



January 10, 2017

Mr. Ted Maine, Nuclear Site VP  
Omaha Public Power District  
Fort Calhoun Station, FC-1-5 Plant  
9610 Power Lane  
Blair, NE 68008

Re: Contract No. 00227943; HSA and Limited Site Characterization

**SUBJECT:** Limited Radiological and Non-Radiological Site Characterization Survey Reports  
Fort Calhoun Nuclear Station, Blair, Nebraska

Correspondence No. 9

Dear Mr. Maine;

TSSD Service, Inc. is pleased to provide you the two final Site Characterization Reports: The Limited Radiological and Non-Radiological Site Characterization Survey Reports for the Fort Calhoun Station, completed in support of your decommissioning program.

The intent of these Limited Characterization Surveys was to focus on the most likely areas where releases could impact environmental media and where remediation could impact future costs and/or schedules. These reports present the field activities, field screening and analytical data, and identify both areas that are impacted as well as areas where no further actions are warranted.

If you have any questions, please do not hesitate to call me at 860-377-4169. We appreciate this opportunity to work with your team and look forward to our continued partnership on future projects.

Respectfully,  
TSSD Service, Inc.

A handwritten signature in black ink, appearing to read "Charles Mercier", is written over a horizontal line.

Charles Mercier  
Chief Operating Officer

79 AVIATOR PLACE, OAKLAND, MAINE 04963

1-877-965-TSSD (8773)

[WWW.TSSDSERVICES.COM](http://WWW.TSSDSERVICES.COM)

# **FORT CALHOUN NUCLEAR STATION LIMITED SITE NON-RADIOLOGICAL CHARACTERIZATION SURVEY REPORT**

**JANUARY 2017**



**Prepared for  
Omaha Public Power District**

Presented by:  
TSSD Services, Incorporated  
79 Aviator Place, Oakland, Maine



Prepared by:

**HALEY  
ALDRICH**

75 Washington Avenue, Suite 1A  
Portland, ME 04101



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## **Glossary of Terms, Acronyms, and Abbreviations**

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### **GLOSSARY OF TERMS, ACRONYMS, AND ABBREVIATIONS**

|       |  |
|-------|--|
| AFFF  | Aqueous Film Forming Foam                    |
| AOI   | Areas of Interest                            |
| AST   | aboveground storage tank                     |
| bgs   | below ground surface                         |
| COC   | (Non-Radioactive) Contaminant of Concern     |
| CRs   | Condition Reports                            |
| DCE   | decommissioning cost estimate                |
| DQO   | Data Quality Objective                       |
| DRO   | Diesel Range Organics                        |
| EPA   | (U.S.) Environmental Protection Agency       |
| FCS   | Fort Calhoun Station                         |
| gpm   | gallons per minute                           |
| HSA   | Historical Site Assessment                   |
| MCL   | Maximum Contaminant Level                    |
| mg/kg | milligram per kilogram                       |
| mg/L  | milligram per liter                          |
| mph   | miles per hour                               |
| MW    | megawatts                                    |
| NDEQ  | Nebraska Department of Environmental Quality |
| NRC   | (U.S.) Nuclear Regulatory Commission         |
| OPPD  | Omaha Public Power District                  |
| PA    | Protected Area                               |
| PAHs  | Polyaromatic Hydrocarbons                    |
| PCBs  | Polychlorinated Biphenyls                    |
| PFA   | perfluoroalkyl surfactants                   |
| PID   | photoionization detector                     |
| ppm   | parts per million                            |
| PWR   | pressurized water reactor                    |
| RCRA  | Resource Conservation and Recovery Act       |
| RGs   | Remedial Goals                               |
| RO    | Reverse Osmosis                              |
| RPDs  | relative percent differences                 |
| SDS   | safety data sheet                            |
| SOPs  | Standard Operating Procedures                |
| SPLP  | Synthetic Precipitation Leaching Procedure   |
| SVOCs | Semi-Volatile Organic Compounds              |
| TAL   | Target Analyte List                          |
| TCLP  | Toxicity Characteristic Leaching Procedure   |
| TPH   | Total Petroleum Hydrocarbons                 |
| TSCA  | Toxic Substance Control Act                  |
| UST   | Underground Storage Tank                     |
| VCP   | Voluntary Cleanup Program                    |
| VOCs  | Volatile Organic Compounds                   |

**SECTION 1 INTRODUCTION**

Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this Limited Site Non-Radiological Characterization Survey Report (Report) to support the characterization of non-radiological or chemical constituents in environmental media at the Omaha Public Power District's (OPPD) Fort Calhoun Station (FCS).

Specifically, this Report focuses on characterizing the eight Areas of Interest (AOIs) identified in the Limited Historical Site Assessment (HSA), where releases are most likely to have impacted soils, sediments, or groundwater. These AOIs were selected during the preparation of the Limited Site Characterization Work Plan (Work Plan) [1] because they are areas where remediation (if required) may impact the decommissioning cost estimate (DCE), either due to the extent of impacted media or potential impacts to the decommissioning schedule. It should be noted that the remaining AOIs not discussed in this Report will most likely require additional investigations, but the impacts are likely to be restricted to shallow soils, or involve compounds that would not have a long-term impact to soils and groundwater.

**1.1 PURPOSE**

The purpose of this Report is to summarize the findings of the limited site non-radiological characterization investigation. The investigation was designed to identify significant environmental impacts to soils, sediments, and groundwater to the extent that subsequent characterization and remediation could impact the DCE and/or decommissioning schedule. The investigation efforts followed the Nebraska Department of Environmental Quality (NDEQ) Voluntary Clean-up Program (VCP) guidance as well as the regulations under the Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) under 40 CFR 261 and Toxic Substance Control Act (TSCA) under 40 CFR 761, as applicable.

## **SECTION 2 SITE DESCRIPTION AND BACKGROUND**

### **2.1 SITE DESCRIPTION**

FCS Unit 1 was a Combustion Engineering 2-loop pressurized water reactor (PWR) rated at 479 megawatts (MW) electrical. Plant construction began in 1966. The first fuel assembly was loaded into the reactor between May – June 1973. The Nuclear Regulatory Commission (NRC) issued an operating license on August 9, 1973. The plant officially went online on September 1, 1973 with commercial operation starting 25 days later. The plant went offline on October 24, 2016.

The site operated under the following:

NRC License No. DPR-40

Docket No. 50-285

EPA ID No. 110007129623

#### **2.1.1 Location**

The FCS site is located on the west bank of the Missouri River at river mile 646.0 on 660.46 acres, approximately 19.4 miles north of Omaha, Nebraska. OPPD has a perpetual easement on 582.18 acres of land on the east bank of the river directly opposite the plant buildings. About 85 percent of the site area is on relatively level ground located in the alluvial plain of the river. On the Western part of the site the ground rises sharply about 60 feet to a higher level area which is bounded on the west by United States (U.S.). Highway 75, formerly U.S. Highway 73.

The area adjoining the site is farmland and sparsely populated. The minimum exclusion distance is 2,986 feet (910 meters). The nearest privately owned land is farmland and is approximately 0.5 miles from the site. The nearest population center area of more than 25,000 is formed by adjacent cities of Omaha, Nebraska and Council Bluffs, Iowa. Figure 1 shows the location of the site along the Missouri River.

## **2.2 ENVIRONMENTAL SETTING**

### **2.2.1 Topography**

The FCS Plant is situated within parts of Section 20 and 21, Township 18 North, Range 12 East of Washington County, Nebraska in the Modale quadrangle. The site is part of the Missouri River bottomland, which is a nearly level plain about 15 miles wide at Blair, 8 miles wide at the site and narrowing to 3 miles wide in the vicinity of Omaha-Council Bluffs. The elevation of this plain averages about 1,000 feet above mean sea level at the Site.

The surface of the land, starting from the Missouri River at about elevation 997 feet above mean sea level, falls to an old channel of the river before rising again to approximately 1,004 feet. Beyond this point, the land then gradually falls off to about 1,000 feet, rises again to approximately 1,020 feet, and then rises approximately 60 feet to a higher plateau at elevation 1,080 feet [2].

The Missouri River, which flows generally north to south, forms the northeast to southeast site boundary. This part of the river is referred to by the Corps of Engineers as the Blair Bend. The river limits are under control of the Corps who have established a structure azimuth line which acts as another site boundary. The topography of the site is shown in Figure 2.



The site drainage development program provides proper drainage of the plant site and upstream properties. This system controls runoff of local precipitation; drainage empties into the Missouri River north of the plant.

### **2.2.2 Geology**

The soils below FCS included thick beds of limestone, dolomite, shale, and sandstone with some thin layers of coal beds. The deeper formations were deposited in marine depositional environmental with the shallow soils from the lateral migration of the paleo river channel. The major tectonic features of the mid-continent region began to develop late in the Paleozoic Era, and probably most of the important structural features of the Nebraska Iowa Missouri River Valley area. However, there is no record of movement of the fault in historic times, or any indication of activity in recent geologic time.

At the beginning of the Pleistocene period, the Missouri River Valley and its main tributaries were established in their approximate present positions. Subsequently under successive glacial movements, the valleys were filled and re-opened several times. During this period, the Peorian loess was deposited on the terraces and adjacent uplands. It is probable that only the upper part of the alluvium in the Missouri River Valley is actually of recent age and that deeper deposits are mostly of Pleistocene age.

Unconsolidated sediments at the plant site generally range from 65 to 75 feet in thickness. The soils are typically interstratified and cross-bedded [3]. These soils may be grouped generally into two units:

- an upper fine-grained sandy clay with silt approximately 20 to 50 feet thick; and
- an underlying fine to coarse sand with some gravel. This lower unit extends to the relatively flat-lying carbonate bedrock surface at a depth of approximately 65 to 75 feet below ground surface (bgs).

The upper units were representing former river deposits and are not likely continuous, but rather have preferential channels formed by paleo-oxbow deposits.

Pennsylvanian-aged limestone and shale (bedrock) of the Kansas City Formation are encountered below the overburden soils. The bedrock below the site consists of various types of limestone formations [4].

### **2.2.3 Hydrology**

Groundwater at the site is in hydraulic communication with the adjacent Missouri River, with the water table ranging from 2 to 20 feet below the surface depending on the river stage [5]. However, under typical conditions, the depth to groundwater is approximately 15 to 20 feet bgs [4]. Both soil units identified in Section 2.2.2 are water bearing with the deeper unit exhibiting a higher hydraulic conductivity. The hydraulic gradients below the site are relatively flat with relatively slow ground water velocity [4].

Water levels taken at the site show that the groundwater gradients at the site are nearly flat, with only a gentle slope toward the river, about ten feet below the ground surface. Water levels at the site varied from elevations 993.7 to 992.4 feet, while the river levels recorded during this same period ranged from elevations 993.2 to 992.4 feet. Groundwater levels vary with changes in the river level. The rate of groundwater flow in the alluvial soils varies with the permeability, however, the groundwater flow rate, or velocity is very slow due to the low gradients. The coefficient of permeability varied from about one-half to three feet per day in the upper sandy silt and silty sand. In the lower fine-to-coarse sands and gravels, coefficients of permeability as high as 20 feet per day were measured [4].

According to site documents, groundwater flow directions have been reported to be both toward the Missouri River (northeasterly) and away from the Missouri River (south-southwesterly) [6]. Flow directions toward the river appear to represent times when Missouri River levels are relatively low, e.g. during the spring, summer, and early fall, when most precipitation occurs and the river flow is relatively high [4]. Flow directions away from the river appear to represent times when Missouri river levels are relatively high causing bank storage effects, e.g. during late fall and winter when the river recedes [4, 5].

Locally, below the plant structures, the reverse osmosis water (RO) treatment plant withdraws groundwater, to be used at the plant. This groundwater withdrawal causes a cone of depression and alters groundwater flow. The extraction well is located at the northwest corner of the old warehouse. Testing during the well installation documented that the aquifer may produce approximately 500 gallons per minute (gpm). The production well was in service as of August 2007, continuously pumping about 200 gpm. Measurement of groundwater flow indicated that within 600 feet of the RO well, groundwater flow is toward the RO well (i.e. southwest) [4].

#### **2.2.4 Surface Waters**

The plant site is bounded on the northeast and southeast by a portion of the Blair Bend of the Missouri River. The Corps of Engineers maintains river structures to prevent further meandering of the channel within the alluvial flood plain; the structures take the form of pile dikes and bank revetments. Fish creek is an intermittent drainage stream that runs along the [plant] north boundary of the Protected Area (PA). This stream discharges into a larger wetland, before flowing in the Missouri River as shown on Figure 3.

There are six dams upstream of the plant site that control the river flow. The nearest structure to the site is Gavin's Point and the most distant structure is Fort Peck. There are no dams, locks, or similar structures on the Missouri downstream of the plant site [6]. The Site has been flooded several times with the most recent occurring in 2011, where the river overflowed its banks for several months. The flood stage from that event and its impacts to the site are shown on Figure 4.

#### **2.2.5 Meteorology**

Nebraska is located midway between two distinctive climatic zones, the humid east and the dry west [7]. Cyclic weather conditions representative of either zone, or combinations of both occur. Changes in weather result from the invasion of large masses of air with dissimilar properties. These air masses tend to get their characteristics from either the warm and humid south-southeast, the warm and dry southwest, the cool and dry north-northwest, or the cold continental polar air of the north. The region is also affected by many storms or cyclones (areas of low pressure) which travel across the country, generally from west to east. Periodic and rapid changes in the weather are normal, especially in the winter.

Annual average precipitation for the region is about 28.5 inches, but annual amounts vary widely from year to year. About 75 percent of the precipitation occurs during showers and thunderstorms from April through September. Snowfall amounts to about 30 inches of snow as the annual average, but total annual amounts vary widely from year to year [7].

The surface wind direction and speed is quite varied during all seasons of the year. The prevailing wind direction from May through December is from south-southeast; north-northwesterly winds prevail during the remainder of the year. The mean annual wind speed is 10.6 miles per hour (mph).

The mean annual temperature for the region is 51.1°F. The January monthly mean is 20.2°F, while that for July is 77.7°F. Relative humidity ranges from an average of about 78 percent for the period midnight to noon and about 59 percent from the period noon to midnight. The mean percentage of possible sunshine over the area is about 50 percent in winter and about 75 percent in summer [7].

### SECTION 3 SCOPE OF WORK

During the HSA, a total of 17 AOIs were identified for non-radiological (chemical) use based on historical use and operations (see Table 1). These included chemical and equipment storage areas, historic practices, and areas where non-radiological materials could have been released to soils, groundwater, sediments, or surface water. All work will be completed in compliance with NDEQ regulations, and if warranted, remedial actions will be executed under their VCP program. Of the 17 AOIs identified, seven were identified where environmental media impacts could require significant remediation. Data from each of these seven areas was collected and evaluated with respect to the NDEQ VCP cleanup criteria presented in Appendix A [8], in addition to the EPA Maximum Contaminant Levels (MCLs), where applicable. All AOIs are listed below. The seven AOIs that were the focus of this limited characterization effort are highlighted below in bold and italics. All AOIs are shown on Figure 5 and the italicized AOIs are presented on Figures 6 through 12.

**Table 1. Areas of Interest (AOIs)**

| AOI No.          | AOI Name                              |
|------------------|---------------------------------------|
| <b><i>1</i></b>  | <b><i>Water Treatment Plant</i></b>   |
| <b><i>2</i></b>  | <b><i>Chemical Storage Areas</i></b>  |
| 3                | Transformers                          |
| 4                | Switchyards                           |
| <b><i>5</i></b>  | <b><i>Spare Transformer</i></b>       |
| <b><i>6</i></b>  | <b><i>USTs</i></b>                    |
| 7                | ASTs                                  |
| 8                | Disposal Area / Landfill              |
| 9                | Sewage Lagoons                        |
| <b><i>10</i></b> | <b><i>Fire Training Area</i></b>      |
| <b><i>11</i></b> | <b><i>Firing Range</i></b>            |
| 12               | Old Warehouse                         |
| 13               | 6-Bay Building and Maintenance Shop   |
| <b><i>14</i></b> | <b><i>Fish Creek and Wetlands</i></b> |
| 15               | Farmlands                             |
| 16               | Storm Water Outfalls                  |
| 17               | Site Wide Groundwater                 |

#### 3.1 SAMPLE METHODOLOGY

The sampling program was completed in accordance with Table 2 and the Work Plan [1]. Locations for each of the explorations are shown on Figures 6 through 12.

Samples were collected using the following methods:

- Surface soil samples. Shallow soil was collected using a hand auger or direct push drilling methods to sample soils at depths up to 5 feet bgs. If there was access the direct push was used in these areas.
- Subsurface samples. Direct Push drilling methods were implemented to collect soil and groundwater grab samples. This method used hydraulics to press a cylinder through the soil to retrieve a core. The core was then logged in the field for soil properties and documented for any evidence of contamination. In areas where volatile or semi-volatile organic compounds (VOCs or SVOCs) were a contaminant of concern (COC), soils were also screened using a photoionization detector (PID).
- Sediment Samples. Sediments were collected from the top 0 to 6 inches of sediment and the data was used to evaluate potential impacts to the benthic receptors.
- Groundwater Grab Samples. Groundwater samples were collected through the direct push locations to identify if there are impacts to groundwater. These samples are considered screening level samples as they will not be collected from groundwater monitoring wells, nor collected using the low flow/low stress techniques.

All work was completed in accordance with the Standard Operating Procedures (SOPs) in Appendix B as well as site safety requirements.

Samples were submitted to General Engineering Laboratories of Savannah, Georgia and TestAmerica Laboratories of Earth City, Missouri. Samples were submitted under chain of custody and samples collected from inside the PA were surveyed by the Health Physics department prior to shipment to the laboratory. Samples were submitted for one or more of the following analyses:

- VOCs, Method 8260C;
- SVOCs, Method 8270D;
- Polychlorinated biphenyls (PCBs), Method 8082A;
- Target Analyte List (TAL) metals, Method 6010C/7471B;
- Synthetic Precipitation Leaching Procedure (SPLP) metals, extraction method 1312 and analysis method 6010C/7470A;
- Toxicity Characterization Leaching Procedure (TCLP) metals, extraction method 1311 and analysis method 6010C/7470A;
- Perchlorate, Method 314.0 Mod;
- Perfluoroalkyl substances (PFAs), Method 537;
- Benzene, toluene, ethylbenzene, xylene, Method 8260B;
- Lead; Method 6010C;

- Naphthalene; Method 8260B;
- Polyaromatic hydrocarbons (PAHs), Method 8270D; and
- Total Petroleum Hydrocarbons – Diesel Range Organics (TPH-DRO), Method 8015C.

Then all sample locations were located using handheld Global Positioning System (GPS) with an accuracy of +/- one foot.

Additional information on the investigation activities or procedures including investigation-derived waste, decontamination, etc. can be found in the Work Plan [1].

## **3.2 DATA QUALITY OBJECTIVES**

Data quality objectives (DQOs) were set in the early stages of the characterization effort to ensure that defensible data was collected to satisfy the requirements of the different regulatory agencies, and their different programs.

### **3.2.1 Quality Assurance/Quality Control**

To meet NDEQ and EPA requirements, duplicate samples were collected at a frequency of 5%, or one duplicate and matrix spike/matrix duplicate samples were collected for every 20 samples submitted for laboratory analysis.

Temperature blanks were included in each shipment and trip blanks accompanied any shipment that contains samples scheduled for analysis of VOCs. Equipment blanks were not required as dedicated equipment was used.

### **3.2.2 Data Validation**

All data was reviewed by a qualified chemist and validated in accordance with NDEQ regulations. At a minimum, data was checked so that the reporting limits are below the NDEQ action levels, and to evaluate that the relative percent differences (RPDs) are below acceptable limits. The data validation reports are included in Appendix C.



## **SECTION 4 CHEMICAL FINDINGS**

This limited non-radiological characterization program focused on seven AOIs, as they had the most potential to impact soils, sediments and groundwater and therefore impact decommissioning costs. This section presents a brief description of each AOI, the COCs, a summary of the investigation and the results compared to NDEQ criteria.

### **4.1 AOI 1 – WATER TREATMENT PLANT**

The original Water Treatment Plant was installed during the initial construction of FCS to supply all the facility's demineralized and domestic water needs. The Water Treatment Plant used river water in its treatment process and all equipment and piping throughout the process was classified as the "Demineralized Water System" and equipment was defined with a "DW" prefix [5]. Little information is available but historical knowledge indicates the system transferred water from the river to a settlement tank within the chemical pump house and there used caustics, acids, and other water treatment chemicals. The water was then sent to two ion exchange resin lagoons to remove other constituents such as metals. The lagoons were unlined and system was connected via a pipe to the turbine building.

During the flood of 1993/94, the lagoons were flooded and washed out. In 2002, the east lagoon was overflowed and the berm between the lagoons had to be cut. Other reports include an ammonia release and an exothermic chemical explosion in the transfer lines going to the Turbine Building. The system was abandoned (circa 1990) when a supply connection was made to the City of Blair's municipal water supply [5]. After abandonment, the ion exchange resin from the lagoons was placed in the landfill (AOI 8).

#### ***Summary of Field Activities***

COCs at AOI 1 include metals from the demineralization process. The limited site investigation included the collection of two soil samples from directly below the lagoons and one soil sample downgradient of the lagoons as identified on Table 2. The plant and lagoons along with the sampling locations are shown on Figure 6 and the boring logs are provided in Appendix D.

**Data Evaluation**

The analytical results from the soil sampling as shown below indicate elevated arsenic greater than the NDEQ VCP Remedial soil criteria, however, the results are consistent or below background arsenic values [9]. The results also indicated elevated cobalt, iron, and manganese greater than NDEQ VCP soil criteria, but these too are consistent or below published background values [9]. No other values exceeded NDEQ VCP soil criteria. A more comprehensive list of analytical data for this AOI including TAL metals is provided in Table 3 and the laboratory results are provided in Appendix E.

**Table 4. AOI 1 – Soil Analytical Regulatory Exceedance Summary**

| Location Name<br>Sample Depth (bgs) | NDEQ<br>VCP<br>Residential<br>Soil (Sept<br>2012) | EPA<br>Residential<br>Soil RSL<br>May 2016<br>HI = 1 | DP0101<br>9-10 (ft) | DP0102<br>16-17 (ft) | DP0103<br>7-8 (ft) |
|-------------------------------------|---|--|---------------------|----------------------|--------------------|
| <b>Inorganic Compounds (mg/kg)</b>  |   |  |                     |                      |                    |
| Arsenic                             | 0.39  | 0.68   | <b>7.3 J</b>        | <b>16.5 J</b>        | <b>5.83 J</b>      |
| Cobalt                              | 5.8   | 23   | 6.8                 | 11.4                 | 4.28               |
| Iron                                | 14000   | 55000  | 17600               | 27100                | 10500              |
| Manganese                           | 460   | 1800   | 692 J               | 1050 J               | 235 J              |

**NOTES:**

J – estimated value

- Bold values indicate an exceedance of the EPA Residential RSL.

- Gray values indicate an exceedance of the NDEQ VCP Residential Soil Criteria

The soil samples were also analyzed for SPLP analysis to evaluate the potential for metals in soils to impact the groundwater below. Data results for SPLP analysis are below NDEQ VCP groundwater remedial goals (RGs), except for arsenic.

**Findings**

Although several inorganics were reported at concentrations that exceeded both EPA and NQED criteria, these are likely naturally occurring but may have been concentrated during the water treatment activities. Additional evaluations may be warranted to evaluate the concentrations with respect to background conditions.

**4.2 AOI 2 – CHEMICAL STORAGE AREAS**

The site contains two chemical storage buildings. The original chemical storage building and the current chemical storage building. Both are shown on Figure 7. With the exception of the flood in 2010, the site was classified as a Low Quantity Generator, and therefore did not require a Greater than 90 Day RCRA Storage Area.

The original storage building was located within the PA houses the hazardous waste. This building known as the Hazardous Material Storage Building (also known as Hazmat Shed) is located adjacent to and west of the Old Warehouse [5]. This building continues to store chemicals and hazardous waste. The building floor lies directly on the soils (i.e. “slab on grade”) and there are no floor drains. During interviews, it was

noted that during past operations, if the building was filled the hazardous materials would be placed outside the building to await off-site disposal. There are also accounts of the area being flooded, offering the potential for chemicals to be discharged to the soils outside the doorways.

The second chemical storage building is a more recent structure that is located outside of the PA to the north of the Switchyard and northeast of the Old Warehouse. This building is known to store chemicals, but not hazardous wastes. Additional information on the chemicals stored in this building were not available, but it is anticipated that lubricants, degreasers, hydraulic fluids, etc. are stored here. There are also accounts of numerous drums of materials being stored in this area, prior to offsite disposal.

## Summary of Field Activities

COCs for AOI 2 include VOCs, SVOCs, TAL metals, and PCBs. The limited site investigation included the collection of two soil samples from the former and current chemical storage building areas as identified on Table 2. The sampling locations are shown on Figure 7 and the boring logs are provided in Appendix D.

## Data Evaluation

The analytical results from the soil sampling as shown below indicate elevated arsenic, cobalt, iron, and manganese greater than the NDEQ VCP soil criteria, however, the results are consistent or below background values [9]. No other values exceeded NDEQ VCP soil criteria. A more comprehensive summary of the analytical data for this AOI including VOCs, SVOCs, SPLP Metals, and PCBs is provided in Table 3 and the laboratory results are provided in Appendix E.

**Table 5. AOI 2 – Soil Analytical Regulatory Exceedance Summary**

| Location Name<br>Sample Depth (bgs) | NDEQ VCP<br>Residential<br>Soil (Sept<br>2012) | EPA<br>Residential<br>Soil RSL<br>May 2016<br>HI = 1 | DP0201<br>14-15 (ft) | DP0202<br>7-8 (ft) | DP0202<br>9-10 (ft) | DP0203<br>12-13 (ft) | DP0204<br>13-14 (ft) |
|-------------------------------------|--|--|----------------------|--------------------|---------------------|----------------------|----------------------|
| <b>Inorganic Compounds (mg/kg)</b>  |  |  |                      |                    |                     |                      |                      |
| Arsenic                             | 0.39   | 0.68   | <b>3.82 J</b>        | <b>13.9 J</b>      | <b>8.09 J</b>       | <b>9.96 J</b>        | <b>9.22 J</b>        |
| Cobalt                              | 5.8  | 23   | 2.23                 | 7.21               | 4.33                | 8.31                 | 5.63                 |
| Iron                                | 14000  | 55000  | 5510                 | 19500              | 12200               | 23900                | 13900                |
| Manganese                           | 460  | 1800   | 115 J                | 646 J              | 348 J               | 461 J                | 396 J                |

### NOTES:

J – estimated value

- Bold values indicate an exceedance of the EPA Residential RSL.

- Gray values indicate an exceedance of the NDEQ VCP Residential Soil Criteria

The soil samples were also analyzed for SPLP analysis to evaluate the potential for metals in soils to impact the groundwater below (see Table 3). Data results for SPLP analysis are below NDEQ VCP groundwater RGs, except for arsenic and selenium.

***Findings***

Based on the materials stored at AOI 2, the inorganics detected at concentrations above the EPA and NDEQ criteria are likely attributed to natural background conditions. These naturally elevated background conditions also would account for the elevated SPLP results for arsenic. Additional evaluations may be warranted to evaluate the concentrations with respect to background conditions.

**4.3 AOI 5 – SPARE TRANSFORMER**

The spare transformer is located just off the main plant entrance road and south of the Switchyard. Drawings indicate that two spare transformer pads were constructed in 2002 and 2005, respectively [12]. One is currently in use and houses a spare T1 transformer which was placed on the pad in approximately 2006. During the flood of 2011, the spare transformer was surrounded by an unlined earthen berm covered with crushed rock. This area is shown on Figure 8.

During transportation of the spare transformer, it has been reported that the load was dropped, potentially causing a minor release of non-PCB oils. The area was cleaned up and stained soils removed, but no confirmation soil samples were collected.

During the site walk down in September 2016, it was noted that the spare transformer was visibly leaking oil onto the pad/ground. This is supported by multiple condition reports (CRs) that report similar findings. It is unknown how long this transformer has been leaking or if the non-PCB oil transformer oil contains residual PCBs.

***Summary of Field Activities***

COCs for AOI 5 include SVOCs and PCBs. The limited site investigation included the collection of one soil sample within the berm where the transformer was leaking, one soil sample around the berm, and one soil sample from the location of the where the spare transformer was dropped as identified on Table 2. The sampling locations are shown on Figure 8 and the boring logs are provided in Appendix D.

***Data Evaluation***

The analytical results from the soil sampling did not exceed NDEQ VCP soil criteria. A summary of the analytical data is provided in Table 3 and the laboratory results are provided in Appendix E.

***Findings***

No further actions are warranted at this AOI.

**4.4 AOI 6 – USTS**

Based on Site documentation [10], three underground storage tanks (USTs) exist on the Site outside of building structures. All three USTs are diesel generator fuel-oil tanks located within the PA. These are:

- Tank FO-1 – 18,000-gallon diesel; single-walled steel tank; located south of the Auxiliary Building
- Tank FO-10 – 18,000-gallon diesel; single-walled steel tank; located between the Intake Structure and the Service Building.

- Tank FO-32 - 4,000-gallon diesel; double-walled steel tank with interstitial monitoring; located south of the New Warehouse

Each of these tanks are shown on Figure 8 and listed on the table below.

Based on the Pollution Prevention Storm Water Management Plan [11], the tanks are installed within compacted soil. Periodic surveillance testing is conducted on these tanks. This testing includes water content and recording level readings.

**Table 6. AOI 6 - USTs**

| Tank  | Size (Gallons) | Type of Fuel | Location                    |
|-------|----------------|--------------|-----------------------------|
| FO-1  | 4/12/1949      | Diesel       | South of Auxiliary Building |
| FO-10 | 4/12/1949      | Diesel       | East of Service Building    |
| FO-32 | 12/13/1910     | Diesel       | South of New Warehouse      |

## Summary of Field Activities

During the site walk down, it was reported that the none of the tanks had ever had a leak but it was possible for them to be overfilled, with residual potentially impacting the adjacent soils. Groundwater wells installed near the USTs have not been tested for non-radiological COCs, however the boring logs do not report staining or odors.

COCs for AOI 6 include TPHDRO. The limited site investigation included the collection of one soil sample from the downgradient edge of each UST as identified on Table 2. The sampling locations are shown on Figure 9 and the boring logs are provided in Appendix D.

## Data Evaluation

The analytical results from the soil sampling did not exceed NDEQ VCP soil criteria. A summary of the analytical data is provided in Table 3 and the laboratory results are provided in Appendix E.

## Findings

This investigation was designed to identify if there were historic releases that impact soils and groundwater downgradient from USTs. Additional samples may be warranted once the USTs are removed. This work should be completed in accordance with the Nebraska Administration Code, Title 159, Chapter 10.

## 4.5 AOI 10 – FIRE TRAINING AREA

The fire training area is located to the west of the equipment storage area in the Switchyard (See Figure 10). Currently the area consists of a concrete pad with a central drain that discharges directly to Fish Creek. The area also contains two sealand containers, a propane tank, a cross pan, and other fire training equipment (fire extinguishers, rest area, etc.). The sealand containers are used to start “live” fires using pallets and straws as the fuel, water is used to extinguish the flames. The propane tank, which was installed approximately 12 years ago, is used to start fires in the cross pan which is then put out with chemical fire

suppressants. It was also reported that during fire training activities the central pad drain is covered, preventing materials from draining to Fish Creek, allowing only rain water and water from the pallet and straw fire suppression activities to drain from the pad.

Prior to use of propane, the cross pan fires were started using diesel fuel. Based on interviews, the fuels were first stored in 55 gallon drums, and later transported in 5 gallon containers. These activities allowed for potential releases of the fuel oils to the pad and soils in the area.

After the fires were extinguished, the extra fuel oil was collected from the cross pan for potential future use and the embers were containerized for off-site disposal. The area was then cleaned by spraying the burn pan and sealand containers with water, where the residual water was then drained to Fish Creek via a drain in the burn pad. Additionally, although the cross pan was covered when not in use, it was possible for rain water to fill or overfill the container, releasing residual oils to the pad, and then to Fish Creek.

The fire extinguishers used for fire prevention training are Aqueous Film Forming Foam (AFFF) dry A/B/C type fire extinguishers. These fire extinguishers are known to contain PFAs or proprietary fluorosurfactants based on the safety data sheets (SDSs). These PFAs are currently recognized by EPA as an emerging compound in the environment.

### Summary of Field Activities

COCs for AOI 10 include PAHs and TAL Metals due to the use of fuel oils and burning of pallets and an additional COC is PFAs or other proprietary fluorosurfactants from fire suppressant use. The primary migration path for these COCs is via the drain to Fish Creek, potentially impacting the sediments and surface water, but there is also potential for COCs to impact the soils below the drain (if the seals leaked) as well as the area where the fuel oils were stored. The limited site investigation included the collection of three soil samples and one downgradient groundwater sample as identified on Table 2. The sampling locations are shown on Figure 10 and the boring logs are provided in Appendix D.

### Data Evaluation

The analytical results from the soil sampling as shown below indicate elevated arsenic, cobalt, and iron, greater than the NDEQ VCP soil criteria, however, the results are consistent or below background values [9]. No other values exceeded NDEQ VCP soil criteria. A more comprehensive summary of the analytical data for this AOI including SVOCs is provided in Table 3 and the laboratory results are provided in Appendix E.

**Table 7. AOI 10 – Soil Analytical Regulatory Exceedance Summary**

| Location Name<br>Sample Depth (bgs) | NDEQ VCP<br>Residential<br>Soil (Sept<br>2012) | EPA<br>Residential<br>Soil RSL<br>May 2016<br>HI = 1 | DP1001<br>13-14 (ft) | DP1002<br>12-13 (ft) | DP1003<br>10-11 (ft) |
|-------------------------------------|--|--|----------------------|----------------------|----------------------|
| <b>Inorganic Compounds (mg/kg)</b>  |  |  |                      |                      |                      |
| Arsenic                             | 0.39   | 0.68   | <b>9.86 J</b>        | <b>5.82 J</b>        | <b>6.63 J</b>        |
| Cobalt                              | 5.8  | 23   | 6.8                  | 9.87                 | 5.83                 |
| Iron                                | 14000  | 55000  | 15300                | 13700                | 12500                |

**NOTES:**

J – estimated value



- Bold values indicate an exceedance of the EPA Residential RSL.
- Gray values indicate an exceedance of the NDEQ VCP Residential Soil Criteria

The analytical results from the groundwater sampling did not exceed (MCLs and the VOC analysis was completed outside of the holding time due to insufficient preservative within the sample and was qualified. It should be noted that the combined detections of PFAs did exceed the EPA May 2016 Health Advisory. A summary of the groundwater analytical data is provided in Table 7 and the laboratory results are provided in Appendix E.

### **Findings**

Data from this AOI indicate groundwater impacts from the historic fire training activities. As PFAs are now recognized as an emerging compound and may require remediation (depending on the extent and concentrations). Additional investigations to determine the lateral and vertical extent of these compounds in the environment may be warranted.

## **4.6 AOI 11 – FIRING RANGE**

The firing range is located north of the PA (Figure 11). The firing range consists of three berms and a shelter area. On the south corner of the firing range is a tower used for rifle practice, and there is a simulated indoor or obstructed view scenario practice area in the northeast corner. This area has formed ‘hallways’ out of soil filled stacked tires. The target line for hand gun firing is plant south to plant north and the target line for rifle firing is plant southwest to plant north east.

When the plant was originally constructed the firing range was reported to consist of one berm, identified as a “hill” running plant east-west. Then in the late 1980’s the current firing range was built. Interviews conducted indicated that after its completion, law enforcement agencies also used the facility for weapons training. Reportedly, they used to take care in picking up the spent casings, but over time this practice was discontinued with reports of spent casings on the ground. Currently the area is well maintained, with only with some shells remaining.

The bullets used at the firing range are indicated to be “normal” bullets. Bullets are known to contain lead and lesser concentrations of other metals. Other COCs include perchlorate, as it is commonly used as a stabilizer in the smokeless powder.

A recent lead assessment completed by B2 Engineering in August of 2014 on the exterior sides of the plant north and plant east berms indicate levels of high lead in the exterior of the north berm. The levels range from 42.2 to 5335.7 parts per million (ppm) which is equivalent to milligrams per kilogram (mg/kg) (exceeding the industrial soil criteria of 750 mg/kg [7] and reported TCLP values up to 150 milligrams per liter (mg/L), exceeding the Hazardous Waste Criteria of 5 mg/L [40 CFR 261.24]). These elevated samples were collected from the outside and norther side of the berm, suggesting that during the last construction (to create the three berms) soils were likely reworks. No samples were collected from the inside of the berms, or from the shooting range floor.

The shelter at the firing range is used for cleaning guns in addition to acting as an office. The shelter stores small containers of gun cleaners and most of the cleaning is conducted on tables places under the overhangs

along both side of the shelter. There is also a transformer located at the southwest corner outside the range and shelter. This transformer was flooded in 2010, potentially releasing oils and residual PCBs to the soils.

## Summary of Field Activities

COCs for AOI 11 include lead and other metals impacts in the berms (and soils within the rubber tires for the indoor/obstructed view training area) as well as metal and perchlorate in the shallow soils on the floor of the range. The limited site investigation included the collection of soil samples at two locations every two feet (up to 8 feet below ground surface) and at the water table. We also collected two surface soil samples and one downgradient groundwater sample as identified on Table 2. The sampling locations are shown on Figure 11 and the boring logs are provided in Appendix D.

## Data Evaluation

The analytical results from some of the soil sampling as shown below indicate elevated arsenic, cobalt, iron, greater than the NDEQ VCP soil criteria, however, the results are consistent or below background values [9]. Additionally, the surface soil sample from within the firing range indicates elevated lead greater than the NDEQ VCP soil criteria. No other values exceeded NDEQ VCP soil criteria. A more comprehensive summary of the analytical data is provided in Table 3 and the laboratory results are provided in Appendix E.

**Table 8. AOI 11 – Soil Analytical Regulatory Exceedance Summary**

| Location Name<br>Sample Depth (bgs) | NDEQ VCP<br>Residential<br>Soil (Sept<br>2012) | EPA Residential<br>Soil RSL<br>May 2016<br>HI = 1 | DP1101<br>0-1 (ft) | SS1101<br>0-0.5 (ft) | SS1102<br>0-0.5 (ft) |
|-------------------------------------|--|---|--------------------|----------------------|----------------------|
| <b>Inorganic Compounds (mg/kg)</b>  |  |   |                    |                      |                      |
| Arsenic                             | 0.39   | 0.68  | --                 | <b>4.5 J</b>         | <b>11.9 J</b>        |
| Cobalt                              | 5.8  | 23  | --                 | 3.72                 | 10.4                 |
| Iron                                | 14000  | 55000   | --                 | --                   | 18300                |
| Lead                                | 400  | 400   | <b>2230 J</b>      | --                   | --                   |
| Manganese                           | 1800   | 460   | --                 | 294 J                | 853 J                |

### NOTES:

J – estimated value

- Bold values indicate an exceedance of the EPA Residential RSL.

- Gray values indicate an exceedance of the NDEQ VCP Residential Soil Criteria

The analytical results from the groundwater sampling as shown below indicated elevated arsenic, barium, chromium, and lead greater than the MCLs and these four compounds plus aluminum, cobalt, iron, manganese, and vanadium are greater than the NDEQ VCP Groundwater Remedial Goals (RGs). A summary of the groundwater analytical data is provided in Table 10 and the laboratory results are provided in Appendix E.

**Table 9. AOI 11 - Groundwater Analytical Regulatory Exceedance Summary**

| Location Name                     | MCL  | NDEQ VCP<br>Groundwater RGs<br>Sept 2012 | GW1101          |
|-----------------------------------|------|--|-----------------|
| <b>Inorganic Compounds (ug/L)</b> |      |  |                 |
| Aluminum, Total                   | NA   | 50                                       | 360000 J-       |
| Arsenic, Total                    | 10   | 50                                       | <b>550 J-</b>   |
| Barium, Total                     | 2000 | 2000                                     | <b>19000 J-</b> |
| Chromium, Total                   | 100  | 100                                      | <b>1700 J-</b>  |
| Cobalt, Total                     | NA   | 2.7                                      | 600 J-          |
| Iron, Total                       | NA   | 300                                      | 1100000 J-      |
| Lead, Total                       | 15   | 15                                       | <b>730 J-</b>   |
| Manganese, Total                  | NA   | 50                                       | 27000 J-        |
| Vanadium, Total                   | NA   | 38                                       | 1400 J-         |

**NOTES:**

- Gray indicates an exceedance of the NDEQ VCP Groundwater RGs

- Bold values indicate an exceedance of the MCL.

**Findings**

The inorganics detected at concentrations above the EPA and NDEQ criteria (other than lead) are likely attributed to natural background conditions and are consistent with inorganics on other portions of the site. These naturally elevated background conditions also would account for some of the elevated constituent concentrations of inorganics in water. Additional evaluations may be warranted to evaluate the concentrations in both soil and groundwater with respect to background conditions.

For the lead detections in soil, data from this AOI coupled with past investigations on the concentrations of lead and historical and current use of the area as a firing range, indicate soil impacts are present with concentration of lead that exceed the Hazardous Waste Criteria of 5 mg/L [40 CFR 261.24]). Due to these levels of lead, additional evaluations are warranted to confirm the nature and extent of lead. Additionally, a risk assessment to confirm that no exposure pathways for human health exist, as well as an ecological evaluation should be considered. Note that only slightly increases levels of lead, when compared to other areas of the site, were seen in the wetlands (see AOI 14).

The site controls access to the public, however, in addition to these additional characterization efforts, an industrial hygienist should be consulted regarding site personal who may come in direct contact with soils as regulatory requirement for lead workers may need to be implemented.

Finally, lead was also detected in groundwater. However, the extent of groundwater impacted by lead should be investigated to better understand the lateral and vertical distribution within the aquifer.

#### 4.7 AOI 14 – FISH CREEK AND WETLANDS

Fish Creek runs along the north side of the PA from the hills towards the Missouri River. Prior to discharging to the Missouri River, Fish Creek lets out into a wetlands area located north of the plant. The topography of the site is such that runoff from the farmland runs into Fish Creek (see Figure 12). Additionally, Fish Creek receives storm water runoff from the fire training area, Switchyard, firing range, and the plant.

##### Summary of Field Activities

COCs for AOI 14 PAHs, PFAs, TAL Metals, and VOCs including perchlorate from the runoff and direct discharges from several other AOIs. The limited site investigation included the collection of three sediment samples along the creek bed. The sampling locations are shown on Figure 12 and the boring logs are provided in Appendix D.

##### Data Evaluation

The analytical results from the sediment sampling as shown below indicate elevated arsenic, cobalt, iron and manganese greater than the NDEQ VCP soil criteria; however, the results are consistent or below background values [9]. PAHs and PFAS were also detected in sediments, but at concentrations below NDEQ VCP soil criteria. It should be noted that since PFAs are recently considered an emerging contaminant, no NDEQ VCP soil criteria has been established. No other values exceeded NDEQ VCP soil criteria. A summary of the sediment analytical data is provided in Table 11 and the laboratory results are provided in Appendix E.

**Table 12. AOI 14 - Sediment Analytical Regulatory Exceedance Summary**

| Location Name<br>Sample Depth (bgs) | NDEQ VCP<br>Residential<br>Soil (Sept<br>2012) | EPA<br>Residential<br>Soil RSL<br>May 2016<br>HI = 1 | SD1401<br>0 - 0.5 (ft) | SD1401<br>0 - 0.5 (ft) | SD1402<br>0 - 0.5 (ft) | SD1403<br>0 - 0.5 (ft) |
|-------------------------------------|--|--|------------------------|------------------------|------------------------|------------------------|
| <b>Inorganic Compounds (mg/kg)</b>  |  |  |                        |                        |                        |                        |
| Arsenic                             | 0.39   | 0.68   | <b>10.9 J</b>          | <b>11.4 J</b>          | <b>9.95 J</b>          | <b>12.3 J</b>          |
| Cobalt                              | 5.8  | 23   | 9.26                   | 9.36                   | 9.96                   | 9.08                   |
| Iron                                | 14000  | 55000  | 19800                  | 19500                  | 21100                  | 19800                  |
| Manganese                           | 460  | 1800   | 706 J                  | 668 J                  | 784 J                  | 663 J                  |

**NOTES:**

J – estimated value

- Bold values indicate an exceedance of the EPA Residential RSL.

- Gray values indicate an exceedance of the NDEQ VCP  
Residential Soil Criteria

##### Findings

Although several inorganics were reported at concentrations that exceeded both EPA and NQED criteria, these are likely attributed to natural background conditions. Additionally, the other analytical data to not

exceed soil screening criteria and to not pose a risk to the public, however, organics should be evaluated in the context of ecological receptors to identify if they could be bioaccumulated.

#### **4.8 AOI 15 – FARMLANDS**

Farmlands surround the plant to the north and south. These farmlands are leased to local farmers for use. Typical farming practices include the use of pesticides, herbicides, arsenic, and fertilization to assist in crop production. It is unknown what chemicals or practices were used on the surrounding farmlands.

Additionally, farming uses tractors and other equipment. It was reported that there was a diesel aboveground storage tank (AST) installed to refuel his equipment. When observed, there were also containers stored in this area. OPPD had the tank and containers removed, however it is not documented how long the area was in use or if any releases associated with this AST occurred. The location is shown on Figure 13.

##### ***Potential source area and migration pathway to impact soils, sediments, or groundwater***

Due to the common practice of releasing small quantities of materials when fueling, shallow soils and groundwater may be impacted by the diesel. As numerous containers were also stored there, additional COCs could include VOCs, SVOCs, metals as well as pesticides.

##### ***Summary of Field Activities***

COCs for AOI 15 included diesel, VOCs, SVOCs, metals as well as pesticides. The limited site investigation intended to collect one soil sample from this location. However, because personnel at FCS were not able to identify an approximate location of this tank, the sample was not completed at the request of the facility.

##### ***Findings***

No further actions are warranted at this time.

**SECTION 5 CONCLUSIONS**

Based on the findings of this investigation, there are only two AOIs where chemical or non-radiological constituents have impacted environmental media.

- AOI 10 - Fire Training Area has PFAOs in excess of the EPA Health Advisory standard of 0.07 micrograms per liter. PFAs do not have a NDEQ criteria, but have been identified recently by EPA as an emerging compound, with a Health Advisory number for drinking water already in effect.
- AOI 11 - Firing Range has lead in the berm and in groundwater. Previous soils data, collected from the north side of the berm, indicated elevated concentrations of lead, that were above the EPA hazardous threshold of 5 mg/L, as analyzed by TCLP. These data were consistent on the southern site of the berm with impacts soils extending to 2 feet bgs. Groundwater grab samples, collected from GW1101 on the downgradient site of the Firing Range also reported lead. It should be noted that the impacted media has not been fully delineated, and will most likely require mitigation and remediation to meet site closure requirements.

Other constituents including arsenic, cobalt, iron, and manganese were noted to have exceedances in soil that exceeded NDEQ criteria. These exceedances occurred in most of the metal samples, but based on a review of published background data [9], these results are consistent with the published values and the samples fall within the same range. Therefore, we do not believe that these elevated levels are due to site conditions, but background levels for the area should be confirmed.



**SECTION 6 RECOMMENDATIONS**

Based on the limited non-radiological characterization effort, AOIs 10 and 11 show site-related contaminants impacting soils and/or groundwater. It should be noted that the purpose of this investigation was to identify if COCs were released to the environment, and now additional efforts should be completed to delineate the horizontal and vertical extents of these contaminant, and if warranted, remediate impacted areas in accordance with the NDEQ VCP requirements.

It is also recommended that site background levels be established to confirm the data collected to date is consistent with site background values. Additionally, the remaining AOIs should be characterized to support site closure, although based on these findings as well as the current groundwater data set, impacts (if present) are likely to be minimal.

**SECTION 7 REFERENCES**

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12. Code of Federal Regulations (CFR), 2013, *Identification and Listing of Hazardous Waste*; 40 CFR §261.24 as amended on July 14, 2006

### **SECTION 8 APPENDICES**

- Appendix A NDEQ VCP Regulations
- Appendix B Standard Operating Procedures
- Appendix C Data Validation
- Appendix D Boring Logs
- Appendix E Laboratory Reports



TABLE 3  
SUMMARY OF SOIL DATA  
OPPD FORT CALHOUN STATION  
BLAIR, NEBRASKA

| Location Name<br>Sample Name<br>Sample Date<br>Sample Depth (bgs) | Residential Soil<br>RSL<br>May 2016<br>HI = 1 | NDEQ VCP<br>Residential Soil<br>Sept 2012 | NDEQ VCP<br>Groundwater<br>RGs<br>Sept 2012 | DP0101<br>DP010109<br>10/25/2016<br>9 - 10 (ft) | DP0102<br>DP010216<br>10/25/2016<br>16 - 17 (ft) | DP0103<br>DP010307<br>10/25/2016<br>7 - 8 (ft) | DP0201<br>DP020114<br>10/26/2016<br>14 - 15 (ft) | DP0202<br>DP020207<br>10/26/2016<br>7 - 8 (ft) | DP0202<br>DP020209<br>10/26/2016<br>9 - 10 (ft) | DP0203<br>DP020312<br>10/25/2016<br>12 - 13 (ft) | DP0203<br>DP020312DUP<br>10/25/2016<br>12 - 13 (ft) | DP0204<br>DP020413<br>10/25/2016<br>13 - 14 (ft) | DP0501<br>DP050113<br>10/25/2016<br>13 - 14 (ft) | DP0502<br>DP050213<br>10/25/2016<br>13 - 14 (ft) | SS0501<br>SS050100<br>10/25/2016<br>0 - 0.5 (ft) | DP0601<br>DP060113<br>10/26/2016<br>13 - 143 (ft) | DP0602<br>DP060212<br>10/26/2016<br>12 - 13 (ft) | DP0602<br>DP060212DUP<br>10/26/2016<br>12 - 13 (ft) | DP0603<br>DP060321<br>10/26/2016<br>21 - 22 (ft) | DP1001<br>DP100113<br>10/24/2016<br>13 - 14 (ft) | DP1002<br>DP100212<br>10/25/2016<br>12 - 13 (ft) | DP1003<br>DP100310<br>10/25/2016<br>10 - 11 (ft) |
|---|---|---|---|---|--|--|--|--|---|--|---|--|--|--|--|---|--|---|--|--|--|--|
| <b>Volatile Organic Compounds (mg/kg)</b>                         |   |   |   |   |  |  |  |  |   |  |   |  |  |  |  |   |  |   |  |  |  |  |
| 2-Butanone (Methyl Ethyl Ketone)                                  | 27000   | 7500                                      | -   | -   | -  | -  | < 0.0016   | 0.00763  | < 0.00195                                       | < 0.00171  | -   | 0.00416 J  | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| Acetone   | 61000   | 16000                                     | -   | -   | -  | -  | < 0.0016   | 0.0412   | < 0.00195                                       | 0.00245 J  | -   | 0.0298   | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| Methyl Tert Butyl Ether   | 47  | 51  | -   | -   | -  | -  | < 0.000321                                       | < 0.000326                                     | < 0.000389                                      | < 0.000341                                       | -   | < 0.000285                                       | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| <b>Semi-Volatile Organic Compounds (SIM) (mg/kg)</b>              |   |   |   |   |  |  |  |  |   |  |   |  |  |  |  |   |  |   |  |  |  |  |
| Benzo(b)fluoranthene  | 0.16  | 0.15                                      | -   | -   | -  | -  | -  | -  | -   | -  | -   | -  | 0.00329 J  | 0.00322 J  | < 0.523  | -   | -  | -   | -  | < 0.00229  | < 0.00221  | 0.00356 J  |
| Chrysene  | 16  | 15  | -   | -   | -  | -  | -  | -  | -   | -  | -   | -  | < 0.00205  | < 0.0023   | < 0.523  | -   | -  | -   | -  | < 0.00229  | < 0.00221  | 0.00222 J  |
| Fluoranthene  | 2400  | 570                                       | -   | -   | -  | -  | -  | -  | -   | -  | -   | -  | < 0.00205  | 0.00322 J  | < 0.523  | -   | -  | -   | -  | < 0.00229  | < 0.00221  | 0.00356 J  |
| Naphthalene   | 3.8   | 4.3                                       | -   | -   | -  | -  | -  | -  | -   | -  | -   | -  | < 0.00123  | 0.00552  | < 0.314  | -   | -  | -   | -  | < 0.00138  | < 0.00133  | < 0.00133  |
| Phenanthrene  | NA  | NA  | -   | -   | -  | -  | -  | -  | -   | -  | -   | -  | 0.00247 J  | 0.00552  | < 0.523  | -   | -  | -   | -  | 0.00229 J  | 0.0031 J   | 0.00311 J  |
| Pyrene  | 1800  | 430                                       | -   | -   | -  | -  | -  | -  | -   | -  | -   | -  | < 0.00205  | 0.00276 J  | < 0.523  | -   | -  | -   | -  | < 0.00229  | < 0.00221  | 0.00311 J  |
| <b>Total Petroleum Hydrocarbons (mg/kg)</b>                       |   |   |   |   |  |  |  |  |   |  |   |  |  |  |  |   |  |   |  |  |  |  |
| Total Petroleum Hydrocarbons (>C10-C20) DRO                       | NA  | NA  | -   | -   | -  | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  | < 2.34  | < 2.61   | 9.1 J+  | < 2.55   | -  | -  | -  |
| <b>Inorganic Compounds (mg/kg)</b>                                |   |   |   |   |  |  |  |  |   |  |   |  |  |  |  |   |  |   |  |  |  |  |
| Aluminum  | 77000   | 19000                                     | -   | 8980 J  | 14500 J  | 4380 J   | 1390 J   | 9270 J   | 4850 J  | 13800 J  | -   | 6420 J   | -  | -  | -  | -   | -  | -   | -  | 6650 J   | 9700 J   | 5650 J   |
| Antimony  | 31  | 7.8                                       | -   | 0.454 J   | < 4.39 J   | 0.547 J  | 0.384 J  | 0.67 J   | 0.416 J   | 0.556 J  | -   | 0.5 J  | -  | -  | -  | -   | -  | -   | -  | < 0.388 J  | < 0.436 J  | < 0.386 J  |
| Arsenic   | 0.68  | 0.39                                      | -   | <b>7.3 J</b>                                    | <b>16.5 J</b>                                    | <b>5.83 J</b>                                  | <b>3.82 J</b>                                    | <b>13.9 J</b>                                  | <b>8.09 J</b>                                   | <b>9.96 J</b>                                    | -   | <b>9.22 J</b>                                    | -  | -  | -  | -   | -  | -   | -  | <b>9.86 J</b>                                    | <b>5.82 J</b>                                    | <b>6.63 J</b>                                    |
| Barium  | 15000   | 3800                                      | -   | 278 J   | 427 J+   | 155 J+   | 71.6 J+  | 265 J+   | 217 J+  | 252 J+   | -   | 205 J+   | -  | -  | -  | -   | -  | -   | -  | 254 J+   | 239 J+   | 224 J+   |
| Beryllium   | 160   | 39  | -   | 0.685   | < 2.66   | 0.402 J  | 0.142 J  | 0.784  | 0.422 J   | 1.03   | -   | 0.568  | -  | -  | -  | -   | -  | -   | -  | < 1.18   | < 1.32   | < 1.17   |
| Cadmium   | 71  | 18  | -   | 0.289 J   | 0.859  | 0.201 J  | < 0.1  | 0.193 J  | < 0.103   | 0.127 J  | -   | 0.208 J  | -  | -  | -  | -   | -  | -   | -  | 0.328 J  | 0.434 J  | 0.399 J  |
| Calcium   | NA  | NA  | -   | 14700   | 15500  | 30700  | 5420   | 19000  | 16100   | 8360   | -   | 16700  | -  | -  | -  | -   | -  | -   | -  | 22400  | 19900  | 19300  |
| Chromium  | NA  | NA  | -   | 12.7  | 19.7   | 15.1   | 3.12   | 14   | 8.59  | 18   | -   | 10   | -  | -  | -  | -   | -  | -   | -  | 11.8   | 15.2   | 10.1   |
| Cobalt  | 23  | 5.8                                       | -   | 6.8   | 11.4   | 4.28   | 2.23   | 7.21   | 4.33  | 8.31   | -   | 5.63   | -  | -  | -  | -   | -  | -   | -  | 6.8  | 9.87   | 5.83   |
| Copper  | 3100  | 780                                       | -   | 17.4 J  | 30.6 J   | 8.87 J   | 1.31 J   | 24.9 J   | 7.71 J  | 25.3 J   | -   | 16.2 J   | -  | -  | -  | -   | -  | -   | -  | 13.3 J   | 23.9 J   | 14.9 J   |
| Iron  | 55000   | 14000                                     | -   | 17600   | 27100  | 10500  | 5510   | 19500  | 12200   | 23900  | -   | 13900  | -  | -  | -  | -   | -  | -   | -  | 15300  | 13700  | 12500  |
| Lead  | 400   | 400                                       | -   | 11.2 J  | 20.2 J   | 6.03 J   | 2.36 J   | 12.5 J   | 6.75 J  | 17.8 J   | -   | 8.98 J   | -  | -  | -  | -   | -  | -   | -  | 9.5 J  | 13.8 J   | 8.86 J   |
| Magnesium   | NA  | NA  | -   | 6440  | 6730   | 5840   | 1690   | 7430   | 6390  | 6290   | -   | 6520   | -  | -  | -  | -   | -  | -   | -  | 8790   | 7840   | 7460   |
| Manganese   | 1800  | 460                                       | -   | 692 J   | 1050 J   | 235 J  | 115 J  | 646 J  | 348 J   | 461 J  | -   | 396 J  | -  | -  | -  | -   | -  | -   | -  | 336 J  | 433 J  | 255 J  |
| Mercury   | 11  | 3.1                                       | -   | 0.0296  | 0.0514   | 0.024  | < 0.00394  | 0.0293   | 0.013   | 0.0434   | -   | 0.017  | -  | -  | -  | -   | -  | -   | -  | 0.0302   | 0.0313   | 0.0219   |
| Nickel  | 1500  | 390                                       | -   | 19.8  | 30.1   | 15.4   | 5.24   | 20.3   | 11.9  | 26.3   | -   | 16.3   | -  | -  | -  | -   | -  | -   | -  | 17.7   | 24.7   | 14.9   |
| Potassium   | NA  | NA  | -   | 1670 J+   | 2660 J+  | 900 J+   | 346 J+   | 1990 J+  | 1030 J+   | 2670 J+  | -   | 1430 J+  | -  | -  | -  | -   | -  | -   | -  | 1470 J+  | 1980 J+  | 1270 J+  |
| Selenium  | 390   | 98  | -   | 2.3 J   | 2.47 J   | 1.64 J   | 0.611 J  | 2.23 J   | 1.88 J  | 2.73 J   | -   | 1.91 J   | -  | -  | -  | -   | -  | -   | -  | < 0.588  | 0.948 J  | 2.01 J   |
| Silver  | 390   | 98  | -   | 0.753 J   | 0.725 J  | 0.241 J  | < 0.11 J   | 0.241 J  | 0.759 J   | 0.433 J  | -   | 0.522 J  | -  | -  | -  | -   | -  | -   | -  | 0.127 J  | 0.25 J   | 0.142 J  |
| Sodium  | NA  | NA  | -   | 680   | 2080   | 213  | 133 J+   | 211 J+   | 207 J+  | 251  | -   | 179 J+   | -  | -  | -  | -   | -  | -   | -  | 264  | 234  | 248  |
| Thallium  | 0.78  | NA  | -   | < 0.56  | < 6.65   | < 0.551  | < 0.502  | < 0.572  | < 0.513   | < 0.61   | -   | < 0.532  | -  | -  | -  | -   | -  | -   | -  | < 5.88   | < 6.61   | < 5.84   |
| Vanadium  | 390   | 97  | -   | 29.4  | 44.9   | 14.9   | 5.9  | 31.5   | 17.7  | 41.7   | -   | 22.6   | -  | -  | -  | -   | -  | -   | -  | 23   | 30.6   | 20.2   |
| Zinc  | 23000   | 5900                                      | -   | 56  | 95.1 J   | 32.1 J   | 11.3 J   | 63.8 J   | 34 J  | 80.2 J   | -   | 44.3 J   | -  | -  | -  | -   | -  | -   | -  | 49.1 J   | 64.8 J   | 43.5 J   |
| <b>Inorganic Compounds (ug/L)</b>                                 |   |   |   |   |  |  |  |  |   |  |   |  |  |  |  |   |  |   |  |  |  |  |
| Arsenic   | NA  | NA  | 50  | < 50  | <b>94.1 J</b>                                    | <b>74.9 J</b>                                  | < 50   | <b>55.2 J</b>                                  | < 50  | <b>61 J</b>                                      | -   | <b>61.2 J</b>                                    | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| Barium  | NA  | NA  | 2000  | 83.5  | 61.6   | 63.1   | 50.3   | 64.2   | 49.8 J  | 93.4   | -   | 32.2 J   | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| Cadmium   | NA  | NA  | 5   | < 10  | < 10   | < 10   | < 10   | < 10   | < 10  | < 10   | -   | < 10   | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| Chromium  | NA  | NA  | 100   | 12 J  | < 10   | < 10   | < 10   | < 10   | < 10  | < 10   | -   | < 10   | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| Lead  | NA  | NA  | 15  | < 33  | < 33   | < 33   | < 33   | < 33   | < 33  | < 33   | -   | < 33   | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| Mercury   | NA  | NA  | 2   | < 0.67 J  | < 0.67 J   | < 0.67 J                                       | < 0.67 J   | < 0.67 J                                       | < 0.67 J  | < 0.67 J   | -   | < 0.67 J   | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| Selenium  | NA  | NA  | 50  | < 60  | < 60   | < 60   | < 60   | < 60   | <b>79.9 J</b>                                   | < 60   | -   | < 60   | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| Silver  | NA  | NA  | 100   | < 10  | < 10   | 16.4 J   | < 10   | < 10   | < 10  | < 10   | -   | < 10   | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |
| <b>PCBs (mg/kg)</b>   |   |   |   |   |  |  |  |  |   |  |   |  |  |  |  |   |  |   |  |  |  |  |
| Aroclor-1016 (PCB-1016)   | 4.1   | 0.98                                      | -   | -   | -  | -  | < 0.00113  | < 0.00139                                      | < 0.00124                                       | < 0.0015   | < 0.00148   | < 0.00134  | < 0.00137  | < 0.00153  | < 0.0124   | -   | -  | -   | -  | -  | -  | -  |
| Aroclor-1221 (PCB-1221)   | 0.2   | 0.19                                      | -   | -   | -  | -  | < 0.00113  | < 0.00139                                      | < 0.00124                                       | < 0.0015   | < 0.00148   | < 0.00134  | < 0.00137  | < 0.00153  | < 0.0124   | -   | -  | -   | -  | -  | -  | -  |
| Aroclor-1232 (PCB-1232)   | 0.17  | 0.19                                      | -   | -   | -  | -  | < 0.00113  | < 0.00139                                      | < 0.00124                                       | < 0.0015   | < 0.00148   | < 0.00134  | < 0.00137  | < 0.00153  | < 0.0124   | -   | -  | -   | -  | -  | -  | -  |
| Aroclor-1242 (PCB-1242)   | 0.23  | 0.22                                      | -   | -   | -  | -  | < 0.00113  | < 0.00139                                      | < 0.00124                                       | < 0.0015   | < 0.00148   | < 0.00134  | < 0.00137  | < 0.00153  | < 0.0124   | -   | -  | -   | -  | -  | -  | -  |
| Aroclor-1248 (PCB-1248)   | 0.23  | 0.22                                      | -   | -   | -  | -  | < 0.00113  | < 0.00139                                      | < 0.00124                                       | < 0.0015   | < 0.00148   | < 0.00134  | < 0.00137  | < 0.00153  | < 0.0124   | -   | -  | -   | -  | -  | -  | -  |
| Aroclor-1254 (PCB-1254)   | 0.24  | 0.22                                      | -   | -   | -  | -  | < 0.00113  | < 0.00139                                      | < 0.00124                                       | < 0.0015   | < 0.00148   | < 0.00134  | < 0.00137  | < 0.00153  | < 0.0124   | -   | -  | -   | -  | -  | -  | -  |
| Aroclor-1260 (PCB-1260)   | 0.24  | 0.22                                      | -   | -   | -  | -  | < 0.00113  | < 0.00139                                      | < 0.00124                                       | < 0.0015   | < 0.00148   | < 0.00134  | < 0.00137  | < 0.00153  | 0.049  | -   | -  | -   | -  | -  | -  | -  |
| <b>Other</b>  |   |   |   |   |  |  |  |  |   |  |   |  |  |  |  |   |  |   |  |  |  |  |
| Perchlorate (mg/kg)   | 55  | 14  | -   | -   | -  | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  | -   | -  | -   | -  | -  | -  | -  |

ABBREVIATIONS AND NOTES:

--: Not Analyzed  
bgs: below ground surface  
ft: feet  
HI: Hazard Index  
mg/kg: milligram per kilogram  
mg/L: milligram per liter  
NA: Not Applicable  
NDEQ: Nebraska Department of Environmental Quality  
RGs: Remedial Goals  
RSL: Regional Screening Level  
VCP: Voluntary Cleanup Program

QUALIFIERS:

< 2.5: Not detected, value is the laboratory reporting limit  
J: value is estimated.  
J-: value is estimated with a potential low bias  
J+: value is estimated with a potential high bias

- Volatile and Semi-Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.  
- Bold values indicate an exceedance of the Residential RSL.  
- Shaded values indicate an exceedance of the NE VCP Residential Soil Criteria or Groundwater RGs.

TABLE 3  
SUMMARY OF SOIL DATA  
OPPD FORT CALHOUN STATION  
BLAIR, NEBRASKA

|  | Location Name<br>Sample Name<br>Sample Date<br>Sample Depth (bgs) | Residential Soil<br>RSL<br>May 2016<br>HI = 1 | NDEQ VCP<br>Residential Soil<br>Sept 2012 | NDEQ VCP<br>Groundwater<br>RGs<br>Sept 2012 | DP1101<br>DP110100<br>10/24/2016<br>0 - 1 (ft) | DP1101<br>DP110102<br>10/24/2016<br>2 - 3 (ft) | DP1101<br>DP110104<br>10/24/2016<br>4 - 5 (ft) | DP1101<br>DP110106<br>10/24/2016<br>6 - 76 (ft) | DP1101<br>DP110113<br>10/24/2016<br>13 - 14 (ft) | DP1102<br>DP110200<br>10/24/2016<br>0 - 1 (ft) | DP1102<br>DP110202<br>10/24/2016<br>2 - 32 (ft) | DP1102<br>DP110204<br>10/24/2016<br>4 -54 (ft) | DP1102<br>DP110206<br>10/24/2016<br>6 - 76 (ft) | DP1102<br>DP110214<br>10/24/2016<br>14 -54 (ft) | SS1101<br>SS110100<br>10/24/2016<br>0 - 0.5 (ft) | SS1102<br>SS110200<br>10/24/2016<br>0 - 0.5 (ft) |
|--|---|---|---|---|--|--|--|---|--|--|---|--|---|---|--|--|
| <b>Volatile Organic Compounds (mg/kg)</b>            |   |   |   |   |  |  |  |   |  |  |   |  |   |   |  |  |
| 2-Butanone (Methyl Ethyl Ketone)                     |   | 27000   | 7500                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | < 0.00155 J                                      | < 0.00151 J                                      |
| Acetone  |   | 61000   | 16000                                     | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | < 0.00155 J                                      | < 0.00151 J                                      |
| Methyl Tert Butyl Ether                              |   | 47  | 51  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 0.000336 J-                                      | < 0.000301 J                                     |
| <b>Semi-Volatile Organic Compounds (SIM) (mg/kg)</b> |   |   |   |   |  |  |  |   |  |  |   |  |   |   |  |  |
| Benzo(b)fluoranthene                                 |   | 0.16  | 0.15                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Chrysene   |   | 16  | 15  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Fluoranthene   |   | 2400  | 570                                       | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Naphthalene  |   | 3.8   | 4.3                                       | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Phenanthrene   |   | NA  | NA  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Pyrene   |   | 1800  | 430                                       | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| <b>Total Petroleum Hydrocarbons (mg/kg)</b>          |   |   |   |   |  |  |  |   |  |  |   |  |   |   |  |  |
| Total Petroleum Hydrocarbons (>C10-C20) DRO          |   | NA  | NA  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| <b>Inorganic Compounds (mg/kg)</b>                   |   |   |   |   |  |  |  |   |  |  |   |  |   |   |  |  |
| Aluminum   |   | 77000   | 19000                                     | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 2950 J   | 8030 J   |
| Antimony   |   | 31  | 7.8                                       | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 2.11 J   | < 0.389 J  |
| Arsenic  |   | 0.68  | 0.39                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 4.5 J  | 11.9 J   |
| Barium   |   | 15000   | 3800                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 89.2 J+  | 265 J+   |
| Beryllium  |   | 160   | 39  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | < 1  | < 1.18   |
| Cadmium  |   | 71  | 18  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 0.36 J   | 0.703  |
| Calcium  |   | NA  | NA  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 183000   | 19100  |
| Chromium   |   | NA  | NA  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 7.89   | 13.3   |
| Cobalt   |   | 23  | 5.8                                       | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 3.72   | 10.4   |
| Copper   |   | 3100  | 780                                       | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 21 J   | 23.4 J   |
| Iron   |   | 55000   | 14000                                     | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 10600  | 18300  |
| Lead   |   | 400   | 400                                       | -   | 2230 J   | 11.9 J   | 10.1 J   | 4.82 J  | 6.69 J   | 9.17 J   | 10.8 J  | 5 J  | 6.57 J  | 4.8 J   | 105 J  | 32.2 J   |
| Magnesium  |   | NA  | NA  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 4820   | 9960   |
| Manganese  |   | 1800  | 460                                       | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 294 J  | 853 J  |
| Mercury  |   | 11  | 3.1                                       | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 0.0115   | 0.0306   |
| Nickel   |   | 1500  | 390                                       | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 12.4   | 24.2   |
| Potassium  |   | NA  | NA  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 678 J+   | 1520 J+  |
| Selenium   |   | 390   | 98  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 1.2 J  | < 0.59   |
| Silver   |   | 390   | 98  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | < 1 J  | 0.341 J  |
| Sodium   |   | NA  | NA  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 399  | 835  |
| Thallium   |   | 0.78  | NA  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | < 0.501  | < 5.9  |
| Vanadium   |   | 390   | 97  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 10.8   | 29.3   |
| Zinc   |   | 23000   | 5900                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | 56.6 J   | 75.5 J   |
| <b>Inorganic Compounds (ug/L)</b>                    |   |   |   |   |  |  |  |   |  |  |   |  |   |   |  |  |
| Arsenic  |   | NA  | NA  | 50  | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Barium   |   | NA  | NA  | 2000  | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Cadmium  |   | NA  | NA  | 5   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Chromium   |   | NA  | NA  | 100   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Lead   |   | NA  | NA  | 15  | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Mercury  |   | NA  | NA  | 2   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Selenium   |   | NA  | NA  | 50  | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Silver   |   | NA  | NA  | 100   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| <b>PCBs (mg/kg)</b>                                  |   |   |   |   |  |  |  |   |  |  |   |  |   |   |  |  |
| Aroclor-1016 (PCB-1016)                              |   | 4.1   | 0.98                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Aroclor-1221 (PCB-1221)                              |   | 0.2   | 0.19                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Aroclor-1232 (PCB-1232)                              |   | 0.17  | 0.19                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Aroclor-1242 (PCB-1242)                              |   | 0.23  | 0.22                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Aroclor-1248 (PCB-1248)                              |   | 0.23  | 0.22                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Aroclor-1254 (PCB-1254)                              |   | 0.24  | 0.22                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| Aroclor-1260 (PCB-1260)                              |   | 0.24  | 0.22                                      | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | -  | -  |
| <b>Other</b>   |   |   |   |   |  |  |  |   |  |  |   |  |   |   |  |  |
| Perchlorate (mg/kg)                                  |   | 55  | 14  | -   | -  | -  | -  | -   | -  | -  | -   | -  | -   | -   | < 0.014  | < 0.0161   |

ABBREVIATIONS AND NOTES:

- : Not Analyzed
- bgs: below ground surface
- ft: feet
- HI: Hazard Index
- mg/kg: milligram per kilogram
- mg/L: milligram per liter
- NA: Not Applicable
- NDEQ: Nebraska Department of Environmental Quality
- RGs: Remedial Goals
- RSL: Regional Screening Level
- VCP: Voluntary Cleanup Program
- Volatile and Semi-Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.
- Bold values indicate an exceedance of the Residential RSL.
- Shaded values indicate an exceedance of the NE VCP Residential Soil Criteria or Groundwater RGs.

QUALIFIERS:

- < 2.5: Not detected, value is the laboratory reporting limit
- J: value is estimated.
- J-: value is estimated with a potential low bias
- J+: value is estimated with a potential high bias

**TABLE 10**  
**SUMMARY OF GROUNDWATER DATA**  
**OPPD FORT CALHOUN STATION**  
**BLAIR, NEBRASKA**

| Location<br>Sample Date<br>Sample Type   | MCL   | EPA Health<br>Advisory<br>(May 2016) | NDEQ VCP<br>Groundwater<br>Sept 2012 | GW1004<br>10/24/2016<br>N | GW1101<br>10/24/2016<br>N |
|--|-------|--------------------------------------|--------------------------------------|---------------------------|---------------------------|
| <b>Volatile Organic Compounds (ug/L)</b> |       |                                      |                                      |                           |                           |
| Benzene                                  | 5     | NA                                   | 5                                    | R                         | -                         |
| Ethylbenzene                             | 700   | NA                                   | 700                                  | R                         | -                         |
| Naphthalene                              | NA    | NA                                   | 0.14                                 | R                         | -                         |
| Toluene                                  | 1000  | NA                                   | 1000                                 | R                         | -                         |
| Xylene (total)                           | 10000 | NA                                   | 10000                                | R                         | -                         |
| <b>Inorganic Compounds (ug/L)</b>        |       |                                      |                                      |                           |                           |
| Aluminum, Total                          | NA    | NA                                   | 50                                   | -                         | 360000 J-                 |
| Antimony, Total                          | 6     | NA                                   | 6                                    | -                         | < 60 J                    |
| Arsenic, Total                           | 10    | NA                                   | 50                                   | -                         | 550 J-                    |
| Barium, Total                            | 2000  | NA                                   | 2000                                 | -                         | 19000 J-                  |
| Beryllium, Total                         | 4     | NA                                   | 4                                    | -                         | < 30 J                    |
| Cadmium, Total                           | 5     | NA                                   | 5                                    | -                         | < 30 J                    |
| Calcium, Total                           | NA    | NA                                   | NA                                   | -                         | 960000 J-                 |
| Chromium, Total                          | 100   | NA                                   | 100                                  | -                         | 1700 J-                   |
| Cobalt, Total                            | NA    | NA                                   | 2.7                                  | -                         | 600 J-                    |
| Copper, Total                            | 1300  | NA                                   | 1300                                 | -                         | 590 J-                    |
| Iron, Total                              | NA    | NA                                   | 300                                  | -                         | 1100000 J-                |
| Lead, Total                              | 15    | NA                                   | 15                                   | -                         | 730 J-                    |
| Magnesium, Total                         | NA    | NA                                   | NA                                   | -                         | 300000 J-                 |
| Manganese, Total                         | NA    | NA                                   | 50                                   | -                         | 27000 J-                  |
| Mercury, Total                           | 2     | NA                                   | 2                                    | -                         | 0.64 J                    |
| Nickel, Total                            | NA    | NA                                   | 180                                  | -                         | 1500 J-                   |
| Potassium, Total                         | NA    | NA                                   | NA                                   | -                         | 66000 J-                  |
| Selenium, Total                          | 50    | NA                                   | 50                                   | -                         | < 160 J                   |
| Silver, Total                            | NA    | NA                                   | 100                                  | -                         | < 60 J                    |
| Sodium, Total                            | NA    | NA                                   | NA                                   | -                         | 63000 J-                  |
| Thallium, Total                          | 2     | NA                                   | 2                                    | -                         | < 100 J                   |
| Vanadium, Total                          | NA    | NA                                   | 38                                   | -                         | 1400 J-                   |
| Zinc, Total                              | NA    | NA                                   | 5000                                 | -                         | 3100 J-                   |
| <b>PFAOs (ng/L)</b>                      |       | 0.07                                 |                                      | 3150*                     |                           |
| Perfluorobutane Sulfonate                | NA    | NA                                   | NA                                   | 270                       | -                         |
| Perfluoroheptanoic acid (PFHpA)          | NA    | NA                                   | NA                                   | 380                       | -                         |
| Perfluorohexanesulfonic acid (PFHxS)     | NA    | NA                                   | NA                                   | 1600                      | -                         |
| Perfluorononanoic Acid (PFNA)            | NA    | NA                                   | NA                                   | 100                       | -                         |
| Perfluorooctanesulfonic acid (PFOS)      | NA    | NA                                   | NA                                   | 520                       | -                         |
| Perfluorooctanoic Acid (PFOA, C8)        | NA    | NA                                   | NA                                   | 280                       | -                         |
| <b>Other</b>                             |       |                                      |                                      |                           |                           |
| Perchlorate (ug/L)                       | 15    |                                      | 6.4                                  | -                         | < 4                       |

**ABBREVIATIONS AND NOTES:**

-: Not Analyzed  
ug/L: microgram per liter  
ng/L: nanogram per liter  
NA: Not Applicable  
NDEQ: Nebraska Department of Environmental Quality  
MCL: Maximum Contaminant Level  
VCP: Voluntary Cleanup Program  
\* Value obtained by summing all the PFAOs detections

**QUALIFIERS:**

< 2.5: Not detected, value is the laboratory reporting limit  
J: value is estimated.  
J-: value is estimated with a potential low bias  
J+: value is estimated with a potential high bias  
R: Value is rejected

- Bold values indicate an exceedance of the MCL.
- Gray indicates an exceedance of the NDEQ VCP Groundwater Remedial Goal.
- Red bold value indicates an exceedance of the EPA Health Advisory.

**TABLE 11**  
**SUMMARY OF SEDIMENT DATA**  
**OPPD FORT CALHOUN STATION**  
**BLAIR, NEBRASKA**

| Location Name<br>Sample Name<br>Sample Date<br>Sample Depth (bgs) | Residential Soil<br>RSL<br>May 2016<br>HI = 1 | NDEQ VCP<br>Residential Soil<br>Sept 2012 | SD1401<br>SD140100<br>10/24/2016<br>0 - 0.5 (ft) | SD1401<br>SD140100 DUP<br>10/24/2016<br>0 - 0.5 (ft) | SD1402<br>SD140200<br>10/24/2016<br>0 - 0.5 (ft) | SD1403<br>SD140300<br>10/24/2016<br>0 - 0.5 (ft) |
|---|---|---|--|--|--|--|
| <b>Volatile Organic Compounds (mg/kg)</b>                         |   |   |  |  |  |  |
| 2-Butanone (Methyl Ethyl Ketone)                                  | 27000   | 7500                                      | 0.00448 J-                                       | < 0.00286 J  | 0.00644 J-                                       | 0.00316 J-                                       |
| Acetone   | 61000   | 16000                                     | 0.0155 J-  | 0.00728 J-   | 0.0255 J-  | 0.0148 J-  |
| Methyl acetate  | 78000   | 20000                                     | < 0.00243 J                                      | < 0.00286 J  | < 0.00319 J                                      | 0.0107 J-  |
| <b>Semi-Volatile Organic Compounds (SIM) (mg/kg)</b>              |   |   |  |  |  |  |
| Anthracene  | 18000   | 5900                                      | < 0.00267  | 0.0042 J   | < 0.00299  | < 0.00263  |
| Benzo(b)fluoranthene  | 0.16  | 0.15                                      | 0.0032 J   | 0.00367 J  | 0.00479 J  | < 0.00263  |
| Benzo(k)fluoranthene  | 1.6   | 1.5                                       | < 0.00267  | < 0.00262  | 0.00359 J  | < 0.00263  |
| Chrysene  | 16  | 15  | < 0.00267  | 0.00262 J  | 0.00359 J  | < 0.00263  |
| Fluoranthene  | 2400  | 570                                       | 0.00374 J  | 0.0063   | 0.00598  | 0.00315 J  |
| Phenanthrene  | NA  | NA  | 0.00374 J  | < 0.00262  | 0.00419 J  | 0.00368 J  |
| Pyrene  | 1800  | 430                                       | 0.0032 J   | 0.0042 J   | 0.00419 J  | 0.00263 J  |
| <b>Inorganic Compounds (mg/kg)</b>                                |   |   |  |  |  |  |
| Aluminum  | 77000   | 19000                                     | 10300 J  | 10000 J  | 11100 J  | 9630 J   |
| Antimony  | 31  | 7.8                                       | < 0.48 J   | < 0.506 J  | < 0.553 J  | < 0.477 J  |
| Arsenic   | 0.68  | 0.39                                      | <b>10.9 J</b>                                    | <b>11.4 J</b>  | <b>9.95 J</b>                                    | <b>12.3 J</b>                                    |
| Barium  | 15000   | 3800                                      | 244 J+   | 243 J+   | 263 J+   | 222 J+   |
| Beryllium   | 160   | 39  | < 1.46   | < 1.53   | < 1.67   | < 1.44   |
| Cadmium   | 71  | 18  | 0.74   | 0.708 J  | 0.788 J  | 0.585 J  |
| Calcium   | NA  | NA  | 32900  | 26700  | 29700  | 23100  |
| Chromium  | NA  | NA  | 16.1   | 15.6   | 17   | 14.5   |
| Cobalt  | 23  | 5.8                                       | <b>9.26</b>                                      | <b>9.36</b>  | <b>9.96</b>                                      | <b>9.08</b>                                      |
| Copper  | 3100  | 780                                       | 24.3 J   | 23.4 J   | 26.6 J   | 23.8 J   |
| Iron  | 55000   | 14000                                     | <b>19800</b>                                     | <b>19500</b>   | <b>21100</b>                                     | <b>19800</b>                                     |
| Lead  | 400   | 400                                       | 14.9 J   | 15 J   | 16.6 J   | 14.5 J   |
| Magnesium   | NA  | NA  | 10300  | 9400   | 9470   | 7010   |
| Manganese   | 1800  | 460                                       | <b>706 J</b>                                     | <b>668 J</b>   | <b>784 J</b>                                     | <b>663 J</b>                                     |
| Mercury   | 11  | 3.1                                       | 0.0355   | 0.0365   | 0.0422   | 0.0342   |
| Nickel  | 1500  | 390                                       | 23.1   | 23   | 24.7   | 21.9   |
| Potassium   | NA  | NA  | 2060 J+  | 1960 J+  | 2370 J+  | 2050 J+  |
| Selenium  | 390   | 98  | 1.95 J   | 2.36 J   | 2.21 J   | 1.38 J   |
| Silver  | 390   | 98  | 0.217 J  | 0.328 J  | 0.348 J  | 0.311 J  |
| Sodium  | NA  | NA  | 263  | 248  | 221  | 195  |
| Thallium  | 0.78  | NA  | < 0.728  | < 0.766  | <b>&lt; 0.837</b>                                | < 0.722  |
| Vanadium  | 390   | 97  | 33.3   | 33.2   | 35.7   | 30.7   |
| Zinc  | 23000   | 5900                                      | 106 J  | 108 J  | 112 J  | 87.5 J   |
| <b>PFAs (mg/Kg)</b>   |   |   |  |  |  |  |
| Perfluorobutane Sulfonate   | 1600  | NA  | < 0.00017  | < 0.00016  | < 0.00017  | < 0.00021  |
| Perfluoroheptanoic acid (PFHpA)                                   | NA  | NA  | 0.00036  | 0.00026 J  | 0.00014 J  | < 0.00018  |
| Perfluorohexanesulfonic acid (PFHxS)                              | NA  | NA  | < 0.00019  | < 0.00019  | < 0.00019  | < 0.00024  |
| Perfluorononanoic Acid (PFNA)                                     | NA  | NA  | 0.0006   | 0.00046  | 0.00062  | 0.00025 J  |
| Perfluorooctanesulfonic acid (PFOS)                               | NA  | NA  | 0.00023 J  | < 0.0002   | 0.00029 J  | 0.0005   |
| Perfluorooctanoic Acid (PFOA, C8)                                 | NA  | NA  | 0.00063  | 0.00039  | 0.00039  | 0.00027 J  |
| <b>Other (mg/Kg)</b>  |   |   |  |  |  |  |
| Perchlorate   | 55  | 14  | < 0.0216   | < 0.0211   | < 0.0242   | < 0.0213   |

**ABBREVIATIONS AND NOTES:**

-: Not Analyzed  
bgs: below ground surface  
ft: feet  
HI: Hazard Index  
mg/kg: milligram per kilogram  
mg/L: milligram per liter  
NA: Not Applicable  
NDEQ: Nebraska Department of Environmental Quality  
RSL: Regional Screening Level  
VCP: Voluntary Cleanup Program

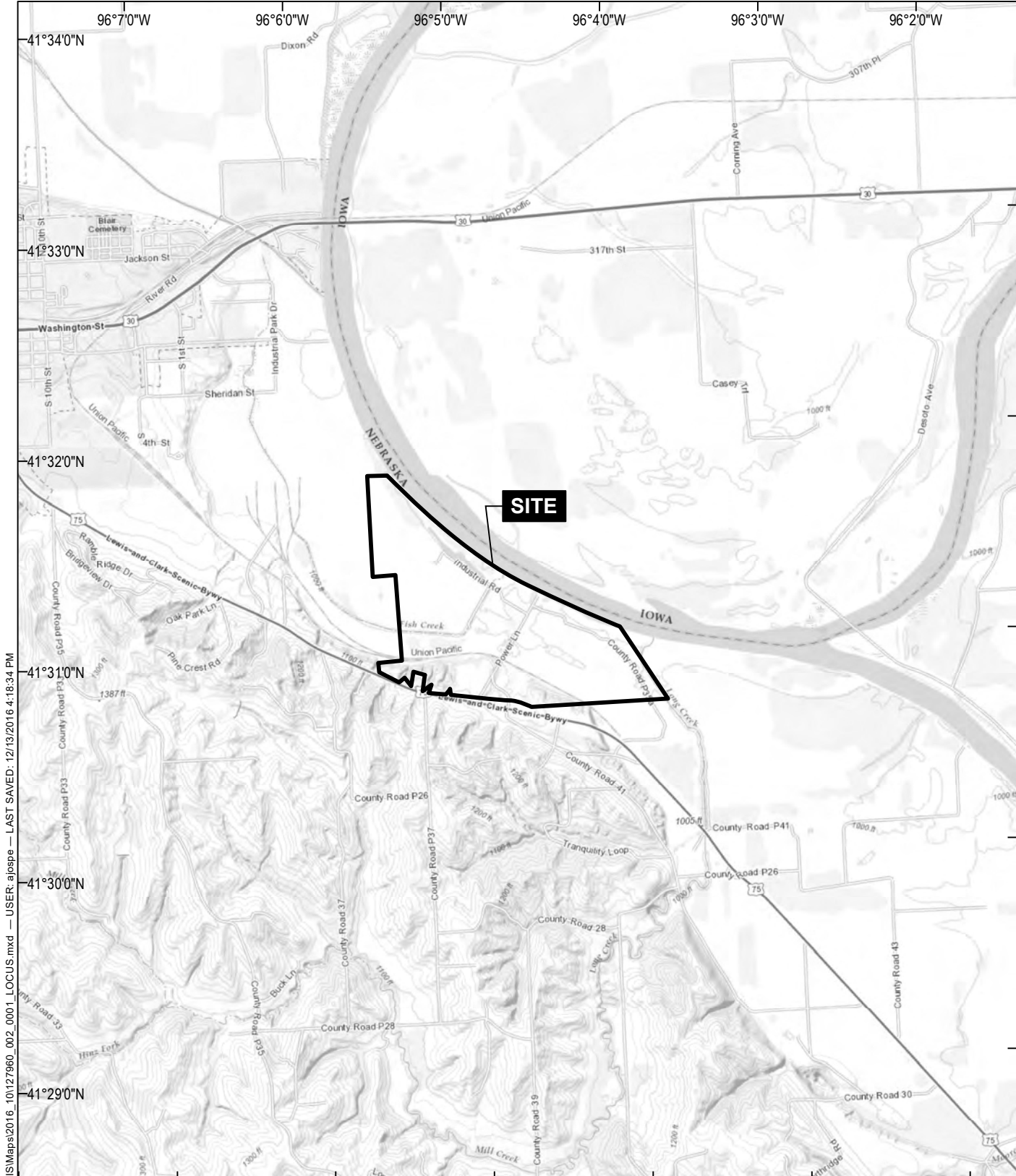
**QUALIFIERS:**

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J-: value is estimated with a potential low bias  
J+: value is estimated with a potential high bias

- Volatile and Semi-Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.
- Bold values indicate an exceedance of the Residential RSL.
- Shaded values indicate an exceedance of the Nebraska VCP Residential Soil Criteria.







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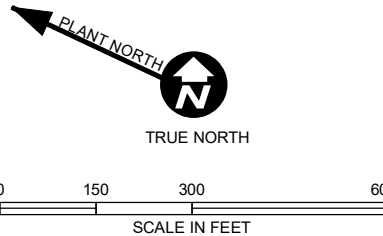


LEGEND

- EXISTING BUILDING
- UTILITY
- STREAM OR BODY OF WATER
- PROPERTY BOUNDARY
- MAJOR TOPOGRAPHIC CONTOUR, 5' CONTOUR INTERVAL
- MINOR TOPOGRAPHIC CONTOUR, 1' CONTOUR INTERVAL

NOTES

1. STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
2. WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
3. AERIAL IMAGERY SOURCE: ESRI 2015



TOPOGRAPHY

FORT CALHOUN NUCLEAR PLANT  
POWER LANE, BLAIR, NEBRASKA

FIGURE 2  
DECEMBER 2016

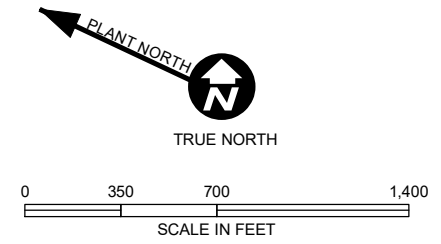
HALEY  
ALDRICH





- LEGEND**
- EXISTING BUILDING
  - UTILITY
  - STREAM OR BODY OF WATER
  - PROPERTY BOUNDARY
  - WETLAND

- NOTES**
- 1. STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
  - 2. WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
  - 3. AERIAL IMAGERY SOURCE: ESRI 2015



**SURFACE WATER FEATURES**

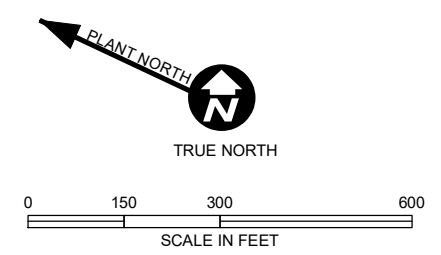
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**LEGEND**

- AQUA DAM OR SANDBAGGED AREA
- EXISTING BUILDING
- UTILITY
- STREAM OR BODY OF WATER
- PROPERTY BOUNDARY
- APPROXIMATE AREA OF FLOODING IN 2011

- NOTES**
1. STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
  2. WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
  3. AERIAL IMAGERY SOURCE: ESRI 2015



**SITE CONDITIONS DURING THE 2011 FLOOD**

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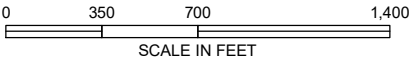
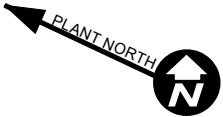


LEGEND

- EXISTING BUILDING
- UTILITY
- STREAM OR BODY OF WATER
- PROPERTY BOUNDARY

NOTES

1. STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
2. WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
3. AERIAL IMAGERY SOURCE: ESRI 2015

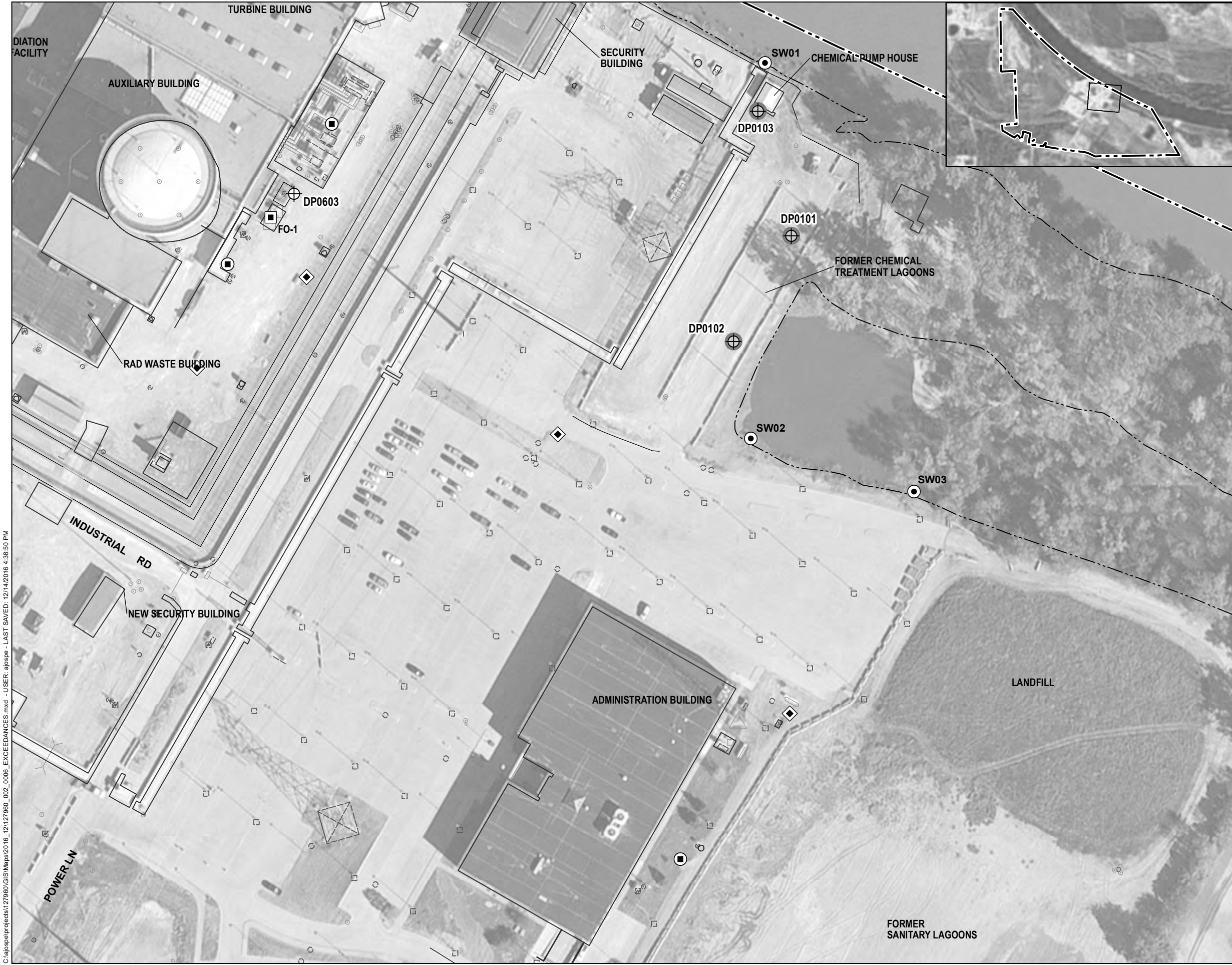


CURRENT SITE CONDITIONS

FORT CALHOUN NUCLEAR PLANT  
POWER LANE, BLAIR, NEBRASKA

FIGURE 5  
DECEMBER 2016

HALEY  
ALDRICH



**LEGEND**

2016 SAMPLING

- SOIL SAMPLING LOCATION (DIRECT PUSH AND SOIL SAMPLE)
- GROUNDWATER SAMPLING LOCATION
- SEDIMENT SAMPLING LOCATION
- EXCEEDANCE OF OTHER CONSTITUENTS
- EXCEEDANCE FOR ARSENIC
- TRANSFORMER
- NPDES OUTFALL
- STORMWATER OUTFALL
- STORMWATER INLET
- ACID TANK
- ABOVEGROUND STORAGE TANK
- UNDERGROUND STORAGE TANK
- EXISTING BUILDING
- UTILITY
- STREAM OR BODY OF WATER

**NOTES**

- PROPERTY BOUNDARY
- LOCATIONS IN THE FIELD MAY BE ADJUSTED BASE ON SITE CONDITIONS.
- STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
- WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
- AERIAL IMAGERY SOURCE: ESRI 2015

PLANT NORTH

TRUE NORTH

0 50 100 200

SCALE IN FEET

**AOI 1: WATER TREATMENT PLANT,  
LIMITED INVESTIGATION FINDINGS**

FORT CALHOUN NUCLEAR PLANT  
POWER LANE, BLAIR, NEBRASKA

**FIGURE 6**  
DECEMBER 2016

**HALEY  
ALDRICH**

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LEGEND

2016 SAMPLING

- SOIL SAMPLING LOCATION (DIRECT PUSH AND SOIL SAMPLE)
- GROUNDWATER SAMPLING LOCATION
- SEDIMENT SAMPLING LOCATION
- EXCEEDANCE OF OTHER CONSTITUENTS
- EXCEEDANCE FOR ARSENIC
- TRANSFORMER
- NPDES OUTFALL
- STORMWATER OUTFALL
- STORMWATER INLET
- ACID TANK
- ABOVEGROUND STORAGE TANK
- UNDERGROUND STORAGE TANK

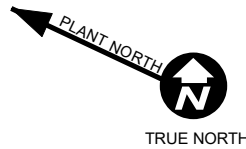
EXISTING BUILDING

UTILITY

STREAM OR BODY OF WATER

NOTES

- LOCATIONS IN THE FIELD MAY BE ADJUSTED BASE ON SITE CONDITIONS.
- STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
- WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
- AERIAL IMAGERY SOURCE: ESRI 2015



0 50 100 200  
SCALE IN FEET

AOI 2: CHEMICAL STORAGE AREAS,  
LIMITED INVESTIGATION FINDINGS

FORT CALHOUN NUCLEAR PLANT  
POWER LANE, BLAIR, NEBRASKA

FIGURE 7  
DECEMBER 2016

HALEY  
ALDRICH



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**LEGEND**

2016 SAMPLING

- SOIL SAMPLING LOCATION (DIRECT PUSH AND SOIL SAMPLE)
- GROUNDWATER SAMPLING LOCATION
- SEDIMENT SAMPLING LOCATION
- EXCEEDANCE OF OTHER CONSTITUENTS
- EXCEEDANCE FOR ARSENIC
- TRANSFORMER
- NPDES OUTFALL
- STORMWATER OUTFALL
- STORMWATER INLET
- EXISTING BUILDING
- UTILITY
- STREAM OR BODY OF WATER
- PROPERTY BOUNDARY

**NOTES**

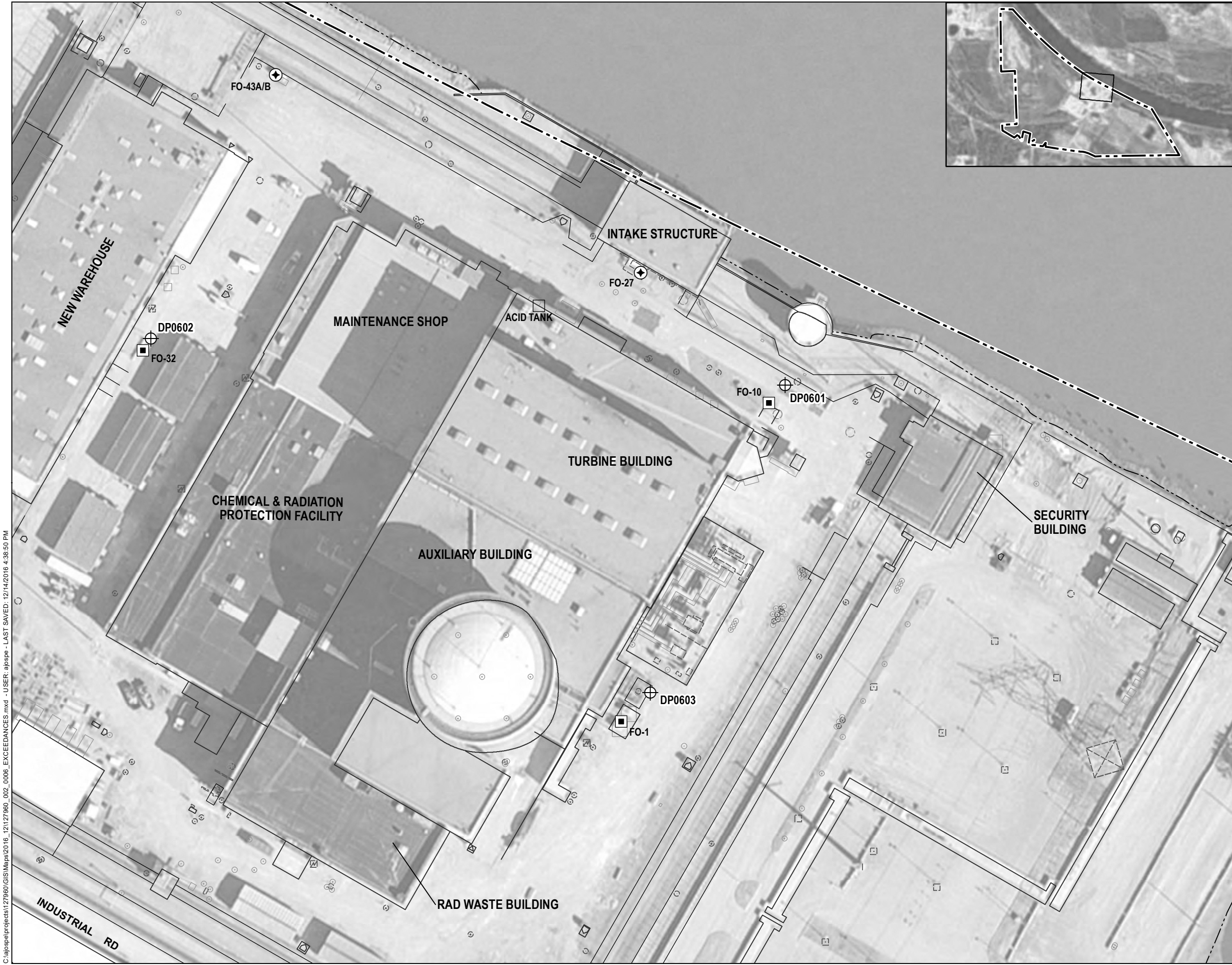
- LOCATIONS IN THE FIELD MAY BE ADJUSTED BASE ON SITE CONDITIONS.
- STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
- WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
- AERIAL IMAGERY SOURCE: ESRI 2015

**AOI 5: SPARE TRANSFORMER, LIMITED INVESTIGATION FINDINGS**

FORT CALHOUN NUCLEAR PLANT  
POWER LANE, BLAIR, NEBRASKA

**FIGURE 8**  
DECEMBER 2016

**HALEY ALDRICH**

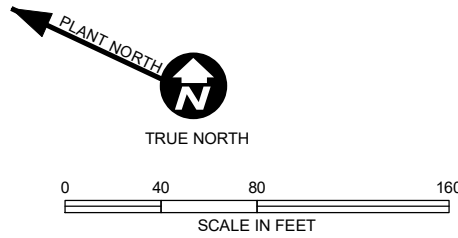


**LEGEND**

**2016 SAMPLING**

- SOIL SAMPLING LOCATION (DIRECT PUSH AND SOIL SAMPLE)
- GROUNDWATER SAMPLING LOCATION
- SEDIMENT SAMPLING LOCATION
- EXCEEDANCE OF OTHER CONSTITUENTS
- EXCEEDANCE FOR ARSENIC
- UNDERGROUND STORAGE TANK
- ABOVE-GROUND STORAGE TANK
- ACID TANK
- EXISTING BUILDING
- UTILITY
- STREAM OR BODY OF WATER
- PROPERTY BOUNDARY

- NOTES**
- LOCATIONS IN THE FIELD MAY BE ADJUSTED BASE ON SITE CONDITIONS.
  - STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
  - WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
  - AERIAL IMAGERY SOURCE: ESRI 2015



**AOI 6: UNDERGROUND STORAGE TANKS,  
LIMITED INVESTIGATION FINDINGS**

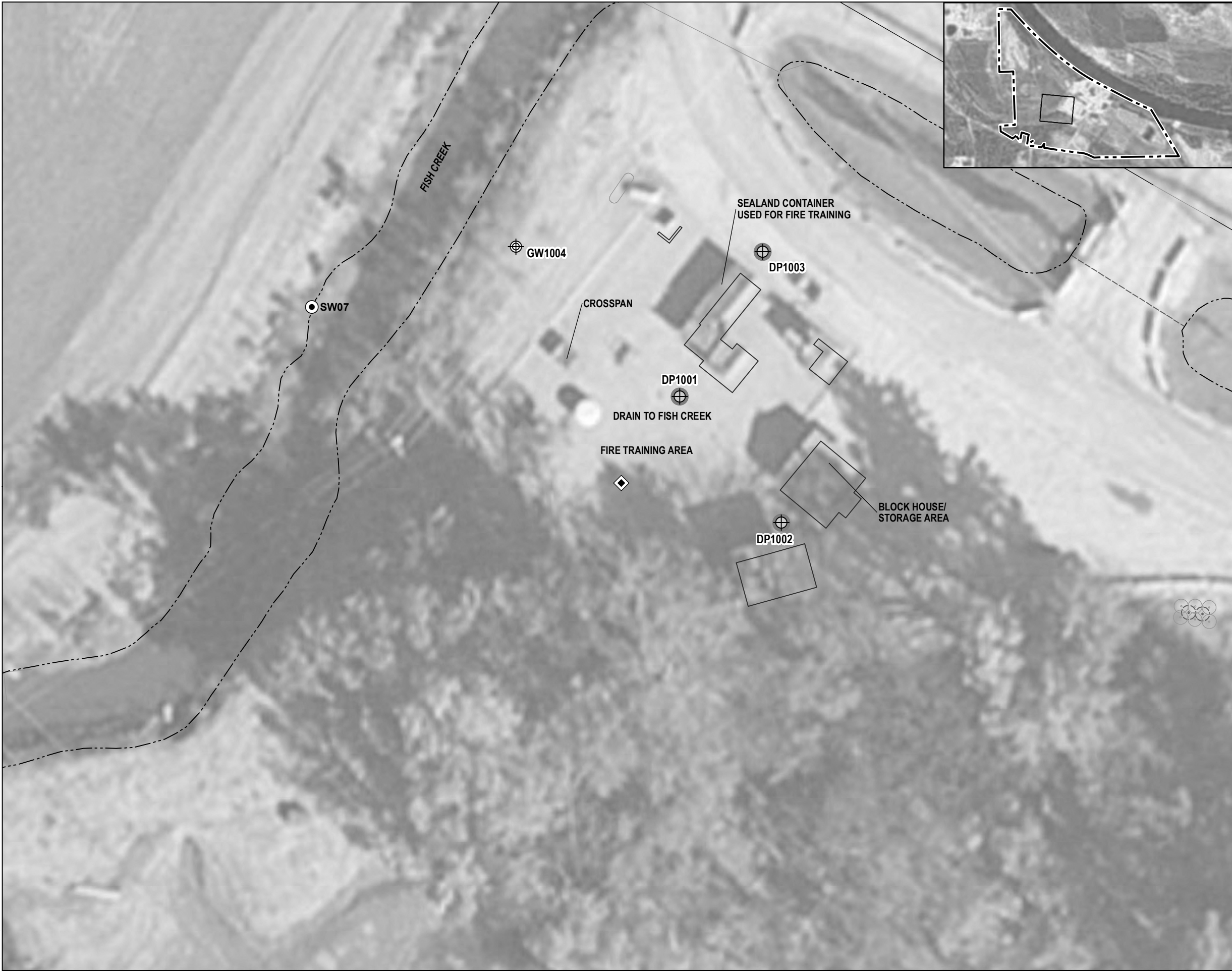
FORT CALHOUN NUCLEAR PLANT  
POWER LANE, BLAIR, NEBRASKA

**FIGURE 9**  
DECEMBER 2016





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**LEGEND**

2016 SAMPLING

- SOIL SAMPLING LOCATION (DIRECT PUSH AND SOIL SAMPLE)
- GROUNDWATER SAMPLING LOCATION
- SEDIMENT SAMPLING LOCATION
- EXCEEDANCE OF OTHER CONSTITUENTS
- EXCEEDANCE FOR ARSENIC
- TRANSFORMER
- NPDES OUTFALL
- STORMWATER OUTFALL
- STORMWATER INLET
- EXISTING BUILDING
- UTILITY
- STREAM OR BODY OF WATER
- PROPERTY BOUNDARY

**NOTES**

- LOCATIONS IN THE FIELD MAY BE ADJUSTED BASE ON SITE CONDITIONS.
- STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
- WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
- AERIAL IMAGERY SOURCE: ESRI 2015

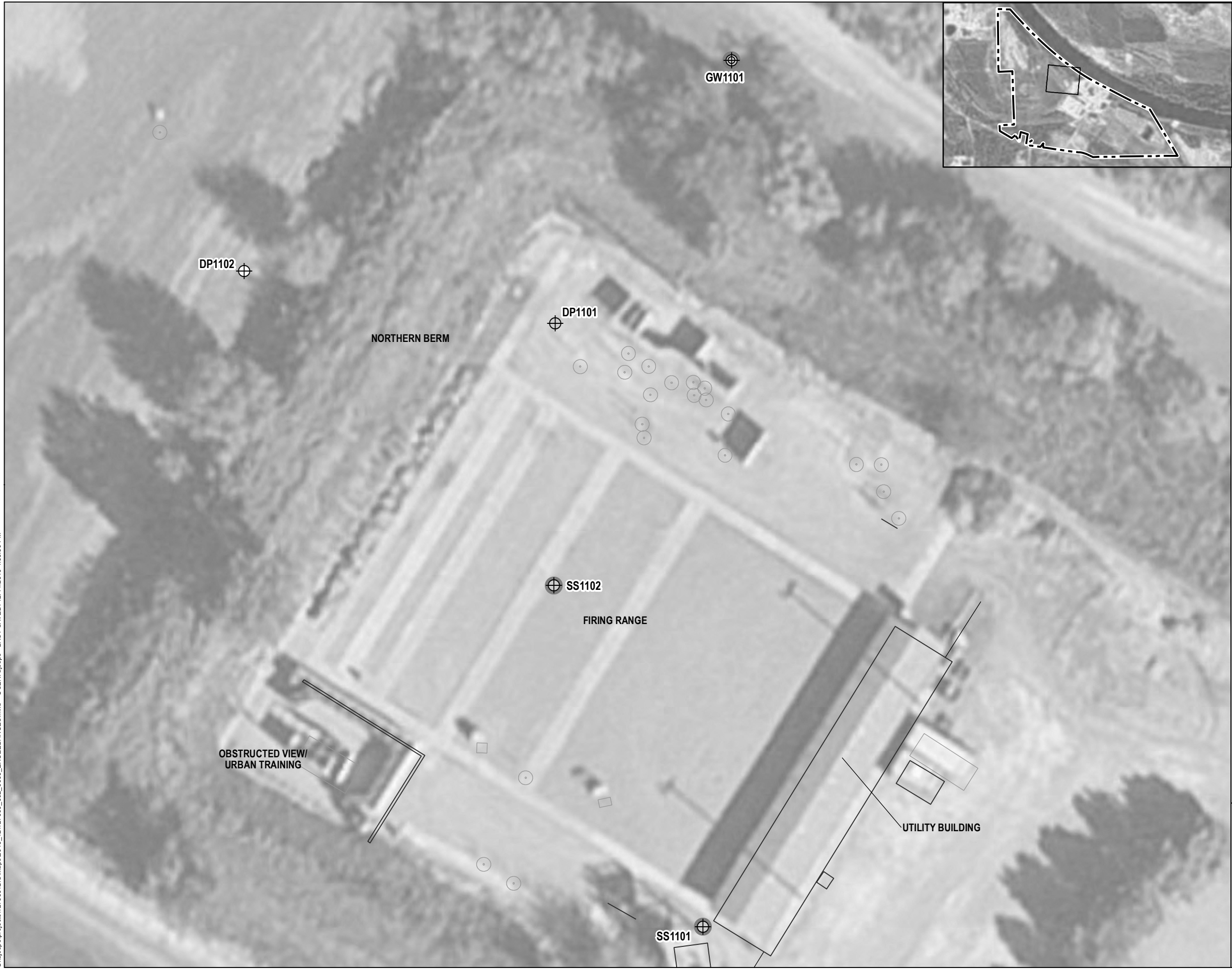
**AOI 10: FIRE TRAINING AREA,  
LIMITED INVESTIGATION FINDINGS**

FORT CALHOUN NUCLEAR PLANT  
POWER LANE, BLAIR, NEBRASKA

**FIGURE 10**  
DECEMBER 2016

**HALEY  
ALDRICH**

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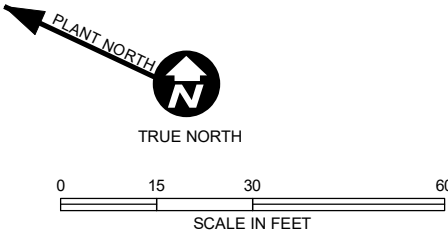
2016 SAMPLING

- SOIL SAMPLING LOCATION (DIRECT PUSH AND SOIL SAMPLE)
- GROUNDWATER SAMPLING LOCATION
- SEDIMENT SAMPLING LOCATION
- EXCEEDANCE OF OTHER CONSTITUENTS
- EXCEEDANCE FOR ARSENIC
- TRANSFORMER
- NPDES OUTFALL
- STORMWATER OUTFALL
- STORMWATER INLET

- EXISTING BUILDING
- UTILITY
- STREAM OR BODY OF WATER
- PROPERTY BOUNDARY

NOTES

- LOCATIONS IN THE FIELD MAY BE ADJUSTED BASE ON SITE CONDITIONS.
- STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
- WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
- ADDITIONAL LOCATIONS MAY BE ADDED, AS SCHEDULE PERMITS.
- AERIAL IMAGERY SOURCE: ESRI 2015



AOI 11: FIRING RANGE,  
LIMITED INVESTIGATION FINDINGS

FORT CALHOUN NUCLEAR PLANT  
POWER LANE, BLAIR, NEBRASKA

**FIGURE 11**  
DECEMBER 2016

HALEY  
ALDRICH



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**LEGEND**  
**2016 SAMPLING**  

- SOIL SAMPLING LOCATION (DIRECT PUSH AND SOIL SAMPLE)
- GROUNDWATER SAMPLING LOCATION
- SEDIMENT SAMPLING LOCATION
- EXCEEDANCE OF OTHER CONSTITUENTS
- EXCEEDANCE FOR ARSENIC

- EXISTING BUILDING
- UTILITY
- STREAM OR BODY OF WATER
- PROPERTY BOUNDARY
- WETLAND

**NOTES**  

- LOCATIONS IN THE FIELD MAY BE ADJUSTED BASE ON SITE CONDITIONS.
- STREAM DATA SOURCE: NATIONAL HYDROGRAPHY DATASET
- WETLAND DATA SOURCE: NATIONAL WETLAND INVENTORY
- AERIAL IMAGERY SOURCE: ESRI

SCALE IN FEET

**AOI 14: FISH CREEK AND WETLANDS,  
LIMITED INVESTIGATION FINDINGS**

FORT CALHOUN NUCLEAR PLANT  
POWER LANE, BLAIR, NEBRASKA

**FIGURE 12**  
DECEMBER 2016

**Appendix A      NDEQ VCP Regulations**

# NDEQ VCP REMEDIATION GOALS

## TABLE 1 - DIRECT CONTACT EXPOSURE PATHWAYS

| Key : SFo = Oral Slope Factor; RfDo = Oral Reference Dose; IUR = Inhalation Unit Risk; RfC = Inhalation Reference Concentration;<br>i = IRIS; h = HEAST; n = NCEA; x = Withdrawn (reference for value provided); o = Other EPA Source (reference for value provided);<br>p = NCEA PPRTV; R3 = EPA Region 3 RBC Table; R6 = EPA Region 6 MSSSL Table; R9 = EPA Region 9 PRG Table; ca = Cancer VCP RG; nc =<br>Noncancer VCP RG; m = MCL-based; s = solubility; sat = Soil Saturation; max = Ceiling limit; DAF = Dilution Attenuation Factor; CAS = Chemical Abstract<br>Services; +++ = Non-Standard Method Applied; see Notes section at bottom of table and Appendix A, Protocol for VCP Remediation Goal Lookup Tables,<br>Nebraska Voluntary Cleanup Program for more information |                                   |                                |   |                   |   |                              |   |                |   |                       |                                |                                 |                                  |    |              |     |                              |                   |
|--|-----------------------------------|--------------------------------|---|-------------------|---|------------------------------|---|----------------|---|-----------------------|--------------------------------|---------------------------------|----------------------------------|----|--------------|-----|------------------------------|-------------------|
| CONTAMINANT  | TOXICITY INFORMATION <sup>1</sup> |                                |   |                   |   |                              |   |                |   |                       | VCP REMEDIATION GOALS (RGs)    |                                 |                                  |    |              |     |                              |                   |
|  | CAS No.                           | SFo<br>(mg/kg-d) <sup>-1</sup> | i | RfDo<br>(mg/kg-d) | i | IUR<br>(µg/m³) <sup>-1</sup> | i | RfC<br>(mg/m³) | i | V<br>O S =<br>C solid | ABS <sub>d</sub><br>(unitless) | ABS <sub>GI</sub><br>(unitless) | Direct Contact Exposure Pathways |    |              |     | Migration to<br>Ground Water |                   |
|  |                                   |                                |   |                   |   |                              |   |                |   |                       |                                |                                 | Residential                      |    | Industrial   |     | Ground Water                 |                   |
|  |                                   |                                |   |                   |   |                              |   |                |   |                       |                                |                                 | Soil (mg/kg)                     | ca | Soil (mg/kg) | ca  | (µg/l)                       | DAF 20<br>(mg/kg) |
| Acephate   | 30560-19-1                        | 8.7E-03                        | i | 4.0E-03           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 5.6E+01                          | ca | 2.0E+03      | ca  | 7.7E+00                      | ca 3.4E-02        |
| Acetaldehyde   | 75-07-0                           |                                |   |                   |   | 2.2E-06                      | i | 9.0E-03        | i | 1                     |                                | 1                               | 1.2E+01                          | ca | 4.4E+02      | ca  | 2.2E+00                      | ca 8.9E-03        |
| Acetochlor   | 34256-82-1                        |                                |   | 2.0E-02           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 3.1E+02                          | nc | 1.2E+04      | nc  | 1.8E+02                      | nc 2.9E+00        |
| Acetone  | 67-64-1                           |                                |   | 9.0E-01           | i |                              |   | 3.1E+01        | a | 1                     |                                | 1                               | 1.6E+04                          | nc | 1.0E+05      | max | 5.4E+03                      | nc 2.2E+01        |
| Acetone cyanohydrin  | 75-86-5                           |                                |   | 3.0E-03           | p |                              |   | 6.0E-02        | p | 1                     |                                | 1                               | 5.2E+01                          | nc | 2.2E+03      | nc  | 1.5E+01                      | nc 5.9E-02        |
| Acetonitrile   | 75-05-8                           |                                |   |                   |   |                              |   | 6.0E-02        | i | 1                     |                                | 1                               | 2.7E+02                          | nc | 4.5E+03      | nc  | 3.1E+01                      | nc 1.3E-01        |
| Acrolein   | 107-02-8                          |                                |   | 5.0E-04           | i |                              |   | 2.0E-05        | i | 1                     |                                | 1                               | 4.8E-02                          | nc | 8.0E-01      | nc  | 1.0E-02                      | nc 4.2E-05        |
| Acrylamide   | 79-06-1                           | 5.0E-01                        | i | 2.0E-03           | i | 1.0E-04                      | i | 6.0E-03        | i | 0                     | 0.10                           | 1                               | 2.3E-01                          | ca | 3.4E+01      | ca  | 4.3E-02                      | ca 1.8E-04        |
| Acrylic acid   | 79-10-7                           |                                |   | 5.0E-01           | i |                              |   | 1.0E-03        | i | 0                     | 0.10                           | 1                               | 7.5E+03                          | nc | 1.0E+05      | max | 4.6E+03                      | nc 1.9E+01        |
| Acrylonitrile  | 107-13-1                          | 5.4E-01                        | i | 4.0E-02           | a | 6.8E-05                      | i | 2.0E-03        | i | 1                     |                                | 1                               | 2.7E-01                          | ca | 1.3E+01      | ca  | 4.5E-02                      | ca 1.9E-04        |
| Alachlor   | 15972-60-8                        | 5.6E-02                        | c | 1.0E-02           | i |                              |   |                |   | 0                     | S                              | 0.10                            | 8.7E+00                          | ca | 3.1E+02      | ca  | 2.0E+00                      | m 3.3E-02         |
| Alar   | 1596-84-5                         | 1.8E-02                        | c | 1.5E-01           | i | 5.1E-06                      | c |                |   | 0                     | 0.10                           | 1                               | 2.7E+01                          | ca | 9.6E+02      | ca  | 3.7E+00                      | ca 1.6E-02        |
| Aldicarb   | 116-06-3                          |                                |   | 1.0E-03           | i |                              |   |                |   | 0                     | S                              | 0.10                            | 1.5E+01                          | nc | 6.2E+02      | nc  | 9.1E+00                      | nc 4.6E-02        |
| Aldicarb sulfone   | 1646-88-4                         |                                |   | 1.0E-03           | i |                              |   |                |   | 0                     | S                              | 0.10                            | 1.5E+01                          | nc | 6.2E+02      | nc  | 9.1E+00                      | nc 4.0E-02        |
| Aldrin   | 309-00-2                          | 1.7E+01                        | i | 3.0E-05           | i | 4.9E-03                      | i |                |   | 0                     | S                              | 0.10                            | 2.9E-02                          | ca | 1.0E+00      | ca  | 4.0E-03                      | ca 1.3E-02        |
| Allyl  | 74223-64-6                        |                                |   | 2.5E-01           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 3.8E+03                          | nc | 1.0E+05      | max | 2.3E+03                      | nc 1.8E+01        |
| Allyl alcohol  | 107-18-6                          |                                |   | 5.0E-03           | i |                              |   | 1.0E-04        | x | 0                     | 0.10                           | 1                               | 7.6E+01                          | nc | 3.1E+03      | nc  | 4.6E+01                      | nc 1.9E-01        |
| Allyl chloride   | 107-05-1                          | 2.1E-02                        | c |                   |   | 6.0E-06                      | c | 1.0E-03        | i | 1                     |                                | 1                               | 5.3E-01                          | nc | 8.9E+00      | nc  | 5.2E-01                      | nc 3.3E-03        |
| Aluminum   | 7429-90-5                         |                                |   | 1.0E+00           | p |                              |   | 5.0E-03        | p | 0                     |                                | 1                               | 1.9E+04                          | nc | 1.0E+05      | max | 5.0E+01                      | m                 |
| Aluminum phosphide   | 20859-73-8                        |                                |   | 4.0E-04           | i |                              |   |                |   | 0                     |                                | 1                               | 7.8E+00                          | nc | 4.1E+02      | nc  | 3.7E+00                      | nc                |
| Amdro  | 67485-29-4                        |                                |   | 3.0E-04           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 4.6E+00                          | nc | 1.8E+02      | nc  | 2.7E+00                      | nc 2.0E+04        |
| Ametryn  | 834-12-8                          |                                |   | 9.0E-03           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 1.4E+02                          | nc | 5.5E+03      | nc  | 8.2E+01                      | nc 1.7E+00        |
| m-Aminophenol  | 591-27-5                          |                                |   | 8.0E-02           | p |                              |   |                |   | 0                     | 0.10                           | 1                               | 1.2E+03                          | nc | 4.9E+04      | nc  | 7.3E+02                      | nc 5.3E+00        |
| Amitraz  | 33089-61-1                        |                                |   | 2.5E-03           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 3.8E+01                          | nc | 1.5E+03      | nc  | 2.3E+01                      | nc 2.3E+02        |
| Ammonia (total ammonia, nitrite & nitrate as N)**  | 7664-41-7                         |                                |   |                   |   |                              |   | 1.0E-01        | i | n/a                   |                                | 1                               |                                  |    |              |     | 1.0E+04                      | ** 4.0E+01        |
| Ammonium sulfamate   | 7773-06-0                         |                                |   | 2.0E-01           | i |                              |   |                |   | 0                     |                                | 1                               | 3.9E+03                          | nc | 1.0E+05      | max | 1.8E+03                      | nc                |
| Aniline  | 62-53-3                           | 5.7E-03                        | i | 7.0E-03           | p | 1.6E-06                      | c | 1.0E-03        | i | 0                     | 0.10                           | 1                               | 8.5E+01                          | ca | 3.0E+03      | ca  | 1.2E+01                      | ca 8.0E-02        |
| Antimony and compounds   | 7440-36-0                         |                                |   | 4.0E-04           | i |                              |   |                |   | 0                     |                                | 0.15                            | 7.8E+00                          | nc | 4.1E+02      | nc  | 6.0E+00                      | m                 |
| Antimony pentoxide   | 1314-60-9                         |                                |   | 5.0E-04           | h |                              |   |                |   | 0                     |                                | 0.15                            | 9.8E+00                          | nc | 5.1E+02      | nc  | 6.0E+00                      | m                 |
| Antimony potassium tartrate  | 11071-15-1                        |                                |   | 9.0E-04           | h |                              |   |                |   | 0                     |                                | 0.15                            | 1.8E+01                          | nc | 9.2E+02      | nc  | 6.0E+00                      | m                 |
| Antimony tetroxide   | 1332-81-6                         |                                |   | 4.0E-04           | h |                              |   |                |   | 0                     |                                | 0.15                            | 7.8E+00                          | nc | 4.1E+02      | nc  | 6.0E+00                      | m                 |
| Antimony trioxide  | 1309-64-4                         |                                |   |                   |   |                              |   | 2.0E-04        | i | 0                     |                                | 0.15                            | 6.2E+04                          | nc | 1.0E+05      | max | 6.0E+00                      | m                 |
| Apollo   | 74115-24-5                        |                                |   | 1.3E-02           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 2.0E+02                          | nc | 8.0E+03      | nc  | 1.2E+02                      | nc 1.4E+02        |
| Aramite  | 140-57-8                          | 2.5E-02                        | i | 5.0E-02           | h | 7.1E-06                      | i |                |   | 0                     | 0.10                           | 1                               | 1.9E+01                          | ca | 6.9E+02      | ca  | 2.7E+00                      | ca 6.1E-01        |
| Arsenic (inorganic)  | 7440-38-2                         | 1.5E+00                        | i | 3.0E-04           | i | 4.3E-03                      | i | 1.5E-05        | c | 0                     | 0.03                           | 1                               | 3.9E-01                          | ca | 1.6E+01      | ca  | 5.0E+01                      | m 2.9E+01         |
| Arsine   | 7784-42-1                         |                                |   | 3.5E-06           | c |                              |   | 5.0E-05        | i | n/a                   |                                | 1                               | 6.8E-02                          | nc | 3.6E+00      | nc  | 3.2E-02                      | nc                |
| Assure   | 76578-14-8                        |                                |   | 9.0E-03           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 1.4E+02                          | nc | 5.5E+03      | nc  | 8.2E+01                      | nc 2.6E+01        |
| Asulam   | 3337-71-1                         |                                |   | 5.0E-02           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 7.6E+02                          | nc | 3.1E+04      | nc  | 4.6E+02                      | nc 2.3E+00        |
| Atrazine   | 1912-24-9                         | 2.3E-01                        | c | 3.5E-02           | i |                              |   |                |   | 0                     | S                              | 0.10                            | 2.1E+00                          | ca | 7.5E+01      | ca  | 3.0E+00                      | m 3.9E-02         |
| Avermectin B1  | 65195-55-3                        |                                |   | 4.0E-04           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 6.1E+00                          | nc | 2.5E+02      | nc  | 3.7E+00                      | nc 1.3E+02        |
| Azobenzene   | 103-33-3                          | 1.1E-01                        | i |                   |   | 3.1E-05                      | i |                |   | 1                     |                                | 1                               | 5.2E+00                          | ca | 2.4E+02      | ca  | 1.2E-01                      | ca 1.9E-02        |
| Barium and compounds   | 7440-39-3                         |                                |   | 2.0E-01           | i |                              |   | 5.0E-04        | h | 0                     |                                | 0.07                            | 3.8E+03                          | nc | 1.0E+05      | max | 2.0E+03                      | m 1.6E+03         |
| Baygon   | 114-26-1                          |                                |   | 4.0E-03           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 6.1E+01                          | nc | 2.5E+03      | nc  | 3.7E+01                      | nc 1.5E-01        |
| Bayleton   | 43121-43-3                        |                                |   | 3.0E-02           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 4.6E+02                          | nc | 1.8E+04      | nc  | 2.7E+02                      | nc 4.4E+00        |
| Baythroid  | 68359-37-5                        |                                |   | 2.5E-02           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 3.8E+02                          | nc | 1.5E+04      | nc  | 3.0E+00                      | s 1.2E+03         |
| Benefin  | 1861-40-1                         |                                |   | 3.0E-01           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 4.6E+03                          | nc | 1.0E+05      | max | 1.0E+02                      | s 1.8E+03         |
| Benomyl  | 17804-35-2                        |                                |   | 5.0E-02           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 7.6E+02                          | nc | 3.1E+04      | nc  | 4.6E+02                      | nc 8.0E+00        |
| Bentazon   | 25057-89-0                        |                                |   | 3.0E-02           | i |                              |   |                |   | 0                     | 0.10                           | 1                               | 4.6E+02                          | nc | 1.8E+04      | nc  | 2.7E+02                      | nc 1.2E+00        |
| Benzaldehyde   | 100-52-7                          |                                |   | 1.0E-01           | i |                              |   |                |   | 1                     |                                | 1                               | 2.0E+03                          | nc | 1.0E+05      | max | 9.1E+02                      | nc 4.1E+00        |
| Benzene  | 71-43-2                           | 5.5E-02                        | i | 4.0E-03           | i | 7.8E-06                      | i | 3.0E-02        | i | 1                     |                                | 1                               | 1.3E+00                          | ca | 6.3E+01      | ca  | 5.0E+00                      | m 5.1E-02         |
| Benzidine  | 92-87-5                           | 2.3E+02                        | i | 3.0E-03           | i | 6.7E-02                      | i |                |   | 0                     | 0.10                           | 1                               | 5.0E-04                          | ca | 7.5E-02      | ca  | 9.4E-05                      | ca 4.8E-06        |
| Benzoic acid   | 65-85-0                           |                                |   | 4.0E+00           | i |                              |   |                |   | 0                     | S                              | 0.10                            | 6.1E+04                          | nc | 1.0E+05      | max | 3.7E+04                      | nc 1.7E+02        |
| Benzotrithloride   | 98-07-7                           | 1.3E+01                        | i |                   |   |                              |   |                |   | 1                     |                                | 1                               | 4.9E-02                          | ca | 2.2E+00      | ca  | 4.9E-03                      | ca 2.2E-04        |
| Benzyl alcohol   | 100-51-6                          |                                |   | 1.0E-01           | p |                              |   |                |   | 0                     | 0.10                           | 1                               | 1.5E+03                          | nc | 6.2E+04      | nc  | 9.1E+02                      | nc 4.4E+00        |

# NDEQ VCP REMEDIATION GOALS

## TABLE 1 - DIRECT CONTACT EXPOSURE PATHWAYS

| Key : SFO = Oral Slope Factor; RfDo = Oral Reference Dose; IUR = Inhalation Unit Risk; RfC = Inhalation Reference Concentration;<br>i = IRIS; h = HEAST; n = NCEA; x = Withdrawn (reference for value provided); o = Other EPA Source (reference for value provided);<br>p = NCEA PPRTV; R3 = EPA Region 3 RBC Table; R6 = EPA Region 6 MSSL Table; R9 = EPA Region 9 PRG Table; ca = Cancer VCP RG; nc =<br>Noncancer VCP RG; m = MCL-based; s = solubility; sat = Soil Saturation; max = Ceiling limit; DAF = Dilution Attenuation Factor; CAS = Chemical Abstract<br>Services; +++ = Non-Standard Method Applied; see Notes section at bottom of table and Appendix A, Protocol for VCP Remediation Goal Lookup Tables,<br>Nebraska Voluntary Cleanup Program for more information |            |                                   |   |                   |   |   |   |                             |   |        |   |                                |                                 |                                  |    |              |     |                              |                   |
|---|------------|-----------------------------------|---|-------------------|---|---|---|-----------------------------|---|--------|---|--------------------------------|---------------------------------|----------------------------------|----|--------------|-----|------------------------------|-------------------|
| CONTAMINANT   |            | TOXICITY INFORMATION <sup>1</sup> |   |                   |   |   |   |                             |   |        |   | VCP REMEDIATION GOALS (RGs)    |                                 |                                  |    |              |     |                              |                   |
|   | CAS No.    | SFO<br>(mg/kg-d) <sup>-1</sup>    | i | RfDo<br>(mg/kg-d) | p | IUR<br>(µg/m <sup>3</sup> ) <sup>-1</sup> | c | RfC<br>(mg/m <sup>3</sup> ) | i | V<br>O | S | ABS <sub>d</sub><br>(unitless) | ABS <sub>GI</sub><br>(unitless) | Direct Contact Exposure Pathways |    |              |     | Migration to<br>Ground Water |                   |
|   |            |                                   |   |                   |   |   |   |                             |   |        |   |                                |                                 | Residential                      |    | Industrial   |     | Ground Water                 |                   |
|   |            |                                   |   |                   |   |   |   |                             |   |        |   |                                |                                 | Soil (mg/kg)                     | ca | Soil (mg/kg) | ca  | (µg/l)                       | DAF 20<br>(mg/kg) |
| Benzyl chloride   | 100-44-7   | 1.7E-01                           | i | 2.0E-03           | p | 4.9E-05                                   | c | 1.0E-03                     | p | 1      |   |                                | 1                               | 1.1E+00                          | ca | 5.5E+01      | ca  | 7.9E-02                      | ca                |
| Beryllium and compounds   | 7440-41-7  |                                   |   | 2.0E-03           | i | 2.4E-03                                   | i | 2.0E-05                     | i | 0      |   |                                | 0.007                           | 3.9E+01                          | nc | 2.0E+03      | nc  | 4.0E+00                      | m                 |
| Bidrin  | 141-66-2   |                                   |   | 1.0E-04           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 1.5E+00                          | nc | 6.2E+01      | nc  | 9.1E-01                      | nc                |
| Biphenthrin (Talstar)   | 82657-04-3 |                                   |   | 1.5E-02           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 2.3E+02                          | nc | 9.2E+03      | nc  | 1.0E+02                      | s                 |
| 1,1-Biphenyl  | 92-52-4    |                                   |   | 5.0E-02           | i |   |   |                             |   | 1      | S |                                | 1                               | 9.8E+02                          | nc | 5.1E+04      | nc  | 4.6E+02                      | nc                |
| Bis(2-chloroethyl)ether   | 111-44-4   | 1.1E+00                           | i |                   |   | 3.3E-04                                   | i |                             |   | 1      |   |                                | 1                               | 2.4E-01                          | ca | 1.1E+01      | ca  | 1.2E-02                      | ca                |
| Bis(chloromethyl)ether  | 542-88-1   | 2.2E+02                           | i |                   |   | 6.2E-02                                   | i |                             |   | 1      |   |                                | 1                               | 9.2E-05                          | ca | 4.6E-03      | ca  | 6.2E-05                      | ca                |
| Bis(2-chloro-1-methylethyl)ether  | 108-60-1   | 7.0E-02                           | h | 4.0E-02           | i | 1.0E-05                                   | h |                             |   | 1      |   |                                | 1                               | 5.0E+00                          | ca | 2.3E+02      | ca  | 3.2E-01                      | ca                |
| Bis(2-ethylhexyl)phthalate (DEHP)   | 117-81-7   | 1.4E-02                           | i | 2.0E-02           | i | 2.4E-06                                   | c |                             |   | 0      |   | 0.10                           | 1                               | 3.5E+01                          | ca | 1.2E+03      | ca  | 6.0E+00                      | m                 |
| Bisphenol A   | 80-05-7    |                                   |   | 5.0E-02           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 7.6E+02                          | nc | 3.1E+04      | nc  | 4.6E+02                      | nc                |
| Boron   | 7440-42-8  |                                   |   | 2.0E-01           | i |   |   | 2.0E-02                     | h | 0      |   |                                | 1                               | 3.9E+03                          | nc | 1.0E+05      | max | 1.8E+03                      | nc                |
| Boron trifluoride   | 7637-07-2  |                                   |   | 4.0E-02           | c |   |   | 1.3E-02                     | c | n/a    |   |                                | 1                               | 7.8E+02                          | nc | 4.1E+04      | nc  | 3.7E+02                      | nc                |
| Bromate   | 15541-45-4 | 7.0E-01                           | i | 4.0E-03           | i |   |   |                             |   | n/a    |   |                                | 1                               | 9.1E-01                          | ca | 4.1E+01      | ca  | 1.0E+01                      | m                 |
| Bromobenzene  | 108-86-1   |                                   |   | 8.0E-03           | i |   |   | 6.0E-02                     | i | 1      |   |                                | 1                               | 8.1E+01                          | nc | 2.1E+03      | nc  | 2.2E+01                      | nc                |
| Bromodichloromethane  | 75-27-4    | 6.2E-02                           | i | 2.0E-02           | i | 3.7E-05                                   | c |                             |   | 1      |   |                                | 1                               | 3.3E-01                          | ca | 1.6E+01      | ca  | 8.0E+01                      | m                 |
| Bromoform (tribromomethane)   | 75-25-2    | 7.9E-03                           | i | 2.0E-02           | i | 1.1E-06                                   | i |                             |   | 0      |   | 0.10                           | 1                               | 6.1E+01                          | ca | 2.2E+03      | ca  | 8.0E+01                      | m                 |
| Bromomethane  | 74-83-9    |                                   |   | 1.4E-03           | i |   |   | 5.0E-03                     | i | 1      |   |                                | 1                               | 2.2E+00                          | nc | 3.8E+01      | nc  | 2.2E+00                      | nc                |
| Bromophos   | 2104-96-3  |                                   |   | 5.0E-03           | h |   |   |                             |   | 0      |   | 0.10                           | 1                               | 7.6E+01                          | nc | 3.1E+03      | nc  | 4.6E+01                      | nc                |
| Bromoxynil  | 1689-84-5  |                                   |   | 2.0E-02           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 3.1E+02                          | nc | 1.2E+04      | nc  | 1.8E+02                      | nc                |
| Bromoxynil octanoate  | 1689-99-2  |                                   |   | 2.0E-02           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 3.1E+02                          | nc | 1.2E+04      | nc  | 8.0E+01                      | s                 |
| 1,3-Butadiene   | 106-99-0   | 3.4E+00                           | c |                   |   | 3.0E-05                                   | i | 2.0E-03                     | i | 1      |   |                                | 1                               | 6.1E-02                          | ca | 3.0E+00      | ca  | 1.7E-02                      | ca                |
| 1-Butanol   | 71-36-3    |                                   |   | 1.0E-01           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 1.5E+03                          | nc | 6.2E+04      | nc  | 9.1E+02                      | nc                |
| Butylate  | 2008-41-5  |                                   |   | 5.0E-02           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 7.6E+02                          | nc | 3.1E+04      | nc  | 4.6E+02                      | nc                |
| Butyl benzyl phthalate  | 85-68-7    | 1.9E-03                           | p | 2.0E-01           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 2.6E+02                          | ca | 9.1E+03      | ca  | 6.0E+00                      | m                 |
| Butylphthalyl butylglycolate  | 85-70-1    |                                   |   | 1.0E+00           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 1.5E+04                          | nc | 1.0E+05      | max | 8.5E+03                      | s                 |
| Cacodylic acid  | 75-60-5    |                                   |   | 2.0E-02           | a |   |   |                             |   | 0      |   | 0.10                           | 1                               | 3.1E+02                          | nc | 1.2E+04      | nc  | 1.8E+02                      | nc                |
| Cadmium and compounds+++  | 7440-43-9  |                                   |   | 1.0E-03           | i | 1.8E-03                                   | i | 1.0E-05                     | a | 0      |   | 0.00                           | 0.05                            | 1.8E+01                          | nc | 8.9E+02      | nc  | 5.0E+00                      | m                 |
| Caprolactam   | 105-60-2   |                                   |   | 5.0E-01           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 7.6E+03                          | nc | 1.0E+05      | max | 4.6E+03                      | nc                |
| Captan  | 2425-06-1  | 1.5E-01                           | c | 2.0E-03           | i | 4.3E-05                                   | c |                             |   | 0      |   | 0.10                           | 1                               | 3.2E+00                          | ca | 1.1E+02      | ca  | 4.5E-01                      | ca                |
| Captan  | 133-06-2   | 2.3E-03                           | c | 1.3E-01           | i | 6.6E-07                                   | c |                             |   | 0      | S | 0.10                           | 1                               | 2.1E+02                          | ca | 7.5E+03      | ca  | 2.9E+01                      | ca                |
| Carbaryl  | 63-25-2    |                                   |   | 1.0E-01           | i |   |   |                             |   | 0      | S | 0.10                           | 1                               | 1.5E+03                          | nc | 6.2E+04      | nc  | 9.1E+02                      | nc                |
| Carbofuran  | 1563-66-2  |                                   |   | 5.0E-03           | i |   |   |                             |   | 0      | S | 0.10                           | 1                               | 7.6E+01                          | nc | 3.1E+03      | nc  | 4.0E+01                      | m                 |
| Carbon disulfide  | 75-15-0    |                                   |   | 1.0E-01           | i |   |   | 7.0E-01                     | i | 1      |   |                                | 1                               | 2.4E+02                          | nc | 4.5E+03      | nc  | 2.5E+02                      | nc                |
| Carbon tetrachloride  | 56-23-5    | 7.0E-02                           | i | 4.0E-03           | i | 6.0E-06                                   | i | 1.0E-01                     | a | 1      |   |                                | 1                               | 7.2E-01                          | ca | 3.6E+01      | ca  | 5.0E+00                      | m                 |
| Carbosulfan   | 55285-14-8 |                                   |   | 1.0E-02           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 1.5E+02                          | nc | 6.2E+03      | nc  | 9.1E+01                      | nc                |
| Carboxin  | 5234-68-4  |                                   |   | 1.0E-01           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 1.5E+03                          | nc | 6.2E+04      | nc  | 9.1E+02                      | nc                |
| Chloramben  | 133-90-4   |                                   |   | 1.5E-02           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 2.3E+02                          | nc | 9.2E+03      | nc  | 1.4E+02                      | nc                |
| Chloranil   | 118-75-2   | 4.0E-01                           | h |                   |   |   |   |                             |   | 0      |   | 0.10                           | 1                               | 1.2E+00                          | ca | 4.3E+01      | ca  | 1.7E-01                      | ca                |
| Chlordane   | 12789-03-6 | 3.5E-01                           | i | 5.0E-04           | i | 1.0E-04                                   | i | 7.0E-04                     | i | 0      | S | 0.04                           | 1                               | 1.6E+00                          | ca | 6.5E+01      | ca  | 2.0E+00                      | m                 |
| Chlorimuron-ethyl   | 90982-32-4 |                                   |   | 2.0E-02           | i |   |   |                             |   | 0      |   | 0.10                           | 1                               | 3.1E+02                          | nc | 1.2E+04      | nc  | 1.8E+02                      | nc                |
| Chlorine  | 7782-50-5  |                                   |   | 1.0E-01           | i |   |   | 1.5E-04                     | a | n/a    |   |                                | 1                               | 2.0E+03                          | nc | 1.0E+05      | max | 2.5E+05                      | m                 |
| Chlorine dioxide  | 10049-04-4 |                                   |   | 3.0E-02           | i |   |   | 2.0E-04                     | i | n/a    |   |                                | 1                               | 5.9E+02                          | nc | 3.1E+04      | nc  | 2.7E+02                      | nc                |
| Chloroacetic acid   | 79-11-8    |                                   |   | 2.0E-03           | h |   |   |                             |   | 0      |   | 0.10                           | 1                               | 3.1E+01                          | nc | 1.2E+03      | nc  | 6.0E+01                      | m                 |
| 2-Chloroacetophenone  | 532-27-4   |                                   |   |                   |   |   |   | 3.0E-05                     | i | 0      |   | 0.10                           | 1                               | 9.3E+03                          | nc | 1.0E+05      | max |                              |                   |
| 4-Chloroaniline   | 106-47-8   | 2.0E-01                           | p | 4.0E-03           | i |   |   |                             |   | 0      | S | 0.10                           | 1                               | 2.4E+00                          | ca | 8.6E+01      | ca  | 3.4E-01                      | ca                |
| Chlorobenzene   | 108-90-7   |                                   |   | 2.0E-02           | i |   |   | 5.0E-02                     | p | 1      |   |                                | 1                               | 8.5E+01                          | nc | 1.7E+03      | nc  | 1.0E+02                      | m                 |
| Chlorobenzilate   | 510-15-6   | 1.1E-01                           | c | 2.0E-02           | i | 3.2E-05                                   | c |                             |   | 0      | S | 0.10                           | 1                               | 4.4E+00                          | ca | 1.6E+02      | ca  | 6.1E-01                      | ca                |
| p-Chlorobenzoic acid  | 74-11-3    |                                   |   | 3.0E-02           | x |   |   |                             |   | 0      |   | 0.10                           | 1                               | 4.6E+02                          | nc | 1.8E+04      | nc  | 2.7E+02                      | nc                |
| 4-Chlorobenzotrifluoride  | 98-56-6    |                                   |   | 3.0E-03           | p |   |   | 3.0E-01                     | p | 1      |   |                                | 1                               | 5.4E+01                          | nc | 2.4E+03      | nc  | 2.3E+01                      | nc                |
| 2-Chloro-1,3-butadiene  | 126-99-8   |                                   |   | 2.0E-02           | h |   |   | 7.0E-03                     | h | 1      |   |                                | 1                               | 2.5E+00                          | nc | 4.3E+01      | nc  | 3.6E+00                      | nc                |
| 1-Chlorobutane  | 109-69-3   |                                   |   | 4.0E-02           | p |   |   |                             |   | 1      |   |                                | 1                               | 7.8E+02                          | nc | 4.1E+04      | nc  | 3.7E+02                      | nc                |
| 1-Chloro-1,1-difluoroethane   | 75-68-3    |                                   |   |                   |   |   |   | 5.0E+01                     | i | 1      |   |                                | 1                               | 1.7E+04                          | nc | 1.0E+05      | max | 2.6E+04                      | nc                |
| Chlorodifluoromethane   | 75-45-6    |                                   |   |                   |   |   |   | 5.0E+01                     | i | 1      |   |                                | 1                               | 1.6E+04                          | nc | 1.0E+05      | max | 2.6E+04                      | nc                |
| Chloroethane  | 75-00-3    |                                   |   |                   |   |   |   | 1.0E+01                     | i | 1      |   |                                | 1                               | 4.4E+03                          | nc | 7.4E+04      | nc  | 5.2E+03                      | nc                |



# NDEQ VCP REMEDIATION GOALS

## TABLE 1 - DIRECT CONTACT EXPOSURE PATHWAYS

| Key : SFO = Oral Slope Factor; RfDo = Oral Reference Dose; IUR = Inhalation Unit Risk; RfC = Inhalation Reference Concentration; i = IRIS; h = HEAST; n = NCEA; x = Withdrawn (reference for value provided); o = Other EPA Source (reference for value provided); p = NCEA PPRTV; R3 = EPA Region 3 RBC Table; R6 = EPA Region 6 MSSL Table; R9 = EPA Region 9 PRG Table; ca = Cancer VCP RG; nc = Noncancer VCP RG; m = MCL-based; s = solubility; sat = Soil Saturation; max = Ceiling limit; DAF = Dilution Attenuation Factor; CAS = Chemical Abstract Services; +++ = Non-Standard Method Applied; see Notes section at bottom of table and Appendix A, Protocol for VCP Remediation Goal Lookup Tables, Nebraska Voluntary Cleanup Program for more information |            |                                   |                   |         |   |         |                             |         |     |   |       |                                |                                 |                                  |                            |                        |                   |                           |         |    |
|--|------------|-----------------------------------|-------------------|---------|---|---------|-----------------------------|---------|-----|---|-------|--------------------------------|---------------------------------|----------------------------------|----------------------------|------------------------|-------------------|---------------------------|---------|----|
| CONTAMINANT  |            | TOXICITY INFORMATION <sup>1</sup> |                   |         |   |         |                             |         |     |   |       | VCP REMEDIATION GOALS (RGs)    |                                 |                                  |                            |                        |                   |                           |         |    |
|  | CAS No.    | SFO<br>(mg/kg-d) <sup>-1</sup>    | RfDo<br>(mg/kg-d) | i       | IUR<br>(µg/m <sup>3</sup> ) <sup>-1</sup> | i       | RfC<br>(mg/m <sup>3</sup> ) | V       |     |   |       | ABS <sub>d</sub><br>(unitless) | ABS <sub>GI</sub><br>(unitless) | Direct Contact Exposure Pathways |                            |                        |                   | Migration to Ground Water |         |    |
|  |            |                                   |                   |         |   |         |                             | O       | S = | C | solid |                                |                                 | Residential<br>Soil (mg/kg)      | Industrial<br>Soil (mg/kg) | Ground Water<br>(ug/l) | DAF 20<br>(mg/kg) |                           |         |    |
| Chloroform   | 67-66-3    | 3.1E-02                           | c                 | 1.0E-02 |   |         | 9.8E-02                     | a       | 1   |   |       | 1                              | 3.5E+01                         | ca                               | 1.8E+01                    | ca                     | 8.0E+01           | m                         | 4.4E-01 | m  |
| Chloromethane  | 74-87-3    |                                   |                   |         |   |         | 9.0E-02                     | i       | 1   |   |       | 1                              | 3.6E+01                         | nc                               | 6.1E+02                    | nc                     | 4.7E+01           | nc                        | 2.4E-01 | nc |
| 4-Chloro-2-methylaniline hydrochloride   | 3165-93-3  | 4.6E-01                           | h                 |         |   |         |                             |         | 0   |   | 0.10  | 1                              | 1.1E+00                         | ca                               | 3.7E+01                    | ca                     | 1.5E-01           | ca                        | 1.7E-03 | ca |
| beta-Chloronaphthalene   | 91-58-7    |                                   |                   | 8.0E-02 | i   |         |                             |         | 1   | S |       | 1                              | 1.6E+03                         | nc                               | 8.2E+04                    | nc                     | 7.3E+02           | nc                        | 7.5E+01 | nc |
| o-Chloronitrobenzene   | 88-73-3    | 3.0E-01                           | p                 | 3.0E-03 | p   |         | 1.0E-05                     | x       | 0   |   | 0.10  | 1                              | 1.6E+00                         | ca                               | 5.7E+01                    | ca                     | 2.2E-01           | ca                        | 4.2E-03 | ca |
| p-Chloronitrobenzene   | 100-00-5   | 6.3E-03                           | p                 | 1.0E-03 | p   |         | 6.0E-04                     | p       | 0   |   | 0.10  | 1                              | 1.5E+01                         | nc                               | 6.2E+02                    | nc                     | 9.1E+00           | nc                        | 1.8E-01 | nc |
| 2-Chlorophenol   | 95-57-8    |                                   |                   | 5.0E-03 | i   |         |                             |         | 1   |   |       | 1                              | 9.8E+01                         | nc                               | 5.1E+03                    | nc                     | 4.1E+01           | nc                        | 6.7E-01 | nc |
| Chlorothalonil   | 1897-45-6  | 3.1E-03                           | c                 | 1.5E-02 | i   | 8.9E-07 | c                           |         | 0   |   | 0.10  | 1                              | 1.6E+02                         | ca                               | 5.6E+03                    | ca                     | 1.9E+01           | ca                        | 8.8E-01 | ca |
| o-Chlorotoluene  | 95-49-8    |                                   |                   | 2.0E-02 | i   |         |                             |         | 1   |   |       | 1                              | 3.9E+02                         | nc                               | 2.0E+04                    | nc                     | 1.8E+02           | nc                        | 3.6E+00 | nc |
| Chlorpropham   | 101-21-3   |                                   |                   | 2.0E-01 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 3.1E+03                         | nc                               | 1.0E+05                    | max                    | 1.8E+03           | nc                        | 3.3E+01 | nc |
| Chlorpyrifos   | 2921-88-2  |                                   |                   | 3.0E-03 | i   |         |                             |         | 0   | S | 0.10  | 1                              | 4.6E+01                         | nc                               | 1.8E+03                    | nc                     | 2.7E+01           | nc                        | 8.1E+00 | nc |
| Chlorpyrifos-methyl  | 5598-13-0  |                                   |                   | 1.0E-02 | h   |         |                             |         | 0   |   | 0.10  | 1                              | 1.5E+02                         | nc                               | 6.2E+03                    | nc                     | 9.1E+01           | nc                        | 8.4E+00 | nc |
| Chlorsulfuron  | 64902-72-3 |                                   |                   | 5.0E-02 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 7.6E+02                         | nc                               | 3.1E+04                    | nc                     | 4.6E+02           | nc                        | 7.7E+00 | nc |
| Chlorthiophos  | 60238-56-4 |                                   |                   | 8.0E-04 | h   |         |                             |         | 0   |   | 0.10  | 1                              | 1.2E+01                         | nc                               | 4.9E+02                    | nc                     | 7.3E+00           | nc                        | 3.8E+00 | nc |
| Total Chromium (1:6 ratio Cr VI:Cr III)+++   |            |                                   |                   |         |   |         |                             |         | 0   |   |       | 0.013                          |                                 |                                  |                            |                        | 1.0E+02           | m                         | 1.0E+05 | m  |
| Chromium III   | 16065-83-1 |                                   |                   | 1.5E+00 | i   |         |                             |         | 0   |   |       | 0.013                          | 2.9E+04                         | nc                               | 1.0E+05                    | max                    | 1.0E+02           | m                         | 1.0E+05 | m  |
| Chromium VI+++   | 18540-29-9 | 5.0E-01                           | j                 | 3.0E-03 | i   | 8.4E-02 | i                           | 1.0E-04 | i   | 0 |       | 0.025                          | 2.9E-01                         | ca                               | 5.5E+01                    | ca                     | 1.0E+02           | m                         | 3.8E+01 | m  |
| Cobalt   | 7440-48-4  |                                   |                   | 3.0E-04 | p   | 9.0E-03 | p                           | 6.0E-06 | p   | 0 |       | 1                              | 5.8E+00                         | nc                               | 3.0E+02                    | nc                     | 2.7E+00           | nc                        |         |    |
| Copper and compounds   | 7440-50-8  |                                   |                   | 4.0E-02 | h   |         |                             |         | 0   |   |       | 1                              | 7.8E+02                         | nc                               | 4.1E+04                    | nc                     | 1.3E+03           | m                         |         |    |
| Crotonaldehyde   | 123-73-9   | 1.9E+00                           | h                 |         |   |         |                             |         | 1   |   |       | 1                              | 3.4E-01                         | ca                               | 1.5E+01                    | ca                     | 3.5E-02           | ca                        | 1.4E-04 | ca |
| Cumene (isopropylbenzene)  | 98-82-8    |                                   |                   | 1.0E-01 | i   |         | 4.0E-01                     | i       | 1   | 1 |       | 1                              | 5.9E+02                         | nc                               | 1.2E+04                    | nc                     | 1.7E+02           | nc                        | 5.6E+00 | nc |
| Cyanazine  | 21725-46-2 | 8.4E-01                           | h                 | 2.0E-03 | h   |         |                             |         | 0   |   | 0.10  | 1                              | 5.8E-01                         | ca                               | 2.1E+01                    | ca                     | 8.0E-02           | ca                        | 7.5E-04 | ca |
| Cyanide (free)   | 57-12-5    |                                   |                   | 2.0E-02 | i   |         |                             |         | 1   |   |       | 1                              | 3.9E+02                         | nc                               | 2.0E+04                    | nc                     | 2.0E+02           | m                         | 8.2E-01 | m  |
| Cyanide (hydrogen)   | 74-90-8    |                                   |                   | 2.0E-02 | i   |         | 3.0E-03                     | i       | 1   | 1 |       | 1                              | 5.6E+00                         | nc                               | 9.5E+01                    | nc                     | 1.6E+00           | nc                        | 6.4E-03 | nc |
| Cyanogen   | 460-19-5   |                                   |                   | 4.0E-02 | i   |         |                             |         | 1   |   |       | 1                              | 7.8E+02                         | nc                               | 4.1E+04                    | nc                     | 3.7E+02           | nc                        | 1.6E+00 | nc |
| Cyanogen bromide   | 506-68-3   |                                   |                   | 9.0E-02 | i   |         |                             |         | 1   |   |       | 1                              | 1.8E+03                         | nc                               | 9.2E+04                    | nc                     | 8.2E+02           | nc                        | 4.9E+00 | nc |
| Cyanogen chloride  | 506-77-4   |                                   |                   | 5.0E-02 | i   |         |                             |         | 1   |   |       | 1                              | 9.8E+02                         | nc                               | 5.1E+04                    | nc                     | 4.6E+02           | nc                        | 2.0E+00 | nc |
| Cyclohexane  | 110-82-7   |                                   |                   |         |   | 6.0E+00 | i                           | 1       | 1   |   |       | 1                              | 2.1E+03                         | nc                               | 3.5E+04                    | nc                     | 3.1E+03           | nc                        | 6.5E+01 | nc |
| Cyclohexanone  | 108-94-1   |                                   |                   | 5.0E+00 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 7.6E+04                         | nc                               | 1.0E+05                    | max                    | 4.6E+04           | nc                        | 2.1E+02 | nc |
| Cyclohexylamine  | 108-91-8   |                                   |                   | 2.0E-01 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 3.1E+03                         | nc                               | 1.0E+05                    | max                    | 1.8E+03           | nc                        | 9.7E+00 | nc |
| Cyhalothrin/Karate   | 68085-85-8 |                                   |                   | 5.0E-03 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 7.6E+01                         | nc                               | 3.1E+03                    | nc                     | 5.0E+00           | s                         | 6.2E+02 | nc |
| Cypermethrin   | 52315-07-8 |                                   |                   | 1.0E-02 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 1.5E+02                         | nc                               | 6.2E+03                    | nc                     | 4.0E+00           | s                         | 2.9E+02 | nc |
| Cyromazine   | 66215-27-8 |                                   |                   | 7.5E-03 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 1.1E+02                         | nc                               | 4.6E+03                    | nc                     | 6.8E+01           | nc                        | 3.5E-01 | nc |
| Dacthal  | 1861-32-1  |                                   |                   | 1.0E-02 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 1.5E+02                         | nc                               | 6.2E+03                    | nc                     | 9.1E+01           | nc                        | 2.2E+00 | nc |
| Dalapon  | 75-99-0    |                                   |                   | 3.0E-02 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 4.6E+02                         | nc                               | 1.8E+04                    | nc                     | 2.0E+02           | m                         | 8.3E-01 | m  |
| Danitol  | 39515-41-8 |                                   |                   | 2.5E-02 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 3.8E+02                         | nc                               | 1.5E+04                    | nc                     | 2.3E+02           | nc                        | 2.1E+02 | nc |
| DDD  | 72-54-8    | 2.4E-01                           | i                 |         |   | 6.9E-05 | c                           |         | 0   | S | 0.10  | 1                              | 2.0E+00                         | ca                               | 7.2E+01                    | ca                     | 1.1E-01           | ca                        | 5.3E-01 | ca |
| DDE  | 72-55-9    | 3.4E-01                           | i                 |         |   | 9.7E-05 | c                           |         | 0   | S | 0.10  | 1                              | 1.4E+00                         | ca                               | 5.1E+01                    | ca                     | 8.6E-02           | ca                        | 4.1E-01 | ca |
| DDT  | 50-29-3    | 3.4E-01                           | i                 | 5.0E-04 | i   | 9.7E-05 | i                           |         | 0   | S | 0.03  | 1                              | 1.7E+00                         | ca                               | 7.0E+01                    | ca                     | 5.7E-02           | ca                        | 3.8E-01 | ca |
| Decabromodiphenyl ether  | 1163-19-5  | 7.0E-04                           | i                 | 7.0E-03 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 1.1E+02                         | nc                               | 4.3E+03                    | nc                     | 1.0E-01           | s                         | 7.1E+02 | nc |
| Demeton  | 8065-48-3  |                                   |                   | 4.0E-05 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 6.1E-01                         | nc                               | 2.5E+01                    | nc                     | 3.7E-01           | nc                        |         |    |
| Diallate   | 2303-16-4  | 6.1E-02                           | h                 |         |   |         |                             |         | 0   |   | 0.10  | 1                              | 8.0E+00                         | ca                               | 2.8E+02                    | ca                     | 1.1E+00           | ca                        | 3.3E-02 | ca |
| Diazinon   | 333-41-5   |                                   |                   | 7.0E-04 | a   |         |                             |         | 0   |   | 0.10  | 1                              | 1.1E+01                         | nc                               | 4.3E+02                    | nc                     | 6.4E+00           | nc                        | 7.9E-01 | nc |
| Dibenzofuran   | 132-64-9   |                                   |                   | 1.0E-03 | x   |         |                             |         | 1   | S |       | 1                              | 2.0E+01                         | nc                               | 1.0E+03                    | nc                     | 9.1E+00           | nc                        | 3.4E+00 | nc |
| 1,4-Dibromobenzene   | 106-37-6   |                                   |                   | 1.0E-02 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 1.5E+02                         | nc                               | 6.2E+03                    | nc                     | 9.1E+01           | nc                        | 1.7E+00 | nc |
| Dibromochloromethane   | 124-48-1   | 8.4E-02                           | i                 | 2.0E-02 | i   | 2.7E-05 | c                           |         | 0   |   | 0.10  | 1                              | 5.8E+00                         | ca                               | 2.1E+02                    | ca                     | 8.0E+01           | m                         | 4.3E-01 | m  |
| 1,2-Dibromo-3-chloropropane  | 96-12-8    | 8.0E-01                           | p                 | 2.0E-04 | p   | 6.0E-03 | p                           | 2.0E-04 | i   | 0 | 0.10  | 1                              | 1.4E-01                         | ca                               | 2.2E+01                    | ca                     | 2.0E-01           | m                         | 1.7E-03 | m  |
| 1,2-Dibromoethane  | 106-93-4   | 2.0E+00                           | i                 | 9.0E-03 | i   | 6.0E-04 | i                           | 9.0E-03 | i   | 1 |       | 1                              | 4.0E-02                         | ca                               | 2.0E+00                    | ca                     | 5.0E-02           | m                         | 2.8E-04 | m  |
| Dibutyl phthalate  | 84-74-2    |                                   |                   | 1.0E-01 | i   |         |                             |         | 0   |   | 0.10  | 1                              | 1.5E+03                         | nc                               | 6.2E+04                    | nc                     | 6.0E+00           | m                         | 3.0E-01 | m  |
| Dicamba  | 1918-00-9  |                                   |                   | 3.0E-02 | i   |         |                             |         | 0   | S | 0.10  | 1                              | 4.6E+02                         | nc                               | 1.8E+04                    | nc                     | 2.7E+02           | nc                        | 1.4E+00 | nc |
| 1,2-Dichlorobenzene  | 95-50-1    |                                   |                   | 9.0E-02 | i   |         | 2.0E-01                     | h       | 1   |   |       | 1                              | 5.4E+02                         | nc                               | 1.2E+04                    | nc                     | 6.0E+02           | m                         | 1.2E+01 | m  |
| 1,4-Dichlorobenzene  | 106-46-7   | 5.4E-03                           | c                 | 7.0E-02 | a   | 1.1E-05 | c                           | 8.0E-01 | i   | 1 | S     | 1                              | 2.9E+00                         | ca                               | 1.5E+02                    | ca                     | 7.5E+01           | m                         | 1.4E+00 | m  |
| 3,3-Dichlorobenzidine  | 91-94-1    | 4.5E-01                           | i                 |         |   | 3.4E-04 | c                           |         | 0   | S | 0.10  | 1                              | 1.1E+00                         | ca                               | 3.8E+01                    | ca                     | 1.4E-01           | ca                        | 1.8E-02 | ca |
| 4,4'-Dichlorobenzophenone  | 90-98-2    |                                   |                   | 9.0E-03 | x   |         |                             |         | 0   |   | 0.10  | 1                              | 1.4E+02                         | nc                               | 5.5E+03                    | nc                     | 8.2E+01           | nc                        | 1.0E+01 | nc |

# NDEQ VCP REMEDIATION GOALS

## TABLE 1 - DIRECT CONTACT EXPOSURE PATHWAYS

| Key : SFO = Oral Slope Factor; RfDo = Oral Reference Dose; IUR = Inhalation Unit Risk; RfC = Inhalation Reference Concentration; i = IRIS; h = HEAST; n = NCEA; x = Withdrawn (reference for value provided); o = Other EPA Source (reference for value provided); p = NCEA PPRTV; R3 = EPA Region 3 RBC Table; R6 = EPA Region 6 MSSL Table; R9 = EPA Region 9 PRG Table; ca = Cancer VCP RG; nc = Noncancer VCP RG; m = MCL-based; s = solubility; sat = Soil Saturation; max = Ceiling limit; DAF = Dilution Attenuation Factor; CAS = Chemical Abstract Services; +++ = Non-Standard Method Applied; see Notes section at bottom of table and Appendix A, Protocol for VCP Remediation Goal Lookup Tables, Nebraska Voluntary Cleanup Program for more information |            |                                   |                   |   |                             |             |              |                                |                                 |                                  |                            |                             |                   |                              |         |         |         |         |         |         |   |
|--|------------|-----------------------------------|-------------------|---|-----------------------------|-------------|--------------|--------------------------------|---------------------------------|----------------------------------|----------------------------|-----------------------------|-------------------|------------------------------|---------|---------|---------|---------|---------|---------|---|
| CONTAMINANT  |            | TOXICITY INFORMATION <sup>1</sup> |                   |   |                             |             |              |                                |                                 |                                  |                            | VCP REMEDIATION GOALS (RGs) |                   |                              |         |         |         |         |         |         |   |
|  | CAS No.    | SFO<br>(mg/kg-d) <sup>-1</sup>    | RfDo<br>(mg/kg-d) | IUR<br>(µg/m <sup>3</sup> ) <sup>-1</sup> | RfC<br>(mg/m <sup>3</sup> ) | V<br>O<br>C | S =<br>solid | ABS <sub>d</sub><br>(unitless) | ABS <sub>GI</sub><br>(unitless) | Direct Contact Exposure Pathways |                            |                             |                   | Migration to<br>Ground Water |         |         |         |         |         |         |   |
|  |            |                                   |                   |   |                             |             |              |                                |                                 | Residential<br>Soil (mg/kg)      | Industrial<br>Soil (mg/kg) | Ground Water<br>(ug/l)      | DAF 20<br>(mg/kg) |                              |         |         |         |         |         |         |   |
| 1,4-Dichloro-2-butene  | 764-41-0   |                                   |                   | 4.2E-03                                   | p                           |             |              |                                | 1                               | 7.8E-03                          | ca                         | 3.9E-01                     | ca                | 1.2E-03                      | ca      | 1.1E-05 | ca      |         |         |         |   |
| Dichlorodifluoromethane  | 75-71-8    |                                   | 2.0E-01           | i   |                             | h           | 1            |                                | 1                               | 5.5E+01                          | nc                         | 9.3E+02                     | nc                | 9.8E+01                      | nc      | 3.0E+00 | nc      |         |         |         |   |
| 1,1-Dichloroethane   | 75-34-3    | 5.7E-03                           | c                 | 2.0E-01                                   | p                           |             |              |                                | 1                               | 3.9E+00                          | ca                         | 2.0E+02                     | ca                | 2.4E+00                      | ca      | 1.4E-02 | ca      |         |         |         |   |
| 1,2-Dichloroethane   | 107-06-2   | 9.1E-02                           | i                 | 2.0E-02                                   | p                           |             | 2.4E+00      | a                              | 1                               | 5.1E-01                          | ca                         | 2.5E+01                     | ca                | 5.0E+00                      | m       | 2.8E-02 | m       |         |         |         |   |
| 1,1-Dichloroethylene   | 75-35-4    |                                   | 5.0E-02           | i   |                             |             | 2.0E-01      | i                              | 1                               | 7.2E+01                          | nc                         | 1.3E+03                     | nc                | 7.0E+00                      | m       | 5.0E-02 | m       |         |         |         |   |
| 1,2-Dichloroethylene (cis)   | 156-59-2   |                                   | 1.0E-02           | p   |                             |             |              | 1                              | 1                               | 2.0E+02                          | nc                         | 1.0E+04                     | nc                | 7.0E+01                      | m       | 4.1E-01 | m       |         |         |         |   |
| 1,2-Dichloroethylene (trans)   | 156-60-5   |                                   | 2.0E-02           | i   |                             |             | 6.0E-02      | p                              | 1                               | 4.5E+01                          | nc                         | 8.1E+02                     | nc                | 1.0E+02                      | m       | 5.9E-01 | m       |         |         |         |   |
| 2,4-Dichlorophenol   | 120-83-2   |                                   | 3.0E-03           | i   |                             |             |              | 0                              | S                               | 0.10                             | 1                          | 4.6E+01                     | nc                | 1.8E+03                      | nc      | 2.0E+01 | nc      | 4.7E-01 | nc      |         |   |
| 4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)   | 94-82-6    |                                   | 8.0E-03           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 1.2E+02                     | nc                | 4.9E+03                      | nc      | 7.3E+01 | nc      | 5.8E-01 | nc      |         |   |
| 2,4-Dichlorophenoxyacetic Acid (2,4-D)   | 94-75-7    |                                   | 1.0E-02           | i   |                             |             |              | 0                              | S                               | 0.05                             | 1                          | 1.7E+02                     | nc                | 7.7E+03                      | nc      | 7.0E+01 | m       | 3.6E-01 | m       |         |   |
| 1,2-Dichloropropane  | 78-87-5    | 3.6E-02                           | c                 | 9.0E-02                                   | a                           | 1.0E-05     | c            | 4.0E-03                        | i                               | 1                                | 1                          | 1.1E+00                     | ca                | 5.3E+01                      | ca      | 5.0E+00 | m       | 3.3E-02 | m       |         |   |
| 1,3-Dichloropropene  | 542-75-6   | 1.0E-01                           | i                 | 3.0E-02                                   | i                           | 4.0E-06     | i            | 2.0E-02                        | i                               | 1                                | 1                          | 2.0E+00                     | ca                | 9.5E+01                      | ca      | 4.3E-01 | ca      | 3.1E-03 | ca      |         |   |
| 2,3-Dichloropropanol   | 616-23-9   |                                   | 3.0E-03           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 4.6E+01                     | nc                | 1.8E+03                      | nc      | 2.7E+01 | nc      | 1.2E-01 | nc      |         |   |
| Dichlorvos   | 62-73-7    | 2.9E-01                           | i                 | 5.0E-04                                   | i                           | 8.3E-05     | ##           | 5.0E-04                        | i                               | 0                                | 0.10                       | 1                           | 1.7E+00           | ca                           | 5.9E+01 | ca      | 2.3E-01 | ca      | 1.4E-03 | ca      |   |
| Dicyclopentadiene  | 77-73-6    |                                   | 8.0E-03           | p   |                             |             | 7.0E-03      | p                              | 1                               |                                  |                            | 1                           | 8.0E+00           | nc                           | 1.4E+02 | nc      | 3.5E+00 | nc      | 2.4E-01 | nc      |   |
| Dieldrin   | 60-57-1    | 1.6E+01                           | i                 | 5.0E-05                                   | i                           | 4.6E-03     | i            |                                | 0                               | S                                | 0.10                       | 1                           | 3.0E-02           | ca                           | 1.1E+00 | ca      | 3.6E-03 | ca      | 2.9E-03 | ca      |   |
| Diethylene glycol, monobutyl ether   | 112-34-5   |                                   | 3.0E-02           | p   |                             |             | 1.0E-04      | p                              | 0                               | 0.10                             | 1                          | 4.5E+02                     | nc                | 1.8E+04                      | nc      | 2.7E+02 | nc      | 1.2E+00 | nc      |         |   |
| Diethylene glycol, monoethyl ether   | 111-90-0   |                                   | 6.0E-02           | p   |                             |             | 3.0E-04      | p                              | 0                               | 0.10                             | 1                          | 9.1E+02                     | nc                | 3.6E+04                      | nc      | 5.5E+02 | nc      | 2.2E+00 | nc      |         |   |
| Diethylformamide   | 617-84-5   |                                   | 1.0E-03           | p   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 1.5E+01                     | nc                | 6.2E+02                      | nc      | 9.1E+00 | nc      | 3.7E-02 | nc      |         |   |
| Di(2-ethylhexyl)adipate  | 103-23-1   | 1.2E-03                           | i                 | 6.0E-01                                   | i                           |             |              | 0                              |                                 | 0.10                             | 1                          | 4.0E+02                     | ca                | 1.4E+04                      | ca      | 4.0E+02 | m       | 5.8E+02 | m       |         |   |
| Diethyl phthalate  | 84-66-2    |                                   | 8.0E-01           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 1.2E+04                     | nc                | 1.0E+05                      | max     | 6.0E+00 | m       | 4.9E-02 | m       |         |   |
| Diethylstilbestrol   | 56-53-1    | 3.5E+02                           | c                 |   | 1.0E-01                     | c           |              | 0                              | S                               | 0.10                             | 1                          | 1.4E-03                     | ca                | 4.9E-02                      | ca      | 1.9E-04 | ca      | 2.1E-03 | ca      |         |   |
| Difenzoquat (Avenge)   | 43222-48-6 |                                   | 8.0E-02           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 1.2E+03                     | nc                | 4.9E+04                      | nc      | 7.3E+02 | nc      |         |         |         |   |
| Diflubenzuron  | 35367-38-5 |                                   | 2.0E-02           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 3.1E+02                     | nc                | 1.2E+04                      | nc      | 8.0E+01 | s       | 4.1E+00 | nc      |         |   |
| 1,1-Difluoroethane   | 75-37-6    |                                   |                   |   |                             | 4.0E+01     | i            | 1                              |                                 |                                  | 1                          | 1.6E+04                     | nc                | 1.0E+05                      | max     | 2.1E+04 | nc      | 1.4E+02 | nc      |         |   |
| Diisopropyl methylphosphonate  | 1445-75-6  |                                   | 8.0E-02           | i   |                             |             |              | 1                              |                                 |                                  | 1                          | 1.6E+03                     | nc                | 8.2E+04                      | nc      | 7.3E+02 | nc      | 4.2E+00 | nc      |         |   |
| Dimethipin   | 55290-64-7 |                                   | 2.0E-02           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 3.1E+02                     | nc                | 1.2E+04                      | nc      | 1.8E+02 | nc      | 8.0E-01 | nc      |         |   |
| Dimethoate   | 60-51-5    |                                   | 2.0E-04           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 3.1E+00                     | nc                | 1.2E+02                      | nc      | 1.8E+00 | nc      | 8.2E-03 | nc      |         |   |
| 3,3'-Dimethoxybenzidine  | 119-90-4   | 1.4E-02                           | h                 |   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 3.5E+01                     | ca                | 1.2E+03                      | ca      | 4.8E+00 | ca      | 1.2E-01 | ca      |         |   |
| N,N-Dimethylaniline  | 121-69-7   |                                   | 2.0E-03           | i   |                             |             |              | 1                              |                                 |                                  | 1                          | 3.9E+01                     | nc                | 2.0E+03                      | nc      | 1.8E+01 | nc      | 1.3E-01 | nc      |         |   |
| 2,4-Dimethylaniline  | 95-68-1    | 7.5E-01                           | h                 |   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 6.5E-01                     | ca                | 2.3E+01                      | ca      | 9.0E-02 | ca      | 1.0E-03 | ca      |         |   |
| 2,4-Dimethylaniline hydrochloride  | 21436-96-4 | 5.8E-01                           | h                 |   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 8.4E-01                     | ca                | 3.0E+01                      | ca      | 1.2E-01 | ca      | 1.3E-03 | ca      |         |   |
| 3,3'-Dimethylbenzidine   | 119-93-7   | 1.1E+01                           | p                 |   |                             |             |              | 0                              | S                               | 0.10                             | 1                          | 4.4E-02                     | ca                | 1.6E+00                      | ca      | 6.1E-03 | ca      | 8.0E-04 | ca      |         |   |
| N,N-Dimethylformamide  | 68-12-2    |                                   | 1.0E-01           | h   |                             | 3.0E-02     | i            | 0                              |                                 | 0.10                             | 1                          | 1.5E+03                     | nc                | 6.2E+04                      | nc      | 9.1E+02 | nc      | 3.7E+00 | nc      |         |   |
| 2,4-Dimethylphenol   | 105-67-9   |                                   | 2.0E-02           | i   |                             |             |              | 0                              | S                               | 0.10                             | 1                          | 3.1E+02                     | nc                | 1.2E+04                      | nc      | 1.6E+02 | nc      | 3.8E+00 | nc      |         |   |
| 2,6-Dimethylphenol   | 576-26-1   |                                   | 6.0E-04           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 9.2E+00                     | nc                | 3.7E+02                      | nc      | 5.5E+00 | nc      | 1.3E-01 | nc      |         |   |
| 3,4-Dimethylphenol   | 95-65-8    |                                   | 1.0E-03           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 1.5E+01                     | nc                | 6.2E+02                      | nc      | 8.1E+00 | nc      | 1.9E-01 | nc      |         |   |
| Dimethyl terephthalate   | 120-61-6   |                                   | 1.0E-01           | i   |                             |             |              | 1                              |                                 |                                  | 1                          | 2.0E+03                     | nc                | 1.0E+05                      | max     | 6.0E+00 | m       | 3.1E-02 | m       |         |   |
| 4,6-Dinitro-o-cyclohexyl phenol  | 131-89-5   |                                   | 2.0E-03           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 3.1E+01                     | nc                | 1.2E+03                      | nc      | 1.8E+01 | nc      | 1.2E+01 | nc      |         |   |
| 1,2-Dinitrobenzene   | 528-29-0   |                                   | 1.0E-04           | p   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 1.5E+00                     | nc                | 6.2E+01                      | nc      | 9.1E-01 | nc      | 1.7E-02 | nc      |         |   |
| 1,3-Dinitrobenzene   | 99-65-0    |                                   | 1.0E-04           | i   |                             |             |              | 0                              | S                               | 0.10                             | 1                          | 1.5E+00                     | nc                | 6.2E+01                      | nc      | 9.1E-01 | nc      | 1.6E-02 | nc      |         |   |
| 1,4-Dinitrobenzene   | 100-25-4   |                                   | 1.0E-04           | p   |                             |             |              | 0                              | S                               | 0.10                             | 1                          | 1.5E+00                     | nc                | 6.2E+01                      | nc      | 9.1E-01 | nc      | 1.6E-02 | nc      |         |   |
| 2,4-Dinitrophenol  | 51-28-5    |                                   | 2.0E-03           | i   |                             |             |              | 0                              | S                               | 0.10                             | 1                          | 3.1E+01                     | nc                | 1.2E+03                      | nc      | 1.8E+01 | nc      | 4.1E-01 | nc      |         |   |
| Dinitrotoluene mixture   | 25321-14-6 | 6.8E-01                           | i                 |   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 7.1E-01                     | ca                | 2.5E+01                      | ca      | 9.9E-02 | ca      | 2.7E-03 | ca      |         |   |
| 2,4-Dinitrotoluene   | 121-14-2   | 3.1E-01                           | c                 | 2.0E-03                                   | i                           | 8.9E-05     | c            |                                | 0                               | S                                | 0.10                       | 1                           | 1.6E+00           | ca                           | 5.6E+01 | ca      | 2.2E-01 | ca      | 5.9E-03 | ca      |   |
| 2,6-Dinitrotoluene   | 606-20-2   |                                   | 1.0E-03           | p   |                             |             |              | 0                              | S                               | 0.10                             | 1                          | 1.5E+01                     | nc                | 6.2E+02                      | nc      | 9.1E+00 | nc      | 2.5E-01 | nc      |         |   |
| Dinoseb  | 88-85-7    |                                   | 1.0E-03           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 1.5E+01                     | nc                | 6.2E+02                      | nc      | 7.0E+00 | m       | 1.2E+00 | m       |         |   |
| 1,4-Dioxane  | 123-91-1   | 1.1E-02                           | i                 | 1.0E-01                                   | a                           | 7.7E-06     | c            | 3.6E+00                        | a                               | 0                                | 0.10                       | 1                           | 4.4E+01           | ca                           | 1.6E+03 | ca      | 6.1E+00 | ca      | 2.5E-02 | ca      |   |
| Dioxin (2,3,7,8-TCDD)  | 1746-01-6  | 1.3E+05                           | h                 | 1.0E-09                                   | a                           | 3.8E+01     | c            | 4.0E-08                        | c                               | 0                                | S                          | 0.03                        | 1                 | 4.5E-06                      | ca      | 1.8E-04 | ca      | 3.0E-05 | m       | 3.0E-04 | m |
| Diphenamid   | 957-51-7   |                                   | 3.0E-02           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 4.6E+02                     | nc                | 1.8E+04                      | nc      | 2.7E+02 | nc      | 5.4E+01 | nc      |         |   |
| Diphenylamine  | 122-39-4   |                                   | 2.5E-02           | i   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 3.8E+02                     | nc                | 1.5E+04                      | nc      | 2.3E+02 | nc      | 8.4E+00 | nc      |         |   |
| N,N-Diphenyl-1,4 benzenediamine (DPPD)   | 74-31-7    |                                   | 3.0E-04           | x   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 4.6E+00                     | nc                | 1.8E+02                      | nc      | 2.7E+00 | nc      | 5.7E+00 | nc      |         |   |
| 1,2-Diphenylhydrazine  | 122-66-7   | 8.0E-01                           | i                 |   | 2.2E-04                     | i           |              | 0                              |                                 | 0.10                             | 1                          | 6.1E-01                     | ca                | 2.2E+01                      | ca      | 8.0E-02 | ca      | 5.1E-03 | ca      |         |   |
| Diphenyl sulfone   | 127-63-9   |                                   | 8.0E-04           | x   |                             |             |              | 0                              |                                 | 0.10                             | 1                          | 1.2E+01                     | nc                | 4.9E+02                      | nc      | 7.3E+00 | nc      | 3.5E-01 | nc      |         |   |

# NDEQ VCP REMEDIATION GOALS

## TABLE 1 - DIRECT CONTACT EXPOSURE PATHWAYS

| Key : SFo = Oral Slope Factor; RfDo = Oral Reference Dose; IUR = Inhalation Unit Risk; RfC = Inhalation Reference Concentration; i = IRIS; h = HEAST; n = NCEA; x = Withdrawn (reference for value provided); o = Other EPA Source (reference for value provided); p = NCEA PPRTV; R3 = EPA Region 3 RBC Table; R6 = EPA Region 6 MSSL Table; R9 = EPA Region 9 PRG Table; ca = Cancer VCP RG; nc = Noncancer VCP RG; m = MCL-based; s = solubility; sat = Soil Saturation; max = Ceiling limit; DAF = Dilution Attenuation Factor; CAS = Chemical Abstract Services; +++ = Non-Standard Method Applied; see Notes section at bottom of table and Appendix A, Protocol for VCP Remediation Goal Lookup Tables, Nebraska Voluntary Cleanup Program for more information |             |                                   |                   |   |                             |         |          |                           |                                 |                                 |                                  |                             |                        |                   |                              |    |         |    |  |
|--|-------------|-----------------------------------|-------------------|---|-----------------------------|---------|----------|---------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------|------------------------|-------------------|------------------------------|----|---------|----|--|
| CONTAMINANT  |             | TOXICITY INFORMATION <sup>1</sup> |                   |   |                             |         |          |                           |                                 |                                 |                                  | VCP REMEDIATION GOALS (RGs) |                        |                   |                              |    |         |    |  |
|  | CAS No.     | SFo<br>(mg/kg-d) <sup>-1</sup>    | RfDo<br>(mg/kg-d) | IUR<br>(µg/m <sup>3</sup> ) <sup>-1</sup> | RfC<br>(mg/m <sup>3</sup> ) | V<br>O  | S =<br>C | ABS <sub>d</sub><br>solid | ABS <sub>GI</sub><br>(unitless) | ABS <sub>GI</sub><br>(unitless) | Direct Contact Exposure Pathways |                             |                        |                   | Migration to<br>Ground Water |    |         |    |  |
|  |             |                                   |                   |   |                             |         |          |                           |                                 |                                 | Residential<br>Soil (mg/kg)      | Industrial<br>Soil (mg/kg)  | Ground Water<br>(ug/l) | DAF 20<br>(mg/kg) |                              |    |         |    |  |
| Diquat   | 85-00-7     |                                   | 2.2E-03           | i   |                             | 0       |          | 0.10                      | 1                               |                                 | 3.4E+01                          | nc                          | 1.4E+03                | nc                | 2.0E+01                      | m  | 7.5E+00 | m  |  |
| Direct black 38  | 1937-37-7   | 7.4E+00                           | c                 |   | 2.1E-03                     | c       |          | 0.10                      | 1                               |                                 | 6.6E-02                          | ca                          | 2.3E+00                | ca                | 9.1E-03                      | ca | 8.8E+01 | ca |  |
| Direct blue 6  | 2602-46-2   | 7.4E+00                           | c                 |   | 2.1E-03                     | c       |          | 0.10                      | 1                               |                                 | 6.6E-02                          | ca                          | 2.3E+00                | ca                | 8.2E-04                      | s  | 2.9E+02 | ca |  |
| Direct brown 95  | 16071-86-6  | 6.7E+00                           | c                 |   | 1.9E-03                     | c       |          | 0.10                      | 1                               |                                 | 7.2E-02                          | ca                          | 2.6E+00                | ca                | 9.7E-04                      | s  |         |    |  |
| Disulfoton   | 298-04-4    |                                   | 4.0E-05           | i   |                             | 0       |          | 0.10                      | 1                               |                                 | 6.1E-01                          | nc                          | 2.5E+01                | nc                | 3.7E-01                      | nc | 1.4E-02 | nc |  |
| 1,4-Dithiane   | 505-29-3    |                                   | 1.0E-02           | i   |                             | 1       |          |                           | 1                               |                                 | 2.0E+02                          | nc                          | 1.0E+04                | nc                | 9.1E+01                      | nc | 9.0E-01 | nc |  |
| Diuron   | 330-54-1    |                                   | 2.0E-03           | i   |                             | 0       |          | 0.10                      | 1                               |                                 | 3.1E+01                          | nc                          | 1.2E+03                | nc                | 1.8E+01                      | nc | 1.5E-01 | nc |  |
| Dodine   | 2439-10-3   |                                   | 4.0E-03           | i   |                             | 0       |          | 0.10                      | 1                               |                                 | 6.1E+01                          | nc                          | 2.5E+03                | nc                | 3.7E+01                      | nc | 3.8E+00 | nc |  |
| Endosulfan   | 115-29-7    |                                   | 6.0E-03           | i   |                             | 0       | S        | 0.10                      | 1                               |                                 | 9.2E+01                          | nc                          | 3.7E+03                | nc                | 5.5E+01                      | nc | 1.5E+01 | nc |  |
| Endothall  | 145-73-3    |                                   | 2.0E-02           | i   |                             | 0       | S        | 0.10                      | 1                               |                                 | 3.1E+02                          | nc                          | 1.2E+04                | nc                | 1.0E+02                      | m  | 4.8E-01 | m  |  |
| Endrin   | 72-20-8     |                                   | 3.0E-04           | i   |                             | 0       | S        | 0.10                      | 1                               |                                 | 4.6E+00                          | nc                          | 1.8E+02                | nc                | 2.0E+00                      | m  | 1.6E+00 | m  |  |
| Epichlorohydrin  | 106-89-8    | 9.9E-03                           | i                 | 6.0E-03                                   | p                           | 1.2E-06 | i        | 1.0E-03                   | i                               | 1                               | 6.0E+00                          | nc                          | 1.0E+02                | nc                | 5.2E-01                      | nc | 2.3E-03 | nc |  |
| 1,2-Epoxybutane  | 106-88-7    |                                   |                   |   |                             | 2.0E-02 | i        | 1                         |                                 | 1                               | 5.1E+01                          | nc                          | 8.6E+02                | nc                | 1.0E+01                      | nc | 4.6E-02 | nc |  |
| EPTC (S-Ethyl dipropylthiocarbamate)   | 759-94-4    |                                   | 2.5E-02           | i   |                             |         | 1        |                           | 1                               |                                 | 4.9E+02                          | nc                          | 2.6E+04                | nc                | 2.3E+02                      | nc | 2.4E+00 | nc |  |
| Ethephon (2-chloroethyl phosphonic acid)   | 16672-87-0  |                                   | 5.0E-03           | i   |                             | 0       |          | 0.10                      | 1                               |                                 | 7.6E+01                          | nc                          | 3.1E+03                | nc                | 4.6E+01                      | nc | 1.9E-01 | nc |  |
| Ethion   | 563-12-2    |                                   | 5.0E-04           | i   |                             | 0       |          | 0.10                      | 1                               |                                 | 7.6E+00                          | nc                          | 3.1E+02                | nc                | 4.6E+00                      | nc | 1.8E-01 | nc |  |
| 2-Ethoxyethanol  | 110-80-5    |                                   | 4.0E-01           | h   |                             | 2.0E-01 | i        | 0.10                      | 1                               |                                 | 6.1E+03                          | nc                          | 1.0E+05                | max               | 3.7E+03                      | nc | 1.5E+01 | nc |  |
| 2-Ethoxyethanol acetate  | 111-15-9    |                                   | 3.0E-01           | h   |                             | 3.0E-01 | c        | 0.10                      | 1                               |                                 | 4.6E+03                          | nc                          | 1.0E+05                | max               | 2.7E+03                      | nc | 1.1E+01 | nc |  |
| Ethyl acetate  | 141-78-6    |                                   | 9.0E-01           | i   |                             |         | 1        |                           | 1                               |                                 | 1.8E+04                          | nc                          | 1.0E+05                | max               | 8.2E+03                      | nc | 3.5E+01 | nc |  |
| Ethyl acrylate   | 140-88-5    | 4.8E-02                           | h                 |   |                             |         | 1        |                           | 1                               |                                 | 1.3E+01                          | ca                          | 6.0E+02                | ca                | 1.4E+00                      | ca | 6.2E-03 | ca |  |
| Ethylbenzene   | 100-41-4    | 1.1E-02                           | c                 | 1.0E-01                                   | i                           | 2.5E-06 | c        | 1.0E+00                   | i                               | 1                               | 6.3E+00                          | ca                          | 3.2E+02                | ca                | 7.0E+02                      | m  | 1.6E+01 | m  |  |
| Ethyl chloride   | 75-00-3     |                                   |                   |   |                             | 1.0E+01 | i        | 1                         |                                 | 1                               | 4.4E+03                          | nc                          | 7.4E+04                | nc                | 5.2E+03                      | nc | 3.0E+01 | nc |  |
| Ethylene cyanohydrin   | 109-78-4    |                                   | 3.0E-02           | p   |                             |         | 0        | 0.10                      | 1                               |                                 | 4.6E+02                          | nc                          | 1.8E+04                | nc                | 2.7E+02                      | nc | 1.1E+00 | nc |  |
| Ethylene diamine   | 107-15-3    |                                   | 9.0E-02           | p   |                             |         | 0        | 0.10                      | 1                               |                                 | 1.4E+03                          | nc                          | 5.5E+04                | nc                | 8.2E+02                      | nc | 3.8E+00 | nc |  |
| Ethylene glycol  | 107-21-1    |                                   | 2.0E+00           | i   |                             | 4.0E-01 | c        | 0.10                      | 1                               |                                 | 3.1E+04                          | nc                          | 1.0E+05                | max               | 1.8E+04                      | nc | 7.4E+01 | nc |  |
| Ethylene glycol, monobutyl ether   | 111-76-2    |                                   | 1.0E-01           | i   |                             | 1.6E+00 | i        | 0.10                      | 1                               |                                 | 1.5E+03                          | nc                          | 6.2E+04                | nc                | 9.1E+02                      | nc | 3.8E+00 | nc |  |
| Ethylene oxide   | 75-21-8     | 3.1E-01                           | c                 |   | 8.8E-05                     | c       | 3.0E-02  | c                         | 1                               |                                 | 2.0E-01                          | ca                          | 9.9E+00                | ca                | 4.4E-02                      | ca | 1.8E-04 | ca |  |
| Ethylene thiourea (ETU)  | 96-45-7     | 4.5E-02                           | c                 | 8.0E-05                                   | i                           | 1.3E-05 | c        |                           | S                               | 0.10                            | 1.2E+00                          | nc                          | 4.9E+01                | nc                | 7.3E-01                      | nc | 3.3E-03 | nc |  |
| Ethyl ether  | 60-29-7     |                                   | 2.0E-01           | i   |                             |         | 1        |                           |                                 | 1                               | 3.9E+03                          | nc                          | 1.0E+05                | max               | 1.8E+03                      | nc | 8.2E+00 | nc |  |
| Ethyl methacrylate   | 97-63-2     |                                   | 9.0E-02           | h   |                             |         | 1        |                           |                                 | 1                               | 1.8E+03                          | nc                          | 9.2E+04                | nc                | 8.2E+02                      | nc | 3.9E+00 | nc |  |
| Ethyl p-nitrophenyl phenylphosphorothioate   | 2104-64-5   |                                   | 1.0E-05           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 1.5E-01                          | nc                          | 6.2E+00                | nc                | 9.1E-02                      | nc | 5.7E-02 | nc |  |
| Ethylphthalyl ethyl glycolate  | 84-72-0     |                                   | 3.0E+00           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 4.6E+04                          | nc                          | 1.0E+05                | max               | 2.7E+04                      | nc | 1.2E+03 | nc |  |
| Express  | 101200-48-0 |                                   | 8.0E-03           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 1.2E+02                          | nc                          | 4.9E+03                | nc                | 7.3E+01                      | nc | 5.7E-01 | nc |  |
| Fenamiphos   | 22224-92-6  |                                   | 2.5E-04           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 3.8E+00                          | nc                          | 1.5E+02                | nc                | 2.3E+00                      | nc | 4.5E-02 | nc |  |
| Fluometuron  | 2164-17-2   |                                   | 1.3E-02           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 2.0E+02                          | nc                          | 8.0E+03                | nc                | 1.2E+02                      | nc | 1.8E+00 | nc |  |
| Fluoride   | 16984-48-8  |                                   | 4.0E-02           | c   |                             | 1.3E-02 | c        | 0                         |                                 | 1                               | 7.8E+02                          | nc                          | 4.1E+04                | nc                | 1.7E+03                      | s  |         |    |  |
| Fluoridone   | 59756-60-4  |                                   | 8.0E-02           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 1.2E+03                          | nc                          | 4.9E+04                | nc                | 7.3E+02                      | nc | 1.7E+03 | nc |  |
| Flurprimidol   | 56425-91-3  |                                   | 2.0E-02           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 3.1E+02                          | nc                          | 1.2E+04                | nc                | 1.8E+02                      | nc | 1.7E+01 | nc |  |
| Flutolanil   | 66332-96-5  |                                   | 6.0E-02           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 9.2E+02                          | nc                          | 3.7E+04                | nc                | 5.5E+02                      | nc | 5.8E+01 | nc |  |
| Fluvalinate  | 69409-94-5  |                                   | 1.0E-02           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 1.5E+02                          | nc                          | 6.2E+03                | nc                | 5.0E+00                      | s  | 2.7E+03 | nc |  |
| Folpet   | 133-07-3    | 3.5E-03                           | i                 | 1.0E-01                                   | i                           |         | 0        | 0.10                      | 1                               |                                 | 1.4E+02                          | ca                          | 4.9E+03                | ca                | 1.9E+01                      | ca | 9.0E-02 | ca |  |
| Fomesafen  | 72178-02-0  | 1.9E-01                           | i                 |   |                             |         | 0        | 0.10                      | 1                               |                                 | 2.6E+00                          | ca                          | 9.1E+01                | ca                | 3.5E-01                      | ca | 2.3E-02 | ca |  |
| Fonofos  | 944-22-9    |                                   | 2.0E-03           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 3.1E+01                          | nc                          | 1.2E+03                | nc                | 1.8E+01                      | nc | 7.0E-01 | nc |  |
| Formaldehyde   | 50-00-0     |                                   | 2.0E-01           | i   | 1.3E-05                     | i       | 9.8E-03  | a                         | 0                               |                                 | 3.1E+03                          | nc                          | 1.0E+05                | max               | 1.8E+03                      | nc | 7.4E+00 | nc |  |
| Formic acid  | 64-18-6     |                                   | 2.0E+00           | h   |                             | 3.0E-03 | p        | 0                         | 0.10                            | 1                               | 3.0E+04                          | nc                          | 1.0E+05                | max               | 1.8E+04                      | nc | 7.4E+01 | nc |  |
| Fosetyl-al   | 39148-24-8  |                                   | 3.0E+00           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 4.6E+04                          | nc                          | 1.0E+05                | max               | 2.7E+04                      | nc |         |    |  |
| Freon 113  | 76-13-1     |                                   | 3.0E+01           | i   |                             | 3.0E+01 | h        | 1                         |                                 | 1                               | 1.3E+04                          | nc                          | 1.0E+05                | max               | 1.5E+04                      | nc | 7.5E+02 | nc |  |
| Furan  | 110-00-9    |                                   | 1.0E-03           | i   |                             |         | 1        |                           | 1                               |                                 | 2.0E+01                          | nc                          | 1.0E+03                | nc                | 9.1E+00                      | nc | 6.9E-02 | nc |  |
| Furazolidone   | 67-45-8     | 3.8E+00                           | h                 |   |                             |         | 0        | 0.10                      | 1                               |                                 | 1.3E-01                          | ca                          | 4.5E+00                | ca                | 1.8E-02                      | ca | 6.8E-04 | ca |  |
| Furfural   | 98-01-1     |                                   | 3.0E-03           | i   |                             | 5.0E-02 | h        | 0                         | 0.10                            | 1                               | 4.6E+01                          | nc                          | 1.8E+03                | nc                | 2.7E+01                      | nc | 1.2E-01 | nc |  |
| Furium   | 531-82-8    | 1.5E+00                           | c                 |   | 4.3E-04                     | c       | 0        | 0.10                      | 1                               |                                 | 3.2E-01                          | ca                          | 1.1E+01                | ca                | 4.5E-02                      | ca | 1.2E-03 | ca |  |
| Furmecyclox  | 60568-05-0  | 3.0E-02                           | i                 |   | 8.6E-06                     | c       | 0        | 0.10                      | 1                               |                                 | 1.6E+01                          | ca                          | 5.7E+02                | ca                | 2.2E+00                      | ca | 4.7E-02 | ca |  |
| Glufosinate-ammonium   | 77182-82-2  |                                   | 4.0E-04           | i   |                             |         | 0        | 0.10                      | 1                               |                                 | 6.1E+00                          | nc                          | 2.5E+02                | nc                | 3.7E+00                      | nc | 1.6E-02 | nc |  |
| Glycidaldehyde   | 765-34-4    |                                   | 4.0E-04           | i   |                             | 1.0E-03 | h        | 0                         | 0.10                            | 1                               | 6.1E+00                          | nc                          | 2.5E+02                | nc                | 3.7E+00                      | nc | 1.5E-02 | nc |  |

# NDEQ VCP REMEDIATION GOALS

## TABLE 1 - DIRECT CONTACT EXPOSURE PATHWAYS

| Key : SFO = Oral Slope Factor; RfDo = Oral Reference Dose; IUR = Inhalation Unit Risk; RfC = Inhalation Reference Concentration; i = IRIS; h = HEAST; n = NCEA; x = Withdrawn (reference for value provided); o = Other EPA Source (reference for value provided); p = NCEA PPRTV; R3 = EPA Region 3 RBC Table; R6 = EPA Region 6 MSSL Table; R9 = EPA Region 9 PRG Table; ca = Cancer VCP RG; nc = Noncancer VCP RG; m = MCL-based; s = solubility; sat = Soil Saturation; max = Ceiling limit; DAF = Dilution Attenuation Factor; CAS = Chemical Abstract Services; +++ = Non-Standard Method Applied; see Notes section at bottom of table and Appendix A, Protocol for VCP Remediation Goal Lookup Tables, Nebraska Voluntary Cleanup Program for more information |                                   |                                |                   |   |                             |         |                |                                |                                 |                                  |                             |                        |                   |         |         |                              |         |         |         |    |
|--|-----------------------------------|--------------------------------|-------------------|---|-----------------------------|---------|----------------|--------------------------------|---------------------------------|----------------------------------|-----------------------------|------------------------|-------------------|---------|---------|------------------------------|---------|---------|---------|----|
| CONTAMINANT  | TOXICITY INFORMATION <sup>1</sup> |                                |                   |   |                             |         |                |                                |                                 |                                  | VCP REMEDIATION GOALS (RGs) |                        |                   |         |         |                              |         |         |         |    |
|  | CAS No.                           | SFO<br>(mg/kg-d) <sup>-1</sup> | RfDo<br>(mg/kg-d) | IUR<br>(µg/m <sup>3</sup> ) <sup>-1</sup> | RfC<br>(mg/m <sup>3</sup> ) | V<br>O  | S =<br>C solid | ABS <sub>d</sub><br>(unitless) | ABS <sub>GI</sub><br>(unitless) | Direct Contact Exposure Pathways |                             |                        |                   |         |         | Migration to<br>Ground Water |         |         |         |    |
|  |                                   |                                |                   |   |                             |         |                |                                |                                 | Residential<br>Soil (mg/kg)      | Industrial<br>Soil (mg/kg)  | Ground Water<br>(ug/l) | DAF 20<br>(mg/kg) |         |         |                              |         |         |         |    |
|  |                                   |                                |                   |   |                             |         |                |                                |                                 |                                  |                             |                        |                   |         |         |                              |         |         |         |    |
| Glyphosate   | 1071-83-6                         |                                | 1.0E-01           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 1.5E+03                     | nc                     | 6.2E+04           | nc      | 7.0E+02 | m                            | 2.8E+00 | m       |         |    |
| Haloxfop-methyl  | 69806-40-2                        |                                | 5.0E-05           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 7.6E-01                     | nc                     | 3.1E+01           | nc      | 4.6E-01 | nc                           | 1.0E-01 | nc      |         |    |
| Harmony  | 79277-27-3                        |                                | 1.3E-02           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 2.0E+02                     | nc                     | 8.0E+03           | nc      | 1.2E+02 | nc                           | 7.2E-01 | nc      |         |    |
| Heptachlor   | 76-44-8                           | 4.5E+00                        | i                 | 5.0E-04                                   | i                           | 1.3E-03 | i              | 0                              | S                               | 0.10                             | 1                           | 1.1E-01                | ca                | 3.8E+00 | ca      | 4.0E-01                      | m       | 6.6E-01 | m       |    |
| Heptachlor epoxide   | 1024-57-3                         | 9.1E+00                        | i                 | 1.3E-05                                   | i                           | 2.6E-03 | i              | 0                              | S                               | 0.10                             | 1                           | 5.3E-02                | ca                | 1.9E+00 | ca      | 2.0E-01                      | m       | 8.2E-02 | m       |    |
| Hexabromobenzene   | 87-82-1                           |                                | 2.0E-03           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 3.1E+01                     | nc                     | 1.2E+03           | nc      | 1.6E-01 | s                            | 2.1E+00 | nc      |         |    |
| Hexachlorobenzene  | 118-74-1                          | 1.6E+00                        | i                 | 8.0E-04                                   | i                           | 4.6E-04 | i              | 0                              | S                               | 0.10                             | 1                           | 3.0E-01                | ca                | 1.1E+01 | ca      | 1.0E+00                      | m       | 2.5E-01 | m       |    |
| Hexachlorobutadiene  | 87-68-3                           | 7.8E-02                        | i                 | 1.0E-03                                   | p                           | 2.2E-05 | i              | 0                              |                                 | 0.10                             | 1                           | 6.2E+00                | ca                | 2.2E+02 | ca      | 5.7E-01                      | ca      | 2.2E-02 | ca      |    |
| HCH (alpha)  | 319-84-6                          | 6.3E+00                        | i                 | 8.0E-03                                   | a                           | 1.8E-03 | i              | 0                              | S                               | 0.10                             | 1                           | 7.7E-02                | ca                | 2.7E+00 | ca      | 1.1E-02                      | ca      | 1.2E-03 | ca      |    |
| HCH (beta)   | 319-85-7                          | 1.8E+00                        | i                 |   |                             | 5.3E-04 | i              | 0                              | S                               | 0.10                             | 1                           | 2.7E-01                | ca                | 9.6E+00 | ca      | 3.7E-02                      | ca      | 4.3E-03 | ca      |    |
| HCH (gamma) Lindane  | 58-89-9                           | 1.1E+00                        | c                 | 3.0E-04                                   | i                           | 3.1E-04 | c              | 0                              | S                               | 0.04                             | 1                           | 5.2E-01                | ca                | 2.1E+01 | ca      | 2.0E-01                      | m       | 2.3E-02 | m       |    |
| HCH-technical  | 608-73-1                          | 1.8E+00                        | i                 |   |                             | 1.5E-04 | i              | 0                              |                                 | 0.04                             | 1                           | 3.2E-01                | ca                | 1.3E+01 | ca      | 3.7E-02                      | ca      | 4.3E-03 | ca      |    |
| Hexachlorocyclopentadiene  | 77-47-4                           |                                | 6.0E-03           | i   |                             | 2.0E-04 | i              | 0                              |                                 | 0.10                             | 1                           | 9.2E+01                | nc                | 3.7E+03 | nc      | 5.0E+01                      | m       | 3.1E+00 | m       |    |
| Hexachloroethane   | 67-72-1                           | 1.4E-02                        | i                 | 1.0E-03                                   | i                           | 4.0E-06 | i              | 0                              | S                               | 0.10                             | 1                           | 1.5E+01                | nc                | 6.2E+02 | nc      | 4.1E+00                      | ca      | 4.9E-02 | ca      |    |
| Hexachlorophene  | 70-30-4                           |                                | 3.0E-04           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 4.6E+00                     | nc                     | 1.8E+02           | nc      | 2.7E+00 | nc                           | 7.3E+01 | nc      |         |    |
| Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)  | 121-82-4                          | 1.1E-01                        | i                 | 3.0E-03                                   | i                           |         | 0              |                                | 0.10                            | 1                                | 4.4E+00                     | ca                     | 1.6E+02           | ca      | 6.1E-01 | ca                           | 4.6E-03 | ca      |         |    |
| 1,6-Hexamethylene diisocyanate   | 822-06-0                          |                                |                   |   |                             | 1.0E-05 | i              | 1                              |                                 | 0.10                             | 1                           | 1.0E+00                | nc                | 1.7E+01 | nc      | 5.2E-03                      | nc      | 1.0E-03 | nc      |    |
| n-Hexane   | 110-54-3                          |                                | 6.0E-02           | h   |                             | 7.0E-01 | v              | 1                              |                                 |                                  | 1                           | 1.7E+02                | nc                | 3.1E+03 | nc      | 2.2E+02                      | nc      | 3.1E+01 | nc      |    |
| Hexazinone   | 51235-04-2                        |                                | 3.3E-02           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 5.0E+02                     | nc                     | 2.0E+04           | nc      | 3.0E+02 | nc                           | 2.8E+00 | nc      |         |    |
| Hydrazine, hydrazine sulfate   | 302-01-2                          | 3.0E+00                        | i                 |   | 4.9E-03                     | i       | 3.0E-05        | p                              | 0                               |                                  | 1                           | 2.1E-01                | ca                | 9.5E+00 | ca      | 2.2E-02                      | ca      |         |         |    |
| Hydrazine, dimethyl  | 57-14-7                           |                                | 1.0E-04           | x   |                             |         | 2.0E-06        | x                              | 0                               |                                  | 0.10                        | 1                      | 1.5E+00           | nc      | 6.1E+01 | nc                           | 9.1E-01 | nc      | 4.1E-03 | nc |
| Hydrogen chloride  | 7647-01-0                         |                                |                   |   |                             |         | 2.0E-02        | i                              | n/a                             |                                  |                             | 1                      |                   |         |         |                              |         |         |         |    |
| Hydrogen cyanide   | 74-90-8                           |                                | 2.0E-02           | i   |                             |         | 3.0E-03        | i                              | 1                               |                                  |                             | 1                      | 7.2E+00           | nc      | 1.2E+02 | nc                           | 1.6E+00 | nc      | 7.3E-03 | nc |
| Hydrogen sulfide   | 7783-06-4                         |                                |                   |   |                             |         | 2.0E-03        | i                              | n/a                             |                                  |                             | 1                      |                   |         |         |                              |         |         |         |    |
| p-Hydroquinone   | 123-31-9                          | 6.0E-02                        | p                 | 4.0E-02                                   | p                           |         |                | 0                              |                                 | 0.10                             | 1                           | 8.1E+00                | ca                | 2.9E+02 | ca      | 1.1E+00                      | ca      | 1.5E-02 | ca      |    |
| Imazalil   | 35554-44-0                        |                                | 1.3E-02           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 2.0E+02                     | nc                     | 8.0E+03           | nc      | 1.2E+02 | nc                           | 4.1E+01 | nc      |         |    |
| Imazaquin  | 81335-37-7                        |                                | 2.5E-01           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 3.8E+03                     | nc                     | 1.0E+05           | max     | 2.3E+03 | nc                           | 2.3E+02 | nc      |         |    |
| Iprodione  | 36734-19-7                        |                                | 4.0E-02           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 6.1E+02                     | nc                     | 2.5E+04           | nc      | 3.7E+02 | nc                           | 2.2E+00 | nc      |         |    |
| Iron   | 7439-89-6                         |                                | 7.0E-01           | p   |                             |         | 0              |                                |                                 | 1                                | 1.4E+04                     | nc                     | 1.0E+05           | max     | 3.0E+02 | m                            |         |         |         |    |
| Isobutanol   | 78-83-1                           |                                | 3.0E-01           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 4.6E+03                     | nc                     | 1.0E+05           | max     | 2.7E+03 | nc                           | 1.1E+01 | nc      |         |    |
| Isophorone   | 78-59-1                           | 9.5E-04                        | i                 | 2.0E-01                                   | i                           |         | 2.0E+00        | c                              | 0                               |                                  | 0.10                        | 1                      | 5.1E+02           | ca      | 1.8E+04 | ca                           | 7.1E+01 | ca      | 4.7E-01 | ca |
| Isopropalin  | 33820-53-0                        |                                | 1.5E-02           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 2.3E+02                     | nc                     | 9.2E+03           | nc      | 1.1E+02 | s                            | 6.3E+01 | nc      |         |    |
| Isopropyl methyl phosphonic acid   | 1832-54-8                         |                                | 1.0E-01           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 1.5E+03                     | nc                     | 6.2E+04           | nc      | 9.1E+02 | nc                           | 3.9E+00 | nc      |         |    |
| Isoxaben   | 82558-50-7                        |                                | 5.0E-02           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 7.6E+02                     | nc                     | 3.1E+04           | nc      | 4.6E+02 | nc                           | 2.5E+01 | nc      |         |    |
| Kepone   | 143-50-0                          | 1.0E+01                        | i                 | 3.0E-04                                   | i                           | 4.6E-03 | c              | 0                              | S                               | 0.10                             | 1                           | 4.9E-02                | ca                | 1.7E+00 | ca      | 6.7E-03                      | ca      | 4.7E-03 | ca      |    |
| Lactofen   | 77501-63-4                        |                                | 2.0E-03           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 3.1E+01                     | nc                     | 1.2E+03           | nc      | 1.8E+01 | nc                           | 1.7E+01 | nc      |         |    |
| Lead+++  | 7439-92-1                         |                                |                   |   |                             |         | n/a            |                                |                                 |                                  | 1                           | 4.0E+02                | nc                | 7.5E+02 | nc      | 1.5E+01                      | m       |         |         |    |
| Lead (tetraethyl)  | 78-00-2                           |                                | 1.0E-07           | i   |                             |         | 0              |                                |                                 | 1                                | 2.0E-03                     | nc                     | 1.0E-01           | nc      | 9.1E-04 | nc                           | 6.5E-05 | nc      |         |    |
| Linuron  | 330-55-2                          |                                | 2.0E-03           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 3.1E+01                     | nc                     | 1.2E+03           | nc      | 1.8E+01 | nc                           | 3.2E-01 | nc      |         |    |
| Lithium  | 7439-93-2                         |                                | 2.0E-03           | p   |                             |         | 0              |                                |                                 | 1                                | 3.9E+01                     | nc                     | 2.0E+03           | nc      | 1.8E+01 | nc                           |         |         |         |    |
| Londax   | 83055-99-6                        |                                | 2.0E-01           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 3.1E+03                     | nc                     | 1.0E+05           | max     | 1.8E+03 | nc                           | 9.3E+00 | nc      |         |    |
| Malathion  | 121-75-5                          |                                | 2.0E-02           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 3.1E+02                     | nc                     | 1.2E+04           | nc      | 1.8E+02 | nc                           | 9.6E-01 | nc      |         |    |
| Maleic anhydride   | 108-31-6                          |                                | 1.0E-01           | i   |                             |         | 7.0E-04        | c                              | 0                               | S                                | 0.10                        | 1                      | 1.5E+03           | nc      | 6.1E+04 | nc                           | 9.1E+02 | nc      | 3.7E+00 | nc |
| Maleic hydrazide   | 123-33-1                          |                                | 5.0E-01           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 7.6E+03                     | nc                     | 1.0E+05           | max     | 4.6E+03 | nc                           | 1.9E+01 | nc      |         |    |
| Malononitrile  | 109-77-3                          |                                | 1.0E-04           | p   |                             |         | 0              |                                | 0.10                            | 1                                | 1.5E+00                     | nc                     | 6.2E+01           | nc      | 9.1E-01 | nc                           | 3.8E-03 | nc      |         |    |
| Mancozeb   | 8018-01-7                         |                                | 3.0E-02           | h   |                             |         | 0              |                                | 0.10                            | 1                                | 4.6E+02                     | nc                     | 1.8E+04           | nc      | 2.7E+02 | nc                           | 7.8E+00 | nc      |         |    |
| Maneb  | 12427-38-2                        |                                | 5.0E-03           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 7.6E+01                     | nc                     | 3.1E+03           | nc      | 4.6E+01 | nc                           | 1.3E+00 | nc      |         |    |
| Manganese (non-food)+++  | 7439-96-5                         |                                | 2.4E-02           | i   |                             | 5.0E-05 | i              | 0                              |                                 | 0.04                             | 4.6E+02                     | nc                     | 2.2E+04           | nc      | 5.0E+01 | m                            |         |         |         |    |
| Mephosfolan  | 950-10-7                          |                                | 9.0E-05           | h   |                             |         | 0              |                                | 0.10                            | 1                                | 1.4E+00                     | nc                     | 5.5E+01           | nc      | 8.2E-01 | nc                           | 2.4E-02 | nc      |         |    |
| Mepiquat   | 24307-26-4                        |                                | 3.0E-02           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 4.6E+02                     | nc                     | 1.8E+04           | nc      | 2.7E+02 | nc                           | 1.8E+00 | nc      |         |    |
| Mercury and compounds  | 7487-94-7                         |                                | 3.0E-04           | i   |                             | 3.0E-05 | c              | n/a                            |                                 | 0.07                             | 5.9E+00                     | nc                     | 3.1E+02           | nc      | 2.0E+00 | m                            |         |         |         |    |
| Mercury (elemental)  | 7439-97-6                         |                                | 1.6E-04           | c   |                             | 3.0E-04 | i              | n/a                            |                                 | 1                                | 3.1E+00                     | nc                     | 1.6E+02           | nc      | 2.0E+00 | m                            |         |         |         |    |
| Mercury (methyl)   | 22967-92-6                        |                                | 1.0E-04           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 1.5E+00                     | nc                     | 6.2E+01           | nc      | 9.1E-01 | nc                           |         |         |         |    |
| Merphos  | 150-50-5                          |                                | 3.0E-05           | i   |                             |         | 0              |                                | 0.10                            | 1                                | 4.6E-01                     | nc                     | 1.8E+01           | nc      | 2.7E-01 | nc                           | 5.4E-01 | nc      |         |    |

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| Key : SFO = Oral Slope Factor; RfDo = Oral Reference Dose; IUR = Inhalation Unit Risk; RfC = Inhalation Reference Concentration; i = IRIS; h = HEAST; n = NCEA; x = Withdrawn (reference for value provided); o = Other EPA Source (reference for value provided); p = NCEA PPRTV; R3 = EPA Region 3 RBC Table; R6 = EPA Region 6 MSSL Table; R9 = EPA Region 9 PRG Table; ca = Cancer VCP RG; nc = Noncancer VCP RG; m = MCL-based; s = solubility; sat = Soil Saturation; max = Ceiling limit; DAF = Dilution Attenuation Factor; CAS = Chemical Abstract Services; +++ = Non-Standard Method Applied; see Notes section at bottom of table and Appendix A, Protocol for VCP Remediation Goal Lookup Tables, Nebraska Voluntary Cleanup Program for more information |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |    |
|--|-----------------------------------|--------------------------------|-------------------|---|-----------------------------|-------------|--------------|--------------------------------|---------------------------------|----------------------------------|-----------------------------|------------------------|-------------------|------------------------------|---------|---------|---------|----|
| CONTAMINANT  | TOXICITY INFORMATION <sup>1</sup> |                                |                   |   |                             |             |              |                                |                                 |                                  | VCP REMEDIATION GOALS (RGs) |                        |                   |                              |         |         |         |    |
|  | CAS No.                           | SFO<br>(mg/kg-d) <sup>-1</sup> | RfDo<br>(mg/kg-d) | IUR<br>(µg/m <sup>3</sup> ) <sup>-1</sup> | RfC<br>(mg/m <sup>3</sup> ) | V<br>O<br>C | S =<br>solid | ABS <sub>d</sub><br>(unitless) | ABS <sub>GI</sub><br>(unitless) | Direct Contact Exposure Pathways |                             |                        |                   | Migration to<br>Ground Water |         |         |         |    |
|  |                                   |                                |                   |   |                             |             |              |                                |                                 | Residential<br>Soil (mg/kg)      | Industrial<br>Soil (mg/kg)  | Ground Water<br>(ug/l) | DAF 20<br>(mg/kg) |                              |         |         |         |    |
| Merphos oxide  | 78-48-8                           |                                | 3.0E-05           | i   |                             | 0           |              | 0.10                           | 1                               | 4.6E-01                          | nc                          | 1.8E+01                | nc                | 2.7E-01                      | nc      | 2.7E-02 | nc      |    |
| Metalaxyl  | 57837-19-1                        |                                | 6.0E-02           | i   |                             | 0           |              | 0.10                           | 1                               | 9.2E+02                          | nc                          | 3.7E+04                | nc                | 5.5E+02                      | nc      | 3.0E+00 | nc      |    |
| Methacrylonitrile  | 126-98-7                          |                                | 1.0E-04           | i   | 7.0E-04                     | h           | 1            |                                | 1                               | 8.8E-01                          | nc                          | 2.1E+01                | nc                | 2.6E-01                      | nc      | 1.2E-03 | nc      |    |
| Methamidophos  | 10265-92-6                        |                                | 5.0E-05           | i   |                             | 0           |              | 0.10                           | 1                               | 7.6E-01                          | nc                          | 3.1E+01                | nc                | 4.6E-01                      | nc      | 1.9E-03 | nc      |    |
| Methanol   | 67-56-1                           |                                | 5.0E-01           | i   | 4.0E+00                     | c           | 0            | 0.10                           | 1                               | 7.6E+03                          | nc                          | 1.0E+05                | max               | 4.6E+03                      | nc      | 1.8E+01 | nc      |    |
| Methidathion   | 950-37-8                          |                                | 1.0E-03           | i   |                             | 0           |              | 0.10                           | 1                               | 1.5E+01                          | nc                          | 6.2E+02                | nc                | 9.1E+00                      | nc      | 4.4E-02 | nc      |    |
| Methomyl   | 16752-77-5                        |                                | 2.5E-02           | i   |                             | 0           |              | 0.10                           | 1                               | 3.8E+02                          | nc                          | 1.5E+04                | nc                | 2.3E+02                      | nc      | 1.0E+00 | nc      |    |
| Methoxychlor   | 72-43-5                           |                                | 5.0E-03           | i   |                             | 0           | S            | 0.10                           | 1                               | 7.6E+01                          | nc                          | 3.1E+03                | nc                | 4.0E+01                      | m       | 4.3E+01 | m       |    |
| 2-Methoxyethanol   | 109-86-4                          |                                | 3.0E-03           | h   | 2.0E-02                     | i           | 0            | 0.10                           | 1                               | 4.6E+01                          | nc                          | 1.8E+03                | nc                | 2.7E+01                      | nc      | 1.1E-01 | nc      |    |
| 2-Methoxyethanol acetate   | 110-49-6                          |                                | 2.0E-03           | h   | 9.0E-02                     | c           | 0            | 0.10                           | 1                               | 3.1E+01                          | nc                          | 1.2E+03                | nc                | 1.8E+01                      | nc      | 7.5E-02 | nc      |    |
| 2-Methoxy-5-nitroaniline   | 99-59-2                           | 4.9E-02                        | c                 | 1.4E-05                                   | c                           | 0           |              | 0.10                           | 1                               | 9.9E+00                          | ca                          | 3.5E+02                | ca                | 1.4E+00                      | ca      | 9.4E-03 | ca      |    |
| Methyl acetate   | 79-20-9                           |                                | 1.0E+00           | h   |                             | 1           |              |                                | 1                               | 2.0E+04                          | nc                          | 1.0E+05                | max               | 9.1E+03                      | nc      | 3.8E+01 | nc      |    |
| Methyl acrylate  | 96-33-3                           |                                | 3.0E-02           | h   |                             | 1           |              |                                | 1                               | 5.9E+02                          | nc                          | 3.1E+04                | nc                | 2.7E+02                      | nc      | 1.2E+00 | nc      |    |
| 2-Methylaniline hydrochloride  | 636-21-5                          | 1.3E-01                        | c                 | 3.7E-05                                   | c                           | 0           |              | 0.10                           | 1                               | 3.7E+00                          | ca                          | 1.3E+02                | ca                | 5.2E-01                      | ca      | 4.4E-03 | ca      |    |
| 2-Methyl-4-chlorophenoxyacetic acid (MCPA)   | 94-74-6                           |                                | 5.0E-04           | i   |                             | 0           |              | 0.10                           | 1                               | 7.6E+00                          | nc                          | 3.1E+02                | nc                | 4.6E+00                      | nc      | 2.4E-02 | nc      |    |
| 4-(2-Methyl-4-chlorophenoxy) butyric acid (MCPB)   | 94-81-5                           |                                | 1.0E-02           | i   |                             | 0           |              | 0.10                           | 1                               | 1.5E+02                          | nc                          | 6.2E+03                | nc                | 9.1E+01                      | nc      | 7.2E-01 | nc      |    |
| 2-(2-Methyl-4-chlorophenoxy) propionic acid  | 93-65-2                           |                                | 1.0E-03           | i   |                             | 0           |              | 0.10                           | 1                               | 1.5E+01                          | nc                          | 6.2E+02                | nc                | 9.1E+00                      | nc      | 5.4E-02 | nc      |    |
| 4,4'-Methylenebisbenzeneamine  | 101-77-9                          | 1.6E+00                        | c                 | 4.6E-04                                   | c                           | 2.0E-02     | c            | 0                              | 0.10                            | 1                                | 3.0E-01                     | ca                     | 1.1E+01           | ca                           | 4.2E-02 | ca      | 3.7E-03 | ca |
| 4,4'-Methylene bis(2-chloroaniline)  | 101-14-4                          | 1.0E-01                        | p                 | 2.0E-03                                   | p                           | 4.3E-04     | c            |                                | 0                               | 0.10                             | 1                           | 1.2E+00                | ca                | 1.7E+02                      | ca      | 2.1E-01 | ca      |    |
| 4,4'-Methylene bis(N,N'-dimethyl)aniline   | 101-61-1                          | 4.6E-02                        | i                 | 1.3E-05                                   | c                           |             |              | 0.10                           | 1                               | 1.1E+01                          | ca                          | 3.7E+02                | ca                | 9.3E-01                      | ca      | 1.0E-01 | ca      |    |
| Methylene bromide  | 74-95-3                           |                                | 1.0E-02           | h   |                             | 4.0E-03     | x            | 1                              |                                 | 1                                | 7.3E+00                     | nc                     | 1.3E+02           | nc                           | 2.0E+00 | nc      | 1.0E-02 | nc |
| Methylene chloride   | 75-09-2                           | 7.5E-03                        | i                 | 6.0E-02                                   | i                           | 1.0E+00     | a            | 1                              |                                 | 1                                | 1.2E+01                     | ca                     | 6.2E+02           | ca                           | 5.0E+00 | m       | 2.6E-02 | m  |
| 4,4'-Methylenediphenyl isocyanate  | 101-68-8                          |                                |                   |   | 6.0E-04                     | i           | 0            | 0.10                           | 1                               | 1.0E+05                          | max                         | 1.0E+05                | max               |                              |         |         |         |    |
| Methyl ethyl ketone  | 78-93-3                           |                                | 6.0E-01           | i   |                             | 5.0E+00     | i            | 1                              |                                 | 1                                | 7.5E+03                     | nc                     | 1.0E+05           | max                          | 1.8E+03 | nc      | 7.4E+00 | nc |
| Methyl isobutyl ketone   | 108-10-1                          |                                | 8.0E-02           | h   |                             | 3.0E+00     | i            | 1                              |                                 | 1                                | 1.4E+03                     | nc                     | 5.6E+04           | nc                           | 5.0E+02 | nc      | 2.2E+00 | nc |
| Methyl methacrylate  | 80-62-6                           |                                | 1.4E+00           | i   |                             | 7.0E-01     | i            | 1                              |                                 | 1                                | 1.4E+03                     | nc                     | 2.5E+04           | nc                           | 3.5E+02 | nc      | 1.6E+00 | nc |
| 2-Methyl-5-nitroaniline  | 99-55-8                           | 3.3E-02                        | h                 |   |                             | 0           |              | 0.10                           | 1                               | 1.5E+01                          | ca                          | 5.2E+02                | ca                | 2.0E+00                      | ca      | 2.3E-02 | ca      |    |
| Methyl parathion   | 298-00-0                          |                                | 2.5E-04           | i   |                             | 0           |              | 0.10                           | 1                               | 3.8E+00                          | nc                          | 1.5E+02                | nc                | 2.3E+00                      | nc      | 7.6E-02 | nc      |    |
| 2-Methylphenol   | 95-48-7                           |                                | 5.0E-02           | i   |                             | 6.0E-01     | c            | 0                              | S                               | 7.6E+02                          | nc                          | 3.1E+04                | nc                | 4.6E+02                      | nc      | 7.4E+00 | nc      |    |
| 3-Methylphenol   | 108-39-4                          |                                | 5.0E-02           | i   |                             | 6.0E-01     | c            | 0                              | 0.10                            | 1                                | 7.6E+02                     | nc                     | 3.1E+04           | nc                           | 4.6E+02 | nc      | 7.3E+00 | nc |
| 4-Methylphenol   | 106-44-5                          |                                | 5.0E-03           | h   |                             | 6.0E-01     | c            | 0                              | 0.10                            | 1                                | 7.6E+01                     | nc                     | 3.1E+03           | nc                           | 4.6E+01 | nc      | 7.3E-01 | nc |
| Methyl phosphonic acid   | 993-13-5                          |                                | 6.0E-02           | x   |                             | 0           |              | 0.10                           | 1                               | 9.2E+02                          | nc                          | 3.7E+04                | nc                | 5.5E+02                      | nc      | 2.2E+00 | nc      |    |
| Methyl styrene (mixture)   | 25013-15-4                        |                                | 6.0E-03           | h   |                             | 4.0E-02     | h            | 1                              |                                 | 1                                | 6.6E+01                     | nc                     | 1.8E+03           | nc                           | 1.5E+01 | nc      | 4.8E-01 | nc |
| Methyl styrene (alpha)   | 98-83-9                           |                                | 7.0E-02           | h   |                             | 1           |              |                                | 1                               | 1.4E+03                          | nc                          | 7.2E+04                | nc                | 6.4E+02                      | nc      | 2.1E+01 | nc      |    |
| Methyl tertbutyl ether (MTBE)  | 1634-04-4                         | 1.8E-03                        | c                 | 2.6E-07                                   | c                           | 3.0E+00     | i            | 1                              |                                 | 1                                | 5.1E+01                     | ca                     | 2.5E+03           | ca                           | 1.2E+01 | ca      | 5.6E-02 | ca |
| Metolacior (Dual)  | 51218-45-2                        |                                | 1.5E-01           | i   |                             | 0           |              | 0.10                           | 1                               | 2.3E+03                          | nc                          | 9.2E+04                | nc                | 1.4E+03                      | nc      | 3.2E+01 | nc      |    |
| Metribuzin   | 21087-64-9                        |                                | 2.5E-02           | i   |                             | 0           |              | 0.10                           | 1                               | 3.8E+02                          | nc                          | 1.5E+04                | nc                | 2.3E+02                      | nc      | 1.4E+00 | nc      |    |
| Mirex  | 2385-85-5                         | 1.8E+01                        | c                 | 2.0E-04                                   | i                           | 5.1E-03     | c            |                                | 0                               | 0.10                             | 1                           | 2.7E-02                | ca                | 9.6E-01                      | ca      | 3.7E-03 | ca      |    |
| Molinate   | 2212-67-1                         |                                | 2.0E-03           | i   |                             | 0           |              | 0.10                           | 1                               | 3.1E+01                          | nc                          | 1.2E+03                | nc                | 1.8E+01                      | nc      | 2.1E-01 | nc      |    |
| Molybdenum   | 7439-98-7                         |                                | 5.0E-03           | i   |                             | 0           |              | 0.10                           | 1                               | 7.6E+01                          | nc                          | 3.1E+03                | nc                | 4.6E+01                      | nc      |         |         |    |
| Monochloramine   | 10599-90-3                        |                                | 1.0E-01           | i   |                             | 0           |              | 0.10                           | 1                               | 1.5E+03                          | nc                          | 6.2E+04                | nc                | 9.1E+02                      | nc      |         |         |    |
| Naled  | 300-76-5                          |                                | 2.0E-03           | i   |                             | 0           |              | 0.10                           | 1                               | 3.1E+01                          | nc                          | 1.2E+03                | nc                | 1.8E+01                      | nc      | 1.7E-01 | nc      |    |
| Napropamide  | 15299-99-7                        |                                | 1.0E-01           | i   |                             | 0           |              | 0.10                           | 1                               | 1.5E+03                          | nc                          | 6.2E+04                | nc                | 9.1E+02                      | nc      | 1.2E+02 | nc      |    |
| Nickel and compounds   | 7440-02-0                         |                                | 2.0E-02           | i   | 2.6E-04                     | c           | 9.0E-05      | a                              | 0                               | 3.9E+02                          | nc                          | 2.0E+04                | nc                | 1.8E+02                      | nc      | 2.4E+02 | nc      |    |
| Nickel refinery dust   |                                   |                                | 5.0E-02           | c   | 2.4E-04                     | i           | 5.0E-05      | c                              | 0                               | 9.2E+02                          | nc                          | 4.3E+04                | nc                | 4.6E+02                      | nc      |         |         |    |
| Nickel subsulfide  | 12035-72-2                        | 1.7E+00                        | c                 | 5.0E-02                                   | c                           | 4.8E-04     | i            |                                | 0.04                            | 3.8E-01                          | ca                          | 1.7E+01                | ca                | 4.0E-02                      | ca      |         |         |    |
| Nitrate  | 14797-55-8                        |                                | 1.6E+00           | i   |                             | n/a         |              |                                | 1                               | 3.1E+04                          | nc                          | 1.0E+05                | max               | 1.0E+04                      | m       |         |         |    |
| Nitrite  | 14797-65-0                        |                                | 1.0E-01           | i   |                             | n/a         |              |                                | 1                               | 2.0E+03                          | nc                          | 1.0E+05                | max               | 1.0E+03                      | m       |         |         |    |
| 2-Nitroaniline   | 88-74-4                           |                                | 1.0E-02           | x   | 5.0E-05                     | x           | 0            | S                              | 0.10                            | 1                                | 1.5E+02                     | nc                     | 6.0E+03           | nc                           | 9.1E+01 | nc      | 7.7E-01 | nc |
| Nitrobenzene   | 98-95-3                           |                                | 2.0E-03           | i   | 4.0E-05                     | i           | 9.0E-03      | i                              | 1                               | 5.7E+00                          | ca                          | 2.9E+02                | ca                | 1.2E-01                      | ca      | 1.6E-03 | ca      |    |
| Nitrofurantoin   | 67-20-9                           |                                | 7.0E-02           | h   |                             | 0           |              | 0.10                           | 1                               | 1.1E+03                          | nc                          | 4.3E+04                | nc                | 6.4E+02                      | nc      | 5.5E+00 | nc      |    |
| Nitrofurazone  | 59-87-0                           | 1.3E+00                        | c                 | 3.7E-04                                   | c                           |             | 0            | 0.10                           | 1                               | 3.7E-01                          | ca                          | 1.3E+01                | ca                | 5.2E-02                      | ca      | 9.3E-04 | ca      |    |
| Nitroglycerin  | 55-63-0                           | 1.7E-02                        | p                 | 1.0E-04                                   | p                           |             | 0            | 0.10                           | 1                               | 1.5E+00                          | nc                          | 6.2E+01                | nc                | 9.1E-01                      | nc      | 7.9E-03 | nc      |    |
| Nitroguanidine   | 556-88-7                          |                                | 1.0E-01           | i   |                             | 0           |              | 0.10                           | 1                               | 1.5E+03                          | nc                          | 6.2E+04                | nc                | 9.1E+02                      | nc      | 4.4E+00 | nc      |    |

# NDEQ VCP REMEDIATION GOALS

TABLE 1 - DIRECT CONTACT EXPOSURE PATHWAYS

| Key : SFo = Oral Slope Factor; RfDo = Oral Reference Dose; IUR = Inhalation Unit Risk; RfC = Inhalation Reference Concentration; i = IRIS; h = HEAST; n = NCEA; x = Withdrawn (reference for value provided); o = Other EPA Source (reference for value provided); p = NCEA PPRTV; R3 = EPA Region 3 RBC Table; R6 = EPA Region 6 MSSL Table; R9 = EPA Region 9 PRG Table; ca = Cancer VCP RG; nc = Noncancer VCP RG; m = MCL-based; s = solubility; sat = Soil Saturation; max = Ceiling limit; DAF = Dilution Attenuation Factor; CAS = Chemical Abstract Services; +++ = Non-Standard Method Applied; see Notes section at bottom of table and Appendix A, Protocol for VCP Remediation Goal Lookup Tables, Nebraska Voluntary Cleanup Program for more information |            |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |  |
|--|------------|-----------------------------------|--------------------------------|-------------------|---|-----------------------------|-------------|--------------|--------------------------------|---------------------------------|----------------------------------|-----------------------------|------------------------|-------------------|------------------------------|---------|---------|---------|---------|----|--|
| CONTAMINANT  |            | TOXICITY INFORMATION <sup>1</sup> |                                |                   |   |                             |             |              |                                |                                 |                                  | VCP REMEDIATION GOALS (RGs) |                        |                   |                              |         |         |         |         |    |  |
|  |            | CAS No.                           | SFo<br>(mg/kg-d) <sup>-1</sup> | RfDo<br>(mg/kg-d) | IUR<br>(µg/m <sup>3</sup> ) <sup>-1</sup> | RfC<br>(mg/m <sup>3</sup> ) | V<br>O<br>C | S =<br>solid | ABS <sub>d</sub><br>(unitless) | ABS <sub>GI</sub><br>(unitless) | Direct Contact Exposure Pathways |                             |                        |                   | Migration to<br>Ground Water |         |         |         |         |    |  |
|  |            |                                   |                                |                   |   |                             |             |              |                                |                                 | Residential<br>Soil (mg/kg)      | Industrial<br>Soil (mg/kg)  | Ground Water<br>(ug/l) | DAF 20<br>(mg/kg) |                              |         |         |         |         |    |  |
| 2-Nitropropane   | 79-46-9    |                                   |                                |                   | 2.7E-03                                   | h                           | 2.0E-02     | i            | 1                              |                                 | 1                                | 7.7E-01                     | ca                     | 1.8E-03           | ca                           | 9.4E-06 | ca      |         |         |    |  |
| N-Nitrosodi-n-butylamine   | 924-16-3   |                                   | 5.4E+00                        | i                 | 1.6E-03                                   | i                           |             | 1            |                                | 1                               | 9.1E-02                          | ca                          | 4.2E+00                | ca                | 2.4E-03                      | ca      | 9.9E-05 | ca      |         |    |  |
| N-Nitrosodiethanolamine  | 1116-54-7  |                                   | 2.8E+00                        | i                 | 8.0E-04                                   | c                           |             | 0            | 0.10                           | 1                               | 1.7E-01                          | ca                          | 6.2E+00                | ca                | 2.4E-02                      | ca      | 9.7E-05 | ca      |         |    |  |
| N-Nitrosodiethylamine  | 55-18-5    |                                   | 1.5E+02                        | i                 | 4.3E-02                                   | i                           |             | 0            | 0.10                           | 1                               | 7.7E-04                          | ca                          | 1.1E-01                | ca                | 1.4E-04                      | ca      | 1.1E-06 | ca      |         |    |  |
| N-Nitrosodimethylamine   | 62-75-9    |                                   | 5.1E+01                        | i                 | 8.0E-06                                   | p                           | 1.4E-02     | x            | 0                              | 0.10                            | 1                                | 2.3E-03                     | ca                     | 3.4E-01           | ca                           | 4.2E-04 | ca      | 2.1E-06 | ca      |    |  |
| N-Nitrosodiphenylamine   | 86-30-6    |                                   | 4.9E-03                        | i                 | 2.6E-06                                   | c                           |             | 0            | S                              | 0.10                            | 1                                | 9.9E+01                     | ca                     | 3.5E+03           | ca                           | 1.3E+01 | ca      | 1.4E+00 | ca      |    |  |
| N-Nitroso di-n-propylamine   | 621-64-7   |                                   | 7.0E+00                        | i                 | 2.0E-03                                   | c                           |             | 0            | S                              | 0.10                            | 1                                | 6.9E-02                     | ca                     | 2.5E+00           | ca                           | 9.6E-03 | ca      | 1.4E-04 | ca      |    |  |
| N-Nitroso-N-methylethylamine   | 10595-95-6 |                                   | 2.2E+01                        | i                 | 6.3E-03                                   | c                           |             | 0            | 0.10                           | 1                               | 2.2E-02                          | ca                          | 7.8E-01                | ca                | 3.1E-03                      | ca      | 1.8E-05 | ca      |         |    |  |
| N-Nitrosopyrrolidine   | 930-55-2   |                                   | 2.1E+00                        | i                 | 6.1E-04                                   | i                           |             | 0            | 0.10                           | 1                               | 2.3E-01                          | ca                          | 8.2E+00                | ca                | 3.2E-02                      | ca      | 2.5E-04 | ca      |         |    |  |
| m-Nitrotoluene   | 99-08-1    |                                   |                                | 1.0E-04           | x   |                             |             | 0            | 0.10                           | 1                               | 1.5E+00                          | nc                          | 6.2E+01                | nc                | 9.1E-01                      | nc      | 1.7E-02 | nc      |         |    |  |
| o-Nitrotoluene   | 88-72-2    |                                   | 2.2E-01                        | p                 | 9.0E-04                                   | p                           |             | 1            |                                | 1                               | 2.9E+00                          | ca                          | 1.3E+02                | ca                | 3.1E-01                      | ca      | 5.8E-03 | ca      |         |    |  |
| p-Nitrotoluene   | 99-99-0    |                                   | 1.6E-02                        | p                 | 4.0E-03                                   | p                           |             | 0            | S                              | 0.10                            | 1                                | 3.0E+01                     | ca                     | 1.1E+03           | ca                           | 4.2E+00 | ca      | 7.8E-02 | ca      |    |  |
| Norflurazon  | 27314-13-2 |                                   |                                | 4.0E-02           | i   |                             |             | 0            | 0.10                           | 1                               | 6.1E+02                          | nc                          | 2.5E+04                | nc                | 3.7E+02                      | nc      | 4.7E+01 | nc      |         |    |  |
| NuStar   | 85509-19-9 |                                   |                                | 7.0E-04           | i   |                             |             | 0            | 0.10                           | 1                               | 1.1E+01                          | nc                          | 4.3E+02                | nc                | 6.4E+00                      | nc      | 2.1E+01 | nc      |         |    |  |
| Octabromodiphenyl ether  | 32536-52-0 |                                   |                                | 3.0E-03           | i   |                             |             | 0            | 0.10                           | 1                               | 4.6E+01                          | nc                          | 1.8E+03                | nc                | 7.4E-02                      | s       | 1.1E+02 | nc      |         |    |  |
| Octahydro-1357-tetranitro-1357- tetrazocine (HMX)  | 2691-41-0  |                                   |                                | 5.0E-02           | i   |                             |             | 0            | 0.10                           | 1                               | 7.6E+02                          | nc                          | 3.1E+04                | nc                | 4.6E+02                      | nc      | 1.2E+01 | nc      |         |    |  |
| Octamethylpyrophosphoramide  | 152-16-9   |                                   |                                | 2.0E-03           | h   |                             |             | 0            | 0.10                           | 1                               | 3.1E+01                          | nc                          | 1.2E+03                | nc                | 1.8E+01                      | nc      | 8.8E-02 | nc      |         |    |  |
| Oryzalin   | 19044-88-3 |                                   |                                | 5.0E-02           | i   |                             |             | 0            | 0.10                           | 1                               | 7.6E+02                          | nc                          | 3.1E+04                | nc                | 4.6E+02                      | nc      | 1.7E+01 | nc      |         |    |  |
| Oxadiazon  | 19666-30-9 |                                   |                                | 5.0E-03           | i   |                             |             | 0            | 0.10                           | 1                               | 7.6E+01                          | nc                          | 3.1E+03                | nc                | 4.6E+01                      | nc      | 9.3E+00 | nc      |         |    |  |
| Oxamyl   | 23135-22-0 |                                   |                                | 2.5E-02           | i   |                             |             | 0            | S                              | 0.10                            | 1                                | 3.8E+02                     | nc                     | 1.5E+04           | nc                           | 2.0E+02 | m       | 8.8E-01 | m       |    |  |
| Oxyfluorfen  | 42874-03-3 |                                   |                                | 3.0E-03           | i   |                             |             | 0            | 0.10                           | 1                               | 4.6E+01                          | nc                          | 1.8E+03                | nc                | 2.7E+01                      | nc      | 4.4E+01 | nc      |         |    |  |
| Paclobutrazol  | 76738-62-0 |                                   |                                | 1.3E-02           | i   |                             |             | 0            | 0.10                           | 1                               | 2.0E+02                          | nc                          | 8.0E+03                | nc                | 1.2E+02                      | nc      | 4.9E+00 | nc      |         |    |  |
| Paraquat   | 4685-14-7  |                                   |                                | 4.5E-03           | i   |                             |             | 0            | 0.10                           | 1                               | 6.9E+01                          | nc                          | 2.8E+03                | nc                | 4.1E+01                      | nc      | 1.1E+01 | nc      |         |    |  |
| Parathion  | 56-38-2    |                                   |                                | 6.0E-03           | h   |                             |             | 0            | S                              | 0.10                            | 1                                | 9.2E+01                     | nc                     | 3.7E+03           | nc                           | 3.7E+01 | nc      | 3.8E+00 | nc      |    |  |
| Pebulate   | 1114-71-2  |                                   |                                | 5.0E-02           | h   |                             |             | 0            | 0.10                           | 1                               | 7.6E+02                          | nc                          | 3.1E+04                | nc                | 4.6E+02                      | nc      | 7.3E+00 | nc      |         |    |  |
| Pendimethalin  | 40487-42-1 |                                   |                                | 4.0E-02           | i   |                             |             | 0            | 0.10                           | 1                               | 6.1E+02                          | nc                          | 2.5E+04                | nc                | 3.0E+02                      | s       | 8.4E+01 | nc      |         |    |  |
| Pentabromo-6-chloro cyclohexane  | 87-84-3    |                                   | 2.3E-02                        | h                 |   |                             |             | 0            | 0.10                           | 1                               | 2.1E+01                          | ca                          | 7.5E+02                | ca                | 2.9E+00                      | ca      | 2.7E-01 | ca      |         |    |  |
| Pentabromodiphenyl ether   | 32534-81-9 |                                   |                                | 2.0E-03           | i   |                             |             | 0            | 0.10                           | 1                               | 3.1E+01                          | nc                          | 1.2E+03                | nc                | 9.0E-04                      | s       | 1.6E+01 | nc      |         |    |  |
| Pentachlorobenzene   | 608-93-5   |                                   |                                | 8.0E-04           | i   |                             |             | 0            | 0.10                           | 1                               | 1.2E+01                          | nc                          | 4.9E+02                | nc                | 7.3E+00                      | nc      | 1.1E+00 | nc      |         |    |  |
| Pentachloronitrobenzene  | 82-68-8    |                                   | 2.6E-01                        | h                 | 3.0E-03                                   | i                           |             | 0            | 0.10                           | 1                               | 1.9E+00                          | ca                          | 6.6E+01                | ca                | 1.9E-01                      | ca      | 4.7E-02 | ca      |         |    |  |
| Pentachlorophenol  | 87-86-5    |                                   | 1.2E-01                        | i                 | 3.0E-02                                   | i                           | 5.1E-06     | c            | 0                              | S                               | 0.25                             | 1                           | 3.0E+00                | ca                | 9.0E+01                      | ca      | 1.0E+00 | m       | 2.0E-01 | m  |  |
| Perchlorate  | 14797-73-0 |                                   |                                | 7.0E-04           | i   |                             |             | 0            |                                | 1                               | 1.4E+01                          | nc                          | 7.2E+02                | nc                | 6.4E+00                      | nc      |         |         |         |    |  |
| Permethrin   | 52645-53-1 |                                   |                                | 5.0E-02           | i   |                             |             | 0            | 0.10                           | 1                               | 7.6E+02                          | nc                          | 3.1E+04                | nc                | 6.0E+00                      | s       | 2.2E+03 | nc      |         |    |  |
| Phenmedipham   | 13684-63-4 |                                   |                                | 2.5E-01           | i   |                             |             | 0            | 0.10                           | 1                               | 3.8E+03                          | nc                          | 1.0E+05                | max               | 2.3E+03                      | nc      | 2.5E+02 | nc      |         |    |  |
| Phenol   | 108-95-2   |                                   |                                | 3.0E-01           | i   |                             | 2.0E-01     | c            | 0                              | S                               | 0.10                             | 1                           | 4.6E+03                | nc                | 1.0E+05                      | max     | 2.7E+03 | nc      | 3.1E+01 | nc |  |
| m-Phenylenediamine   | 108-45-2   |                                   |                                | 6.0E-03           | i   |                             |             | 0            | 0.10                           | 1                               | 9.2E+01                          | nc                          | 3.7E+03                | nc                | 5.5E+01                      | nc      | 2.9E-01 | nc      |         |    |  |
| p-Phenylenediamine   | 106-50-3   |                                   |                                | 1.9E-01           | h   |                             |             | 0            | 0.10                           | 1                               | 2.9E+03                          | nc                          | 1.0E+05                | max               | 1.7E+03                      | nc      | 9.3E+00 | nc      |         |    |  |
| Phenylmercuric acetate   | 62-38-4    |                                   |                                | 8.0E-05           | i   |                             |             | 0            | 0.10                           | 1                               | 1.2E+00                          | nc                          | 4.9E+01                | nc                | 7.3E-01                      | nc      | 4.6E-03 | nc      |         |    |  |
| 2-Phenylphenol   | 90-43-7    |                                   | 1.9E-03                        | h                 |   |                             |             | 0            | 0.10                           | 1                               | 2.6E+02                          | ca                          | 9.1E+03                | ca                | 3.5E+01                      | ca      | 9.7E+00 | ca      |         |    |  |
| Phorate  | 298-02-2   |                                   |                                | 2.0E-04           | h   |                             |             | 0            | 0.10                           | 1                               | 3.1E+00                          | nc                          | 1.2E+02                | nc                | 1.8E+00                      | nc      | 4.1E-02 | nc      |         |    |  |
| Phosmet  | 732-11-6   |                                   |                                | 2.0E-02           | i   |                             |             | 0            | 0.10                           | 1                               | 3.1E+02                          | nc                          | 1.2E+04                | nc                | 1.8E+02                      | nc      | 8.0E-01 | nc      |         |    |  |
| Phosphine  | 7803-51-2  |                                   |                                | 3.0E-04           | i   |                             | 3.0E-04     | i            | 0                              | 1                               | 5.9E+00                          | nc                          | 3.1E+02                | nc                | 2.7E+00                      | nc      |         |         |         |    |  |
| Phosphoric acid  | 7664-38-2  |                                   |                                |                   |   |                             | 1.0E-02     | i            | n/a                            |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |  |
| Phosphorus (white)   | 7723-14-0  |                                   |                                | 2.0E-05           | i   |                             |             | 0            |                                | 1                               | 3.9E-01                          | nc                          | 2.0E+01                | nc                | 1.8E-01                      | nc      |         |         |         |    |  |
| p-Phthalic acid  | 100-21-0   |                                   |                                | 1.0E+00           | h   |                             |             | 0            | 0.10                           | 1                               | 1.5E+04                          | nc                          | 1.0E+05                | max               | 9.1E+03                      | nc      | 6.5E+01 | nc      |         |    |  |
| Phthalic anhydride   | 85-44-9    |                                   |                                | 2.0E+00           | i   |                             | 2.0E-02     | c            | 0                              | 0.10                            | 1                                | 3.0E+04                     | nc                     | 1.0E+05           | max                          | 1.8E+04 | nc      | 8.0E+01 | nc      |    |  |
| Picloram   | 1918-02-1  |                                   |                                | 7.0E-02           | i   |                             |             | 0            | 0.10                           | 1                               | 1.1E+03                          | nc                          | 4.3E+04                | nc                | 5.0E+02                      | m       | 2.8E+00 | m       |         |    |  |
| Pirimiphos-methyl  | 29232-93-7 |                                   |                                | 1.0E-02           | i   |                             |             | 0            | 0.10                           | 1                               | 1.5E+02                          | nc                          | 6.2E+03                | nc                | 9.1E+01                      | nc      | 1.7E+00 | nc      |         |    |  |
| Polybrominated biphenyls   | 59536-65-1 |                                   | 3.0E+01                        | c                 | 7.0E-06                                   | h                           | 8.6E-03     | c            | 0                              | S                               | 0.10                             | 1                           | 1.6E-02                | ca                | 5.7E-01                      | ca      | 2.2E-03 | ca      |         |    |  |
| Polychlorinated biphenyls (PCBs)   | 1336-36-3  |                                   | 2.0E+00                        | i                 | 5.7E-04                                   | c                           |             | 0            | 0.14                           | 1                               | 2.2E-01                          | ca                          | 7.4E+00                | ca                | 5.0E-01                      | m       |         |         |         |    |  |
| Aroclor 1016   | 12674-11-2 |                                   | 7.0E-02                        | i                 | 7.0E-05                                   | i                           | 2.0E-05     | i            | 0                              | 0.14                            | 1                                | 9.8E-01                     | nc                     | 3.7E+01           | nc                           | 6.4E-01 | nc      | 1.2E+00 | nc      |    |  |
| Aroclor 1221   | 11104-28-2 |                                   | 2.0E+00                        | i                 | 5.7E-04                                   | i                           |             | 1            |                                | 1                               | 1.9E-01                          | ca                          | 8.9E+00                | ca                | 6.8E-03                      | ca      | 2.3E-03 | ca      |         |    |  |
| Aroclor 1232   | 11141-16-5 |                                   | 2.0E+00                        | i                 | 5.7E-04                                   | i                           |             | 1            |                                | 1                               | 1.9E-01                          | ca                          | 8.9E+00                | ca                | 6.8E-03                      | ca      | 2.3E-03 | ca      |         |    |  |
| Aroclor 1242   | 53469-21-9 |                                   | 2.0E+00                        | i                 | 5.7E-04                                   | i                           |             | 0            | 0.14                           | 1                               | 2.2E-01                          | ca                          | 7.4E+00                | ca                | 3.4E-02                      | ca      | 1.1E-01 | ca      |         |    |  |

# NDEQ VCP REMEDIATION GOALS

## TABLE 1 - DIRECT CONTACT EXPOSURE PATHWAYS

| Key : SFo = Oral Slope Factor; RfDo = Oral Reference Dose; IUR = Inhalation Unit Risk; RfC = Inhalation Reference Concentration; i = IRIS; h = HEAST; n = NCEA; x = Withdrawn (reference for value provided); o = Other EPA Source (reference for value provided); p = NCEA PPRTV; R3 = EPA Region 3 RBC Table; R6 = EPA Region 6 MSSL Table; R9 = EPA Region 9 PRG Table; ca = Cancer VCP RG; nc = Noncancer VCP RG; m = MCL-based; s = solubility; sat = Soil Saturation; max = Ceiling limit; DAF = Dilution Attenuation Factor; CAS = Chemical Abstract Services; +++ = Non-Standard Method Applied; see Notes section at bottom of table and Appendix A, Protocol for VCP Remediation Goal Lookup Tables, Nebraska Voluntary Cleanup Program for more information |  |                                   |                                |                   |   |                             |         |         |                  |                   |                                  |                             |                        |                   |                              |         |    |         |    |
|--|--|-----------------------------------|--------------------------------|-------------------|---|-----------------------------|---------|---------|------------------|-------------------|----------------------------------|-----------------------------|------------------------|-------------------|------------------------------|---------|----|---------|----|
| CONTAMINANT  |  | TOXICITY INFORMATION <sup>1</sup> |                                |                   |   |                             |         |         |                  |                   |                                  | VCP REMEDIATION GOALS (RGs) |                        |                   |                              |         |    |         |    |
|  |  | CAS No.                           | SFo<br>(mg/kg-d) <sup>-1</sup> | RfDo<br>(mg/kg-d) | IUR<br>(µg/m <sup>3</sup> ) <sup>-1</sup> | RfC<br>(mg/m <sup>3</sup> ) | V       |         |                  |                   | Direct Contact Exposure Pathways |                             |                        |                   | Migration to<br>Ground Water |         |    |         |    |
|  |  |                                   |                                |                   |   |                             | O       | S       | ABS <sub>d</sub> | ABS <sub>GI</sub> | Residential<br>Soil (mg/kg)      | Industrial<br>Soil (mg/kg)  | Ground Water<br>(ug/l) | DAF 20<br>(mg/kg) |                              |         |    |         |    |
|  |  |                                   |                                |                   |   |                             | C       | solid   | (unitless)       | (unitless)        |                                  |                             |                        |                   |                              |         |    |         |    |
| Aroclor 1248   |  | 12672-29-6                        | 2.0E+00                        | i                 | 5.7E-04                                   | i                           |         | 0       |                  | 0.14              | 1                                | 2.2E-01                     | ca                     | 7.4E+00           | ca                           | 3.4E-02 | ca | 1.0E-01 | ca |
| Aroclor 1254   |  | 11097-69-1                        | 2.0E+00                        | i                 | 5.7E-04                                   | i                           |         | 0       |                  | 0.14              | 1                                | 2.2E-01                     | ca                     | 7.4E+00           | ca                           | 3.4E-02 | ca | 1.8E-01 | ca |
| Aroclor 1260   |  | 11096-82-5                        | 2.0E+00                        | i                 | 5.7E-04                                   | i                           |         | 0       |                  | 0.14              | 1                                | 2.2E-01                     | ca                     | 7.4E+00           | ca                           | 3.4E-02 | ca | 4.7E-01 | ca |
| Polynuclear aromatic hydrocarbons  |  |                                   |                                |                   |   |                             |         | n/a     |                  |                   | 1                                |                             |                        |                   |                              |         |    |         |    |
| Acenaphthene   |  | 83-32-9                           |                                | 6.0E-02           | i   |                             |         | 1       | S                |                   | 1                                | 1.2E+03                     | nc                     | 6.1E+04           | nc                           | 5.5E+02 | nc | 1.1E+02 | nc |
| Anthracene   |  | 120-12-7                          |                                | 3.0E-01           | i   |                             |         | 1       | S                |                   | 1                                | 5.9E+03                     | nc                     | 1.0E+05           | max                          | 4.3E+01 | s  | 1.8E+03 | nc |
| Benz[a]anthracene  |  | 56-55-3                           | 7.3E-01                        | n                 | 1.1E-04                                   | c                           |         | 0       | S                | 0.13              | 1                                | 1.5E-01                     | ca                     | 2.1E+01           | ca                           | 1.6E-02 | ca | 1.1E-01 | ca |
| Benzo[b]fluoranthene   |  | 205-99-2                          | 7.3E-01                        | n                 | 1.1E-04                                   | c                           |         | 0       | S                | 0.13              | 1                                | 1.5E-01                     | ca                     | 2.1E+01           | ca                           | 1.2E-02 | ca | 2.8E-01 | ca |
| Benzo[k]fluoranthene   |  | 207-08-9                          | 7.3E-02                        | n                 | 1.1E-04                                   | c                           |         | 0       | S                | 0.13              | 1                                | 1.5E+00                     | ca                     | 2.1E+02           | ca                           | 2.9E-01 | ca | 6.9E+00 | ca |
| Benzo[a]pyrene   |  | 50-32-8                           | 7.3E+00                        | i                 | 1.1E-03                                   | c                           |         | 0       | S                | 0.13              | 1                                | 1.5E-02                     | ca                     | 2.1E+00           | ca                           | 2.0E-01 | m  | 4.7E+00 | m  |
| Chrysene   |  | 218-01-9                          | 7.3E-03                        | n                 | 1.1E-05                                   | c                           |         | 0       | S                | 0.13              | 1                                | 1.5E+01                     | ca                     | 2.1E+03           | ca                           | 1.6E+00 | ca | 1.1E+01 | ca |
| Dibenz[ah]anthracene   |  | 53-70-3                           | 7.3E+00                        | n                 | 1.2E-03                                   | c                           |         | 0       | S                | 0.13              | 1                                | 1.5E-02                     | ca                     | 2.1E+00           | ca                           | 8.9E-04 | ca | 6.8E-02 | ca |
| Fluoranthene   |  | 206-44-0                          |                                | 4.0E-02           | i   |                             |         | 0       | S                | 0.13              | 1                                | 5.7E+02                     | nc                     | 2.2E+04           | nc                           | 6.0E+01 | nc | 1.3E+02 | nc |
| Fluorene   |  | 86-73-7                           |                                | 4.0E-02           | i   |                             |         | 1       | S                |                   | 1                                | 7.8E+02                     | nc                     | 4.1E+04           | nc                           | 3.7E+02 | nc | 1.4E+02 | nc |
| Indeno[1,2,3-cd]pyrene   |  | 193-39-5                          | 7.3E-01                        | n                 | 1.1E-04                                   | c                           |         | 0       | S                | 0.13              | 1                                | 1.5E-01                     | ca                     | 2.1E+01           | ca                           | 1.1E-02 | ca | 8.9E-01 | ca |
| Naphthalene  |  | 91-20-3                           |                                | 2.0E-02           | i   | 3.4E-05                     | c       | 3.0E-03 | i                | 1                 | S                                | 4.3E+00                     | ca                     | 2.2E+02           | ca                           | 1.4E-01 | ca | 9.4E-03 | ca |
| Pyrene   |  | 129-00-0                          |                                | 3.0E-02           | i   |                             |         | 0       | S                | 0.13              | 1                                | 4.3E+02                     | nc                     | 1.7E+04           | nc                           | 1.4E+02 | s  | 6.0E+02 | nc |
| Prochloraz   |  | 67747-09-5                        | 1.5E-01                        | i                 | 9.0E-03                                   | i                           |         | 0       |                  | 0.10              | 1                                | 3.2E+00                     | ca                     | 1.1E+02           | ca                           | 4.5E-01 | ca | 4.5E-02 | ca |
| Profluralin  |  | 26399-36-0                        |                                | 6.0E-03           | h   |                             |         | 0       |                  | 0.10              | 1                                | 9.2E+01                     | nc                     | 3.7E+03           | nc                           | 5.5E+01 | nc | 6.7E+01 | nc |
| Prometon   |  | 1610-18-0                         |                                | 1.5E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 2.3E+02                     | nc                     | 9.2E+03           | nc                           | 1.4E+02 | nc | 1.3E+00 | nc |
| Prometryn  |  | 7287-19-6                         |                                | 4.0E-03           | i   |                             |         | 0       |                  | 0.10              | 1                                | 6.1E+01                     | nc                     | 2.5E+03           | nc                           | 3.7E+01 | nc | 1.1E+00 | nc |
| Pronamide  |  | 23950-58-5                        |                                | 7.5E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 1.1E+03                     | nc                     | 4.6E+04           | nc                           | 6.8E+02 | nc | 1.4E+01 | nc |
| Propachlor   |  | 1918-16-7                         |                                | 1.3E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 2.0E+02                     | nc                     | 8.0E+03           | nc                           | 1.2E+02 | nc | 1.4E+00 | nc |
| Propanil   |  | 709-98-8                          |                                | 5.0E-03           | i   |                             |         | 0       |                  | 0.10              | 1                                | 7.6E+01                     | nc                     | 3.1E+03           | nc                           | 4.6E+01 | nc | 5.0E-01 | nc |
| Propargite   |  | 2312-35-8                         |                                | 2.0E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 3.1E+02                     | nc                     | 1.2E+04           | nc                           | 1.8E+02 | nc | 2.7E+02 | nc |
| Propargyl alcohol  |  | 107-19-7                          |                                | 2.0E-03           | i   |                             |         | 0       |                  | 0.10              | 1                                | 3.1E+01                     | nc                     | 1.2E+03           | nc                           | 1.8E+01 | nc | 7.4E-02 | nc |
| Propazine  |  | 139-40-2                          |                                | 2.0E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 3.1E+02                     | nc                     | 1.2E+04           | nc                           | 1.8E+02 | nc | 3.2E+00 | nc |
| Propham  |  | 122-42-9                          |                                | 2.0E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 3.1E+02                     | nc                     | 1.2E+04           | nc                           | 1.8E+02 | nc | 2.3E+00 | nc |
| Propiconazole  |  | 60207-90-1                        |                                | 1.3E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 2.0E+02                     | nc                     | 8.0E+03           | nc                           | 1.2E+02 | nc | 7.9E+00 | nc |
| n-Propylbenzene  |  | 103-65-1                          |                                | 1.0E-01           | x   |                             | 1.0E+00 | x       | 1                |                   | 1                                | 1.1E+03                     | nc                     | 2.8E+04           | nc                           | 3.3E+02 | nc | 1.2E+01 | nc |
| Propylene glycol   |  | 57-55-6                           |                                | 2.0E+01           | p   |                             |         | 0       |                  | 0.10              | 1                                | 1.0E+05                     | max                    | 1.0E+05           | max                          | 1.8E+05 | nc | 7.4E+02 | nc |
| Propylene glycol, monoethyl ether  |  | 1569-02-4                         |                                | 7.0E-01           | h   |                             |         | 0       |                  | 0.10              | 1                                | 1.1E+04                     | nc                     | 1.0E+05           | max                          | 6.4E+03 | nc | 2.6E+01 | nc |
| Propylene glycol, monomethyl ether   |  | 107-98-2                          |                                | 7.0E-01           | h   |                             | 2.0E+00 | i       | 0                | 0.10              | 1                                | 1.1E+04                     | nc                     | 1.0E+05           | max                          | 6.4E+03 | nc | 2.6E+01 | nc |
| Propylene oxide  |  | 75-56-9                           | 2.4E-01                        | i                 | 3.7E-06                                   | i                           | 3.0E-02 | i       | 1                |                   | 1                                | 2.0E+00                     | ca                     | 9.2E+01           | ca                           | 2.3E-01 | ca | 9.7E-04 | ca |
| Pursuit  |  | 81335-77-5                        |                                | 2.5E-01           | i   |                             |         | 0       |                  | 0.10              | 1                                | 3.8E+03                     | nc                     | 1.0E+05           | max                          | 2.3E+03 | nc | 4.0E+01 | nc |
| Pydrin   |  | 51630-58-1                        |                                | 2.5E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 3.8E+02                     | nc                     | 1.5E+04           | nc                           | 2.4E+01 | s  | 2.9E+03 | nc |
| Pyridine   |  | 110-86-1                          |                                | 1.0E-03           | i   |                             |         | 1       |                  |                   | 1                                | 2.0E+01                     | nc                     | 1.0E+03           | nc                           | 9.1E+00 | nc | 6.3E-02 | nc |
| Quinalphos   |  | 13593-03-8                        |                                | 5.0E-04           | i   |                             |         | 0       |                  | 0.10              | 1                                | 7.6E+00                     | nc                     | 3.1E+02           | nc                           | 4.6E+00 | nc | 7.8E-01 | nc |
| Quinoline  |  | 91-22-5                           | 3.0E+00                        | i                 |   |                             |         | 0       |                  | 0.10              | 1                                | 1.6E-01                     | ca                     | 5.7E+00           | ca                           | 2.2E-02 | ca | 1.5E-03 | ca |
| Resmethrin   |  | 10453-86-8                        |                                | 3.0E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 4.6E+02                     | nc                     | 1.8E+04           | nc                           | 3.8E+01 | s  | 3.4E+03 | nc |
| Ronnel   |  | 299-84-3                          |                                | 5.0E-02           | h   |                             |         | 0       |                  | 0.10              | 1                                | 7.6E+02                     | nc                     | 3.1E+04           | nc                           | 4.6E+02 | nc | 8.3E+01 | nc |
| Rotenone   |  | 83-79-4                           |                                | 4.0E-03           | i   |                             |         | 0       |                  | 0.10              | 1                                | 6.1E+01                     | nc                     | 2.5E+03           | nc                           | 3.7E+01 | nc | 3.8E+02 | nc |
| Savey  |  | 78587-05-0                        |                                | 2.5E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 3.8E+02                     | nc                     | 1.5E+04           | nc                           | 2.3E+02 | nc | 2.0E+01 | nc |
| Selenious Acid   |  | 7783-00-8                         |                                | 5.0E-03           | i   |                             |         | 0       |                  |                   | 1                                | 9.8E+01                     | nc                     | 5.1E+03           | nc                           | 4.6E+01 | nc |         |    |
| Selenium   |  | 7782-49-2                         |                                | 5.0E-03           | i   |                             | 2.0E-02 | c       | 0                |                   | 1                                | 9.8E+01                     | nc                     | 5.1E+03           | nc                           | 5.0E+01 | m  | 5.2E+00 | m  |
| Sethoxydim   |  | 74051-80-2                        |                                | 9.0E-02           | i   |                             |         | 0       |                  | 0.10              | 1                                | 1.4E+03                     | nc                     | 5.5E+04           | nc                           | 8.2E+02 | nc | 1.5E+02 | nc |
| Silver and compounds   |  | 7440-22-4                         |                                | 5.0E-03           | i   |                             |         | 0       |                  |                   | 0.04                             | 9.8E+01                     | nc                     | 5.1E+03           | nc                           | 1.0E+02 | m  | 1.7E+01 | m  |
| Simazine   |  | 122-34-9                          | 1.2E-01                        | h                 | 5.0E-03                                   | i                           |         | 0       |                  | 0.10              | 1                                | 4.0E+00                     | ca                     | 1.4E+02           | ca                           | 4.0E+00 | m  | 4.0E-02 | m  |
| Sodium azide   |  | 26628-22-8                        |                                | 4.0E-03           | i   |                             |         | 0       |                  |                   | 1                                | 7.8E+01                     | nc                     | 4.1E+03           | nc                           | 3.7E+01 | nc |         |    |
| Sodium diethyldithiocarbamate  |  | 148-18-5                          | 2.7E-01                        | h                 | 3.0E-02                                   | i                           |         | 0       |                  | 0.10              | 1                                | 1.8E+00                     | ca                     | 6.4E+01           | ca                           | 2.5E-01 | ca |         |    |
| Sodium fluoroacetate   |  | 62-74-8                           |                                | 2.0E-05           | i   |                             |         | 0       |                  | 0.10              | 1                                | 3.1E-01                     | nc                     | 1.2E+01           | nc                           | 1.8E-01 | nc | 7.4E-04 | nc |
| Sodium metavanadate  |  | 13718-26-8                        |                                | 1.0E-03           | h   |                             |         | 0       |                  |                   | 1                                | 2.0E+01                     | nc                     | 1.0E+03           | nc                           | 9.1E+00 | nc |         |    |
| Strontium, stable  |  | 7440-24-6                         |                                | 6.0E-01           | i   |                             |         | 0       |                  |                   | 1                                | 1.2E+04                     | nc                     | 1.0E+05           | max                          | 5.5E+03 | nc |         |    |
| Strychnine   |  | 57-24-9                           |                                | 3.0E-04           | i   |                             |         | 0       |                  | 0.10              | 1                                | 4.6E+00                     | nc                     | 1.8E+02           | nc                           | 2.7E+00 | nc | 6.0E-01 | nc |

# NDEQ VCP REMEDIATION GOALS

## TABLE 1 - DIRECT CONTACT EXPOSURE PATHWAYS

| Key : SFo = Oral Slope Factor; RfDo = Oral Reference Dose; IUR = Inhalation Unit Risk; RfC = Inhalation Reference Concentration; i = IRIS; h = HEAST; n = NCEA; x = Withdrawn (reference for value provided); o = Other EPA Source (reference for value provided); p = NCEA PPRTV; R3 = EPA Region 3 RBC Table; R6 = EPA Region 6 MSSL Table; R9 = EPA Region 9 PRG Table; ca = Cancer VCP RG; nc = Noncancer VCP RG; m = MCL-based; s = solubility; sat = Soil Saturation; max = Ceiling limit; DAF = Dilution Attenuation Factor; CAS = Chemical Abstract Services; +++ = Non-Standard Method Applied; see Notes section at bottom of table and Appendix A, Protocol for VCP Remediation Goal Lookup Tables, Nebraska Voluntary Cleanup Program for more information |                                   |                                |                   |   |                             |         |       |                                |                                 |                                  |                             |                        |                   |                           |         |         |         |    |
|--|-----------------------------------|--------------------------------|-------------------|---|-----------------------------|---------|-------|--------------------------------|---------------------------------|----------------------------------|-----------------------------|------------------------|-------------------|---------------------------|---------|---------|---------|----|
| CONTAMINANT  | TOXICITY INFORMATION <sup>1</sup> |                                |                   |   |                             |         |       |                                |                                 |                                  | VCP REMEDIATION GOALS (RGs) |                        |                   |                           |         |         |         |    |
|  | CAS No.                           | SFo<br>(mg/kg-d) <sup>-1</sup> | RfDo<br>(mg/kg-d) | IUR<br>(µg/m <sup>3</sup> ) <sup>-1</sup> | RfC<br>(mg/m <sup>3</sup> ) | V       |       | ABS <sub>d</sub><br>(unitless) | ABS <sub>GI</sub><br>(unitless) | Direct Contact Exposure Pathways |                             |                        |                   | Migration to Ground Water |         |         |         |    |
|  |                                   |                                |                   |   |                             | O       | S =   |                                |                                 | Residential<br>Soil (mg/kg)      | Industrial<br>Soil (mg/kg)  | Ground Water<br>(ug/l) | DAF 20<br>(mg/kg) |                           |         |         |         |    |
|  |                                   |                                |                   |   |                             | C       | solid |                                |                                 |                                  |                             |                        |                   |                           |         |         |         |    |
| Styrene  | 100-42-5                          |                                | 2.0E-01           | i   | 1.0E+00                     | i       | 1     |                                | 1                               | 1.7E+03                          | nc                          | 4.2E+04                | nc                | 1.0E+02                   | m       | 2.2E+00 | m       |    |
| 1,1'-Sulfonylbis (4-chlorobenzene)   | 80-07-9                           |                                | 8.0E-04           | p   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.2E+01                | nc                | 4.9E+02                   | nc      | 7.3E+00 | nc      |    |
| Systhane   | 88671-89-0                        |                                | 2.5E-02           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 3.8E+02                | nc                | 1.5E+04                   | nc      | 2.3E+02 | nc      |    |
| 2,3,7,8-TCDD (dioxin)  | 1746-01-6                         | 1.3E+05                        | c                 | 1.0E-09                                   | a                           | 3.8E+01 | c     | 0                              |                                 | 0.10                             | 1                           | 3.7E-06                | ca                | 1.3E-04                   | ca      | 9.8E-08 | ca      |    |
| Tebuthiuron  | 34014-18-1                        |                                | 7.0E-02           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.1E+03                | nc                | 4.3E+04                   | nc      | 6.4E+02 | nc      |    |
| Temephos   | 3383-96-8                         |                                | 2.0E-02           | h   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 3.1E+02                | nc                | 1.2E+04                   | nc      | 1.8E+02 | nc      |    |
| Terbacil   | 5902-51-2                         |                                | 1.3E-02           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 2.0E+02                | nc                | 8.0E+03                   | nc      | 1.2E+02 | nc      |    |
| Terbufos   | 13071-79-9                        |                                | 2.5E-05           | h   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 3.8E-01                | nc                | 1.5E+01                   | nc      | 2.3E-01 | nc      |    |
| Terbutryn  | 886-50-0                          |                                | 1.0E-03           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.5E+01                | nc                | 6.2E+02                   | nc      | 9.1E+00 | nc      |    |
| 1,2,4,5-Tetrachlorobenzene   | 95-94-3                           |                                | 3.0E-04           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 4.6E+00                | nc                | 1.8E+02                   | nc      | 2.7E+00 | nc      |    |
| 1,1,1,2-Tetrachloroethane  | 630-20-6                          | 2.6E-02                        | i                 | 3.0E-02                                   | i                           | 7.4E-06 | i     | 1                              |                                 |                                  | 1                           | 2.2E+00                | ca                | 1.1E+02                   | ca      | 5.2E-01 | ca      |    |
| 1,1,2,2-Tetrachloroethane  | 79-34-5                           | 2.0E-01                        | i                 | 4.0E-03                                   | p                           | 5.8E-05 | i     | 1                              |                                 |                                  | 1                           | 6.5E-01                | ca                | 3.2E+01                   | ca      | 6.7E-02 | ca      |    |
| Tetrachloroethylene (PCE)  | 127-18-4                          | 2.1E-03                        | i                 | 6.0E-03                                   | i                           | 2.6E-07 | i     | 1                              | 1                               |                                  | 1                           | 2.5E+01                | nc                | 4.9E+02                   | nc      | 5.0E+00 | m       |    |
| 2,3,4,6-Tetrachlorophenol  | 58-90-2                           |                                | 3.0E-02           | i   |                             |         | 0     | S                              |                                 | 0.10                             | 1                           | 4.6E+02                | nc                | 1.8E+04                   | nc      | 2.7E+02 | nc      |    |
| p,a,a,a-Tetrachlorotoluene   | 5216-25-1                         | 2.0E+01                        | h                 |   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 2.4E-02                | ca                | 8.6E-01                   | ca      | 3.4E-03 | ca      |    |
| Tetrachlorovinphos   | 961-11-5                          | 2.4E-02                        | h                 | 3.0E-02                                   | i                           |         | 0     |                                |                                 | 0.10                             | 1                           | 2.0E+01                | ca                | 7.2E+02                   | ca      | 2.8E+00 | ca      |    |
| Tetraethyldithiopyrophosphate  | 3689-24-5                         |                                | 5.0E-04           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 7.6E+00                | nc                | 3.1E+02                   | nc      | 4.6E+00 | nc      |    |
| Thallium and compounds+++  | 7440-28-0                         |                                |                   |   |                             |         | 0     |                                |                                 |                                  | 1                           |                        |                   |                           | 2.0E+00 | m       | 2.8E+00 | m  |
| Thiobencarb  | 28249-77-6                        |                                | 1.0E-02           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.5E+02                | nc                | 6.2E+03                   | nc      | 9.1E+01 | nc      |    |
| Thiofanox  | 39196-18-4                        |                                | 3.0E-04           | h   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 4.6E+00                | nc                | 1.8E+02                   | nc      | 2.7E+00 | nc      |    |
| Thiophanate-methyl   | 23564-05-8                        |                                | 8.0E-02           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.2E+03                | nc                | 4.9E+04                   | nc      | 7.3E+02 | nc      |    |
| Thiram   | 137-26-8                          |                                | 5.0E-03           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 7.6E+01                | nc                | 3.1E+03                   | nc      | 4.6E+01 | nc      |    |
| Tin and compounds  | 7440-31-5                         |                                | 6.0E-01           | h   |                             |         | 0     |                                |                                 |                                  | 1                           | 1.2E+04                | nc                | 1.0E+05                   | max     | 5.5E+03 | nc      |    |
| Toluene  | 108-88-3                          |                                | 8.0E-02           | i   | 5.0E+00                     | i       | 1     |                                |                                 |                                  | 1                           | 1.3E+03                | nc                | 4.9E+04                   | nc      | 1.0E+03 | m       |    |
| p-Toluidine  | 106-49-0                          | 1.9E-01                        | h                 |   |                             |         | 0     | S                              |                                 | 0.10                             | 1                           | 2.6E+00                | ca                | 9.1E+01                   | ca      | 3.5E-01 | ca      |    |
| Toxaphene  | 8001-35-2                         | 1.1E+00                        | i                 |   | 3.2E-04                     | i       | 0     | S                              |                                 | 0.10                             | 1                           | 4.4E-01                | ca                | 1.6E+01                   | ca      | 3.0E+00 | m       |    |
| Tralomehrin  | 66841-25-6                        |                                | 7.5E-03           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.1E+02                | nc                | 4.6E+03                   | nc      | 6.8E+01 | nc      |    |
| Triallate  | 2303-17-5                         |                                | 1.3E-02           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 2.0E+02                | nc                | 8.0E+03                   | nc      | 1.2E+02 | nc      |    |
| Triasulfuron   | 82097-50-5                        |                                | 1.0E-02           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.5E+02                | nc                | 6.2E+03                   | nc      | 9.1E+01 | nc      |    |
| 1,2,4-Tribromobenzene  | 615-54-3                          |                                | 5.0E-03           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 7.6E+01                | nc                | 3.1E+03                   | nc      | 4.6E+01 | nc      |    |
| Tributyltin oxide (TBTO)   | 56-35-9                           |                                | 3.0E-04           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 4.6E+00                | nc                | 1.8E+02                   | nc      | 2.7E+00 | nc      |    |
| 2,4,6-Trichloroaniline   | 634-93-5                          | 3.4E-02                        | h                 |   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.4E+01                | ca                | 5.1E+02                   | ca      | 2.0E+00 | ca      |    |
| 2,4,6-Trichloroaniline hydrochloride   | 33663-50-2                        | 2.9E-02                        | h                 |   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.7E+01                | ca                | 5.9E+02                   | ca      | 2.3E+00 | ca      |    |
| 1,2,4-Trichlorobenzene   | 120-82-1                          | 2.9E-02                        | p                 | 1.0E-02                                   | i                           | 2.0E-03 | p     | 1                              |                                 |                                  | 1                           | 1.8E+01                | nc                | 3.3E+02                   | nc      | 7.0E+01 | m       |    |
| 1,1,1-Trichloroethane  | 71-55-6                           |                                | 2.0E+00           | i   | 5.0E+00                     | i       | 1     |                                |                                 |                                  | 1                           | 2.6E+03                | nc                | 4.5E+04                   | nc      | 2.0E+02 | m       |    |
| 1,1,2-Trichloroethane  | 79-00-5                           | 5.7E-02                        | i                 | 4.0E-03                                   | i                           | 1.6E-05 | i     |                                | 1                               |                                  | 1                           | 1.3E+00                | ca                | 6.2E+01                   | ca      | 5.0E+00 | m       |    |
| Trichloroethylene (TCE)  | 79-01-6                           | 4.6E-02                        | i                 | 5.0E-04                                   | i                           | 4.1E-06 | i     | 2.0E-03                        | i                               | 1                                |                             | 1                      | 1.3E+00           | nc                        | 2.4E+01 | nc      | 5.0E+00 | m  |
| Trichlorofluoromethane   | 75-69-4                           |                                | 3.0E-01           | i   | 7.0E-01                     | h       | 1     |                                |                                 |                                  | 1                           | 2.3E+02                | nc                | 4.0E+03                   | nc      | 3.1E+02 | nc      |    |
| 2,4,5-Trichlorophenol  | 95-95-4                           |                                | 1.0E-01           | i   |                             |         | 0     | S                              |                                 | 0.10                             | 1                           | 1.5E+03                | nc                | 6.2E+04                   | nc      | 9.1E+02 | nc      |    |
| 2,4,6-Trichlorophenol  | 88-06-2                           | 1.1E-02                        | i                 | 1.0E-03                                   | p                           | 3.1E-06 | i     |                                | S                               |                                  | 0.10                        | 1                      | 1.5E+01           | nc                        | 6.2E+02 | nc      | 5.2E+00 | nc |
| 2,4,5-Trichlorophenoxyacetic acid  | 93-76-5                           |                                | 1.0E-02           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.5E+02                | nc                | 6.2E+03                   | nc      | 9.1E+01 | nc      |    |
| 2-(2,4,5-Trichlorophenoxy) propionic acid  | 93-72-1                           |                                | 8.0E-03           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.2E+02                | nc                | 4.9E+03                   | nc      | 5.0E+01 | m       |    |
| 1,1,2-Trichloropropane   | 598-77-6                          |                                | 5.0E-03           | i   |                             |         |       |                                | 1                               |                                  | 1                           | 9.8E+01                | nc                | 5.1E+03                   | nc      | 4.6E+01 | nc      |    |
| 1,2,3-Trichloropropane   | 96-18-4                           | 3.0E+01                        | i                 | 4.0E-03                                   | i                           | 3.0E-04 | i     | 1                              |                                 |                                  | 1                           | 5.0E-03                | ca                | 9.5E-01                   | ca      | 7.2E-04 | ca      |    |
| 1,2,3-Trichloropropene   | 96-19-5                           |                                | 3.0E-03           | x   | 3.0E-04                     | p       | 1     |                                |                                 |                                  | 1                           | 2.3E-01                | nc                | 4.0E+00                   | nc      | 1.6E-01 | nc      |    |
| Tridiphan  | 58138-08-2                        |                                | 3.0E-03           | i   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 4.6E+01                | nc                | 1.8E+03                   | nc      | 2.7E+01 | nc      |    |
| Triethylamine  | 121-44-8                          |                                |                   |   | 7.0E-03                     | i       | 1     |                                |                                 |                                  | 1                           | 3.7E+01                | nc                | 6.3E+02                   | nc      | 3.7E+00 | nc      |    |
| Trifluralin  | 1582-09-8                         | 7.7E-03                        | i                 | 7.5E-03                                   | i                           |         | 0     |                                |                                 | 0.10                             | 1                           | 6.3E+01                | ca                | 2.2E+03                   | ca      | 8.7E+00 | ca      |    |
| 1,2,4-Trimethylbenzene   | 95-63-6                           |                                |                   |   | 7.0E-03                     | p       | 1     | S                              |                                 |                                  | 1                           | 1.9E+01                | nc                | 3.1E+02                   | nc      | 3.7E+00 | nc      |    |
| 1,3,5-Trimethylbenzene   | 108-67-8                          |                                | 1.0E-02           | x   |                             |         | 1     |                                |                                 |                                  | 1                           | 2.0E+02                | nc                | 1.0E+04                   | nc      | 9.1E+01 | nc      |    |
| Trimethyl phosphate  | 512-56-1                          | 3.7E-02                        | h                 |   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 1.3E+01                | ca                | 4.7E+02                   | ca      | 1.8E+00 | ca      |    |
| 1,3,5-Trinitrobenzene  | 99-35-4                           |                                | 3.0E-02           | i   |                             |         | 0     | S                              |                                 | 0.10                             | 1                           | 4.6E+02                | nc                | 1.8E+04                   | nc      | 2.7E+02 | nc      |    |
| Trinitrophenylmethylnitramine  | 479-45-8                          |                                | 4.0E-03           | p   |                             |         | 0     |                                |                                 | 0.10                             | 1                           | 6.1E+01                | nc                | 2.5E+03                   | nc      | 3.7E+01 | nc      |    |
| 2,4,6-Trinitrotoluene  | 118-96-7                          | 3.0E-02                        | i                 | 5.0E-04                                   | i                           |         | 0     |                                |                                 | 0.10                             | 1                           | 7.6E+00                | nc                | 3.1E+02                   | nc      | 2.2E+00 | ca      |    |



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|--|--|-----------------------------------|--------------------------------|-------------------|---|-----------------------------|-------------|--------------|--------------------------------|---------------------------------|----------------------------------|-----------------------------|------------------------|-------------------|------------------------------|---------|---------|---------|---------|----|
| CONTAMINANT  |  | TOXICITY INFORMATION <sup>1</sup> |                                |                   |   |                             |             |              |                                |                                 |                                  | VCP REMEDIATION GOALS (RGs) |                        |                   |                              |         |         |         |         |    |
|  |  | CAS No.                           | SFO<br>(mg/kg-d) <sup>-1</sup> | RfDo<br>(mg/kg-d) | IUR<br>(µg/m <sup>3</sup> ) <sup>-1</sup> | RfC<br>(mg/m <sup>3</sup> ) | V<br>O<br>C | S =<br>solid | ABS <sub>d</sub><br>(unitless) | ABS <sub>GI</sub><br>(unitless) | Direct Contact Exposure Pathways |                             |                        |                   | Migration to<br>Ground Water |         |         |         |         |    |
|  |  |                                   |                                |                   |   |                             |             |              |                                |                                 | Residential<br>Soil (mg/kg)      | Industrial<br>Soil (mg/kg)  | Ground Water<br>(ug/l) | DAF 20<br>(mg/kg) |                              |         |         |         |         |    |
| Triphenylphosphine oxide   |  | 791-28-6                          |                                | 2.0E-02           | p   |                             |             | 0            |                                | 0.10                            | 1                                | 3.1E+02                     | nc                     | 1.2E+04           | nc                           | 1.8E+02 | nc      | 1.5E+01 | nc      |    |
| Tris(2-chloroethyl) phosphate  |  | 115-96-8                          | 2.0E-02                        | p                 | 7.0E-03                                   | p                           |             | 0            |                                | 0.10                            | 1                                | 2.4E+01                     | ca                     | 8.6E+02           | ca                           | 3.4E+00 | ca      | 6.6E-02 | ca      |    |
| Uranium (chemical toxicity only)   |  | 7440-61-0                         |                                | 3.0E-03           | i   |                             | 3.0E-04     | a            | 0                              |                                 | 1                                | 5.9E+01                     | nc                     | 3.1E+03           | nc                           | 2.7E+01 | nc      |         |         |    |
| Vanadium and compounds   |  | 7440-62-2                         |                                | 5.0E-03           | s   |                             | 1.0E-04     | a            | 0                              |                                 | 0.026                            | 9.7E+01                     | nc                     | 5.1E+03           | nc                           | 3.8E+01 | nc      |         |         |    |
| Vernam   |  | 1929-77-7                         |                                | 1.0E-03           | i   |                             |             | 0            |                                | 0.10                            | 1                                | 1.5E+01                     | nc                     | 6.2E+02           | nc                           | 9.1E+00 | nc      | 1.5E-01 | nc      |    |
| Vinclozolin  |  | 50471-44-8                        |                                | 2.5E-02           | i   |                             |             | 0            |                                | 0.10                            | 1                                | 3.8E+02                     | nc                     | 1.5E+04           | nc                           | 2.3E+02 | nc      | 3.5E+00 | nc      |    |
| Vinyl acetate  |  | 108-05-4                          |                                | 1.0E+00           | h   |                             | 2.0E-01     | i            | 1                              |                                 | 1                                | 2.9E+02                     | nc                     | 4.9E+03           | nc                           | 1.0E+02 | nc      | 4.4E-01 | nc      |    |
| Vinyl bromide  |  | 593-60-2                          |                                |                   |   | 3.2E-05                     | h           | 3.0E-03      | i                              | 1                               |                                  | 1                           | 1.3E-01                | ca                | 6.8E+00                      | ca      | 1.5E-01 | ca      | 8.8E-04 | ca |
| Vinyl chloride   |  | 75-01-4                           | 7.2E-01                        | i                 | 3.0E-03                                   | i                           | 4.4E-06     | i            | 1.0E-01                        | i                               | 1                                | 6.3E-02                     | ca                     | 1.8E+01           | ca                           | 2.0E+00 | m       | 1.4E-02 | m       |    |
| Warfarin   |  | 81-81-2                           |                                | 3.0E-04           | i   |                             |             | 0            |                                | 0.10                            | 1                                | 4.6E+00                     | nc                     | 1.8E+02           | nc                           | 2.7E+00 | nc      | 5.8E-02 | nc      |    |
| Xylenes  |  | 1330-20-7                         |                                | 2.0E-01           | i   |                             | 1.0E-01     | i            | 1                              |                                 | 1                                | 1.9E+02                     | nc                     | 3.2E+03           | nc                           | 1.0E+04 | m       | 2.0E+02 | m       |    |
| Zinc   |  | 7440-66-6                         |                                | 3.0E-01           | i   |                             |             | 0            |                                |                                 | 1                                | 5.9E+03                     | nc                     | 1.0E+05           | max                          | 5.0E+03 | m       |         |         |    |
| Zinc phosphide   |  | 1314-84-7                         |                                | 3.0E-04           | i   |                             |             | 0            |                                |                                 | 1                                | 5.9E+00                     | nc                     | 3.1E+02           | nc                           | 2.7E+00 | nc      |         |         |    |
| Zineb  |  | 12122-67-7                        |                                | 5.0E-02           | i   |                             |             | 0            |                                | 0.10                            | 1                                | 7.6E+02                     | nc                     | 3.1E+04           | nc                           | 4.6E+02 | nc      |         |         |    |
| Notes  |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| <sup>1</sup> Toxicity factors selected based on the hierarchy described in EPA's "Memorandum Regarding Human Health Toxicity Values in Superfund Risk Assessments." From Michael B. Cook, Director, EPA Office of Superfund Remediation and Technology Innovation. To EPA Superfund National Policy Managers, Regions 1 - 10. OSWER Directive 9285.7-53. December 5, 2003. On-Line Address: <a href="http://www.epa.gov/oerrpage/superfund/programs/risk/hhmemo.pdf">http://www.epa.gov/oerrpage/superfund/programs/risk/hhmemo.pdf</a>  |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| EPA Region 3 Risk-Based Concentrations (RBC) Table. Last update: April 14, 2004. On-Line Address: <a href="http://epa.gov/reg3hwmd/risk/human/index.htm">http://epa.gov/reg3hwmd/risk/human/index.htm</a>  |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| EPA Region 6 Human Health Medium-Specific Screening Levels (MSSL) Table. Last update: January 13, 2004. On-Line Address: <a href="http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm">http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</a>   |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| EPA Region 9 Preliminary Remediation Goals (PRG) Table. Last update: October 1, 2002. On-Line Address: <a href="http://epa.gov/region09/waste/sfund/prg/index.htm">http://epa.gov/region09/waste/sfund/prg/index.htm</a>   |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| ** RGs for ammonia were established by NDEQ policy decision based on the ready conversion of ammonia to nitrite and nitrate via chemical nitrification, the lack of an MCL for ammonia, and the established MCL for nitrate.   |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| +++ Designations (see Appendix A, Protocol for VCP Remediation Goal Lookup Tables, Nebraska Voluntary Cleanup Program for more information):   |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| Cadmium and compounds: RfDo is value for water.  |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| Total Chromium (1:6 ratio Cr VI:Cr III): IRIS IUR for Chromium VI used (since IRIS IUR is based on a 1:6 ratio of chromium VI:chromium III).   |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| Chromium VI: IUR is IRIS value for Chromium VI multiplied by 7 (since IRIS IUR is based on a 1:6 ratio of chromium VI:chromium III).   |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| Lead: VCP RGs calculated using EPA's Integrated Exposure Uptake Biokinetic (IEUBK) Model   |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| Manganese (non-food): RfDo reflects IRIS RfDo for manganese divided by 3, which reflects subtraction of dietary sources of manganese.  |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| Thallium and compounds: RfDo is IRIS RfDo for thallium sulfate adjusted for the molecular weight of thallium   |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| Vinyl chloride (residential): SFO and IUR are IRIS values based on continuous lifetime exposure from birth, derived using the linearized multistage (LMS) method.  |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |
| Vinyl chloride (industrial): SFO and IUR are IRIS values based on continuous lifetime exposure during adulthood, derived using the linearized multistage (LMS) method.   |  |                                   |                                |                   |   |                             |             |              |                                |                                 |                                  |                             |                        |                   |                              |         |         |         |         |    |

**Appendix B      Standard Operating Procedures**

## 1.1 UTILITY CLEARANCE

### INTRODUCTION

Invasive field investigation activities such as drilling, soil gas surveys, test excavation or remedial construction activities require location of underground utilities prior to initiating work. Such clearance is sound practice in that it minimizes the potential for damage to underground facilities and more importantly, is protective of the health and safety of personnel. Under no circumstances will invasive activities be allowed to proceed without obtaining proper utility clearance by the appropriate public agencies and/or private entities. **This clearance requirement applies to all work on both public and private property, whether located in a dense urban area or a seemingly out-of-the-way rural location.**

The responsibility of obtaining this clearance lies with the Consultant or Contractor performing the work.

In most states such utility clearance is required by law, and obtaining clearance includes contacting a public or private central clearance agency via a “one-call” telephone service and providing them with proposed exploration location information. This is discussed in more detail herein. It is important to note that public utility agencies may not, and usually don’t have information regarding utility locations on private property. As such, utility clearance at the Zion Nuclear Power Station must be cleared using available site drawings, and written approval must be obtained from plant personnel with appropriate knowledge of existing utilities.

### PROCEDURES REFERENCED

- 2.2 Soil Borings

### PROCEDURE

- Before marking any proposed exploration or underground construction locations, it is critical that all readily-available information on underground utilities and structures be obtained. This includes publicly-available information as well as information in the possession of private landowners. Any drawings obtained must be reviewed in detail for information pertaining to underground utilities.
- Using the information obtained, the site should be viewed in detail for physical evidence of buried lines or structures, including pavement cuts and patches,

variation in or lack of vegetation, variations in grading, etc. (Care must also be taken to avoid overhead utilities as well). Presence of surface elements of buried utilities should be documented, such as manholes, gas or water service valves, catch basins, monuments or other evidence.

- Overhead utility lines must be taken into account when choosing exploration and excavation locations. Most states require a minimum of 10 ft. of clearance between equipment and energized wires. Such separation requirements may also be voltage-based and may vary depending on state or municipality regulations.

In evaluating clearance from overhead lines, the same restrictions may apply to “drops”, or wires on a utility pole connecting overhead and underground lines.

- Using the information obtained and observations made, *proposed* exploration or construction locations should be marked in the field. Marking locations can be accomplished using spray paint on the ground, stakes, or other means. **All markings of proposed locations should be made in white**, in accordance with the generally-accepted universal color code for facilities identification (AWMA 4/99):

- White: Proposed Excavation or Drilling location
- Pink: Temporary Survey Markings
- Red: Electrical Power Lines, Cables, Conduit and Lighting Cables
- Yellow: Gas, Oil, Steam, Petroleum or Gaseous Materials
- Orange: Communication, Alarm or Signal Lines, Cables or Conduits
- Blue: Potable Water
- Purple: Reclaimed Water, Irrigation and Slurry Lines
- Green: Sewers and Drain Lines

- In order to effectively evaluate the proposed locations with these entities, detailed, accurate measurements between the proposed locations and existing surface features should be obtained. Such features can be buildings, street intersections, utility poles, guardrails, etc.
- Obtaining the utility clearance generally involves two entities:
  - The designated “One-Call” underground facilities protection organization for the area; and
  - The landowner.

Both entities must be contacted and the proposed locations evaluated in light of information available for existing underground facilities. The detailed measurement information described above will be required by the “one call” agency. The owners of the applicable, participating underground utilities are obligated to mark their respective facilities at the site in the colors described

above. Utility stake-out activities will typically not commence for approximately 72 hours after the initial request is made.

- The public and private utility entities generally only mark the locations of their respective underground facilities within public rights-of-way. Determination of the locations of these facilities on private property will be the responsibility of the project Consultant or Contractor. If available information does not contain sufficient detail to locate underground facilities with a reasonable amount of confidence, alternate measures may be appropriate, as described below. In some cases, the memory of a long-time employee of a facility on private property may be the best or only source of information. It is incumbent on the Consultant or Contractor to exercise caution and use good judgement when faced with uncertainty.
- **Notes: It is important to note that not all utilities are participants in the “one-call” agency or process. As such, inquiries must be made with the “one-call” agency to determine which entities do not participate, so they can be contacted independently.**

**Most utility Stake-outs have a limited time period for which they remain valid, typically two to three weeks. It is critical that this time period be taken into account to prevent expiration of clearance prior to completion of the invasive activities, and the need to repeat the stake-out process.**

- Care must be exercised to document receipt of notice from the involved agencies of the presence or absence of utilities in the vicinity of the proposed locations.

Most agencies will generally provide a telephone or fax communication indicating the lack of facilities in the project area. **If contact is not made by all of the agencies identified by the “one-call” process, do not assume that such utilities are not present. Re-contact the “one-call” agency to determine the status.**

- For complicated sites with multiple proposed locations and multiple utilities, it is advisable to arrange an on-site meeting with utility representatives. This will minimize the potential for miscommunication amongst the involved parties.
- Completion of the utility stake out process is not a guarantee that underground facilities will not be encountered in excavations or boreholes; in fact, most “one-call” agencies and individual utilities do not offer guarantees, nor do they accept liability for damage that might occur. Accordingly, it is advisable that any invasive activities proceed with extreme caution in the upper four to five feet in the event the clearance has failed to identify an existing facility. This may necessitate hand-excavation or probing to confirm potential presence of shallow

utilities. If uncertainty exists for any given utility, extra activities can be initiated to solve utility clearance concerns. These options include:

- Hand digging, augering or probing to expose or reveal shallow utilities and confirm presence and location. In northern climates this may require advancing to below frost line, typically at least four feet.
- Screening the proposed work areas with utility locating devices, and/or hiring a utility locating service to perform this task. The private utility locating service is a growing industry that has formed a national organization. The National Utility Locate Contractors Association (NULCA) can be reached at 715-635-6004.

## **EQUIPMENT**

- White Spray paint
- Wooden stakes, painted white or containing white flagging
- Color-code key
- Available drawings

## **REFERENCE**

- American Public Works Association, April 1999, Uniform Color Code (<http://www.apwa.net/>)

## **1.2 FIELD DATA RECORDING – FIELD BOOKS, LOG FORMS AND ELECTRONIC DATA**

### **INTRODUCTION**

This procedure describes protocol for documenting standard investigation activities in the field. Field data serves as the cornerstone for an environmental project, not only for site characterization but also for additional phases of investigation or remedial design. Inaccurate or incomplete field data may create significant problems and additional project costs. In addition, recorded field data becomes a legal record of project work, and should be approached with that in mind. Producing legally defensible data includes proper and appropriate recording of field data as it is obtained in a manner that will preserve it for future use.

This procedure provides guidelines for accurate, thorough collection and preservation of written and electronic field data.

### **PROCEDURES REFERENCED**

- 6.0 Field Instruments - Use And Calibration

### **PROCEDURE**

Typical field data to be recorded generally includes, but is not limited to, the following:

- general field observations;
- numeric field measurements and instrument readings;
- quantity estimates;
- sample locations and corresponding sample numbers;
- relevant comments and details pertaining to the samples collected;
- documentation of activities, procedures and progress achieved;
- contractor pay item quantities;
- weather conditions;
- a listing of personnel involved in site-related activities;
- a log of conversations, site meetings and other communications; and
- field decisions made and pertinent information associated with the decisions.

#### **Written Field Data**

Written field data is generally recorded on one of two media: A standardized, pre-printed field log form, or a bound field log book. In general, use of a field log form is preferable as it prompts field personnel to make appropriate observations and record data in a standardized format. This promotes completeness and consistency from one person to the next.

In the absence of an appropriate pre-printed form, the data should be recorded in an organized and structured manner in a dedicated project field log book. Log books must be hard-cover, bound so that pages cannot be added or removed, and should be made from high-grade 50% rag paper with a water-resistant surface.

The following are guidelines for use of field log forms and log books:

1. Information must be factual and complete. Do not abbreviate.
2. All entries will be made in black indelible ink with a ballpoint pen and will be written legibly. Do not use “rollerball” or felt tip-style pens, since the water-soluble ink can run or smear in the presence of moisture.
3. All pages in a log book must be consecutively numbered. Field log forms should also be consecutively numbered.
4. Each day’s work must start a new log book page.
5. At the end of each day, the current log book page must be *signed and dated* by the field personnel making the entries.
6. When using field log forms, they must also be *signed and dated*.
7. Make data entries immediately upon obtaining the data. Do not make temporary notes in other locations for later transfer to log forms or log books; this only increases the potential for error or loss of data.
8. Entry errors are to be crossed out with a single line, dated and initialed by the person making the correction.
9. Do not leave blanks on log forms, if no entry is applicable for a given data field, indicate so with “NA” or a dash (“--”).
10. At the earliest practical time, photocopies of log forms and log book pages should be made and placed in the project file as a backup in the event the book or forms are lost or damaged.
11. Log books should be dedicated to one project only, i.e., do not record data from multiple projects in one log book.



## **Electronic Data**

Electronic data recording is widely used in environmental investigation and remediation projects. In general, it involves electronic measurement of field information through the use of monitoring instruments, sensors, gauges, and equipment controls. The following is a list of guidelines for proper recording and management of electronic field data:

1. Field data management should follow requirements of a project-specific data management plan (DMP), if one exists.
2. Use only instruments that have been calibrated in accordance with manufacturer's recommendations.
3. Personnel properly trained and experienced in the use of the equipment and software should only perform usage of instruments, controls and computers for the purpose of obtaining field data.
4. Use only fully licensed software on PCs and laptops.
5. Loss of electronic files may mean loss of irreplaceable data. Every effort should be made to back up electronic files obtained in the field as soon as practical. A backup file placed on a disk and kept in a separate location from the original will minimize the potential for loss.
6. Electronic files, once transferred from field instruments or laptops to office computers, should be protected if possible to prevent unwanted or inadvertent manipulation or modification of data. Several levels of protection are usually available for spreadsheets, including making a file "read-only" or assigning a password to access the file.
7. Protect floppy disks from exposure to moisture, excessive heat or cold, magnetic fields, or other potentially damaging conditions.
8. Remote monitoring is often used to obtain stored electronic data from site environmental systems. A thorough discussion of this type of electronic field data recording is beyond the scope of this SOP. Such on-site systems are generally capable of storing a limited amount of data as a comma-delimited or spreadsheet file. Users must remotely access the monitoring equipment files via modem or other access, and download the data. In order to minimize the potential for loss of data, access and downloading of data should be performed frequently enough to insure the data storage capacity of the remote equipment is not exceeded.

## **EQUIPMENT**

- 5” by 7” National 407 Field Book, with high-grade 50% rag paper with water-resistant surface, hard-cover, or equivalent;
- Appropriate field log forms;
- Indelible ball point pen (do not use “rollerball” or felt-tip style pens);
- Straight edge;
- Pocket calculator;
- Laptop computer (if required).

## **REFERENCES**

## 2.1 DRILLING TECHNIQUES/BACKGROUND INFORMATION

### INTRODUCTION

This section will provide a brief description of common methods for conducting subsurface investigations. It should be noted that every drilling technology has its limitations.

### PROCEDURES REFERENCED

- 2.2 Soil Borings
- 3.2 Overburden Wells
- 3.4 Well Development

### DRILLING METHODS

It is important that the drilling method or methods used minimize disturbance of subsurface materials and not contaminate the subsurface and groundwater. The actual drilling method would be dependent upon site-specific geologic conditions. It is important to note that the drilling equipment selected be decontaminated before and between borehole locations to prevent cross contamination (see SOP 7.0). Where possible drilling methods that minimize waste generation (soil cuttings), and waste water generation (decon water), should be selected for investigation/remedial tasks.

In other settings it may be desirable to dictate drilling procedures that minimize turbidity/maximize the ability to achieve sediment-free groundwater. Generally, roto sonic techniques or rotary spun casing techniques achieve these objectives, or oversizing the borehole/sand pack may be considered, as well.

#### Rotosonic Drilling

This method consists of a combination of rotation with high frequency vibration to advance a core barrel to a desired depth. Once the vibration is stopped, the core barrel is retrieved, and the sample is vibrated or hydraulically extracted into plastic sleeves or sample trays. Monitoring wells shall be installed through the outer casing with minimal formation disturbance and mixing of formation materials. Rotosonic drilling generally requires less time than more traditional methods and minimizes soil mixing and soil disturbance (preferred for well locations where low turbidity is an important objective). Continuous, relatively undisturbed samples can be obtained through virtually any formation. Conventional sampling tools can be employed as attachments (i.e., hydropunch, split spoon, shelly tube, etc.). No mud, air, water, or other circulating medium is required. The roto sonic method can drill easily through formations such as

rock, sand, clay, or glacial till. The main limitation of this method is the availability of equipment, the large area required (i.e., drill units are quite large), and costs.

#### Direct Push (Geoprobe™)

Direct push refers to the sampler being “pushed” into the soil material without the use of drilling to remove the soil. This method relies on the amount of the drill weight combined with percussion for advancement of the tool string. Discrete soil samples are continuously obtained as well groundwater and vapor samples can also be collected utilizing this method. Subsurface investigations typically probe to depths of 30 feet or more, although depths will vary based on site-specific geology. This method is used extensively for initial Site screening activities to delineate vertical and horizontal plume presence and can significantly reduce investigative costs. This method is becoming more popular due to the limited cuttings that are produced during the sampling process and the sampling process speed. The use of the Geoprobe™ 6600 also allows for the installation of 2-inch diameter monitoring wells.

#### Rotary Method

This method consists of a drill rod attached to a drill bit (soils: tricone, drag; rock: button studded, diamond studded) that rotates and cuts through the soils and rock. The cuttings produced are forced to the surface between the borehole wall and the drill rod by drilling fluids that generally consist of water, drilling mud, or air. The drilling fluids not only force the cuttings to the surface but also keep the drilling bit cool. Using rotary methods for well installations can be difficult, as it usually requires several steps to complete the installation. First, the borehole is drilled; then temporarily cased; then the well is installed; and then the temporary casing is removed. In some cases, the borehole may remain open without installing a casing but this will only occur in limited instances (i.e., cohesive soils).

##### i) Water Rotary

When using water rotary, the potable water supply shall be analyzed for contaminants of concern. Water rotary is the preferred rotary method since the potable water is the only fluid introduced into the borehole during drilling. However, the use of water as a fluid is generally only successful when drilling in cohesive soils. The use of potable water (only) also reduces well development time, when compared to mud rotary.

##### ii) Air Rotary (typically used in rock)

When using air rotary, the air compressor must have an in-line oil filter system assembly to filter the oil mixed with the air coming from the compressor. This will help eliminate contaminant introduction into the formation. The oil filter system shall be regularly inspected. Air compressors not having an in-line oil filter system are not acceptable for air rotary drilling. A cyclone velocity dissipater or similar air

containment system shall also be used to funnel the cuttings to one location rather than letting the cuttings blow uncontrolled out of the borehole. Air rotary may not be an acceptable method for well installation where certain contaminants are present in the formation. Alternatively, it may be necessary to provide treatment for the air being exhausted from the borehole during the installation process.

### iii) Mud Rotary

Mud rotary is the least preferred rotary method because contamination can be introduced into the borehole from the constituents in the drilling mud (i.e., Ohio, Michigan). The drilling muds are generally non-toxic and do not introduce contaminants into the borehole, however, it is possible for mud to commonly infiltrate and affect water quality by sorbing metals and polar organic compounds. Chemical composition and priority pollutants analysis may be obtained from the manufacturer. Mud rotary shall utilize only potable water and pure (no additives) bentonite drilling muds. The viscosity of the drilling mud shall be kept as low as possible in order to expedite well development. Proper well development is essential to ensure the removal of all the drilling mud and to return the formation to its previously undisturbed state.

### Hollow-Stem Auger

The hollow-stem continuous-flight auger (HSA) is among the most frequently used in the drilling of monitoring wells (overburden wells) or for placement of overburden casings for bedrock wells.

The primary advantages of hollow-stem augering are that:

- generally, no additional drilling fluids are introduced into the formation;
- representative geologic soil samples can be easily obtained using split-spoon samples in conjunction with the hollow-stem augers; and
- monitoring wells can be installed through the augers eliminating the need for temporary borehole casings.

Disadvantages of hollow-stem augering are:

- creates problems for select parameters;
- large volumes of cuttings are typically generated;
- decon is fairly time consuming/labor intensive; and
- relatively slow when compared to direct-push methods (soil sampling tasks).

Installing monitoring wells through hollow-stem augers is a relatively simple process although precautions need to be taken to ensure that the well is properly backfilled. This can be particularly problematic in cases where flowing sand is present.

Hollow-stem augers are available with inside diameters of 2.5, 3.25, 4.0, 4.25, 6.25, 8.25, and 10.25 inches. The most commonly used are 4.25 inches for 2-inch (5 cm) monitoring wells and 6.25 inches for 4-inch (10 cm) monitoring wells. Boreholes can usually be drilled with hollow-stem augers to depths up to 100 feet (30 m) in unconsolidated clays, silts, and sands. Removing augers in flowing sand conditions while installing monitoring wells may be difficult since the augers have to be removed without being rotated. A bottom plug or pilot bit assembly should be utilized to keep out soils and/or water that have a tendency to plug the bottom of the augers during drilling. If flowing sands are encountered, potable water (analyzed once for contaminants of concern) may be poured into the augers to equalize the pressure to keep the formation materials and water from coming up into the auger once the bottom plug is removed.

### Dual-Wall Reverse Circulation Air Method of Drilling

This method consists of two concentric strings of drill pipe (an outer casing and a slightly smaller inner casing). The outer drill pipe is advanced using rotary drilling with a donut-shaped bit attached to the dual casing string cuts an area only the width of the two casings and annulus between. Compressed air is continually forced down the annulus between the inner casing carrying the drill cuttings and groundwater. At the surface, the inner casing is connected to a cyclone hopper where the drill cuttings and groundwater fall out the bottom of the hopper, and air is disbursed out the top. The dual wall provides a fully cased borehole in which to install a monitoring well. The only soil or groundwater materials exposed at any time are those at the drill bit. Therefore, the potential for carrying contamination from one stratum to another is minimal. Depth-specific groundwater samples can be collected during drilling; however, since the groundwater is aerated, analysis for volatile compounds may not be valid.

### Well Points

In some limited cases, well points (sand points) are driven into place without the use of augers. This method provides no information on the geologic condition (other than the difficulty of driving which may be related to formation density). Well points are most often used simply to provide dewatering of a geologic unit prior to excavation in the area. Well points are also used in monitoring shallow hydrogeologic conditions such as in stream beds.

## **REFERENCE**

Numerous publications are available describing current monitoring well design and construction procedures.

1. Driscoll, F.G., 1986. Groundwater and Wells, 2nd Edition. Johnson Division.
2. Freeze, R.A. and Cherry, J.A., 1979. Groundwater. Prentice Hall, Inc.
3. EPA/625/6-90/0166 (July 1991), Handbook Ground Water Volume II:Methodology

4. National Water Well Association, 1989. Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells
5. Environmental Protection Agency (1986), RCRA Groundwater Monitoring Technical Enforcement Guidance Document, OSWER-9950.1

In addition, the following ASTM publications apply:

1. ASTM D5474 Guide for Selection of Data Elements for Ground-Water Investigations
2. ASTM D5787 Practice for Monitoring Well Protection
3. ASTM D5521 Guide for Development of Ground-Water Monitoring Wells in Granular Aquifers
4. ASTM D5978 Guide for Maintenance and Rehabilitation of Ground-Water Monitoring Wells
5. ASTM D5299 Guide for Decommissioning of Ground Water Wells, Vadose Zone Monitoring Devices, Boreholes and Other Devices for Environmental Activities
6. ASTM D5092 Standard Practice for Design and Installation of Ground Water Monitoring Wells in an Aquifer.

## **2.2 SOIL BORINGS**

### **INTRODUCTION**

The following presents a description of the methods generally employed for the installation of boreholes and the collection of subsurface soil samples. Boreholes are typically installed to define geologic conditions for hydrogeologic and geotechnical evaluation; to allow the installation of monitoring wells and piezometers; and to allow the collection of subsurface soil samples (generally above the water table) for chemical analysis.

Several manual methods are available for the collection of shallow subsurface soil samples (e.g., hand augers, post-hole augers, vibratory hammers). However, the most common methods to advance boreholes are rotosonic drilling techniques, hollow-stem augers (HSA), or the use of a direct-push equipment. SOP 2.1 Drilling Techniques/Background, provides insight into the advantages/disadvantages of these drilling methods.

### **PROCEDURES REFERENCED**

- 1.1 Utility Clearance
- 2.1 Drilling Techniques/Background Information
- 5.1 Soil Sample Collection

### **BOREHOLE REQUIREMENTS**

The following activities must be undertaken prior to installing a borehole.

- i) Obtain a site plan and any previous stratigraphic logs. Determine the exact number and location of boreholes to be installed and the depths of samples for chemical analysis.
- ii) Coordinate lab services including:
  - glassware/sample jars;
  - cooler;
  - shipping details;
  - start date; and
  - expected duration.



- iii) Establish borehole locations in field using available landmark or by surveying methods if necessary.
- iv) Arrange for utility clearance of franchised utilities and site utilities.
- v) Determine notification needs with the Project Manager. Notify the regulatory groups, landowner, facility personnel, and laboratory of the sampling event.
- vi) Determine the methods for handling and disposal of drill cuttings, wash waters, and spent decontamination fluids.

Once the prior planning and preparation activities are completed, the borehole installation and subsurface soil sampling program can proceed. The typical work sequence is as follows:

- locating and marking of borehole locations (if not already completed);
- equipment decontamination;
- final visual examination of proposed drilling area for utility conflicts/final hand auger or post-hole check to verify utility absence;
- advancement of borehole and collection of the soil sample;
- field screening of soil sample;
- description of soil sample;
- sample preparation and packaging;
- abandonment of boreholes;
- surveying of borehole locations and elevations; and
- field note completion and review.

i) Location and Marking of Boreholes/Final Visual Check

The proposed borehole locations marked on the site plan are located in the field and staked. On most sites, this will likely be done several days in advance of the drill rig arriving on site. Unless boreholes are to be installed on a fixed grid, the proposed locations are usually placed at biased locations.

Once the final location for the proposed boring has been selected and utility clearances are complete, one last visual check of the immediate area should be performed before drilling proceeds. This last visual check should confirm the locations of any adjacent utilities (subsurface or overhead) and verification of adequate clearance. If gravity sewers or conduits exist in the area, any access manholes or chambers should be opened and the conduit/sewer alignments confirmed. Do not enter manholes unless confined space procedures are followed.

ii) Borehole Advancement

If possible, it is prudent to use a hand auger or post-hole digging equipment to a sufficient depth to verify the absence of buried utilities and pipelines. This procedure should clear the area to the full diameter of the drilling equipment that will follow. **(Only if underground utilities are suspected in the area, or requested by client.)**

If it is necessary to relocate any proposed borehole due to terrain, utilities, access, etc., the Field Coordinator/Task Manager must be notified and an alternate location will be selected. If moved, details of new location should be recorded in field log book.

Prior to use and between each borehole location at an environmental site, the drilling and sampling equipment must be decontaminated. All decontamination must be conducted in accordance with the project-specific plans or the methods presented in SOP 7.0

The clean augers/tooling are covered with clean plastic sheeting to prevent contact with foreign materials. For geotechnical, geologic, or hydrogeologic studies where contaminants will not be present, it is sufficient to clean the drilling equipment simply by removing the excess soils.

- Collection of soil samples is one of the most important considerations in selecting drilling methods. Therefore, the need for reviewing drilling techniques (SOP 2.1) and the Site objectives must first be considered. Sections iii) and iv) describe borehole soil sampling procedures using direct-push tooling and hollow stem augering/split spoon sampling (Standard Penetration Testing - SPT), respectively.

### iii) Direct-Push/Macro-Core™ Soil Sampler

The operation of the direct-push/Macro-Core™ Soil Sampler (or equivalent) consists of “pushing” the sampler into the subsurface and then retrieved using a direct-push soil probing machine. The collected soil core is contained within an internal soil liner (acetate, polyethylene or Teflon) and removed from the sampler once returned to the ground surface. Sampler length is variable depending on equipment available (2 ft., 4 ft., 5 ft.). Once the soil liner has been removed and the outer sampler de-coned, a new liner is inserted and the sampler reassembled. The clean sampler is then driven back down the same hole to collect the next soil sample.

The Macro-Core™ sampler can be used in either the open-tube or closed-point sampling mode. The open-core sample mode is most commonly used in stable soil conditions. In unstable soils, the piston rod point system prevents collapsed soil from entering the sampler as it is advanced back down the hole. Once at the sample depth, the piston rod is unthreaded and released. The sampler is then driven into the subsurface to fill the sampler with soil, the piston point rides on top of the soil, as it enters the sampler. Once recovered the soil liner with collected soils is opened (cut lengthwise) and examined to collected soil screening information, soil logging information, and soils for chemical analysis.

iv) Standard Penetration Testing (SPT) Sampling and Testing Procedure

This method is used to obtain representative samples of subsurface soil materials and to determine a measure of the in situ relative density of the subsurface soils. The test methods described below must be followed to obtain accurate SPT values. The split spoon is typically driven in advance of a hollow stem auger string which allows collection of the disturbed but representative sample.

SPT sampling is performed by using a split barrel sampler in accordance with ASTM D1586. The split barrel sampler, or split spoon, consists of an 18- or 24-inch long, 2-inch outside diameter tube, which comes apart length-wise into two halves. The split spoon is typically driven in advance of a hollow stem auger string which allows collection of the disturbed but representative soil sample.

Once the borehole is advanced to the target depth and the borehole cleaned of cuttings, representative soil samples are collected in the following manner:

- the split-spoon sampler should be inspected to ensure it is properly cleaned and decontaminated. The driving shoe (tip) should be relatively sharp and free of severe dents and distortions;
- the cleaned split-spoon sampler is attached to the drill rods and lowered into the borehole. Do not allow the sampler to drop onto the soil;
- after the sampler has been lowered to the bottom of the hole, it is given a single blow to seat it and make sure that it is in undisturbed soil. If there still appear to be excessive cuttings in the bottom of the borehole, remove the sampler from the borehole and remove the cuttings; and
- mark the drill rods in three or four successive 6-inch (0.15 m) increments, depending on sampler length, so that the advance of the sampler under the impact of the hammer can be easily observed for each 6-inch (0.15 m) increment.

The sampler is then driven continuously for either 18 or 24 inches (0.45 or 0.60 m) by use of a 140-pound (63.5 kg) hammer. The hammer may be lifted and dropped by either the cathead and rope method, or by using a trip, automatic, or semi-automatic drop system. The hammer should free-fall a distance of 30 inches ( $\pm 1$  inches) (760 mm,  $\pm 25$  mm) per blow. Measure the drop at least daily to ensure that the drop is correct. To ensure a free-falling hammer, no more than 2 1/4 turns of the rope may be wound around the cathead (see ASTM D1586). The number of blows applied in each 6-inch (0.15 m) increment is counted until one of the following occurs:

- a total of 50 blows have been applied during any one of the 6-inch (0.15 m) increments described above;
- a total of 100 blows have been applied;
- there is no advancement of the sampler during the application of ten successive blows of the hammer (i.e., the spoon is "bouncing" on a stone or bedrock); or

- the sampler has advanced the complete 18 or 24 inches (0.45 or 0.60 m) without the limiting blow counts occurring as described above.

In some cases where the limiting number of blow counts has been exceeded, the Consultant may direct the driller to attempt to drive the sampler more if collection of a greater sample length is essential.

On the field form, record the number of blows required to drive each 6-inch (0.15 m) increment of penetration. The first 6 inches is considered to be a seating drive. The sum of the number of blows required for the second and third 6 inches (0.15 m) of penetration is termed the "standard penetration resistance" or the "N-value".

*Note: If the borehole has sloughed and there is caved material in the bottom, the split spoon may push through this under its own weight, but now the spoon is partially "pre-filled". When the spoon is driven the 18 or 24 inches representing its supposedly empty length, the spoon fills completely before the end of the drive interval. Two problems arise:*

- 1. the top part of the sample is not representative of the in-place soil at that depth;*
- 2. the SPT value will be artificially higher toward the bottom of the drive interval since the spoon was packed full. These conditions should be noted on the field log.*

The sampler is then removed from the borehole and unthreaded from the drill rods. The open shoe (cutting end) and head of the sampler are partially unthreaded by the drill crew and the sampler is transferred to the geologist/engineer work surface.

*Note: A table made out of two sawhorses and a piece of plywood is appropriate, or a drum, both covered with plastic sheeting.*

The open shoe and head are removed by hand, and the sampler is tapped so that the tube separates.

*Note: Handle each split spoon with clean disposable gloves if environmental issues are being investigated.*

Measure and record the length of sample recovered making sure to discount any sloughed material that is present on top of the sample core.

Caution must be used when conducting SPT sampling below the groundwater table, particularly in sand or silt soils. These soils tend to heave or "blow back" up the borehole due to the difference in hydraulic pressures between the inside of the HSA and the undisturbed soil. To equalize the hydraulic pressure, the inside of the HSA must be filled with water or drilling mud. The drilling fluid level within the boring or hollow-stem augers needs to be maintained at or above the in situ groundwater level at all times during drilling, removal of drill rods, and sampling. Since heave or blow back is not always

obvious to the driller, it is essential that the water level in the borehole always be maintained at or above the groundwater level. Heaving conditions and the use of water or mud should be noted on the field logs.

SPT sampling below the water table in sands and silt occasionally results in low SPT values being obtained due to the heaving effect disturbing the soil especially if the water level in the hole has not been maintained at the in situ water level. Suspect low N values should be noted on the field logs. If it is critical to have accurate N values below the water table, other methods can be employed, such as conducting a dynamic cone penetration test. This quick and easy test involves attaching a cone shaped tip to the end of the drill rods, and driving the tip into the ground similar to the SPT method, except that the borehole is not pre-augered. Cones may be driven 20 to 40 feet through a formation without augering. Blow counts are recorded for each foot (0.3 m) of advancement.

A variation of split barrel sampling involves the use of a longer barrel in conjunction with hollow stem augers. The sampling barrel is installed inside the auger with a swivel attachment to limit rotation of the barrel. After completion of a 5-foot auger penetration, the auger is left in place and the barrel retrieved from the borehole. The sampler should be handled and the sample retrieved in the same way as described above for SPT sampling. This method is quicker than SPT split spoon sampling and the sample is virtually undisturbed because the cutting shoe sits ahead of the auger. No SPT information is collected due to soil sample collection during auger run.

#### Thin-Walled Samplers (Shelby Tubes)

Thin-walled samplers are used to collect relatively undisturbed samples (as compared to split-spoon samples) of soft to stiff clayey soils. Shelby tubes are commonly used. The Shelby Tube has an outside diameter of 2 or 3 inches and is 3 feet long. These undisturbed samples are used for certain laboratory tests of structural properties (consolidation, hydraulic conductivity, shear strength) or other tests that might be influenced by sample disturbance. Procedures for conducting thin-walled tube sampling are provided in ASTM D1587, and are briefly described below.

- the soil deposit being sampled must be cohesive in nature, and relatively free of sand, gravel, and cobble materials, as contact with these materials will damage the sampler;
- clean out the borehole to the sampling elevation using whatever method is preferred that will ensure the material to be sampled is not disturbed. If groundwater is encountered, maintain the liquid level in the borehole at or above groundwater level during the sampling operation;
- bottom discharge bits are not permitted. Side discharge bits may be used, with caution. Jetting through an open-tube sampler to clean out the borehole to sampling elevation is not permitted. Remove loose material from the center of a casing or hollow-stem auger as carefully as possible to avoid disturbance of the material to be sampled;

- place the sample tube so that its bottom rests on the bottom of the hole. Advance the sampler into the formation without rotation by a continuous and relatively rapid motion; usually hydraulic pressure is applied to the top of the drill rods;
- determine the length of advance by the resistance and condition of the formation, but the length shall never exceed 5 to 10 diameters of the tube in sands and 10 to 15 diameters of the tube in clays;
- in no case should the length of advance be greater than the sample-tube length minus an allowance for the sampler head and a minimum of 3 inches for cuttings.
- the tube may be rotated to shear the bottom of the sample 2 to 3 minutes after pressing in, and prior to retrieval to ensure the sample does not slide out of the tube. Lift the weight of the rods off of the tube prior to rotating.
- withdraw the sampler from the formation as carefully as possible in order to minimize disturbance of the sample;
- package and transport the sample in accordance with Paragraph ix).

On occasion it may be required to extract the sample from the tube in the field.

- a sample extruder, which consists of a clamp arrangement to hold the tube and a hydraulic ram to push the sample through the tube, is usually mounted on the side of the rig. To prevent cross-contamination, be certain that the extruder is field cleaned between each sample;
- the sample is then extruded into a carrying tray; these are often made from a piece of 4-inch or 6-inch diameter PVC pipe cut lengthwise. Be certain that the carrying tray is field cleaned between each sample. The sample is carried to the work station to describe the sample, trim the potentially cross contaminated exterior, and place it in the appropriate container; and
- the Shelby tube may then be thoroughly field cleaned and decontaminated for reuse. Since they are thin-walled, the tubes are easily damaged, crimped, or otherwise distorted during handling or pushing. The Shelby Tube should be inspected before use and any which are significantly damaged should be rejected.

#### v) Borehole Completion

At the completion of the soil boring, once the soil/groundwater samples have been collected, the borehole annulus is then abandoned. Each boring will be surveyed to establish vertical/horizontal information; field ties (i.e., swing ties) will also be collected to document the boring location. Once completed, a stratigraphic log will be prepared for reporting purposes.

## **EQUIPMENT**

- Drilling Equipment

- Tape Measure

## REFERENCE

1. ASTM D420-93 Guide to Site Characterization for Engineering, Design, and Construction Purposes
2. ASTM D1452-80 Practice for Soil Investigation and Sampling by Auger Borings
3. ASTM D1586-84 Test Method for Penetration Test and Split-Barrel Sampling of Soils
4. ASTM D1587-94 Practice for Thin-Walled Tube Geotechnical Sampling of Soils
5. ASTM D2488-93 Practice for Description and Identification of Soils (Visual-Manual Procedure)
6. National Water Well Association, Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells.1989
7. EPA OSWER-9950.1,1986. RCRA Ground-Water Monitoring Technical Enforcement Guidance Document

## 2.4 BOREHOLE ABANDONMENT/SEALING

### INTRODUCTION

The following procedure describes common techniques for the abandonment/sealing of overburden boreholes. Borehole completion may have been performed by hollow stem augering/split spoon sampling, direct push sampling device, solid stem augering or other soil sample collection techniques. The method of borehole abandonment selected for a program will be dependent on a number of factors such as: depth to groundwater, presence of contamination (and degree of contamination i.e., light or dense non-aqueous phase liquids - NAPL), confining layer presence and/or physical setting (i.e., open field/vacant land, vs. facility setting). The Work Plan guiding these activities (soil boring/boring closure) will dictate which method of borehole abandonment/sealing is required. The borehole abandonment/sealing techniques reviewed in the following consist of:

- soil cutting backfill;
- bentonite chip backfill; or
- cement/bentonite grout backfill using tremie techniques.

Boreholes need to be abandoned and sealed properly to prevent surface water entry to the groundwater regime, to eliminate any physical hazard, and to prevent/protect groundwater movement from one aquifer to another.

### PROCEDURES REFERENCED

- 2.2 Soil Borings

### BOREHOLE ABANDONMENT/SEALING PROCEDURE

#### A. Soil Cutting Backfill

Typically employed when working above groundwater table and at shallow depths.

- The final depth of borehole will be measured and recorded.
- Cuttings are dropped into borehole after augering/sample equipment is removed.
- Drill rod and/or probe rodding is used to compact/compress cuttings to allow return of all cuttings back into borehole.
- Mound final surface of cuttings above ground surface to allow settlements and promote surface water runoff away from boring.
- Borehole abandonment will be documented in field records/notes.



## B. Bentonite Chip Backfill

Typically employed when working above or just into the groundwater table

- Excess cuttings have been drummed for disposal or excess cuttings have been spread at ground surface.
- The depth of the borehole will be measured and recorded.
- Bentonite chips will be dropped into borehole as hollow stem augers are removed, or after the boring equipment has been removed from the borehole (solid stem auger, probing tools, split spoon samplers).
- The bentonite chip backfill will be extended to within 1 foot of ground surface, the final borehole space will be backfilled with native soil and mounded slightly to allow settlement and promote surface water runoff away from the boring. Alternatively, the borehole cuttings may be mixed with bentonite to complete the abandonment/sealing task.
- Borehole abandonment will be documented in field records/notes.

## C. Cement/Bentonite Grout Backfill

Typically employed when working below the groundwater table, or in an area where a confining layer exists and the potential for groundwater/NAPL movement along a preferential pathway (i.e., former borehole) must be eliminated.

- The final depth of borehole will be measured and recorded.
- The volume of grout required will be calculated from the above measurements.
- A grout mix of one bag (94 lbs.) of Portland Cement and three pounds of bentonite with approximately 7.5 gallons of clean water will be prepared.
- Using a tremie tube placed at the base of the borehole the grout will be pumped until observed at the required elevation. The tremie tube will be raised as the grout level rises (positive displacement technique).
- The bentonite/grout backfill will be extended to within 1 foot of ground surface, the final borehole space will be backfilled with native soil and mounded slightly to allow settlement and promote surface water runoff away from boring.
- Borehole abandonment will be documented, noting depth of borehole; volume of grout used and mix ratio.
- Groundwater displaced from the borehole may or may not required containment depending on borehole setting and/or water quality.

*NOTE: AT THE COMPLETION OF BOREHOLE ABANDONMENT/SEALING ACTIVITIES (REGARDLESS OF METHODOLOGY EMPLOYED) IT IS NECESSARY TO CHECK FOR SURFACE SETTLEMENT A FEW DAYS AFTER WORK COMPLETION TO DETERMINE IF THE BOREHOLE AREA REQUIRES "TOPPING OFF".*

### Restoration

The area around the borehole shall be restored as directed by the plant representative (e.g., asphalt, concrete, vegetation).

### Cleanup

The area around the borehole shall be completely cleaned up of any investigation related materials (litter, etc.).

### **EQUIPMENT/MATERIALS**

- Grout pump/mixing equipment
- Test Boring Report

### **REFERENCE**

1. United States Environmental Protection Agency (1992) "Guide to Management of Investigation-Derived Wastes", Quick Reference Fact Sheet
2. ASTM D5299 "Guide for Decommissioning of Ground Water Wells, Vadose Zone Monitoring Devices, Boreholes and Other Devices for Environmental Activities

## 3.1 WELL CONSTRUCTION MATERIALS

### INTRODUCTION

In environmental subsurface investigations, the information used to evaluate subsurface conditions often relies on the installation of appropriate groundwater monitoring wells. The application and use of the proper well construction materials to the specific well installation is crucial to obtaining representative and reliable groundwater samples.

The two general types of wells are groundwater monitoring wells and pumping (also referred to as recovery, extraction, or withdrawal) wells. The specific use of a groundwater well dictates the types of materials with which it is constructed.

This SOP outlines the general types and use of well construction materials and considerations involved in selecting appropriate materials for specific well installation applications. Installation of these materials is described in detail in the specific well-installation SOPs listed below.

### PROCEDURES REFERENCED

- 3.2 Overburden Monitoring Well Installation

### MATERIAL DESCRIPTIONS

#### A. Well Screen

The screen is the portion of the well that contains appropriately sized openings and allows groundwater to enter the well. The screen materials used in groundwater monitoring wells are crucial to ensuring the installation of an efficient, productive, and durable groundwater well.

The diameter of the well screen is generally dependent upon the application of the well. For monitoring wells used in groundwater level measurements and groundwater sampling, screen diameter will generally be 2.0-inch inner-diameter (I.D.) flush-threaded screen segments (piezometers are typically 1.0-inch inner diameter but may also be 2-inch). These screen segments are typically available in 10-foot lengths. Four-inch diameter or larger well screens are usually used for recovery or production well applications where larger diameters permit greater groundwater withdrawal rates. Larger diameter wells also allow a well to serve additional functions such as housing extraction oil recovery systems.

Screen material will be either thermoplastic Schedule 40 PVC (PolyVinylChloride) (ASTM D1785, ASTM D2665, ASTM F480) or Schedule 5 Type 316 stainless steel, depending primarily on the depth of the well and the groundwater quality (degree and nature of contamination). Shallower depths and generally low levels of contaminants in groundwater allow for PVC applications, whereas greater depths and severely degraded groundwater quality, or the presence of free-phase oils or solvents, may necessitate stainless steel due to its greater strength and resistance to chemical degradation. It should be noted that PVC and stainless steel are appropriate for the vast majority of environmental applications, and are generally accepted by regulatory agencies. Well materials other than PVC or stainless steel should be used only in certain instances, to be determined and approved by the Consultant Project Manager on a case-by-case basis.

Certain applications such as investigation of inorganic (metals) concentrations in groundwater, or the presence of low pH (acidic) conditions may preclude the use of stainless steel wells. Stainless steel, which contains molybdenum in addition to its iron content, may leach out metal compounds which could cause to misleading groundwater analysis results.

PVC may likewise leach out or degrade specific thermoplastic elements of its composition which may compromise the well integrity or groundwater analyses. PVC generally performs well in acidic groundwater conditions; however, it may degrade in the presence of certain organic compounds such as ketones, aldehydes or chlorinated compounds in high concentrations. Certain additives to the PVC may also affect groundwater quality.

Well screen slot sizes and well screen type will also be consistent for groundwater monitoring wells. Screen slot size is typically 0.010 inches; 0.020-inch slot size may be more appropriate for coarser formation materials or where the well may serve as a recovery well for free-phase oils. For monitoring applications, slot type should be either factory machine-slotted or continuous-wrap slotted. Perforated, bridge-slotted or louver-slotted well screens are generally not acceptable for most environmental applications and should be avoided.

Screen slot sizes may vary from these two sizes when used in production or recovery (pumping) well applications where the need to maximize groundwater withdrawal is essential. In such cases, screen slot sizes can be manufactured to exact specifications for a particular well based on particle size analysis results and formation transmissivity or permeability.

## **B. Well Riser Pipes and Casings**

Well riser pipe is a solid extension of the well that extends from the screen up to the surface. The riser pipe protects the well screen, prevents outside groundwater from

entering the well, and allows groundwater pumped from down in the open interval to be routed up through the well to the surface.

Well riser pipe should be of the same material and size as the well screen described above. In instances to be determined and approved by the project manager on a case-by-case basis only, differing materials may be approved for use in the same well (e.g. stainless steel well screen connected to PVC riser). Well risers should extend to the surface and should either be cut at grade in flush-mount completions or as an approximately 3-foot stickup to be covered with a steel protective casing.

Well riser pipe sections shall be flush-threaded and fitted with neoprene, rubber, or other appropriately constructed, durable o-rings to properly seal the threaded pipe joints. Glues or cements are not to be used in well construction.

In installations of bedrock monitoring wells, which have an open rock monitoring interval and a permanent well casing that extends from bedrock to the surface, the permanent casing (or casings in telescoping wells) shall be made of carbon steel, low-carbon steel ( $\geq 0.8\%$  carbon and  $\leq 0.8\%$  carbon, respectively), or PVC. The well casing should be a minimum of 4 inches in diameter (at least 4-inch diameter for the innermost casing).

#### C. Sand Packs

The filter pack, or sand pack, installed in a well replaces formation material immediately around a well with a more permeable material (sand). The sand pack separates the well screen from the formation, increases the hydraulic diameter of the well, and prevents fines (silt or clay) from entering or clogging the well screen.

Sand pack of an appropriate size shall be utilized based on the well screen slot size being used. Sand pack size should be chosen so that the majority of the sand (sand pack has inherent variation in its particle grain size distribution) is larger than the screen slot size while sized small enough to prevent deleterious amounts of formation fines from entering the well through the sand pack. Screen slot sizes of 0.010-inch and 0.020-inch typically use a sand pack such as Morie or U.S. Silica #1, #0, #00N, or equivalent.

Sand pack shall be washed silica sand with a silica content of at least 95%. Sands should meet one or more of the following requirements: NSF Standard 61, AWWA B-100, ANSI, or equivalent standards for uniformity and chemical inertness. In cases to be determined and approved by the project manager on a case-by-case basis only, differing sand pack materials may be approved for use in a well. Sand packs used for production and recovery wells with larger screen slot sizes will use larger-particle-sized sand packs of the same type and quality. The slot size and sand pack size for recovery wells should be chosen based on results of formation grain size distribution analysis.

#### D. Seals

Bentonite and grout seals are installed above the sand pack to isolate the monitoring interval and prevent groundwater from infiltrating into the well screen from other water-bearing zones. Seals also prevent migration of backfill or formation materials downward into the sand pack.

Bentonite is the generic name for a group of a naturally-occurring clay minerals (montmorillonites) that come in a variety of forms: pellets, chips, granulated, or powdered. This material is commercially available as “Wyoming Bentonite”. When hydrated it swells to many times its original volume and forms an ultra-low-permeability clay seal.

Bentonite chips or pellets are generally used to create a seal immediately above the sand pack. The chips/pellets are dropped inside the augers or well casing by hand down through the water column onto the top of the sand pack. Care must be taken to prevent “bridging” of the bentonite particles in the casing above the target zone. Measurements of the depth to the top of the seal must be obtained during installation of the seal to ensure its proper position and thickness. In the absence of significant water in a casing or borehole, potable water must be added to hydrate the bentonite. The bentonite seal will be allowed to set for a minimum of one-half hour, in order to hydrate properly, before additional seals (grout) are applied. Once the bentonite has set for one-half hour the grout seal may be placed, as described below.

In saline groundwater environments, such as where ocean water may infiltrate the monitoring interval, a zeolite-based seal material may be used, as saline conditions may hamper the performance of bentonite pellets.

Portland cement grout (grout) forms a concrete-like seal that can be more manageable than bentonite (e.g. able to be pumped through a water pump). Grout is generally placed on top of the hydrated bentonite seal to form a solid cement seal around the well riser up to the surface.

The grout mixture will consist of one 94-pound bag of Portland Cement and 3 to 5 pounds of powdered bentonite added per sack of cement. Two (2) pounds of calcium chloride may also be added (under certain conditions, e.g. very cold days) to accelerate the setting time of the grout, as well as to increase the dry strength of the grout. The grout will be thoroughly mixed with 6.5 gallons of potable water per sack of cement. Grout is generally placed using either the tremie or Halliburton grouting methods. These are described in the specific well installation SOPs.

#### E. Protective Casings and Surface Seals

Once the well screen, riser, and all seals have been placed to ground surface, the well riser must be protected. This includes protection from vehicles, damage, surface water

infiltration, and weather. This is typically accomplished using either a flush-mount roadbox or a stickup casing.

Flush-mount roadboxes are circular steel casing segments with a heavy-duty steel lid with locking bolts. These units are widely available and come in a number of diameters and lengths, depending on the well diameter. A stickup protective casing is generally a length of carbon or stainless steel pipe with a locking top.

For a typical 2-inch monitoring well, the roadbox should be at least 6 inches in diameter; a stickup casing should be at least 4 inches in diameter. A roadbox should be at least 12 inches in length (they are typically 16 to 18 inches long) and is installed flush with the ground surface. A stickup casing should be at least 5 to 6 feet long such that approximately 2.5-3 feet is below ground surface and 2.5-3 feet is protruding above grade. In wells where a permanent steel casing is installed (serves as the well riser pipe) and brought to the ground surface, it may be used as the protective casing provided it is equipped with a semi-permanent, metal, locking cap or cover that can be affixed to the steel casing.

Flush-mount installations should have at least the last 18-inches of the open borehole filled with coarse sand, placed up to ground surface to allow drainage of surface water infiltration down through and out of the roadbox. This also prevents infiltrating surface water from accumulating up over the top of the well riser and draining down into the well. This sand drain is not necessary in the locking-cap stickup casings.

Both roadbox and stick-up casings must be secured in the ground with concrete, which also serves as a surface seal.

In areas of high vehicle traffic activity, protective steel bollards should be installed. This is typically a vertically-oriented, concrete-filled, steel pipe (min. 4-in diameter) cemented at least 3 ft. into the ground, acting as a “guard rail” for the well casing and preventing it from being damaged by vehicles. Three bollards should be placed around a well to provide adequate protection.

## **EQUIPMENT**

- Drilling equipment
- Well screen and riser materials
- Sand pack
- Bentonite pellets/chips
- Powdered bentonite

- Portland cement

## REFERENCE

1. ASTM D1785-99, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
2. ASTM D2665-00, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings.
3. ASTM F480-00, Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), SCH 40 and SCH 80.
4. ASTM A53/A53M-01 Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless for Ordinary Uses.
5. Campbell, M.D., and Lehr, J.H., Water Well Technology, McGraw Hill, 1973.
6. Cold Weather Concreting, ACI Committee 306, Materials Journal, Volume 85, Issue 4, July 1, 1988.
7. Driscoll, Fletcher G., Groundwater and Wells, Johnson Filtration Systems, Inc., 1986.
8. Freeze, R. Allen, and Cherry, John A., Groundwater, Prentice-Hall, 1979.
9. USEPA, 1986, RCRA Groundwater Monitoring Technical Enforcement Guidance Document, Office of Solid Waste and Emergency Response, 1986.



## **3.2 PROCEDURES FOR OVERBURDEN MONITORING WELL INSTALLATION**

### **INTRODUCTION**

This procedure presents the drilling, installation, and completion of overburden monitoring wells. The design and installation of monitoring wells involves the drilling of boreholes into various types of geologic formations. Designing and installing monitoring wells may require different drilling methods and installation in the overburden. However, due to specific site and monitoring requirements, the procedure may be revised as necessary to reflect these site-specific needs. Prior planning is required for the selection of the appropriate drilling method and selection of well materials.

### **PROCEDURES REFERENCED**

- 2.5 Soil Classification
- 3.4 Well Development
- 5.1 Soil Sampling
- 7.0 Equipment Decontamination

### **DRILLING PROCEDURES**

- Drilling and sampling equipment arriving on site will be decontaminated prior to drilling in accordance with the Decontamination and Waste Disposal Procedure.
- Drilling generated waste materials will be disposed according to the Decontamination and Waste Disposal Procedure.
- Record construction and geologic information on the attached subsurface boring log.
- The depth to the target interval may be determined from an existing adjacent monitoring well/boring or from information obtained from split spoon sampling

of the borehole. The criteria for determining the target interval to be monitored will be presented in the Project Work Plan. An 8-inch diameter borehole will be advanced to the target interval using a minimum 4¼-inch inside diameter (I.D.) hollow-stem auger.

- In the instances where the borehole is advanced deeper than the target interval, a bentonite pellet seal will be installed to bring the bottom of the boring to within 6 inches of the target interval. Six inches of filter sand will then be placed above the bentonite seal prior to further well installation.
- In some areas where the water table is known to be at or near the top of bedrock, the base of the overburden well will be installed at the top of bedrock.
- Continuous split-spoon samples may be collected, if required by applicable project Work Plan. (see Subsurface Soil Sampling Procedure). If collected, soil samples will be classified in accordance with the Soil Classification Procedure.

## **WELL CONSTRUCTION**

- The well construction procedures presented below are the recommended standards. However, due to variations in subsurface conditions, changes in these well construction standards may be necessary in order to facilitate the installation of the protective casing.
- Overburden wells will be constructed of either 2-inch Schedule 40 Flush-threaded Virgin PVC or type 316 Stainless Steel. Type of well material to use will be dependent upon known subsurface conditions. Wells constructed of PVC are preferable; however in situations where sufficient levels of chlorinated solvents are present to affect the PVC well integrity, stainless steel will be the material of choice. Wells of mixed construction materials are not acceptable. The well screen will consist of machine slot or continuous wrap PVC or Stainless Steel with screen slot size appropriate for the type of subsurface material. It is anticipated that PVC will be used at the site.
- The bottom of the well screen will be placed to the bottom of the borehole. Ideally, the top of the well screen should be greater than 4 feet below grade. As the augers are slowly removed, clean washed silica sand filter pack will be placed in the annular space around the well screen and casing from the base of the screen to at least 2 feet above the screen.

- In wells that exhibit a water table elevation above the sand pack, a minimum of 2-foot thick layer of bentonite pellets will be placed above the sand pack. The seal will be hydrated and allowed to set for approximately 30 minutes.
- Cement/bentonite grout will be placed from the top of the bentonite seal to a point 5 feet below existing ground surface where conditions allow. The grout will be prepared in the ratio of one bag (94 pounds) of Type I or Type II Portland Cement to 3 to 5 pounds of bentonite powder mixed with approximately 7 gallons of potable water.
- Accurate measurements of the material depths will be made by sounding the annulus during installation. The volume of materials needed will be calculated and compared to the actual volume used. Material depths will be recorded on the well installation report log (attached).
- The well casing will be secured with a vented lockable cap. If the well is located in a high traffic area, the casing will be protected by 9-inch flush-mounted roadway box set in a concrete seal. Alternatively, in low traffic areas, the well casing may be cut above grade and completed with 4 or 6-inch diameter steel protective casing with approximately 3 feet of stick up, set in a concrete surface seal.
- For flush-mounted wells, a 9-inch diameter, water-tight protector will be installed complete with a sand drain. A lockable gripper plug will top the PVC casing.
- After installation, the monitoring well will be labeled with the well identification and a reference point for water level and depth measurements will be notched into the well casing. The well will be allowed to sit for at least 24 hours prior to well development, and for one week between development and groundwater sampling.

## EQUIPMENT

- Drilling Equipment
- Well Supplies
- Subsurface Boring Log
- Overburden Well Log
- Tape Measure

## REFERENCE

1. American Society for Testing and Materials (1991), Standard D1452-80, “Practice for Soil Investigation and Sampling by Auger Borings”, Annual Book of ASTM Standard, Section 4, Volume 04.08.
2. American Society for Testing and Materials (1991), Standard D2113-83 (87), “Diamond Core Drilling for Site Investigations”, Annual Book of ASTM Standards, Section 4, Volume 04.08.
3. American Society for Testing and Materials (1991), Standard D5092, “Practices for Design and Installation of Ground Water Monitoring Wells in Aquifers”, Annual Book of ASTM Standard, Section 4, Volume 04.08.
4. New York State Department of Environmental Conservation (1988), Draft Generic Environmental Impact Statement on the Oil, Gas, and Solution Mining Regulatory Program, Division of Mineral Resources.
5. Environmental Protection Agency (1986), RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, OSWER-9950.1.
6. Environmental Protection Agency (1987), A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001.
7. Environmental Protection Agency (1988), Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, EPA/540/G-89/004.

### **3.3 WELL DECOMMISSIONING PROCEDURES**

#### **INTRODUCTION**

This procedure is for the decommissioning/abandonment of groundwater monitoring wells that have been installed in overburden, top of bedrock, or deep bedrock formations. Well decommissioning refers to the procedure used to properly abandon or remove the monitoring well from the formation while taking the proper precautions to help eliminate cross-contamination.

The methods for properly abandoning monitoring wells are either by leaving the well materials in place and pressure grouting with a cement/bentonite slurry directly into the well or by over-drilling with augers, removing the well material and back filling with a cement bentonite slurry.

#### **PROCEDURES REFERENCED**

- 3.2 Procedures for Overburden Well Installation
- 7.0 Equipment Decontamination

## WELL DECOMMISSIONING PROCEDURES

### 1. Pressure Grouting

- The borehole log from the monitoring well needs to be obtained to determine the well construction in order to prepare the proper materials and calculate the quantity of cement/bentonite slurry that will be required.
- The cement pad and the well protector around the monitoring pad needs to be removed and the immediate area around the monitoring well dug out. The riser pipe is to be cut off approximately one to two-feet below ground surface.
- A tremie pipe will be placed into the well completely to the bottom. A cement/bentonite slurry will then be pressure grouted in to the monitoring well backfilling completely to the surface. The grout will be prepared in the ratio of one bag (94 pounds) of Type I or Type II Portland Cement to 3 to 5 pounds of bentonite powder mixed with approximately 7 gallons of potable water. The grout will be allowed to sit for approximately one hour to allow any settlement of the cement/bentonite slurry and then augment if needed.

### 2. Overdrilling

- Based on the diameter of the monitoring well, this information can be obtained from the well completion diagram, the proper sized augers need to be specified.
- The cement pad and the well protector around the monitoring pad needs to be removed and the immediate area around the monitoring well dug out. The riser pipe is to be cut off approximately one to two-feet below ground surface.
- The augers are then placed over the riser pipe of the monitoring well and then drilling commences. The drilling continues until the final depth to which the monitoring well was installed is reached. The well materials are then removed (pulled) from the augers.
- A Cement/bentonite grout will be placed from the bottom of the borehole to the top of the augers. As each flight of augers is removed from the ground, the cement/bentonite grout will continue to be placed in the augers, to the top. This will continue until all the augers have been removed from the borehole. The grout will be prepared in the ratio of one bag (94 pounds) of Type I or Type II Portland Cement to 3 to 5 pounds of bentonite powder mixed with approximately 7 gallons of potable water.
- Documentation/Notification requirements include modification of the well log to reflect closure and if necessary notification to the appropriate regulatory agency.

## **WASTE DISPOSAL**

- All material generated during well decommissioning procedures will be collected and contained on site in roll-off boxes or 55-gallon drums for future analysis and appropriate disposal.
- Personal protective equipment, such as gloves, disposable clothing, and other disposable equipment, resulting from personnel cleaning procedures and from soil sampling and handling activities, will be placed in plastic bags. These bags will be transferred into appropriately labeled 55-gallon drums or a covered roll-off box for appropriate disposal.

## **EQUIPMENT**

- Drilling Equipment
- Well Supplies
- Monitoring Well Abandonment Form
- Tape Measure

## **REFERENCE**

1. Michigan Department of Public Health, Ground Water Quality Control Section – Division Of Water Supply (1988), Michigan Water Well Grouting Manual, MDPH GW-3-302
2. ASTM D5229, “Guide for Decommissioning of Groundwater Wells, Vadose Zone Monitoring Devices, Boreholes and other Devices for Environmental Activities”.

### **3.4 WELL DEVELOPMENT PROCEDURES**

#### **INTRODUCTION**

This procedure is for the development of groundwater monitoring wells that have been installed in overburden, top of bedrock, or deep bedrock formations. Before a newly constructed well can be used for water-quality sampling, measuring water levels, or aquifer testing, it must be developed. Well development refers to the procedure used to clear the well and formation around the screen of fine-grained materials (sands, silts, and clays) produced during drilling or naturally occurring in the formation.

Well development is completed to remove fine-grained materials from the well but in such a manner as to not introduce fines from the formation into the sand pack. Well development continues until the well responds to water level changes in the formation (i.e., a good hydraulic connection is established between the well and formation) and the well produces clear, sediment-free water to the extent practical.

#### **PROCEDURES REFERENCED**

- 3.2 Procedures for Monitoring Well Installation

#### **WELL DEVELOPMENT PROCEDURES**

- The well development procedures presented below are the recommended standards. However, due to variations in conditions, changes in these well development standards may be necessary in order to facilitate the successful completion of developing the monitoring well. Well development can be accomplished by using in-place pumps or using manual equipment; either peristaltic, bladder, or other appropriate pumps depending on well depth.
- Don appropriate safety equipment.
- Attach appropriate pump and lower tubing into well.
- Turn on pump. If well runs dry, shut off pump and allow to recover.
- Surging will be performed by raising and lowering the pump in the well to open and close the check valve in the pump several times to pull fine-grained material from the well. Collect the groundwater sample in a glass jar to determine relative



turbidity, and measure and record the temperature, pH, and specific electrical conductance.

- The fourth and fifth steps will be repeated until groundwater is relatively silt-free; no further change is noted; and the temperature, pH, and specific conductance readings have stabilized to within 10% or 10 well volumes and 5 times the volume of water used to complete the well have been removed.
- The developing equipment will be raised two feet and then Steps 4 and 5 will be repeated.
- Step 6 will be repeated until entire well screen has been developed.

#### **WASTE DISPOSAL**

- All water generated during cleaning and development procedures will be collected and contained on site in 55-gallon drums for future analysis and appropriate disposal.
- Personal protective equipment, such as gloves, disposable clothing, and other disposable equipment, resulting from personnel cleaning procedures and from soil sampling and handling activities, will be placed in plastic bags. These bags will be transferred into appropriately labeled 55-gallon drums or a covered roll-off box for appropriate disposal.

## EQUIPMENT

- Appropriate health and safety equipment
- Knife
- Power source (generator)
- Field book
- Well Development Form
- Well keys
- Graduated pails
- Pump and tubing
- Cleaning supplies (including non-phosphate soap, buckets, brushes, laboratory-supplied distilled/deionized water, tap water, cleaning solvent, aluminum foil, plastic sheeting, etc.)
- Water level meter
- pH/temperature/conductivity meter
- Clear glass jars (e.g., drillers' jars)

## REFERENCE

1. Environmental Protection Agency (1986), RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, OSWER-9950.1.
2. Environmental Protection Agency (1987), A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001.
3. Environmental Protection Agency (1988), Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, EPA/540/G-89/004.

## **5.1 SOIL SAMPLE COLLECTION FOR LABORATORY ANALYSIS**

### **INTRODUCTION**

The following procedure describes typical soil sample collection methods for submission of samples to a laboratory for chemical analysis. Two sample situations are presented: soil sampling from surficial soils and soil sampling from sub-surface samplers such as a split-spoon sampler or a direct push sampler.

Soil sampling procedures may vary from project to project due to different parameters of concern, different guidance provided by the state/province where the site is located, or the specific objectives for the project. Therefore, it is essential that the sampling team members carefully review the Non-Radiological Site Characterization Work Plan requirements and the rationale behind the program. The primary goal of soil sampling is to collect representative samples for examination and chemical analysis (if required).

#### Grab Versus Composite Samples

A grab sample is collected to identify and quantify compounds at a specific location or interval. The sample is comprised of no more than the minimum amount of soil necessary to make up the volume of sample dictated by the required sample analyses.

### **PROCEDURES REFERENCED**

- 2.1 Drilling Techniques/Background Information
- 2.2 Soil Borings
- 5.6 Sample Handling and Shipping
- 7.0 Equipment Decontamination

## **SAMPLE COLLECTION**

### **1.0 Surficial Soil Sample Collection**

#### **1.1 Sample Strategy -Random, Biased, and Grid-Based Sampling**

Unless there is a strong indication of contaminant presence, such as staining, then soil sample locations may be randomly selected from several areas within the site.

If any areas show evidence of contamination, such as staining or vegetative stress, biased samples will be collected from each area to characterize the contamination present in each area. Background and control samples are also biased, since they are collected in locations typical of non-Site-impacted conditions.

When soil sampling investigations involve large areas, a grid-based soil sampling program is used. There is no single grid size that is appropriate for all sites. Common grid sizes are developed on 50-foot and 100-foot centers. It is acceptable to integrate several different grid sizes in a single investigation.

For surficial soil sampling programs, it is also important to consider the presence of structures and drainage pathways that might affect contaminant migration. It is sometimes desirable to select sampling locations in low lying areas which are capable of retaining some surface water flow since these areas could provide samples which are representative of historic site conditions (worst-case scenario if surface water flow was a concern).

#### **1.2 Sample Interval**

Surficial soils are generally considered to be soil between ground surface and 6 to 12 inches below ground surface. However, for risk assessment purposes, regulatory authorities often consider soil from ground surface to 2 feet below ground surface to be surficial soil. The exact interval to be considered as surficial soil is often a matter of discussion with the regulatory authorities that review the RFI Work Plan. The sample interval is important to the manner in which the data are ultimately interpreted. Another important factor is the type of soil. If there are different types of soil present at the site, this may have a bearing on the sample interval. For example, it may be important to separately sample a layer of material with high organic carbon content that overlies a layer of fine-grained soil.

#### **1.3 Surface Sampling Procedure**

Soil sampling techniques are dependent upon the sample interval of interest, the type of soil material to be sampled, and the requirements for handling the sample after retrieval.

The most common method for collection of surficial soil samples involves the use of a stainless steel trowel. Soil samples may also be collected with spoons and push tubes. The sampling equipment is cleaned between sample locations. A typical surficial soil sampling protocol is outlined below:

- Surficial soil samples will be collected using a pre-cleaned stainless steel trowel or other appropriate tool. Each sample will consist of soil from the surface to the depth specified within the Work Plan;
- A new pair of disposable gloves will be used at each sample location;
- Any surficial debris (i.e., grass cover, gravel) should be removed from the area where the sample is to be collected using a separate pre-cleaned device. Gravel presents difficulties for the laboratory in terms of sample preparation and is typically not representative of contaminant concentrations in nearby soil.
- A pre-cleaned sampling tool will be used to remove the sample from the layer of exposed soil.
- When only one sample container is required, the collected soil will be placed directly into the clean, pre-labeled sample jar. When more than one sample container requires filling or samples will be split for duplicate analyses; the soils will first be homogenized in a pre-cleaned stainless steel bowl; and then placed into the respective sample containers. It is important that soil samples be mixed as thoroughly as possible to ensure that the sample is as representative as possible of the sample interval. When round bowls are used for sample mixing, mixing is achieved by stirring the material in a circular motion and occasionally turning the material over. Soil samples collected for volatile organic compounds analyses shall not be mixed.
- Samples will be placed on ice or cooler packs in laboratory supplied shipping coolers after collection.

Exception is noted for the collection of volatile organic compounds (VOC's) which require special sample collection methods. VOC's are collected directly into a sample vial (triplicate volume typically required) without headspace, or collected using an EnCore Sampler<sup>TM</sup> (triplicate samples collected per manufacturers instructions). Samples for VOC's are typically collected first, without homogenization or extra handling to limit the loss of volatile constituents.

The VOC sample collection methodology will be identified in the Work Plan, which will dictate the sample method. The methodology for VOC sampling varies from area to area, so carefull review of this issue in advance of the field efforts is required.

## 2.0 Sub-Surface Sample Collection

Sub-surface soil sample collection is typically performed with the help of a drill unit, direct-push probing unit, or hand-driven/held samplers. Typically a boring is advanced incrementally to permit intermittent or continuous sampling to the required depth of chemical sample collection; or alternatively sampling may be initiated if certain conditions are observed (i.e. chemical presence or volatile presence identified from monitoring). Sample collection criteria and locations, are normally stipulated by the Work Plan.

Any drilling procedure that provides a suitably clean and stable hole before insertion of the sampler and assures that the penetration test or other sampling technique is performed on essentially undisturbed soil is acceptable. The drilling method is to be selected based on the subsurface conditions. Each of the following procedures have proven to be acceptable for specific subsurface conditions:

- Conventional drilling with continuous flight hollow-stem auger method (with inside diameter between 2.2 and 6.5 inches) using split spoon samplers (Standard Penetration Test – SPT) or Shelby tube samplers; or
- direct - push samplers, advanced using a percussion/vibratory hammer ( Geoprobe <sup>TM</sup> or equivalent); or
- hand – held/driven split spoon sampling equipment or portable hammer and split spoon sampling equipment ( final depth will be limited).

Several drilling methods are not acceptable. These include: jetting through an open tube sampler and then sampling when the desired depth is reached; use of continuous flight solid auger equipment below the groundwater table in non-cohesive soils; casing driven below the sampling depth prior to sampling; and advancing a borehole with bottom discharge bits.

The following subsections describe the specific methods for completing split spoon sampling, shelly tube sampling, and direct-push sampling. Section 2.4 describes the soil sampling procedure for chemical analysis, once a soil core is recovered from any of the above sample collection devices.

### 2.1 Split – Spoon Sampling Method

This method is used to obtain representative samples of subsurface soil materials for sample collection. The test methods described below must be followed to ensure that the soils captured in the split-spoon or shelly tube are relatively undisturbed/representative of the desired soil interval and obtain accurate Standard Penetration Test (SPT) values. The SPT values reflect the sub-surface soils density and is typically measured when performing geo-technical work or environmental borings. This information although not

directly relevant to the collection of chemical samples, is collected because it is beneficial in terms of stratigraphy interpretation and understanding the conditions below grade.

The split barrel sampler, or split spoon, consists of an 18- or 24-inch long, 2-inch outside diameter tube, which comes apart length wise into two halves. Larger spoons are available for use when a larger sample volume is required (4-inch diameter spoons).

Once the borehole is advanced, by an appropriate method (e.g. hollow stem augers), to the target depth and the borehole cleaned of cuttings, representative soil samples are collected in the following manner:

- the split-spoon sampler should be inspected to ensure it is properly cleaned and decontaminated. The driving shoe (tip) should be relatively sharp and free of severe dents and distortions;
- the cleaned split-spoon sampler is attached to the drill rods and lowered into the borehole. Do not allow the sampler to drop onto the soil;
- after the sampler has been lowered to the bottom of the hole, it is given a single blow to seat it and make sure that it is in undisturbed soil. If there still appear to be excessive cuttings in the bottom of the borehole, remove the sampler from the borehole and remove the cuttings; and
- mark the drill rods in three or four successive 6-inch (0.15 m) increments, depending on sampler length, so that the advance of the sampler under the impact of the hammer can be easily observed for each 6-inch (0.15 m) increment.

The sampler is then driven continuously for either 18 or 24 inches (0.45 or 0.60 m) by use of a 140-pound (63.5 kg) hammer. The hammer may be lifted and dropped by either the cathead and rope method, or by using a trip, automatic, or semi-automatic drop system.

The hammer should free-fall a distance of 30 inches ( $\pm 1$  inches) (760 mm,  $\pm 25$  mm) per blow. Measure the drop at least daily to ensure that the drop is correct. To ensure a free-falling hammer, no more than 2 1/4 turns of the rope may be wound around the cathead (see ASTM D1586-84). The number of blows applied in each 6-inch (0.15 m) increment is counted until one of the following occurs:

- a total of 50 blows have been applied during any one of the 6-inch (0.15 m) increments described above;
- a total of 100 blows have been applied;
- there is no advancement of the sampler during the application of ten successive blows of the hammer (i.e., the spoon is "bouncing" on a stone or bedrock); or
- the sampler has advanced the complete 18 or 24 inches (0.45 or 0.60 m) without the limiting blow counts occurring as described above.

In some cases where the limiting number of blow counts has been exceeded, the field supervisor may direct the driller to attempt to drive the sampler more if collection of a greater sample length is essential.

On the field form, record the number of blows required to drive each 6-inch (0.15 m) increment of penetration. The first 6 inches is considered to be a seating drive. The sum of the number of blows required for the second and third 6 inches (0.15 m) of penetration is termed the "standard penetration resistance" or the "N-value".

*Note: If the borehole has sloughed and there is caved material in the bottom, the split spoon may push through this under its own weight, but now the spoon is partially "pre-filled". When the spoon is driven the 18 or 24 inches representing its supposedly empty length, the spoon fills completely before the end of the drive interval. Two problems arise:*

- 1. the top part of the sample is not representative of the in-place soil at that depth; and*
- 2. the SPT value will be artificially higher toward the bottom of the drive interval since the spoon was packed full. These conditions should be noted on the field log.*

The sampler is then removed from the borehole and unthreaded from the drill rods. The open shoe (cutting end) and head of the sampler are partially unthreaded by the drill crew and the sampler is transferred to the field supervisors work surface.

The open shoe and head are removed by hand, and the sampler is tapped so that the spoon separates.

Measure and record the length of sample recovered making sure to discount any sloughed material that is present on top of the sample core.

Caution must be used when conducting SPT sampling below the groundwater table, particularly in sand or silt soils. These soils tend to heave or "blow back" up the borehole due to the difference in hydraulic pressures between the inside of the HSA and the undisturbed soil. To equalize the hydraulic pressure, the inside of the HSA must be filled with water. The drilling fluid level within the boring or hollow-stem augers needs to be maintained at or above the in-situ groundwater level at all times during drilling, removal of drill rods, and sampling. Since heave or blow back is not always obvious to the driller, it is essential that the water level in the borehole always be maintained at or above the groundwater level.

Section 2.4 describes the soil sampling procedure for chemical analysis, once a soil core is recovered from a split spoon sampler.

## 2.2 Thin-Walled (Shelby Tubes) Sample Method

Thin-walled samplers are used to collect relatively undisturbed samples (as compared to split-spoon samples) of soft to stiff clayey soils. Shelby tubes are commonly used. The



shelby tube has an outside diameter of 2 or 3 inches and is 3 feet long. These undisturbed samples are used for certain laboratory tests of structural properties (consolidation, hydraulic conductivity, shear strength) or other tests (such as collection of soils for chemical analysis) that might be influenced by sample disturbance. Procedures for conducting thin-walled tube sampling are provided in ASTM D1587-94, and are briefly described below.

- the soil deposit being sampled must be cohesive in nature, and relatively free of sand, gravel, and cobble materials, as contact with these materials will damage the sampler;
- clean out the borehole to the sampling elevation using whatever method is preferred that will ensure the material to be sampled is not disturbed. If groundwater is encountered, maintain the liquid level in the borehole at or above groundwater level during the sampling operation;
- bottom discharge bits are not permitted. Side discharge bits may be used, with caution. Jetting through an open-tube sampler to clean out the borehole to sampling elevation is not permitted. Remove loose material from the center of a casing or hollow-stem auger as carefully as possible to avoid disturbance of the material to be sampled;
- place the sample tube so that its bottom rests on the bottom of the hole. Advance the sampler into the formation without rotation by a continuous and relatively rapid motion; usually hydraulic pressure is applied to the top of the drill rods;
- determine the length of advance by the resistance and condition of the formation, but the length shall never exceed 5 to 10 diameters of the tube in sands and 10 to 15 diameters of the tube in clays;
- in no case should the length of advance be greater than the sample-tube length minus an allowance for the sampler head and a minimum of 3 inches for cuttings.
- the tube may be rotated to shear the bottom of the sample 2 to 3 minutes after pressing in, and prior to retrieval to ensure the sample does not slide out of the tube. Lift the weight of the rods off of the tube prior to rotating.
- withdraw the sampler from the formation as carefully as possible in order to minimize disturbance of the sample.

On occasion it may be required that extraction of the sample from the tube be conducted in the field for chemical sample collection. The following procedure should be followed.

- a sample extruder, which consists of a clamp arrangement to hold the tube and a hydraulic ram to push the sample through the tube, is usually mounted on the side of

the rig. To prevent cross-contamination, be certain that the extruder is field cleaned between each sample;

- the sample is then extruded into a carrying tray; these are often made from a piece of 4-inch or 6-inch diameter PVC pipe cut lengthwise. Be certain that the carrying tray is field cleaned between each sample. The sample is carried to the workstation to describe the sample, trim the potentially cross-contaminated exterior, and select the area for sample collection (see section 2.4 collection procedure).
- the shelby tube may then be thoroughly field cleaned and decontaminated for reuse. Since they are thin-walled, the tubes are easily damaged, crimped, or otherwise distorted during handling or pushing. The shelby tube should be inspected before use and any which are significantly damaged should be rejected.

Section 2.4 describes the soil sampling procedure for chemical analysis, once a soil core is recovered from a shelby tube sampler.

### 2.3 Direct- Push Sample Method

The operation of the direct-push samplers (i.e. Macro-Core <sup>TM</sup> Soil Sampler or equivalent) consists of “pushing and/or vibrating” the sampler into the subsurface using a direct-push unit (i.e. Geoprobe <sup>TM</sup> soil probing machine or equivalent). The sampler is typically a hollow tube with a threaded drive head, and threaded cutting shoe; provided with an internal sleeve (i.e.liner) that the soil sample is captured in.

Once driven to the required depth, the sampler body/soil liner and soil core is removed from the borehole for inspection and sample collection. Once above grade the sampler is opened by the probe operator and the liner removed and cut open (opened with a dual blade cutting tool), to expose the soil for inspection and sampling.

The sampler body and ends are decontaminated and a new liner is inserted and the sampler reassembled for collection of the next interval. The clean sampler is then advanced back down the same hole to collect the next soil sample. The Macro-Core <sup>TM</sup> sampler can be used in either the open-tube or closed-point sampling mode. The open-tube is the most commonly used method, typically employed in stable soil conditions when the borehole does not collapse. The closed-point system seals the cutting shoe opening until the sampler is at the next sample interval, this prevents collapsed soil from entering the sampler as it is advanced back down the hole. Once at the sample depth, the closed-point is unthreaded and released from the cutting shoe area, such that it rides on top of the soil core as it is being driven into the next interval.

Section 2.4 describes the soil sampling procedure for chemical analysis, once a soil core is recovered from a direct-push sampler.

## 2.4 Soil Core Chemical Sample Collection Procedure

The following describes the collection of soil samples for chemical analysis from a split spoon soil core, shelly tube soil core, or direct-push sample core.

- record soil core recovery and soil stratigraphy data;
- discard upper and lower ends of sample core (3 inches  $\pm$ );
- if clayey soils are present use a pre-cleaned stainless steel knife to cut the remaining core longitudinally, alternatively if sandy soils are present, use a clean stainless steel spoon to scrape away the soil surface;
- screen the exposed soil surface with a PID to monitor for the presence of volatile organics;
- with a sample knife or spoon, remove soil from the center portion of the core and place in the sample jar (when only one aliquot is required), or
- when more than one aliquot is required place soils in a pre-cleaned stainless steel bowl for homogenization;
- do not sample large stones and natural vegetative debris;
- homogenize the soil and place directly into the sample jars
- properly label sample container; and
- place collected samples on ice or cooler packs in laboratory supplied shipping coolers.

When only one sample container is required, the collected soil will be placed directly into the clean, pre-labeled sample jar. When more than one sample container requires filling or samples will be split for duplicate analyses; the soils will first be homogenized in a pre-cleaned stainless steel bowl; and then placed into the respective sample containers. It is important that soil samples be mixed as thoroughly as possible to ensure that the sample is as representative as possible of the sample interval. When round bowls are used for sample mixing, mixing is achieved by stirring the material in a circular motion and occasionally turning the material over. Soil samples collected for volatile organic compounds analyses shall not be mixed.

Exception is noted for the collection of volatile organic compounds (VOC's) which require special sample collection methods. VOC's are collected directly into a sample vial (triplicate volume typically required) without headspace, or collected in triplicate using an EnCore Sampler<sup>TM</sup> (triplicate samples collected per manufacturers instructions). Samples for VOC's are typically collected first, without homogenization or extra handling to limit the loss of volatile constituents.

The VOC sample collection methodology will be identified in the Work Plan, which will dictate the sample method. The methodology for VOC sampling varies from area to area, so careful review of this issue in advance of the field efforts is required.

## **FIELD NOTES**

All conditions at the time of sample collection should be properly documented in the field log book. This should include a thorough description of the collection method, sample characteristics, including grain size, color, and general appearance, as well as date/time of sampling and labeling information. The location of the sampling point should be described in a sketch and three measurements (swing ties) should be taken to adjacent permanent structures so that the sample location can be readily identified in the field at a future date if necessary. It is often advisable to have a licensed land surveyor accurately survey the locations.

## **DECONTAMINATION**

In all sampling scenarios measures to prevent cross-contamination must be employed. The sampling device selected must be constructed of an inert material with smooth surfaces that can be readily cleaned.

Heavy equipment used for test pit operations must also be cleaned between each location when collecting samples for chemical analysis.

## **EQUIPMENT**

- Drilling equipment and soil sampling tools
- Decontamination fluids and rinse water
- Subsurface Boring Log
- Tape Measure
- Water Level Probe
- Appropriate sampling containers

## REFERENCE

1. American Society for Testing and Materials (1991), Standard D1452-80, "Practice for Soil Investigation and Sampling by Auger Borings", Annual Book of ASTM Standard, Section 4, Volume 04.08.
2. Environmental Protection Agency (1986), RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, OSWER-9950.1.
3. Environmental Protection Agency (1987), A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001.
4. ASTM D1452-80 Practice for Soil Investigation and Sampling by Auger Borings.
5. ASTM D1586-84 Test Method for Penetration Test and Split-Barrel Sampling of Soils
6. ASTM D1587-94 Practice for Thin Walled Tube Geotechnical Sampling of Soils
7. ASTM D2488-93 Practice for Description and Identification of Soils (Visual-Manual Procedure)
8. ASTM D4700-91 Guide for Soil Sampling from the Vadose Zone

## 5.2 GROUNDWATER SAMPLE COLLECTION FOR LABORATORY ANALYSIS

### INTRODUCTION

This procedure is for the collection of groundwater samples for laboratory analysis.

The following describes two techniques for groundwater sampling: "Low Stress/Low Flow Methods" and "Typical Sample Methods."

"Low Stress/Low Flow" methods will be employed when it is critical to collect groundwater samples where sediment/colloid presence is significant, particularly in fine-grained formations. Analyses typically sensitive to turbidity/sediment issues are Polychlorinated biphenyls (PCBs), Semi-volatile compounds (SVOCs) and metals.

The "Typical Sample Methods" will be employed where the collection of parameters less sensitive to turbidity/sediment issues are being collected (volatile organics - VOCs, and general chemistry).

*NOTE: If Non-aqueous phase liquids (NAPL) (light or dense) are detected in a monitoring well, groundwater sample collection will not be conducted and the Project Manager must be contacted to determine a course of action.*

### PROCEDURES REFERENCED

- 7.0 Equipment Decontamination

### PREPARATORY REQUIREMENTS

- Verify well identification and location using borehole log details and location layout figures. Note the condition of the well and inform the Project Coordinator of any necessary repair work required.
- Prior to opening the well cap, measure the breathing space above the well casing with a PID to establish baseline levels. Repeat this measurement once the well cap is opened. If either of these measurements exceeds the air quality criteria in the health and safety plan, field personnel should adjust their PPE accordingly.
- Prior to commencing the groundwater purging/sampling tasks, a water level must be obtained to determine the well volume for hydraulic purposes. In some settings it may be

necessary to allow the water level time to equilibrate. This condition exists if a watertight seal exists at the well cap and the water level has fluctuated above the top of screen; creating a vacuum or pressurized area in this air space. Three water level checks will verify static water level conditions or changing conditions.

- Calculate the water volume in the well. Typically overburden well volumes consider only the quantity of water standing in the well screen and riser; bedrock well volumes are calculated on the quantity of water within the open corehole and within the overburden casing.
- Estimate natural groundwater flow rate into well to determine the approximate pumping rate for purging/sampling activities.

#### **WELL PURGING AND STABILIZATION MONITORING (LOW STRESS/LOW FLOW METHOD)**

- The preferred method for groundwater sampling will be the low stress/low flow method described below.
- Bladder pumps/submersible variable rate pumps (i.e., Grundfos™ Rediflo or equivalent) are typically employed.
- Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified by the project requirements. The pump intake must be at the mid-point of the well screen to prevent disturbance and resuspension of any sediment in the screen base.
- Before starting the pump, measure the water level again with the pump in the well leaving the water level measuring device in the well when completed.
- Purge the well at 100 to a maximum of 500 milliliters per minute (ml/min). During purging, the water level should be monitored approximately every 5 minutes, or as appropriate. A steady flow rate should be maintained that results in drawdown of 0.3 feet or less. The rate of pumping should not exceed the natural flow rate conditions of the well being sampled. Care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record adjustments made to the pumping rates and water levels immediately after each adjustment.
- During the purging of the well, monitor and record the field indicator parameters (pH, temperature, conductivity, oxidation-reduction (redox) reaction potential (ORP), dissolved oxygen (DO), and turbidity) approximately every five minutes. Stabilization is considered to be achieved when the final groundwater flow rate is achieved, and three consecutive readings for each parameters are within the following limits:
  - pH  $\pm 0.1$  pH units of the average value of the three readings;
  - temperature  $\pm 3$  percent of the average value of the three readings;
  - conductivity  $\pm 0.005$  milliSiemen per centimeter (mS/cm) of the average value of the three readings for conductivity  $< 1$  mS/cm and  $\pm 0.01$  mS/cm of the average value of the three readings for conductivity  $> 1$  mS/cm;

- ORP  $\pm 10$  millivolts (mV) of the average value of the three readings;
  - DO  $\pm 10$  percent of the average value of the three readings; and
  - turbidity  $\pm 10$  percent of the average value of the three readings, or a final value of less than 5 nephelometric turbidity units (NTU).
- Should stabilization not be achieved for all field parameters, purging is continued until a maximum of 20 well screen volumes have been purged from the well. Since low-flow purging (LFP) likely will not draw groundwater from a significant distance above or below the pump intake, the screen volume is based upon a 5-foot (1.4 m) screen length. After purging 20 well screen volumes, purging is continued if the purge water remains visually turbid and appears to be clearing, or if stabilization parameters are varying slightly outside of the stabilization criteria listed above and appear to be approaching stabilization.
  - If low-turbidity samples are critical to the project goals, purging will be extended until turbidity has been reduced to 5 NTU or less.
  - The pump must not be removed from the well between purging and sampling.

#### **WELL PURGING AND STABILIZATION MONITORING (TYPICAL METHOD)**

- Typically peristaltic pumps or bladder pumps or submersible pumps are preferred. In most cases bailer use is not desirable.
- Pump placement is typically performed at the mid-point of the screen.
- Purge the well until three consecutive well volume measurements of temperature and specific conductivity are approximately plus or minus 10 percent and if the pH values are within 1 pH unit of the last three value averages, and the groundwater turbidity values are less than 5 NTU. If stabilization has not occurred within the first five well volumes removed, continue purging and monitoring until eight well volumes have been pumped.
- Groundwater turbidity may be evaluated by a visual examination for sediment/silt presence or use of a nephelometer. Work Plan specific goals may exist for turbidity values that may require extending the purging, or require an alternate pumping system.
- Monitoring well purging is accomplished by using in-place pumps or by a peristaltic, bladder or other appropriate pump, depending on the well depth. The pump/hose assembly or bailer used for purging should be lowered into the top of the standing water column and not deep into the column. Typically pump placement at the mid-point of the screen is adequate.



## **SAMPLING TECHNIQUES**

- If an alternate pump is utilized, the first pump discharge volumes should be discarded to allow the equipment a period of acclimation to the groundwater.
- Samples are typically collected directly from the pump with the groundwater being discharged directly into the appropriate sample container. Avoid handling the interior of the bottle or bottle cap and don new gloves for each well sampled to avoid contamination of the sample.
- Order of sample collection:
  - Volatile organic compounds
  - Semi-volatile organic compounds
  - Total organic carbon (TOC)
  - Total organic halogens (TOX)
  - Extractable organics
  - Total metals
  - Dissolved metals
  - Phenols
  - Cyanide
  - Sulfate and chloride
  - Nitrate and ammonia
  - Radionuclides
- For low stress/low flow sampling, samples should be collected at a flow rate between 100 and 500 mL/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 feet.
- The pumping rate used to collect a sample for VOCs should not exceed 100 mL/min. Samples should be transferred directly to the final container 40 mL glass vials completely full and topped with a teflon cap. Once capped the vial must be inverted and tapped to check for headspace/air presence (bubbles). If air is present the sample vial will be discarded, and re-collected until free of air.
- Field filtration will be performed if dictated by the project Work Plan.
- Sample labels/sample identification
- All samples must be labeled with:
  - A unique sample number
  - Date and time
  - Parameters to be analyzed
  - Project Reference ID
  - Samplers initials
- Labels should be secured to the bottle and should be written in indelible inks.

## **EQUIPMENT/MATERIALS**

- pH meter, Conductivity meter, Dissolved Oxygen (DO) meter, Oxidation-reduction (redox) reaction potential (ORP) meter, Nephelometer, Temperature gauge
- Field filtration units (if required)
- Purging/sampling equipment
  - Peristaltic Pump (not suitable for VOCs<sup>1</sup>/SVOCs or depths >25 feet);
  - Suction Pumps (not suitable for LFP, VOCs/SVOCs, or depths >25 feet);
  - Submersible Pumps (suitable for VOCs/SVOCs only at low flow rates);
  - Air Lift Pumps (not suitable for VOCs/SVOCs); and
  - Bladder Pumps (suitable for LFR and VOCs/SVOCs);
- Water Level Probe
- Sampling Materials (containers, log book/forms, coolers, chain-of-custody)
- Work Plan
- Health and Safety Plan

NOTE<sup>1</sup>: PERISTALTIC PUMP USE FOR VOC COLLECTION IS NOT ACCEPTABLE ON EPA/RCRA SITES; THIS TECHNIQUE HAS GAINED ACCEPTANCE IN SELECT AREAS WHERE IT IS PERMISSIBLE TO COLLECT VOCs USING A PERISTALTIC PUMP AT A LOW FLOW RATE (EX. MICHIGAN).

## **FIELD NOTES**

- Field notes must document all the events, equipment used, and measurements collected during the sampling activities. SOP 1.2 describes the data/recording procedure for field activities. The log book should document the following for each well sampled:
  - Identification of well
  - Well depth
  - Static water level depth and measurement technique
  - Sounded well depth
  - Presence of immiscible layers and detection/collection method
  - Well yield – high or low
  - Purge volume and pumping rate
  - Time well purged
  - Measured field parameters
  - Purge/sampling device used

- Well sampling sequence
- Sampling appearance
- Sample odors
- Sample volume
- Types of sample containers and sample identification
- Preservative(s) used
- Parameters requested for analysis
- Field analysis data and method(s)
- Sample distribution and transporter
- Laboratory shipped to
- Chain of custody number for shipment to laboratory
- Field observations on sampling event
- Name collector(s)
- Climatic conditions including air temperature
- Problems encountered and any deviations made from the established sampling protocol.

A standard log form for documentation and reporting groundwater purging and sampling events are presented on Form 6.3-01 (Well Purging Field Information Form), 6.3-02 (Sample Collection Data Sheet), and 6.3-03 (Monitoring Well Record for Low-Flow Purging).

### **GROUNDWATER/DECON FLUID DISPOSAL**

- Groundwater disposal methods will vary on a case-by-case basis but may range from:
  - Off-site treatment at private treatment/disposal facilities or public owned treatment facilities
  - On-site treatment at Facility operated facilities
  - Direct discharge to the surrounding ground surface, allowing groundwater infiltration to the underlying subsurface regime
- Decon fluids should be segregated and collected separately from wash waters/groundwater containers.

### **REFERENCE**

1. ASTM D5474      Guide for selection of Data Elements for Groundwater Investigations
2. ASTM D4696      Guide for pore-liquid sampling from the vadose zone
3. ASTM D5979      Guide for conceptualization and characterization of groundwater systems

4. ASTM D5903      Guide for planning and preparing for a groundwater sampling event
5. ASTM D4448      Standard guide for sampling groundwater wells
6. ASTM D6001      Standard guide for direct push water sampling for geo-environmental investigations.
7. USEPA            Low-flow (minimal drawdown) ground-water sampling procedures (EPA/540/S-95/504)
8. USEPA            RCRA Groundwater Monitoring: Draft Technical guidance (EPA/530-R-93-001)

## 5.6 SAMPLE NAMING, HANDLING, AND SHIPPING

### INTRODUCTION

Sample management is the continuous care given to each sample from the point of collection to receipt at the analytical laboratory. Good sample management ensures that samples are properly recorded, properly labeled, and not lost, broken, or exposed to conditions that may affect the sample's integrity.

All sample submissions must be accompanied with a chain-of-custody (COC) document to record sample collection and submission.

The following sections provide the minimum standards for sample management.

### PROCEDURES REFERENCED

#### A) Field Handling

Prior to entering the field area where sampling is to be conducted, especially at sites with defined exclusion zones, the sampler should ensure that all materials necessary to complete the sampling are on hand.

If samples must be maintained at a specified temperature after collection, proper coolers and ice/cool-packs must be brought out to the field. Consideration should be given to keeping reserve cooling media on hand if sampling events will be of long duration. Conversely, when sampling in extremely cold weather, proper protection of water samples, trip blanks, and field blanks must be considered.

Personnel performing groundwater sampling tasks must check the sample preparation and preservation requirements to ensure compliance with the Quality Assurance Project Plan. Typical sample preparation may involve pH adjustment (i.e., preservation), sample filtration and preservation, or simply cooling to 4°C. Sample preparation requirements vary from site to site and vary depending upon the analytical method for which the samples will be analyzed.

The sampling personnel must also confirm before the sample event, the amount of bottle filling required for the respective sample containers. VOC samples must not have any headspace within the sample collection vial; whereas when collecting select analytes (i.e., metals) a headspace must be provided to allow addition of the required preservative.

## B) Sample Labeling

Samples must be properly labeled as soon as practical after collection.

Note that the data shown on the sample label is the minimum data required. The sample label data requirements are listed below for clarity.

- i) Project name.
- ii) Sample number.
- iii) Sampler's initials.
- iv) Date of sample collection.
- v) Time of sample collection.
- vi) Analysis required.
- vii) Preservatives.

Quite often the analytical laboratory supplying the containers will provide blank sample labels. If these are adequate and convenient they can be used.

Under certain field conditions it is impractical to complete and attach sample labels to the container at the point of sample collection. However, to ensure that samples are not confused, a clear notation should be made on the container with a permanent marker indicating the last three digits of the sample number. If the containers are too soiled or small for marking, the container can be put into a "zip-lock" bag which can then be labeled.

No one sample number format is adequate for every type of sampling activity. Prior to the start of every project or sub-sampling event within the project, Project Managers and field personnel should devise a sample number format. Sample number formats should be as simple and short as possible. Sample number formats will reduce transcription errors by both Consultants and lab personnel. The sample number format should be comprehensive enough to allow for easy location of detailed sample data within the Site log books. Sample format must also be consistent with any future data management activities.

Unless otherwise instructed, labels should not contain specific names of the sample source (i.e., "Well No. 16"). Provision of such specific data on the label can produce biased lab results.

### Sample Labels/Sample Identification

All samples must be labeled with:

- a unique sample number (never to be re-used, nor likely to be);
- date and time;
- parameters to be analyzed; and

- sampler's initials.

Labels should be secured to the bottle and should be written in indelible ink. It is also desirable to place wide clear tape over the label before packing in a cooler for label protection during transportation.

The unique sample identification number may follow the format recommended below, or a specific sample protocol for labeling may be specified in the project RFI Work Plan.

XXXX-XXXXXX-XXXX

This format has been selected to maximize the information content of the sample number. Minor modifications are certainly reasonable.

- i) XXXX – Employee four-digit identification number
- ii) XXXXXX – Sample Date – Month/Date/Year
- iii) XXXX – Time (military)

Note that for Field Duplicates, Field Blanks, Equipment Blanks, Trip Blanks, Field Replicate, Known Duplicate, and Material Blank time will NOT be used. Instead we will use a sample number (ie. 0001, 0002, 0003), reset every day. This will simplify sample naming for the QA/QC samples and avoid identifying the parent sample for blind duplicates.

The decision of how to assign sample numbers will be made at the beginning of a job or phase, and should be consistent throughout the job.

#### C) Packaging

When possible, sample container preparation and packing for shipment should be completed in a well-organized and clean area, free of any potential cross-contaminants.

Sample containers should be prepared for shipment as follows:

- i) Containers should be wiped clean of all debris/water using paper towels (paper towels must be disposed of with other contaminated materials).
- ii) Clear, wide packing tape should be placed over the sample label for protection.

While there is no one "best" way to pack samples for shipment, the following packing guidelines should be followed.

- i) Plan time to pack your samples (and make delivery to shipper if applicable). Proper packing and manifesting takes time. A day's worth of sampling can be easily wasted due to a few minutes of neglect when packing the samples.
- ii) Always opt for more coolers and more padding rather than crowd samples. The cost associated with the packing and shipment of additional coolers is usually

- always small in comparison with the cost of having to re-sample due to breakage during shipment.
- iii) Do not bulk pack. Each sample must be individually padded.
  - iv) Large glass containers (1 liter and up) require much more space between containers.
  - v) Ice is not a packing material due to the reduction in volume when it melts.

The following is a list of standard guidelines that must be followed when packing samples for shipment.

- i) When using ice for a cooling media, always double bag the ice in "Zip-Lock" bags.
- ii) Double-check to ensure trip and temperature blanks have been included for all shipments containing VOCs, or where otherwise specified in the QA/QC plan.
- iii) Enclose the Chain-of-Custody form in a "Zip-Lock" bag.
- iv) Ensure custody seals (two, minimum) are placed on each cooler. Coolers with hinged lids should have both seals placed on the opening edge of the lid. Coolers with "free" lids should have seals placed on opposite diagonal corners of the lid. Place clear tape over custody seals.
- v) Ensure that all "Hazardous Material" stickers/markings have been removed from coolers being used which previously contained such materials.

*Note: Never store sterile sample containers in enclosures containing equipment which use any form of fuel or volatile petroleum based product. An alternate means of secure storage must be planned for. When conducting sampling in freezing conditions at sites without a heated storage area (free of potential cross contaminants), trip blanks not being used in a QA/QC role should be isolated from coolers immediately after receipt. Trip blanks should be double-bagged and kept from freezing.*

#### D) Chain-of-Custody Records

Chain-of-custody forms will be completed for all samples collected. The form documents the transfer of sample containers.

The chain-of-custody record, completed at the time of sampling, will contain, but not be limited to, the sample number, date and time of sampling, and the name of the sampler. The chain-of-custody document will be signed and dated by the sampler when transferring the samples.

Each sample cooler being shipped to the laboratory will contain a chain-of-custody form. The chain-of-custody form will consist of four copies which will be distributed as follows: The shipper will maintain a copy while the other three copies will be enclosed in a waterproof envelop within the cooler with the samples. The cooler will then be sealed



properly for shipment. The laboratory, upon receiving the samples, will complete the three remaining copies. The laboratory will maintain one copy for their records. One copy will be returned to the Field Coordinator upon receipt of the samples by the laboratory. One copy will be returned with the data deliverables package.

Chain-of-custody (COC) records are legal documents. They must be completed and handled accordingly.

The following list provides guidance for the completion and handling of all COCs.

- i) COCs used should be Consultant-standard forms or those supplied by the analytical laboratory. Do not use any COC forms from other labs, even if the heading is blocked out.
- ii) COCs must be completed in black ballpoint ink only.
- iii) COCs must be completed neatly using printed text.
- iv) If a simple mistake is made, line out the error with a single line and initial and date next to it.
- v) Each separate sample entry must be sequentially numbered.
- vi) The use of "Ditto" or quotation marks to indicate repetitive information in columnar entries should be avoided. If numerous repetitive entries must be made in the same column, place a continuous vertical arrow between the first entry and the next different entry.
- vii) When more than one COC form is used for a single shipment, each form must be consecutively numbered using the "Page \_\_\_\_ of \_\_\_\_" format.
- viii) If necessary, place additional instructions directly onto the COC. Do not enclose separate loose instructions.
- ix) Include a contact name and phone number on the COC in case there is a problem with the shipment.
- x) Do not indicate the source of the sample as this may produce a biased lab result.
- xi) Before using an acronym on a COC, define clearly the full interpretation of your designation [i.e., Polychlorinated Biphenyls - (PCBs)].

E) Shipment

In all but a few cases the QA/QC plan for the field work will require shipment of samples by overnight carrier. A great many problems can be avoided by proper advance planning. Prior to the start of the field sampling, the carrier should be contacted to determine if pickup can be made at the field site location. If pickup at the field site can be made, the "no-later-than" time for having the shipment ready must be determined.

If no pick-up is available at the Site, the nearest pick-up or drop-off location should be determined. Again, the "no-later-than" time for each location should be determined.

Sample shipments must not be left at unsecured or questionable drop locations (i.e., if the cooler will not fit in a remote drop box do not leave the cooler unattended next to the

drop box). Some overnight carriers do not in fact provide "overnight" shipment to/from some locations. Do not assume; call the carrier in advance before the start of the field work.

Copies of all shipment manifests must be maintained in the field file.

## **6.0 FIELD INSTRUMENTS – USE AND CALIBRATION**

### **INTRODUCTION**

A significant number of field activities involve usage of electronic instruments to monitor for environmental screening and health and safety purposes. It is imperative the instruments are used and maintained properly to optimize their performance and minimize the potential for inaccuracies in the data obtained, and to insure worker's health and safety is not compromised.

This SOP provides guidance on the usage, maintenance and calibration of electronic field equipment, whether for equipment owned by the Consultant or Contractor, or equipment obtained from a rental agency.

### **PROCEDURES REFERENCED**

- 1.2 Field Data Recording

### **PROCEDURE**

- All monitoring equipment will be in proper working order, and operated for the purpose for which it was intended, in accordance with manufacturer's recommendations.
- Field personnel will be responsible for insuring the equipment is maintained and calibrated in the field to extent practical, or returned for office or manufacturer maintenance or calibration if warranted. Calibration is discussed in greater detail below.
- A copy of the Operating Instructions, Maintenance and Service manual and calibration log, if available, for each instrument used on a project will be kept on site at all times.
- Instruments will be operated only by personnel trained in the proper usage and calibration. In the event certification of training is required, personnel will have documentation of such certification with them on site at all times.
- Personnel must be aware that certain instruments are rated for operation within a limited range of conditions such as temperature and humidity. Usage of such instruments in conditions outside these ranges will only proceed with proper approval by a project manager and/or Health and Safety supervisor as appropriate.

- Instruments that contain radioactive source material, such as x-ray fluorescence analyzers or moisture-density gauges require specific transportation, handling and usage procedures that are generally associated with a license from the Nuclear Regulatory Commission (NRC) or an NRC-Agreement State. Under no circumstance will operation of such instruments be allowed on site unless by properly authorized and trained personnel, using the proper personal dosimetry badges or monitoring instruments.

#### Calibration:

Calibration of an electronic instrument is critical to insure it is operating properly for its intended use. Such instruments are often sensitive to changes in temperature or humidity, or chemical vapors in the working atmosphere, and as a result their response and ability to monitor conditions and provide data can change significantly.

*Calibration:* Calibration of instruments shall be performed once at the beginning of every day and one additional time during the day. This includes the following parameters:

- Frequency
- Use of proper calibration Gases or Chemical Standards
- Requirements for Factory Calibration

*Calibration Gas Safety:* Several instruments such as photoionization detectors (PIDs), flame ionization detectors (FIDs), oxygen meters, explosimeters, combustible gas indicators and many others require use of calibration gasses contained in compressed gas cylinders. Many of these gases are combustible or explosive. Care shall be taken to minimize the potential for injury from the use of such compressed gases. Transport, handling and storage of cylinders, where necessary, shall be performed in accordance with applicable DOT regulations and site requirements.

Calibration will only be performed in areas free of sources of spark, flame or excessive heat. Smoking will not be allowed in the vicinity of calibration gas usage areas. In situations where an extreme temperature differential exists, the unit should be brought to the temperature it is used in and calibrated at that temperature.

*Documentation of Calibration:* Instrument calibration activities and maintenance activities will be documented on the appropriate field forms. In addition, protocol for documentation outlined in the Field Data Recording Procedure will be followed.

- Intrinsically Safe Requirements

Certain work locations may be such that dangerous, ignitable or explosive conditions exist. In such cases, it may be necessary to utilize only equipment that is rated as “Intrinsically Safe.” Intrinsically safe instrumentation is designed with limited electrical and thermal energy levels to eliminate the potential for ignition of hazardous mixtures.

For site work requiring operation of monitoring instruments in Class I, Division I locations (as defined by the National Fire Protection Agency (NFPA)) only instrumentation rated as Intrinsically Safe will be used. Such equipment (including all accessories and ancillary equipment) must be rated to conform to Underwriter’s Laboratories (UL) Standard 913, for use in a Class I, Division 1 Groups A, B, C, and D locations. It is also recommended the equipment conform with CSA Standard 22.2, No. 157-92.

- Upon completion of the field activities, equipment shall be returned to the possession of the Consultant, Contractor or Rental Agency accompanied by a written summary of any problems encountered with its use or calibration.
- Equipment shall be properly prepared for shipping, including insuring that residual gases (if applicable) are removed from the instrument, and accompanying containers of compressed gases or fluids are properly labeled and sealed.
- Equipment Decontamination

Equipment that comes in contact with Site media (water level meters, water quality meters) must be cleaned **before** removal from the site to ensure that chemicals are not transferred to other sites. It is the responsibility of the person who requisitioned the equipment to ensure appropriate cleaning before returning the equipment. Equipment decontamination procedures are typically site-specific for unique site compounds.

## **EQUIPMENT**

- Monitoring equipment specific to work plan tasks.
- Manufacturer’s instructions, operation and maintenance information.
- Associated calibration gases, aqueous standards, etc.
- Appropriate shipping containers to facilitate transport without damage to equipment.

## **REFERENCE**

- Underwriter's Laboratories, Inc. (<http://www.ul.com/hazloc/define.htm>) Standard UL 913.
- National Fire Protection Agency (<http://www.nfpa.org/index.html>)
- Canadian Standards Association (CSA) (<http://www.csa.ca>) Standard 22.2 No. 157

## 7.0 EQUIPMENT DECONTAMINATION

### INTRODUCTION

This procedure describes decontamination of field equipment potentially exposed to contaminants. Proper decontamination is required to reduce the risk of transfer of contaminants from areas of contamination to other areas and to minimize the potential for cross-contamination that would compromise sample quality. The degree of decontamination required will be dependent on the nature of the activity, equipment used and on the amount of exposure to contaminants.

### PROCEDURES REFERENCED

- 2.2 - Soil Borings
- 5.1 - Soil Sample Collection
- 5.2 - Groundwater Sampling
- 6.0 - Field Instruments – Use And Calibration

### PROCEDURE

#### A. General Procedure Discussion

Decontamination activities must be performed in a controlled area outside any exclusion zones established on the site. Care must be taken to minimize the potential for transfer of contaminated materials to the ground or onto other materials. Regardless of the size or nature of the equipment being decontaminated, the process will utilize a series of steps that involve removal of gross material (dirt, grease, oil etc.), washing with a detergent, and multiple rinsing steps. In lieu of a series of washes and rinse steps, steam cleaning with low-volume, high-pressure equipment (i.e. steam cleaner) is acceptable.

Drill rigs, backhoes and other exploration equipment, and all monitoring equipment (rented or not) in contact with the sampling media must be decontaminated prior to initiating site activities, in-between exploration locations to minimize cross-contamination potential, and prior to mobilizing off site after completion of site work. Heavy equipment is generally best decontaminated with a combination of steam-cleaning equipment and detergent scrubbing. Particular attention should be paid to parts in direct contact with contaminants, e.g. shovels, tires, augers, drilling decks, etc.

Control and containerization of all decontamination fluids is critical. A decontamination pad must be constructed that is appropriate for the size and type of equipment being

decontaminated. At a minimum, the decontamination pad will have the following elements:

- an impermeable barrier capable of containing decontaminated fluids;
- a low point where fluids will collect and can be pumped into appropriate containers;
- durability to withstand equipment such as vehicle and foot traffic;
- appropriate ancillary equipment such as racks to place decontaminated equipment to drain without further exposure to contaminated fluids;
- Labels to alert personnel as to the potential presence of contaminated materials.

B. Decontamination of Specific Sampling Equipment

The following specific decontamination procedure is recommended:

- Brush loose soil off of equipment;
- Wash equipment with laboratory grade detergent (i.e. Alconox or equivalent);
- Rinse with tap water (three rinses minimum);
- Rinse equipment with reagent grade methanol for VOC samples (this requirement may not be appropriate for sites where methanol is a contaminant of concern);
- Rinse equipment with nitric acid for metal samples (especially important for sites with potentially high metals concentrations);
- Rinse equipment with distilled water;
- Allow water to evaporate before reusing equipment; and
- Wrap equipment in aluminum foil when not being used.

C. Decontamination of Monitoring Equipment

Because monitoring equipment is difficult to decontaminate, care should be exercised to *prevent* contamination. Sensitive monitoring instruments should be protected when they are at risk of exposure to contaminants. This may include enclosing them in plastic bags allowing an opening for the sample intake. Ventilation ports should not be covered.

If contamination does occur, decontamination of the equipment will be required; however, immersion in decon fluids is not possible. As such, care must be taken to wipe the instruments down with detergent-wetted wipes or sponges, and then with deionized water-wetted wipes or sponges.

D. Disposal of Wash Solutions and Contaminated Equipment



All contaminated wash water, rinsates, solids and materials used in the decontaminated process that cannot be effectively decontaminated (such as polyethylene sheeting) will be containerized and disposed of in accordance with applicable regulations and site requirements. All containers will be labeled with an indelible marker as to contents and date of placement in the container, and any appropriate stickers required (such as PCBs).

Sampling of containerized wastes will be performed immediately upon completion of the investigations to minimize storage time on site. Storage of decon wastes on site will not exceed 90 days under any circumstances.

## **EQUIPMENT**

Decontamination equipment and solutions are generally selected based on ease of decontamination and disposability.

- Polyethylene sheeting;
- Metal racks to hold equipment;
- Soft-bristle scrub brushes or long-handle brushes for removing gross contamination and scrubbing with wash solutions;
- Large galvanized wash tubs, stock tanks, or wading pools for wash and rinse solutions;
- Plastic buckets or garden sprayers for rinse solutions;
- Large plastic garbage cans or other similar containers lined with plastic bags can be used to store contaminated clothing;
- Contaminated liquids and solids should be segregated and containerized in DOT-approved plastic or metal drums, appropriate for offsite shipping/disposal if necessary.

## **REFERENCE**

- ASTM D5088 - Practice for Decontamination of Field Equipment Used at Non-Radioactive Waste Sites

**Appendix C      Data Validation**

**Data Usability Summary Report (DUSR)**  
**Fort Calhoun NGS Blair, NE**  
**Analytical Laboratory: TestAmerica, Inc. - St. Louis, MO**  
**Sample Delivery Group # 160-19727-1**

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA 540-R-2016-001)
- USEPA National Functional Guidelines for Superfund Organic Methods Data Review (EPA 540-R-2016-002)

and method protocol criteria where applicable as prescribed by “Test Methods for Evaluating Solid Waste”, SW846, Update III, 1996, or Standard Methods for the Examination of Water and Wastewater, Eds 18-20.

This DUSR pertains to the following samples:

| Sample ID    |
|--------------|
| SD140300     |
| SD140200     |
| SD140100     |
| SD140100 DUP |

| Sample ID       |
|-----------------|
| GW1101-20161024 |
| GW1004-20161024 |

Project Samples were analyzed according to the following analytical methods:

|    | Parameter                  | Analytical Method | Holding Time Criteria |
|----|----------------------------|-------------------|-----------------------|
| 1. | Perfluorinated Alkyl Acids | EPA 537           | 14/28 days            |
| 2. | Mercury                    | EPA 7470A         | 28 days               |
| 3. | ICP Metals                 | EPA 6010C         | 180 days              |
| 4. | Perchlorate                | EPA 314.0         | 28 days               |
| 5. | VOCs                       | EPA 8260B         | 14 days               |

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- NDEQ Regulations
- Holding Times
- Project-specific Reporting Limits
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Field Duplicate Sample Analysis
- Sample Data Reporting Format
- Data Qualifiers
- Summary

#### NDEQ Regulations

Reporting limits were all compared to the NDEQ action levels. All reporting limits were below NDEQ limits (Nebraska VCP Remedial Goals), with the following exceptions. Results were reported to the MDL.

| Analyte              | NDEQ Action Level (ug/L) | Reporting Limit (RL) | Method Detection Limit (MDL) | Status            |
|----------------------|--------------------------|----------------------|------------------------------|-------------------|
| Naphthalene (GW1004) | 0.14                     | 5.0                  | 0.85                         | MDL > NDEQ Limit  |
| Antimony (GW1101)    | 6.0                      | 200                  | 60                           | MDL > NDEQ Limit  |
| Beryllium (GW1101)   | 4.0                      | 100                  | 30                           | MDL > NDEQ Limit  |
| Cadmium (GW1101)     | 5.0                      | 100                  | 30                           | MDL > NDEQ Limit  |
| Selenium (GW1101)    | 50                       | 300                  | 160                          | MDL > NDEQ Limit  |
| Silver (GW1101)      | 100                      | 200                  | 60                           | MDL below limits. |
| Thallium (GW1101)    | 2.0                      | 400                  | 100                          | MDL > NDEQ Limit  |
| Perchlorate (GW1101) | 6.4                      | 12                   | 4.0                          | MDL below limits. |

The lab cannot report any lower than this for Naphthalene. The metals were all diluted 10x for GW1101 due to high concentrations of other target analytes, thereby raising the reporting limits. The sample could not be run straight due to these high concentrations.

## Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group, with the following exception(s):

During the analysis of VOCs (EPA Method 8260B) preservation and/or technical holding times were exceeded for project samples shown below. Sample results should be qualified according to the actions specified in the following table:

| Lab ID      | Sample ID       | Matrix | Action              |
|-------------|-----------------|--------|---------------------|
| 160-19727-6 | GW1004-20161024 | Water  | See Action #1 Below |

### Action #1

*Sample was received with insufficient preservation for VOCs. Vials were not checked until time of analysis in order to avoid potential loss of volatile constituents. Sample was analyzed outside the 7 day unpreserved holding time. Qualify results "J-/R".*

During the analysis of Perfluorinated Acids (EPA Method 537) preservation and/or technical holding times were exceeded for project samples shown below. Sample results should be qualified according to the actions specified in the following table:

| Lab ID      | Sample ID       | Matrix | Action              |
|-------------|-----------------|--------|---------------------|
| 160-19727-6 | GW1004-20161024 | Water  | See Action #1 Below |

### Action #1

*Sample contained excessive sediment. The aqueous portion was decanted to a new bottle prior to spiking and extractions. No qualification is recommended.*

During the analysis of Metals (EPA Methods 6010B/6020/7470A/7471A) preservation and/or technical holding times were exceeded for project samples shown below. Sample results should be qualified according to the actions specified in the following table:

| Lab ID      | Sample ID       | Matrix | Action           |
|-------------|-----------------|--------|------------------|
| 160-19727-5 | GW1101-20161024 | Water  | See Action Below |

### Action:

*Sample was received with insufficient preservation for metals and mercury. Nitric acid was added by the laboratory to adjust the pH under 2, but as 4 days passed between collection and delivery to the laboratory, results should be considered estimated "J-/UJ".*

## Project-specific Reporting Limits

The reporting limits for the samples within this Sample Delivery Group (SDG) met or exceeded the minimum reporting limit requirements specified by the Project-specific Quality Assurance Project Plan (QAPP). If a QAPP does not exist, all dilutions were still reviewed and found to be justified. Any exceptions are noted below:

During the analysis of Metals (EPA Methods 6010B/6020/7470A/7471A) the reporting limits were greater than the Project-specific Quality Assurance Project Plan (QAPP) criteria. The following project sample data as specified in the following table were affected:

| Target Analyte(s) | QAPP RL | Sample ID       | Lab Package RL | Reason                        | Action            |
|-------------------|---------|-----------------|----------------|-------------------------------|-------------------|
| All Metals        | 1x      | GW1101-20161024 | 10x            | Abundance of non-trgt analyte | No further action |

## Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is found to be influenced by the amount found in any associated blank. USEPA method specific guidelines are followed when evaluating any detect found in a blank. Common laboratory contaminants include methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters. Target analytes were not detected in associated blank samples (trip, equipment, or method) collected, prepared and/or analyzed concurrently with the project samples, with the following exception(s):

| Blank                  | Target Analyte(s) | Concn.        | Affected Sample(s) | Qualifiers                                      |
|------------------------|-------------------|---------------|--------------------|---|
| Method Blank<br>277175 | Mercury           | 0.0727 J ug/L | GW1101-20161024    | J+<br>Due to multiple<br>deficiencies, flag "J" |

## System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria. No qualification of the data is recommended.

## Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria, with the following exception(s):

| LCS ID /<br>Project Sample MS | Type   | Target Analyte(s)  | %R<br>Criteria | %R     | %RPD   | Affected Sample(s)      |
|-------------------------------|--------|--------------------|----------------|--------|--------|-------------------------|
| GW1004-20161024               | MS/MSD | BTEX + Naphthalene | Various        | Within | Within | None, all within limit. |

| LCS ID /<br>Project Sample MS | Type   | Target Analyte(s)    | %R<br>Criteria | %R     | %RPD   | Affected Sample(s)       |
|-------------------------------|--------|----------------------|----------------|--------|--------|--------------------------|
| SD140100 DUP                  | MS/MSD | Perfluorinated Acids | Various        | Within | Within | None, all within limits. |

| LCS ID /<br>Project Sample MS | Type   | Target Analyte(s) | %R  | Affected Sample(s)   | Positive<br>Results | Non Detect<br>(ND) |
|-------------------------------|--------|-------------------|-----|----------------------|---------------------|--------------------|
| 160-19589-D-12                | MS/MSD | Perchlorate       | Low | None, not HA Sample. |                     |                    |

## Field Duplicate Sample Analysis

The overall variability attributable to the sampling procedure, sample matrix, and laboratory procedures, was evaluated by assessing the relative percent difference (RPD) data from field duplicate samples. All calculated RPD values were within matrix specific data quality objectives, with the exception of results qualified "J" as shown in the table(s) below:

| Target Analyte(s)            | Original Sample ID. | FD Sample ID. | %RPD | Flag Original and FD<br>sample results with: |
|------------------------------|---------------------|---------------|------|--|
|                              | SD140100            | SD140100 DUP  |      |  |
| Perfluorooctanesulfonic acid | 0.23 J ug/kg        | 0.2 U ug/kg   | NA   | None, Abs. Diff < RL                         |
| Perfluorooctanoic Acid       | 0.63 ug/kg          | 0.39 ug/kg    | NA   | None, Abs. Diff < RL                         |
| Perfluorohexanesulfonic acid | 0.19 U ug/kg        | 0.19 U ug/kg  | NA   | None, Both ND.                               |
| Perfluorobutane Sulfonate    | 0.17 U ug/kg        | 0.16 U ug/kg  | NA   | None, Both ND.                               |
| Perfluoroheptanoic acid      | 0.36 ug/kg          | 0.26 J ug/kg  | NA   | None, Abs. Diff < RL                         |
| Perfluorononanoic Acid       | 0.6 ug/kg           | 0.46 ug/kg    | NA   | None, Abs. Diff < RL                         |

### Action:

*If the sample matrix is solid and the %RPD is greater than 50%, the original sample results are qualified "J". If the sample matrix is water or air and the %RPD is greater than 35%, the original sample results are qualified "J".*

### **Sample Data Reporting Format**

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format or equivalent. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

### **Data Qualifiers**

Samples that contain results between the MDL and RL were flagged as estimated, "J", by the laboratory. The data user should be aware that there is a possibility of false positive or mis-identification at the quantitation levels. The laboratory also qualified results when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

### **Summary**

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

Date: 12/12/2016

**Data Usability Summary Report (DUSR)**  
**Fort Calhoun Nuclear Station**  
**Analytical Laboratory: GEL Laboratories LLC. - Charleston, SC**  
**Sample Delivery Group # 409254**

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA 540-R-2016-001)
- USEPA National Functional Guidelines for Superfund Organic Methods Data Review (EPA 540-R-2016-002)

and method protocol criteria where applicable as prescribed by “Test Methods for Evaluating Solid Waste”, SW846, Update III, 1996, or Standard Methods for the Examination of Water and Wastewater, Eds 18-20.

This DUSR pertains to the following samples:

| Sample ID   | Sample ID   | Sample ID    |
|-------------|-------------|--------------|
| DP010109    | DP060212    | DP110202     |
| DP010216    | DP060212DUP | DP110204     |
| DP010307    | DP060321    | DP110206     |
| DP020114    | DP100113    | DP110214     |
| DP020207    | DP100212    | SD140100     |
| DP020209    | DP100310    | SD140100 DUP |
| DP020312    | DP110100    | SD140200     |
| DP020312DUP | DP110102    | SD140300     |
| DP020413    | DP110104    | SS050100     |
| DP050113    | DP110106    | SS110100     |
| DP050213    | DP110113    | SS110200     |
| DP060113    | DP110200    | TB102616     |

Project Samples were analyzed according to the following analytical methods:

|    | Parameter                   | Analytical Method | Holding Time Criteria        |
|----|-----------------------------|-------------------|------------------------------|
| 1. | Perchlorate                 | EPA 314.0         | 28 days                      |
| 2. | ICP Metals (Total and SPLP) | EPA 6010C         | 180 days                     |
| 3. | Mercury (Total)             | EPA 7471A         | 28 days                      |
| 4. | VOCs                        | EPA 8260B         | 14 days                      |
| 5. | SVOCs                       | EPA 8270D         | 14 days                      |
| 6. | Mercury (SPLP)              | EPA 7470A         | 28 days                      |
| 7. | PCBs                        | EPA 8082A         | 14 days ext/40 days analysis |
| 8. | PAHs                        | EPA 8270D SIM     | 14 days ext/40 days analysis |
| 9. | TPH(d)                      | EPA 8015C         | 14 days                      |

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Case Narrative
- NDEQ Regulations
- Holding Times
- Project-specific Reporting Limits
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Field Duplicate Sample Analysis
- Sample Data Reporting Format
- Data Qualifiers
- Summary

## Case Narrative

The laboratory included the below notes of interest in the method case narratives:

- The trip blank was a soil trip blank that did not have any soil added. Therefore, the laboratory added 5g of sand as the sample aliquot for calculation purposes.
- Samples 013-018 were slightly muddy. 019 was very wet. 026-028 contained moist soil. 028 appeared greasy while concentrating on the TurboVap and did not concentrate to 1ml.
- During PCB analysis, all samples were cleaned using both alumina in order to remove oil and other high molecular weight interferences and activated copper in order to remove sulfur.
- Method SW-846 3050B (prep method for metals) is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

## NDEQ Regulations

Reporting limits were all compared to the NDEQ action levels. All reporting limits were below NDEQ limits (Nebraska VCP Remedial Goals), with the following exceptions. Results were reported to the MDL.

| Analyte              | NDEQ Action Level (mg/kg) | Reporting Limit (RL) | Method Detection Limit (MDL) | Status           |
|----------------------|---------------------------|----------------------|------------------------------|------------------|
| Benzo(b)fluoranthene | 0.15                      | 1.050                | 0.523                        | MDL > NDEQ Limit |

Sample SS050100 was diluted 200x due to the presence of non-target analytes. This dilution elevated the reporting limit above NDEQ standards. Samples run straight were reported at limits below the NDEQ standards.

## Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group, with the following exception(s):

During the analysis of VOCs (EPA Method 8260B) preservation and/or technical holding times were exceeded for project samples shown below. Sample results should be qualified according to the actions specified in the following table:

| Lab ID    | Sample ID    | Matrix | Action              |
|-----------|--------------|--------|---------------------|
| 409254015 | SD140100     | Soil   | See Action #1 Below |
| 409254016 | SD140100 DUP | Soil   | See Action #1 Below |
| 409254014 | SD140200     | Soil   | See Action #1 Below |
| 409254013 | SD140300     | Soil   | See Action #1 Below |
| 409254011 | SS110100     | Soil   | See Action #1 Below |
| 409254012 | SS110200     | Soil   | See Action #1 Below |

### Action #1

*Soil samples were collected for VOC analysis using O2SI soil kit. These kits are frozen on arrival to the laboratory to arrest the 48 hour holding time. Samples collected on 10/24 (listed above) were delivered to the lab beyond the 48 hour holding time. The results for these samples should be qualified estimated, "J-UJ".*



### Project-specific Reporting Limits

The reporting limits for the samples within this Sample Delivery Group (SDG) met or exceeded the minimum reporting limit requirements specified by the Project-specific Quality Assurance Project Plan (QAPP). If a QAPP does not exist, all dilutions were still reviewed and found to be justified. Any exceptions are noted below:

During the analysis of SVOCs (EPA Method 8270C) the reporting limits were greater than the Project-specific Quality Assurance Project Plan (QAPP) criteria. The following project sample data as specified in the following table were affected:

| Target Analyte(s) | QAPP RL | Sample ID | Lab Package RL | Reason                        | Action            |
|-------------------|---------|-----------|----------------|-------------------------------|-------------------|
| All PAHs          | 1x      | SS050100  | 200x           | Abundance of non-trgt analyte | No further action |

During the analysis of PCBs (EPA Method 8082) the reporting limits were greater than the Project-specific Quality Assurance Project Plan (QAPP) criteria. The following project sample data as specified in the following table were affected:

| Target Analyte(s) | QAPP RL | Sample ID | Lab Package RL | Reason                           | Action            |
|-------------------|---------|-----------|----------------|----------------------------------|-------------------|
| All PCBs          | 1x      | SS050100  | 10x            | Diluted due to extract thickness | No Further Action |

During the analysis of Metals (EPA Methods 6010B/6020/7470A/7471A) the reporting limits were greater than the Project-specific Quality Assurance Project Plan (QAPP) criteria. The following project sample data as specified in the following table were affected:

| Target Analyte(s) | QAPP RL | Sample ID        | Lab Package RL | Reason                          | Action            |
|-------------------|---------|------------------|----------------|---------------------------------|-------------------|
| Beryllium         | 1x      | DP010216         | 20x            | Dilution req'd by sample matrix | No further action |
| Beryllium         | 1x      | 409254011 - 19   | 10x            | Dilution req'd by sample matrix | No further action |
| Antimony          | 1x      | DP010216         | 10x            | Dilution req'd by sample matrix | No further action |
| Silver            | 1x      | SS110100         | 10x            | Dilution req'd by sample matrix | No further action |
| Thallium          | 1x      | 409254012, 17-20 | 10x            | Dilution req'd by sample matrix | No further action |

*The samples were prepared at a 10x dilution or greater to minimize potential interferences arising from the SPLP leaching solution.*

### Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is found to be influenced by the amount found in any associated blank. USEPA method specific guidelines are followed when evaluating any detect found in a blank. Common laboratory contaminants include methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters. Target analytes were not detected in associated blank samples (trip, equipment, or method) collected, prepared and/or analyzed concurrently with the project samples, with the following exception(s):

| Blank                          | Target Analyte(s)  | Concn.       | Affected Sample(s)                              | Qualifiers        |
|--------------------------------|--------------------|--------------|---|-------------------|
| TB102616                       | Tetrachloroethene  | 0.4 J ug/kg  | 409254011-13, 15, 29, 38                        | U                 |
| Trip Blank                     | Methylene chloride | 2.79 J ug/kg | None, samples all ND.                           | None.             |
| Method Blank - VOCs<br>1612391 | Methylene chloride | 2.14 J ug/kg | None. Associated samples are all ND.            | None.             |
| Method Blank - DRO<br>1612127  | TPH - DRO          | 3190 J ug/kg | DP060212<br>DP060113<br>DP060321<br>DP060212DUP | U<br>U<br>U<br>J+ |

| Blank                      | Target Analyte(s)                              | Concn.  | Affected Sample(s)   | Qualifiers              |
|----------------------------|--|---|--|-------------------------|
| Method Blank<br>1203657595 | Calcium, Total<br>Sodium, Total<br>Zinc, Total | 20200 J ug/kg<br>17500 J ug/kg<br>662 J ug/kg | None, samples >10x blank<br>None, samples >10x blank<br>None, samples >10x blank | None.<br>None.<br>None. |
| Method Blank<br>1203657600 | Sodium, Total                                  | 21800 J ug/kg                                 | DP020207<br>DP020209<br>DP020413<br>DP020114                                     | J+<br>J+<br>J+<br>J+    |

#### System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria, with the following exception(s):

| Semi-Volatile Surrogate Percent Recovery Criteria |     |                    |                  |
|---|-----|--------------------|------------------|
| Surrogate   |     | Aqueous Matrix (%) | Solid Matrix (%) |
| 5-alpha-Androstane                                | S01 | - -                | 30 - 118         |

| Project Sample ID | Matrix | S01<br>%R | Acid                                  |                 | Base/Neutral     |                 |
|-------------------|--------|-----------|---------------------------------------|-----------------|------------------|-----------------|
|                   |        |           | Positive Results                      | Non Detect (ND) | Positive Results | Non Detect (ND) |
| SS050100          | SO     | 0         | None, sample diluted $\geq 5x$ (200x) |                 |                  |                 |

| PCB Surrogate Percent Recovery Criteria |     |                    |                  |
|---|-----|--------------------|------------------|
| Surrogate                               |     | Aqueous Matrix (%) | Solid Matrix (%) |
| Tetrachloro-m-xylene                    | S01 | - -                | 30 - 120         |
| Decachlorobiphenyl                      | S02 | - -                | 32 - 139         |

| Project Sample ID | Matrix | S01<br>%R | S02<br>%R | Applies to List S01                  |                 | Applies to List S02 |                 |
|-------------------|--------|-----------|-----------|--------------------------------------|-----------------|---------------------|-----------------|
|                   |        |           |           | Positive Results                     | Non Detect (ND) | Positive Results    | Non Detect (ND) |
| SS050100 (Col. 1) | Soil   | 33        | 46        | None, sample diluted $\geq 5x$ (10x) |                 |                     |                 |
| SS050100 (Col. 2) | Soil   | 25        | 42        | None, sample diluted $\geq 5x$ (10x) |                 |                     |                 |

#### Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria, with the following exception(s):

| LCS ID /<br>Project Sample MS | Type | Target Analyte(s) | %R<br>Criteria | %R | %RPD | Affected Sample(s) |
|-------------------------------|------|-------------------|----------------|----|------|--------------------|
| DP060321                      | MS   | TPH - DRO         | 32 - 127       | 97 | 32   | DP060321           |
|                               | MSD  | TPH - DRO         | 32 - 127       | 65 |      |                    |

| LCS ID /<br>Project Sample MS | Type   | Target Analyte(s) | %R<br>Criteria | %R     | %RPD   | Affected Sample(s)       |
|-------------------------------|--------|-------------------|----------------|--------|--------|--------------------------|
| SD140300                      | MS/MSD | All PAHs          | Various        | Within | Within | None, all within limits. |
| WST03-17-127184               | MS/MSD | All SVOCs         | Various        | Low    | High   | None, not HA sample.     |

| LCS ID /<br>Project Sample MS | Type   | Target Analyte(s) | %R<br>Criteria | %R     | %RPD   | Affected Sample(s)   |
|-------------------------------|--------|-------------------|----------------|--------|--------|----------------------|
| DP050113                      | MS/MSD | Aroclor 1016      | 29 - 135       | Within | Within | None, within limits. |
|                               | MS/MSD | Aroclor 1260      | 29 - 135       | Within | Within |                      |

| LCS ID /<br>Project Sample MS | Type | Target Analyte(s)   | %R   | Affected Sample(s)   | Positive<br>Results | Non Detect<br>(ND) |
|-------------------------------|------|---|--|--|---------------------|--------------------|
| DP010216                      | MS   | SPLP Metals   | Within   | None within limits.  |                     |                    |
| DP110100<br>409254001         | MS   | Manganese, Total<br>Potassium, Total<br>Zinc, Total<br>Aluminum, Total<br>Barium, Total<br>Calcium, Total<br>Iron, Total<br>Lead, Total | -45.3<br>189<br>65.7<br>732<br>149<br>-371<br>299<br>-3630 | None, sample >4x spike<br><b>All Project Samples</b><br><b>All but DP010109</b><br>None, sample >4x spike<br><b>All but DP010109</b><br>None, sample >4x spike<br>None, sample >4x spike<br>None, sample >4x spike<br>None, sample >4x spike | J+<br>J<br>J+       | UJ                 |
| DP010109<br>409254022         | MS   | Aluminum, Total<br>Antimony, Total<br>Calcium, Total<br>Iron, Total<br>Magnesium, Total<br>Manganese, Total<br>Potassium, Total         | 642<br>73.2<br>-16.5<br>135<br>140<br>402<br>133           | None, sample >4x spike<br><b>All Project Samples</b><br>None, sample >4x spike<br>None, sample >4x spike<br>None, sample >4x spike<br>None, sample >4x spike<br>None, sample >4x spike<br><b>All Project Samples</b>                         | J<br>J+             | UJ                 |
| DP110100<br>409254001         | PS   | Barium, Total<br>Potassium, Total<br>Zinc, Total  | 90.1<br>104<br>91.7  | None, within limits.<br>None, within limits.<br>None, within limits.   |                     |                    |
| DP010109<br>409254022         | PS   | Antimony, Total<br>Potassium, Total   | 93.8<br>91   | None, within limits.<br>None, within limits.   |                     |                    |

| LCS ID /<br>Project Sample MS | Type | Target Analyte(s) | %R   | Affected Sample(s)      | Positive<br>Results | Non Detect<br>(ND) |
|-------------------------------|------|-------------------|------|-------------------------|---------------------|--------------------|
| DP010216 - SPLP               | MS   | Mercury           | 48.1 | <b>All SPLP Results</b> | J-                  | UJ                 |
| SS110100 - Totals             | MS   | Mercury           | 107  | None, within limits.    |                     |                    |
| DP010216 - SPLP               | PS   | Mercury           | 110  | None, within limits.    |                     |                    |

| LCS ID /<br>Project Sample MS | Type | Target Analyte(s) | %R  | Affected Sample(s)   | Positive<br>Results | Non Detect<br>(ND) |
|-------------------------------|------|-------------------|-----|----------------------|---------------------|--------------------|
| SS110100                      | MS   | Perchlorate       | 103 | None, within limits. |                     |                    |

## Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL, with the following exception(s):

| Sample ID       | Matrix | Target Analyte(s) | RPD  | Affected Sample(s)    |
|-----------------|--------|-------------------|------|-----------------------|
| DP110100        | SO     | Antimony, Total   | 38.5 | All Project Samples   |
|                 |        | Lead, Total       | 153  | All Project Samples   |
|                 |        | Manganese, Total  | 20.4 | All Project Samples   |
| DP010109        | SO     | Aluminum, Total   | 21.8 | All Project Samples   |
|                 |        | Arsenic, Total    | 24.9 | All Project Samples   |
|                 |        | Barium, Total     | 23.4 | All Project Samples   |
|                 |        | Cadmium, Total    | 32.5 | None, Abs. Diff < RL. |
|                 |        | Copper, Total     | 24.1 | All Project Samples   |
|                 |        | Lead, Total       | 20.8 | All Project Samples   |
|                 |        | Silver, Total     | 33.4 | All Project Samples   |
| DP010216 - SPLP | SO     | Arsenic, Total    | 32.3 | None, Abs. Diff < RL. |

| Sample ID         | Matrix | Target Analyte(s) | RPD | Affected Sample(s)   |
|-------------------|--------|-------------------|-----|----------------------|
| SS110100 - Totals | SO     | Mercury           | 19  | None, within limits. |
| DP010216 - SPLP   | SO     | Mercury           | NA  | None, Both ND.       |

| Sample ID | Matrix | Target Analyte(s) | RPD | Affected Sample(s) |
|-----------|--------|-------------------|-----|--------------------|
| SS110100  | SO     | Perchlorate       | NA  | None, Both ND.     |

### Action:

Analytes with RPDs greater than 20% should be qualified "J" and non-detects qualified "UJ".

## Field Duplicate Sample Analysis

The overall variability attributable to the sampling procedure, sample matrix, and laboratory procedures, was evaluated by assessing the relative percent difference (RPD) data from field duplicate samples. All calculated RPD values were within matrix specific data quality objectives, with the exception of results qualified "J" as shown in the table(s) below:

| Target Analyte(s) | Original Sample ID. | FD Sample ID. | %RPD | Flag Original and FD sample results with: |
|-------------------|---------------------|---------------|------|---|
|                   | SD140100            | SD140100 DUP  |      |   |
| 2-Butanone (MEK)  | 4.48 J ug/kg        | 8.58 U ug/kg  | NA   | None, Abs. Diff < RL                      |
| Acetone           | 15.5 ug/kg          | 7.28 J ug/kg  | NA   | None, Abs. Diff < RL                      |
| Tetrachloroethene | 0.539 J ug/kg       | 1.72 U ug/kg  | NA   | None, Abs. Diff < RL                      |

| Target Analyte(s) | Original Sample ID. | FD Sample ID. | %RPD | Flag Original and FD sample results with: |
|-------------------|---------------------|---------------|------|---|
|                   | DP060212            | DP060212DUP   |      |   |
| TPH - DRO         | 6840 J ug/kg        | 9100 ug/kg    | NA   | None, Abs. Diff < RL                      |

| Target Analyte(s)    | Original Sample ID. | FD Sample ID. | %RPD | Flag Original and FD sample results with: |
|----------------------|---------------------|---------------|------|---|
|                      | SD140100            | SD140100 DUP  |      |   |
| Anthracene           | 5.34 U ug/kg        | 4.2 J ug/kg   | NA   | None, Abs. Diff < RL                      |
| Benzo(b)fluoranthene | 3.2 J ug/kg         | 3.67 J ug/kg  | NA   | None, Abs. Diff < RL                      |
| Chrysene             | 5.34 U ug/kg        | 2.62 J ug/kg  | NA   | None, Abs. Diff < RL                      |
| Fluoranthene         | 3.74 J ug/kg        | 6.3 ug/kg     | NA   | None, Abs. Diff < RL                      |
| Phenanthrene         | 3.74 J ug/kg        | 5.25 U ug/kg  | NA   | None, Abs. Diff < RL                      |
| Pyrene               | 3.2 J ug/kg         | 4.2 J ug/kg   | NA   | None, Abs. Diff < RL                      |

| Target Analyte(s)       | Original Sample ID. | FD Sample ID. | %RPD | Flag Original and FD sample results with: |
|-------------------------|---------------------|---------------|------|---|
|                         | DP020312            | DP020312DUP   |      |   |
| Aroclor-1260 (PCB-1260) | 1.5 U ug/kg         | 1.48 U ug/kg  | NA   | None, Both ND.                            |
| Aroclor-1254 (PCB-1254) | 1.5 U ug/kg         | 1.48 U ug/kg  | NA   | None, Both ND.                            |
| Aroclor-1221 (PCB-1221) | 1.5 U ug/kg         | 1.48 U ug/kg  | NA   | None, Both ND.                            |
| Aroclor-1232 (PCB-1232) | 1.5 U ug/kg         | 1.48 U ug/kg  | NA   | None, Both ND.                            |
| Aroclor-1248 (PCB-1248) | 1.5 U ug/kg         | 1.48 U ug/kg  | NA   | None, Both ND.                            |
| Aroclor-1016 (PCB-1016) | 1.5 U ug/kg         | 1.48 U ug/kg  | NA   | None, Both ND.                            |
| Aroclor-1242 (PCB-1242) | 1.5 U ug/kg         | 1.48 U ug/kg  | NA   | None, Both ND.                            |

| Target Analyte(s) | Original Sample ID. | FD Sample ID.  | %RPD | Flag Original and FD sample results with: |
|-------------------|---------------------|----------------|------|---|
|                   | SD140100            | SD140100 DUP   |      |   |
| Aluminum, Total   | 10300000 ug/kg      | 10000000 ug/kg | 3%   | None, RPD < 50%                           |
| Antimony, Total   | 480 U ug/kg         | 506 U ug/kg    | NA   | None, Both ND.                            |
| Arsenic, Total    | 10900 ug/kg         | 11400 ug/kg    | 4%   | None, RPD < 50%                           |
| Barium, Total     | 244000 ug/kg        | 243000 ug/kg   | 0%   | None, RPD < 50%                           |
| Beryllium, Total  | 1460 U ug/kg        | 1530 U ug/kg   | NA   | None, Both ND.                            |
| Cadmium, Total    | 740 ug/kg           | 708 ug/kg      | NA   | None, Abs. Diff < RL                      |
| Calcium, Total    | 32900000 ug/kg      | 26700000 ug/kg | 21%  | None, RPD < 50%                           |
| Chromium, Total   | 16100 ug/kg         | 15600 ug/kg    | 3%   | None, RPD < 50%                           |
| Cobalt, Total     | 9260 ug/kg          | 9360 ug/kg     | 1%   | None, RPD < 50%                           |
| Copper, Total     | 24300 ug/kg         | 23400 ug/kg    | 4%   | None, RPD < 50%                           |
| Iron, Total       | 19800000 ug/kg      | 19500000 ug/kg | 2%   | None, RPD < 50%                           |
| Lead, Total       | 14900 ug/kg         | 15000 ug/kg    | 1%   | None, RPD < 50%                           |
| Magnesium, Total  | 10300000 ug/kg      | 9400000 ug/kg  | 9%   | None, RPD < 50%                           |
| Manganese, Total  | 706000 ug/kg        | 668000 ug/kg   | 6%   | None, RPD < 50%                           |
| Nickel, Total     | 23100 ug/kg         | 23000 ug/kg    | 0%   | None, RPD < 50%                           |
| Potassium, Total  | 2060000 ug/kg       | 1960000 ug/kg  | 5%   | None, RPD < 50%                           |
| Selenium, Total   | 1950 ug/kg          | 2360 ug/kg     | NA   | None, Abs. Diff < RL                      |
| Silver, Total     | 217 ug/kg           | 328 ug/kg      | 41%  | None, Abs. Diff < RL                      |
| Sodium, Total     | 263000 ug/kg        | 248000 ug/kg   | 6%   | None, RPD < 50%                           |
| Thallium, Total   | 728 U ug/kg         | 766 U ug/kg    | NA   | None, Both ND.                            |
| Vanadium, Total   | 33300 ug/kg         | 33200 ug/kg    | 0%   | None, RPD < 50%                           |
| Zinc, Total       | 106000 ug/kg        | 108000 ug/kg   | 2%   | None, RPD < 50%                           |

| Target Analyte(s) | Original Sample ID. | FD Sample ID. | %RPD | Flag Original and FD sample results with: |
|-------------------|---------------------|---------------|------|---|
|                   | SD140100            | SD140100 DUP  |      |   |
| Mercury           | 35.5 ug/kg          | 36.5 ug/kg    | 3%   | None, RPD < 50%                           |

| Target Analyte(s) | Original Sample ID. | FD Sample ID. | %RPD | Flag Original and FD sample results with: |
|-------------------|---------------------|---------------|------|---|
|                   | SD140100            | SD140100 DUP  |      |   |
| Perchlorate       | 21.6 U ug/kg        | 21.1 U ug/kg  | NA   | None, Both ND.                            |

Action:

*If the sample matrix is solid and the %RPD is greater than 50%, the original sample results are qualified "J". If the sample matrix is water or air and the %RPD is greater than 35%, the original sample results are qualified "J".*

### **Sample Data Reporting Format**

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format or equivalent. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

### **Data Qualifiers**

Samples that contain results between the MDL and RL were flagged as estimated, "J", by the laboratory. The data user should be aware that there is a possibility of false positive or mis-identification at the quantitation levels. The laboratory also qualified results when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

### **Summary**

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

Date: 12/13/2016

**Appendix D      Boring Logs**

H&A-GEOPROBE-09 HA-LIB09-BOS-HAR-GLB HA-TB-CORE-WELL-07-1.GDT \\ROCI\COMMON\127960-FT\_CALHOUN\GINT\127960-002\_GP.GPJ Jan 9, 17

| <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> </div> <div> <h1 style="margin: 0;">GEOPROBE REPORT</h1> </div> <div> <b>Boring No. DP0101</b> </div> </div>  |                         |                         |                   |                                |  |   |          |        |          |          |        |            |           |           |            |          |  |
|---|-------------------------|-------------------------|-------------------|--------------------------------|--|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|--|
| <div style="display: flex; justify-content: space-between;"> <div> <b>Project</b> Fort Calhoun Station, Blair, NE<br/> <b>Client</b> OPPD<br/> <b>Contractor</b> Saber Drilling                 </div> <div> <b>File No.</b> 127960-002<br/> <b>Sheet No.</b> 1 of 1<br/> <b>Start</b> October 25, 2016<br/> <b>Finish</b> October 25, 2016<br/> <b>Driller</b> J. Wilkinson<br/> <b>H&amp;A Rep.</b> M. Van Noordennen                 </div> </div> |                         |                         |                   |                                |  |   |          |        |          |          |        |            |           |           |            |          |  |
|   |                         | <b>Casing</b>           | <b>Sampler</b>    | <b>Barrel</b>                  | <b>Drilling Equipment and Procedures</b>   |   |          |        |          |          |        |            |           |           |            |          |  |
| <b>Type</b>   |                         |                         | <b>S</b>          | <b>-</b>                       | <b>Rig Make &amp; Model:</b> GeoProbe<br><b>Bit Type:</b><br><b>Drill Mud:</b><br><b>Casing:</b><br><b>Hoist/Hammer:</b><br><b>PID Make &amp; Model:</b> MiniRAE3000 |   |          |        |          |          |        |            |           |           |            |          |  |
| <b>Inside Diameter (in.)</b>  |                         |                         | <b>1 3/8</b>      | <b>-</b>                       |  |   |          |        |          |          |        |            |           |           |            |          |  |
| <b>Hammer Weight (lb)</b>   |                         |                         |                   | <b>-</b>                       |  |   |          |        |          |          |        |            |           |           |            |          |  |
| <b>Hammer Fall (in.)</b>  |                         |                         |                   | <b>-</b>                       |  |   |          |        |          |          |        |            |           |           |            |          |  |
|   |                         |                         |                   |                                | <b>Elevation</b><br><b>Datum</b><br><b>Location</b> See Plan   |   |          |        |          |          |        |            |           |           |            |          |  |
| Depth (ft)  | Sampler Blows per 6 in. | Sample No. & Rec. (in.) | Sample Depth (ft) | Stratum Change Elev/Depth (ft) | USCS Symbol  | <b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b><br>(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |  |
|   |                         |                         |                   |                                |  |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |
| 0   |                         | G1<br>46.8              | 0.0<br>5.0        | 1.0                            |  | -STONE AND GRAVEL-  |          |        |          |          |        |            |           |           |            |          |  |
|   |                         |                         |                   |                                |  | Dense mix of stone and gravel and brown medium to fine SAND   |          |        |          |          |        |            |           |           |            |          |  |
|   |                         |                         |                   |                                |  | Dense brown fine SAND and silt, dry   |          |        |          |          |        |            |           |           |            |          |  |
| 5   |                         | G2<br>48                | 5.0<br>10.0       | 7.2                            |  | Similar to above  |          |        |          |          |        |            |           |           |            |          |  |
|   |                         |                         |                   |                                |  | Dense clay-like black fine SILT   |          |        |          |          |        |            |           |           |            |          |  |
|   |                         |                         |                   |                                |  | -STONE-   |          |        |          |          |        |            |           |           |            |          |  |
|   |                         |                         |                   |                                |  | Dense dark brown fine SILT, moist   |          |        |          |          |        |            |           |           |            |          |  |
|   |                         |                         |                   |                                |  | Gray-brown medium to fine SAND, some silt, moist  |          |        |          |          |        |            |           |           |            |          |  |
| 10  |                         | G3<br>57.6              | 10.0<br>15.0      |                                |  | Gray-brown fine SAND and silt, wet  |          |        |          |          |        |            |           |           |            |          |  |
|   |                         |                         |                   |                                |  | Loose red-brown medium SAND, wet  |          |        |          |          |        |            |           |           |            |          |  |
|   |                         |                         |                   |                                |  | Similar to above  |          |        |          |          |        |            |           |           |            |          |  |
| 15  |                         | G4<br>48                | 15.0<br>20.0      | 20.0                           |  |   |          |        |          |          |        |            |           |           |            |          |  |
|   |                         |                         |                   |                                |  |   |          |        |          |          |        |            |           |           |            |          |  |
| 20  |                         |                         |                   |                                |  | BOTTOM OF EXPLORAITON 20.0 FT   |          |        |          |          |        |            |           |           |            |          |  |

| Water Level Data |      |                    |                  |                |       | Sample ID   | Well Diagram   | Summary   |
|------------------|------|--------------------|------------------|----------------|-------|---|--|---|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe | Riser Pipe<br>Screen<br>Filter Sand<br>Cuttings<br>Grout<br>Concrete<br>Bentonite Seal | Overburden (ft) 20.0<br>Rock Cored (ft) -<br>Samples 4G<br><b>Boring No. DP0101</b> |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |   |
|                  |      |                    |                  |                |       |   |  |   |

**Field Tests:**
Dilatancy: R - Rapid S - Slow N - None
Plasticity: N - Nonplastic L - Low M - Medium H - High  
Toughness: L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.



H&A-GEOPROBE-09 HA-LIB09-BOS-HAR-GLB HA-TB-CORE-WELL-07-1.GDT \\ROCI\COMMON\127960-FT\_CALHOUN\GINT\127960-002\_GP.GPJ Jan 9, 17

| <b>GEOPROBE REPORT</b>   |                         |                         |                   |                                |                                   |   |  |   |          |          |        | <b>Boring No. DP0102</b>   |           |           |            |          |  |
|--|-------------------------|-------------------------|-------------------|--------------------------------|-----------------------------------|---|--|---|----------|----------|--------|--|-----------|-----------|------------|----------|--|
| Project Fort Calhoun Station, Blair, NE<br>Client OPPD<br>Contractor Saber Drilling                                  |                         |                         |                   |                                |                                   |   |  |   |          |          |        | File No. 127960-002<br>Sheet No. 1 of 1<br>Start October 24, 2016<br>Finish October 24, 2016<br>Driller J. Wilkinson<br>H&A Rep. M. Van Noordennen |           |           |            |          |  |
|  |                         | Casing                  | Sampler           | Barrel                         | Drilling Equipment and Procedures |   |  |   |          |          |        |  |           |           |            |          |  |
| Type   |                         |                         | S                 | -                              | Rig Make & Model: GeoProbe        |   |  |   |          |          |        |  |           |           |            |          |  |
| Inside Diameter (in.)  |                         |                         | 1 3/8             | -                              | Bit Type:                         |   |  |   |          |          |        |  |           |           |            |          |  |
| Hammer Weight (lb)   |                         |                         |                   | -                              | Drill Mud:                        |   |  |   |          |          |        |  |           |           |            |          |  |
| Hammer Fall (in.)  |                         |                         |                   | -                              | Casing:                           |   |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   |                                | Hoist/Hammer:                     |   |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   |                                | PID Make & Model: MiniRAE3000     |   |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   |                                | Elevation                         |   |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   |                                | Datum                             |   |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   |                                | Location See Plan                 |   |  |   |          |          |        |  |           |           |            |          |  |
| Depth (ft)   | Sampler Blows per 6 in. | Sample No. & Rec. (in.) | Sample Depth (ft) | Stratum Change Elev/Depth (ft) | USCS Symbol                       | <b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b><br>(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |   | Sand     |          |        | Field Test   |           |           |            |          |  |
|  |                         |                         |                   |                                |                                   |   | % Coarse   | % Fine  | % Coarse | % Medium | % Fine | % Fines  | Dilatancy | Toughness | Plasticity | Strength |  |
| 0  |                         | G1<br>27.6              | 0.0<br>5.0        |                                |                                   | -STONE AND GRAVEL-  |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   | 1.2                            |                                   | Very dense clay-like brown fine SAND and silt   |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   | 4.4                            |                                   | -STONE-   |  |   |          |          |        |  |           |           |            |          |  |
| 5  |                         | G2<br>38.4              | 5.0<br>10.0       |                                |                                   | Very dense brown fine SAND and silt<br>Similar to above   |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   |                                |                                   | Similar, except less dense, moist   |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   |                                |                                   | Gray SILT and stone<br>Very dense clay-like brown fine SAND and silt, moist   |  |   |          |          |        |  |           |           |            |          |  |
| 10   |                         | G3<br>39.6              | 10.0<br>15.0      |                                |                                   | Dense clay-like brown fine SAND and silt, moist   |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   |                                |                                   | Brown fine to medium SAND and silt, moist   |  |   |          |          |        |  |           |           |            |          |  |
| 15   |                         | G4<br>55.2              | 15.0<br>20.0      |                                |                                   | Dense black medium to fine SAND and silt, moist<br>Similar to above   |  |   |          |          |        |  |           |           |            |          |  |
|  |                         |                         |                   |                                |                                   | Black medium SAND, some silt, some organic odor, wet<br>Black medium to fine SAND and silt, some organic odor, wet  |  |   |          |          |        |  |           |           |            |          |  |
| 20   |                         |                         |                   | 20.0                           |                                   | BOTTOM OF EXPLORATION 20.0 FT   |  |   |          |          |        |  |           |           |            |          |  |
| <b>Water Level Data</b><br>Date Time Elapsed Time (hr.) Depth (ft) to: Bottom of Casing Bottom of Hole Water         |                         |                         |                   |                                |                                   | Sample ID<br>O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe  | Well Diagram<br>Riser Pipe<br>Screen<br>Filter Sand<br>Cuttings<br>Grout<br>Concrete<br>Bentonite Seal | <b>Summary</b><br>Overburden (ft) 20.0<br>Rock Cored (ft) -<br>Samples 4G<br><b>Boring No. DP0102</b> |          |          |        |  |           |           |            |          |  |
| <b>Field Tests:</b> Dilatancy: R - Rapid S - Slow N - None Toughness: L - Low M - Medium H - High                    |                         |                         |                   |                                |                                   | Plasticity: N - Nonplastic L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High   |  |   |          |          |        |  |           |           |            |          |  |
| <sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size. |                         |                         |                   |                                |                                   |   |  |   |          |          |        |  |           |           |            |          |  |
| Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.           |                         |                         |                   |                                |                                   |   |  |   |          |          |        |  |           |           |            |          |  |

Project Fort Calhoun Station, Blair, NE  
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




File No. 127960-002  
 Sheet No. 1 of 1  
 Start October 25, 2016  
 Finish October 25, 2016  
 Driller J. Wilkinson

H&A Rep. M. Van Noordennen

|                       | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|-----------------------|--------|---------|--------|-----------------------------------|
| Type                  |        | S       | -      | Rig Make & Model: GeoProbe        |
| Inside Diameter (in.) |        | 1 3/8   | -      | Bit Type:                         |
| Hammer Weight (lb)    |        |         | -      | Drill Mud:                        |
| Hammer Fall (in.)     |        |         | -      | Casing:                           |
|                       |        |         |        | Hoist/Hammer:                     |
|                       |        |         |        | PID Make & Model: MiniRAE3000     |

Elevation  
 Datum  
 Location See Plan

| Depth (ft) | Sampler Blows<br>per 6 in. | Sample No.<br>& Rec. (in.) | Sample<br>Depth (ft) | Stratum<br>Change<br>Elev/Depth (ft) | USCS Symbol | VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION<br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> ,<br>structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |  |
|------------|----------------------------|----------------------------|----------------------|--------------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|--|
|            |                            |                            |                      |                                      |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |
| 0          |                            | G1<br>31.2                 | 0.0<br>5.0           | 0.8                                  |             | -STONE AND GRAVEL-  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Brown fine SAND, some silt, some gravel, dry  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Dense gray-brown fine SAND and silt, wet  |          |        |          |          |        |            |           |           |            |          |  |
| 5          |                            | G2<br>21.6                 | 5.0<br>8.0           |                                      |             | Similar to above  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      | 8.0                                  |             | Note: Refusal on stone at 8.0 ft.   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | BOTTOM OF EXPLORATION 8.0 FT  |          |        |          |          |        |            |           |           |            |          |  |

| Water Level Data |      |                    |                  |                |       | Sample ID   |  | Well Diagram   |  | Summary  |                   |
|------------------|------|--------------------|------------------|----------------|-------|---|--|--|--|--|-------------------|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |  |  Riser Pipe<br> Screen<br> Filter Sand<br> Cuttings<br> Grout<br> Concrete<br> Bentonite Seal |  | Overburden (ft) 8.0<br>Rock Cored (ft) -<br>Samples 2G | Boring No. DP0103 |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |  |  |  |                   |
|                  |      |                    |                  |                |       |   |  |  |  |  |                   |

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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 Contractor Saber Drilling








File No. 127960-002  
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 Start October 26, 2016  
 Finish October 26, 2016  
 Driller J. Wilkinson

H&A Rep. M. Van Noordennen

|                       | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|-----------------------|--------|---------|--------|-----------------------------------|
| Type                  |        | S       | -      | Rig Make & Model: GeoProbe        |
| Inside Diameter (in.) |        | 1 3/8   | -      | Bit Type:                         |
| Hammer Weight (lb)    |        |         | -      | Drill Mud:                        |
| Hammer Fall (in.)     |        |         | -      | Casing:                           |
|                       |        |         |        | Hoist/Hammer:                     |
|                       |        |         |        | PID Make & Model: MiniRAE3000     |

Elevation  
 Datum  
 Location See Plan

| Depth (ft) | Sampler Blows<br>per 6 in. | Sample No.<br>& Rec. (in.) | Sample<br>Depth (ft) | Stratum<br>Change<br>Elev/Depth (ft) | USCS Symbol | VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION<br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> ,<br>structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |  |
|------------|----------------------------|----------------------------|----------------------|--------------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|--|
|            |                            |                            |                      |                                      |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |
| 0          |                            | G1<br>60                   | 0.0<br>5.0           | 1.4                                  |             | -STONE AND GRAVEL-  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Dense brown medium to fine SAND, some silt  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Gray fine SAND and silt, some pieces of wood  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Brown to light brown medium to coarse SAND, gray at 5.0 ft with some silt   |          |        |          |          |        |            |           |           |            |          |  |
| 5          |                            | G2<br>50.4                 | 5.0<br>10.0          | 15.0                                 |             | Dense gray fine SAND and silt, moist  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Dense light brown medium SAND, moist, some layers of rust color   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Similar to above, except some silt  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Similar to above  |          |        |          |          |        |            |           |           |            |          |  |
| 10         |                            | G3<br>60                   | 10.0<br>15.0         | 15.0                                 |             | Light to dark brown medium SAND, wet at 14.0 ft   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |  |
| 15         |                            |                            |                      | 15.0                                 |             | BOTTOM OF EXPLORATION 15.0 FT   |          |        |          |          |        |            |           |           |            |          |  |

| Water Level Data |      |                    |                  |                |       | Sample ID   |  | Well Diagram   |  | Summary   |                   |
|------------------|------|--------------------|------------------|----------------|-------|---|--|--|--|---|-------------------|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |  |  Riser Pipe<br> Screen<br> Filter Sand<br> Cuttings<br> Grout<br> Concrete<br> Bentonite Seal |  | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 3G | Boring No. DP0201 |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |  |  |   |                   |
|                  |      |                    |                  |                |       |   |  |  |  |   |                   |

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-GEOPROBE-09 HA-LIB09-BOS-HAR-GLB HA-TB-CORE-WELL-07-1.GDT \\ROCI\COMMON\127960-FT\_CALHOUN\GINT\127960-002\_GP.GPJ Jan 9, 17

| <b style="font-size: 1.2em; margin-left: 10px;">GEOPROBE REPORT</b>                 |                         |                         |                   |                                |                                   |  |          |        |          | <b>Boring No. DP0202</b>   |        |            |           |           |            |          |  |  |
|---|-------------------------|-------------------------|-------------------|--------------------------------|-----------------------------------|--|----------|--------|----------|--|--------|------------|-----------|-----------|------------|----------|--|--|
| Project Fort Calhoun Station, Blair, NE<br>Client OPPD<br>Contractor Saber Drilling |                         |                         |                   |                                |                                   |  |          |        |          | File No. 127960-002<br>Sheet No. 1 of 1<br>Start October 26, 2016<br>Finish October 26, 2016<br>Driller J. Wilkinson<br>H&A Rep. M. Van Noordennen |        |            |           |           |            |          |  |  |
|   |                         | Casing                  | Sampler           | Barrel                         | Drilling Equipment and Procedures |  |          |        |          |  |        |            |           |           |            |          |  |  |
| Type  |                         |                         | S                 | -                              | Rig Make & Model: GeoProbe        |  |          |        |          | Elevation  |        |            |           |           |            |          |  |  |
| Inside Diameter (in.)   |                         |                         | 1 3/8             | -                              | Bit Type:                         |  |          |        |          | Datum  |        |            |           |           |            |          |  |  |
| Hammer Weight (lb)  |                         |                         |                   | -                              | Drill Mud:                        |  |          |        |          | Location See Plan  |        |            |           |           |            |          |  |  |
| Hammer Fall (in.)   |                         |                         |                   | -                              | Casing:                           |  |          |        |          |  |        |            |           |           |            |          |  |  |
|   |                         |                         |                   |                                | Hoist/Hammer:                     |  |          |        |          |  |        |            |           |           |            |          |  |  |
|   |                         |                         |                   |                                | PID Make & Model: MiniRAE3000     |  |          |        |          |  |        |            |           |           |            |          |  |  |
| Depth (ft)  | Sampler Blows per 6 in. | Sample No. & Rec. (in.) | Sample Depth (ft) | Stratum Change Elev/Depth (ft) | USCS Symbol                       | VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION<br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |  |        | Field Test |           |           |            |          |  |  |
|   |                         |                         |                   |                                |                                   |  | % Coarse | % Fine | % Coarse | % Medium   | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |  |
| 0   |                         | G1<br>49.2              | 0.0<br>5.0        | 0.8                            |                                   | -STONE AND GRAVEL-   |          |        |          |  |        |            |           |           |            |          |  |  |
|   |                         |                         |                   |                                |                                   | Loose dark brown medium SAND, some gravel  |          |        |          |  |        |            |           |           |            |          |  |  |
|   |                         |                         |                   |                                |                                   | Dense dark brown medium to fine SAND and silt, some gravel   |          |        |          |  |        |            |           |           |            |          |  |  |
|   |                         |                         |                   |                                |                                   | Loose coarse SAND and gravel, slight fuel odor, moist  |          |        |          |  |        |            |           |           |            |          |  |  |
| 5   |                         | G2<br>37.2              | 5.0<br>10.0       | 15.0                           |                                   | Similar to above   |          |        |          |  |        |            |           |           |            |          |  |  |
|   |                         |                         |                   |                                |                                   | Dense gray fine SAND and silt, slight fuel odor  |          |        |          |  |        |            |           |           |            |          |  |  |
|   |                         |                         |                   |                                |                                   | Dense brown medium SAND, moist   |          |        |          |  |        |            |           |           |            |          |  |  |
|   |                         |                         |                   |                                |                                   | Dense clay-like dark brown fine to medium SAND and silt<br>Note: Stone and gravel cave in.   |          |        |          |  |        |            |           |           |            |          |  |  |
| 10  |                         | G3<br>56.4              | 10.0<br>15.0      |                                |                                   | Brown to light brown medium to coarse SAND, moist, wet at 14.9 ft  |          |        |          |  |        |            |           |           |            |          |  |  |
|   |                         |                         |                   |                                |                                   |  |          |        |          |  |        |            |           |           |            |          |  |  |
| 15  |                         |                         |                   |                                |                                   | BOTTOM OF EXPLORATION 15.0 FT  |          |        |          |  |        |            |           |           |            |          |  |  |
|   |                         |                         |                   |                                |                                   |  |          |        |          |  |        |            |           |           |            |          |  |  |

| Water Level Data |      |                    |                  |                |       | Sample ID   | Well Diagram   | Summary   |
|------------------|------|--------------------|------------------|----------------|-------|---|--|---|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe | Riser Pipe<br>Screen<br>Filter Sand<br>Cuttings<br>Grout<br>Concrete<br>Bentonite Seal | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 3G |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |   |
|                  |      |                    |                  |                |       |   |  |   |

**Field Tests:**  
 Dilatancy: R - Rapid S - Slow N - None  
 Toughness: L - Low M - Medium H - High

Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Project Fort Calhoun Station, Blair, NE  
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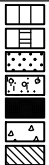
File No. 127960-002  
 Sheet No. 1 of 1  
 Start October 25, 2016  
 Finish October 25, 2016  
 Driller J. Wilkinson

H&A Rep. M. Van Noordennen

|                       | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|-----------------------|--------|---------|--------|-----------------------------------|
| Type                  |        | S       | -      | Rig Make & Model: GeoProbe        |
| Inside Diameter (in.) |        | 1 3/8   | -      | Bit Type:                         |
| Hammer Weight (lb)    |        |         | -      | Drill Mud:                        |
| Hammer Fall (in.)     |        |         | -      | Casing:                           |
|                       |        |         |        | Hoist/Hammer:                     |
|                       |        |         |        | PID Make & Model: MiniRAE3000     |

Elevation  
 Datum  
 Location See Plan

| Depth (ft) | Sampler Blows<br>per 6 in. | Sample No.<br>& Rec. (in.) | Sample<br>Depth (ft) | Stratum<br>Change<br>Elev/Depth (ft) | USCS Symbol | VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION<br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> ,<br>structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |  |
|------------|----------------------------|----------------------------|----------------------|--------------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|--|
|            |                            |                            |                      |                                      |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |
| 0          |                            | G1<br>36                   | 0.0<br>5.0           | 1.2                                  |             | -STONE/GRAVEL/SAND-   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Very dense dark brown fine SAND, some silt  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Dense brown medium SAND, moist, some orange staining  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Dense dark brown medium to fine SAND and silt, moist  |          |        |          |          |        |            |           |           |            |          |  |
| 5          |                            | G2<br>27.6                 | 5.0<br>10.0          | 15.0                                 |             | Dense clay-like dark brown fine SAND and silt, moist  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |  |
| 10         |                            | G3<br>49.2                 | 10.0<br>15.0         | 15.0                                 |             | Similar to above, except wet at 12.8 ft   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |  |
| 15         |                            |                            |                      | 15.0                                 |             | BOTTOM OF EXPLORATION 15.0 FT   |          |        |          |          |        |            |           |           |            |          |  |

| Water Level Data |      |                    |                  |                |       | Sample ID   |  | Well Diagram  |  | Summary   |                   |
|------------------|------|--------------------|------------------|----------------|-------|---|--|---|--|---|-------------------|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |  |  |  | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 3G | Boring No. DP0203 |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |   |  |   |                   |
|                  |      |                    |                  |                |       |   |  |   |  |   |                   |

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Project Fort Calhoun Station, Blair, NE  
 Client OPPD  
 Contractor Saber Drilling


File No. 127960-002  
 Sheet No. 1 of 1  
 Start October 25, 2016  
 Finish October 25, 2016  
 Driller J. Wilkinson

H&A Rep. M. Van Noordennen

|                       | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|-----------------------|--------|---------|--------|-----------------------------------|
| Type                  |        | S       | -      | Rig Make & Model: GeoProbe        |
| Inside Diameter (in.) |        | 1 3/8   | -      | Bit Type:                         |
| Hammer Weight (lb)    |        |         | -      | Drill Mud:                        |
| Hammer Fall (in.)     |        |         | -      | Casing:                           |
|                       |        |         |        | Hoist/Hammer:                     |
|                       |        |         |        | PID Make & Model: MiniRAE3000     |

Elevation  
 Datum  
 Location See Plan

| Depth (ft) | Sampler Blows<br>per 6 in. | Sample No.<br>& Rec. (in.) | Sample<br>Depth (ft) | Stratum<br>Change<br>Elev/Depth (ft) | USCS Symbol | VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION<br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> ,<br>structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |  |
|------------|----------------------------|----------------------------|----------------------|--------------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|--|
|            |                            |                            |                      |                                      |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |
| 0          |                            | G1<br>25.2                 | 0.0<br>5.0           | 1.3                                  |             | -STONE/GRAVEL/SAND-   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Loose gray-brown medium to fine SAND, dry   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Dense brown medium to fine SAND, some silt, dry   |          |        |          |          |        |            |           |           |            |          |  |
| 5          |                            | G2<br>45.6                 | 5.0<br>10.0          |                                      |             | Clay-like gray-brown fine SAND and silt, wet  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Gray-brown fine SAND and silt, wet  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Medium SAND, dark black staining  |          |        |          |          |        |            |           |           |            |          |  |
| 10         |                            | G3<br>38.4                 | 10.0<br>15.0         | 15.0                                 |             | BOTTOM OF EXPLORATION 15.0 FT   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |  |
| 15         |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |  |

| Water Level Data |      |                    |                  |                |       | Sample ID   |  | Well Diagram  |  | Summary           |      |
|------------------|------|--------------------|------------------|----------------|-------|---|--|---|--|-------------------|------|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |  |  |  | Overburden (ft)   | 15.0 |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |   |  | Rock Cored (ft)   | -    |
|                  |      |                    |                  |                |       |   |  |   |  | Samples           | 3G   |
|                  |      |                    |                  |                |       |   |  |   |  | Boring No. DP0204 |      |

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Project Fort Calhoun Station, Blair, NE  
 Client OPPD  
 Contractor Saber Drilling








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 Start October 25, 2016  
 Finish October 25, 2016  
 Driller J. Wilkinson

H&A Rep. M. Van Noordennen

|                       | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|-----------------------|--------|---------|--------|-----------------------------------|
| Type                  |        | S       | -      | Rig Make & Model: GeoProbe        |
| Inside Diameter (in.) |        | 1 3/8   | -      | Bit Type:                         |
| Hammer Weight (lb)    |        |         | -      | Drill Mud:                        |
| Hammer Fall (in.)     |        |         | -      | Casing:                           |
|                       |        |         |        | Hoist/Hammer:                     |
|                       |        |         |        | PID Make & Model: MiniRAE3000     |

Elevation  
 Datum  
 Location See Plan

| Depth (ft) | Sampler Blows<br>per 6 in. | Sample No.<br>& Rec. (in.) | Sample<br>Depth (ft) | Stratum<br>Change<br>Elev/Depth (ft) | USCS Symbol | VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION<br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> ,<br>structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |  |
|------------|----------------------------|----------------------------|----------------------|--------------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|--|
|            |                            |                            |                      |                                      |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |
| 0          |                            | G1<br>45.6                 | 0.0<br>5.0           | 1.6                                  |             | -STONE AND GRAVEL-  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Gray SAND<br>Brown to gray-brown medium to fine SAND, some silt, dry  |          |        |          |          |        |            |           |           |            |          |  |
| 5          |                            | G2<br>30                   | 5.0<br>10.0          |                                      |             | Dense brown medium to fine SAND and silt, moist   |          |        |          |          |        |            |           |           |            |          |  |
| 10         |                            | G3<br>38.4                 | 10.0<br>15.0         | 15.0                                 |             | Loose brown and gray-brown medium to fine SAND, some silt, moist<br><br>Loose brown meidium SAND, wet, some rust staining<br><br>Gray medium to fine SAND, some silt, wet                 |          |        |          |          |        |            |           |           |            |          |  |
| 15         |                            |                            |                      |                                      |             | BOTTOM OF EXPLOATION 15.0 FT  |          |        |          |          |        |            |           |           |            |          |  |

| Water Level Data |      |                    |                  |                |       | Sample ID   |  | Well Diagram   |  | Summary   |                   |
|------------------|------|--------------------|------------------|----------------|-------|---|--|--|--|---|-------------------|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |  |  Riser Pipe<br> Screen<br> Filter Sand<br> Cuttings<br> Grout<br> Concrete<br> Bentonite Seal |  | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 3G | Boring No. DP0501 |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |  |  |   |                   |

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

## GEOPROBE REPORT

Boring No. DP0502

Project Fort Calhoun Station, Blair, NE  
 Client OPPD  
 Contractor Saber Drilling

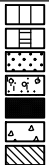
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 Start October 25, 2016  
 Finish October 25, 2016  
 Driller J. Wilkinson

H&amp;A Rep. M. Van Noordennen

|                       | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|-----------------------|--------|---------|--------|-----------------------------------|
| Type                  |        | S       | -      | Rig Make & Model: GeoProbe        |
| Inside Diameter (in.) |        | 1 3/8   | -      | Bit Type:                         |
| Hammer Weight (lb)    |        |         | -      | Drill Mud:                        |
| Hammer Fall (in.)     |        |         | -      | Casing:                           |
|                       |        |         |        | Hoist/Hammer:                     |
|                       |        |         |        | PID Make & Model: MiniRAE3000     |

Elevation  
 Datum  
 Location See Plan

| Depth (ft) | Sampler Blows<br>per 6 in. | Sample No.<br>& Rec. (in.) | Sample<br>Depth (ft) | Stratum<br>Change<br>Elev/Depth (ft) | USCS Symbol | VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION<br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> ,<br>structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |  |
|------------|----------------------------|----------------------------|----------------------|--------------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|--|
|            |                            |                            |                      |                                      |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |
| 0          |                            | G1<br>37.2                 | 0.0<br>5.0           | 0.8                                  |             | -STONE AND GRAVEL-  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Mix of brown medium SAND and gravel   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Dense brown medium to fine SAND, dry  |          |        |          |          |        |            |           |           |            |          |  |
| 5          |                            | G2<br>45.6                 | 5.0<br>10.0          |                                      |             | Very dense gray-brown fine SAND and silt, dry<br>Similar to above   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Similar to above, except less dense, wet<br>Similar to above, except very dense, moist  |          |        |          |          |        |            |           |           |            |          |  |
| 10         |                            | G3<br>43.2                 | 10.0<br>15.0         | 15.0                                 |             | Similar to above  |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Loose gray medium SAND, moist   |          |        |          |          |        |            |           |           |            |          |  |
|            |                            |                            |                      |                                      |             | Gray and red-brown medium SAND, some silt, moist<br>Similar to above, except wet  |          |        |          |          |        |            |           |           |            |          |  |
| 15         |                            |                            |                      |                                      |             | BOTTOM OF EXPLORATION 15.0 FT   |          |        |          |          |        |            |           |           |            |          |  |

| Water Level Data |      |                    |                  |                |       | Sample ID   |  | Well Diagram  |  | Summary   |                   |
|------------------|------|--------------------|------------------|----------------|-------|---|--|---|--|---|-------------------|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |  |  |  | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 3G | Boring No. DP0502 |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |   |  |   |                   |
|                  |      |                    |                  |                |       |   |  |   |  |   |                   |

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.



Project Fort Calhoun Station, Blair, NE  
 Client OPPD  
 Contractor Saber Drilling








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 Start October 26, 2016  
 Finish October 26, 2016  
 Driller J. Wilkinson

H&A Rep. M. Van Noordennen

|                       | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|-----------------------|--------|---------|--------|-----------------------------------|
| Type                  |        | S       | -      | Rig Make & Model: GeoProbe        |
| Inside Diameter (in.) |        | 1 3/8   | -      | Bit Type:                         |
| Hammer Weight (lb)    |        |         | -      | Drill Mud:                        |
| Hammer Fall (in.)     |        |         | -      | Casing:                           |
|                       |        |         |        | Hoist/Hammer:                     |
|                       |        |         |        | PID Make & Model: MiniRAE3000     |

Elevation  
 Datum  
 Location See Plan

| Depth (ft) | Sampler Blows<br>per 6 in. | Sample No.<br>& Rec. (in.) | Sample<br>Depth (ft) | Stratum<br>Change<br>Elev/Depth (ft) | USCS Symbol | VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION<br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> ,<br>structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |
|------------|----------------------------|----------------------------|----------------------|--------------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|
|            |                            |                            |                      |                                      |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |
| 0          |                            |                            |                      |                                      |             | Note: Hydrovac'd for utility clearance.   |          |        |          |          |        |            |           |           |            |          |
| 10         |                            | G1<br>45.6                 | 10.0<br>15.0         |                                      |             | Loose gray-brown SAND and gravel, cave in<br><br>Brown to dark brown medium SAND, trace silt, wet   |          |        |          |          |        |            |           |           |            |          |
| 15         |                            |                            |                      | 15.0                                 |             | BOTTOM OF EXPLORATION 15.0 FT   |          |        |          |          |        |            |           |           |            |          |

| Water Level Data |      |                    |                  |                |       | Sample ID   |  | Well Diagram   |  | Summary   |                   |
|------------------|------|--------------------|------------------|----------------|-------|---|--|--|--|---|-------------------|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |  |  Riser Pipe<br> Screen<br> Filter Sand<br> Cuttings<br> Grout<br> Concrete<br> Bentonite Seal |  | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 1G | Boring No. DP0601 |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |  |  |   |                   |
|                  |      |                    |                  |                |       |   |  |  |  |   |                   |

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Project Fort Calhoun Station, Blair, NE  
 Client OPPD  
 Contractor Saber Drilling








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 Start October 26, 2016  
 Finish October 26, 2016  
 Driller J. Wilkinson

H&A Rep. M. Van Noordennen

|                       | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|-----------------------|--------|---------|--------|-----------------------------------|
| Type                  |        | S       | -      | Rig Make & Model: GeoProbe        |
| Inside Diameter (in.) |        | 1 3/8   | -      | Bit Type:                         |
| Hammer Weight (lb)    |        |         | -      | Drill Mud:                        |
| Hammer Fall (in.)     |        |         | -      | Casing:                           |
|                       |        |         |        | Hoist/Hammer:                     |
|                       |        |         |        | PID Make & Model: MiniRAE3000     |

Elevation  
 Datum  
 Location See Plan

| Depth (ft) | Sampler Blows<br>per 6 in. | Sample No.<br>& Rec. (in.) | Sample<br>Depth (ft) | Stratum<br>Change<br>Elev/Depth (ft) | USCS Symbol | VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION<br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> ,<br>structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |
|------------|----------------------------|----------------------------|----------------------|--------------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|
|            |                            |                            |                      |                                      |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |
| 0          |                            |                            |                      |                                      |             | Note: Hydrovac'd for utility clearance.   |          |        |          |          |        |            |           |           |            |          |
| 5          |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |
| 10         |                            | G1<br>33.6                 | 10.0<br>15.0         |                                      |             | Note: Cave in material.<br><br>Gray medium SAND, trace silt, wet<br><br>Similar to above, except some silt  |          |        |          |          |        |            |           |           |            |          |
| 15         |                            |                            |                      | 15.0                                 |             | BOTTOM OF EXPLORATION 15.0 FT   |          |        |          |          |        |            |           |           |            |          |

| Water Level Data |      |                    |                  |                |       | Sample ID   |  | Well Diagram   |  | Summary   |                   |
|------------------|------|--------------------|------------------|----------------|-------|---|--|--|--|---|-------------------|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |  |  Riser Pipe<br> Screen<br> Filter Sand<br> Cuttings<br> Grout<br> Concrete<br> Bentonite Seal |  | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 1G | Boring No. DP0602 |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |  |  |   |                   |
|                  |      |                    |                  |                |       |   |  |  |  |   |                   |

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

## GEOPROBE REPORT

Boring No. DP0603

Project Fort Calhoun Station, Blair, NE  
 Client OPPD  
 Contractor Saber Drilling








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 Start October 26, 2016  
 Finish October 26, 2016  
 Driller J. Wilkinson

H&amp;A Rep. M. Van Noordennen

|                       | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|-----------------------|--------|---------|--------|-----------------------------------|
| Type                  |        | S       | -      | Rig Make & Model: GeoProbe        |
| Inside Diameter (in.) |        | 1 3/8   | -      | Bit Type:                         |
| Hammer Weight (lb)    |        |         | -      | Drill Mud:                        |
| Hammer Fall (in.)     |        |         | -      | Casing:                           |
|                       |        |         |        | Hoist/Hammer:                     |
|                       |        |         |        | PID Make & Model: MiniRAE3000     |

Elevation  
 Datum  
 Location See Plan

| Depth (ft) | Sampler Blows<br>per 6 in. | Sample No.<br>& Rec. (in.) | Sample<br>Depth (ft) | Stratum<br>Change<br>Elev/Depth (ft) | USCS Symbol | VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION<br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> ,<br>structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |
|------------|----------------------------|----------------------------|----------------------|--------------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|
|            |                            |                            |                      |                                      |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |
| 0          |                            |                            |                      |                                      |             | Note: Hydrovac'd for utility clearance.   |          |        |          |          |        |            |           |           |            |          |
| 5          |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |
|            |                            | G1<br>37.2                 | 12.0<br>17.0         |                                      |             | Dense brown medium SAND, moist, gray at 17.0 ft   |          |        |          |          |        |            |           |           |            |          |
| 15         |                            |                            |                      |                                      |             |   |          |        |          |          |        |            |           |           |            |          |
|            |                            | G2<br>45.6                 | 17.0<br>22.0         |                                      |             | Loose gray to brown medium SAND, moist  |          |        |          |          |        |            |           |           |            |          |
| 20         |                            |                            |                      |                                      |             | Dense brown medium to fine SAND and silt, wet   |          |        |          |          |        |            |           |           |            |          |
|            |                            |                            |                      | 22.0                                 |             | Gray medium SAND, slight fuel odor, wet   |          |        |          |          |        |            |           |           |            |          |
|            |                            |                            |                      |                                      |             | BOTTOM OF EXPLORATION 22.0 FT   |          |        |          |          |        |            |           |           |            |          |

| Water Level Data |      |                    |                  |                |       | Sample ID   |  | Well Diagram   |  | Summary   |                   |
|------------------|------|--------------------|------------------|----------------|-------|---|--|--|--|---|-------------------|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |  |  Riser Pipe<br> Screen<br> Filter Sand<br> Cuttings<br> Grout<br> Concrete<br> Bentonite Seal |  | Overburden (ft) 22.0<br>Rock Cored (ft) -<br>Samples 2G | Boring No. DP0603 |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |  |  |  |   |                   |
|                  |      |                    |                  |                |       |   |  |  |  |   |                   |

**Field Tests:** Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High  
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-GEOPROBE-09 HA-LIB09-BOS-HAR-GLB HA-TB-CORE-WELL-07-1.GDT \\ROC\COMMON\127960-FT\_CALHOUN\GINT\127960-002\_GP.GPJ Jan 9, 17

|   |  |        |         |        |                                   |  |  |  |  |  |  |  |  |  |  |
|---|--|--------|---------|--------|-----------------------------------|--|--|--|--|--|--|--|--|--|--|
| <h2 style="margin: 0;">GEOPROBE REPORT</h2>   |  |        |         |        |                                   |  |  |  |  |  |  | <b>Boring No. DP1001</b>   |  |  |  |
| Project Fort Calhoun Station, Blair, NE<br>Client OPPD<br>Contractor Saber Drilling |  |        |         |        |                                   |  |  |  |  |  |  | File No. 127960-002<br>Sheet No. 1 of 1<br>Start October 24, 2016<br>Finish October 24, 2016<br>Driller J. Wilkinson<br>H&A Rep. M. Van Noordennen |  |  |  |
|   |  | Casing | Sampler | Barrel | Drilling Equipment and Procedures |  |  |  |  |  |  |  |  |  |  |
| Type  |  |        | S       | -      | Rig Make & Model: GeoProbe        |  |  |  |  |  |  |  |  |  |  |
| Inside Diameter (in.)   |  |        | 1 3/8   | -      | Bit Type:                         |  |  |  |  |  |  |  |  |  |  |
| Hammer Weight (lb)  |  |        |         | -      | Drill Mud:                        |  |  |  |  |  |  |  |  |  |  |
| Hammer Fall (in.)   |  |        |         | -      | Casing:                           |  |  |  |  |  |  |  |  |  |  |
|   |  |        |         |        | Hoist/Hammer:                     |  |  |  |  |  |  |  |  |  |  |
|   |  |        |         |        | PID Make & Model: MiniRAE3000     |  |  |  |  |  |  |  |  |  |  |
|   |  |        |         |        | Elevation                         |  |  |  |  |  |  |  |  |  |  |
|   |  |        |         |        | Datum                             |  |  |  |  |  |  |  |  |  |  |
|   |  |        |         |        | Location See Plan                 |  |  |  |  |  |  |  |  |  |  |

| Depth (ft) | Sampler Blows per 6 in. | Sample No. & Rec. (in.) | Sample Depth (ft) | Stratum Change Elev/Depth (ft) | USCS Symbol | <b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b><br>(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |
|------------|-------------------------|-------------------------|-------------------|--------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|
|            |                         |                         |                   |                                |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |
| 0          |                         | G1<br>31.2              | 0.0<br>5.0        | 0.3                            |             | -CONCRETE-  |          |        |          |          |        |            |           |           |            |          |
|            |                         |                         |                   |                                |             | Very dense dark gray fine SILT  |          |        |          |          |        |            |           |           |            |          |
|            |                         |                         |                   |                                |             | Very dense gray fine SILT, dry  |          |        |          |          |        |            |           |           |            |          |
| 5          |                         | G2<br>31.2              | 5.0<br>10.0       |                                |             | Very dense clay-like gray fine SILT, dry to moist   |          |        |          |          |        |            |           |           |            |          |
|            |                         |                         |                   |                                |             | Dense clay-like brown fine SILT   |          |        |          |          |        |            |           |           |            |          |
| 10         |                         | G3<br>40.8              | 10.0<br>15.0      |                                |             | Similar to above, except some sand  |          |        |          |          |        |            |           |           |            |          |
|            |                         |                         |                   |                                |             | Dense clay-like gray fine SILT, wet   |          |        |          |          |        |            |           |           |            |          |
| 15         |                         |                         |                   | 15.0                           |             | BOTTOM OF EXPLORATION 15.0 FT   |          |        |          |          |        |            |           |           |            |          |

| Water Level Data |      |                    |                  |                |       | Sample ID   | Well Diagram | Summary   |
|------------------|------|--------------------|------------------|----------------|-------|---|--------------|---|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |              | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 3G<br><b>Boring No. DP1001</b> |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |              |   |
|                  |      |                    |                  |                |       |   |              |   |

**Field Tests:**
Dilatancy: R - Rapid S - Slow N - None
Plasticity: N - Nonplastic L - Low M - Medium H - High  
Toughness: L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-GEOPROBE-09 HA-LIB09-BOS-HAR-GLB HA-TB-CORE-WELL-07-1.GDT \\ROCI\COMMON\127960-FT\_CALHOUN\GINT\127960-002\_GP.GPJ Jan 9, 17

| <b>GEOPROBE REPORT</b>   |                         |                         |                   |                                |                                   |   |                          |   |          | <b>Boring No. DP1002</b>   |        |            |           |           |            |          |  |  |
|--|-------------------------|-------------------------|-------------------|--------------------------------|-----------------------------------|---|--------------------------|---|----------|--|--------|------------|-----------|-----------|------------|----------|--|--|
| Project Fort Calhoun Station, Blair, NE<br>Client OPPD<br>Contractor Saber Drilling                                  |                         |                         |                   |                                |                                   |   |                          |   |          | File No. 127960-002<br>Sheet No. 1 of 1<br>Start October 25, 2016<br>Finish October 25, 2016<br>Driller J. Wilkinson<br>H&A Rep. M. Van Noordennen |        |            |           |           |            |          |  |  |
|  |                         | Casing                  | Sampler           | Barrel                         | Drilling Equipment and Procedures |   |                          |   |          |  |        |            |           |           |            |          |  |  |
| Type   |                         |                         | S                 | -                              | Rig Make & Model: GeoProbe        |   |                          |   |          | Elevation  |        |            |           |           |            |          |  |  |
| Inside Diameter (in.)  |                         |                         | 1 3/8             | -                              | Bit Type:                         |   |                          |   |          | Datum  |        |            |           |           |            |          |  |  |
| Hammer Weight (lb)   |                         |                         |                   | -                              | Drill Mud:                        |   |                          |   |          | Location See Plan  |        |            |           |           |            |          |  |  |
| Hammer Fall (in.)  |                         |                         |                   | -                              | Casing:                           |   |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   | -                              | Hoist/Hammer:                     |   |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   | -                              | PID Make & Model: MiniRAE3000     |   |                          |   |          |  |        |            |           |           |            |          |  |  |
| Depth (ft)   | Sampler Blows per 6 in. | Sample No. & Rec. (in.) | Sample Depth (ft) | Stratum Change Elev/Depth (ft) | USCS Symbol                       | <b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b><br>(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel                   |   | Sand     |  |        | Field Test |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   |   | % Coarse                 | % Fine  | % Coarse | % Medium   | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |  |
| 0  |                         | G1<br>45.6              | 0.0<br>5.0        | 0.3                            |                                   | -STONE-   |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   | Dense brown fine SILT, some sand  |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   | Very dense gray-brown to dark brown fine SAND and silt  |                          |   |          |  |        |            |           |           |            |          |  |  |
| 5  |                         | G2<br>34.8              | 5.0<br>10.0       |                                |                                   | Similar to above  |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   | Dense clay-like gray-brown fine SILT  |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   | Similar to above, except more dense   |                          |   |          |  |        |            |           |           |            |          |  |  |
| 10   |                         | G3<br>60                | 10.0<br>15.0      |                                |                                   | Dense clay-like dark brown and gray fine SAND and silt  |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   | Brown medium to fine SAND, some silt, wet   |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   | Dense dark brown fine SAND and silt   |                          |   |          |  |        |            |           |           |            |          |  |  |
| 15   |                         |                         |                   | 15.0                           |                                   | BOTTOM OF EXPLORATION 15.0 FT   |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   |   |                          |   |          |  |        |            |           |           |            |          |  |  |
| Water Level Data   |                         |                         |                   |                                |                                   | Sample ID   |                          | Well Diagram  |          | Summary  |        |            |           |           |            |          |  |  |
| Date   | Time                    | Elapsed Time (hr.)      | Depth (ft) to:    |                                |                                   | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe   | <br><br><br><br><br><br> | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 3G |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         | Bottom of Casing  | Bottom of Hole                 | Water                             |   |                          | <b>Boring No. DP1002</b>                                |          |  |        |            |           |           |            |          |  |  |
| <b>Field Tests:</b> Dilatancy: R - Rapid S - Slow N - None Toughness: L - Low M - Medium H - High                    |                         |                         |                   |                                |                                   | Plasticity: N - Nonplastic L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High   |                          |   |          |  |        |            |           |           |            |          |  |  |
| <sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size. |                         |                         |                   |                                |                                   |   |                          |   |          |  |        |            |           |           |            |          |  |  |
| Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.           |                         |                         |                   |                                |                                   |   |                          |   |          |  |        |            |           |           |            |          |  |  |

H&A-GEOPROBE-09 HA-LIB09-BOS-HAR-GLB HA-TB-CORE-WELL-07-1.GDT \\ROCI\COMMON\127960-FT\_CALHOUN\GINT\127960-002\_GP.GPJ Jan 9, 17

| <h2 style="margin: 0;">GEOPROBE REPORT</h2>  |                         |                         |                   |                                |                                   |   |                          |   |          | <b>Boring No. DP1003</b>   |        |            |           |           |            |          |  |  |
|--|-------------------------|-------------------------|-------------------|--------------------------------|-----------------------------------|---|--------------------------|---|----------|--|--------|------------|-----------|-----------|------------|----------|--|--|
| Project Fort Calhoun Station, Blair, NE<br>Client OPPD<br>Contractor Saber Drilling                                  |                         |                         |                   |                                |                                   |   |                          |   |          | File No. 127960-002<br>Sheet No. 1 of 1<br>Start October 25, 2016<br>Finish October 25, 2016<br>Driller J. Wilkinson<br>H&A Rep. M. Van Noordennen |        |            |           |           |            |          |  |  |
|  |                         | Casing                  | Sampler           | Barrel                         | Drilling Equipment and Procedures |   |                          |   |          |  |        |            |           |           |            |          |  |  |
| Type   |                         |                         | S                 | -                              | Rig Make & Model: GeoProbe        |   |                          |   |          | Elevation  |        |            |           |           |            |          |  |  |
| Inside Diameter (in.)  |                         |                         | 1 3/8             | -                              | Bit Type:                         |   |                          |   |          | Datum  |        |            |           |           |            |          |  |  |
| Hammer Weight (lb)   |                         |                         |                   | -                              | Casing:                           |   |                          |   |          | Location See Plan  |        |            |           |           |            |          |  |  |
| Hammer Fall (in.)  |                         |                         |                   | -                              | Hoist/Hammer:                     |   |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                | PID Make & Model: MiniRAE3000     |   |                          |   |          |  |        |            |           |           |            |          |  |  |
| Depth (ft)   | Sampler Blows per 6 in. | Sample No. & Rec. (in.) | Sample Depth (ft) | Stratum Change Elev/Depth (ft) | USCS Symbol                       | <b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b><br>(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel                   |   | Sand     |  |        | Field Test |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   |   | % Coarse                 | % Fine  | % Coarse | % Medium   | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |  |
| 0  |                         | G1<br>45.6              | 0.0<br>5.0        | 0.3                            |                                   | -STONE-   |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   | Dense clay-like brown fine SILT   |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   | Very dense clay-like gray-brown fine SILT   |                          |   |          |  |        |            |           |           |            |          |  |  |
| 5  |                         | G2<br>26.4              | 5.0<br>10.0       |                                |                                   | Similar to above  |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   | Dense clay-like dark brown fine SILT  |                          |   |          |  |        |            |           |           |            |          |  |  |
| 10   |                         | G3<br>60                | 10.0<br>15.0      |                                |                                   | Dark brown fine SAND and silt, moist, some rust staining  |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   | Dense gray-brown medium to fine SILT, some sand, wet  |                          |   |          |  |        |            |           |           |            |          |  |  |
| 15   |                         |                         |                   | 15.0                           |                                   | BOTTOM OF EXPLORATION 15.0 FT   |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   |   |                          |   |          |  |        |            |           |           |            |          |  |  |
| Water Level Data   |                         |                         |                   |                                |                                   | Sample ID   |                          | Well Diagram  |          |  |        | Summary    |           |           |            |          |  |  |
| Date   | Time                    | Elapsed Time (hr.)      | Depth (ft) to:    |                                |                                   | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe   | <br><br><br><br><br><br> | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 3G |          | <b>Boring No. DP1003</b>   |        |            |           |           |            |          |  |  |
|  |                         |                         | Bottom of Casing  | Bottom of Hole                 | Water                             |   |                          |   |          |  |        |            |           |           |            |          |  |  |
|  |                         |                         |                   |                                |                                   |   |                          |   |          |  |        |            |           |           |            |          |  |  |
| <b>Field Tests:</b> Dilatancy: R - Rapid S - Slow N - None<br>Toughness: L - Low M - Medium H - High                 |                         |                         |                   |                                |                                   | Plasticity: N - Nonplastic L - Low M - Medium H - High<br>Dry Strength: N - None L - Low M - Medium H - High V - Very High  |                          |   |          |  |        |            |           |           |            |          |  |  |
| <sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size. |                         |                         |                   |                                |                                   |   |                          |   |          |  |        |            |           |           |            |          |  |  |
| Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.           |                         |                         |                   |                                |                                   |   |                          |   |          |  |        |            |           |           |            |          |  |  |

H&A-GEOPROBE-09 HA-LIB09-BOS-HAR-GLB HA-TB-CORE-WELL-07-1.GDT \\ROC\COMMON\127960-FT\_CALHOUN\GINT\127960-002\_GP.GPJ Jan 9, 17

|   |  |        |         |        |                                   |  |  |  |  |  |  |  |  |  |  |
|---|--|--------|---------|--------|-----------------------------------|--|--|--|--|--|--|--|--|--|--|
| <h2 style="margin: 0;">GEOPROBE REPORT</h2>   |  |        |         |        |                                   |  |  |  |  |  |  | <b>Boring No. DP1101</b>   |  |  |  |
| Project Fort Calhoun Station, Blair, NE<br>Client OPPD<br>Contractor Saber Drilling |  |        |         |        |                                   |  |  |  |  |  |  | File No. 127960-002<br>Sheet No. 1 of 1<br>Start October 24, 2016<br>Finish October 24, 2016<br>Driller J. Wilkinson<br>H&A Rep. M. Van Noordennen |  |  |  |
|   |  | Casing | Sampler | Barrel | Drilling Equipment and Procedures |  |  |  |  |  |  |  |  |  |  |
| Type  |  |        | S       | -      | Rig Make & Model: GeoProbe        |  |  |  |  |  |  |  |  |  |  |
| Inside Diameter (in.)   |  |        | 1 3/8   | -      | Bit Type:                         |  |  |  |  |  |  |  |  |  |  |
| Hammer Weight (lb)  |  |        |         | -      | Drill Mud:                        |  |  |  |  |  |  |  |  |  |  |
| Hammer Fall (in.)   |  |        |         | -      | Casing:                           |  |  |  |  |  |  |  |  |  |  |
|   |  |        |         |        | Hoist/Hammer:                     |  |  |  |  |  |  |  |  |  |  |
|   |  |        |         |        | PID Make & Model: MiniRAE3000     |  |  |  |  |  |  |  |  |  |  |
|   |  |        |         |        |                                   |  |  |  |  |  |  | Elevation  |  |  |  |
|   |  |        |         |        |                                   |  |  |  |  |  |  | Datum  |  |  |  |
|   |  |        |         |        |                                   |  |  |  |  |  |  | Location See Plan  |  |  |  |

| Depth (ft) | Sampler Blows per 6 in. | Sample No. & Rec. (in.) | Sample Depth (ft) | Stratum Change Elev/Depth (ft) | USCS Symbol | <b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b><br>(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION) | Gravel   |        | Sand     |          |        | Field Test |           |           |            |          |  |  |
|------------|-------------------------|-------------------------|-------------------|--------------------------------|-------------|---|----------|--------|----------|----------|--------|------------|-----------|-----------|------------|----------|--|--|
|            |                         |                         |                   |                                |             |   | % Coarse | % Fine | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |  |
| 0          |                         | G1<br>28.8              | 0.0<br>5.0        |                                |             | Gray-brown medium to fine SAND and silt   |          |        |          |          |        |            |           |           |            |          |  |  |
| 5          |                         | G2<br>31.2              | 5.0<br>10.0       |                                |             | Similar to above<br>Loose light brown coarse SAND<br><br>Brown fine SAND and silt<br>Loose light brown medium to coarse SAND<br><br>Dense brown fine SAND and silt<br>Similar to above    |          |        |          |          |        |            |           |           |            |          |  |  |
| 10         |                         | G3<br>31.2              | 10.0<br>15.0      |                                |             | Dense brown medium SAND<br>Brown medium to fine SAND and silt, wet  |          |        |          |          |        |            |           |           |            |          |  |  |
| 15         |                         |                         |                   | 15.0                           |             | BOTTOM OF EXPLORATION 15.0 FT   |          |        |          |          |        |            |           |           |            |          |  |  |

| Water Level Data |      |                    |                  |                |       | Sample ID   | Well Diagram | Summary   |
|------------------|------|--------------------|------------------|----------------|-------|---|--------------|---|
| Date             | Time | Elapsed Time (hr.) | Depth (ft) to:   |                |       | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe |              | Overburden (ft) 15.0<br>Rock Cored (ft) -<br>Samples 3G |
|                  |      |                    | Bottom of Casing | Bottom of Hole | Water |   |              |   |
|                  |      |                    |                  |                |       |   |              | <b>Boring No. DP1101</b>                                |

**Field Tests:**
Dilatancy: R - Rapid S - Slow N - None
Plasticity: N - Nonplastic L - Low M - Medium H - High  
Toughness: L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

<sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-GEOPROBE-09 HA-LIB09-BOS-HAR-GLB HA-TB-CORE-WELL-07-1.GDT \\ROCI\COMMON\127960-FT\_CALHOUN\GINT\127960-002\_GP.GPJ Jan 9, 17

| <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> <h1 style="margin: 0;">GEOPROBE REPORT</h1> </div> <div style="text-align: right;"> <b>Boring No. DP1102</b> </div> </div> |                         |                         |   |                                |  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
|---|-------------------------|-------------------------|---|--------------------------------|--|--|--|---|----------|----------|--------|------------|-----------|-----------|------------|----------|--|--|--|
| Project Fort Calhoun Station, Blair, NE<br>Client OPPD<br>Contractor Saber Drilling   |                         |                         |   |                                | File No. 127960-002<br>Sheet No. 1 of 1<br>Start October 24, 2016<br>Finish October 24, 2016<br>Driller J. Wilkinson<br>H&A Rep. M. Van Noordennen |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
|   |                         | Casing                  | Sampler   | Barrel                         | Drilling Equipment and Procedures  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
| Type  |                         |                         | S   | -                              | Rig Make & Model: GeoProbe   |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
| Inside Diameter (in.)   |                         |                         | 1 3/8   | -                              | Bit Type:  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
| Hammer Weight (lb)  |                         |                         |   | -                              | Drill Mud:   |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
| Hammer Fall (in.)   |                         |                         |   | -                              | Casing:  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
|   |                         |                         |   |                                | Hoist/Hammer:  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
|   |                         |                         |   |                                | PID Make & Model: MiniRAE3000  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
|   |                         |                         |   |                                | Elevation  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
|   |                         |                         |   |                                | Datum  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
|   |                         |                         |   |                                | Location See Plan  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
| Depth (ft)  | Sampler Blows per 6 in. | Sample No. & Rec. (in.) | Sample Depth (ft)   | Stratum Change Elev/Depth (ft) | USCS Symbol  | <b>VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION</b><br><br>(Color, GROUP NAME, max. particle size <sup>†</sup> , structure, odor, moisture, optional descriptions<br>GEOLOGIC INTERPRETATION)  | Gravel   |   | Sand     |          |        | Field Test |           |           |            |          |  |  |  |
|   |                         |                         |   |                                |  |  | % Coarse   | % Fine  | % Coarse | % Medium | % Fine | % Fines    | Dilatancy | Toughness | Plasticity | Strength |  |  |  |
| 0   |                         | G1<br>38.4              | 0.0<br>5.0  |                                |  | Brown fine SAND and silt, dry<br><br><br><br>Similar to above, except wet<br>Brown to light brown medium to coarse SAND, moist<br><br>Similar to above<br>Dense brown fine sandy SILT, wet<br><br><br>Light brown medium to coarse SAND, moist<br>Dark brown fine sandy SILT, wet<br>Brown to light brown medium to coarse SAND, moist<br>Similar to above<br>Brown medium SAND, tightly packed, moist<br><br><br>Brown medium to coarse SAND, tightly packed, wet |  |   |          |          |        |            |           |           |            |          |  |  |  |
| 5   |                         | G2<br>31.2              | 5.0<br>10.0   |                                |  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
| 10  |                         | G3<br>45.6              | 10.0<br>15.0  |                                |  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
| 15  |                         | G4<br>43.2              | 15.0<br>20.0  |                                |  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
| 20  |                         |                         |   | 20.0                           |  | BOTTOM OF EXPLORATION 20.0 FT  |  |   |          |          |        |            |           |           |            |          |  |  |  |
| <b>Water Level Data</b>   |                         |                         |   |                                |  | <b>Sample ID</b>   | <b>Well Diagram</b>  | <b>Summary</b>  |          |          |        |            |           |           |            |          |  |  |  |
| Date  | Time                    | Elapsed Time (hr.)      | Depth (ft) to:<br>Bottom of Casing    Bottom of Hole    Water |                                |  | O - Open End Rod<br>T - Thin Wall Tube<br>U - Undisturbed Sample<br>S - Splitspoon Sample<br>G - Geoprobe  | Riser Pipe<br>Screen<br>Filter Sand<br>Cuttings<br>Grout<br>Concrete<br>Bentonite Seal | Overburden (ft) 20.0<br>Rock Cored (ft) -<br>Samples 4G |          |          |        |            |           |           |            |          |  |  |  |
|   |                         |                         |   |                                |  | <b>Boring No. DP1102</b>   |  |   |          |          |        |            |           |           |            |          |  |  |  |
| <b>Field Tests:</b>   |                         |                         |   |                                |  | <b>Dilatancy:</b> R - Rapid S - Slow N - None<br><b>Toughness:</b> L - Low M - Medium H - High<br><b>Plasticity:</b> N - Nonplastic L - Low M - Medium H - High<br><b>Dry Strength:</b> N - None L - Low M - Medium H - High V - Very High   |  |   |          |          |        |            |           |           |            |          |  |  |  |
| <sup>†</sup> Note: Maximum particle size is determined by direct observation within the limitations of sampler size.  |                         |                         |   |                                |  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |
| Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.  |                         |                         |   |                                |  |  |  |   |          |          |        |            |           |           |            |          |  |  |  |



**Appendix E      Laboratory Reports**

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica St. Louis

13715 Rider Trail North

Earth City, MO 63045

Tel: (314)298-8566

TestAmerica Job ID: 160-19727-1

Client Project/Site: Fort Calhoun NGS Blair, NE

For:

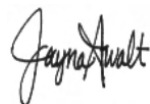
Haley & Aldrich, Inc.

100 Corporate Palce

Suite 105

Rocky Hill, Connecticut 06067-1803

Attn: Miles van Noordennen



*Authorized for release by:*

*11/14/2016 6:02:10 PM*

Jayna Awalt, Project Manager II

(314)298-8566

[jayna.awalt@testamericainc.com](mailto:jayna.awalt@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Case Narrative

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

**Job ID: 160-19727-1**

**Laboratory: TestAmerica St. Louis**

## Narrative

### CASE NARRATIVE

**Client: Haley & Aldrich, Inc.**

**Project: Fort Calhoun NGS Blair, NE**

**Report Number: 160-19727-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

### RECEIPT

The samples were received on 10/28/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.9 C.

### **Receipt Exceptions**

The following sample was received with insufficient preservation: GW1101 (160-19727-5). Nitric acid preservative was added by the laboratory, and the sample(s) pH was adjusted to < 2 SU.

### **VOLATILE ORGANIC COMPOUNDS (GC MS)**

Sample GW1004 (160-19727-6) was analyzed for volatile organic compounds (GC MS) in accordance with EPA SW-846 Method 8260C. The samples were analyzed on 11/05/2016.

### Analytical Batch: 277750

Sample was presumed to be preserved to a pH < 2. Due to the potential loss of volatile constituents, VOA vials are not checked for pH

## Case Narrative

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

### Job ID: 160-19727-1 (Continued)

#### Laboratory: TestAmerica St. Louis (Continued)

preservation until the time of analysis. Sample pH was not less than 2. Sample was analyzed outside the 7 day, unpreserved, holding time. GW1004 (160-19727-6), (160-19727-A-6 MS) and (160-19727-A-6 MSD)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### PERCHLORATE

Sample GW1101 (160-19727-5) was analyzed for perchlorate in accordance with EPA Method 314.0. The samples were analyzed on 11/09/2016.

##### Analytical Batch: 278496

The following matrix spike duplicate (MSD) recovered below the lower acceptance limit of 80% (72%) in Perchlorate batch 160-278496: (160-19589-D-12 MS) and (160-19589-D-12 MSD) The matrix spike (MS) recovered within acceptance limits at 85%, and the RPD between the MS and MSD was within 20% criteria. This MSD recovery excursion is attributed to sample matrix interference, because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### PERFLUORINATED HYDROCARBONS

Sample GW1004 (160-19727-6) was analyzed for Perfluorinated Hydrocarbons in accordance with EPA 537 (modified). The samples were prepared on 10/31/2016 and analyzed on 11/02/2016 and 11/03/2016.

Samples SD140300 (160-19727-1), SD140200 (160-19727-2), SD140100 (160-19727-3) and SD140100 DUP (160-19727-4) were analyzed for Perfluorinated Hydrocarbons (LC/MS) in accordance with EPA 537 (modified). The samples were prepared on 10/31/2016 and analyzed on 11/03/2016.

##### Analytical Batch: 135762

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-135232. An LCS/LCSD was performed to demonstrate precision.

Due to the excessive of sediment in the sample bottle, the aqueous portion of these samples was decanted to new bottle prior to spiking and the extraction. GW1004 (160-19727-6)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### TOTAL METALS (ICP)

Sample GW1101 (160-19727-5) was analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/08/2016 and analyzed on 11/09/2016.

##### Analytical Batch: 278522

The initial calibration verification (ICV) result for batch analytical batch 160-278522 was above the upper control limit for Thallium. Sample results were below the reporting limit, and have been reported as qualified data. (ICV 160-278522/5)

Due to the high concentration of Calcium, matrix spike duplicate (MSD) for preparation batch 160-278261 and analytical batch 160-278522 could not be evaluated for accuracy and precision. (160-19687-D-3-C MSD)

The following samples were diluted to bring the concentration of target analytes within the calibration range: GW1101 (160-19727-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### TOTAL MERCURY

Sample GW1101 (160-19727-5) was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/31/2016.

##### Analytical Batch: 277175

## Case Narrative

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

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### Job ID: 160-19727-1 (Continued)

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#### Laboratory: TestAmerica St. Louis (Continued)

Mercury was detected in method blank MB 160-276813/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### PERCENT SOLIDS

Samples SD140300 (160-19727-1), SD140200 (160-19727-2), SD140100 (160-19727-3) and SD140100 DUP (160-19727-4) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 11/08/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Chain of Custody Record

**TestAmerica**  
13715 Rider Tra  
Earth City, MO  
Phone (314) 29



160-19727 Chain of Custody

## Client Information

Client Contact:  
Miles van Noordennen

Company:  
Haley & Aldrich, Inc.

Address:  
100 Corporate Palace Suite 105

City:  
Rocky Hill

State/Zip:  
CT, 06067-1803

Phone:  
860-290-3114(Tel)

Email:  
MvanNoordennen@haleyaldrich.com

Project Name:  
Fort Calhoun NGS Blair, NE

Site:  
SSOW#

Lab PM:

Awalt, Jayna K

E-Mail:

jayna.awalt@testamericainc.com

Carrier Tracking No(s):

160-4680-2325.1

Page:

Page 1 of 2

Job #:

122960

## Analysis Requested

| Analysis Requested | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | PFC, IDA - PFAS, UCMR List | 6010C, 7470A | 3140 - Perchlorate | 8260C - VOCs (GC/MS) | 8270D - SIM - PAH | 8260C - BTEX List + Naphthalene |
|--------------------|-----------------------------------|----------------------------|----------------------------|--------------|--------------------|----------------------|-------------------|---------------------------------|
|                    |                                   |                            |                            |              |                    |                      |                   |                                 |

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=air) | Preservation Code: | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | PFC, IDA - PFAS, UCMR List | 6010C, 7470A | 3140 - Perchlorate | 8260C - VOCs (GC/MS) | 8270D - SIM - PAH | 8260C - BTEX List + Naphthalene | Total Number of Containers | Special Instructions/Note: |
|-----------------------|-------------|-------------|------------------------------|--|--------------------|-----------------------------------|----------------------------|----------------------------|--------------|--------------------|----------------------|-------------------|---------------------------------|----------------------------|----------------------------|
| SD140300              | 10-24-16    | 1143        | G                            | Solid  |                    |                                   |                            |                            |              |                    |                      |                   |                                 | 1                          | 500ml                      |
| SD140200              | 10-24-16    | 1158        | G                            | Solid  |                    |                                   |                            |                            |              |                    |                      |                   |                                 | 1                          | ↓                          |
| SD140100              | 10-24-16    | 1235        | G                            | Solid  |                    |                                   |                            |                            |              |                    |                      |                   |                                 | 1                          | ↓                          |
| SD140100 DUP          | 10-24-16    | 1235        | G                            | Solid  |                    |                                   |                            |                            |              |                    |                      |                   |                                 | 1                          | ↓                          |
| GW1101                | 10-24-16    | 1042        | G                            | Water  |                    |                                   |                            |                            |              |                    |                      |                   |                                 | 2                          | 250p, 250p                 |
| GW1004                | 10-24-16    | 1456        | G                            | Water  |                    |                                   |                            |                            |              |                    |                      |                   |                                 | 4                          | 250p, 3xvial               |
|                       |             |             |                              | Water  |                    |                                   |                            |                            |              |                    |                      |                   |                                 |                            |                            |
|                       |             |             |                              | Water  |                    |                                   |                            |                            |              |                    |                      |                   |                                 |                            |                            |
|                       |             |             |                              | Water  |                    |                                   |                            |                            |              |                    |                      |                   |                                 |                            |                            |

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☒ Disposal By Lab ☐ Archive For Months

Special Instructions/QC Requirements:

NONE

Method of Shipment:

FedEx

Date/Time:

10/26/16 0815

Company:

Company

Company

Company

Cooler Temperature(s) °C and Other Remarks:

Phone (314) 298-8566 Fax (314) 298-8757

## Chain of Custody Record



# TestAmerica

## THE LEADER IN ENVIRONMENTAL TESTING

|  |             |               |                              |   |                                   |
|--|-------------|---------------|------------------------------|---|-----------------------------------|
| <b>Client Information (Sub Contract Lab)</b>   |             |               |                              | Lab PM:<br>Carrier Tracking No(s):  |                                   |
| Client Contact:<br>Shipping/Receiving  |             |               |                              | Jayna K<br>160-96546.1  |                                   |
| Company:<br>TestAmerica Laboratories, Inc.   |             |               |                              | State of Origin:<br>Nebraska  |                                   |
| Address:<br>880 Riverside Parkway,<br>West Sacramento<br>State, Zip:<br>CA, 95605  |             |               |                              | Page:<br>Page 1 of 1  |                                   |
| Phone:<br>916-373-5600(Tel) 916-372-1059(Fax)  |             |               |                              | Job #:<br>160-19727-1   |                                   |
| Email:<br>Project Name:<br>Fort Calhoun NGS Blair, NE  |             |               |                              | Preservation Codes:<br>A - HCL<br>B - NaOH<br>C - Zn Acetate<br>D - Nitric Acid<br>E - NaHSO4<br>F - MeOH<br>G - Amchlor<br>H - Ascorbic Acid<br>I - Ice<br>J - DI Water<br>K - EDTA<br>L - EDA<br>Other: |                                   |
| Site:<br>Project #: 16005733<br>SSOW#:   |             |               |                              | Analysis Requested<br>Total Number of containers  |                                   |
| Sample Identification - Client ID (Lab ID)   |             |               |                              | Special Instructions/Note:  |                                   |
| SD140300 (160-19727-1)   | Sample Date | Sample Time   | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=oil, BT=Tissue, A=air)  | Field Filtered Sample (Yes or No) |
| SD140200 (160-19727-2)   | 10/24/16    | 11:43 Central | Solid                        | Water   | Yes                               |
| SD140100 (160-19727-3)   | 10/24/16    | 11:58 Central | Solid                        | Water   | Yes                               |
| SD140100 DUP (160-19727-4)   | 10/24/16    | 12:35 Central | Solid                        | Water   | Yes                               |
| GW1004 (160-19727-6)   | 10/24/16    | 14:56 Central | Water                        | Water   | Yes                               |
| Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analysis & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc. |             |               |                              |   |                                   |
| Possible Hazard Identification<br>Unconfirmed<br>Deliverable Requested: I, II, III, IV, Other (specify)  |             |               |                              |   |                                   |
| Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)<br><input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months  |             |               |                              |   |                                   |
| Special Instructions/QC Requirements:  |             |               |                              |   |                                   |
| Empty Kit Relinquished by:   |             |               |                              |   |                                   |
| Relinquished by:   |             |               |                              |   |                                   |
| Relinquished by:   |             |               |                              |   |                                   |
| Relinquished by:   |             |               |                              |   |                                   |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No   |             |               |                              |   |                                   |
| Cooler Temperature(s) °C and Other Remarks:  |             |               |                              |   |                                   |

- 1
- 2
- 3
- 4**
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13



## Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 160-19727-1

Login Number: 19727

List Number: 1

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

| Question  | Answer | Comment  |
|---|--------|--|
| Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter. | True   |  |
| The cooler's custody seal, if present, is intact.                                   | N/A    |  |
| Sample custody seals, if present, are intact.                                       | N/A    |  |
| The cooler or samples do not appear to have been compromised or tampered with.      | True   |  |
| Samples were received on ice.   | True   |  |
| Cooler Temperature is acceptable.   | True   |  |
| Cooler Temperature is recorded.   | True   |  |
| COC is present.   | True   |  |
| COC is filled out in ink and legible.   | True   |  |
| COC is filled out with all pertinent information.                                   | True   |  |
| Is the Field Sampler's name present on COC?   | True   |  |
| There are no discrepancies between the containers received and the COC.             | True   |  |
| Samples are received within Holding Time (excluding tests with immediate HTs)       | True   |  |
| Sample containers have legible labels.  | True   |  |
| Containers are not broken or leaking.   | True   |  |
| Sample collection date/times are provided.  | True   |  |
| Appropriate sample containers are used.   | True   |  |
| Sample bottles are completely filled.   | True   |  |
| Sample Preservation Verified.   | True   | Sample -5 was received unpreserved. Nitric acid was added to adjust pH to $<2$ . |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs    | True   |  |
| Containers requiring zero headspace have no headspace or bubble is $<6$ mm (1/4").  | True   |  |
| Multiphasic samples are not present.  | True   |  |
| Samples do not require splitting or compositing.                                    | True   |  |
| Residual Chlorine Checked.  | N/A    |  |

## Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 160-19727-1

Login Number: 19727

List Number: 2

Creator: Shockley, Wesley S

List Source: TestAmerica Sacramento

List Creation: 10/29/16 03:29 PM

| Question   | Answer | Comment |
|--|--------|---------|
| Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.      | True   |         |
| The cooler's custody seal, if present, is intact.  | True   |         |
| Sample custody seals, if present, are intact.  | N/A    |         |
| The cooler or samples do not appear to have been compromised or tampered with.           | True   |         |
| Samples were received on ice.  | True   |         |
| Cooler Temperature is acceptable.  | True   |         |
| Cooler Temperature is recorded.  | True   |         |
| COC is present.  | True   |         |
| COC is filled out in ink and legible.  | True   |         |
| COC is filled out with all pertinent information.  | True   |         |
| Is the Field Sampler's name present on COC?  | N/A    |         |
| There are no discrepancies between the containers received and the COC.                  | True   |         |
| Samples are received within Holding Time (excluding tests with immediate HTs)            | True   |         |
| Sample containers have legible labels.   | True   |         |
| Containers are not broken or leaking.  | True   |         |
| Sample collection date/times are provided.   | True   |         |
| Appropriate sample containers are used.  | True   |         |
| Sample bottles are completely filled.  | True   |         |
| Sample Preservation Verified.  | N/A    |         |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs         | True   |         |
| Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4"). | True   |         |
| Multiphasic samples are not present.   | True   |         |
| Samples do not require splitting or compositing.   | True   |         |
| Residual Chlorine Checked.   | N/A    |         |

# Definitions/Glossary

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## Qualifiers

### HPLC/IC

| Qualifier | Qualifier Description                                |
|-----------|--|
| F1        | MS and/or MSD Recovery is outside acceptance limits. |

### LCMS

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Metals

| Qualifier | Qualifier Description   |
|-----------|---|
| 4         | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
| ^         | ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.  |
| B         | Compound was found in the blank and sample.   |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.  |

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| □              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CNF            | Contains no Free Liquid   |
| DER            | Duplicate error ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision level concentration  |
| MDA            | Minimum detectable activity   |
| EDL            | Estimated Detection Limit   |
| MDC            | Minimum detectable concentration  |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| NC             | Not Calculated  |
| ND             | Not detected at the reporting limit (or MDL or EDL if shown)  |
| PQL            | Practical Quantitation Limit  |
| QC             | Quality Control   |
| RER            | Relative error ratio  |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |

## Method Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

| Method         | Method Description                  | Protocol | Laboratory |
|----------------|-------------------------------------|----------|------------|
| 8260C          | Volatile Organic Compounds by GC/MS | SW846    | TAL SL     |
| 314.0          | Perchlorate (IC)                    | EPA      | TAL SL     |
| 537 (modified) | Perfluorinated Hydrocarbons         | EPA      | TAL SAC    |
| 6010C          | Metals (ICP)                        | SW846    | TAL SL     |
| 7470A          | Mercury (CVAA)                      | SW846    | TAL SL     |
| D 2216         | Percent Moisture                    | ASTM     | TAL SAC    |

### Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

## Sample Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 160-19727-1   | SD140300         | Solid  | 10/24/16 11:43 | 10/28/16 08:50 |
| 160-19727-2   | SD140200         | Solid  | 10/24/16 11:58 | 10/28/16 08:50 |
| 160-19727-3   | SD140100         | Solid  | 10/24/16 12:35 | 10/28/16 08:50 |
| 160-19727-4   | SD140100 DUP     | Solid  | 10/24/16 12:35 | 10/28/16 08:50 |
| 160-19727-5   | GW1101           | Water  | 10/24/16 10:42 | 10/28/16 08:50 |
| 160-19727-6   | GW1004           | Water  | 10/24/16 14:56 | 10/28/16 08:50 |

# Client Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

**Client Sample ID: SD140300**

Date Collected: 10/24/16 11:43

Date Received: 10/28/16 08:50

**Lab Sample ID: 160-19727-1**

Matrix: Solid

Percent Solids: 49.4

## Method: 537 (modified) - Perfluorinated Hydrocarbons

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|-------|---|----------------|----------------|---------|
| Perfluorobutanesulfonic acid (PFBS)  | ND        |           | 0.41     | 0.21 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:21 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 0.41     | 0.24 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:21 | 1       |
| Perfluoroheptanoic acid (PFHpA)      | ND        |           | 0.41     | 0.18 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:21 | 1       |
| Perfluorooctanoic acid (PFOA)        | 0.27      | J         | 0.41     | 0.21 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:21 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.50      |           | 0.41     | 0.26 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:21 | 1       |
| Perfluorononanoic acid (PFNA)        | 0.25      | J         | 0.41     | 0.17 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:21 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |       |   | Prepared       | Analyzed       | Dil Fac |
| 18O2 PFHxS                           | 87        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:21 | 1       |
| 13C4-PFHpa                           | 84        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:21 | 1       |
| 13C4 PFOA                            | 85        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:21 | 1       |
| 13C4 PFOS                            | 86        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:21 | 1       |
| 13C5 PFNA                            | 91        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:21 | 1       |

**Client Sample ID: SD140200**

Date Collected: 10/24/16 11:58

Date Received: 10/28/16 08:50

**Lab Sample ID: 160-19727-2**

Matrix: Solid

Percent Solids: 61.9

## Method: 537 (modified) - Perfluorinated Hydrocarbons

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|-------|---|----------------|----------------|---------|
| Perfluorobutanesulfonic acid (PFBS)  | ND        |           | 0.32     | 0.17 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:28 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 0.32     | 0.19 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:28 | 1       |
| Perfluoroheptanoic acid (PFHpA)      | 0.14      | J         | 0.32     | 0.14 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:28 | 1       |
| Perfluorooctanoic acid (PFOA)        | 0.39      |           | 0.32     | 0.17 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:28 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.29      | J         | 0.32     | 0.20 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:28 | 1       |
| Perfluorononanoic acid (PFNA)        | 0.62      |           | 0.32     | 0.13 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:28 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |       |   | Prepared       | Analyzed       | Dil Fac |
| 18O2 PFHxS                           | 75        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:28 | 1       |
| 13C4-PFHpa                           | 82        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:28 | 1       |
| 13C4 PFOA                            | 80        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:28 | 1       |
| 13C4 PFOS                            | 74        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:28 | 1       |
| 13C5 PFNA                            | 84        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:28 | 1       |

**Client Sample ID: SD140100**

Date Collected: 10/24/16 12:35

Date Received: 10/28/16 08:50

**Lab Sample ID: 160-19727-3**

Matrix: Solid

Percent Solids: 62.4

## Method: 537 (modified) - Perfluorinated Hydrocarbons

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|-------|---|----------------|----------------|---------|
| Perfluorobutanesulfonic acid (PFBS)  | ND        |           | 0.32     | 0.17 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:36 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 0.32     | 0.19 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:36 | 1       |
| Perfluoroheptanoic acid (PFHpA)      | 0.36      |           | 0.32     | 0.14 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:36 | 1       |
| Perfluorooctanoic acid (PFOA)        | 0.63      |           | 0.32     | 0.16 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:36 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | 0.23      | J         | 0.32     | 0.20 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:36 | 1       |
| Perfluorononanoic acid (PFNA)        | 0.60      |           | 0.32     | 0.13 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:36 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |       |   | Prepared       | Analyzed       | Dil Fac |
| 18O2 PFHxS                           | 80        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:36 | 1       |
| 13C4-PFHpa                           | 85        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:36 | 1       |

TestAmerica St. Louis

# Client Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

**Client Sample ID: SD140100**

**Lab Sample ID: 160-19727-3**

Date Collected: 10/24/16 12:35

Matrix: Solid

Date Received: 10/28/16 08:50

Percent Solids: 62.4

## Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 13C4 PFOA        | 86        |           | 25 - 150 | 10/31/16 10:42 | 11/03/16 02:36 | 1       |
| 13C4 PFOS        | 78        |           | 25 - 150 | 10/31/16 10:42 | 11/03/16 02:36 | 1       |
| 13C5 PFNA        | 86        |           | 25 - 150 | 10/31/16 10:42 | 11/03/16 02:36 | 1       |

**Client Sample ID: SD140100 DUP**

**Lab Sample ID: 160-19727-4**

Date Collected: 10/24/16 12:35

Matrix: Solid

Date Received: 10/28/16 08:50

Percent Solids: 62.2

## Method: 537 (modified) - Perfluorinated Hydrocarbons

| Analyte                              | Result    | Qualifier | RL       | MDL  | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|-----------|----------|------|-------|---|----------------|----------------|---------|
| Perfluorobutanesulfonic acid (PFBS)  | ND        |           | 0.32     | 0.16 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:43 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |           | 0.32     | 0.19 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:43 | 1       |
| Perfluoroheptanoic acid (PFHpA)      | 0.26      | J         | 0.32     | 0.14 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:43 | 1       |
| Perfluorooctanoic acid (PFOA)        | 0.39      |           | 0.32     | 0.16 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:43 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND        |           | 0.32     | 0.20 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:43 | 1       |
| Perfluorononanoic acid (PFNA)        | 0.46      |           | 0.32     | 0.13 | ug/Kg | ☼ | 10/31/16 10:42 | 11/03/16 02:43 | 1       |
| Isotope Dilution                     | %Recovery | Qualifier | Limits   |      |       |   | Prepared       | Analyzed       | Dil Fac |
| 18O2 PFHxS                           | 80        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:43 | 1       |
| 13C4-PFHxPA                          | 87        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:43 | 1       |
| 13C4 PFOA                            | 87        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:43 | 1       |
| 13C4 PFOS                            | 78        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:43 | 1       |
| 13C5 PFNA                            | 90        |           | 25 - 150 |      |       |   | 10/31/16 10:42 | 11/03/16 02:43 | 1       |

**Client Sample ID: GW1101**

**Lab Sample ID: 160-19727-5**

Date Collected: 10/24/16 10:42

Matrix: Water

Date Received: 10/28/16 08:50

## Method: 314.0 - Perchlorate (IC)

| Analyte     | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|--------|-----------|----|-----|------|---|----------|----------------|---------|
| Perchlorate | ND     |           | 12 | 4.0 | ug/L | - |          | 11/09/16 21:32 | 1       |

## Method: 6010C - Metals (ICP)

| Analyte   | Result  | Qualifier | RL     | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------|--------|-------|------|---|----------------|----------------|---------|
| Aluminum  | 360000  |           | 4000   | 1000  | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Antimony  | ND      |           | 200    | 60    | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Arsenic   | 550     |           | 200    | 80    | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Barium    | 19000   |           | 1000   | 300   | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Beryllium | ND      |           | 100    | 30    | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Cadmium   | ND      |           | 100    | 30    | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Calcium   | 960000  |           | 20000  | 6000  | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Chromium  | 1700    |           | 200    | 60    | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Cobalt    | 600     | J         | 1000   | 300   | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Copper    | 590     |           | 500    | 140   | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Iron      | 1100000 |           | 2000   | 600   | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Lead      | 730     |           | 200    | 60    | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Magnesium | 300000  |           | 20000  | 6000  | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Manganese | 27000   |           | 300    | 80    | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Nickel    | 1500    |           | 800    | 200   | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Potassium | 66000   | J         | 100000 | 30000 | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Selenium  | ND      |           | 300    | 160   | ug/L | - | 11/08/16 13:16 | 11/09/16 18:16 | 10      |

TestAmerica St. Louis

# Client Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

Client Sample ID: GW1101

Lab Sample ID: 160-19727-5

Date Collected: 10/24/16 10:42

Matrix: Water

Date Received: 10/28/16 08:50

## Method: 6010C - Metals (ICP) (Continued)

| Analyte  | Result | Qualifier | RL    | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------|--------|-----------|-------|------|------|---|----------------|----------------|---------|
| Silver   | ND     |           | 200   | 60   | ug/L |   | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Sodium   | 63000  |           | 20000 | 6000 | ug/L |   | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Thallium | ND ^   |           | 400   | 100  | ug/L |   | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Vanadium | 1400   |           | 1000  | 300  | ug/L |   | 11/08/16 13:16 | 11/09/16 18:16 | 10      |
| Zinc     | 3100   |           | 400   | 120  | ug/L |   | 11/08/16 13:16 | 11/09/16 18:16 | 10      |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL   | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|------|-------|------|---|----------------|----------------|---------|
| Mercury | 0.64   | B         | 0.20 | 0.060 | ug/L |   | 10/31/16 09:16 | 10/31/16 17:28 | 1       |

Client Sample ID: GW1004

Lab Sample ID: 160-19727-6

Date Collected: 10/24/16 14:56

Matrix: Water

Date Received: 10/28/16 08:50

## Method: 8260C - Volatile Organic Compounds by GC/MS

| Analyte        | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Benzene        | ND     |           | 5.0 | 0.25 | ug/L |   |          | 11/05/16 03:01 | 1       |
| Ethylbenzene   | ND     |           | 5.0 | 0.30 | ug/L |   |          | 11/05/16 03:01 | 1       |
| Toluene        | ND     |           | 5.0 | 1.0  | ug/L |   |          | 11/05/16 03:01 | 1       |
| Xylenes, Total | ND     |           | 10  | 0.85 | ug/L |   |          | 11/05/16 03:01 | 1       |
| Naphthalene    | ND     |           | 5.0 | 0.85 | ug/L |   |          | 11/05/16 03:01 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 4-Bromofluorobenzene (Surr)  | 100       |           | 71 - 139 |          | 11/05/16 03:01 | 1       |
| 1,2-Dichloroethane-d4 (Surr) | 104       |           | 76 - 121 |          | 11/05/16 03:01 | 1       |
| Toluene-d8 (Surr)            | 106       |           | 80 - 129 |          | 11/05/16 03:01 | 1       |
| Dibromofluoromethane (Surr)  | 110       |           | 80 - 121 |          | 11/05/16 03:01 | 1       |

## Method: 537 (modified) - Perfluorinated Hydrocarbons

| Analyte                             | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------------------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanesulfonic acid (PFBS) | 270    |           | 2.8 | 1.3  | ng/L |   | 10/31/16 11:07 | 11/02/16 19:51 | 1       |
| Perfluoroheptanoic acid (PFHpA)     | 380    |           | 2.8 | 1.1  | ng/L |   | 10/31/16 11:07 | 11/02/16 19:51 | 1       |
| Perfluorooctanoic acid (PFOA)       | 280    |           | 2.8 | 1.1  | ng/L |   | 10/31/16 11:07 | 11/02/16 19:51 | 1       |
| Perfluorononanoic acid (PFNA)       | 100    |           | 2.8 | 0.92 | ng/L |   | 10/31/16 11:07 | 11/02/16 19:51 | 1       |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 18O2 PFHxS       | 78        |           | 25 - 150 | 10/31/16 11:07 | 11/02/16 19:51 | 1       |
| 13C4-PFHpA       | 67        |           | 25 - 150 | 10/31/16 11:07 | 11/02/16 19:51 | 1       |
| 13C4 PFOA        | 75        |           | 25 - 150 | 10/31/16 11:07 | 11/02/16 19:51 | 1       |
| 13C5 PFNA        | 71        |           | 25 - 150 | 10/31/16 11:07 | 11/02/16 19:51 | 1       |

## Method: 537 (modified) - Perfluorinated Hydrocarbons - DL

| Analyte                              | Result | Qualifier | RL | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|--------|-----------|----|-----|------|---|----------------|----------------|---------|
| Perfluorohexanesulfonic acid (PFHxS) | 1600   |           | 28 | 12  | ng/L |   | 10/31/16 11:07 | 11/03/16 14:37 | 10      |
| Perfluorooctanesulfonic acid (PFOS)  | 520    |           | 28 | 18  | ng/L |   | 10/31/16 11:07 | 11/03/16 14:37 | 10      |

| Isotope Dilution | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|-----------|-----------|----------|----------------|----------------|---------|
| 18O2 PFHxS       | 96        |           | 25 - 150 | 10/31/16 11:07 | 11/03/16 14:37 | 10      |
| 13C4 PFOA        | 97        |           | 25 - 150 | 10/31/16 11:07 | 11/03/16 14:37 | 10      |
| 13C4 PFOS        | 94        |           | 25 - 150 | 10/31/16 11:07 | 11/03/16 14:37 | 10      |

TestAmerica St. Louis



# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 160-277750/9

Matrix: Water

Analysis Batch: 277750

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte        | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Benzene        | ND           |                 | 5.0 | 0.25 | ug/L |   |          | 11/04/16 19:56 | 1       |
| Ethylbenzene   | ND           |                 | 5.0 | 0.30 | ug/L |   |          | 11/04/16 19:56 | 1       |
| Toluene        | ND           |                 | 5.0 | 1.0  | ug/L |   |          | 11/04/16 19:56 | 1       |
| Xylenes, Total | ND           |                 | 10  | 0.85 | ug/L |   |          | 11/04/16 19:56 | 1       |
| Naphthalene    | ND           |                 | 5.0 | 0.85 | ug/L |   |          | 11/04/16 19:56 | 1       |

| Surrogate                    | MB<br>%Recovery | MB<br>Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------------|-----------------|----------|----------|----------------|---------|
| 4-Bromofluorobenzene (Surr)  | 100             |                 | 71 - 139 |          | 11/04/16 19:56 | 1       |
| 1,2-Dichloroethane-d4 (Surr) | 98              |                 | 76 - 121 |          | 11/04/16 19:56 | 1       |
| Toluene-d8 (Surr)            | 105             |                 | 80 - 129 |          | 11/04/16 19:56 | 1       |
| Dibromofluoromethane (Surr)  | 105             |                 | 80 - 121 |          | 11/04/16 19:56 | 1       |

Lab Sample ID: LCS 160-277750/4

Matrix: Water

Analysis Batch: 277750

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte        | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------|----------------|---------------|------------------|------|---|------|-----------------|
| Benzene        | 50.0           | 49.5          |                  | ug/L |   | 99   | 80 - 120        |
| Ethylbenzene   | 50.0           | 54.2          |                  | ug/L |   | 108  | 80 - 120        |
| Toluene        | 50.0           | 49.6          |                  | ug/L |   | 99   | 80 - 120        |
| Xylenes, Total | 100            | 108           |                  | ug/L |   | 108  | 80 - 121        |
| Naphthalene    | 50.0           | 50.7          |                  | ug/L |   | 101  | 79 - 133        |

| Surrogate                    | LCS<br>%Recovery | LCS<br>Qualifier | Limits   |
|------------------------------|------------------|------------------|----------|
| 4-Bromofluorobenzene (Surr)  | 89               |                  | 71 - 139 |
| 1,2-Dichloroethane-d4 (Surr) | 95               |                  | 76 - 121 |
| Toluene-d8 (Surr)            | 102              |                  | 80 - 129 |
| Dibromofluoromethane (Surr)  | 104              |                  | 80 - 121 |

Lab Sample ID: LCSD 160-277750/5

Matrix: Water

Analysis Batch: 277750

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

| Analyte        | Spike<br>Added | LCSD<br>Result | LCSD<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits | RPD | RPD<br>Limit |
|----------------|----------------|----------------|-------------------|------|---|------|-----------------|-----|--------------|
| Benzene        | 50.0           | 49.1           |                   | ug/L |   | 98   | 80 - 120        | 1   | 20           |
| Ethylbenzene   | 50.0           | 52.0           |                   | ug/L |   | 104  | 80 - 120        | 4   | 20           |
| Toluene        | 50.0           | 48.4           |                   | ug/L |   | 97   | 80 - 120        | 2   | 20           |
| Xylenes, Total | 100            | 104            |                   | ug/L |   | 104  | 80 - 121        | 3   | 20           |
| Naphthalene    | 50.0           | 53.8           |                   | ug/L |   | 108  | 79 - 133        | 6   | 20           |

| Surrogate                    | LCSD<br>%Recovery | LCSD<br>Qualifier | Limits   |
|------------------------------|-------------------|-------------------|----------|
| 4-Bromofluorobenzene (Surr)  | 91                |                   | 71 - 139 |
| 1,2-Dichloroethane-d4 (Surr) | 99                |                   | 76 - 121 |
| Toluene-d8 (Surr)            | 100               |                   | 80 - 129 |
| Dibromofluoromethane (Surr)  | 105               |                   | 80 - 121 |

TestAmerica St. Louis

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 160-19727-6 MS

Matrix: Water

Analysis Batch: 277750

Client Sample ID: GW1004

Prep Type: Total/NA

| Analyte        | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Benzene        | ND            |                  | 50.0        | 49.7      |              | ug/L |   | 99   | 80 - 120     |
| Ethylbenzene   | ND            |                  | 50.0        | 53.5      |              | ug/L |   | 107  | 80 - 121     |
| Toluene        | ND            |                  | 50.0        | 49.2      |              | ug/L |   | 98   | 75 - 134     |
| Xylenes, Total | ND            |                  | 100         | 106       |              | ug/L |   | 106  | 80 - 124     |
| Naphthalene    | ND            |                  | 50.0        | 54.2      |              | ug/L |   | 108  | 54 - 150     |

| Surrogate                    | MS %Recovery | MS Qualifier | Limits   |
|------------------------------|--------------|--------------|----------|
| 4-Bromofluorobenzene (Surr)  | 89           |              | 71 - 139 |
| 1,2-Dichloroethane-d4 (Surr) | 97           |              | 76 - 121 |
| Toluene-d8 (Surr)            | 99           |              | 80 - 129 |
| Dibromofluoromethane (Surr)  | 105          |              | 80 - 121 |

Lab Sample ID: 160-19727-6 MSD

Matrix: Water

Analysis Batch: 277750

Client Sample ID: GW1004

Prep Type: Total/NA

| Analyte        | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Benzene        | ND            |                  | 50.0        | 51.5       |               | ug/L |   | 103  | 80 - 120     | 3   | 20        |
| Ethylbenzene   | ND            |                  | 50.0        | 53.3       |               | ug/L |   | 107  | 80 - 121     | 0   | 20        |
| Toluene        | ND            |                  | 50.0        | 50.0       |               | ug/L |   | 100  | 75 - 134     | 2   | 20        |
| Xylenes, Total | ND            |                  | 100         | 109        |               | ug/L |   | 109  | 80 - 124     | 2   | 20        |
| Naphthalene    | ND            |                  | 50.0        | 56.2       |               | ug/L |   | 112  | 54 - 150     | 4   | 20        |

| Surrogate                    | MSD %Recovery | MSD Qualifier | Limits   |
|------------------------------|---------------|---------------|----------|
| 4-Bromofluorobenzene (Surr)  | 88            |               | 71 - 139 |
| 1,2-Dichloroethane-d4 (Surr) | 104           |               | 76 - 121 |
| Toluene-d8 (Surr)            | 98            |               | 80 - 129 |
| Dibromofluoromethane (Surr)  | 109           |               | 80 - 121 |

## Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 160-278496/5

Matrix: Water

Analysis Batch: 278496

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte     | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Perchlorate | ND        |              | 12 | 4.0 | ug/L |   |          | 11/09/16 20:10 | 1       |

Lab Sample ID: LCS 160-278496/6

Matrix: Water

Analysis Batch: 278496

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte     | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------|-------------|------------|---------------|------|---|------|--------------|
| Perchlorate | 50.0        | 52.1       |               | ug/L |   | 104  | 85 - 115     |

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# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## Method: 314.0 - Perchlorate (IC) - DL

Lab Sample ID: 160-19589-D-12 MS

Matrix: Water

Analysis Batch: 278496

Client Sample ID: Matrix Spike

Prep Type: Total/NA

| Analyte          | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Perchlorate - DL | 960           | F1               | 1000        | 1810      |              | ug/L |   | 85   | 80 - 120     |

Lab Sample ID: 160-19589-D-12 MSD

Matrix: Water

Analysis Batch: 278496

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

| Analyte          | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|------------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Perchlorate - DL | 960           | F1               | 1000        | 1690       | F1            | ug/L |   | 72   | 80 - 120     | 7   | 15        |

## Method: 537 (modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-135225/1-A

Matrix: Solid

Analysis Batch: 136003

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 135225

| Analyte                              | MB Result | MB Qualifier | RL   | MDL   | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|--------------|------|-------|-------|---|----------------|----------------|---------|
| Perfluorobutanesulfonic acid (PFBS)  | ND        |              | 0.20 | 0.10  | ug/Kg |   | 10/31/16 10:42 | 11/03/16 02:06 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |              | 0.20 | 0.12  | ug/Kg |   | 10/31/16 10:42 | 11/03/16 02:06 | 1       |
| Perfluoroheptanoic acid (PFHpA)      | ND        |              | 0.20 | 0.088 | ug/Kg |   | 10/31/16 10:42 | 11/03/16 02:06 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |              | 0.20 | 0.10  | ug/Kg |   | 10/31/16 10:42 | 11/03/16 02:06 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND        |              | 0.20 | 0.13  | ug/Kg |   | 10/31/16 10:42 | 11/03/16 02:06 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |              | 0.20 | 0.083 | ug/Kg |   | 10/31/16 10:42 | 11/03/16 02:06 | 1       |

| Isotope Dilution | MB %Recovery | MB Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|--------------|--------------|----------|----------------|----------------|---------|
| 18O2 PFHxS       | 91           |              | 25 - 150 | 10/31/16 10:42 | 11/03/16 02:06 | 1       |
| 13C4-PFHpa       | 101          |              | 25 - 150 | 10/31/16 10:42 | 11/03/16 02:06 | 1       |
| 13C4 PFOA        | 100          |              | 25 - 150 | 10/31/16 10:42 | 11/03/16 02:06 | 1       |
| 13C4 PFOS        | 90           |              | 25 - 150 | 10/31/16 10:42 | 11/03/16 02:06 | 1       |
| 13C5 PFNA        | 97           |              | 25 - 150 | 10/31/16 10:42 | 11/03/16 02:06 | 1       |

Lab Sample ID: LCS 320-135225/2-A

Matrix: Solid

Analysis Batch: 136003

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 135225

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|--------------------------------------|-------------|------------|---------------|-------|---|------|--------------|
| Perfluorobutanesulfonic acid (PFBS)  | 3.50        | 3.98       |               | ug/Kg |   | 114  | 69 - 139     |
| Perfluorohexanesulfonic acid (PFHxS) | 3.60        | 3.75       |               | ug/Kg |   | 104  | 53 - 157     |
| Perfluoroheptanoic acid (PFHpA)      | 3.96        | 4.23       |               | ug/Kg |   | 107  | 69 - 148     |
| Perfluorooctanoic acid (PFOA)        | 3.96        | 3.98       |               | ug/Kg |   | 101  | 54 - 144     |
| Perfluorooctanesulfonic acid (PFOS)  | 3.68        | 3.74       |               | ug/Kg |   | 102  | 47 - 154     |
| Perfluorononanoic acid (PFNA)        | 3.96        | 4.39       |               | ug/Kg |   | 111  | 75 - 134     |

| Isotope Dilution | LCS %Recovery | LCS Qualifier | Limits   |
|------------------|---------------|---------------|----------|
| 18O2 PFHxS       | 94            |               | 25 - 150 |
| 13C4-PFHpa       | 102           |               | 25 - 150 |
| 13C4 PFOA        | 99            |               | 25 - 150 |

TestAmerica St. Louis

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-135225/2-A

Matrix: Solid

Analysis Batch: 136003

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 135225

|                  | LCS       | LCS       |          |
|------------------|-----------|-----------|----------|
| Isotope Dilution | %Recovery | Qualifier | Limits   |
| 13C4 PFOS        | 91        |           | 25 - 150 |
| 13C5 PFNA        | 98        |           | 25 - 150 |

Lab Sample ID: 160-19727-4 MS

Matrix: Solid

Analysis Batch: 136003

Client Sample ID: SD140100 DUP

Prep Type: Total/NA

Prep Batch: 135225

| Analyte                              | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit  | D | %Rec | Limits   |
|--------------------------------------|---------------|------------------|-------------|-----------|--------------|-------|---|------|----------|
| Perfluorobutanesulfonic acid (PFBS)  | ND            |                  | 5.73        | 7.42      |              | ug/Kg | ☼ | 130  | 69 - 139 |
| Perfluorohexanesulfonic acid (PFHxS) | ND            |                  | 5.90        | 6.06      |              | ug/Kg | ☼ | 103  | 53 - 157 |
| Perfluoroheptanoic acid (PFHpA)      | 0.26          | J                | 6.48        | 7.01      |              | ug/Kg | ☼ | 104  | 69 - 148 |
| Perfluorooctanoic acid (PFOA)        | 0.39          |                  | 6.48        | 6.67      |              | ug/Kg | ☼ | 97   | 54 - 144 |
| Perfluorooctanesulfonic acid (PFOS)  | ND            |                  | 6.01        | 6.34      |              | ug/Kg | ☼ | 105  | 47 - 154 |
| Perfluorononanoic acid (PFNA)        | 0.46          |                  | 6.48        | 7.45      |              | ug/Kg | ☼ | 108  | 75 - 134 |
| Isotope Dilution                     | %Recovery     | Qualifier        | Limits      |           |              |       |   |      |          |
| 18O2 PFHxS                           | 76            |                  | 25 - 150    |           |              |       |   |      |          |
| 13C4-PFHpa                           | 83            |                  | 25 - 150    |           |              |       |   |      |          |
| 13C4 PFOA                            | 83            |                  | 25 - 150    |           |              |       |   |      |          |
| 13C4 PFOS                            | 75            |                  | 25 - 150    |           |              |       |   |      |          |
| 13C5 PFNA                            | 87            |                  | 25 - 150    |           |              |       |   |      |          |

Lab Sample ID: 160-19727-4 MSD

Matrix: Solid

Analysis Batch: 136003

Client Sample ID: SD140100 DUP

Prep Type: Total/NA

Prep Batch: 135225

| Analyte                              | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit  | D | %Rec | Limits   | RPD | Limit |
|--------------------------------------|---------------|------------------|-------------|------------|---------------|-------|---|------|----------|-----|-------|
| Perfluorobutanesulfonic acid (PFBS)  | ND            |                  | 5.67        | 7.49       |               | ug/Kg | ☼ | 132  | 69 - 139 | 1   | 30    |
| Perfluorohexanesulfonic acid (PFHxS) | ND            |                  | 5.84        | 6.11       |               | ug/Kg | ☼ | 105  | 53 - 157 | 1   | 30    |
| Perfluoroheptanoic acid (PFHpA)      | 0.26          | J                | 6.41        | 7.02       |               | ug/Kg | ☼ | 105  | 69 - 148 | 0   | 30    |
| Perfluorooctanoic acid (PFOA)        | 0.39          |                  | 6.41        | 7.01       |               | ug/Kg | ☼ | 103  | 54 - 144 | 5   | 30    |
| Perfluorooctanesulfonic acid (PFOS)  | ND            |                  | 5.95        | 6.25       |               | ug/Kg | ☼ | 105  | 47 - 154 | 1   | 30    |
| Perfluorononanoic acid (PFNA)        | 0.46          |                  | 6.41        | 7.60       |               | ug/Kg | ☼ | 111  | 75 - 134 | 2   | 30    |
| Isotope Dilution                     | %Recovery     | Qualifier        | Limits      |            |               |       |   |      |          |     |       |
| 18O2 PFHxS                           | 76            |                  | 25 - 150    |            |               |       |   |      |          |     |       |
| 13C4-PFHpa                           | 83            |                  | 25 - 150    |            |               |       |   |      |          |     |       |
| 13C4 PFOA                            | 82            |                  | 25 - 150    |            |               |       |   |      |          |     |       |
| 13C4 PFOS                            | 75            |                  | 25 - 150    |            |               |       |   |      |          |     |       |
| 13C5 PFNA                            | 83            |                  | 25 - 150    |            |               |       |   |      |          |     |       |

TestAmerica St. Louis

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: MB 320-135232/1-A

Matrix: Water

Analysis Batch: 135762

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 135232

| Analyte                              | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|--------------|-----|------|------|---|----------------|----------------|---------|
| Perfluorobutanesulfonic acid (PFBS)  | ND        |              | 2.0 | 0.92 | ng/L |   | 10/31/16 11:07 | 11/02/16 19:13 | 1       |
| Perfluorohexanesulfonic acid (PFHxS) | ND        |              | 2.0 | 0.87 | ng/L |   | 10/31/16 11:07 | 11/02/16 19:13 | 1       |
| Perfluoroheptanoic acid (PFHpA)      | ND        |              | 2.0 | 0.80 | ng/L |   | 10/31/16 11:07 | 11/02/16 19:13 | 1       |
| Perfluorooctanoic acid (PFOA)        | ND        |              | 2.0 | 0.75 | ng/L |   | 10/31/16 11:07 | 11/02/16 19:13 | 1       |
| Perfluorooctanesulfonic acid (PFOS)  | ND        |              | 2.0 | 1.3  | ng/L |   | 10/31/16 11:07 | 11/02/16 19:13 | 1       |
| Perfluorononanoic acid (PFNA)        | ND        |              | 2.0 | 0.65 | ng/L |   | 10/31/16 11:07 | 11/02/16 19:13 | 1       |

| Isotope Dilution | MB %Recovery | MB Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|------------------|--------------|--------------|----------|----------------|----------------|---------|
| 18O2 PFHxS       | 103          |              | 25 - 150 | 10/31/16 11:07 | 11/02/16 19:13 | 1       |
| 13C4-PFHpA       | 107          |              | 25 - 150 | 10/31/16 11:07 | 11/02/16 19:13 | 1       |
| 13C4 PFOA        | 106          |              | 25 - 150 | 10/31/16 11:07 | 11/02/16 19:13 | 1       |
| 13C4 PFOS        | 102          |              | 25 - 150 | 10/31/16 11:07 | 11/02/16 19:13 | 1       |
| 13C5 PFNA        | 102          |              | 25 - 150 | 10/31/16 11:07 | 11/02/16 19:13 | 1       |

Lab Sample ID: LCS 320-135232/2-A

Matrix: Water

Analysis Batch: 135762

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 135232

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | Limits   |
|--------------------------------------|-------------|------------|---------------|------|---|------|----------|
| Perfluorobutanesulfonic acid (PFBS)  | 35.4        | 39.8       |               | ng/L |   | 113  | 55 - 147 |
| Perfluorohexanesulfonic acid (PFHxS) | 36.4        | 37.7       |               | ng/L |   | 103  | 58 - 138 |
| Perfluoroheptanoic acid (PFHpA)      | 40.0        | 41.0       |               | ng/L |   | 102  | 63 - 135 |
| Perfluorooctanoic acid (PFOA)        | 40.0        | 38.6       |               | ng/L |   | 96   | 63 - 141 |
| Perfluorooctanesulfonic acid (PFOS)  | 37.1        | 37.1       |               | ng/L |   | 100  | 47 - 162 |
| Perfluorononanoic acid (PFNA)        | 40.0        | 42.7       |               | ng/L |   | 107  | 71 - 140 |

| Isotope Dilution | LCS %Recovery | LCS Qualifier | Limits   |
|------------------|---------------|---------------|----------|
| 18O2 PFHxS       | 103           |               | 25 - 150 |
| 13C4-PFHpA       | 103           |               | 25 - 150 |
| 13C4 PFOA        | 102           |               | 25 - 150 |
| 13C4 PFOS        | 103           |               | 25 - 150 |
| 13C5 PFNA        | 102           |               | 25 - 150 |

Lab Sample ID: LCSD 320-135232/3-A

Matrix: Water

Analysis Batch: 135762

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 135232

| Analyte                              | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | Limits   | RPD | RPD Limit |
|--------------------------------------|-------------|-------------|----------------|------|---|------|----------|-----|-----------|
| Perfluorobutanesulfonic acid (PFBS)  | 35.4        | 38.7        |                | ng/L |   | 109  | 55 - 147 | 3   | 30        |
| Perfluorohexanesulfonic acid (PFHxS) | 36.4        | 36.9        |                | ng/L |   | 101  | 58 - 138 | 2   | 30        |
| Perfluoroheptanoic acid (PFHpA)      | 40.0        | 42.0        |                | ng/L |   | 105  | 63 - 135 | 2   | 30        |
| Perfluorooctanoic acid (PFOA)        | 40.0        | 39.8        |                | ng/L |   | 100  | 63 - 141 | 3   | 30        |
| Perfluorooctanesulfonic acid (PFOS)  | 37.1        | 38.4        |                | ng/L |   | 103  | 47 - 162 | 3   | 30        |
| Perfluorononanoic acid (PFNA)        | 40.0        | 43.2        |                | ng/L |   | 108  | 71 - 140 | 1   | 30        |

TestAmerica St. Louis

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

| Isotope Dilution | LCSD      |           | Limits   |
|------------------|-----------|-----------|----------|
|                  | %Recovery | Qualifier |          |
| 18O2 PFHxS       | 105       |           | 25 - 150 |
| 13C4-PFHpA       | 102       |           | 25 - 150 |
| 13C4 PFOA        | 101       |           | 25 - 150 |
| 13C4 PFOS        | 102       |           | 25 - 150 |
| 13C5 PFNA        | 100       |           | 25 - 150 |

## Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-278261/1-A

Matrix: Water

Analysis Batch: 278522

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 278261

| Analyte   | MB Result | MB Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|-----------|--------------|------|------|------|---|----------------|----------------|---------|
| Aluminum  | ND        |              | 200  | 50   | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Antimony  | ND        |              | 10   | 3.0  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Arsenic   | ND        |              | 10   | 4.0  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Barium    | ND        |              | 50   | 15   | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Beryllium | ND        |              | 5.0  | 1.5  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Cadmium   | ND        |              | 5.0  | 1.5  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Calcium   | ND        |              | 1000 | 300  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Chromium  | ND        |              | 10   | 3.0  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Cobalt    | ND        |              | 50   | 15   | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Copper    | ND        |              | 25   | 7.0  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Iron      | ND        |              | 100  | 30   | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Lead      | ND        |              | 10   | 3.0  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Magnesium | ND        |              | 1000 | 300  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Manganese | ND        |              | 15   | 4.0  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Nickel    | ND        |              | 40   | 10   | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Potassium | ND        |              | 5000 | 1500 | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Selenium  | ND        |              | 15   | 8.0  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Silver    | ND        |              | 10   | 3.0  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Sodium    | ND        |              | 1000 | 300  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Thallium  | ND        | ^            | 20   | 5.0  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Vanadium  | ND        |              | 50   | 15   | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |
| Zinc      | ND        |              | 20   | 6.0  | ug/L |   | 11/08/16 13:16 | 11/09/16 17:31 | 1       |

Lab Sample ID: LCS 160-278261/2-A

Matrix: Water

Analysis Batch: 278522

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 278261

| Analyte   | Spike Added | LCS    |           | Unit | D | %Rec | Limits   |
|-----------|-------------|--------|-----------|------|---|------|----------|
|           |             | Result | Qualifier |      |   |      |          |
| Aluminum  | 10000       | 10000  |           | ug/L |   | 100  | 80 - 120 |
| Antimony  | 500         | 499    |           | ug/L |   | 100  | 80 - 120 |
| Arsenic   | 1000        | 979    |           | ug/L |   | 98   | 80 - 120 |
| Barium    | 1000        | 1040   |           | ug/L |   | 104  | 80 - 120 |
| Beryllium | 1000        | 1020   |           | ug/L |   | 102  | 80 - 120 |
| Cadmium   | 1000        | 991    |           | ug/L |   | 99   | 80 - 120 |
| Calcium   | 10000       | 10400  |           | ug/L |   | 104  | 80 - 120 |
| Chromium  | 1000        | 1020   |           | ug/L |   | 102  | 80 - 120 |
| Cobalt    | 1000        | 1040   |           | ug/L |   | 104  | 80 - 120 |
| Copper    | 1000        | 1010   |           | ug/L |   | 101  | 80 - 120 |
| Iron      | 10000       | 10400  |           | ug/L |   | 104  | 80 - 120 |
| Lead      | 1000        | 1060   |           | ug/L |   | 106  | 80 - 120 |
| Magnesium | 10000       | 9990   |           | ug/L |   | 100  | 80 - 120 |

TestAmerica St. Louis

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 160-278261/2-A  
Matrix: Water  
Analysis Batch: 278522

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 278261  
%Rec.

| Analyte   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | Limits   |
|-----------|-------------|------------|---------------|------|---|------|----------|
| Manganese | 1000        | 1030       |               | ug/L |   | 103  | 80 - 120 |
| Nickel    | 1000        | 1050       |               | ug/L |   | 105  | 80 - 120 |
| Potassium | 10000       | 9890       |               | ug/L |   | 99   | 80 - 120 |
| Selenium  | 500         | 498        |               | ug/L |   | 100  | 80 - 120 |
| Silver    | 200         | 202        |               | ug/L |   | 101  | 80 - 120 |
| Sodium    | 10000       | 10100      |               | ug/L |   | 101  | 80 - 120 |
| Thallium  | 200         | 220 ^      |               | ug/L |   | 110  | 80 - 120 |
| Vanadium  | 1000        | 1030       |               | ug/L |   | 103  | 80 - 120 |
| Zinc      | 1000        | 1020       |               | ug/L |   | 102  | 80 - 120 |

Lab Sample ID: 160-19687-D-3-B MS  
Matrix: Water  
Analysis Batch: 278522

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 278261  
%Rec.

| Analyte   | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | Limits   |
|-----------|---------------|------------------|-------------|-----------|--------------|------|---|------|----------|
| Aluminum  | 150           | J                | 10000       | 10100     |              | ug/L |   | 99   | 75 - 125 |
| Antimony  | ND            |                  | 500         | 517       |              | ug/L |   | 103  | 75 - 125 |
| Arsenic   | 6.4           | J                | 1000        | 1030      |              | ug/L |   | 102  | 75 - 125 |
| Barium    | 90            |                  | 1000        | 1110      |              | ug/L |   | 102  | 75 - 125 |
| Beryllium | ND            |                  | 1000        | 1010      |              | ug/L |   | 101  | 75 - 125 |
| Cadmium   | ND            |                  | 1000        | 1040      |              | ug/L |   | 104  | 75 - 125 |
| Calcium   | 75000         |                  | 10000       | 83100 4   |              | ug/L |   | 79   | 75 - 125 |
| Chromium  | 3.1           | J                | 1000        | 1040      |              | ug/L |   | 104  | 75 - 125 |
| Cobalt    | ND            |                  | 1000        | 1050      |              | ug/L |   | 105  | 75 - 125 |
| Copper    | ND            |                  | 1000        | 1030      |              | ug/L |   | 103  | 75 - 125 |
| Iron      | 100           |                  | 10000       | 10300     |              | ug/L |   | 102  | 75 - 125 |
| Lead      | 12            |                  | 1000        | 1090      |              | ug/L |   | 107  | 75 - 125 |
| Magnesium | 42000         |                  | 10000       | 51100 4   |              | ug/L |   | 93   | 75 - 125 |
| Manganese | 19            |                  | 1000        | 1020      |              | ug/L |   | 100  | 75 - 125 |
| Nickel    | ND            |                  | 1000        | 1060      |              | ug/L |   | 106  | 75 - 125 |
| Potassium | ND            |                  | 10000       | 11200     |              | ug/L |   | 112  | 75 - 125 |
| Selenium  | ND            |                  | 500         | 518       |              | ug/L |   | 104  | 75 - 125 |
| Silver    | ND            |                  | 200         | 207       |              | ug/L |   | 103  | 75 - 125 |
| Sodium    | 11000         |                  | 10000       | 20100     |              | ug/L |   | 92   | 75 - 125 |
| Thallium  | ND            | ^                | 200         | 220 ^     |              | ug/L |   | 110  | 75 - 125 |
| Vanadium  | ND            |                  | 1000        | 1000      |              | ug/L |   | 100  | 75 - 125 |
| Zinc      | 19            | J                | 1000        | 1080      |              | ug/L |   | 106  | 75 - 125 |

Lab Sample ID: 160-19687-D-3-C MSD  
Matrix: Water  
Analysis Batch: 278522

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 278261  
%Rec. RPD

| Analyte   | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | Limits   | RPD | Limit |
|-----------|---------------|------------------|-------------|------------|---------------|------|---|------|----------|-----|-------|
| Aluminum  | 150           | J                | 10000       | 10200      |               | ug/L |   | 101  | 75 - 125 | 2   | 20    |
| Antimony  | ND            |                  | 500         | 514        |               | ug/L |   | 103  | 75 - 125 | 1   | 20    |
| Arsenic   | 6.4           | J                | 1000        | 1020       |               | ug/L |   | 102  | 75 - 125 | 0   | 20    |
| Barium    | 90            |                  | 1000        | 1130       |               | ug/L |   | 104  | 75 - 125 | 2   | 20    |
| Beryllium | ND            |                  | 1000        | 1020       |               | ug/L |   | 102  | 75 - 125 | 1   | 20    |
| Cadmium   | ND            |                  | 1000        | 1030       |               | ug/L |   | 103  | 75 - 125 | 2   | 20    |

TestAmerica St. Louis

# QC Sample Results

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## Method: 6010C - Metals (ICP) (Continued)

| Lab Sample ID: 160-19687-D-3-C MSD |               |                  |             |            |               | Client Sample ID: Matrix Spike Duplicate |   |      |          |     |       |
|------------------------------------|---------------|------------------|-------------|------------|---------------|--|---|------|----------|-----|-------|
| Matrix: Water                      |               |                  |             |            |               | Prep Type: Total/NA                      |   |      |          |     |       |
| Analysis Batch: 278522             |               |                  |             |            |               | Prep Batch: 278261                       |   |      |          |     |       |
| Analyte                            | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit                                     | D | %Rec | Limits   | RPD | Limit |
| Calcium                            | 75000         |                  | 10000       | 80700      | 4             | ug/L                                     |   | 54   | 75 - 125 | 3   | 20    |
| Chromium                           | 3.1           | J                | 1000        | 1030       |               | ug/L                                     |   | 102  | 75 - 125 | 2   | 20    |
| Cobalt                             | ND            |                  | 1000        | 1030       |               | ug/L                                     |   | 103  | 75 - 125 | 1   | 20    |
| Copper                             | ND            |                  | 1000        | 1030       |               | ug/L                                     |   | 103  | 75 - 125 | 0   | 20    |
| Iron                               | 100           |                  | 10000       | 10400      |               | ug/L                                     |   | 103  | 75 - 125 | 1   | 20    |
| Lead                               | 12            |                  | 1000        | 1070       |               | ug/L                                     |   | 105  | 75 - 125 | 2   | 20    |
| Magnesium                          | 42000         |                  | 10000       | 51600      | 4             | ug/L                                     |   | 99   | 75 - 125 | 1   | 20    |
| Manganese                          | 19            |                  | 1000        | 1030       |               | ug/L                                     |   | 101  | 75 - 125 | 1   | 20    |
| Nickel                             | ND            |                  | 1000        | 1040       |               | ug/L                                     |   | 104  | 75 - 125 | 2   | 20    |
| Potassium                          | ND            |                  | 10000       | 11300      |               | ug/L                                     |   | 113  | 75 - 125 | 2   | 20    |
| Selenium                           | ND            |                  | 500         | 518        |               | ug/L                                     |   | 104  | 75 - 125 | 0   | 20    |
| Silver                             | ND            |                  | 200         | 207        |               | ug/L                                     |   | 104  | 75 - 125 | 0   | 20    |
| Sodium                             | 11000         |                  | 10000       | 20400      |               | ug/L                                     |   | 95   | 75 - 125 | 2   | 20    |
| Thallium                           | ND            | ^                | 200         | 218        | ^             | ug/L                                     |   | 109  | 75 - 125 | 1   | 20    |
| Vanadium                           | ND            |                  | 1000        | 1020       |               | ug/L                                     |   | 102  | 75 - 125 | 2   | 20    |
| Zinc                               | 19            | J                | 1000        | 1070       |               | ug/L                                     |   | 105  | 75 - 125 | 1   | 20    |

## Method: 7470A - Mercury (CVAA)

| Lab Sample ID: MB 160-276813/1-A |           |              |      |       |      | Client Sample ID: Method Blank |                |                |         |  |  |
|----------------------------------|-----------|--------------|------|-------|------|--------------------------------|----------------|----------------|---------|--|--|
| Matrix: Water                    |           |              |      |       |      | Prep Type: Total/NA            |                |                |         |  |  |
| Analysis Batch: 277175           |           |              |      |       |      | Prep Batch: 276813             |                |                |         |  |  |
| Analyte                          | MB Result | MB Qualifier | RL   | MDL   | Unit | D                              | Prepared       | Analyzed       | Dil Fac |  |  |
| Mercury                          | 0.0727    | J            | 0.20 | 0.060 | ug/L |                                | 10/31/16 09:16 | 10/31/16 16:43 | 1       |  |  |

| Lab Sample ID: LCS 160-276813/2-A |             |            |               |      |   | Client Sample ID: Lab Control Sample |          |  |  |  |  |
|-----------------------------------|-------------|------------|---------------|------|---|--------------------------------------|----------|--|--|--|--|
| Matrix: Water                     |             |            |               |      |   | Prep Type: Total/NA                  |          |  |  |  |  |
| Analysis Batch: 277175            |             |            |               |      |   | Prep Batch: 276813                   |          |  |  |  |  |
| Analyte                           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec                                 | Limits   |  |  |  |  |
| Mercury                           | 5.00        | 4.81       |               | ug/L |   | 96                                   | 80 - 120 |  |  |  |  |

| Lab Sample ID: 160-19516-B-1-D MS |               |                  |             |           |              | Client Sample ID: Matrix Spike |   |      |          |  |  |
|-----------------------------------|---------------|------------------|-------------|-----------|--------------|--------------------------------|---|------|----------|--|--|
| Matrix: Water                     |               |                  |             |           |              | Prep Type: Total/NA            |   |      |          |  |  |
| Analysis Batch: 277175            |               |                  |             |           |              | Prep Batch: 276813             |   |      |          |  |  |
| Analyte                           | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit                           | D | %Rec | Limits   |  |  |
| Mercury                           | ND            |                  | 5.00        | 4.67      |              | ug/L                           |   | 93   | 80 - 120 |  |  |

| Lab Sample ID: 160-19516-B-1-E MSD |               |                  |             |            |               | Client Sample ID: Matrix Spike Duplicate |   |      |          |     |       |
|------------------------------------|---------------|------------------|-------------|------------|---------------|--|---|------|----------|-----|-------|
| Matrix: Water                      |               |                  |             |            |               | Prep Type: Total/NA                      |   |      |          |     |       |
| Analysis Batch: 277175             |               |                  |             |            |               | Prep Batch: 276813                       |   |      |          |     |       |
| Analyte                            | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit                                     | D | %Rec | Limits   | RPD | Limit |
| Mercury                            | ND            |                  | 5.00        | 4.68       |               | ug/L                                     |   | 94   | 80 - 120 | 0   | 20    |

TestAmerica St. Louis



# QC Association Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## GC/MS VOA

### Analysis Batch: 277750

| Lab Sample ID     | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------------|-----------|--------|--------|------------|
| 160-19727-6       | GW1004                 | Total/NA  | Water  | 8260C  |            |
| MB 160-277750/9   | Method Blank           | Total/NA  | Water  | 8260C  |            |
| LCS 160-277750/4  | Lab Control Sample     | Total/NA  | Water  | 8260C  |            |
| LCSD 160-277750/5 | Lab Control Sample Dup | Total/NA  | Water  | 8260C  |            |
| 160-19727-6 MS    | GW1004                 | Total/NA  | Water  | 8260C  |            |
| 160-19727-6 MSD   | GW1004                 | Total/NA  | Water  | 8260C  |            |

## HPLC/IC

### Analysis Batch: 278496

| Lab Sample ID           | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|-------------------------|------------------------|-----------|--------|--------|------------|
| 160-19727-5             | GW1101                 | Total/NA  | Water  | 314.0  |            |
| MB 160-278496/5         | Method Blank           | Total/NA  | Water  | 314.0  |            |
| LCS 160-278496/6        | Lab Control Sample     | Total/NA  | Water  | 314.0  |            |
| 160-19589-D-12 MS - DL  | Matrix Spike           | Total/NA  | Water  | 314.0  |            |
| 160-19589-D-12 MSD - DL | Matrix Spike Duplicate | Total/NA  | Water  | 314.0  |            |

## LCMS

### Prep Batch: 135225

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 160-19727-1        | SD140300           | Total/NA  | Solid  | SHAKE  |            |
| 160-19727-2        | SD140200           | Total/NA  | Solid  | SHAKE  |            |
| 160-19727-3        | SD140100           | Total/NA  | Solid  | SHAKE  |            |
| 160-19727-4        | SD140100 DUP       | Total/NA  | Solid  | SHAKE  |            |
| MB 320-135225/1-A  | Method Blank       | Total/NA  | Solid  | SHAKE  |            |
| LCS 320-135225/2-A | Lab Control Sample | Total/NA  | Solid  | SHAKE  |            |
| 160-19727-4 MS     | SD140100 DUP       | Total/NA  | Solid  | SHAKE  |            |
| 160-19727-4 MSD    | SD140100 DUP       | Total/NA  | Solid  | SHAKE  |            |

### Prep Batch: 135232

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 160-19727-6 - DL    | GW1004                 | Total/NA  | Water  | 3535   |            |
| 160-19727-6         | GW1004                 | Total/NA  | Water  | 3535   |            |
| MB 320-135232/1-A   | Method Blank           | Total/NA  | Water  | 3535   |            |
| LCS 320-135232/2-A  | Lab Control Sample     | Total/NA  | Water  | 3535   |            |
| LCSD 320-135232/3-A | Lab Control Sample Dup | Total/NA  | Water  | 3535   |            |

### Analysis Batch: 135762

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method         | Prep Batch |
|---------------------|------------------------|-----------|--------|----------------|------------|
| 160-19727-6         | GW1004                 | Total/NA  | Water  | 537 (modified) | 135232     |
| MB 320-135232/1-A   | Method Blank           | Total/NA  | Water  | 537 (modified) | 135232     |
| LCS 320-135232/2-A  | Lab Control Sample     | Total/NA  | Water  | 537 (modified) | 135232     |
| LCSD 320-135232/3-A | Lab Control Sample Dup | Total/NA  | Water  | 537 (modified) | 135232     |

### Analysis Batch: 136003

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method         | Prep Batch |
|---------------|------------------|-----------|--------|----------------|------------|
| 160-19727-1   | SD140300         | Total/NA  | Solid  | 537 (modified) | 135225     |
| 160-19727-2   | SD140200         | Total/NA  | Solid  | 537 (modified) | 135225     |
| 160-19727-3   | SD140100         | Total/NA  | Solid  | 537 (modified) | 135225     |

TestAmerica St. Louis

# QC Association Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## LCMS (Continued)

### Analysis Batch: 136003 (Continued)

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method         | Prep Batch |
|--------------------|--------------------|-----------|--------|----------------|------------|
| 160-19727-4        | SD140100 DUP       | Total/NA  | Solid  | 537 (modified) | 135225     |
| MB 320-135225/1-A  | Method Blank       | Total/NA  | Solid  | 537 (modified) | 135225     |
| LCS 320-135225/2-A | Lab Control Sample | Total/NA  | Solid  | 537 (modified) | 135225     |
| 160-19727-4 MS     | SD140100 DUP       | Total/NA  | Solid  | 537 (modified) | 135225     |
| 160-19727-4 MSD    | SD140100 DUP       | Total/NA  | Solid  | 537 (modified) | 135225     |

### Analysis Batch: 136008

| Lab Sample ID    | Client Sample ID | Prep Type | Matrix | Method         | Prep Batch |
|------------------|------------------|-----------|--------|----------------|------------|
| 160-19727-6 - DL | GW1004           | Total/NA  | Water  | 537 (modified) | 135232     |

## Metals

### Prep Batch: 276813

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 160-19727-5         | GW1101                 | Total/NA  | Water  | 7470A  |            |
| MB 160-276813/1-A   | Method Blank           | Total/NA  | Water  | 7470A  |            |
| LCS 160-276813/2-A  | Lab Control Sample     | Total/NA  | Water  | 7470A  |            |
| 160-19516-B-1-D MS  | Matrix Spike           | Total/NA  | Water  | 7470A  |            |
| 160-19516-B-1-E MSD | Matrix Spike Duplicate | Total/NA  | Water  | 7470A  |            |

### Analysis Batch: 277175

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 160-19727-5         | GW1101                 | Total/NA  | Water  | 7470A  | 276813     |
| MB 160-276813/1-A   | Method Blank           | Total/NA  | Water  | 7470A  | 276813     |
| LCS 160-276813/2-A  | Lab Control Sample     | Total/NA  | Water  | 7470A  | 276813     |
| 160-19516-B-1-D MS  | Matrix Spike           | Total/NA  | Water  | 7470A  | 276813     |
| 160-19516-B-1-E MSD | Matrix Spike Duplicate | Total/NA  | Water  | 7470A  | 276813     |

### Prep Batch: 278261

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 160-19727-5         | GW1101                 | Total/NA  | Water  | 3010A  |            |
| MB 160-278261/1-A   | Method Blank           | Total/NA  | Water  | 3010A  |            |
| LCS 160-278261/2-A  | Lab Control Sample     | Total/NA  | Water  | 3010A  |            |
| 160-19687-D-3-B MS  | Matrix Spike           | Total/NA  | Water  | 3010A  |            |
| 160-19687-D-3-C MSD | Matrix Spike Duplicate | Total/NA  | Water  | 3010A  |            |

### Analysis Batch: 278522

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 160-19727-5         | GW1101                 | Total/NA  | Water  | 6010C  | 278261     |
| MB 160-278261/1-A   | Method Blank           | Total/NA  | Water  | 6010C  | 278261     |
| LCS 160-278261/2-A  | Lab Control Sample     | Total/NA  | Water  | 6010C  | 278261     |
| 160-19687-D-3-B MS  | Matrix Spike           | Total/NA  | Water  | 6010C  | 278261     |
| 160-19687-D-3-C MSD | Matrix Spike Duplicate | Total/NA  | Water  | 6010C  | 278261     |

## General Chemistry

### Analysis Batch: 136744

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 160-19727-1   | SD140300         | Total/NA  | Solid  | D 2216 |            |
| 160-19727-2   | SD140200         | Total/NA  | Solid  | D 2216 |            |

TestAmerica St. Louis

## QC Association Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

### General Chemistry (Continued)

#### Analysis Batch: 136744 (Continued)

| Lab Sample ID    | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|------------------|-----------|--------|--------|------------|
| 160-19727-3      | SD140100         | Total/NA  | Solid  | D 2216 |            |
| 160-19727-4      | SD140100 DUP     | Total/NA  | Solid  | D 2216 |            |
| 320-23338-A-4 DU | Duplicate        | Total/NA  | Solid  | D 2216 |            |

# Surrogate Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

|                   |                        | Percent Surrogate Recovery (Acceptance Limits) |                   |                 |                  |
|-------------------|------------------------|--|-------------------|-----------------|------------------|
| Lab Sample ID     | Client Sample ID       | BFB<br>(71-139)                                | 12DCE<br>(76-121) | TOL<br>(80-129) | DBFM<br>(80-121) |
| 160-19727-6       | GW1004                 | 100  | 104               | 106             | 110              |
| 160-19727-6 MS    | GW1004                 | 89   | 97                | 99              | 105              |
| 160-19727-6 MSD   | GW1004                 | 88   | 104               | 98              | 109              |
| LCS 160-277750/4  | Lab Control Sample     | 89   | 95                | 102             | 104              |
| LCSD 160-277750/5 | Lab Control Sample Dup | 91   | 99                | 100             | 105              |
| MB 160-277750/9   | Method Blank           | 100  | 98                | 105             | 105              |

### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

12DCE = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

# Isotope Dilution Summary

Client: Haley & Aldrich, Inc.  
Project/Site: Fort Calhoun NGS Blair, NE

TestAmerica Job ID: 160-19727-1

## Method: 537 (modified) - Perfluorinated Hydrocarbons

Matrix: Solid

Prep Type: Total/NA

| Lab Sample ID      | Client Sample ID   | Percent Isotope Dilution Recovery (Acceptance Limits) |   |  |  |  |
|--------------------|--------------------|---|---|--|--|--|
|                    |                    | <sup>18</sup> O <sub>2</sub> PFHx (25-150)            | <sup>13</sup> C <sub>4</sub> -PFHp (25-150) | <sup>13</sup> C <sub>4</sub> PFO <sub>2</sub> (25-150) | <sup>13</sup> C <sub>4</sub> PFO <sub>1</sub> (25-150) | <sup>13</sup> C <sub>5</sub> PFNA (25-150) |
| 160-19727-1        | SD140300           | 87  | 84  | 85   | 86   | 91   |
| 160-19727-2        | SD140200           | 75  | 82  | 80   | 74   | 84   |
| 160-19727-3        | SD140100           | 80  | 85  | 86   | 78   | 86   |
| 160-19727-4        | SD140100 DUP       | 80  | 87  | 87   | 78   | 90   |
| 160-19727-4 MS     | SD140100 DUP       | 76  | 83  | 83   | 75   | 87   |
| 160-19727-4 MSD    | SD140100 DUP       | 76  | 83  | 82   | 75   | 83   |
| LCS 320-135225/2-A | Lab Control Sample | 94  | 102   | 99   | 91   | 98   |
| MB 320-135225/1-A  | Method Blank       | 91  | 101   | 100  | 90   | 97   |

### Surrogate Legend

<sup>18</sup>O<sub>2</sub> PFHxS = <sup>18</sup>O<sub>2</sub> PFHxS  
<sup>13</sup>C<sub>4</sub>-PFHpA = <sup>13</sup>C<sub>4</sub>-PFHpA  
<sup>13</sup>C<sub>4</sub> PFOA = <sup>13</sup>C<sub>4</sub> PFOA  
<sup>13</sup>C<sub>4</sub> PFOS = <sup>13</sup>C<sub>4</sub> PFOS  
<sup>13</sup>C<sub>5</sub> PFNA = <sup>13</sup>C<sub>5</sub> PFNA

## Method: 537 (modified) - Perfluorinated Hydrocarbons

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID       | Client Sample ID       | Percent Isotope Dilution Recovery (Acceptance Limits) |   |  |  |  |
|---------------------|------------------------|---|---|--|--|--|
|                     |                        | <sup>18</sup> O <sub>2</sub> PFHx (25-150)            | <sup>13</sup> C <sub>4</sub> -PFHp (25-150) | <sup>13</sup> C <sub>4</sub> PFO <sub>2</sub> (25-150) | <sup>13</sup> C <sub>4</sub> PFO <sub>1</sub> (25-150) | <sup>13</sup> C <sub>5</sub> PFNA (25-150) |
| 160-19727-6         | GW1004                 | 78  | 67  | 75   |  | 71   |
| 160-19727-6 - DL    | GW1004                 | 96  |   | 97   | 94   |  |
| LCS 320-135232/2-A  | Lab Control Sample     | 103   | 103   | 102  | 103  | 102  |
| LCSD 320-135232/3-A | Lab Control Sample Dup | 105   | 102   | 101  | 102  | 100  |
| MB 320-135232/1-A   | Method Blank           | 103   | 107   | 106  | 102  | 102  |

### Surrogate Legend

<sup>18</sup>O<sub>2</sub> PFHxS = <sup>18</sup>O<sub>2</sub> PFHxS  
<sup>13</sup>C<sub>4</sub>-PFHpA = <sup>13</sup>C<sub>4</sub>-PFHpA  
<sup>13</sup>C<sub>4</sub> PFOA = <sup>13</sup>C<sub>4</sub> PFOA  
<sup>13</sup>C<sub>4</sub> PFOS = <sup>13</sup>C<sub>4</sub> PFOS  
<sup>13</sup>C<sub>5</sub> PFNA = <sup>13</sup>C<sub>5</sub> PFNA

TestAmerica St. Louis

November 18, 2016

Mr. Miles van Noordennen  
AMEC Environment & Infrastructure  
100 Corporate Place, Suite 105  
Rocky Hill, Connecticut 06067


Re: Fort Calhoun Nuclear Station  
Work Order: 409254

Dear Mr. Noordennen:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 27, 2016. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4453.

Sincerely,

  
Kaitlyn Stone for  
Edith Kent  
Project Manager

Purchase Order: 127960-002  
Chain of Custody: FCS-001, FCS-002, FCS-003 and FCS-004  
Enclosures



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# Case Narrative

**Receipt Narrative  
for  
Haley & Aldrich, Inc.  
SDG: 409254**

**November 18, 2016**

**Laboratory Identification:**

GEL Laboratories LLC  
2040 Savage Road  
Charleston, South Carolina 29407  
(843) 556-8171

**Summary:**

**Sample receipt:** The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on October 27, 2016 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. The client was notified that samples 409254011(SS110100), 409254012(SS110200), 409254013(SD140300), 409254014(SD140200), 409254015(SD140100), and 409254016(SD140100DUP) were received out of holding time for low level VOAs. The client directed the lab to proceed with analysis.

**Sample Identification:** The laboratory received the following samples:


| <b><u>Laboratory ID</u></b> | <b><u>Client ID</u></b> |
|-----------------------------|-------------------------|
| 409254001                   | DP110100                |
| 409254002                   | DP110102                |
| 409254003                   | DP110104                |
| 409254004                   | DP110106                |
| 409254005                   | DP110113                |
| 409254006                   | DP110200                |
| 409254007                   | DP110202                |
| 409254008                   | DP110204                |
| 409254009                   | DP110206                |
| 409254010                   | DP110214                |
| 409254011                   | SS110100                |
| 409254012                   | SS110200                |
| 409254013                   | SD140300                |
| 409254014                   | SD140200                |
| 409254015                   | SD140100                |
| 409254016                   | SD140100DUP             |
| 409254017                   | DP100113                |
| 409254018                   | DP100212                |
| 409254019                   | DP100310                |
| 409254020                   | DP010216                |
| 409254021                   | DP010216                |
| 409254022                   | DP010109                |
| 409254023                   | DP010109                |
| 409254024                   | DP010307                |
| 409254025                   | DP010307                |
| 409254026                   | DP050113                |
| 409254027                   | DP050213                |

|           |             |
|-----------|-------------|
| 409254028 | SS050100    |
| 409254029 | DP020312    |
| 409254030 | DP020312    |
| 409254031 | DP020312DUP |
| 409254032 | DP020413    |
| 409254033 | DP020413    |
| 409254034 | DP020207    |
| 409254035 | DP020207    |
| 409254036 | DP020209    |
| 409254037 | DP020209    |
| 409254038 | DP020114    |
| 409254039 | DP020114    |
| 409254040 | DP060321    |
| 409254041 | DP060113    |
| 409254042 | DP060212    |
| 409254043 | DP060212DUP |
| 409254044 | TB102616    |

**Case Narrative:**

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Diesel Range Organics, GC Semivolatile PCB, GC/MS Semivolatile, GC/MS Volatile, General Chemistry, Metals and Project Management.



Kaitlyn Stone for  
Edith Kent  
Project Manager

# **Chain of Custody and Supporting Documentation**



Client Name: Haley + Aldrich

Project/Site Name: Fort Calhoun Station

Address: Bldg. 5, NE

Phone #: 866 812 3152

Fax #:

| Sample ID  |  | Date Collected (mm-dd-yy) |  | Time Collected (Military) (hh:mm) |  | QC Code (n) |  | Field Filtered (b) |  | Sample Matrix (d) |  | Should this sample be considered: |  | Sample Analysis Requested (6) |  | Preservative Type (6) |  | Comments  |  |
|--|--|---------------------------|--|-----------------------------------|--|-------------|--|--------------------|--|-------------------|--|-----------------------------------|--|-------------------------------|--|-----------------------|--|---|--|
| • For composites - indicate start and stop date/time |  |                           |  |                                   |  |             |  |                    |  |                   |  | Radioactive                       |  | Total number of containers    |  |                       |  | Note: extra sample is required for sample specific QC |  |
| DP020114   |  | 10-26-16                  |  | 1054                              |  | N           |  | N                  |  | SD                |  | N                                 |  | X                             |  |                       |  |   |  |
| DP060321   |  | 10-26-16                  |  | 1231                              |  | N           |  | N                  |  | SD                |  | N                                 |  | X                             |  |                       |  |   |  |
| DP060113   |  | 10-26-16                  |  | 1253                              |  | N           |  | N                  |  | SD                |  | N                                 |  | X                             |  |                       |  |   |  |
| DP060212   |  | 10-26-16                  |  | 1322                              |  | N           |  | N                  |  | SD                |  | N                                 |  | X                             |  |                       |  |   |  |
| DP060212DUP  |  | 10-26-16                  |  | 1322                              |  | FD          |  | N                  |  | SD                |  | N                                 |  | X                             |  |                       |  |   |  |
| TB06-0211 TB102616                                   |  | 10-26-16                  |  | 1740                              |  | TB          |  | N                  |  | TB                |  | N                                 |  | X                             |  |                       |  |   |  |

TAT Requested: Normal: X Rush:

Specify: (Subject to Surcharge)

Fax Results: Yes / No

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

None

| Chain of Custody Signatures |      | Sample Shipping and Delivery Details |          |
|-----------------------------|------|--------------------------------------|----------|
| Relinquished By (Signed)    | Date | Received by (signed)                 | Date     |
| 1                           |      | P. Kent                              | 10-27-16 |
| 2                           |      |                                      |          |
| 3                           |      |                                      |          |

GEL PM: Edie Kent

Method of Shipment: FedEx

Date Shipped:

Airbill #:

Airbill #:

For Lab Receiving Use Only

Custody Seal Intact? YES NO

Cooler Temp: C

1.) Chain of Custody Number = Client Determined  
2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite  
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.  
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal  
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).  
6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate. If no preservative is added = leave field blank

WHITE = LABORATORY  
YELLOW = FILE  
PINK = CLIENT

Page: 1 of 1

Project #: 127960

GEL Quote #: 66616-1160

COC Number (1): FCS-001

PO Number: 127960-002

GEL Chain of Custody and Analytical Request

GEL Work Order Number:

GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC 29407  
Phone: (843) 556-8171  
Fax: (843) 766-1178

Client Name: Haley Aldrich

Project/Site Name: Fort Calhoun Station

Address: Blair, NE

Collected by: M. van Nooden

Phone #: 860.817.3152

Fax #:

Send Results To: online

Sample ID

\*For composites - indicate start and stop date/time

DP110100

DP110102

DP110104

DP110106

DP110113

DP110200

DP110202

DP110204

DP110206

DP110214

\*Date Collected (mm-dd-yy)

10-24-16

10-24-16

10-24-16

10-24-16

10-24-16

10-24-16

10-24-16

10-24-16

10-24-16

10-24-16

\*Time Collected (Military) (hhmm)

0938

0941

0948

0950

0954

1128

1130

1134

1137

1140

QC Code (1)

N

N

N

N

N

N

N

N

N

Field Filtered (2)

N

N

N

N

N

N

N

N

N

Sample Matrix (3)

SO

SO

SO

SO

SO

SO

SO

SO

SO

Should this sample be considered:

TSCA Regulated

Radioactive

Total number of containers

2

2

2

2

2

2

2

2

2

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

No

Yes

Comments

Note: extra sample is required for sample specific QC

\*HOLD TCLP\*

\*HOLD TCLP\*

\*HOLD TCLP\*

\*HOLD TCLP\*

\*HOLD TCLP\*

\*HOLD TCLP\*

\*HOLD TCLP\*

\*HOLD TCLP\*

\*HOLD TCLP\*

\*HOLD TCLP\*

<-- Preservative Type (6)

Relinquished By (Signed)

Date

Time

1

10-26-16

1240

2

3

Chain of Custody Signatures

Reviewed by (signed)

Date

Time

1

P. Kent

10-27-16

0900

2

3

Sample Shipping and Delivery Details

GEL PM: Edge Kent

Method of Shipment: FedEx

Date Shipped: 10-26-16

Airbill #:

Airbill #:

TAT Requested: Normal: ☒ Rush:

Specify:

Subject to Surcharge

Fax Results:

Yes

No

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

None

1.) Chain of Custody Number = Client Determined

2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite

3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.

4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).

6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate. If no preservative is added = leave field blank

WHITE = LABORATORY

YELLOW = FILE

PINK = CLIENT

For Lab Receiving Use Only

Custody Seal Intact?

YES

NO

Cooler Temp:

C

Page 7 of 1804



Page: 2 of 2  
Project #: 122960  
GEL Quote #: GELP16-1160  
COC Number (1): FCS-002  
PO Number: 122960-002  
Client Name: Haley + Aldrich  
Project/Site Name: Fort Calhoun Station  
Address: Blaine, NE  
Collected by: M. van Nooden  
Send Results To: online  
Phone #: 860-817-352  
Fax #:   
GEL Work Order Number:   
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC 29407  
Phone: (843) 556-8171  
Fax: (843) 766-1178

| Client Name: Hales + Aldrich                         |          | Phone #: 860-817-352    |    | Sample Analysis Requested <sup>(5)</sup> (Fill in the number of containers for each test) |    |                        |   |                               |   |                              |      |                            |            |          |                      |               |
|--|----------|-------------------------|----|---|----|------------------------|---|-------------------------------|---|------------------------------|------|----------------------------|------------|----------|----------------------|---------------|
| Project/Site Name: Fort Calhoun Station              |          | Fax #:                  |    | Should this sample be considered:   |    | Preservative Type (6)  |   |                               |   |                              |      |                            |            |          |                      |               |
| Address: Blair, NE                                   |          |                         |    |   |    |                        |   |                               |   |                              |      |                            |            |          |                      |               |
| Collected by: M. van Noorden                         |          | Send Results To: Online |    |   |    |                        |   |                               |   |                              |      |                            |            |          |                      |               |
| Sample ID  |          | Date Collected          |    | Time Collected (Military) (hhmm)  |    | QC Code <sup>(a)</sup> |   | Field Filtered <sup>(b)</sup> |   | Sample Matrix <sup>(c)</sup> |      | Total number of containers |            | Comments |                      |               |
| * For composites - indicate start and stop date/time |          |                         |    |   |    |                        |   |                               |   |                              |      |                            |            |          |                      |               |
| SS110100   | 10-24-16 | 1004                    | 2  | 2   | SD | 2                      | 6 | X                             | X | Perchlorate - 314.8          | 1311 | TCLP Metals - 6010/242     | PAH - 8230 | 1312     | SPEC Metals 6010/242 |               |
| SS110200   | 10-24-16 | 1054                    | 2  | 2   | SD | 2                      | 6 | X                             | X |                              |      |                            |            |          |                      | * HOLD TCLP * |
| SD140300   | 10-24-16 | 1143                    | 2  | 2   | SD | 2                      | 5 | X                             | X |                              |      |                            | X          |          |                      | * HOLD TCLP * |
| SD140200   | 10-24-16 | 1158                    | 2  | 2   | SD | 2                      | 5 | X                             | X |                              |      |                            | X          |          |                      |               |
| SD140100   | 10-24-16 | 1235                    | 2  | 2   | SD | 2                      | 5 | X                             | X |                              |      |                            | X          |          |                      |               |
| SD140100 Dup   | 10-24-16 | 1235                    | FD | 2   | SD | 2                      | 5 | X                             | X |                              |      |                            | X          |          |                      |               |
| DP100113   | 10-24-16 | 1430                    | 2  | 2   | SD | 2                      | 1 | X                             |   |                              |      |                            | X          |          |                      |               |
| DP100212   | 10-25-16 | 0942                    | 2  | 2   | SD | 2                      | 1 | X                             |   |                              |      |                            | X          |          |                      |               |
| DP100310   | 10-25-16 | 1004                    | 2  | 2   | SD | 2                      | 1 | X                             |   |                              |      |                            | X          |          |                      |               |
| DP010216   | 10-25-16 | 1038                    | 2  | 2   | SD | 2                      | 2 | X                             |   |                              |      |                            | X          |          | X                    |               |



Laboratories LLC

## SAMPLE RECEIPT &amp; REVIEW FORM

|  |  |     |                                      |  |  |
|--|--|-----|--------------------------------------|--|--|
| Client: <u>HIAL</u>  |  |     | SDG/AR/COC/Work Order: <u>409254</u> |  |  |
| Received By: <u>P. Mont</u>  |  |     | Date Received: <u>10.27.16</u>       |  |  |
| Suspected Hazard Information   |  | Yes | No                                   | *If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. |  |
| COC/Samples marked as radioactive?                                       |  |     | <input checked="" type="checkbox"/>  | Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>21cpm</u>                                      |  |
| Classified Radioactive II or III by RSO?                                 |  |     | <input checked="" type="checkbox"/>  | If yes, Were swipes taken of sample containers < action levels?  |  |
| COC/Samples marked containing PCBs?                                      |  |     | <input checked="" type="checkbox"/>  |  |  |
| Package, COC, and/or Samples marked as beryllium or asbestos containing? |  |     | <input checked="" type="checkbox"/>  | If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.                     |  |
| Shipped as a DOT Hazardous?  |  |     | <input checked="" type="checkbox"/>  | Hazard Class Shipped: UN#:   |  |
| Samples identified as Foreign Soil?                                      |  |     | <input checked="" type="checkbox"/>  |  |  |

| Sample Receipt Criteria   | Yes                                 | NA | No                                  | Comments/Qualifiers (Required for Non-Conforming Items)   |
|---|-------------------------------------|----|-------------------------------------|---|
| 1 Shipping containers received intact and sealed?                               | <input checked="" type="checkbox"/> |    |                                     | Circle Applicable: Seals broken Damaged container Leaking container Other (describe)  |
| 2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*                   | <input checked="" type="checkbox"/> |    |                                     | Preservation Method: Ice bags Blue ice Dry ice None Other (describe)<br>*all temperatures are recorded in Celsius <u>1°C</u>  |
| 2a Daily check performed and passed on IR temperature gun?                      | <input checked="" type="checkbox"/> |    |                                     | Temperature Device Serial #:<br>Secondary Temperature Device Serial # (If Applicable): <u>201404337</u>   |
| 3 Chain of custody documents included with shipment?                            | <input checked="" type="checkbox"/> |    |                                     |   |
| 4 Sample containers intact and sealed?  | <input checked="" type="checkbox"/> |    |                                     | Circle Applicable: Seals broken Damaged container Leaking container Other (describe)  |
| 5 Samples requiring chemical preservation at proper pH?                         |                                     |    | <input checked="" type="checkbox"/> | Sample ID's, containers affected and observed pH:   |
| 6 Do Low Level Perchlorate samples have headspace as required?                  |                                     |    | <input checked="" type="checkbox"/> | If Preservation added, Lot#:<br>Sample ID's and containers affected:  |
| 7 VOA vials contain acid preservation?  |                                     |    | <input checked="" type="checkbox"/> | (If unknown, select No)   |
| 8 VOA vials free of headspace (defined as < 6mm bubble)?                        |                                     |    | <input checked="" type="checkbox"/> | Sample ID's and containers affected:  |
| 9 Are Encore containers present?  |                                     |    | <input checked="" type="checkbox"/> | (If yes, immediately deliver to Volatiles laboratory)   |
| 10 Samples received within holding time?  | <input checked="" type="checkbox"/> |    |                                     | ID's and tests affected:  |
| 11 Sample ID's on COC match ID's on bottles?                                    | <input checked="" type="checkbox"/> |    |                                     | Sample ID's and containers affected:  |
| 12 Date & time on COC match date & time on bottles?                             | <input checked="" type="checkbox"/> |    |                                     | Sample ID's affected:   |
| 13 Number of containers received match number indicated on COC? <u>10/27/16</u> | <input checked="" type="checkbox"/> |    |                                     | Sample ID's affected:<br><u>Did not receive Evap loss For TB</u>  |
| 14 Are sample containers identifiable as GEL provided?                          | <input checked="" type="checkbox"/> |    |                                     |   |
| 15 COC form is properly signed in relinquished/received sections?               | <input checked="" type="checkbox"/> |    |                                     |   |
| 16 Carrier and tracking number.   |                                     |    |                                     | Circle Applicable:<br><u>FedEx Air</u> FedEx Ground UPS Field Services Courier Other<br><br><u>7775 6303 4257</u><br><u>7775 6303 4279</u><br><u>7775 6303 4728</u> |

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials VS Date 10/28/16 Page 1 of 1

GL-CHL-SR-001 Rev 3

**Subject:** Re: samples received 10/27/16 Please Advise  
**From:** Brielle Luthman <Brielle.Luthman@gel.com>  
**Date:** 10/27/2016 2:39 PM  
**To:** "van Noordennen, Miles" <MvanNoordennen@haleyaldrich.com>  
**CC:** "team.kent" <team.kent@gel.com>

Soil kits have a holding time of 48 hours. We will proceed with analysis on all samples. Thanks for the quick response

Brielle

On 10/27/2016 2:10 PM, van Noordennen, Miles wrote:

Please proceed with analysis. I thought the kits had a holding time of 7 days?

Sent from my iPhone

On Oct 27, 2016, at 1:00 PM, Brielle Luthman<[https://urldefense.proofpoint.com/v2/url?u=http-3A\\_Brielle.Luthman-40gel.com&d=DQIF-g&c=euGZstcaTD1lvimEN8b7jXrwqOf-v5A\\_Cdp gnVfiiMM&r=pKZCt6\\_GbNB8plXireAn1oxlP2DOQMvMyaEMFkeLdss&m=I16DuWHHKLEVK3AwF0Vn3CyOLU12bxPC7znr5W0VI4w&s=o29UvNR1QAHNP5S47AnJEzsgIETEA4iwjbP3ZbXicV0&e=>](https://urldefense.proofpoint.com/v2/url?u=http-3A_Brielle.Luthman-40gel.com&d=DQIF-g&c=euGZstcaTD1lvimEN8b7jXrwqOf-v5A_Cdp gnVfiiMM&r=pKZCt6_GbNB8plXireAn1oxlP2DOQMvMyaEMFkeLdss&m=I16DuWHHKLEVK3AwF0Vn3CyOLU12bxPC7znr5W0VI4w&s=o29UvNR1QAHNP5S47AnJEzsgIETEA4iwjbP3ZbXicV0&e=>)> wrote:

Hi Miles,

We received a shipment today for PO 127960-002 GEL workorder 409254 and the volatile soil kits that were collected on 10/24/16 were received at GEL out of holding. Would you like us to proceed with analysis?

Thanks,  
Brielle

--

Brielle Luthman  
Project Manager Assistant  
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC (USA) 29407  
Main: 843.556.8171 x4487  
Fax: 843.766.1178  
Email: [Brielle.Luthman@gel.com](mailto:Brielle.Luthman@gel.com)  
Web: [https://urldefense.proofpoint.com/v2/url?u=http-3A\\_www.gel.com&d=DQIF-g&c=euGZstcaTD1lvimEN8b7jXrwqOf-v5A\\_Cdp gnVfiiMM&r=pKZCt6\\_GbNB8plXireAn1oxlP2DOQMvMyaEMFkeLdss&m=I16DuWHHKLEVK3AwF0Vn3CyOLU12bxPC7znr5W0VI4w&s=Z\\_7pLjrH\\_MCuM6Uc4NKdACjPRq\\_SVs8IebBs0AnVDPg&e=](https://urldefense.proofpoint.com/v2/url?u=http-3A_www.gel.com&d=DQIF-g&c=euGZstcaTD1lvimEN8b7jXrwqOf-v5A_Cdp gnVfiiMM&r=pKZCt6_GbNB8plXireAn1oxlP2DOQMvMyaEMFkeLdss&m=I16DuWHHKLEVK3AwF0Vn3CyOLU12bxPC7znr5W0VI4w&s=Z_7pLjrH_MCuM6Uc4NKdACjPRq_SVs8IebBs0AnVDPg&e=)

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Brielle Luthman  
Project Manager Assistant  
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC (USA) 29407  
Main: 843.556.8171 x4487  
Fax: 843.766.1178  
Email: [Brielle.Luthman@gel.com](mailto:Brielle.Luthman@gel.com)  
Web: [www.gel.com](http://www.gel.com)

# **Laboratory Certifications**

**List of current GEL Certifications as of 18 November 2016**

| <b>State</b>             | <b>Certification</b>         |
|--------------------------|------------------------------|
| Alaska                   | UST-0110                     |
| Arkansas                 | 88-0651                      |
| CLIA                     | 42D0904046                   |
| California               | 2940                         |
| Colorado                 | SC00012                      |
| Connecticut              | PH-0169                      |
| Delaware                 | SC00012                      |
| DoD ELAP/ ISO17025 A2LA  | 2567.01                      |
| Florida NELAP            | E87156                       |
| Foreign Soils Permit     | P330-15-00283, P330-15-00253 |
| Georgia                  | SC00012                      |
| Georgia SDWA             | 967                          |
| Hawaii                   | SC00012                      |
| Idaho Chemistry          | SC00012                      |
| Idaho Radiochemistry     | SC00012                      |
| Illinois NELAP           | 200029                       |
| Indiana                  | C-SC-01                      |
| Kansas NELAP             | E-10332                      |
| Kentucky SDWA            | 90129                        |
| Kentucky Wastewater      | 90129                        |
| Louisiana NELAP          | 03046 (AI33904)              |
| Louisiana SDWA           | LA160006                     |
| Maryland                 | 270                          |
| Massachusetts            | M-SC012                      |
| Michigan                 | 9976                         |
| Mississippi              | SC00012                      |
| Nebraska                 | NE-OS-26-13                  |
| Nevada                   | SC000122016-1                |
| New Hampshire NELAP      | 205415                       |
| New Jersey NELAP         | SC002                        |
| New Mexico               | SC00012                      |
| New York NELAP           | 11501                        |
| North Carolina           | 233                          |
| North Carolina SDWA      | 45709                        |
| North Dakota             | R-158                        |
| Oklahoma                 | 9904                         |
| Pennsylvania NELAP       | 68-00485                     |
| S.Carolina Radchem       | 10120002                     |
| South Carolina Chemistry | 10120001                     |
| Tennessee                | TN 02934                     |
| Texas NELAP              | T104704235-16-11             |
| Utah NELAP               | SC000122016-21               |
| Vermont                  | VT87156                      |
| Virginia NELAP           | 460202                       |
| Washington               | C780                         |
| West Virginia            | 997404                       |

# **Volatile Analysis**

# Case Narrative



**GC/MS Volatile  
Technical Case Narrative  
Haley & Aldrich, Inc. (HAAL)  
SDG #: 409254**

**Product:** Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer

**Analytical Method:** SW846 8260B

**Analytical Procedure:** GL-OA-E-038 REV# 23

**Analytical Batch:** 1612391

**Preparation Method:** SW846 5035A

**Preparation Procedure:** GL-OA-E-039 REV# 11

**Preparation Batch:** 1612389

The following samples were analyzed using the above methods and analytical procedure(s).

| <b><u>GEL Sample ID#</u></b> | <b><u>Client Sample Identification</u></b> |
|------------------------------|--|
| 409254011                    | SS110100                                   |
| 409254012                    | SS110200                                   |
| 409254013                    | SD140300                                   |
| 409254014                    | SD140200                                   |
| 409254015                    | SD140100                                   |
| 409254016                    | SD140100DUP                                |
| 409254029                    | DP020312                                   |
| 409254032                    | DP020413                                   |
| 409254034                    | DP020207                                   |
| 409254036                    | DP020209                                   |
| 409254038                    | DP020114                                   |
| 409254044                    | TB102616                                   |
| 1203660807                   | Method Blank (MB)                          |
| 1203660808                   | Laboratory Control Sample (LCS)            |
| 1203660809                   | Laboratory Control Sample Duplicate (LCSD) |
| 1203666128                   | Method Blank (MB)                          |
| 1203666129                   | Method Blank (MB)                          |
| 1203666130                   | Laboratory Control Sample (LCS)            |
| 1203666131                   | Laboratory Control Sample (LCS)            |

Samples 409254011,012,013,014,015,016,029,032,034,036 and 038 in this SDG were analyzed on a "dry weight corrected" basis. Sample 409254044 in this SDG was analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Quality Control (QC) Information**

**Blank (MB) Statement**

Target analytes were detected in the blank 1203660807 (MB) below the reporting limit.

**Technical Information**

**Sample Re-extraction/Re-analysis**

Samples 409254029 (DP020312) and 409254036 (DP020209) were re-analyzed due to unacceptable surrogate or

internal standard recoveries in the initial analysis. The re-analyses confirmed/and or passed and were reported.

#### **Miscellaneous Information**

##### **Additional Comments**

The samples were collected in O2SI soil kits. HAAL sample 409254044 (TB102616) was a soil trip blank that did not have soil added, therefore 5g was used as the sample aliquot for calculation purposes.

#### **Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Qualifier Definition Report for

HAAL002 Haley & Aldrich, Inc.

Client SDG: 409254 GEL Work Order: 409254

#### The Qualifiers in this report are defined as follows:

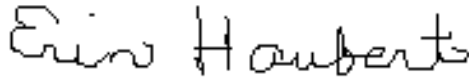
- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

#### Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:



Name: Erin Haubert

Date: 23 NOV 2016

Title: Data Validator

# **Sample Data Summary**

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254011

**Date Collected:** 10/24/2016 10:04  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 5.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 4.2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-34-3  | 1,1-Dichloroethane          | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 0.932  | ug/kg | 0.466   | 0.932   |
| 106-93-4 | 1,2-Dibromoethane           | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 107-06-2 | 1,2-Dichloroethane          | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 78-87-5  | 1,2-Dichloropropane         | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 123-91-1 | 1,4-Dioxane                 | U         | 46.6   | ug/kg | 15.5    | 46.6    |
| 78-93-3  | 2-Butanone                  | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 591-78-6 | 2-Hexanone                  | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 67-64-1  | Acetone                     | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 71-43-2  | Benzene                     | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 74-97-5  | Bromochloromethane          | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-27-4  | Bromodichloromethane        | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-25-2  | Bromoform                   | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 74-83-9  | Bromomethane                | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-15-0  | Carbon disulfide            | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 56-23-5  | Carbon tetrachloride        | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 108-90-7 | Chlorobenzene               | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-00-3  | Chloroethane                | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 67-66-3  | Chloroform                  | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 74-87-3  | Chloromethane               | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 110-82-7 | Cyclohexane                 | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 124-48-1 | Dibromochloromethane        | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-71-8  | Dichlorodifluoromethane     | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 100-41-4 | Ethylbenzene                | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 98-82-8  | Isopropylbenzene            | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 79-20-9  | Methyl acetate              | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 108-87-2 | Methylcyclohexane           | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-09-2  | Methylene chloride          | U         | 4.66   | ug/kg | 1.55    | 4.66    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254011

**Date Collected:** 10/24/2016 10:04  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 5.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 4.2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 127-18-4    | Tetrachloroethylene         | J         | 0.317  | ug/kg | 0.310   | 0.932   |
| 108-88-3    | Toluene                     | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 79-01-6     | Trichloroethylene           | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-69-4     | Trichlorofluoromethane      | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 75-01-4     | Vinyl chloride              | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 179601-23-1 | m,p-Xylenes                 | U         | 1.86   | ug/kg | 0.622   | 1.86    |
| 95-47-6     | o-Xylene                    | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 1634-04-4   | tert-Butyl methyl ether     | J         | 0.336  | ug/kg | 0.310   | 0.932   |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.932  | ug/kg | 0.310   | 0.932   |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254012

**Date Collected:** 10/24/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 6.7 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 17.4  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-34-3  | 1,1-Dichloroethane          | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 0.903  | ug/kg | 0.452   | 0.903   |
| 106-93-4 | 1,2-Dibromoethane           | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 107-06-2 | 1,2-Dichloroethane          | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 78-87-5  | 1,2-Dichloropropane         | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 123-91-1 | 1,4-Dioxane                 | U         | 45.2   | ug/kg | 15.1    | 45.2    |
| 78-93-3  | 2-Butanone                  | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 591-78-6 | 2-Hexanone                  | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 67-64-1  | Acetone                     | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 71-43-2  | Benzene                     | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 74-97-5  | Bromochloromethane          | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-27-4  | Bromodichloromethane        | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-25-2  | Bromoform                   | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 74-83-9  | Bromomethane                | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-15-0  | Carbon disulfide            | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 56-23-5  | Carbon tetrachloride        | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 108-90-7 | Chlorobenzene               | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-00-3  | Chloroethane                | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 67-66-3  | Chloroform                  | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 74-87-3  | Chloromethane               | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 110-82-7 | Cyclohexane                 | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 124-48-1 | Dibromochloromethane        | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-71-8  | Dichlorodifluoromethane     | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 100-41-4 | Ethylbenzene                | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 98-82-8  | Isopropylbenzene            | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 79-20-9  | Methyl acetate              | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 108-87-2 | Methylcyclohexane           | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-09-2  | Methylene chloride          | U         | 4.52   | ug/kg | 1.51    | 4.52    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254012

**Client ID:** SS110200  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 16:24  
**Prep Date:** 10/24/2016 10:54  
**Data File:** 110116V6\6G216.D

**Date Collected:** 10/24/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 6.7 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 17.4  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 127-18-4    | Tetrachloroethylene         | J         | 0.506  | ug/kg | 0.301   | 0.903   |
| 108-88-3    | Toluene                     | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 79-01-6     | Trichloroethylene           | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-69-4     | Trichlorofluoromethane      | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 75-01-4     | Vinyl chloride              | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 179601-23-1 | m,p-Xylenes                 | U         | 1.81   | ug/kg | 0.602   | 1.81    |
| 95-47-6     | o-Xylene                    | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.903  | ug/kg | 0.301   | 0.903   |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254013

**Date Collected:** 10/24/2016 11:43  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.8 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 36.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.64   | ug/kg | 0.822   | 1.64    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 123-91-1 | 1,4-Dioxane                 | U         | 82.2   | ug/kg | 27.4    | 82.2    |
| 78-93-3  | 2-Butanone                  | J         | 3.16   | ug/kg | 2.74    | 8.22    |
| 591-78-6 | 2-Hexanone                  | U         | 8.22   | ug/kg | 2.74    | 8.22    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 8.22   | ug/kg | 2.74    | 8.22    |
| 67-64-1  | Acetone                     |           | 14.8   | ug/kg | 2.74    | 8.22    |
| 71-43-2  | Benzene                     | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 74-97-5  | Bromochloromethane          | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-27-4  | Bromodichloromethane        | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-25-2  | Bromoform                   | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 74-83-9  | Bromomethane                | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-15-0  | Carbon disulfide            | U         | 8.22   | ug/kg | 2.74    | 8.22    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 108-90-7 | Chlorobenzene               | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-00-3  | Chloroethane                | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 67-66-3  | Chloroform                  | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 74-87-3  | Chloromethane               | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 110-82-7 | Cyclohexane                 | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 124-48-1 | Dibromochloromethane        | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 100-41-4 | Ethylbenzene                | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 98-82-8  | Isopropylbenzene            | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 79-20-9  | Methyl acetate              |           | 10.7   | ug/kg | 2.74    | 8.22    |
| 108-87-2 | Methylcyclohexane           | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-09-2  | Methylene chloride          | U         | 8.22   | ug/kg | 2.74    | 8.22    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254013  
  
**Client ID:** SD140300  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 16:52  
**Prep Date:** 10/24/2016 11:43  
**Data File:** 110116V6\6G217.D

**Date Collected:** 10/24/2016 11:43  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.8 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 36.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 127-18-4    | Tetrachloroethylene         | J         | 0.739  | ug/kg | 0.547   | 1.64    |
| 108-88-3    | Toluene                     | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 79-01-6     | Trichloroethylene           | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 8.22   | ug/kg | 2.74    | 8.22    |
| 75-01-4     | Vinyl chloride              | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 179601-23-1 | m,p-Xylenes                 | U         | 3.29   | ug/kg | 1.10    | 3.29    |
| 95-47-6     | o-Xylene                    | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.64   | ug/kg | 0.547   | 1.64    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254014

**Date Collected:** 10/24/2016 11:58  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.7 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 44.5  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

**Client ID:** SD140200  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 17:21  
**Prep Date:** 10/24/2016 11:58  
**Data File:** 110116V6\6G218.D

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.92   | ug/kg | 0.958   | 1.92    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 123-91-1 | 1,4-Dioxane                 | U         | 95.8   | ug/kg | 31.9    | 95.8    |
| 78-93-3  | 2-Butanone                  | J         | 6.44   | ug/kg | 3.19    | 9.58    |
| 591-78-6 | 2-Hexanone                  | U         | 9.58   | ug/kg | 3.19    | 9.58    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 9.58   | ug/kg | 3.19    | 9.58    |
| 67-64-1  | Acetone                     |           | 25.5   | ug/kg | 3.19    | 9.58    |
| 71-43-2  | Benzene                     | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 74-97-5  | Bromochloromethane          | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-27-4  | Bromodichloromethane        | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-25-2  | Bromoform                   | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 74-83-9  | Bromomethane                | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-15-0  | Carbon disulfide            | U         | 9.58   | ug/kg | 3.19    | 9.58    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 108-90-7 | Chlorobenzene               | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-00-3  | Chloroethane                | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 67-66-3  | Chloroform                  | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 74-87-3  | Chloromethane               | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 110-82-7 | Cyclohexane                 | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 124-48-1 | Dibromochloromethane        | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 100-41-4 | Ethylbenzene                | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 98-82-8  | Isopropylbenzene            | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 79-20-9  | Methyl acetate              | U         | 9.58   | ug/kg | 3.19    | 9.58    |
| 108-87-2 | Methylcyclohexane           | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-09-2  | Methylene chloride          | U         | 9.58   | ug/kg | 3.19    | 9.58    |

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254014

**Date Collected:** 10/24/2016 11:58  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.7 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 44.5  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 108-88-3    | Toluene                     | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 79-01-6     | Trichloroethylene           | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 9.58   | ug/kg | 3.19    | 9.58    |
| 75-01-4     | Vinyl chloride              | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 179601-23-1 | m,p-Xylenes                 | U         | 3.83   | ug/kg | 1.28    | 3.83    |
| 95-47-6     | o-Xylene                    | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.92   | ug/kg | 0.638   | 1.92    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 2

**SDG Number:** 409254  
**Lab Sample ID:** 409254015

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 5.5 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 37.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.46   | ug/kg | 0.729   | 1.46    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 123-91-1 | 1,4-Dioxane                 | U         | 72.9   | ug/kg | 24.3    | 72.9    |
| 78-93-3  | 2-Butanone                  | J         | 4.48   | ug/kg | 2.43    | 7.29    |
| 591-78-6 | 2-Hexanone                  | U         | 7.29   | ug/kg | 2.43    | 7.29    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 7.29   | ug/kg | 2.43    | 7.29    |
| 67-64-1  | Acetone                     |           | 15.5   | ug/kg | 2.43    | 7.29    |
| 71-43-2  | Benzene                     | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 74-97-5  | Bromochloromethane          | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-27-4  | Bromodichloromethane        | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-25-2  | Bromoform                   | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 74-83-9  | Bromomethane                | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-15-0  | Carbon disulfide            | U         | 7.29   | ug/kg | 2.43    | 7.29    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 108-90-7 | Chlorobenzene               | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-00-3  | Chloroethane                | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 67-66-3  | Chloroform                  | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 74-87-3  | Chloromethane               | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 110-82-7 | Cyclohexane                 | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 124-48-1 | Dibromochloromethane        | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 100-41-4 | Ethylbenzene                | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 98-82-8  | Isopropylbenzene            | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 79-20-9  | Methyl acetate              | U         | 7.29   | ug/kg | 2.43    | 7.29    |
| 108-87-2 | Methylcyclohexane           | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-09-2  | Methylene chloride          | U         | 7.29   | ug/kg | 2.43    | 7.29    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254015  
  
**Client ID:** SD140100  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 17:50  
**Prep Date:** 10/24/2016 12:35  
**Data File:** 110116V6\6G219.D

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 5.5 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 37.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 127-18-4    | Tetrachloroethylene         | J         | 0.539  | ug/kg | 0.485   | 1.46    |
| 108-88-3    | Toluene                     | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 79-01-6     | Trichloroethylene           | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 7.29   | ug/kg | 2.43    | 7.29    |
| 75-01-4     | Vinyl chloride              | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.92   | ug/kg | 0.972   | 2.92    |
| 95-47-6     | o-Xylene                    | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.46   | ug/kg | 0.485   | 1.46    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254016

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 36.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

**Client ID:** SD140100DUP  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 18:19  
**Prep Date:** 10/24/2016 12:35  
**Data File:** 110116V6\6G220.D

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.72   | ug/kg | 0.858   | 1.72    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 123-91-1 | 1,4-Dioxane                 | U         | 85.8   | ug/kg | 28.6    | 85.8    |
| 78-93-3  | 2-Butanone                  | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 591-78-6 | 2-Hexanone                  | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 67-64-1  | Acetone                     | J         | 7.28   | ug/kg | 2.86    | 8.58    |
| 71-43-2  | Benzene                     | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 74-97-5  | Bromochloromethane          | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-27-4  | Bromodichloromethane        | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-25-2  | Bromoform                   | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 74-83-9  | Bromomethane                | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-15-0  | Carbon disulfide            | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 108-90-7 | Chlorobenzene               | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-00-3  | Chloroethane                | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 67-66-3  | Chloroform                  | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 74-87-3  | Chloromethane               | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 110-82-7 | Cyclohexane                 | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 124-48-1 | Dibromochloromethane        | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 100-41-4 | Ethylbenzene                | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 98-82-8  | Isopropylbenzene            | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 79-20-9  | Methyl acetate              | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 108-87-2 | Methylcyclohexane           | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-09-2  | Methylene chloride          | U         | 8.58   | ug/kg | 2.86    | 8.58    |

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254016

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 36.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

**Client ID:** SD140100DUP  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 18:19  
**Prep Date:** 10/24/2016 12:35  
**Data File:** 110116V6\6G220.D

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 108-88-3    | Toluene                     | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 79-01-6     | Trichloroethylene           | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 75-01-4     | Vinyl chloride              | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 179601-23-1 | m,p-Xylenes                 | U         | 3.43   | ug/kg | 1.14    | 3.43    |
| 95-47-6     | o-Xylene                    | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.72   | ug/kg | 0.571   | 1.72    |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254029

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 6.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 26.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.03   | ug/kg | 0.513   | 1.03    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 123-91-1 | 1,4-Dioxane                 | U         | 51.3   | ug/kg | 17.1    | 51.3    |
| 78-93-3  | 2-Butanone                  | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 591-78-6 | 2-Hexanone                  | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 67-64-1  | Acetone                     | J         | 2.45   | ug/kg | 1.71    | 5.13    |
| 71-43-2  | Benzene                     | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 74-97-5  | Bromochloromethane          | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-27-4  | Bromodichloromethane        | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-25-2  | Bromoform                   | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 74-83-9  | Bromomethane                | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-15-0  | Carbon disulfide            | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 108-90-7 | Chlorobenzene               | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-00-3  | Chloroethane                | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 67-66-3  | Chloroform                  | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 74-87-3  | Chloromethane               | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 110-82-7 | Cyclohexane                 | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 124-48-1 | Dibromochloromethane        | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 100-41-4 | Ethylbenzene                | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 98-82-8  | Isopropylbenzene            | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 79-20-9  | Methyl acetate              | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 108-87-2 | Methylcyclohexane           | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-09-2  | Methylene chloride          | U         | 5.13   | ug/kg | 1.71    | 5.13    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254029

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 6.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 26.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 127-18-4    | Tetrachloroethylene         | J         | 0.472  | ug/kg | 0.341   | 1.03    |
| 108-88-3    | Toluene                     | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 79-01-6     | Trichloroethylene           | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 75-01-4     | Vinyl chloride              | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.05   | ug/kg | 0.684   | 2.05    |
| 95-47-6     | o-Xylene                    | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.03   | ug/kg | 0.341   | 1.03    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254032

**Date Collected:** 10/25/2016 14:00  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 7.1 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 17.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-34-3  | 1,1-Dichloroethane          | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 0.855  | ug/kg | 0.428   | 0.855   |
| 106-93-4 | 1,2-Dibromoethane           | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 107-06-2 | 1,2-Dichloroethane          | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 78-87-5  | 1,2-Dichloropropane         | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 123-91-1 | 1,4-Dioxane                 | U         | 42.8   | ug/kg | 14.3    | 42.8    |
| 78-93-3  | 2-Butanone                  | J         | 4.16   | ug/kg | 1.43    | 4.28    |
| 591-78-6 | 2-Hexanone                  | U         | 4.28   | ug/kg | 1.43    | 4.28    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 4.28   | ug/kg | 1.43    | 4.28    |
| 67-64-1  | Acetone                     |           | 29.8   | ug/kg | 1.43    | 4.28    |
| 71-43-2  | Benzene                     | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 74-97-5  | Bromochloromethane          | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-27-4  | Bromodichloromethane        | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-25-2  | Bromoform                   | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 74-83-9  | Bromomethane                | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-15-0  | Carbon disulfide            | U         | 4.28   | ug/kg | 1.43    | 4.28    |
| 56-23-5  | Carbon tetrachloride        | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 108-90-7 | Chlorobenzene               | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-00-3  | Chloroethane                | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 67-66-3  | Chloroform                  | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 74-87-3  | Chloromethane               | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 110-82-7 | Cyclohexane                 | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 124-48-1 | Dibromochloromethane        | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-71-8  | Dichlorodifluoromethane     | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 100-41-4 | Ethylbenzene                | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 98-82-8  | Isopropylbenzene            | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 79-20-9  | Methyl acetate              | U         | 4.28   | ug/kg | 1.43    | 4.28    |
| 108-87-2 | Methylcyclohexane           | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-09-2  | Methylene chloride          | U         | 4.28   | ug/kg | 1.43    | 4.28    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254032

**Date Collected:** 10/25/2016 14:00  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 7.1 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 17.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 127-18-4    | Tetrachloroethylene         | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 108-88-3    | Toluene                     | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 79-01-6     | Trichloroethylene           | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-69-4     | Trichlorofluoromethane      | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 4.28   | ug/kg | 1.43    | 4.28    |
| 75-01-4     | Vinyl chloride              | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 179601-23-1 | m,p-Xylenes                 | U         | 1.71   | ug/kg | 0.570   | 1.71    |
| 95-47-6     | o-Xylene                    | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.855  | ug/kg | 0.285   | 0.855   |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254034

**Date Collected:** 10/26/2016 09:46  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 6.4 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 20.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-34-3  | 1,1-Dichloroethane          | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 0.978  | ug/kg | 0.489   | 0.978   |
| 106-93-4 | 1,2-Dibromoethane           | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 107-06-2 | 1,2-Dichloroethane          | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 78-87-5  | 1,2-Dichloropropane         | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 123-91-1 | 1,4-Dioxane                 | U         | 48.9   | ug/kg | 16.3    | 48.9    |
| 78-93-3  | 2-Butanone                  |           | 7.63   | ug/kg | 1.63    | 4.89    |
| 591-78-6 | 2-Hexanone                  | U         | 4.89   | ug/kg | 1.63    | 4.89    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 4.89   | ug/kg | 1.63    | 4.89    |
| 67-64-1  | Acetone                     |           | 41.2   | ug/kg | 1.63    | 4.89    |
| 71-43-2  | Benzene                     | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 74-97-5  | Bromochloromethane          | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-27-4  | Bromodichloromethane        | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-25-2  | Bromoform                   | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 74-83-9  | Bromomethane                | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-15-0  | Carbon disulfide            | U         | 4.89   | ug/kg | 1.63    | 4.89    |
| 56-23-5  | Carbon tetrachloride        | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 108-90-7 | Chlorobenzene               | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-00-3  | Chloroethane                | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 67-66-3  | Chloroform                  | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 74-87-3  | Chloromethane               | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 110-82-7 | Cyclohexane                 | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 124-48-1 | Dibromochloromethane        | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-71-8  | Dichlorodifluoromethane     | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 100-41-4 | Ethylbenzene                | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 98-82-8  | Isopropylbenzene            | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 79-20-9  | Methyl acetate              | U         | 4.89   | ug/kg | 1.63    | 4.89    |
| 108-87-2 | Methylcyclohexane           | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-09-2  | Methylene chloride          | U         | 4.89   | ug/kg | 1.63    | 4.89    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254034  
  
**Client ID:** DP020207  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 19:46  
**Prep Date:** 10/26/2016 09:46  
**Data File:** 110116V6\6G223.D

**Date Collected:** 10/26/2016 09:46  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 6.4 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 20.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 127-18-4    | Tetrachloroethylene         | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 108-88-3    | Toluene                     | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 79-01-6     | Trichloroethylene           | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-69-4     | Trichlorofluoromethane      | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 4.89   | ug/kg | 1.63    | 4.89    |
| 75-01-4     | Vinyl chloride              | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 179601-23-1 | m,p-Xylenes                 | U         | 1.96   | ug/kg | 0.652   | 1.96    |
| 95-47-6     | o-Xylene                    | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.978  | ug/kg | 0.326   | 0.978   |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 2

**SDG Number:** 409254  
**Lab Sample ID:** 409254036

**Date Collected:** 10/26/2016 09:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 4.8 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

**Client ID:** DP020209  
**Batch ID:** 1612391  
**Run Date:** 11/03/2016 17:06  
**Prep Date:** 10/26/2016 09:53  
**Data File:** 110316V4\4H415.D

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.17   | ug/kg | 0.584   | 1.17    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 123-91-1 | 1,4-Dioxane                 | U         | 58.4   | ug/kg | 19.5    | 58.4    |
| 78-93-3  | 2-Butanone                  | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 591-78-6 | 2-Hexanone                  | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 67-64-1  | Acetone                     | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 71-43-2  | Benzene                     | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 74-97-5  | Bromochloromethane          | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-27-4  | Bromodichloromethane        | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-25-2  | Bromoform                   | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 74-83-9  | Bromomethane                | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-15-0  | Carbon disulfide            | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 108-90-7 | Chlorobenzene               | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-00-3  | Chloroethane                | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 67-66-3  | Chloroform                  | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 74-87-3  | Chloromethane               | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 110-82-7 | Cyclohexane                 | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 124-48-1 | Dibromochloromethane        | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 100-41-4 | Ethylbenzene                | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 98-82-8  | Isopropylbenzene            | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 79-20-9  | Methyl acetate              | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 108-87-2 | Methylcyclohexane           | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-09-2  | Methylene chloride          | U         | 5.84   | ug/kg | 1.95    | 5.84    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254036

**Client ID:** DP020209  
**Batch ID:** 1612391  
**Run Date:** 11/03/2016 17:06  
**Prep Date:** 10/26/2016 09:53  
**Data File:** 110316V4\4H415.D

**Date Collected:** 10/26/2016 09:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 4.8 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 108-88-3    | Toluene                     | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 79-01-6     | Trichloroethylene           | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 75-01-4     | Vinyl chloride              | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.34   | ug/kg | 0.779   | 2.34    |
| 95-47-6     | o-Xylene                    | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.17   | ug/kg | 0.389   | 1.17    |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254038

**Date Collected:** 10/26/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 5.3 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-34-3  | 1,1-Dichloroethane          | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 0.963  | ug/kg | 0.481   | 0.963   |
| 106-93-4 | 1,2-Dibromoethane           | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 107-06-2 | 1,2-Dichloroethane          | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 78-87-5  | 1,2-Dichloropropane         | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 123-91-1 | 1,4-Dioxane                 | U         | 48.1   | ug/kg | 16.0    | 48.1    |
| 78-93-3  | 2-Butanone                  | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 591-78-6 | 2-Hexanone                  | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 67-64-1  | Acetone                     | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 71-43-2  | Benzene                     | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 74-97-5  | Bromochloromethane          | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-27-4  | Bromodichloromethane        | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-25-2  | Bromoform                   | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 74-83-9  | Bromomethane                | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-15-0  | Carbon disulfide            | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 56-23-5  | Carbon tetrachloride        | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 108-90-7 | Chlorobenzene               | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-00-3  | Chloroethane                | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 67-66-3  | Chloroform                  | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 74-87-3  | Chloromethane               | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 110-82-7 | Cyclohexane                 | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 124-48-1 | Dibromochloromethane        | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-71-8  | Dichlorodifluoromethane     | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 100-41-4 | Ethylbenzene                | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 98-82-8  | Isopropylbenzene            | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 79-20-9  | Methyl acetate              | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 108-87-2 | Methylcyclohexane           | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-09-2  | Methylene chloride          | U         | 4.81   | ug/kg | 1.60    | 4.81    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254038

**Date Collected:** 10/26/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 5.3 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 127-18-4    | Tetrachloroethylene         | J         | 0.433  | ug/kg | 0.321   | 0.963   |
| 108-88-3    | Toluene                     | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 79-01-6     | Trichloroethylene           | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-69-4     | Trichlorofluoromethane      | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 75-01-4     | Vinyl chloride              | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 179601-23-1 | m,p-Xylenes                 | U         | 1.93   | ug/kg | 0.642   | 1.93    |
| 95-47-6     | o-Xylene                    | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.963  | ug/kg | 0.321   | 0.963   |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254044

**Date Collected:** 10/26/2016 12:40  
**Date Received:** 10/27/2016 09:00

**Matrix:** SOIL

**Client ID:** TB102616

**Client:** HAAL002

**Project:** HAAL00201

**Batch ID:** 1612391

**Method:** SW846 8260B

**SOP Ref:** GL-OA-E-038

**Run Date:** 11/02/2016 17:15

**Inst:** VOA4.I

**Dilution:** 1

**Prep Date:** 10/26/2016 12:40

**Analyst:** ACJ

**Purge Vol:** 5 mL

**Data File:** 110216V4\4H316.D

**Aliquot:** 5 g

**Final Volume:** 5 mL

**Column:** DB-624

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.00   | ug/kg | 0.500   | 1.00    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 123-91-1 | 1,4-Dioxane                 | U         | 50.0   | ug/kg | 16.7    | 50.0    |
| 78-93-3  | 2-Butanone                  | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 591-78-6 | 2-Hexanone                  | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 67-64-1  | Acetone                     | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 71-43-2  | Benzene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-97-5  | Bromochloromethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-27-4  | Bromodichloromethane        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-25-2  | Bromoform                   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-83-9  | Bromomethane                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-15-0  | Carbon disulfide            | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 108-90-7 | Chlorobenzene               | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-00-3  | Chloroethane                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 67-66-3  | Chloroform                  | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-87-3  | Chloromethane               | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 110-82-7 | Cyclohexane                 | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 124-48-1 | Dibromochloromethane        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 100-41-4 | Ethylbenzene                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 98-82-8  | Isopropylbenzene            | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-20-9  | Methyl acetate              | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 108-87-2 | Methylcyclohexane           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-09-2  | Methylene chloride          | J         | 2.79   | ug/kg | 1.67    | 5.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254044

**Date Collected:** 10/26/2016 12:40  
**Date Received:** 10/27/2016 09:00

**Matrix:** SOIL

**Client ID:** TB102616

**Client:** HAAL002

**Project:** HAAL00201

**Batch ID:** 1612391

**Method:** SW846 8260B

**SOP Ref:** GL-OA-E-038

**Run Date:** 11/02/2016 17:15

**Inst:** VOA4.I

**Dilution:** 1

**Prep Date:** 10/26/2016 12:40

**Analyst:** ACJ

**Purge Vol:** 5 mL

**Data File:** 110216V4\4H316.D

**Aliquot:** 5 g

**Final Volume:** 5 mL

**Column:** DB-624

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | J         | 0.400  | ug/kg | 0.333   | 1.00    |
| 108-88-3    | Toluene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-01-6     | Trichloroethylene           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 75-01-4     | Vinyl chloride              | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.00   | ug/kg | 0.667   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.00   | ug/kg | 0.333   | 1.00    |

# **Quality Control Summary**

**Volatile**  
**Surrogate Recovery Report**

Page 1 of 1

**SDG Number: 409254****Matrix Type: SOLID**

| Sample ID  | Client ID              | DCED4<br>%REC | TOL<br>%REC | BFB<br>%REC |
|------------|------------------------|---------------|-------------|-------------|
| 1203660808 | LCS for batch 1612389  | 98            | 101         | 103         |
| 1203660809 | LCSD for batch 1612389 | 99            | 100         | 99          |
| 1203660807 | MB for batch 1612389   | 98            | 101         | 100         |
| 409254011  | SS110100               | 105           | 102         | 104         |
| 409254012  | SS110200               | 107           | 100         | 100         |
| 409254013  | SD140300               | 100           | 105         | 113         |
| 409254014  | SD140200               | 110           | 102         | 104         |
| 409254015  | SD140100               | 103           | 104         | 115         |
| 409254016  | SD140100DUP            | 104           | 107         | 112         |
| 409254032  | DP020413               | 113           | 101         | 103         |
| 409254034  | DP020207               | 114           | 100         | 100         |
| 1203666130 | LCS for batch 1612389  | 100           | 98          | 100         |
| 1203666128 | MB for batch 1612389   | 90            | 93          | 93          |
| 409254029  | DP020312               | 104           | 98          | 98          |
| 409254038  | DP020114               | 99            | 99          | 98          |
| 409254044  | TB102616               | 94            | 95          | 95          |
| 1203666131 | LCS for batch 1612389  | 91            | 94          | 91          |
| 1203666129 | MB for batch 1612389   | 90            | 91          | 92          |
| 409254036  | DP020209               | 108           | 105         | 108         |

**Surrogate****Acceptance Limits**

DCED4 = 1,2-Dichloroethane-d4

(81%-124%)

TOL = Toluene-d8

(81%-120%)

BFB = Bromofluorobenzene

(70%-130%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 6

SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1612389

Matrix: SOIL

Lab Sample ID 1203660808

Instrument: VOA6.I

Analysis Date: 11/01/2016 10:35

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No      | Parmname                       | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|-------------|--------------------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|
| 179601-23-1 | LCS m,p-Xylenes                | 100                      | 0.0                      | 95.0                    | 95            | 72-124               |
| 67-64-1     | LCS Acetone                    | 250                      | 0.0                      | 206                     | 82            | 60-143               |
| 79-20-9     | LCS Methyl acetate             | 250                      | 0.0                      | 223                     | 89            | 69-130               |
| 75-15-0     | LCS Carbon disulfide           | 250                      | 0.0                      | 267                     | 107           | 69-137               |
| 78-93-3     | LCS 2-Butanone                 | 250                      | 0.0                      | 226                     | 90            | 61-140               |
| 108-10-1    | LCS 4-Methyl-2-pentanone       | 250                      | 0.0                      | 226                     | 90            | 65-123               |
| 591-78-6    | LCS 2-Hexanone                 | 250                      | 0.0                      | 238                     | 95            | 61-147               |
| 75-71-8     | LCS Dichlorodifluoromethane    | 50.0                     | 0.0                      | 60.4                    | 121           | 38-165               |
| 74-87-3     | LCS Chloromethane              | 50.0                     | 0.0                      | 52.3                    | 105           | 59-135               |
| 75-01-4     | LCS Vinyl chloride             | 50.0                     | 0.0                      | 54.8                    | 110           | 63-140               |
| 74-83-9     | LCS Bromomethane               | 50.0                     | 0.0                      | 55.9                    | 112           | 63-137               |
| 75-00-3     | LCS Chloroethane               | 50.0                     | 0.0                      | 55.2                    | 110           | 67-129               |
| 75-69-4     | LCS Trichlorofluoromethane     | 50.0                     | 0.0                      | 57.5                    | 115           | 66-141               |
| 75-35-4     | LCS 1,1-Dichloroethylene       | 50.0                     | 0.0                      | 48.0                    | 96            | 64-129               |
| 75-09-2     | LCS Methylene chloride         | 50.0                     | 0.0                      | 48.3                    | 97            | 66-120               |
| 1634-04-4   | LCS tert-Butyl methyl ether    | 50.0                     | 0.0                      | 48.1                    | 96            | 76-127               |
| 156-60-5    | LCS trans-1,2-Dichloroethylene | 50.0                     | 0.0                      | 48.0                    | 96            | 69-124               |
| 75-34-3     | LCS 1,1-Dichloroethane         | 50.0                     | 0.0                      | 47.1                    | 94            | 71-124               |
| 156-59-2    | LCS cis-1,2-Dichloroethylene   | 50.0                     | 0.0                      | 47.3                    | 95            | 73-124               |
| 74-97-5     | LCS Bromochloromethane         | 50.0                     | 0.0                      | 47.0                    | 94            | 76-123               |
| 67-66-3     | LCS Chloroform                 | 50.0                     | 0.0                      | 47.3                    | 95            | 75-123               |
| 71-55-6     | LCS 1,1,1-Trichloroethane      | 50.0                     | 0.0                      | 50.7                    | 101           | 73-137               |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 2 of 6

SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1612389

Matrix: SOIL

Lab Sample ID 1203660808

Instrument: VOA6.I

Analysis Date: 11/01/2016 10:35

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No     | Parmname                        | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance Limits |
|------------|---------------------------------|-----------------------|-----------------------|----------------------|---------------|-------------------|
| 110-82-7   | LCS Cyclohexane                 | 50.0                  | 0.0                   | 51.0                 | 102           | 66-137            |
| 56-23-5    | LCS Carbon tetrachloride        | 50.0                  | 0.0                   | 51.6                 | 103           | 71-140            |
| 107-06-2   | LCS 1,2-Dichloroethane          | 50.0                  | 0.0                   | 44.8                 | 90            | 72-121            |
| 71-43-2    | LCS Benzene                     | 50.0                  | 0.0                   | 47.2                 | 94            | 71-123            |
| 79-01-6    | LCS Trichloroethylene           | 50.0                  | 0.0                   | 48.3                 | 97            | 72-127            |
| 78-87-5    | LCS 1,2-Dichloropropane         | 50.0                  | 0.0                   | 46.8                 | 94            | 72-120            |
| 108-87-2   | LCS Methylcyclohexane           | 50.0                  | 0.0                   | 52.0                 | 104           | 71-134            |
| 75-27-4    | LCS Bromodichloromethane        | 50.0                  | 0.0                   | 47.5                 | 95            | 76-129            |
| 10061-01-5 | LCS cis-1,3-Dichloropropylene   | 50.0                  | 0.0                   | 48.9                 | 98            | 78-129            |
| 108-88-3   | LCS Toluene                     | 50.0                  | 0.0                   | 47.1                 | 94            | 70-121            |
| 10061-02-6 | LCS trans-1,3-Dichloropropylene | 50.0                  | 0.0                   | 49.1                 | 98            | 78-127            |
| 79-00-5    | LCS 1,1,2-Trichloroethane       | 50.0                  | 0.0                   | 45.8                 | 92            | 74-120            |
| 127-18-4   | LCS Tetrachloroethylene         | 50.0                  | 0.0                   | 49.1                 | 98            | 68-129            |
| 124-48-1   | LCS Dibromochloromethane        | 50.0                  | 0.0                   | 48.3                 | 97            | 78-134            |
| 106-93-4   | LCS 1,2-Dibromoethane           | 50.0                  | 0.0                   | 48.4                 | 97            | 78-121            |
| 108-90-7   | LCS Chlorobenzene               | 50.0                  | 0.0                   | 47.1                 | 94            | 72-120            |
| 100-41-4   | LCS Ethylbenzene                | 50.0                  | 0.0                   | 48.7                 | 97            | 72-123            |
| 95-47-6    | LCS o-Xylene                    | 50.0                  | 0.0                   | 46.6                 | 93            | 72-124            |
| 100-42-5   | LCS Styrene                     | 50.0                  | 0.0                   | 46.5                 | 93            | 72-127            |
| 75-25-2    | LCS Bromoform                   | 50.0                  | 0.0                   | 50.5                 | 101           | 74-133            |
| 98-82-8    | LCS Isopropylbenzene            | 50.0                  | 0.0                   | 50.2                 | 100           | 69-127            |
| 79-34-5    | LCS 1,1,2,2-Tetrachloroethane   | 50.0                  | 0.0                   | 47.9                 | 96            | 72-123            |



Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1612389

Matrix: SOIL

Lab Sample ID 1203660808

Instrument: VOA6.I

Analysis Date: 11/01/2016 10:35

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No   | Parmname                        | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|----------|---------------------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|
| 541-73-1 | LCS 1,3-Dichlorobenzene         | 50.0                     | 0.0                      | 47.7                    | 95            | 70-119               |
| 106-46-7 | LCS 1,4-Dichlorobenzene         | 50.0                     | 0.0                      | 47.0                    | 94            | 70-119               |
| 96-12-8  | LCS 1,2-Dibromo-3-chloropropane | 50.0                     | 0.0                      | 48.8                    | 98            | 70-139               |
| 87-61-6  | LCS 1,2,3-Trichlorobenzene      | 50.0                     | 0.0                      | 48.9                    | 98            | 69-128               |
| 120-82-1 | LCS 1,2,4-Trichlorobenzene      | 50.0                     | 0.0                      | 48.7                    | 97            | 71-125               |
| 95-50-1  | LCS 1,2-Dichlorobenzene         | 50.0                     | 0.0                      | 46.8                    | 94            | 73-117               |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 4 of 6

SDG Number: 409254

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 1612389

Matrix: SOIL

Lab Sample ID 1203660809

Instrument: VOA6.I

Analysis Date: 11/01/2016 11:04

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No      | Parmname                        | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance Limits | RPD<br>% | Acceptance Limits |
|-------------|---------------------------------|-----------------------|-----------------------|----------------------|---------------|-------------------|----------|-------------------|
| 179601-23-1 | LCSD m,p-Xylenes                | 100                   | 0.0                   | 92.2                 | 92            | 72-124            | 3        | 0-20              |
| 67-64-1     | LCSD Acetone                    | 250                   | 0.0                   | 204                  | 82            | 60-143            | 1        | 0-20              |
| 79-20-9     | LCSD Methyl acetate             | 250                   | 0.0                   | 223                  | 89            | 69-130            | 0        | 0-20              |
| 75-15-0     | LCSD Carbon disulfide           | 250                   | 0.0                   | 258                  | 103           | 69-137            | 3        | 0-20              |
| 78-93-3     | LCSD 2-Butanone                 | 250                   | 0.0                   | 225                  | 90            | 61-140            | 0        | 0-20              |
| 108-10-1    | LCSD 4-Methyl-2-pentanone       | 250                   | 0.0                   | 228                  | 91            | 65-123            | 1        | 0-20              |
| 591-78-6    | LCSD 2-Hexanone                 | 250                   | 0.0                   | 240                  | 96            | 61-147            | 1        | 0-20              |
| 75-71-8     | LCSD Dichlorodifluoromethane    | 50.0                  | 0.0                   | 56.0                 | 112           | 38-165            | 8        | 0-20              |
| 74-87-3     | LCSD Chloromethane              | 50.0                  | 0.0                   | 50.5                 | 101           | 59-135            | 4        | 0-20              |
| 75-01-4     | LCSD Vinyl chloride             | 50.0                  | 0.0                   | 52.4                 | 105           | 63-140            | 5        | 0-20              |
| 74-83-9     | LCSD Bromomethane               | 50.0                  | 0.0                   | 53.7                 | 107           | 63-137            | 4        | 0-20              |
| 75-00-3     | LCSD Chloroethane               | 50.0                  | 0.0                   | 52.5                 | 105           | 67-129            | 5        | 0-20              |
| 75-69-4     | LCSD Trichlorofluoromethane     | 50.0                  | 0.0                   | 53.9                 | 108           | 66-141            | 6        | 0-20              |
| 75-35-4     | LCSD 1,1-Dichloroethylene       | 50.0                  | 0.0                   | 46.1                 | 92            | 64-129            | 4        | 0-20              |
| 75-09-2     | LCSD Methylene chloride         | 50.0                  | 0.0                   | 47.5                 | 95            | 66-120            | 2        | 0-20              |
| 1634-04-4   | LCSD tert-Butyl methyl ether    | 50.0                  | 0.0                   | 47.3                 | 95            | 76-127            | 2        | 0-20              |
| 156-60-5    | LCSD trans-1,2-Dichloroethylene | 50.0                  | 0.0                   | 46.0                 | 92            | 69-124            | 4        | 0-20              |
| 75-34-3     | LCSD 1,1-Dichloroethane         | 50.0                  | 0.0                   | 46.0                 | 92            | 71-124            | 2        | 0-20              |
| 156-59-2    | LCSD cis-1,2-Dichloroethylene   | 50.0                  | 0.0                   | 45.7                 | 91            | 73-124            | 3        | 0-20              |
| 74-97-5     | LCSD Bromochloromethane         | 50.0                  | 0.0                   | 46.4                 | 93            | 76-123            | 1        | 0-20              |
| 67-66-3     | LCSD Chloroform                 | 50.0                  | 0.0                   | 45.3                 | 91            | 75-123            | 4        | 0-20              |
| 71-55-6     | LCSD 1,1,1-Trichloroethane      | 50.0                  | 0.0                   | 48.6                 | 97            | 73-137            | 4        | 0-20              |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 5 of 6

SDG Number: 409254

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 1612389

Matrix: SOIL

Lab Sample ID 1203660809

Instrument: VOA6.I

Analysis Date: 11/01/2016 11:04

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No     | Parmname                         | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance Limits | RPD<br>% | Acceptance Limits |
|------------|----------------------------------|-----------------------|-----------------------|----------------------|---------------|-------------------|----------|-------------------|
| 110-82-7   | LCSD Cyclohexane                 | 50.0                  | 0.0                   | 48.6                 | 97            | 66-137            | 5        | 0-20              |
| 56-23-5    | LCSD Carbon tetrachloride        | 50.0                  | 0.0                   | 49.4                 | 99            | 71-140            | 5        | 0-20              |
| 107-06-2   | LCSD 1,2-Dichloroethane          | 50.0                  | 0.0                   | 44.1                 | 88            | 72-121            | 2        | 0-20              |
| 71-43-2    | LCSD Benzene                     | 50.0                  | 0.0                   | 45.4                 | 91            | 71-123            | 4        | 0-20              |
| 79-01-6    | LCSD Trichloroethylene           | 50.0                  | 0.0                   | 47.1                 | 94            | 72-127            | 2        | 0-20              |
| 78-87-5    | LCSD 1,2-Dichloropropane         | 50.0                  | 0.0                   | 45.4                 | 91            | 72-120            | 3        | 0-20              |
| 108-87-2   | LCSD Methylcyclohexane           | 50.0                  | 0.0                   | 49.2                 | 98            | 71-134            | 6        | 0-20              |
| 75-27-4    | LCSD Bromodichloromethane        | 50.0                  | 0.0                   | 46.1                 | 92            | 76-129            | 3        | 0-20              |
| 10061-01-5 | LCSD cis-1,3-Dichloropropylene   | 50.0                  | 0.0                   | 47.2                 | 94            | 78-129            | 4        | 0-20              |
| 108-88-3   | LCSD Toluene                     | 50.0                  | 0.0                   | 45.5                 | 91            | 70-121            | 3        | 0-20              |
| 10061-02-6 | LCSD trans-1,3-Dichloropropylene | 50.0                  | 0.0                   | 48.2                 | 96            | 78-127            | 2        | 0-20              |
| 79-00-5    | LCSD 1,1,2-Trichloroethane       | 50.0                  | 0.0                   | 45.7                 | 91            | 74-120            | 0        | 0-20              |
| 127-18-4   | LCSD Tetrachloroethylene         | 50.0                  | 0.0                   | 47.3                 | 95            | 68-129            | 4        | 0-20              |
| 124-48-1   | LCSD Dibromochloromethane        | 50.0                  | 0.0                   | 47.2                 | 94            | 78-134            | 2        | 0-20              |
| 106-93-4   | LCSD 1,2-Dibromoethane           | 50.0                  | 0.0                   | 47.8                 | 96            | 78-121            | 1        | 0-20              |
| 108-90-7   | LCSD Chlorobenzene               | 50.0                  | 0.0                   | 45.8                 | 92            | 72-120            | 3        | 0-20              |
| 100-41-4   | LCSD Ethylbenzene                | 50.0                  | 0.0                   | 47.0                 | 94            | 72-123            | 4        | 0-20              |
| 95-47-6    | LCSD o-Xylene                    | 50.0                  | 0.0                   | 45.4                 | 91            | 72-124            | 3        | 0-20              |
| 100-42-5   | LCSD Styrene                     | 50.0                  | 0.0                   | 46.1                 | 92            | 72-127            | 1        | 0-20              |
| 75-25-2    | LCSD Bromoform                   | 50.0                  | 0.0                   | 49.2                 | 98            | 74-133            | 2        | 0-20              |
| 98-82-8    | LCSD Isopropylbenzene            | 50.0                  | 0.0                   | 47.1                 | 94            | 69-127            | 6        | 0-20              |
| 79-34-5    | LCSD 1,1,2,2-Tetrachloroethane   | 50.0                  | 0.0                   | 46.6                 | 93            | 72-123            | 3        | 0-20              |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 6 of 6

SDG Number: 409254

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 1612389

Matrix: SOIL

Lab Sample ID 1203660809

Instrument: VOA6.I

Analysis Date: 11/01/2016 11:04

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No   | Parmname                         | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits | RPD<br>% | Acceptance<br>Limits |
|----------|----------------------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|----------|----------------------|
| 541-73-1 | LCSD 1,3-Dichlorobenzene         | 50.0                     | 0.0                      | 44.8                    | 90            | 70-119               | 6        | 0-20                 |
| 106-46-7 | LCSD 1,4-Dichlorobenzene         | 50.0                     | 0.0                      | 44.6                    | 89            | 70-119               | 5        | 0-20                 |
| 96-12-8  | LCSD 1,2-Dibromo-3-chloropropane | 50.0                     | 0.0                      | 47.9                    | 96            | 70-139               | 2        | 0-20                 |
| 87-61-6  | LCSD 1,2,3-Trichlorobenzene      | 50.0                     | 0.0                      | 45.9                    | 92            | 69-128               | 6        | 0-20                 |
| 120-82-1 | LCSD 1,2,4-Trichlorobenzene      | 50.0                     | 0.0                      | 45.1                    | 90            | 71-125               | 8        | 0-20                 |
| 95-50-1  | LCSD 1,2-Dichlorobenzene         | 50.0                     | 0.0                      | 44.9                    | 90            | 73-117               | 4        | 0-20                 |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 3

SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1612389

Matrix: SOIL

Lab Sample ID 1203666130

Instrument: VOA4.I

Analysis Date: 11/02/2016 11:25

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No      | Parmname                       | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|-------------|--------------------------------|-----------------------|-----------------------|----------------------|---------------|----------------------|
| 179601-23-1 | LCS m,p-Xylenes                | 100                   | 0.0                   | 87.9                 | 88            | 72-124               |
| 67-64-1     | LCS Acetone                    | 250                   | 0.0                   | 236                  | 95            | 60-143               |
| 79-20-9     | LCS Methyl acetate             | 250                   | 0.0                   | 221                  | 89            | 69-130               |
| 75-15-0     | LCS Carbon disulfide           | 250                   | 0.0                   | 212                  | 85            | 69-137               |
| 78-93-3     | LCS 2-Butanone                 | 250                   | 0.0                   | 240                  | 96            | 61-140               |
| 108-10-1    | LCS 4-Methyl-2-pentanone       | 250                   | 0.0                   | 222                  | 89            | 65-123               |
| 591-78-6    | LCS 2-Hexanone                 | 250                   | 0.0                   | 244                  | 97            | 61-147               |
| 75-71-8     | LCS Dichlorodifluoromethane    | 50.0                  | 0.0                   | 45.6                 | 91            | 38-165               |
| 74-87-3     | LCS Chloromethane              | 50.0                  | 0.0                   | 41.9                 | 84            | 59-135               |
| 75-01-4     | LCS Vinyl chloride             | 50.0                  | 0.0                   | 48.8                 | 98            | 63-140               |
| 74-83-9     | LCS Bromomethane               | 50.0                  | 0.0                   | 48.0                 | 96            | 63-137               |
| 75-00-3     | LCS Chloroethane               | 50.0                  | 0.0                   | 47.1                 | 94            | 67-129               |
| 75-69-4     | LCS Trichlorofluoromethane     | 50.0                  | 0.0                   | 47.6                 | 95            | 66-141               |
| 75-35-4     | LCS 1,1-Dichloroethylene       | 50.0                  | 0.0                   | 42.1                 | 84            | 64-129               |
| 75-09-2     | LCS Methylene chloride         | 50.0                  | 0.0                   | 41.7                 | 83            | 66-120               |
| 1634-04-4   | LCS tert-Butyl methyl ether    | 50.0                  | 0.0                   | 47.3                 | 95            | 76-127               |
| 156-60-5    | LCS trans-1,2-Dichloroethylene | 50.0                  | 0.0                   | 45.3                 | 91            | 69-124               |
| 75-34-3     | LCS 1,1-Dichloroethane         | 50.0                  | 0.0                   | 45.9                 | 92            | 71-124               |
| 156-59-2    | LCS cis-1,2-Dichloroethylene   | 50.0                  | 0.0                   | 47.0                 | 94            | 73-124               |
| 74-97-5     | LCS Bromochloromethane         | 50.0                  | 0.0                   | 47.9                 | 96            | 76-123               |
| 67-66-3     | LCS Chloroform                 | 50.0                  | 0.0                   | 46.3                 | 93            | 75-123               |
| 71-55-6     | LCS 1,1,1-Trichloroethane      | 50.0                  | 0.0                   | 44.3                 | 89            | 73-137               |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 2 of 3

SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1612389

Matrix: SOIL

Lab Sample ID 1203666130

Instrument: VOA4.I

Analysis Date: 11/02/2016 11:25

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No     | Parmname                        | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance Limits |
|------------|---------------------------------|-----------------------|-----------------------|----------------------|---------------|-------------------|
| 110-82-7   | LCS Cyclohexane                 | 50.0                  | 0.0                   | 44.9                 | 90            | 66-137            |
| 56-23-5    | LCS Carbon tetrachloride        | 50.0                  | 0.0                   | 46.0                 | 92            | 71-140            |
| 107-06-2   | LCS 1,2-Dichloroethane          | 50.0                  | 0.0                   | 46.8                 | 94            | 72-121            |
| 71-43-2    | LCS Benzene                     | 50.0                  | 0.0                   | 44.7                 | 89            | 71-123            |
| 79-01-6    | LCS Trichloroethylene           | 50.0                  | 0.0                   | 45.9                 | 92            | 72-127            |
| 78-87-5    | LCS 1,2-Dichloropropane         | 50.0                  | 0.0                   | 47.2                 | 94            | 72-120            |
| 108-87-2   | LCS Methylcyclohexane           | 50.0                  | 0.0                   | 44.5                 | 89            | 71-134            |
| 75-27-4    | LCS Bromodichloromethane        | 50.0                  | 0.0                   | 48.7                 | 97            | 76-129            |
| 10061-01-5 | LCS cis-1,3-Dichloropropylene   | 50.0                  | 0.0                   | 47.1                 | 94            | 78-129            |
| 108-88-3   | LCS Toluene                     | 50.0                  | 0.0                   | 44.6                 | 89            | 70-121            |
| 10061-02-6 | LCS trans-1,3-Dichloropropylene | 50.0                  | 0.0                   | 49.4                 | 99            | 78-127            |
| 79-00-5    | LCS 1,1,2-Trichloroethane       | 50.0                  | 0.0                   | 46.3                 | 93            | 74-120            |
| 127-18-4   | LCS Tetrachloroethylene         | 50.0                  | 0.0                   | 43.8                 | 88            | 68-129            |
| 124-48-1   | LCS Dibromochloromethane        | 50.0                  | 0.0                   | 50.1                 | 100           | 78-134            |
| 106-93-4   | LCS 1,2-Dibromoethane           | 50.0                  | 0.0                   | 48.4                 | 97            | 78-121            |
| 108-90-7   | LCS Chlorobenzene               | 50.0                  | 0.0                   | 44.8                 | 90            | 72-120            |
| 100-41-4   | LCS Ethylbenzene                | 50.0                  | 0.0                   | 43.6                 | 87            | 72-123            |
| 95-47-6    | LCS o-Xylene                    | 50.0                  | 0.0                   | 42.7                 | 85            | 72-124            |
| 100-42-5   | LCS Styrene                     | 50.0                  | 0.0                   | 44.8                 | 90            | 72-127            |
| 75-25-2    | LCS Bromoform                   | 50.0                  | 0.0                   | 50.9                 | 102           | 74-133            |
| 98-82-8    | LCS Isopropylbenzene            | 50.0                  | 0.0                   | 44.2                 | 88            | 69-127            |
| 79-34-5    | LCS 1,1,2,2-Tetrachloroethane   | 50.0                  | 0.0                   | 45.6                 | 91            | 72-123            |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 3 of 3

SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1612389

Matrix: SOIL

Lab Sample ID 1203666130

Instrument: VOA4.I

Analysis Date: 11/02/2016 11:25

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No   | Parmname                        | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|----------|---------------------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|
| 541-73-1 | LCS 1,3-Dichlorobenzene         | 50.0                     | 0.0                      | 44.0                    | 88            | 70-119               |
| 106-46-7 | LCS 1,4-Dichlorobenzene         | 50.0                     | 0.0                      | 44.1                    | 88            | 70-119               |
| 96-12-8  | LCS 1,2-Dibromo-3-chloropropane | 50.0                     | 0.0                      | 48.0                    | 96            | 70-139               |
| 87-61-6  | LCS 1,2,3-Trichlorobenzene      | 50.0                     | 0.0                      | 46.3                    | 93            | 69-128               |
| 120-82-1 | LCS 1,2,4-Trichlorobenzene      | 50.0                     | 0.0                      | 45.0                    | 90            | 71-125               |
| 95-50-1  | LCS 1,2-Dichlorobenzene         | 50.0                     | 0.0                      | 44.8                    | 90            | 73-117               |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 3

SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1612389

Matrix: SOIL

Lab Sample ID 1203666131

Instrument: VOA4.I

Analysis Date: 11/03/2016 11:45

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No      | Parmname                       | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance Limits |
|-------------|--------------------------------|-----------------------|-----------------------|----------------------|---------------|-------------------|
| 179601-23-1 | LCS m,p-Xylenes                | 100                   | 0.0                   | 88.0                 | 88            | 72-124            |
| 67-64-1     | LCS Acetone                    | 250                   | 0.0                   | 215                  | 86            | 60-143            |
| 79-20-9     | LCS Methyl acetate             | 250                   | 0.0                   | 209                  | 84            | 69-130            |
| 75-15-0     | LCS Carbon disulfide           | 250                   | 0.0                   | 211                  | 84            | 69-137            |
| 78-93-3     | LCS 2-Butanone                 | 250                   | 0.0                   | 221                  | 88            | 61-140            |
| 108-10-1    | LCS 4-Methyl-2-pentanone       | 250                   | 0.0                   | 215                  | 86            | 65-123            |
| 591-78-6    | LCS 2-Hexanone                 | 250                   | 0.0                   | 235                  | 94            | 61-147            |
| 75-71-8     | LCS Dichlorodifluoromethane    | 50.0                  | 0.0                   | 41.9                 | 84            | 38-165            |
| 74-87-3     | LCS Chloromethane              | 50.0                  | 0.0                   | 42.9                 | 86            | 59-135            |
| 75-01-4     | LCS Vinyl chloride             | 50.0                  | 0.0                   | 48.5                 | 97            | 63-140            |
| 74-83-9     | LCS Bromomethane               | 50.0                  | 0.0                   | 47.8                 | 96            | 63-137            |
| 75-00-3     | LCS Chloroethane               | 50.0                  | 0.0                   | 47.2                 | 94            | 67-129            |
| 75-69-4     | LCS Trichlorofluoromethane     | 50.0                  | 0.0                   | 47.8                 | 96            | 66-141            |
| 75-35-4     | LCS 1,1-Dichloroethylene       | 50.0                  | 0.0                   | 42.0                 | 84            | 64-129            |
| 75-09-2     | LCS Methylene chloride         | 50.0                  | 0.0                   | 40.5                 | 81            | 66-120            |
| 1634-04-4   | LCS tert-Butyl methyl ether    | 50.0                  | 0.0                   | 45.2                 | 90            | 76-127            |
| 156-60-5    | LCS trans-1,2-Dichloroethylene | 50.0                  | 0.0                   | 45.2                 | 90            | 69-124            |
| 75-34-3     | LCS 1,1-Dichloroethane         | 50.0                  | 0.0                   | 45.3                 | 91            | 71-124            |
| 156-59-2    | LCS cis-1,2-Dichloroethylene   | 50.0                  | 0.0                   | 46.0                 | 92            | 73-124            |
| 74-97-5     | LCS Bromochloromethane         | 50.0                  | 0.0                   | 45.3                 | 91            | 76-123            |
| 67-66-3     | LCS Chloroform                 | 50.0                  | 0.0                   | 45.6                 | 91            | 75-123            |
| 71-55-6     | LCS 1,1,1-Trichloroethane      | 50.0                  | 0.0                   | 44.0                 | 88            | 73-137            |



Volatile  
Quality Control Summary  
Spike Recovery Report

Page 2 of 3

SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1612389

Matrix: SOIL

Lab Sample ID 1203666131

Instrument: VOA4.I

Analysis Date: 11/03/2016 11:45

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No     | Parmname                        | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance Limits |
|------------|---------------------------------|-----------------------|-----------------------|----------------------|---------------|-------------------|
| 110-82-7   | LCS Cyclohexane                 | 50.0                  | 0.0                   | 44.3                 | 89            | 66-137            |
| 56-23-5    | LCS Carbon tetrachloride        | 50.0                  | 0.0                   | 45.5                 | 91            | 71-140            |
| 107-06-2   | LCS 1,2-Dichloroethane          | 50.0                  | 0.0                   | 44.4                 | 89            | 72-121            |
| 71-43-2    | LCS Benzene                     | 50.0                  | 0.0                   | 44.0                 | 88            | 71-123            |
| 79-01-6    | LCS Trichloroethylene           | 50.0                  | 0.0                   | 45.5                 | 91            | 72-127            |
| 78-87-5    | LCS 1,2-Dichloropropane         | 50.0                  | 0.0                   | 46.5                 | 93            | 72-120            |
| 108-87-2   | LCS Methylcyclohexane           | 50.0                  | 0.0                   | 44.1                 | 88            | 71-134            |
| 75-27-4    | LCS Bromodichloromethane        | 50.0                  | 0.0                   | 46.9                 | 94            | 76-129            |
| 10061-01-5 | LCS cis-1,3-Dichloropropylene   | 50.0                  | 0.0                   | 45.6                 | 91            | 78-129            |
| 108-88-3   | LCS Toluene                     | 50.0                  | 0.0                   | 45.2                 | 90            | 70-121            |
| 10061-02-6 | LCS trans-1,3-Dichloropropylene | 50.0                  | 0.0                   | 47.9                 | 96            | 78-127            |
| 79-00-5    | LCS 1,1,2-Trichloroethane       | 50.0                  | 0.0                   | 45.2                 | 90            | 74-120            |
| 127-18-4   | LCS Tetrachloroethylene         | 50.0                  | 0.0                   | 44.3                 | 89            | 68-129            |
| 124-48-1   | LCS Dibromochloromethane        | 50.0                  | 0.0                   | 48.2                 | 96            | 78-134            |
| 106-93-4   | LCS 1,2-Dibromoethane           | 50.0                  | 0.0                   | 46.5                 | 93            | 78-121            |
| 108-90-7   | LCS Chlorobenzene               | 50.0                  | 0.0                   | 44.3                 | 89            | 72-120            |
| 100-41-4   | LCS Ethylbenzene                | 50.0                  | 0.0                   | 44.5                 | 89            | 72-123            |
| 95-47-6    | LCS o-Xylene                    | 50.0                  | 0.0                   | 43.0                 | 86            | 72-124            |
| 100-42-5   | LCS Styrene                     | 50.0                  | 0.0                   | 44.4                 | 89            | 72-127            |
| 75-25-2    | LCS Bromoform                   | 50.0                  | 0.0                   | 47.5                 | 95            | 74-133            |
| 98-82-8    | LCS Isopropylbenzene            | 50.0                  | 0.0                   | 44.0                 | 88            | 69-127            |
| 79-34-5    | LCS 1,1,2,2-Tetrachloroethane   | 50.0                  | 0.0                   | 43.8                 | 88            | 72-123            |

Volatile  
Quality Control Summary  
Spike Recovery Report

Page 3 of 3

SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1612389

Matrix: SOIL

Lab Sample ID 1203666131

Instrument: VOA4.I

Analysis Date: 11/03/2016 11:45

Dilution: 1

Analyst: ACJ

Prep Batch ID: 1612389

Purge Vol: 5 mL

Batch ID: 1612391

| CAS No   | Parmname                        | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|----------|---------------------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|
| 541-73-1 | LCS 1,3-Dichlorobenzene         | 50.0                     | 0.0                      | 43.2                    | 86            | 70-119               |
| 106-46-7 | LCS 1,4-Dichlorobenzene         | 50.0                     | 0.0                      | 43.4                    | 87            | 70-119               |
| 96-12-8  | LCS 1,2-Dibromo-3-chloropropane | 50.0                     | 0.0                      | 45.4                    | 91            | 70-139               |
| 87-61-6  | LCS 1,2,3-Trichlorobenzene      | 50.0                     | 0.0                      | 43.3                    | 87            | 69-128               |
| 120-82-1 | LCS 1,2,4-Trichlorobenzene      | 50.0                     | 0.0                      | 42.0                    | 84            | 71-125               |
| 95-50-1  | LCS 1,2-Dichlorobenzene         | 50.0                     | 0.0                      | 43.2                    | 86            | 73-117               |

## Method Blank Summary

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|                |                      |                |                  |            |                   |
|----------------|----------------------|----------------|------------------|------------|-------------------|
| SDG Number:    | 409254               | Client:        | HAAL002          | Matrix:    | SOIL              |
| Client ID:     | MB for batch 1612389 | Instrument ID: | VOA6.I           | Data File: | 110116V6\6G209B.D |
| Lab Sample ID: | 1203660807           | Prep Date:     | 11/01/2016 08:30 | Analyzed:  | 11/01/16 13:00    |
| Column:        | DB-624               |                |                  |            |                   |

This method blank applies to the following samples and quality control samples:

| Client Sample ID          | Lab Sample ID | File ID           | Date Analyzed | Time Analyzed |
|---------------------------|---------------|-------------------|---------------|---------------|
| 01 LCS for batch 1612389  | 1203660808    | 110116V6\6G204L.D | 11/01/16      | 1035          |
| 02 LCSD for batch 1612389 | 1203660809    | 110116V6\6G205D.D | 11/01/16      | 1104          |
| 03 SS110100               | 409254011     | 110116V6\6G215.D  | 11/01/16      | 1622          |
| 04 SS110200               | 409254012     | 110116V6\6G216.D  | 11/01/16      | 1624          |
| 05 SD140300               | 409254013     | 110116V6\6G217.D  | 11/01/16      | 1652          |
| 06 SD140200               | 409254014     | 110116V6\6G218.D  | 11/01/16      | 1721          |
| 07 SD140100               | 409254015     | 110116V6\6G219.D  | 11/01/16      | 1750          |
| 08 SD140100DUP            | 409254016     | 110116V6\6G220.D  | 11/01/16      | 1819          |
| 09 DP020413               | 409254032     | 110116V6\6G222.D  | 11/01/16      | 1917          |
| 10 DP020207               | 409254034     | 110116V6\6G223.D  | 11/01/16      | 1946          |

## Method Blank Summary

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|                |                      |                |                  |            |                    |
|----------------|----------------------|----------------|------------------|------------|--------------------|
| SDG Number:    | 409254               | Client:        | HAAL002          | Matrix:    | SOIL               |
| Client ID:     | MB for batch 1612389 | Instrument ID: | VOA4.I           | Data File: | 110216V4\4H308BH.D |
| Lab Sample ID: | 1203666128           | Prep Date:     | 11/02/2016 08:30 | Analyzed:  | 11/02/16 13:22     |
| Column:        | DB-624               |                |                  |            |                    |

This method blank applies to the following samples and quality control samples:

| Client Sample ID         | Lab Sample ID | File ID            | Date Analyzed | Time Analyzed |
|--------------------------|---------------|--------------------|---------------|---------------|
| 12 LCS for batch 1612389 | 1203666130    | 110216V4\4H304LH.D | 11/02/16      | 1125          |
| 13 DP020312              | 409254029     | 110216V4\4H313.D   | 11/02/16      | 1548          |
| 14 DP020114              | 409254038     | 110216V4\4H315.D   | 11/02/16      | 1646          |
| 15 TB102616              | 409254044     | 110216V4\4H316.D   | 11/02/16      | 1715          |

**Method Blank Summary**

|                       |                             |                       |                         |                   |                           |
|-----------------------|-----------------------------|-----------------------|-------------------------|-------------------|---------------------------|
| <b>SDG Number:</b>    | <b>409254</b>               | <b>Client:</b>        | <b>HAAL002</b>          | <b>Matrix:</b>    | <b>SOIL</b>               |
| <b>Client ID:</b>     | <b>MB for batch 1612389</b> | <b>Instrument ID:</b> | <b>VOA4.I</b>           | <b>Data File:</b> | <b>110316V4\4H407BH.D</b> |
| <b>Lab Sample ID:</b> | <b>1203666129</b>           | <b>Prep Date:</b>     | <b>11/03/2016 08:30</b> | <b>Analyzed:</b>  | <b>11/03/16 13:13</b>     |
| <b>Column:</b>        | <b>DB-624</b>               |                       |                         |                   |                           |

**This method blank applies to the following samples and quality control samples:**

| Client Sample ID         | Lab Sample ID | File ID            | Date Analyzed | Time Analyzed |
|--------------------------|---------------|--------------------|---------------|---------------|
| 17 LCS for batch 1612389 | 1203666131    | 110316V4\4H404LH.D | 11/03/16      | 1145          |
| 18 DP020209              | 409254036     | 110316V4\4H415.D   | 11/03/16      | 1706          |

## Instrument Performance Check

## BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: VOA4.I

Injection Date/Time: 31-OCT-16 16:24

Column Description: DB-624

Lab File ID 103116V4\4H101.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 19.6                 |
| 75  | 30.0 - 60.0% of mass 95            | 44.8                 |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 6.4                  |
| 173 | Less than 2.0% of mass 174         | 0                    |
| 174 | 50.0 - 100.0% of mass 95           | 71.6                 |
| 175 | 5.0 -9.0% of mass 174              | 6.5                  |
| 176 | 95.0 - 101.0% of mass 174          | 96                   |
| 177 | 5.0 - 9.0% of mass 176             | 7.5                  |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID | Lab File ID      | Time Analyzed   |
|------------------|---------------|------------------|-----------------|
| ICALMIX[A]       | W4VM161031-01 | 103116V4\4H102.D | 31-OCT-16 16:55 |
| ICALMIX[A]       | W4VM161031-02 | 103116V4\4H103.D | 31-OCT-16 17:24 |
| ICALMIX[A]       | W4VM161031-03 | 103116V4\4H104.D | 31-OCT-16 17:53 |
| ICALMIX[A]       | W4VM161031-04 | 103116V4\4H105.D | 31-OCT-16 18:22 |
| ICALMIX[A]       | W4VM161031-05 | 103116V4\4H106.D | 31-OCT-16 18:52 |
| ICALMIX[A]       | W4VM161031-06 | 103116V4\4H107.D | 31-OCT-16 19:21 |
| ICALMIX[A]       | W4VM161031-07 | 103116V4\4H108.D | 31-OCT-16 19:49 |
| ICALMIX[A]       | W4VM161031-08 | 103116V4\4H109.D | 31-OCT-16 20:19 |
| ICALMIX[A]       | W4VM161031-09 | 103116V4\4H110.D | 31-OCT-16 20:48 |
| ICVMIX[A]01      | W4VM161031-10 | 103116V4\4H112.D | 31-OCT-16 21:46 |
| ICALMIX[B]       | W4VM161031-11 | 103116V4\4H113.D | 31-OCT-16 22:15 |
| ICALMIX[B]       | W4VM161031-12 | 103116V4\4H114.D | 31-OCT-16 22:45 |
| ICALMIX[B]       | W4VM161031-13 | 103116V4\4H115.D | 31-OCT-16 23:14 |
| ICALMIX[B]       | W4VM161031-14 | 103116V4\4H116.D | 31-OCT-16 23:43 |
| ICALMIX[B]       | W4VM161031-15 | 103116V4\4H117.D | 01-NOV-16 00:12 |
| ICALMIX[B]       | W4VM161031-16 | 103116V4\4H118.D | 01-NOV-16 00:41 |

## Instrument Performance Check

## BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: VOA4.I

Injection Date/Time: 01-NOV-16 08:50

Column Description: DB-624

Lab File ID 110116V4\4H201.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 20                   |
| 75  | 30.0 - 60.0% of mass 95            | 45.7                 |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 7.5                  |
| 173 | Less than 2.0% of mass 174         | 0                    |
| 174 | 50.0 - 100.0% of mass 95           | 70.3                 |
| 175 | 5.0 -9.0% of mass 174              | 7.1                  |
| 176 | 95.0 - 101.0% of mass 174          | 95.3                 |
| 177 | 5.0 - 9.0% of mass 176             | 7                    |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client<br>Sample ID | Lab<br>Sample ID | Lab<br>File ID   | Time<br>Analyzed |
|---------------------|------------------|------------------|------------------|
| ICVMIX[B]02         | W4VM161101-01    | 110116V4\4H202.D | 01-NOV-16 09:21  |

## Instrument Performance Check

## BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: VOA4.I

Injection Date/Time: 02-NOV-16 09:58

Column Description: DB-624

Lab File ID 110216V4\4H301.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 18.9                 |
| 75  | 30.0 - 60.0% of mass 95            | 45                   |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 6.9                  |
| 173 | Less than 2.0% of mass 174         | 0.4                  |
| 174 | 50.0 - 100.0% of mass 95           | 68.4                 |
| 175 | 5.0 - 9.0% of mass 174             | 7.1                  |
| 176 | 95.0 - 101.0% of mass 174          | 95.1                 |
| 177 | 5.0 - 9.0% of mass 176             | 7.9                  |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID | Lab File ID        | Time Analyzed   |
|------------------|---------------|--------------------|-----------------|
| CCVMIX[A]01      | W4VM161102-01 | 110216V4\4H302.D   | 02-NOV-16 10:27 |
| BLK02LCS         | 1203666130    | 110216V4\4H304LH.D | 02-NOV-16 11:25 |
| CCVMIX[B]02      | W4VM161102-05 | 110216V4\4H306.D   | 02-NOV-16 12:24 |
| BLK02            | 1203666128    | 110216V4\4H308BH.D | 02-NOV-16 13:22 |
| DP020312         | 409254029     | 110216V4\4H313.D   | 02-NOV-16 15:48 |
| DP020114         | 409254038     | 110216V4\4H315.D   | 02-NOV-16 16:46 |
| TB102616         | 409254044     | 110216V4\4H316.D   | 02-NOV-16 17:15 |



## Instrument Performance Check

## BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: VOA4.I

Injection Date/Time: 03-NOV-16 10:17

Column Description: DB-624

Lab File ID 110316V4\4H401.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 20.4                 |
| 75  | 30.0 - 60.0% of mass 95            | 48.9                 |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 6.8                  |
| 173 | Less than 2.0% of mass 174         | 0                    |
| 174 | 50.0 - 100.0% of mass 95           | 69.4                 |
| 175 | 5.0 -9.0% of mass 174              | 7.7                  |
| 176 | 95.0 - 101.0% of mass 174          | 95.7                 |
| 177 | 5.0 - 9.0% of mass 176             | 7.4                  |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID | Lab File ID        | Time Analyzed   |
|------------------|---------------|--------------------|-----------------|
| CCVMIX[A]03      | W4VM161103-01 | 110316V4\4H402.D   | 03-NOV-16 10:46 |
| BLK03LCS         | 1203666131    | 110316V4\4H404LH.D | 03-NOV-16 11:45 |
| CCVMIX[B]04      | W4VM161103-04 | 110316V4\4H405.D   | 03-NOV-16 12:14 |
| BLK03            | 1203666129    | 110316V4\4H407BH.D | 03-NOV-16 13:13 |
| DP020209         | 409254036     | 110316V4\4H415.D   | 03-NOV-16 17:06 |

## Instrument Performance Check

## BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: VOA6.I

Injection Date/Time: 13-OCT-16 16:42

Column Description: DB-624

Lab File ID 101316V6\6D401.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 24.9                 |
| 75  | 30.0 - 60.0% of mass 95            | 50.3                 |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 6.3                  |
| 173 | Less than 2.0% of mass 174         | 0                    |
| 174 | 50.0 - 100.0% of mass 95           | 77                   |
| 175 | 5.0 -9.0% of mass 174              | 9                    |
| 176 | 95.0 - 101.0% of mass 174          | 99.6                 |
| 177 | 5.0 - 9.0% of mass 176             | 6.3                  |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID | Lab File ID      | Time Analyzed   |
|------------------|---------------|------------------|-----------------|
| ICALMIX[A]       | W6VM161013-01 | 101316V6\6D402.D | 13-OCT-16 17:11 |
| ICALMIX[A]       | W6VM161013-02 | 101316V6\6D403.D | 13-OCT-16 17:39 |
| ICALMIX[A]       | W6VM161013-03 | 101316V6\6D404.D | 13-OCT-16 18:08 |
| ICALMIX[A]       | W6VM161013-04 | 101316V6\6D405.D | 13-OCT-16 18:37 |
| ICALMIX[A]       | W6VM161013-05 | 101316V6\6D406.D | 13-OCT-16 19:06 |
| ICALMIX[A]       | W6VM161013-06 | 101316V6\6D407.D | 13-OCT-16 19:35 |
| ICALMIX[A]       | W6VM161013-07 | 101316V6\6D408.D | 13-OCT-16 20:03 |
| ICALMIX[A]       | W6VM161013-08 | 101316V6\6D409.D | 13-OCT-16 20:32 |
| ICALMIX[A]       | W6VM161013-09 | 101316V6\6D410.D | 13-OCT-16 21:01 |
| ICALMIX[B]       | W6VM161013-12 | 101316V6\6D413.D | 13-OCT-16 22:27 |
| ICALMIX[B]       | W6VM161013-13 | 101316V6\6D414.D | 13-OCT-16 22:56 |
| ICALMIX[B]       | W6VM161013-14 | 101316V6\6D415.D | 13-OCT-16 23:25 |
| ICALMIX[B]       | W6VM161013-15 | 101316V6\6D416.D | 13-OCT-16 23:54 |
| ICALMIX[B]       | W6VM161013-16 | 101316V6\6D417.D | 14-OCT-16 00:22 |
| ICALMIX[B]       | W6VM161013-17 | 101316V6\6D418.D | 14-OCT-16 00:52 |
| ICALMIX[B]       | W6VM161013-18 | 101316V6\6D419.D | 14-OCT-16 01:20 |
| ICVMIX[B]01      | W6VM161013-19 | 101316V6\6D421.D | 14-OCT-16 02:18 |

## Instrument Performance Check

## BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: VOA6.I

Injection Date/Time: 14-OCT-16 09:30

Column Description: DB-624

Lab File ID 101416V6\6D501.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 22                   |
| 75  | 30.0 - 60.0% of mass 95            | 47.2                 |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 6.1                  |
| 173 | Less than 2.0% of mass 174         | 0.9                  |
| 174 | 50.0 - 100.0% of mass 95           | 74.3                 |
| 175 | 5.0 -9.0% of mass 174              | 8                    |
| 176 | 95.0 - 101.0% of mass 174          | 97.5                 |
| 177 | 5.0 - 9.0% of mass 176             | 6.5                  |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client<br>Sample ID | Lab<br>Sample ID | Lab<br>File ID   | Time<br>Analyzed |
|---------------------|------------------|------------------|------------------|
| ICVMIX[A]02         | W6VM161014-01    | 101416V6\6D502.D | 14-OCT-16 09:59  |

## Instrument Performance Check

## BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: VOA6.I

Injection Date/Time: 01-NOV-16 09:08

Column Description: DB-624

Lab File ID 110116V6\6G201.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 50  | 15.0 - 40.0% of mass 95            | 24.6                 |
| 75  | 30.0 - 60.0% of mass 95            | 48                   |
| 95  | Base Peak, 100% Relative Abundance | 100                  |
| 96  | 5.0 - 9.0% of mass 95              | 7.7                  |
| 173 | Less than 2.0% of mass 174         | 0                    |
| 174 | 50.0 - 100.0% of mass 95           | 73.4                 |
| 175 | 5.0 - 9.0% of mass 174             | 7.5                  |
| 176 | 95.0 - 101.0% of mass 174          | 100.5                |
| 177 | 5.0 - 9.0% of mass 176             | 8.2                  |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD, BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID | Lab File ID       | Time Analyzed   |
|------------------|---------------|-------------------|-----------------|
| CCVMIX[A]01      | W6VM161101-01 | 110116V6\6G202.D  | 01-NOV-16 09:37 |
| BLK01LCS         | 1203660808    | 110116V6\6G204L.D | 01-NOV-16 10:35 |
| BLK01LCSD        | 1203660809    | 110116V6\6G205D.D | 01-NOV-16 11:04 |
| CCVMIX[B]02      | W6VM161101-05 | 110116V6\6G206.D  | 01-NOV-16 11:33 |
| BLK01            | 1203660807    | 110116V6\6G209B.D | 01-NOV-16 13:00 |
| SS110100         | 409254011     | 110116V6\6G215.D  | 01-NOV-16 16:22 |
| SS110200         | 409254012     | 110116V6\6G216.D  | 01-NOV-16 16:24 |
| SD140300         | 409254013     | 110116V6\6G217.D  | 01-NOV-16 16:52 |
| SD140200         | 409254014     | 110116V6\6G218.D  | 01-NOV-16 17:21 |
| SD140100         | 409254015     | 110116V6\6G219.D  | 01-NOV-16 17:50 |
| SD140100DUP      | 409254016     | 110116V6\6G220.D  | 01-NOV-16 18:19 |
| DP020413         | 409254032     | 110116V6\6G222.D  | 01-NOV-16 19:17 |
| DP020207         | 409254034     | 110116V6\6G223.D  | 01-NOV-16 19:46 |

Internal Standard  
Area and RT Summary

Lab Name : GEL Laboratories LLC  
Instrument: VOA4.I  
GC Column: DB-624

Client SDG: 409254  
STD Analysis Time: 02-NOV-16 10:27  
Data File: 110216V4\4H302.D

|             | Fluorobenzene |        | Chlorobenzene-d5 |        | 1,4-Dichlorobenzene-d4 |        |
|-------------|---------------|--------|------------------|--------|------------------------|--------|
|             | Area          | # RT # | Area             | # RT # | Area                   | # RT # |
| 12 Hour STD | 1162907       | 10.3   | 859639           | 13.5   | 455873                 | 15.9   |
| Upper Limit | 2325814       | 10.8   | 1719278          | 14.0   | 911746                 | 16.4   |
| Lower Limit | 581454        | 9.83   | 429820           | 13.0   | 227937                 | 15.4   |
| Sample ID   |               |        |                  |        |                        |        |
| BLK02LCS    | 1165495       | 10.3   | 851584           | 13.5   | 448758                 | 15.9   |
| BLK02       | 1143362       | 10.3   | 823292           | 13.5   | 423115                 | 15.9   |
| DP020312    | 1092772       | 10.3   | 773910           | 13.5   | 392295                 | 15.9   |
| DP020114    | 1131661       | 10.3   | 799908           | 13.5   | 411993                 | 15.9   |
| TB102616    | 1140923       | 10.3   | 819972           | 13.5   | 423435                 | 15.9   |

Area Upper Limit = +100% of internal standard area  
Area Lower Limit = - 50% of internal standard area  
RT Upper Limit = + 0.50 minutes of internal standard RT  
RT Lower Limit = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk  
\* Value outside of QC Limits

Internal Standard  
Area and RT Summary

Lab Name : GEL Laboratories LLC  
Instrument: VOA4.I  
GC Column: DB-624

Client SDG: 409254  
STD Analysis Time: 03-NOV-16 10:46  
Data File: 110316V4\4H402.D

|             | Fluorobenzene |        | Chlorobenzene-d5 |        | 1,4-Dichlorobenzene-d4 |        |
|-------------|---------------|--------|------------------|--------|------------------------|--------|
|             | Area          | # RT # | Area             | # RT # | Area                   | # RT # |
| 12 Hour STD | 1176019       | 10.3   | 869583           | 13.5   | 457978                 | 15.9   |
| Upper Limit | 2352038       | 10.8   | 1739166          | 14.0   | 915956                 | 16.4   |
| Lower Limit | 588010        | 9.83   | 434792           | 13.0   | 228989                 | 15.4   |
| Sample ID   |               |        |                  |        |                        |        |
| BLK03LCS    | 1125183       | 10.3   | 805821           | 13.5   | 427840                 | 15.9   |
| BLK03       | 1162222       | 10.3   | 844132           | 13.5   | 437477                 | 15.9   |
| DP020209    | 1063915       | 10.3   | 745451           | 13.5   | 360676                 | 15.9   |

Area Upper Limit = +100% of internal standard area  
Area Lower Limit = - 50% of internal standard area  
RT Upper Limit = + 0.50 minutes of internal standard RT  
RT Lower Limit = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk  
\* Value outside of QC Limits

Internal Standard  
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 409254

Instrument: VOA6.I

STD Analysis Time: 01-NOV-16 09:37

GC Column: DB-624

Data File: 110116V6\6G202.D

|             | Fluorobenzene |        | Chlorobenzene-d5 |        | 1,4-Dichlorobenzene-d4 |        |
|-------------|---------------|--------|------------------|--------|------------------------|--------|
|             | Area          | # RT # | Area             | # RT # | Area                   | # RT # |
| 12 Hour STD | 1822715       | 9.44   | 1412183          | 12.6   | 745710                 | 15.1   |
| Upper Limit | 3645430       | 9.94   | 2824366          | 13.1   | 1491420                | 15.6   |
| Lower Limit | 911358        | 8.94   | 706092           | 12.1   | 372855                 | 14.6   |
| Sample ID   |               |        |                  |        |                        |        |
| BLK01LCS    | 1820995       | 9.44   | 1415124          | 12.6   | 732505                 | 15.1   |
| BLK01LCSD   | 1800284       | 9.44   | 1390236          | 12.6   | 747102                 | 15.1   |
| BLK01       | 1796311       | 9.44   | 1361879          | 12.6   | 704101                 | 15.1   |
| SS110100    | 1692788       | 9.45   | 1258163          | 12.6   | 620984                 | 15.1   |
| SS110200    | 1659193       | 9.44   | 1273501          | 12.6   | 676715                 | 15.1   |
| SD140300    | 1547967       | 9.44   | 1118738          | 12.6   | 475055                 | 15.1   |
| SD140200    | 1590224       | 9.44   | 1210418          | 12.6   | 612752                 | 15.1   |
| SD140100    | 1457795       | 9.44   | 1035860          | 12.6   | 425135                 | 15.1   |
| SD140100DUP | 1402220       | 9.44   | 1005733          | 12.6   | 443926                 | 15.1   |
| DP020413    | 1511601       | 9.44   | 1163989          | 12.6   | 597925                 | 15.1   |
| DP020207    | 1303748       | 9.44   | 1013750          | 12.6   | 537243                 | 15.1   |

Area Upper Limit = +100% of internal standard area  
Area Lower Limit = - 50% of internal standard area  
RT Upper Limit = + 0.50 minutes of internal standard RT  
RT Lower Limit = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk  
\* Value outside of QC Limits

# Sample Data



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254011

**Date Collected:** 10/24/2016 10:04  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 5.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 4.2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-34-3  | 1,1-Dichloroethane          | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 0.932  | ug/kg | 0.466   | 0.932   |
| 106-93-4 | 1,2-Dibromoethane           | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 107-06-2 | 1,2-Dichloroethane          | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 78-87-5  | 1,2-Dichloropropane         | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 123-91-1 | 1,4-Dioxane                 | U         | 46.6   | ug/kg | 15.5    | 46.6    |
| 78-93-3  | 2-Butanone                  | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 591-78-6 | 2-Hexanone                  | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 67-64-1  | Acetone                     | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 71-43-2  | Benzene                     | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 74-97-5  | Bromochloromethane          | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-27-4  | Bromodichloromethane        | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-25-2  | Bromoform                   | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 74-83-9  | Bromomethane                | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-15-0  | Carbon disulfide            | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 56-23-5  | Carbon tetrachloride        | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 108-90-7 | Chlorobenzene               | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-00-3  | Chloroethane                | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 67-66-3  | Chloroform                  | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 74-87-3  | Chloromethane               | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 110-82-7 | Cyclohexane                 | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 124-48-1 | Dibromochloromethane        | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-71-8  | Dichlorodifluoromethane     | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 100-41-4 | Ethylbenzene                | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 98-82-8  | Isopropylbenzene            | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 79-20-9  | Methyl acetate              | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 108-87-2 | Methylcyclohexane           | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-09-2  | Methylene chloride          | U         | 4.66   | ug/kg | 1.55    | 4.66    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254011

**Date Collected:** 10/24/2016 10:04  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 5.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 4.2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 127-18-4    | Tetrachloroethylene         | J         | 0.317  | ug/kg | 0.310   | 0.932   |
| 108-88-3    | Toluene                     | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 79-01-6     | Trichloroethylene           | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 75-69-4     | Trichlorofluoromethane      | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 4.66   | ug/kg | 1.55    | 4.66    |
| 75-01-4     | Vinyl chloride              | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 179601-23-1 | m,p-Xylenes                 | U         | 1.86   | ug/kg | 0.622   | 1.86    |
| 95-47-6     | o-Xylene                    | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 1634-04-4   | tert-Butyl methyl ether     | J         | 0.336  | ug/kg | 0.310   | 0.932   |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 0.932  | ug/kg | 0.310   | 0.932   |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.932  | ug/kg | 0.310   | 0.932   |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G215.D  
Acq On : 01 Nov 2016 16:22  
Operator : ACJ  
InstName : VOA6  
Sample : |409254011|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.6G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 02 09:20:00 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.446  | 9.440  | 1.000  | 1692788  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.629 | 1.000  | 1258163  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 620984   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.446  | 9.440  | 1.000  | 1692788  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.628 | 1.000  | 1258163  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 620984   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 585486  | 52.59 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1706246 | 50.85 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 652221  | 51.93 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 105%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 102%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 104%     |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000 | 4.001  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              | 50   | 4.281 | 4.282  | 0.453  | 189      | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000 | 4.498  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000 | 5.020  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000 | 5.156  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000 | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                | 59   | 5.830 | 5.830  | 0.617  | 368      | N.D. |       |        |
| 9) Acetone                    | 43   | 6.203 | 6.197  | 0.657  | 1434     | N.D. |       |        |
| 10) 1,1-Dichloroethylene      |      | 0.000 | 6.191  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 0.000 | 6.429  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              | 41   | 6.575 | 6.550  | 0.696  | 1458     | N.D. |       |        |
| 13) Methyl acetate            | 43   | 6.569 | 6.575  | 0.695  | 247      | N.D. |       |        |
| 14) Carbon disulfide          | 76   | 6.550 | 6.550  | 0.693  | 1406     | N.D. |       |        |
| 15) Methylene chloride        | 84   | 6.758 | 6.764  | 0.715  | 16049    | N.D. |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.062 | 7.050  | 0.748  | 12187    | 0.36 | ug/L  | 97     |
| 17) trans-1,2-Dichloroethy... |      | 0.000 | 7.093  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    | 57   | 7.367 | 7.367  | 0.780  | 469      | N.D. |       |        |
| 19) Vinyl acetate             | 43   | 7.593 | 7.538  | 0.804  | 134      | N.D. |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000 | 7.575  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                | 43   | 8.196 | 8.160  | 0.868  | 4296     | N.D. |       |        |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.190 | 8.209  | 0.867  | 818      | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000 | 8.233  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000 | 8.483  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                | 83   | 8.519 | 8.520  | 0.902  | 749      | N.D. |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000 | 8.788  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 0.000 | 8.873  | 0.000  | 0        | N.D. |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000 | 8.946  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000 | 8.977  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        | 62   | 9.172 | 9.172  | 0.971  | 166      | N.D. |       |        |
| 32) Benzene                   | 78   | 9.178 | 9.184  | 0.972  | 985      | N.D. |       |        |
| 33) Cyclohexene               | 67   | 9.300 | 9.294  | 0.985  | 326      | N.D. |       |        |
| 34) n-Butyl alcohol           | 56   | 9.513 | 9.568  | 1.007  | 125      | N.D. |       |        |
| 35) Trichloroethylene         | 95   | 9.830 | 9.830  | 1.041  | 239      | N.D. |       |        |
| 36) 2-Pentanone               |      | 0.000 | 9.928  | 0.000  | 0        | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000 | 10.080 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 0.000 | 10.068 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G215.D  
Acq On : 01 Nov 2016 16:22  
Operator : ACJ  
InstName : VOA6  
Sample : |409254011|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.6G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 02 09:20:00 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D.      |       |
| 40) Bromodichloromethane      |      | 0.000  | 10.330 | 0.000  | 0        | N.D.      |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D.      |       |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 10.787 | 0.000  | 0        | N.D.      |       |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 10.891 | 0.000  | 0        | N.D.      |       |
| 46) Toluene                   | 91   | 11.171 | 11.172 | 0.885  | 3729     | N.D.      |       |
| 47) trans-1,3-Dichloroprop... |      | 0.000  | 11.342 | 0.000  | 0        | N.D.      |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D.      |       |
| 49) 2-Hexanone                | 43   | 11.750 | 11.745 | 0.930  | 198      | N.D.      |       |
| 50) 1,3-Dichloropropane       |      | 0.000  | 11.751 | 0.000  | 0        | N.D.      |       |
| 51) Tetrachloroethylene       | 164  | 11.757 | 11.763 | 0.931  | 2929     | 0.34 ug/L | 90    |
| 52) Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D.      |       |
| 53) 1,2-Dibromoethane         |      | 0.000  | 12.177 | 0.000  | 0        | N.D.      |       |
| 54) Chlorobenzene             | 112  | 12.659 | 12.665 | 1.002  | 786      | N.D.      |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.720 | 0.000  | 0        | N.D.      |       |
| 56) Ethylbenzene              | 91   | 12.750 | 12.732 | 1.010  | 1026     | N.D.      |       |
| 57) m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 1103     | N.D.      |       |
| 58) o-Xylene                  | 91   | 13.281 | 13.275 | 1.052  | 521      | N.D.      |       |
| 59) Styrene                   | 104  | 13.287 | 13.281 | 1.052  | 2893     | N.D.      |       |
| 61) Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.      |       |
| 62) Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 193      | N.D.      |       |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 131      | N.D.      |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.      |       |
| 66) Bromobenzene              | 156  | 14.037 | 14.043 | 0.932  | 526      | N.D.      |       |
| 67) n-Propylbenzene           | 91   | 14.073 | 14.067 | 0.935  | 765      | N.D.      |       |
| 68) 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 204      | N.D.      |       |
| 69) 2-Chlorotoluene           |      | 0.000  | 14.214 | 0.000  | 0        | N.D.      |       |
| 70) 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 1441     | N.D.      |       |
| 71) tert-Butylbenzene         |      | 0.000  | 14.592 | 0.000  | 0        | N.D.      |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.634 | 0.972  | 782      | N.D.      |       |
| 73) sec-Butylbenzene          | 105  | 14.817 | 14.817 | 0.984  | 147      | N.D.      |       |
| 74) 4-Isopropyltoluene        |      | 0.000  | 14.592 | 0.000  | 0        | N.D.      |       |
| 75) 1,3-Dichlorobenzene       | 146  | 14.994 | 14.994 | 0.996  | 1170     | N.D.      |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.085 | 15.085 | 1.002  | 2834     | N.D.      |       |
| 77) n-Butylbenzene            | 91   | 15.372 | 15.372 | 1.021  | 311      | N.D.      |       |
| 78) 1,2-Dichlorobenzene       | 146  | 15.500 | 15.494 | 1.030  | 711      | N.D.      |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.      |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.286 | 17.280 | 1.148  | 1075     | N.D.      |       |
| 81) Hexachlorobutadiene       |      | 0.000  | 17.445 | 0.000  | 0        | N.D.      |       |
| 82) Naphthalene               | 128  | 17.633 | 17.628 | 1.171  | 2158     | N.D.      |       |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.950 | 17.945 | 1.192  | 545      | N.D.      |       |
| 85) Acrolein                  |      | 0.000  | 6.026  | 0.000  | 0        | N.D.      |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 6.185  | 0.000  | 0        | N.D.      |       |
| 87) Isopropyl Alcohol         | 45   | 6.331  | 6.282  | 0.670  | 136      | N.D.      |       |
| 88) Allyl chloride            | 41   | 6.623  | 6.611  | 0.701  | 413      | N.D.      |       |
| 89) tert-Butyl Alcohol        | 59   | 6.782  | 6.770  | 0.718  | 8164     | N.D.      |       |
| 90) Acrylonitrile             |      | 0.000  | 7.014  | 0.000  | 0        | N.D.      |       |
| 91) Isopropyl ether           |      | 0.000  | 7.556  | 0.000  | 0        | N.D.      |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 7.672  | 0.000  | 0        | N.D.      |       |
| 93) Ethyl tert-butyl ether    | 59   | 7.946  | 7.965  | 0.841  | 564      | N.D.      |       |
| 94) Ethyl acetate             | 43   | 8.196  | 8.178  | 0.868  | 4296     | N.D.      |       |
| 95) Propionitrile             |      | 0.000  | 8.245  | 0.000  | 0        | N.D.      |       |
| 96) Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.      |       |
| 97) Tetrahydrofuran           | 42   | 8.532  | 8.526  | 0.903  | 3218     | N.D.      |       |
| 98) Isobutyl alcohol          |      | 0.000  | 8.873  | 0.000  | 0        | N.D.      |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G215.D  
Acq On : 01 Nov 2016 16:22  
Operator : ACJ  
InstName : VOA6  
Sample : |409254011|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.6G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 02 09:20:00 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

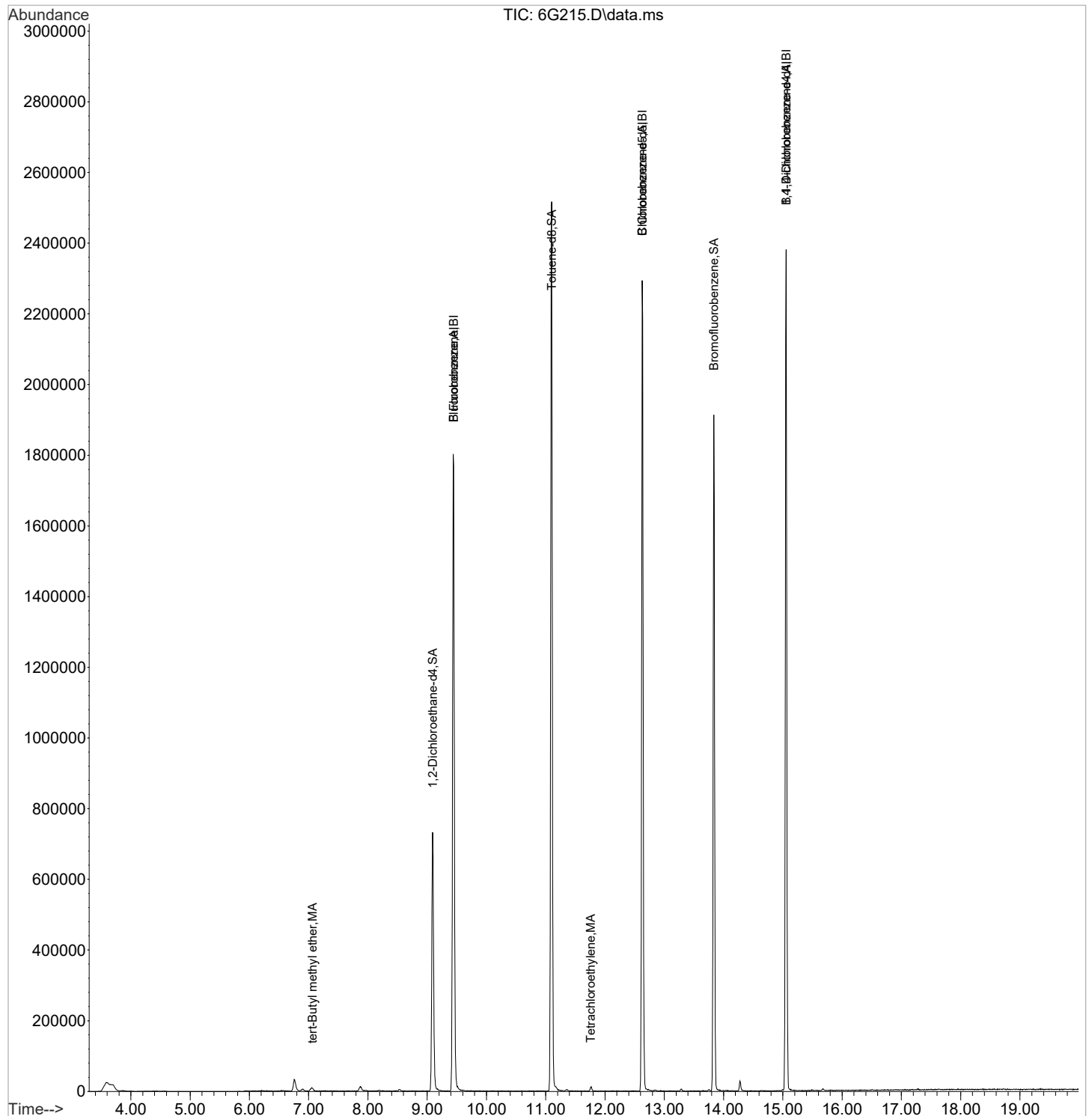
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 99) Methyl tert-amyl ether     |      | 0.000  | 9.214  | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       | 69   | 10.080 | 10.068 | 1.067  | 106      | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 10.172 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 10.543 | 0.000  | 0        | N.D.      |       |
| 104) Ethyl methacrylate        |      | 0.000  | 11.348 | 0.000  | 0        | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D.      |       |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 13.689 | 0.000  | 0        | N.D.      |       |
| 108) Cyclohexanone             |      | 0.000  | 13.793 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 13.976 | 0.000  | 0        | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 14.658 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 907      | Below Cal | #     |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.670 | 15.591 | 1.041  | 118      | N.D.      |       |

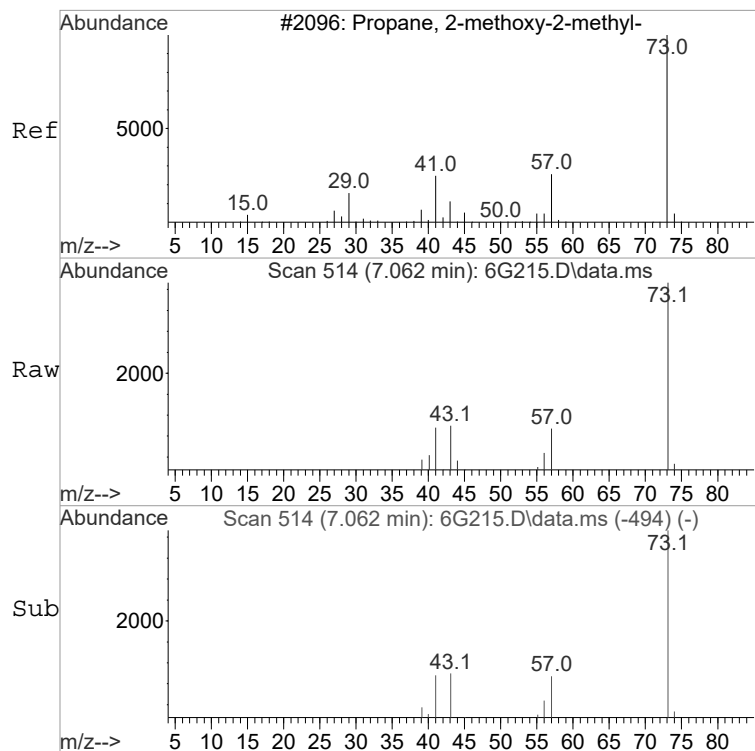
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G215.D  
Acq On : 01 Nov 2016 16:22  
Operator : ACJ  
InstName : VOA6  
Sample : |409254011|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.6G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

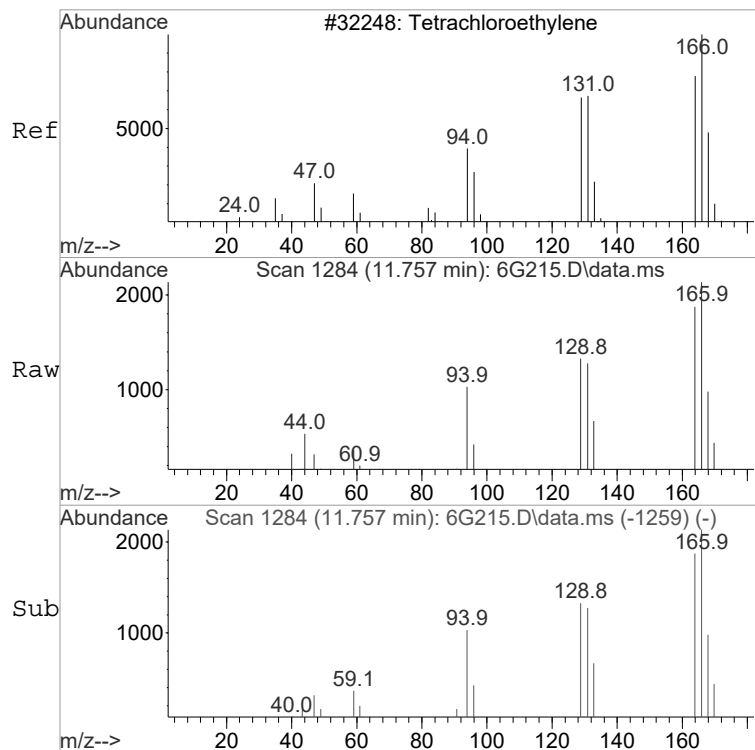
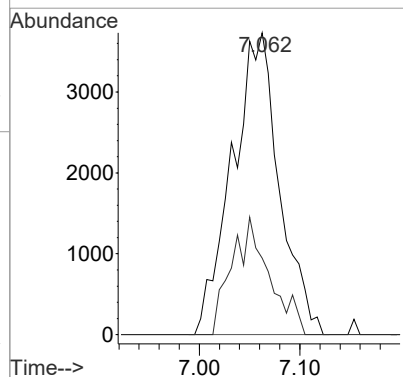
Quant Time: Nov 02 09:20:00 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE





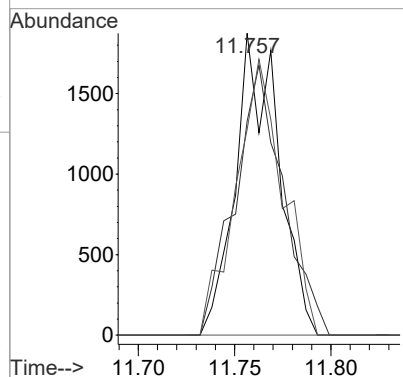
#16  
tert-Butyl methyl ether  
Concen: 0.36 ug/L  
RT: 7.062 min Scan# 514  
Delta R.T. 0.012 min  
Lab File: 6G215.D  
Acq: 01 Nov 2016 16:22

Tgt Ion: 73 Resp: 12187  
Ion Ratio Lower Upper  
73 100  
57 31.1 0.0 59.4



#51  
Tetrachloroethylene  
Concen: 0.34 ug/L  
RT: 11.757 min Scan# 1284  
Delta R.T. -0.006 min  
Lab File: 6G215.D  
Acq: 01 Nov 2016 16:22

Tgt Ion: 164 Resp: 2929  
Ion Ratio Lower Upper  
164 100  
129 99.8 61.6 121.6  
131 99.3 59.4 119.4



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254012

**Date Collected:** 10/24/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 6.7 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 17.4  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-34-3  | 1,1-Dichloroethane          | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 0.903  | ug/kg | 0.452   | 0.903   |
| 106-93-4 | 1,2-Dibromoethane           | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 107-06-2 | 1,2-Dichloroethane          | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 78-87-5  | 1,2-Dichloropropane         | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 123-91-1 | 1,4-Dioxane                 | U         | 45.2   | ug/kg | 15.1    | 45.2    |
| 78-93-3  | 2-Butanone                  | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 591-78-6 | 2-Hexanone                  | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 67-64-1  | Acetone                     | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 71-43-2  | Benzene                     | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 74-97-5  | Bromochloromethane          | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-27-4  | Bromodichloromethane        | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-25-2  | Bromoform                   | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 74-83-9  | Bromomethane                | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-15-0  | Carbon disulfide            | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 56-23-5  | Carbon tetrachloride        | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 108-90-7 | Chlorobenzene               | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-00-3  | Chloroethane                | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 67-66-3  | Chloroform                  | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 74-87-3  | Chloromethane               | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 110-82-7 | Cyclohexane                 | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 124-48-1 | Dibromochloromethane        | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-71-8  | Dichlorodifluoromethane     | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 100-41-4 | Ethylbenzene                | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 98-82-8  | Isopropylbenzene            | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 79-20-9  | Methyl acetate              | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 108-87-2 | Methylcyclohexane           | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-09-2  | Methylene chloride          | U         | 4.52   | ug/kg | 1.51    | 4.52    |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254012

**Client ID:** SS110200  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 16:24  
**Prep Date:** 10/24/2016 10:54  
**Data File:** 110116V6\6G216.D

**Date Collected:** 10/24/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 6.7 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 17.4  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 127-18-4    | Tetrachloroethylene         | J         | 0.506  | ug/kg | 0.301   | 0.903   |
| 108-88-3    | Toluene                     | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 79-01-6     | Trichloroethylene           | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 75-69-4     | Trichlorofluoromethane      | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 4.52   | ug/kg | 1.51    | 4.52    |
| 75-01-4     | Vinyl chloride              | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 179601-23-1 | m,p-Xylenes                 | U         | 1.81   | ug/kg | 0.602   | 1.81    |
| 95-47-6     | o-Xylene                    | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 0.903  | ug/kg | 0.301   | 0.903   |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.903  | ug/kg | 0.301   | 0.903   |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G216.D  
Acq On : 01 Nov 2016 16:24  
Operator : ACJ  
InstName : VOA6  
Sample : |409254012|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.7G N/A SOIL  
ALS Vial : 16 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 02 09:20:02 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1659193  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.635 | 12.629 | 1.000  | 1273501  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 676715   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1659193  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.635 | 12.628 | 1.000  | 1273501  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 676715   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 586218  | 53.72 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 1691779 | 49.82 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 685428  | 50.08 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 107%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 100%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 100%     |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000 | 4.001  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 0.000 | 4.282  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000 | 4.498  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000 | 5.020  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000 | 5.156  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000 | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                | 59   | 5.822 | 5.830  | 0.617  | 555      | N.D. |       |        |
| 9) Acetone                    | 43   | 6.215 | 6.197  | 0.658  | 3717     | N.D. |       |        |
| 10) 1,1-Dichloroethylene      |      | 0.000 | 6.191  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 0.000 | 6.429  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              | 41   | 6.550 | 6.550  | 0.694  | 840      | N.D. |       |        |
| 13) Methyl acetate            | 43   | 6.581 | 6.575  | 0.697  | 699      | N.D. |       |        |
| 14) Carbon disulfide          | 76   | 6.532 | 6.550  | 0.692  | 912      | N.D. |       |        |
| 15) Methylene chloride        | 84   | 6.758 | 6.764  | 0.716  | 15010    | N.D. |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.050 | 7.050  | 0.747  | 5381     | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000 | 7.093  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    | 57   | 7.361 | 7.367  | 0.780  | 905      | N.D. |       |        |
| 19) Vinyl acetate             | 43   | 7.556 | 7.538  | 0.800  | 145      | N.D. |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000 | 7.575  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                | 43   | 8.184 | 8.160  | 0.867  | 6736     | N.D. |       |        |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.203 | 8.209  | 0.869  | 781      | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000 | 8.233  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000 | 8.483  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                | 83   | 8.513 | 8.520  | 0.902  | 266      | N.D. |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000 | 8.788  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 0.000 | 8.873  | 0.000  | 0        | N.D. |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000 | 8.946  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000 | 8.977  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        | 62   | 9.111 | 9.172  | 0.965  | 488      | N.D. |       |        |
| 32) Benzene                   | 78   | 9.196 | 9.184  | 0.974  | 1035     | N.D. |       |        |
| 33) Cyclohexene               |      | 0.000 | 9.294  | 0.000  | 0        | N.D. |       |        |
| 34) n-Butyl alcohol           | 56   | 9.666 | 9.568  | 1.024  | 166      | N.D. |       |        |
| 35) Trichloroethylene         | 95   | 9.824 | 9.830  | 1.041  | 148      | N.D. |       |        |
| 36) 2-Pentanone               |      | 0.000 | 9.928  | 0.000  | 0        | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000 | 10.080 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 0.000 | 10.068 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G216.D  
Acq On : 01 Nov 2016 16:24  
Operator : ACJ  
InstName : VOA6  
Sample : |409254012|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.7G N/A SOIL  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 02 09:20:02 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D.      |       |
| 40) Bromodichloromethane      |      | 0.000  | 10.330 | 0.000  | 0        | N.D.      |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D.      |       |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 10.787 | 0.000  | 0        | N.D.      |       |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 10.891 | 0.000  | 0        | N.D.      |       |
| 46) Toluene                   | 91   | 11.165 | 11.172 | 0.884  | 4377     | N.D.      |       |
| 47) trans-1,3-Dichloroprop... |      | 0.000  | 11.342 | 0.000  | 0        | N.D.      |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D.      |       |
| 49) 2-Hexanone                | 43   | 11.763 | 11.745 | 0.931  | 185      | N.D.      |       |
| 50) 1,3-Dichloropropane       |      | 0.000  | 11.751 | 0.000  | 0        | N.D.      |       |
| 51) Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 4864     | 0.56 ug/L | 92    |
| 52) Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D.      |       |
| 53) 1,2-Dibromoethane         |      | 0.000  | 12.177 | 0.000  | 0        | N.D.      |       |
| 54) Chlorobenzene             | 112  | 12.659 | 12.665 | 1.002  | 950      | N.D.      |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.720 | 0.000  | 0        | N.D.      |       |
| 56) Ethylbenzene              | 91   | 12.738 | 12.732 | 1.008  | 946      | N.D.      |       |
| 57) m,p-Xylenes               | 106  | 12.854 | 12.842 | 1.017  | 925      | N.D.      |       |
| 58) o-Xylene                  | 91   | 13.281 | 13.275 | 1.051  | 802      | N.D.      |       |
| 59) Styrene                   | 104  | 13.293 | 13.281 | 1.052  | 3255     | N.D.      |       |
| 61) Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.      |       |
| 62) Isopropylbenzene          |      | 0.000  | 13.641 | 0.000  | 0        | N.D.      |       |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 13.829 | 13.927 | 0.919  | 168      | N.D.      |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.      |       |
| 66) Bromobenzene              | 156  | 14.043 | 14.043 | 0.933  | 360      | N.D.      |       |
| 67) n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 712      | N.D.      |       |
| 68) 1,3,5-Trimethylbenzene    | 105  | 14.232 | 14.226 | 0.945  | 242      | N.D.      |       |
| 69) 2-Chlorotoluene           |      | 0.000  | 14.214 | 0.000  | 0        | N.D.      |       |
| 70) 4-Chlorotoluene           | 91   | 14.323 | 14.317 | 0.951  | 1298     | N.D.      |       |
| 71) tert-Butylbenzene         |      | 0.000  | 14.592 | 0.000  | 0        | N.D.      |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.634 | 0.972  | 633      | N.D.      |       |
| 73) sec-Butylbenzene          |      | 0.000  | 14.817 | 0.000  | 0        | N.D.      |       |
| 74) 4-Isopropyltoluene        |      | 0.000  | 14.592 | 0.000  | 0        | N.D.      |       |
| 75) 1,3-Dichlorobenzene       | 146  | 15.000 | 14.994 | 0.996  | 965      | N.D.      |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.073 | 15.085 | 1.001  | 2363     | N.D.      |       |
| 77) n-Butylbenzene            | 91   | 15.378 | 15.372 | 1.021  | 591      | N.D.      |       |
| 78) 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 745      | N.D.      |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.      |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.286 | 17.280 | 1.148  | 1266     | N.D.      |       |
| 81) Hexachlorobutadiene       |      | 0.000  | 17.445 | 0.000  | 0        | N.D.      |       |
| 82) Naphthalene               | 128  | 17.628 | 17.628 | 1.171  | 2258     | N.D.      |       |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.951 | 17.945 | 1.192  | 669      | N.D.      |       |
| 85) Acrolein                  |      | 0.000  | 6.026  | 0.000  | 0        | N.D.      |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 6.185  | 0.000  | 0        | N.D.      |       |
| 87) Isopropyl Alcohol         | 45   | 6.349  | 6.282  | 0.673  | 136      | N.D.      |       |
| 88) Allyl chloride            | 41   | 6.550  | 6.611  | 0.694  | 840      | N.D.      |       |
| 89) tert-Butyl Alcohol        | 59   | 6.770  | 6.770  | 0.717  | 5497     | N.D.      |       |
| 90) Acrylonitrile             |      | 0.000  | 7.014  | 0.000  | 0        | N.D.      |       |
| 91) Isopropyl ether           |      | 0.000  | 7.556  | 0.000  | 0        | N.D.      |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 7.672  | 0.000  | 0        | N.D.      |       |
| 93) Ethyl tert-butyl ether    | 59   | 7.965  | 7.965  | 0.844  | 733      | N.D.      |       |
| 94) Ethyl acetate             | 43   | 8.184  | 8.178  | 0.867  | 6736     | N.D.      |       |
| 95) Propionitrile             |      | 0.000  | 8.245  | 0.000  | 0        | N.D.      |       |
| 96) Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.      |       |
| 97) Tetrahydrofuran           | 42   | 8.532  | 8.526  | 0.904  | 2899     | N.D.      |       |
| 98) Isobutyl alcohol          |      | 0.000  | 8.873  | 0.000  | 0        | N.D.      |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G216.D  
Acq On : 01 Nov 2016 16:24  
Operator : ACJ  
InstName : VOA6  
Sample : |409254012|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.7G N/A SOIL  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 02 09:20:02 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

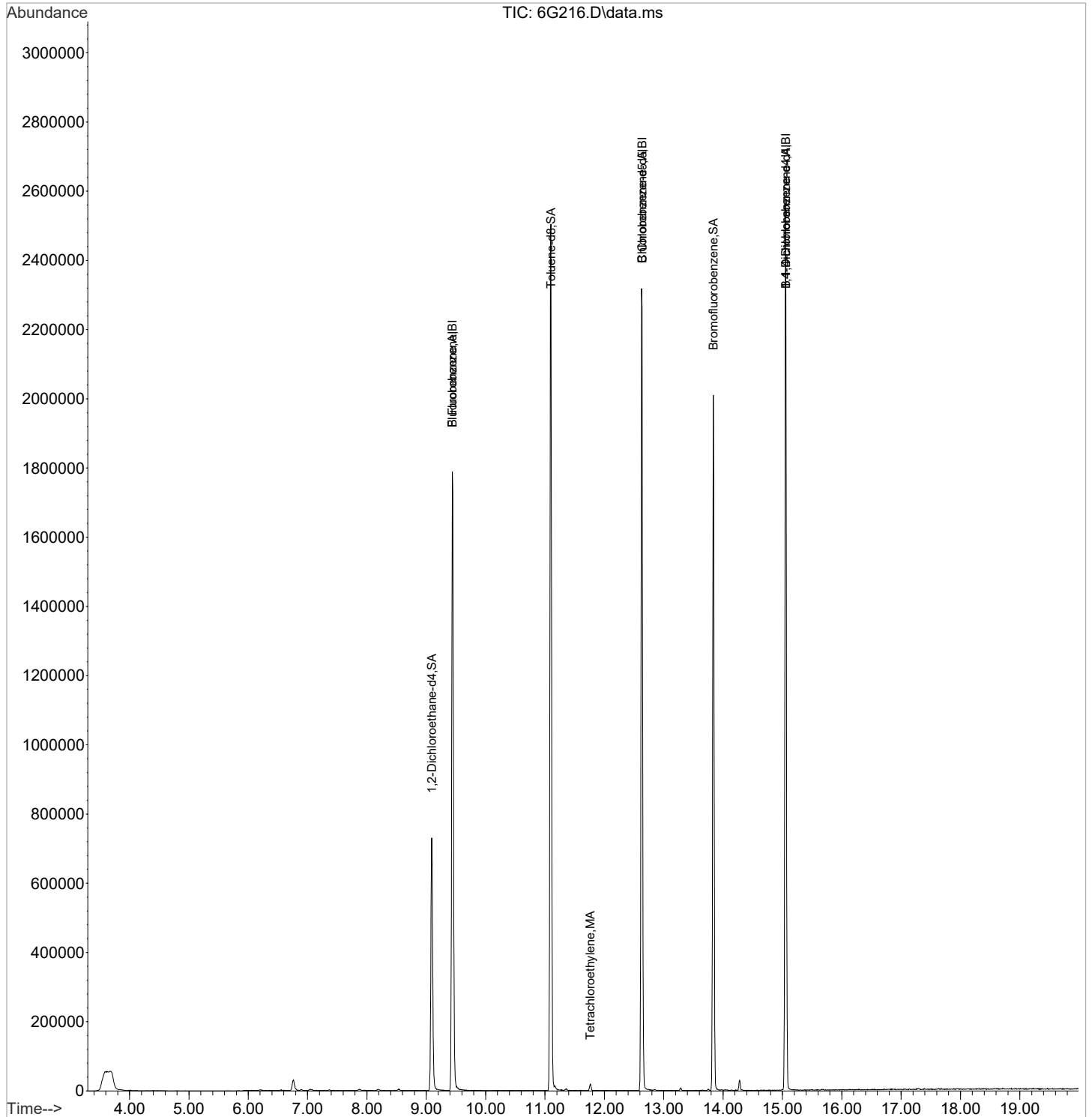
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 99) Methyl tert-amyl ether     |      | 0.000  | 9.214  | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       | 69   | 10.086 | 10.068 | 1.068  | 118      | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 10.172 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 10.543 | 0.000  | 0        | N.D.      |       |
| 104) Ethyl methacrylate        | 69   | 11.360 | 11.348 | 0.899  | 229      | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D.      |       |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 13.689 | 0.000  | 0        | N.D.      |       |
| 108) Cyclohexanone             |      | 0.000  | 13.793 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.988 | 13.976 | 0.929  | 200      | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 14.658 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 15.213 | 15.201 | 1.011  | 659      | Below Cal | #     |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.689 | 15.591 | 1.042  | 121      | N.D.      |       |

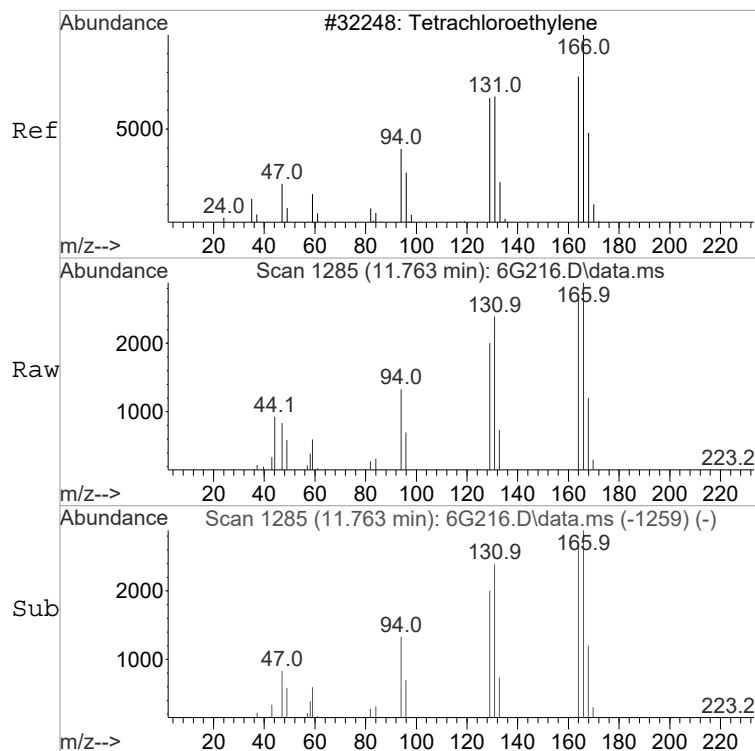
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G216.D  
Acq On : 01 Nov 2016 16:24  
Operator : ACJ  
InstName : VOA6  
Sample : |409254012|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.7G N/A SOIL  
ALS Vial : 16 Sample Multiplier: 1

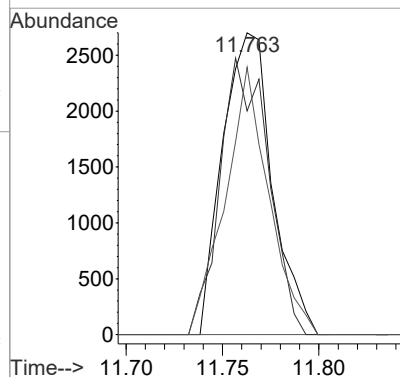
Quant Time: Nov 02 09:20:02 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE





#51  
Tetrachloroethylene  
Concen: 0.56 ug/L  
RT: 11.763 min Scan# 1285  
Delta R.T. -0.000 min  
Lab File: 6G216.D  
Acq: 01 Nov 2016 16:24

| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 164     | 100   | 4864 |       |       |
| 129     | 88.5  | 61.6 | 121.6 |       |
| 131     | 77.9  | 59.4 | 119.4 |       |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254013

**Date Collected:** 10/24/2016 11:43  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.8 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 36.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.64   | ug/kg | 0.822   | 1.64    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 123-91-1 | 1,4-Dioxane                 | U         | 82.2   | ug/kg | 27.4    | 82.2    |
| 78-93-3  | 2-Butanone                  | J         | 3.16   | ug/kg | 2.74    | 8.22    |
| 591-78-6 | 2-Hexanone                  | U         | 8.22   | ug/kg | 2.74    | 8.22    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 8.22   | ug/kg | 2.74    | 8.22    |
| 67-64-1  | Acetone                     |           | 14.8   | ug/kg | 2.74    | 8.22    |
| 71-43-2  | Benzene                     | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 74-97-5  | Bromochloromethane          | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-27-4  | Bromodichloromethane        | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-25-2  | Bromoform                   | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 74-83-9  | Bromomethane                | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-15-0  | Carbon disulfide            | U         | 8.22   | ug/kg | 2.74    | 8.22    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 108-90-7 | Chlorobenzene               | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-00-3  | Chloroethane                | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 67-66-3  | Chloroform                  | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 74-87-3  | Chloromethane               | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 110-82-7 | Cyclohexane                 | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 124-48-1 | Dibromochloromethane        | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 100-41-4 | Ethylbenzene                | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 98-82-8  | Isopropylbenzene            | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 79-20-9  | Methyl acetate              |           | 10.7   | ug/kg | 2.74    | 8.22    |
| 108-87-2 | Methylcyclohexane           | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-09-2  | Methylene chloride          | U         | 8.22   | ug/kg | 2.74    | 8.22    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254013  
  
**Client ID:** SD140300  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 16:52  
**Prep Date:** 10/24/2016 11:43  
**Data File:** 110116V6\6G217.D

**Date Collected:** 10/24/2016 11:43  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.8 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 36.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 127-18-4    | Tetrachloroethylene         | J         | 0.739  | ug/kg | 0.547   | 1.64    |
| 108-88-3    | Toluene                     | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 79-01-6     | Trichloroethylene           | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 8.22   | ug/kg | 2.74    | 8.22    |
| 75-01-4     | Vinyl chloride              | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 179601-23-1 | m,p-Xylenes                 | U         | 3.29   | ug/kg | 1.10    | 3.29    |
| 95-47-6     | o-Xylene                    | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.64   | ug/kg | 0.547   | 1.64    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.64   | ug/kg | 0.547   | 1.64    |



Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G217.D  
Acq On : 01 Nov 2016 16:52  
Operator : ACJ  
InstName : VOA6  
Sample : |409254013|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.8G N/A SOIL  
ALS Vial : 17 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 02 09:20:04 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1547967  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.634 | 12.629 | 1.000  | 1118738  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 475055   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1547967  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.634 | 12.628 | 1.000  | 1118738  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 475055   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 506442  | 49.75 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 1563764 | 52.42 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 543727  | 56.59 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 100%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 105%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 113%     |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc      | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|-----------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.001 | 4.001  | 0.424  | 400      | Below Cal | #     | 42     |
| 3) Chloromethane              | 50   | 4.274 | 4.282  | 0.453  | 297      | N.D.      |       |        |
| 4) Vinyl chloride             |      | 0.000 | 4.498  | 0.000  | 0        | N.D.      |       |        |
| 5) Bromomethane               |      | 0.000 | 5.020  | 0.000  | 0        | N.D.      |       |        |
| 6) Chloroethane               |      | 0.000 | 5.156  | 0.000  | 0        | N.D.      |       |        |
| 7) Trichlorofluoromethane     |      | 0.000 | 5.509  | 0.000  | 0        | N.D.      |       |        |
| 8) Ethyl ether                | 59   | 5.822 | 5.830  | 0.617  | 1018     | N.D.      |       |        |
| 9) Acetone                    | 43   | 6.197 | 6.197  | 0.656  | 38467    | 8.98      | ug/L  | 100    |
| 10) 1,1-Dichloroethylene      | 61   | 6.337 | 6.191  | 0.671  | 4088     | N.D.      |       |        |
| 11) Iodomethane               |      | 0.000 | 6.429  | 0.000  | 0        | N.D.      |       |        |
| 12) Acetonitrile              | 41   | 6.550 | 6.550  | 0.694  | 5090     | N.D.      |       |        |
| 13) Methyl acetate            | 43   | 6.581 | 6.575  | 0.697  | 54925    | 6.53      | ug/L  | 99     |
| 14) Carbon disulfide          | 76   | 6.538 | 6.550  | 0.693  | 7644     | N.D.      |       |        |
| 15) Methylene chloride        | 84   | 6.758 | 6.764  | 0.716  | 10996    | N.D.      |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.056 | 7.050  | 0.747  | 8718     | N.D.      |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000 | 7.093  | 0.000  | 0        | N.D.      |       |        |
| 18) Hexane                    | 57   | 7.355 | 7.367  | 0.779  | 3891     | N.D.      |       |        |
| 19) Vinyl acetate             | 43   | 7.544 | 7.538  | 0.799  | 350      | N.D.      |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000 | 7.575  | 0.000  | 0        | N.D.      |       |        |
| 21) 2-Butanone                | 43   | 8.178 | 8.160  | 0.866  | 12949    | 1.92      | ug/L  | 83     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.196 | 8.209  | 0.868  | 480      | N.D.      |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000 | 8.233  | 0.000  | 0        | N.D.      |       |        |
| 24) Bromochloromethane        |      | 0.000 | 8.483  | 0.000  | 0        | N.D.      |       |        |
| 25) Chloroform                | 83   | 8.538 | 8.520  | 0.904  | 235      | N.D.      |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000 | 8.788  | 0.000  | 0        | N.D.      |       |        |
| 27) Cyclohexane               | 56   | 8.867 | 8.873  | 0.939  | 749      | N.D.      |       |        |
| 28) 1,1-Dichloropropene       | 75   | 8.958 | 8.946  | 0.949  | 104      | N.D.      |       |        |
| 29) Carbon tetrachloride      |      | 0.000 | 8.977  | 0.000  | 0        | N.D.      |       |        |
| 31) 1,2-Dichloroethane        | 62   | 9.105 | 9.172  | 0.964  | 187      | N.D.      |       |        |
| 32) Benzene                   | 78   | 9.178 | 9.184  | 0.972  | 1253     | N.D.      |       |        |
| 33) Cyclohexene               | 67   | 9.300 | 9.294  | 0.985  | 214      | N.D.      |       |        |
| 34) n-Butyl alcohol           | 56   | 9.586 | 9.568  | 1.015  | 160      | N.D.      |       |        |
| 35) Trichloroethylene         |      | 0.000 | 9.830  | 0.000  | 0        | N.D.      |       |        |
| 36) 2-Pentanone               | 43   | 9.946 | 9.928  | 1.054  | 454      | N.D.      |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000 | 10.080 | 0.000  | 0        | N.D.      |       |        |
| 38) Methylcyclohexane         |      | 0.000 | 10.068 | 0.000  | 0        | N.D.      |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G217.D  
Acq On : 01 Nov 2016 16:52  
Operator : ACJ  
InstName : VOA6  
Sample : |409254013|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.8G N/A SOIL  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 02 09:20:04 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc       | Units |
|-------------------------------|------|--------|--------|--------|----------|------------|-------|
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D.       |       |
| 40) Bromodichloromethane      |      | 0.000  | 10.330 | 0.000  | 0        | N.D.       |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D.       |       |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 10.787 | 0.000  | 0        | N.D.       |       |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 10.891 | 0.000  | 0        | N.D.       |       |
| 46) Toluene                   | 91   | 11.165 | 11.172 | 0.884  | 6775     | N.D.       |       |
| 47) trans-1,3-Dichloroprop... | 75   | 11.275 | 11.342 | 0.892  | 101      | N.D.       |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D.       |       |
| 49) 2-Hexanone                | 43   | 11.763 | 11.745 | 0.931  | 1129     | N.D.       |       |
| 50) 1,3-Dichloropropane       |      | 0.000  | 11.751 | 0.000  | 0        | N.D.       |       |
| 51) Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 3454     | 0.45 ug/L  | 83    |
| 52) Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D.       |       |
| 53) 1,2-Dibromoethane         |      | 0.000  | 12.177 | 0.000  | 0        | N.D.       |       |
| 54) Chlorobenzene             | 112  | 12.659 | 12.665 | 1.002  | 566      | N.D.       |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.720 | 0.000  | 0        | N.D.       |       |
| 56) Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 1472     | N.D.       |       |
| 57) m,p-Xylenes               | 106  | 12.848 | 12.842 | 1.017  | 1234     | N.D.       |       |
| 58) o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 990      | N.D.       |       |
| 59) Styrene                   | 104  | 13.293 | 13.281 | 1.052  | 3933     | N.D.       |       |
| 61) Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.       |       |
| 62) Isopropylbenzene          | 105  | 13.647 | 13.641 | 0.906  | 800      | N.D.       |       |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 13.823 | 13.927 | 0.918  | 247      | N.D.       |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.       |       |
| 66) Bromobenzene              | 156  | 14.037 | 14.043 | 0.932  | 382      | N.D.       |       |
| 67) n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 781      | N.D.       |       |
| 68) 1,3,5-Trimethylbenzene    | 105  | 14.238 | 14.226 | 0.946  | 1069     | N.D.       |       |
| 69) 2-Chlorotoluene           |      | 0.000  | 14.214 | 0.000  | 0        | N.D.       |       |
| 70) 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 1489     | N.D.       |       |
| 71) tert-Butylbenzene         |      | 0.000  | 14.592 | 0.000  | 0        | N.D.       |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.634 | 0.972  | 672      | N.D.       |       |
| 73) sec-Butylbenzene          | 105  | 14.823 | 14.817 | 0.985  | 149      | N.D.       |       |
| 74) 4-Isopropyltoluene        |      | 0.000  | 14.592 | 0.000  | 0        | N.D.       |       |
| 75) 1,3-Dichlorobenzene       | 146  | 14.994 | 14.994 | 0.996  | 850      | N.D.       |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.085 | 15.085 | 1.002  | 2707     | N.D.       |       |
| 77) n-Butylbenzene            | 91   | 15.372 | 15.372 | 1.021  | 474      | N.D.       |       |
| 78) 1,2-Dichlorobenzene       | 146  | 15.482 | 15.494 | 1.028  | 589      | N.D.       |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.       |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.280 | 1.148  | 1097     | N.D.       |       |
| 81) Hexachlorobutadiene       |      | 0.000  | 17.445 | 0.000  | 0        | N.D.       |       |
| 82) Naphthalene               | 128  | 17.634 | 17.628 | 1.171  | 2147     | N.D.       |       |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.957 | 17.945 | 1.193  | 816      | N.D.       |       |
| 85) Acrolein                  |      | 0.000  | 6.026  | 0.000  | 0        | N.D.       |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 6.185  | 0.000  | 0        | N.D.       |       |
| 87) Isopropyl Alcohol         | 45   | 6.325  | 6.282  | 0.670  | 12385    | N.D.       |       |
| 88) Allyl chloride            | 41   | 6.550  | 6.611  | 0.694  | 5090     | N.D.       |       |
| 89) tert-Butyl Alcohol        | 59   | 6.776  | 6.770  | 0.718  | 22256    | 16.83 ug/L | 77    |
| 90) Acrylonitrile             |      | 0.000  | 7.014  | 0.000  | 0        | N.D.       |       |
| 91) Isopropyl ether           |      | 0.000  | 7.556  | 0.000  | 0        | N.D.       |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 7.672  | 0.000  | 0        | N.D.       |       |
| 93) Ethyl tert-butyl ether    | 59   | 7.959  | 7.965  | 0.843  | 4264     | N.D.       |       |
| 94) Ethyl acetate             | 43   | 8.178  | 8.178  | 0.866  | 12949    | N.D.       |       |
| 95) Propionitrile             |      | 0.000  | 8.245  | 0.000  | 0        | N.D.       |       |
| 96) Methacrylonitrile         | 41   | 8.452  | 8.416  | 0.895  | 783      | N.D.       |       |
| 97) Tetrahydrofuran           | 42   | 8.538  | 8.526  | 0.904  | 2373     | N.D.       |       |
| 98) Isobutyl alcohol          | 41   | 8.879  | 8.873  | 0.941  | 934      | N.D.       |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G217.D  
Acq On : 01 Nov 2016 16:52  
Operator : ACJ  
InstName : VOA6  
Sample : |409254013|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.8G N/A SOIL  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 02 09:20:04 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

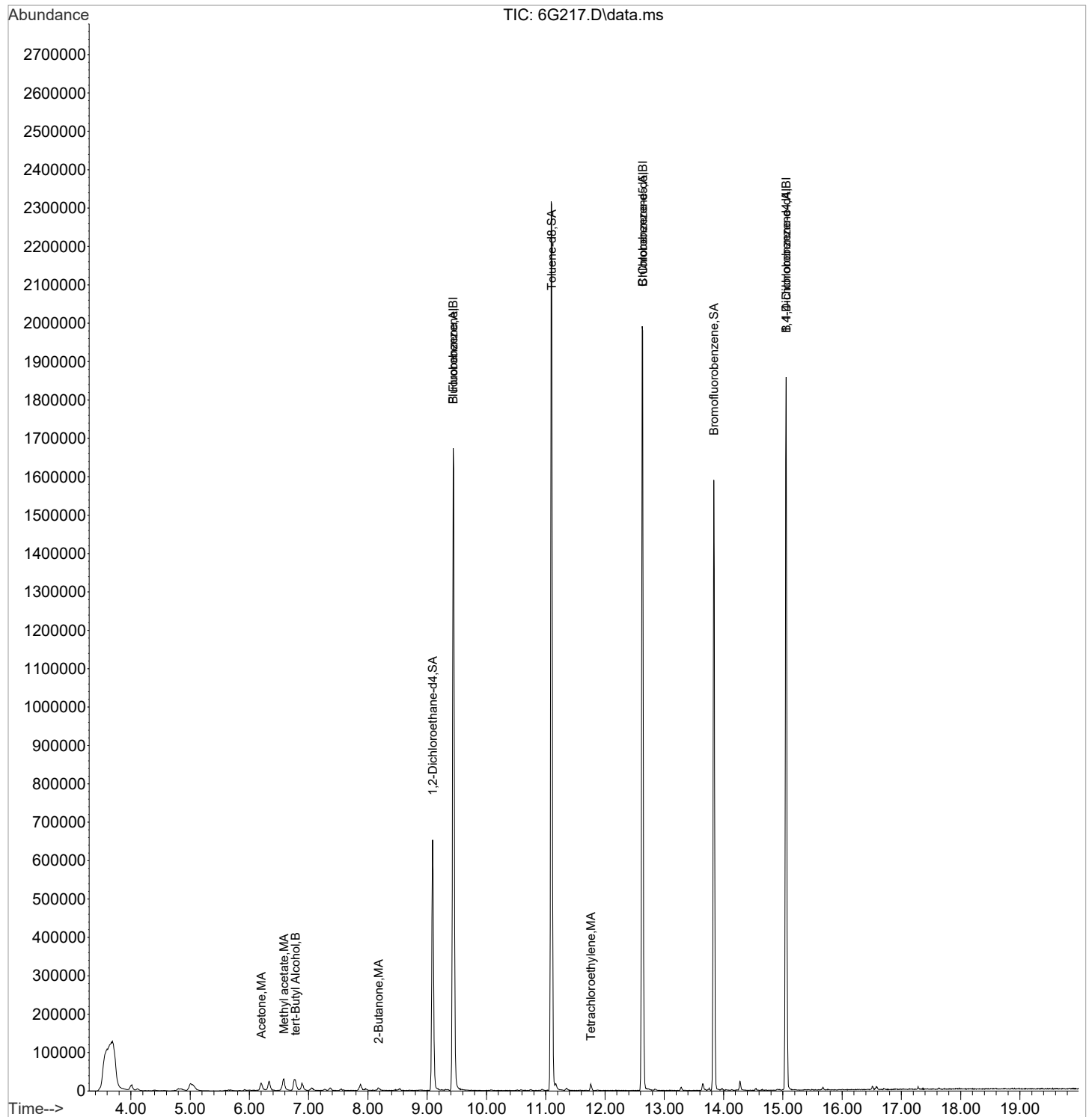
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 99) Methyl tert-amyl ether     |      | 0.000  | 9.214  | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       |      | 0.000  | 10.068 | 0.000  | 0        | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 10.172 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 10.543 | 0.000  | 0m       | N.D.      | d     |
| 104) Ethyl methacrylate        | 69   | 11.366 | 11.348 | 0.900  | 358      | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D.      |       |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.659 | 13.689 | 0.907  | 967      | N.D.      |       |
| 108) Cyclohexanone             |      | 0.000  | 13.793 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.976 | 13.976 | 0.928  | 184      | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 14.658 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 15.189 | 15.201 | 1.009  | 1037     | Below Cal | #     |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 15.591 | 0.000  | 0        | N.D.      |       |

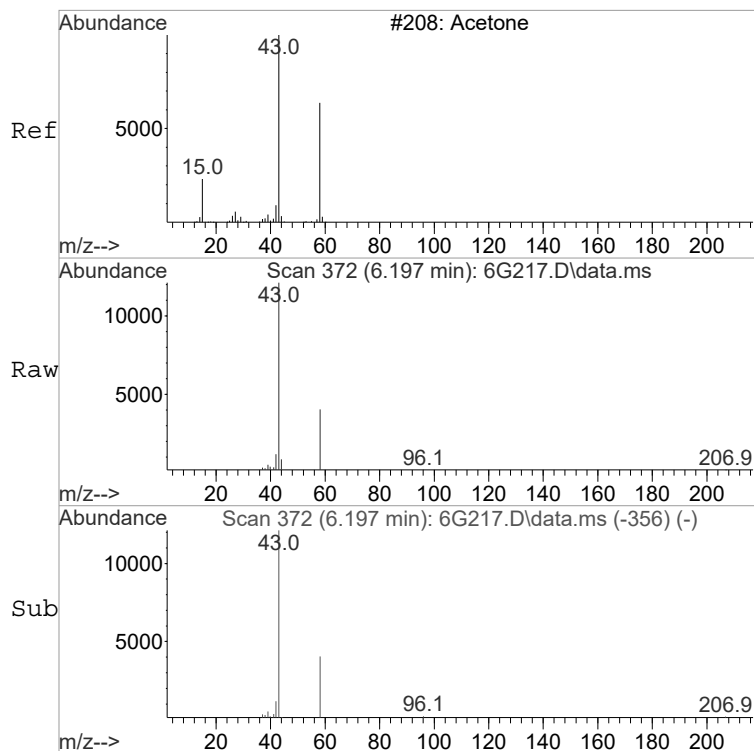
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G217.D  
Acq On : 01 Nov 2016 16:52  
Operator : ACJ  
InstName : VOA6  
Sample : |409254013|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.8G N/A SOIL  
ALS Vial : 17 Sample Multiplier: 1

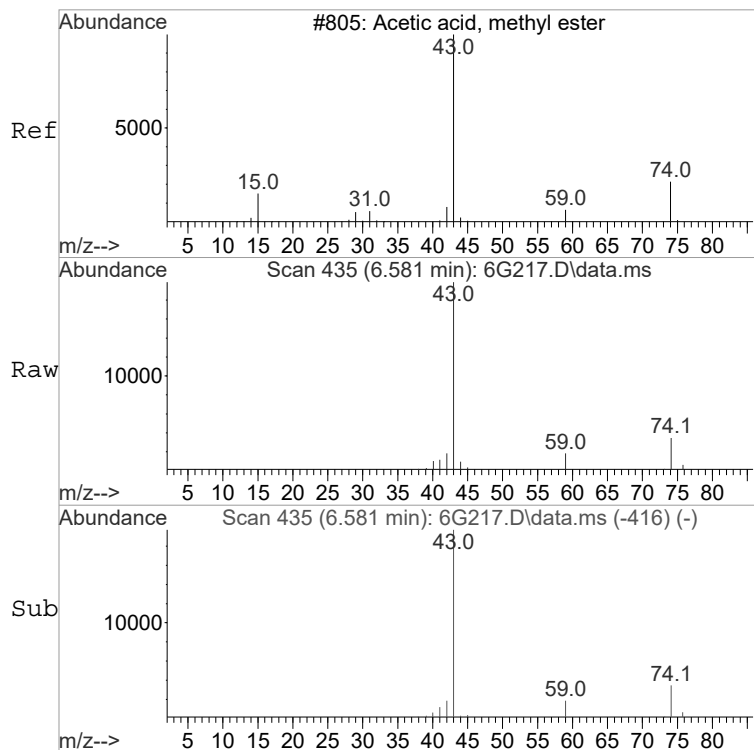
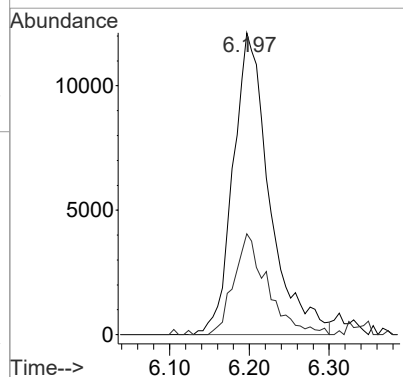
Quant Time: Nov 02 09:20:04 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE





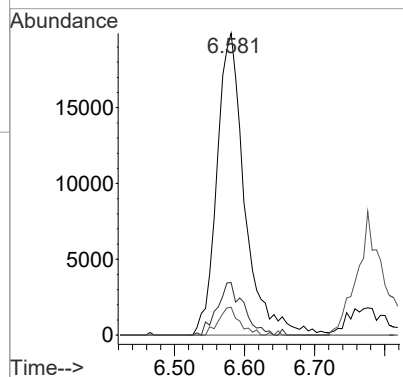
#9  
Acetone  
Concen: 8.98 ug/L  
RT: 6.197 min Scan# 372  
Delta R.T. -0.000 min  
Lab File: 6G217.D  
Acq: 01 Nov 2016 16:52

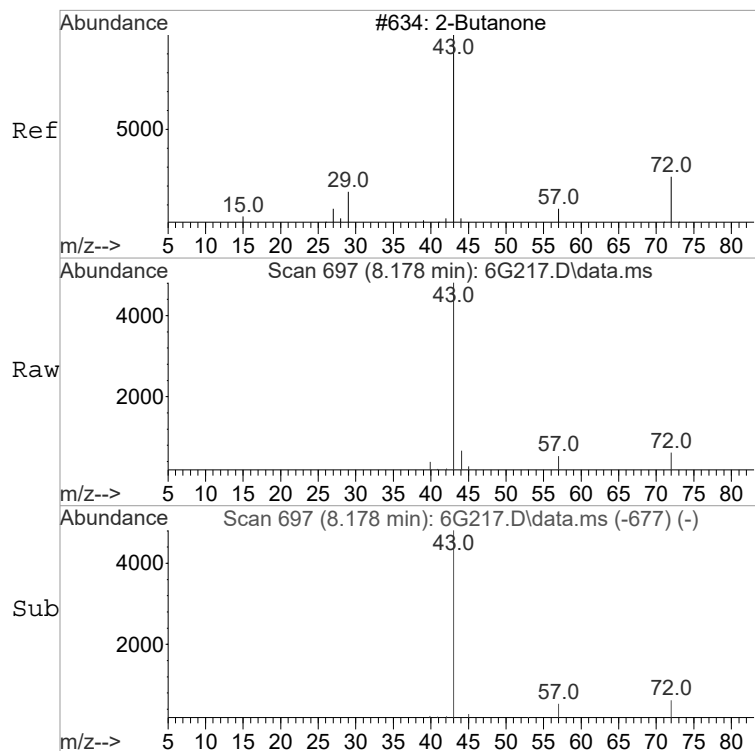
Tgt Ion: 43 Resp: 38467  
Ion Ratio Lower Upper  
43 100  
58 31.0 0.8 60.8



#13  
Methyl acetate  
Concen: 6.53 ug/L  
RT: 6.581 min Scan# 435  
Delta R.T. 0.006 min  
Lab File: 6G217.D  
Acq: 01 Nov 2016 16:52

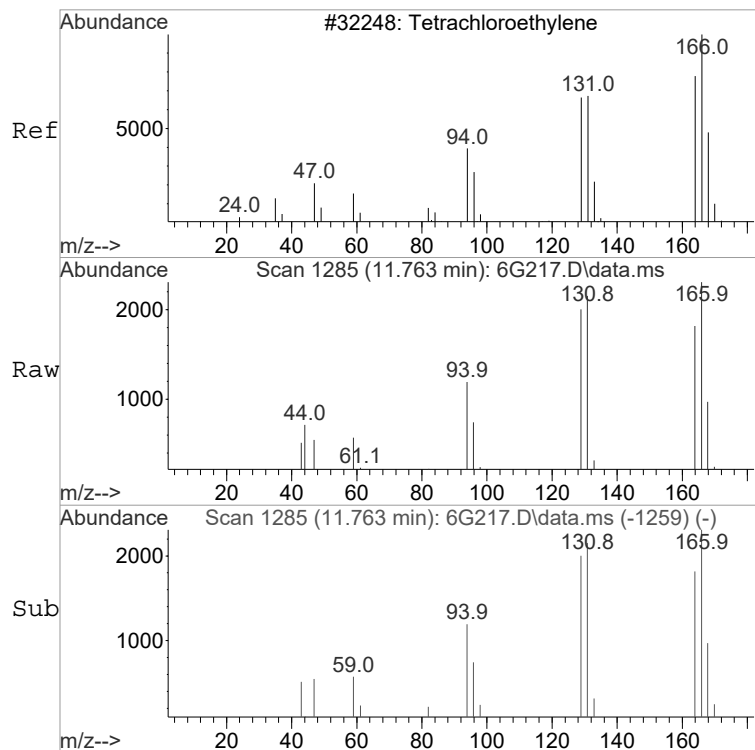
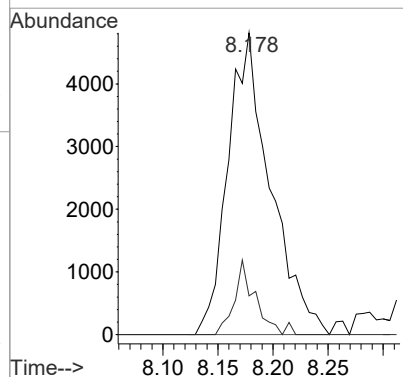
Tgt Ion: 43 Resp: 54925  
Ion Ratio Lower Upper  
43 100  
74 16.5 0.0 46.3  
59 6.9 0.0 37.6





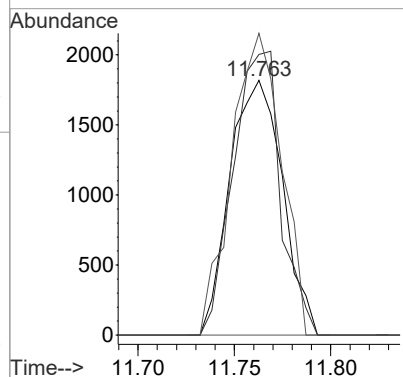
#21  
2-Butanone  
Concen: 1.92 ug/L  
RT: 8.178 min Scan# 697  
Delta R.T. 0.018 min  
Lab File: 6G217.D  
Acq: 01 Nov 2016 16:52

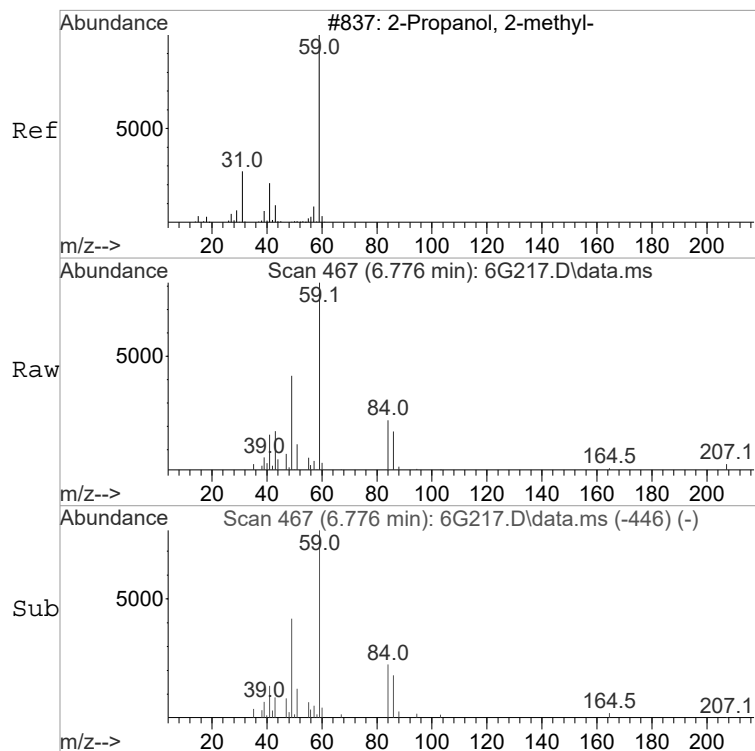
Tgt Ion: 43 Resp: 12949  
Ion Ratio Lower Upper  
43 100  
72 11.7 0.0 49.3



#51  
Tetrachloroethylene  
Concen: 0.45 ug/L  
RT: 11.763 min Scan# 1285  
Delta R.T. -0.000 min  
Lab File: 6G217.D  
Acq: 01 Nov 2016 16:52

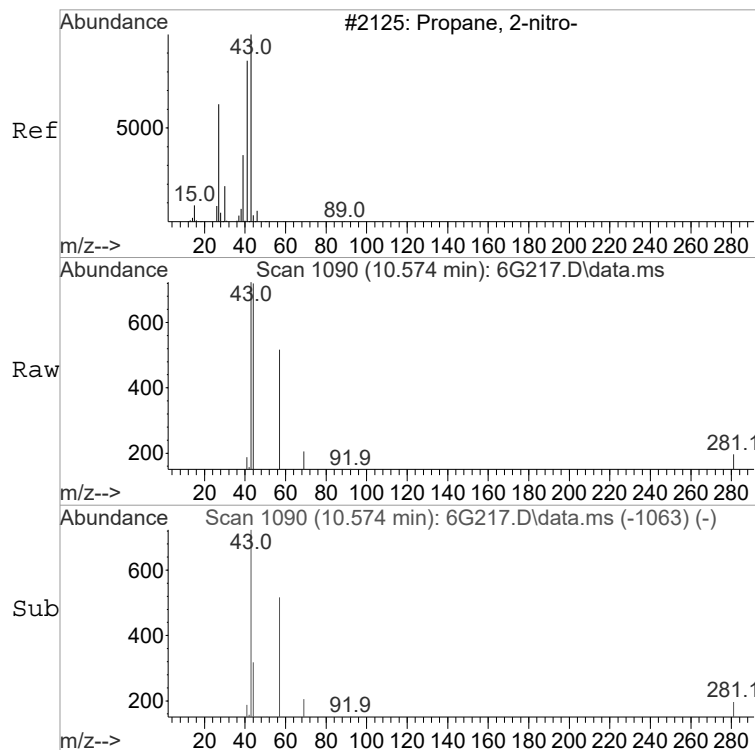
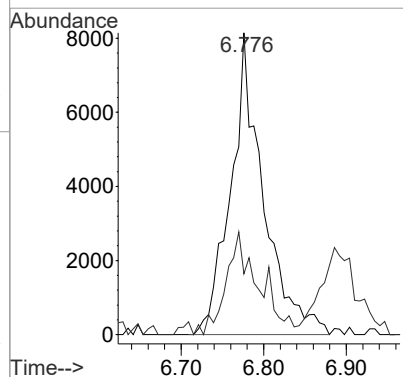
Tgt Ion: 164 Resp: 3454  
Ion Ratio Lower Upper  
164 100  
129 100.5 61.6 121.6  
131 111.9 59.4 119.4





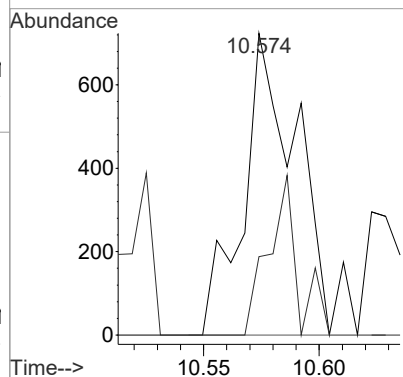
#89  
tert-Butyl Alcohol  
Concen: 16.83 ug/L  
RT: 6.776 min Scan# 467  
Delta R.T. 0.006 min  
Lab File: 6G217.D  
Acq: 01 Nov 2016 16:52

Tgt Ion: 59 Resp: 22256  
Ion Ratio Lower Upper  
59 100  
41 33.9 0.0 52.9



#102 BEFORE analyst DELETION  
2-Nitropropane  
Concen: 6.54 ug/L  
RT: 10.574 min Scan# 1090  
Delta R.T. 0.031 min  
Lab File: 6G217.D  
Acq: 01 Nov 2016 16:52

Tgt Ion: 43 Resp: 1151  
Ion Ratio Lower Upper  
43 100  
41 29.5 49.3 109.3#



**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254014

**Date Collected:** 10/24/2016 11:58  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.7 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 44.5  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

**Client ID:** SD140200  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 17:21  
**Prep Date:** 10/24/2016 11:58  
**Data File:** 110116V6\6G218.D

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.92   | ug/kg | 0.958   | 1.92    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 123-91-1 | 1,4-Dioxane                 | U         | 95.8   | ug/kg | 31.9    | 95.8    |
| 78-93-3  | 2-Butanone                  | J         | 6.44   | ug/kg | 3.19    | 9.58    |
| 591-78-6 | 2-Hexanone                  | U         | 9.58   | ug/kg | 3.19    | 9.58    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 9.58   | ug/kg | 3.19    | 9.58    |
| 67-64-1  | Acetone                     |           | 25.5   | ug/kg | 3.19    | 9.58    |
| 71-43-2  | Benzene                     | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 74-97-5  | Bromochloromethane          | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-27-4  | Bromodichloromethane        | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-25-2  | Bromoform                   | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 74-83-9  | Bromomethane                | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-15-0  | Carbon disulfide            | U         | 9.58   | ug/kg | 3.19    | 9.58    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 108-90-7 | Chlorobenzene               | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-00-3  | Chloroethane                | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 67-66-3  | Chloroform                  | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 74-87-3  | Chloromethane               | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 110-82-7 | Cyclohexane                 | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 124-48-1 | Dibromochloromethane        | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 100-41-4 | Ethylbenzene                | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 98-82-8  | Isopropylbenzene            | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 79-20-9  | Methyl acetate              | U         | 9.58   | ug/kg | 3.19    | 9.58    |
| 108-87-2 | Methylcyclohexane           | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-09-2  | Methylene chloride          | U         | 9.58   | ug/kg | 3.19    | 9.58    |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254014  
  
**Client ID:** SD140200  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 17:21  
**Prep Date:** 10/24/2016 11:58  
**Data File:** 110116V6\6G218.D

**Date Collected:** 10/24/2016 11:58  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.7 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 44.5  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 108-88-3    | Toluene                     | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 79-01-6     | Trichloroethylene           | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 9.58   | ug/kg | 3.19    | 9.58    |
| 75-01-4     | Vinyl chloride              | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 179601-23-1 | m,p-Xylenes                 | U         | 3.83   | ug/kg | 1.28    | 3.83    |
| 95-47-6     | o-Xylene                    | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.92   | ug/kg | 0.638   | 1.92    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.92   | ug/kg | 0.638   | 1.92    |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G218.D  
Acq On : 01 Nov 2016 17:21  
Operator : ACJ  
InstName : VOA6  
Sample : |409254014|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.7G N/A SOIL  
ALS Vial : 18 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 02 09:20:06 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1590224  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.634 | 12.629 | 1.000  | 1210418  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 612752   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1590224  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.634 | 12.628 | 1.000  | 1210418  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 612752   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 574176  | 54.90 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 1647652 | 51.05 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 642637  | 51.86 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 110%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 102%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 104%     |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| 2) Dichlorodifluoromethane    | 50   | 0.000 | 4.001  | 0.000  | 0        | N.D.  |       |        |
| 3) Chloromethane              |      | 4.394 | 4.282  | 0.465  | 705      | N.D.  |       |        |
| 4) Vinyl chloride             |      | 0.000 | 4.498  | 0.000  | 0        | N.D.  |       |        |
| 5) Bromomethane               |      | 0.000 | 5.020  | 0.000  | 0        | N.D.  |       |        |
| 6) Chloroethane               |      | 0.000 | 5.156  | 0.000  | 0        | N.D.  |       |        |
| 7) Trichlorofluoromethane     | 43   | 0.000 | 5.509  | 0.000  | 0        | N.D.  |       |        |
| 8) Ethyl ether                |      | 0.000 | 5.830  | 0.000  | 0        | N.D.  |       |        |
| 9) Acetone                    |      | 6.197 | 6.197  | 0.656  | 58537    | 13.30 | ug/L  | 100    |
| 10) 1,1-Dichloroethylene      |      | 6.331 | 6.191  | 0.671  | 2500     | N.D.  |       |        |
| 11) Iodomethane               |      | 0.000 | 6.429  | 0.000  | 0        | N.D.  |       |        |
| 12) Acetonitrile              | 41   | 6.581 | 6.550  | 0.697  | 2324     | N.D.  |       |        |
| 13) Methyl acetate            | 43   | 6.581 | 6.575  | 0.697  | 1929     | N.D.  |       |        |
| 14) Carbon disulfide          | 76   | 6.550 | 6.550  | 0.694  | 3955     | N.D.  |       |        |
| 15) Methylene chloride        | 84   | 6.745 | 6.764  | 0.715  | 623      | N.D.  |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.050 | 7.050  | 0.747  | 3076     | N.D.  |       |        |
| 17) trans-1,2-Dichloroethy... | 57   | 0.000 | 7.093  | 0.000  | 0        | N.D.  |       |        |
| 18) Hexane                    |      | 7.361 | 7.367  | 0.780  | 1653     | N.D.  |       |        |
| 19) Vinyl acetate             |      | 0.000 | 7.538  | 0.000  | 0        | N.D.  |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000 | 7.575  | 0.000  | 0        | N.D.  |       |        |
| 21) 2-Butanone                |      | 8.172 | 8.160  | 0.866  | 23270    | 3.36  | ug/L  | 92     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.190 | 8.209  | 0.868  | 345      | N.D.  |       |        |
| 23) 2,2-Dichloropropane       | 62   | 0.000 | 8.233  | 0.000  | 0        | N.D.  |       |        |
| 24) Bromochloromethane        |      | 0.000 | 8.483  | 0.000  | 0        | N.D.  |       |        |
| 25) Chloroform                |      | 0.000 | 8.520  | 0.000  | 0        | N.D.  |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000 | 8.788  | 0.000  | 0        | N.D.  |       |        |
| 27) Cyclohexane               |      | 0.000 | 8.873  | 0.000  | 0        | N.D.  |       |        |
| 28) 1,1-Dichloropropene       | 67   | 0.000 | 8.946  | 0.000  | 0        | N.D.  |       |        |
| 29) Carbon tetrachloride      |      | 0.000 | 8.977  | 0.000  | 0        | N.D.  |       |        |
| 31) 1,2-Dichloroethane        |      | 9.086 | 9.172  | 0.963  | 189      | N.D.  |       |        |
| 32) Benzene                   |      | 9.178 | 9.184  | 0.972  | 841      | N.D.  |       |        |
| 33) Cyclohexene               |      | 9.306 | 9.294  | 0.986  | 128      | N.D.  |       |        |
| 34) n-Butyl alcohol           | 56   | 9.592 | 9.568  | 1.016  | 113      | N.D.  |       |        |
| 35) Trichloroethylene         | 62   | 0.000 | 9.830  | 0.000  | 0        | N.D.  |       |        |
| 36) 2-Pentanone               |      | 0.000 | 9.928  | 0.000  | 0        | N.D.  |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000 | 10.080 | 0.000  | 0        | N.D.  |       |        |
| 38) Methylcyclohexane         |      | 0.000 | 10.068 | 0.000  | 0        | N.D.  |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G218.D  
Acq On : 01 Nov 2016 17:21  
Operator : ACJ  
InstName : VOA6  
Sample : |409254014|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.7G N/A SOIL  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 02 09:20:06 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D.      |       |
| 40) Bromodichloromethane      |      | 0.000  | 10.330 | 0.000  | 0        | N.D.      |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D.      |       |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 10.787 | 0.000  | 0        | N.D.      |       |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 10.891 | 0.000  | 0        | N.D.      |       |
| 46) Toluene                   | 91   | 11.171 | 11.172 | 0.884  | 8810     | N.D.      |       |
| 47) trans-1,3-Dichloroprop... |      | 0.000  | 11.342 | 0.000  | 0        | N.D.      |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D.      |       |
| 49) 2-Hexanone                | 43   | 11.720 | 11.745 | 0.928  | 263      | N.D.      |       |
| 50) 1,3-Dichloropropane       |      | 0.000  | 11.751 | 0.000  | 0        | N.D.      |       |
| 51) Tetrachloroethylene       | 164  | 11.769 | 11.763 | 0.931  | 2677     | 0.32 ug/L | 85    |
| 52) Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D.      |       |
| 53) 1,2-Dibromoethane         |      | 0.000  | 12.177 | 0.000  | 0        | N.D.      |       |
| 54) Chlorobenzene             | 112  | 12.653 | 12.665 | 1.001  | 786      | N.D.      |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.720 | 0.000  | 0        | N.D.      |       |
| 56) Ethylbenzene              | 91   | 12.750 | 12.732 | 1.009  | 7158     | N.D.      |       |
| 57) m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.016  | 1189     | N.D.      |       |
| 58) o-Xylene                  | 91   | 13.293 | 13.275 | 1.052  | 379      | N.D.      |       |
| 59) Styrene                   | 104  | 13.281 | 13.281 | 1.051  | 2407     | N.D.      |       |
| 61) Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.      |       |
| 62) Isopropylbenzene          | 105  | 13.646 | 13.641 | 0.906  | 435      | N.D.      |       |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 13.829 | 13.927 | 0.919  | 161      | N.D.      |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.      |       |
| 66) Bromobenzene              | 156  | 14.037 | 14.043 | 0.932  | 299      | N.D.      |       |
| 67) n-Propylbenzene           | 91   | 14.061 | 14.067 | 0.934  | 547      | N.D.      |       |
| 68) 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 374      | N.D.      |       |
| 69) 2-Chlorotoluene           |      | 0.000  | 14.214 | 0.000  | 0        | N.D.      |       |
| 70) 4-Chlorotoluene           | 91   | 14.311 | 14.317 | 0.951  | 1095     | N.D.      |       |
| 71) tert-Butylbenzene         |      | 0.000  | 14.592 | 0.000  | 0        | N.D.      |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.634 | 0.972  | 657      | N.D.      |       |
| 73) sec-Butylbenzene          | 105  | 14.774 | 14.817 | 0.981  | 115      | N.D.      |       |
| 74) 4-Isopropyltoluene        |      | 0.000  | 14.592 | 0.000  | 0        | N.D.      |       |
| 75) 1,3-Dichlorobenzene       | 146  | 15.000 | 14.994 | 0.996  | 1083     | N.D.      |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.085 | 15.085 | 1.002  | 1883     | N.D.      |       |
| 77) n-Butylbenzene            | 91   | 15.378 | 15.372 | 1.021  | 526      | N.D.      |       |
| 78) 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 724      | N.D.      |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.      |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.286 | 17.280 | 1.148  | 841      | N.D.      |       |
| 81) Hexachlorobutadiene       |      | 0.000  | 17.445 | 0.000  | 0        | N.D.      |       |
| 82) Naphthalene               | 128  | 17.627 | 17.628 | 1.171  | 2130     | N.D.      |       |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.944 | 17.945 | 1.192  | 398      | N.D.      |       |
| 85) Acrolein                  |      | 0.000  | 6.026  | 0.000  | 0        | N.D.      |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 6.185  | 0.000  | 0        | N.D.      |       |
| 87) Isopropyl Alcohol         | 45   | 6.331  | 6.282  | 0.671  | 8673     | N.D.      |       |
| 88) Allyl chloride            | 41   | 6.636  | 6.611  | 0.703  | 126      | N.D.      |       |
| 89) tert-Butyl Alcohol        | 59   | 6.770  | 6.770  | 0.717  | 4799     | N.D.      |       |
| 90) Acrylonitrile             |      | 0.000  | 7.014  | 0.000  | 0        | N.D.      |       |
| 91) Isopropyl ether           |      | 0.000  | 7.556  | 0.000  | 0        | N.D.      |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 7.672  | 0.000  | 0        | N.D.      |       |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.      |       |
| 94) Ethyl acetate             |      | 0.000  | 8.178  | 0.000  | 0m       | N.D.      | d     |
| 95) Propionitrile             |      | 0.000  | 8.245  | 0.000  | 0        | N.D.      |       |
| 96) Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.      |       |
| 97) Tetrahydrofuran           | 42   | 8.538  | 8.526  | 0.904  | 3564     | N.D.      |       |
| 98) Isobutyl alcohol          | 41   | 8.861  | 8.873  | 0.939  | 194      | N.D.      |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G218.D  
Acq On : 01 Nov 2016 17:21  
Operator : ACJ  
InstName : VOA6  
Sample : |409254014|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.7G N/A SOIL  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 02 09:20:06 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

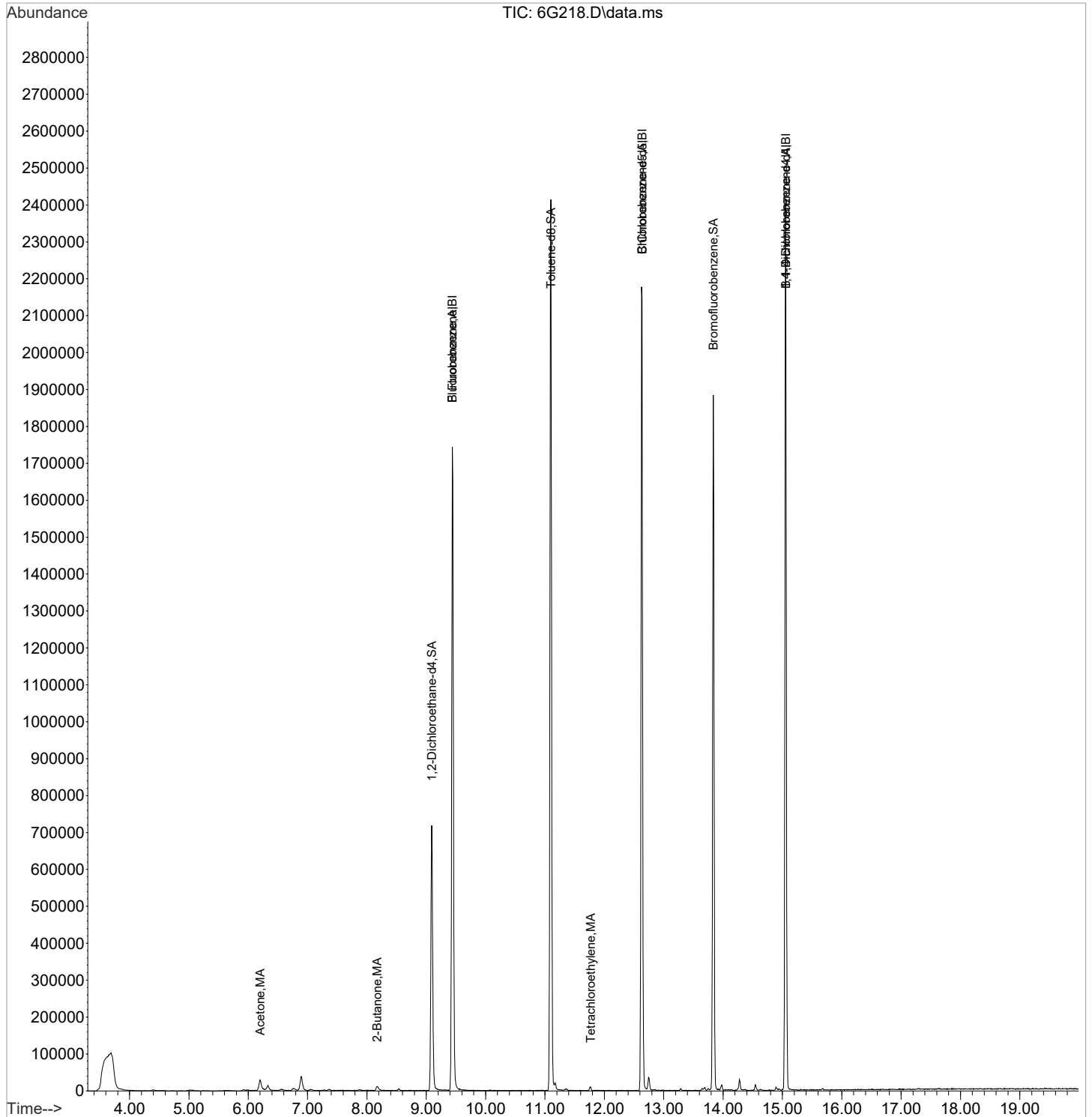
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 99) Methyl tert-amyl ether     |      | 0.000  | 9.214  | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       |      | 0.000  | 10.068 | 0.000  | 0        | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 10.172 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 10.543 | 0.000  | 0m       | N.D.      | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 11.348 | 0.000  | 0        | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D.      |       |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.671 | 13.689 | 0.908  | 121      | N.D.      |       |
| 108) Cyclohexanone             |      | 0.000  | 13.793 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.982 | 13.976 | 0.929  | 1100     | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 14.658 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 481      | Below Cal | #     |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 15.591 | 0.000  | 0        | N.D.      |       |

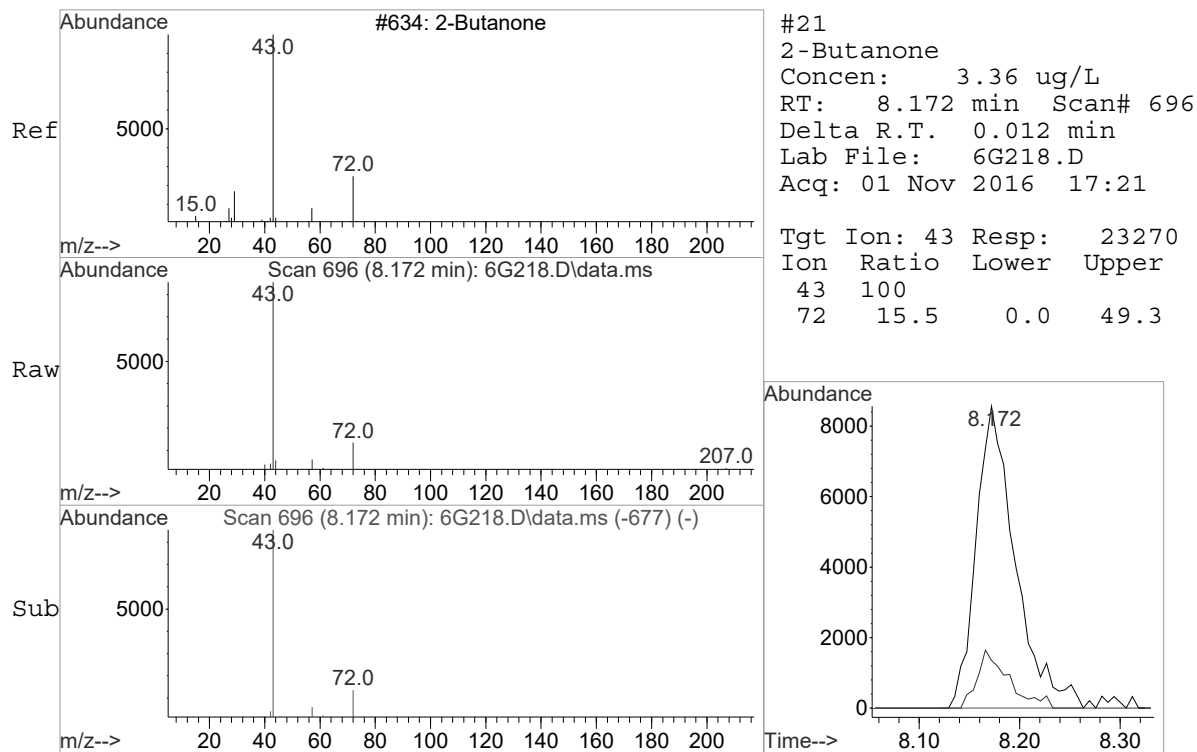
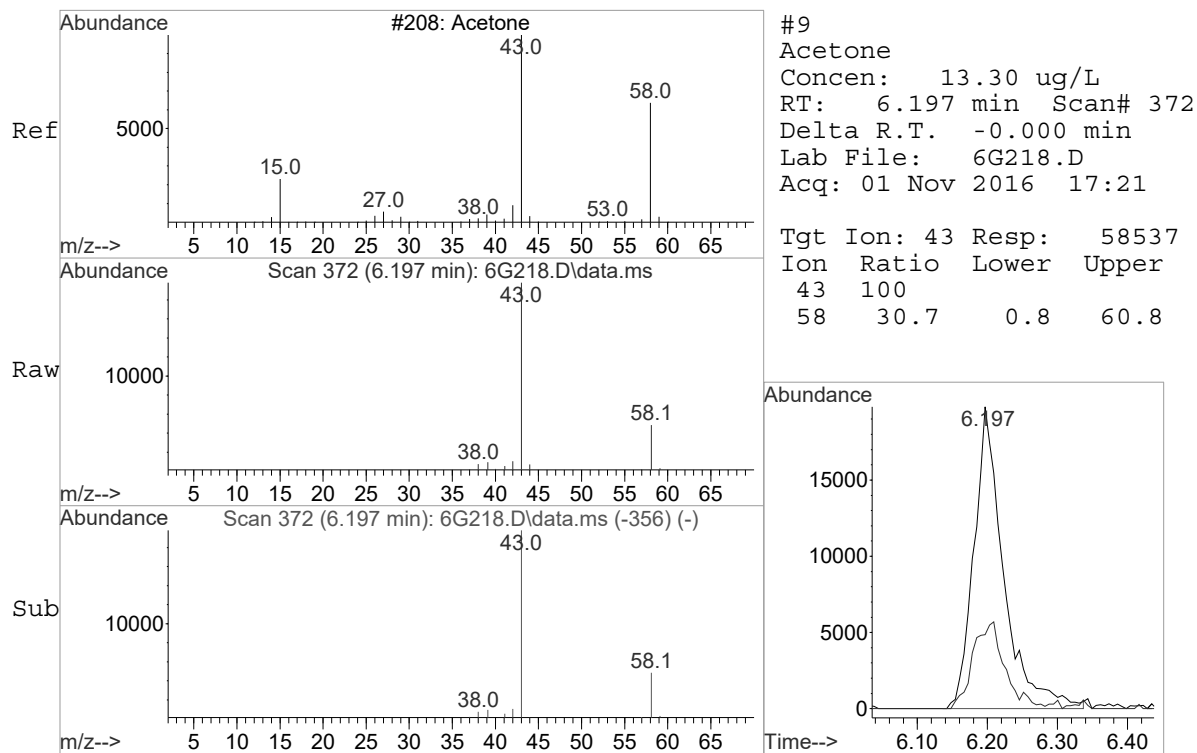
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

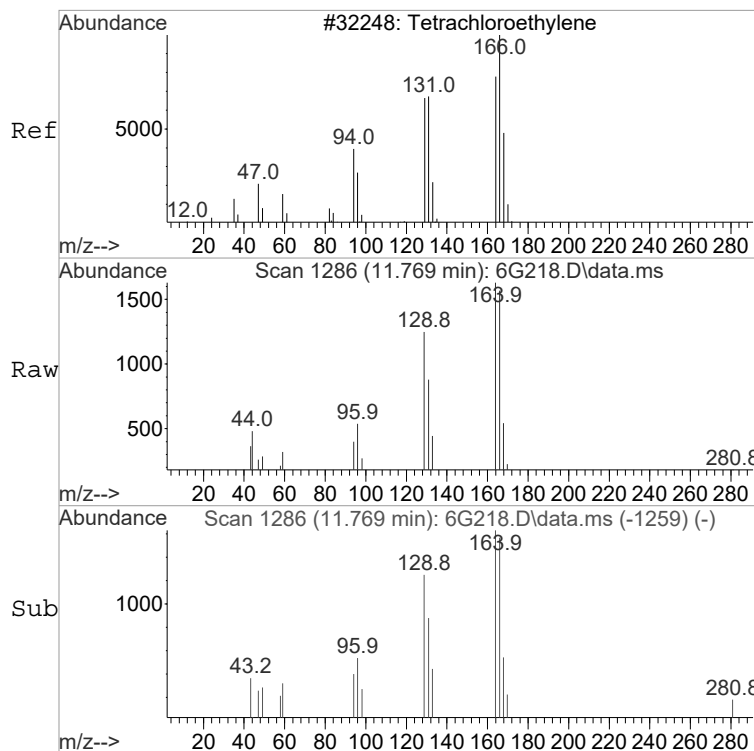
Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G218.D  
Acq On : 01 Nov 2016 17:21  
Operator : ACJ  
InstName : VOA6  
Sample : |409254014|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.7G N/A SOIL  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 02 09:20:06 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

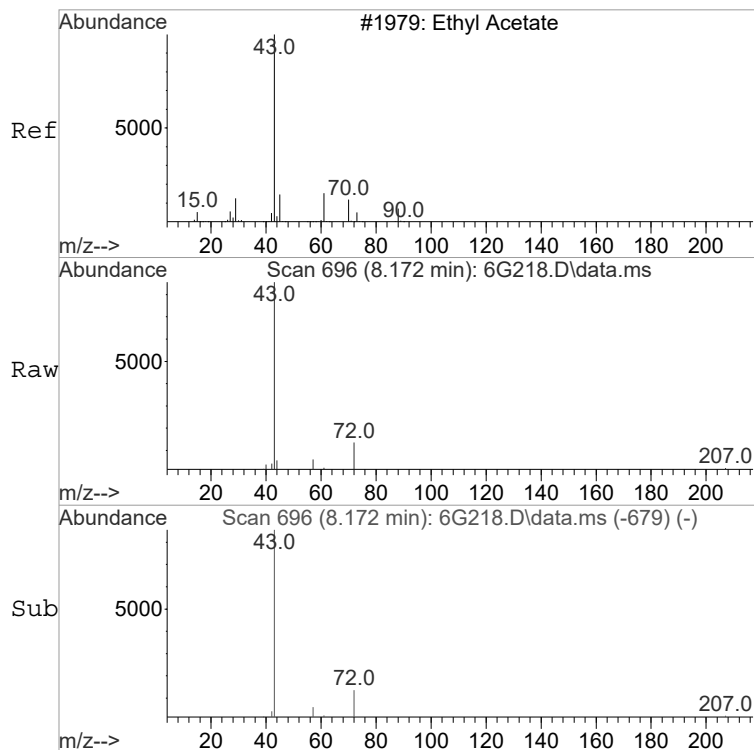
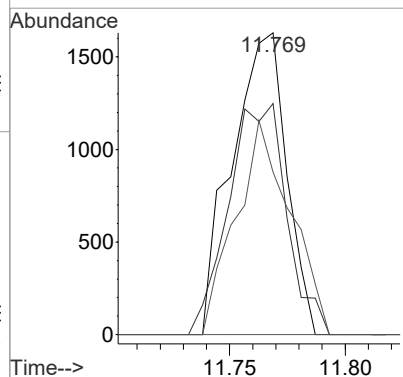






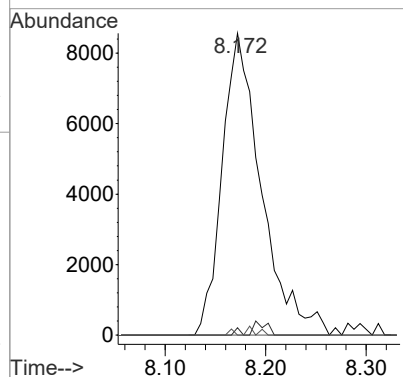
#51  
Tetrachloroethylene  
Concen: 0.32 ug/L  
RT: 11.769 min Scan# 1286  
Delta R.T. 0.006 min  
Lab File: 6G218.D  
Acq: 01 Nov 2016 17:21

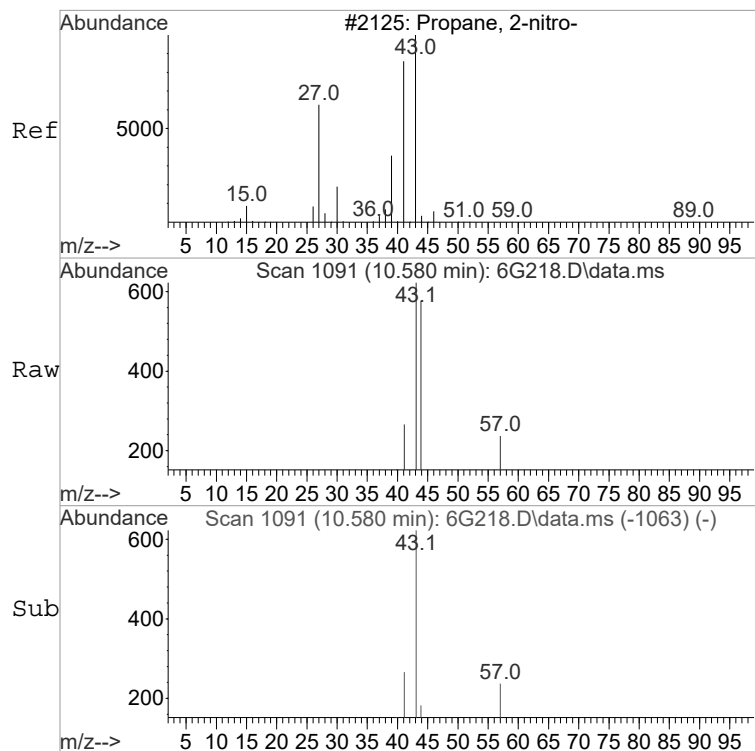
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 164     | 100   |       |       |
| 129     | 81.5  | 61.6  | 121.6 |
| 131     | 71.2  | 59.4  | 119.4 |



#94 BEFORE analyst DELETION  
Ethyl acetate  
Concen: 2.08 ug/L  
RT: 8.172 min Scan# 696  
Delta R.T. -0.006 min  
Lab File: 6G218.D  
Acq: 01 Nov 2016 17:21

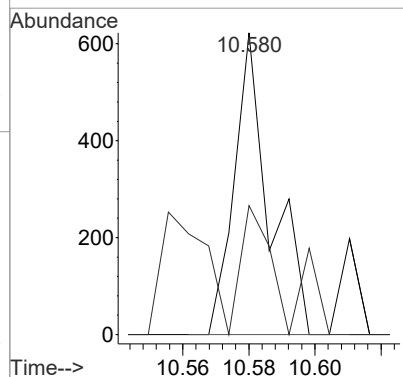
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 43      | 100   |       |       |
| 61      | 1.5   | 0.0   | 42.7  |
| 70      | 0.7   | 0.0   | 38.5  |





#102 BEFORE analyst DELETION  
 2-Nitropropane  
 Concen: 6.37 ug/L  
 RT: 10.580 min Scan# 1091  
 Delta R.T. 0.037 min  
 Lab File: 6G218.D  
 Acq: 01 Nov 2016 17:21

Tgt Ion: 43 Resp: 470  
 Ion Ratio Lower Upper  
 43 100  
 41 50.2 49.3 109.3





**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254015

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 5.5 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 37.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.46   | ug/kg | 0.729   | 1.46    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 123-91-1 | 1,4-Dioxane                 | U         | 72.9   | ug/kg | 24.3    | 72.9    |
| 78-93-3  | 2-Butanone                  | J         | 4.48   | ug/kg | 2.43    | 7.29    |
| 591-78-6 | 2-Hexanone                  | U         | 7.29   | ug/kg | 2.43    | 7.29    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 7.29   | ug/kg | 2.43    | 7.29    |
| 67-64-1  | Acetone                     |           | 15.5   | ug/kg | 2.43    | 7.29    |
| 71-43-2  | Benzene                     | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 74-97-5  | Bromochloromethane          | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-27-4  | Bromodichloromethane        | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-25-2  | Bromoform                   | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 74-83-9  | Bromomethane                | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-15-0  | Carbon disulfide            | U         | 7.29   | ug/kg | 2.43    | 7.29    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 108-90-7 | Chlorobenzene               | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-00-3  | Chloroethane                | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 67-66-3  | Chloroform                  | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 74-87-3  | Chloromethane               | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 110-82-7 | Cyclohexane                 | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 124-48-1 | Dibromochloromethane        | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 100-41-4 | Ethylbenzene                | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 98-82-8  | Isopropylbenzene            | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 79-20-9  | Methyl acetate              | U         | 7.29   | ug/kg | 2.43    | 7.29    |
| 108-87-2 | Methylcyclohexane           | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-09-2  | Methylene chloride          | U         | 7.29   | ug/kg | 2.43    | 7.29    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254015  
  
**Client ID:** SD140100  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 17:50  
**Prep Date:** 10/24/2016 12:35  
**Data File:** 110116V6\6G219.D

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 5.5 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 37.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 127-18-4    | Tetrachloroethylene         | J         | 0.539  | ug/kg | 0.485   | 1.46    |
| 108-88-3    | Toluene                     | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 79-01-6     | Trichloroethylene           | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 7.29   | ug/kg | 2.43    | 7.29    |
| 75-01-4     | Vinyl chloride              | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.92   | ug/kg | 0.972   | 2.92    |
| 95-47-6     | o-Xylene                    | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.46   | ug/kg | 0.485   | 1.46    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.46   | ug/kg | 0.485   | 1.46    |

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G219.D  
Acq On : 01 Nov 2016 17:50  
Operator : ACJ  
InstName : VOA6  
Sample : |409254015|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.5G N/A SOIL  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 02 09:20:08 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1457795  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.629 | 1.000  | 1035860  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 425135   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1457795  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.628 | 1.000  | 1035860  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 425135   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 495887  | 51.72 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1438225 | 52.07 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 494737  | 57.54 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 103%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 104%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 115%     |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc      | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|-----------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.009 | 4.001  | 0.425  | 772      | Below Cal |       | 42     |
| 3) Chloromethane              | 50   | 4.209 | 4.282  | 0.446  | 103      | N.D.      |       |        |
| 4) Vinyl chloride             |      | 0.000 | 4.498  | 0.000  | 0        | N.D.      |       |        |
| 5) Bromomethane               |      | 0.000 | 5.020  | 0.000  | 0        | N.D.      |       |        |
| 6) Chloroethane               |      | 0.000 | 5.156  | 0.000  | 0        | N.D.      |       |        |
| 7) Trichlorofluoromethane     |      | 0.000 | 5.509  | 0.000  | 0        | N.D.      |       |        |
| 8) Ethyl ether                | 59   | 5.822 | 5.830  | 0.617  | 293      | N.D.      |       |        |
| 9) Acetone                    | 43   | 6.197 | 6.197  | 0.656  | 42991    | 10.65     | ug/L  | 96     |
| 10) 1,1-Dichloroethylene      | 61   | 6.337 | 6.191  | 0.671  | 3322     | N.D.      |       |        |
| 11) Iodomethane               |      | 0.000 | 6.429  | 0.000  | 0        | N.D.      |       |        |
| 12) Acetonitrile              | 41   | 6.526 | 6.550  | 0.691  | 148      | N.D.      |       |        |
| 13) Methyl acetate            | 43   | 6.593 | 6.575  | 0.698  | 1333     | N.D.      |       |        |
| 14) Carbon disulfide          | 76   | 6.556 | 6.550  | 0.695  | 2737     | N.D.      |       |        |
| 15) Methylene chloride        | 84   | 6.758 | 6.764  | 0.716  | 6339     | N.D.      |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.038 | 7.050  | 0.746  | 5305     | N.D.      |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000 | 7.093  | 0.000  | 0        | N.D.      |       |        |
| 18) Hexane                    | 57   | 7.367 | 7.367  | 0.780  | 2845     | N.D.      |       |        |
| 19) Vinyl acetate             |      | 0.000 | 7.538  | 0.000  | 0        | N.D.      |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000 | 7.575  | 0.000  | 0        | N.D.      |       |        |
| 21) 2-Butanone                | 43   | 8.178 | 8.160  | 0.866  | 19482    | 3.07      | ug/L  | 91     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.190 | 8.209  | 0.868  | 132      | N.D.      |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000 | 8.233  | 0.000  | 0        | N.D.      |       |        |
| 24) Bromochloromethane        |      | 0.000 | 8.483  | 0.000  | 0        | N.D.      |       |        |
| 25) Chloroform                |      | 0.000 | 8.520  | 0.000  | 0        | N.D.      |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000 | 8.788  | 0.000  | 0        | N.D.      |       |        |
| 27) Cyclohexane               | 56   | 8.879 | 8.873  | 0.941  | 102      | N.D.      |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000 | 8.946  | 0.000  | 0        | N.D.      |       |        |
| 29) Carbon tetrachloride      |      | 0.000 | 8.977  | 0.000  | 0        | N.D.      |       |        |
| 31) 1,2-Dichloroethane        | 62   | 9.080 | 9.172  | 0.962  | 331      | N.D.      |       |        |
| 32) Benzene                   | 78   | 9.184 | 9.184  | 0.973  | 1169     | N.D.      |       |        |
| 33) Cyclohexene               |      | 0.000 | 9.294  | 0.000  | 0        | N.D.      |       |        |
| 34) n-Butyl alcohol           | 56   | 9.605 | 9.568  | 1.017  | 139      | N.D.      |       |        |
| 35) Trichloroethylene         |      | 0.000 | 9.830  | 0.000  | 0        | N.D.      |       |        |
| 36) 2-Pentanone               |      | 0.000 | 9.928  | 0.000  | 0        | N.D.      |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000 | 10.080 | 0.000  | 0        | N.D.      |       |        |
| 38) Methylcyclohexane         |      | 0.000 | 10.068 | 0.000  | 0        | N.D.      |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G219.D  
Acq On : 01 Nov 2016 17:50  
Operator : ACJ  
InstName : VOA6  
Sample : |409254015|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.5G N/A SOIL  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 02 09:20:08 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D.      |       |
| 40) Bromodichloromethane      |      | 0.000  | 10.330 | 0.000  | 0        | N.D.      |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D.      |       |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 10.787 | 0.000  | 0        | N.D.      |       |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 10.891 | 0.000  | 0        | N.D.      |       |
| 46) Toluene                   | 91   | 11.177 | 11.172 | 0.885  | 4726     | N.D.      |       |
| 47) trans-1,3-Dichloroprop... |      | 0.000  | 11.342 | 0.000  | 0        | N.D.      |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D.      |       |
| 49) 2-Hexanone                | 43   | 11.763 | 11.745 | 0.931  | 384      | N.D.      |       |
| 50) 1,3-Dichloropropane       |      | 0.000  | 11.751 | 0.000  | 0        | N.D.      |       |
| 51) Tetrachloroethylene       | 164  | 11.769 | 11.763 | 0.932  | 2608     | 0.37 ug/L | 95    |
| 52) Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D.      |       |
| 53) 1,2-Dibromoethane         |      | 0.000  | 12.177 | 0.000  | 0        | N.D.      |       |
| 54) Chlorobenzene             | 112  | 12.659 | 12.665 | 1.002  | 664      | N.D.      |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.720 | 0.000  | 0        | N.D.      |       |
| 56) Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 1224     | N.D.      |       |
| 57) m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 748      | N.D.      |       |
| 58) o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 568      | N.D.      |       |
| 59) Styrene                   | 104  | 13.287 | 13.281 | 1.052  | 2091     | N.D.      |       |
| 61) Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.      |       |
| 62) Isopropylbenzene          | 105  | 13.653 | 13.641 | 0.907  | 7177     | N.D.      |       |
| 64) 1,1,2,2-Tetrachloroethane |      | 0.000  | 13.927 | 0.000  | 0        | N.D.      |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.      |       |
| 66) Bromobenzene              | 156  | 14.049 | 14.043 | 0.933  | 437      | N.D.      |       |
| 67) n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 694      | N.D.      |       |
| 68) 1,3,5-Trimethylbenzene    | 105  | 14.238 | 14.226 | 0.946  | 486      | N.D.      |       |
| 69) 2-Chlorotoluene           |      | 0.000  | 14.214 | 0.000  | 0        | N.D.      |       |
| 70) 4-Chlorotoluene           | 91   | 14.323 | 14.317 | 0.951  | 1279     | N.D.      |       |
| 71) tert-Butylbenzene         |      | 0.000  | 14.592 | 0.000  | 0        | N.D.      |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.646 | 14.634 | 0.973  | 772      | N.D.      |       |
| 73) sec-Butylbenzene          |      | 0.000  | 14.817 | 0.000  | 0        | N.D.      |       |
| 74) 4-Isopropyltoluene        |      | 0.000  | 14.592 | 0.000  | 0        | N.D.      |       |
| 75) 1,3-Dichlorobenzene       | 146  | 14.994 | 14.994 | 0.996  | 1036     | N.D.      |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 1715     | N.D.      |       |
| 77) n-Butylbenzene            | 91   | 15.378 | 15.372 | 1.021  | 567      | N.D.      |       |
| 78) 1,2-Dichlorobenzene       | 146  | 15.494 | 15.494 | 1.029  | 836      | N.D.      |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.      |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.280 | 1.148  | 760      | N.D.      |       |
| 81) Hexachlorobutadiene       |      | 0.000  | 17.445 | 0.000  | 0        | N.D.      |       |
| 82) Naphthalene               | 128  | 17.627 | 17.628 | 1.171  | 2013     | N.D.      |       |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.951 | 17.945 | 1.192  | 668      | N.D.      |       |
| 85) Acrolein                  |      | 0.000  | 6.026  | 0.000  | 0        | N.D.      |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 6.185  | 0.000  | 0        | N.D.      |       |
| 87) Isopropyl Alcohol         | 45   | 6.319  | 6.282  | 0.669  | 9811     | N.D.      |       |
| 88) Allyl chloride            | 41   | 6.630  | 6.611  | 0.702  | 221      | N.D.      |       |
| 89) tert-Butyl Alcohol        | 59   | 6.782  | 6.770  | 0.718  | 7793     | N.D.      |       |
| 90) Acrylonitrile             |      | 0.000  | 7.014  | 0.000  | 0        | N.D.      |       |
| 91) Isopropyl ether           |      | 0.000  | 7.556  | 0.000  | 0        | N.D.      |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 7.672  | 0.000  | 0        | N.D.      |       |
| 93) Ethyl tert-butyl ether    | 59   | 7.959  | 7.965  | 0.843  | 303      | N.D.      |       |
| 94) Ethyl acetate             |      | 0.000  | 8.178  | 0.000  | 0m       | N.D.      | d     |
| 95) Propionitrile             |      | 0.000  | 8.245  | 0.000  | 0        | N.D.      |       |
| 96) Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.      |       |
| 97) Tetrahydrofuran           | 42   | 8.532  | 8.526  | 0.904  | 2814     | N.D.      |       |
| 98) Isobutyl alcohol          | 41   | 8.885  | 8.873  | 0.941  | 201      | N.D.      |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G219.D  
Acq On : 01 Nov 2016 17:50  
Operator : ACJ  
InstName : VOA6  
Sample : |409254015|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.5G N/A SOIL  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 02 09:20:08 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

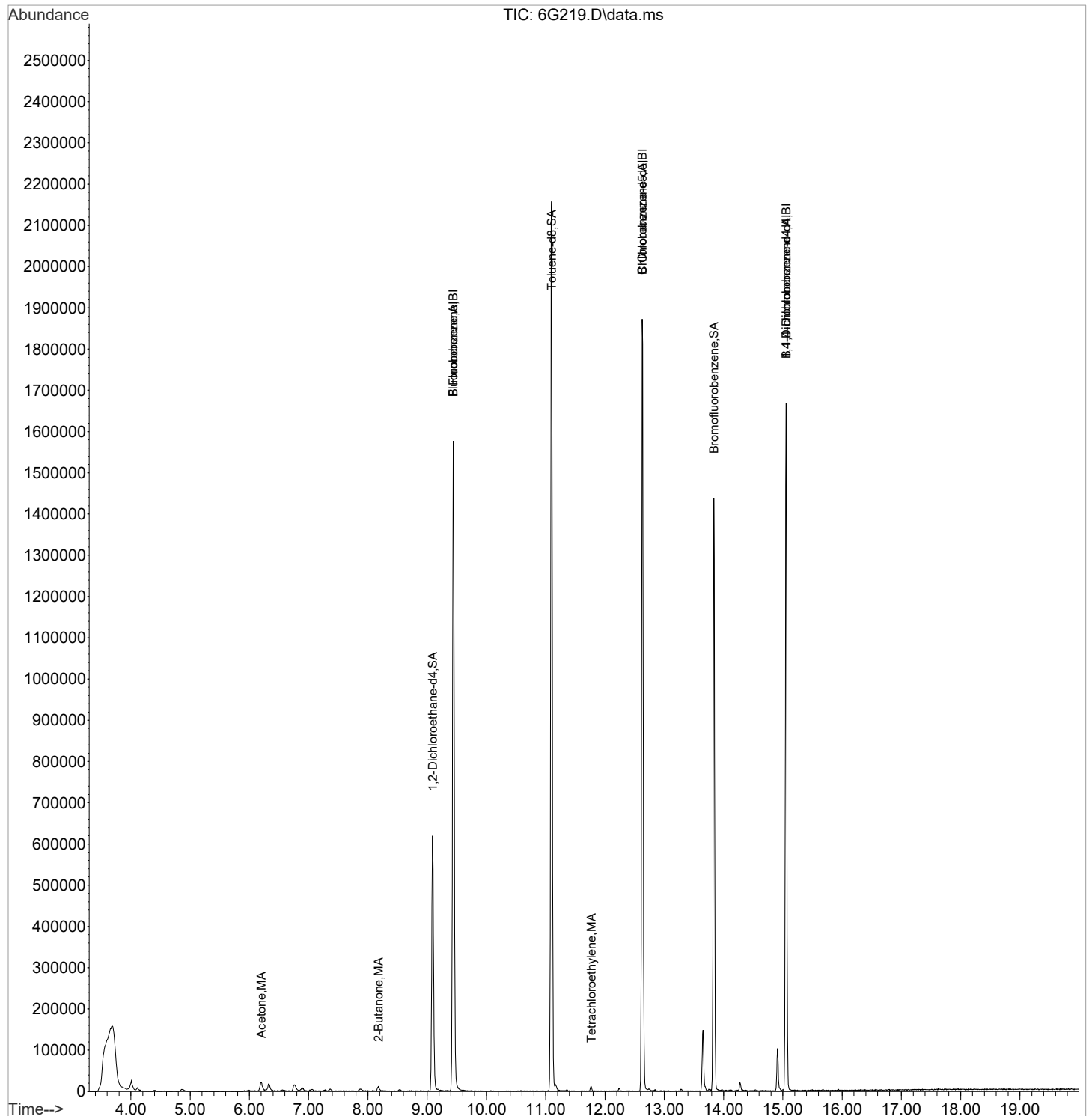
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 99) Methyl tert-amyl ether     |      | 0.000  | 9.214  | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       |      | 0.000  | 10.068 | 0.000  | 0        | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 10.172 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 10.543 | 0.000  | 0m       | N.D.      | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 11.348 | 0.000  | 0        | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D.      |       |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 13.689 | 0.000  | 0m       | N.D.      | d     |
| 108) Cyclohexanone             |      | 0.000  | 13.793 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.970 | 13.976 | 0.928  | 274      | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 14.658 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 15.207 | 15.201 | 1.010  | 650      | Below Cal | #     |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 15.591 | 0.000  | 0        | N.D.      |       |

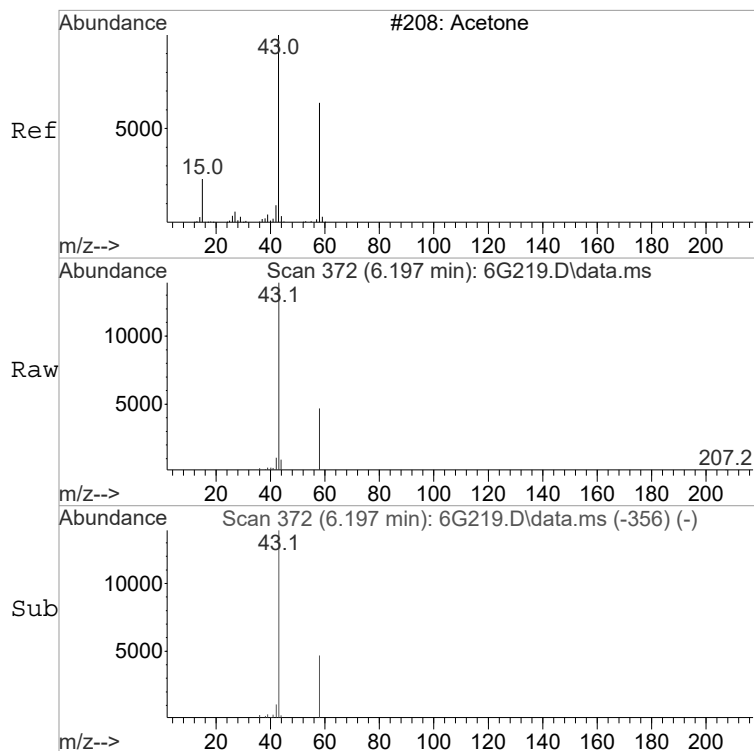
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G219.D  
Acq On : 01 Nov 2016 17:50  
Operator : ACJ  
InstName : VOA6  
Sample : |409254015|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.5G N/A SOIL  
ALS Vial : 19 Sample Multiplier: 1

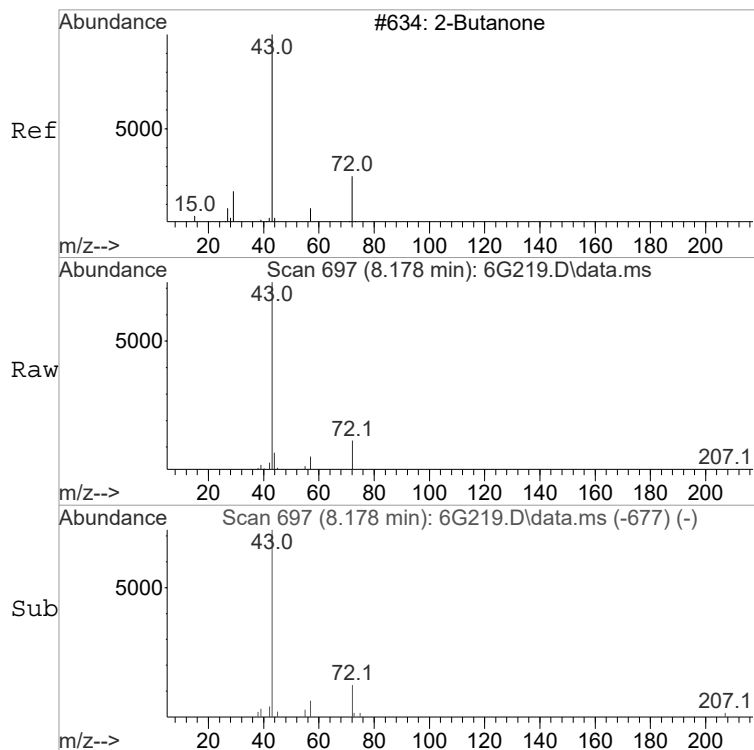
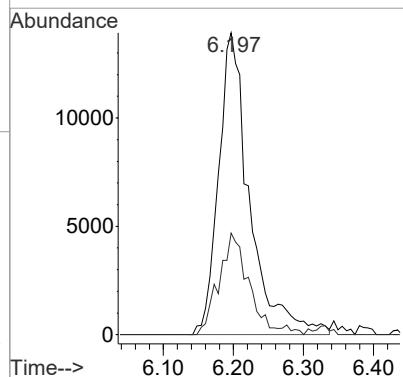
Quant Time: Nov 02 09:20:08 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE





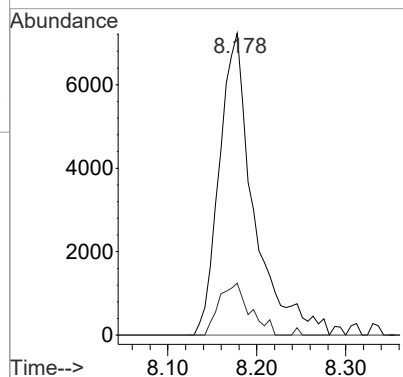
#9  
Acetone  
Concen: 10.65 ug/L  
RT: 6.197 min Scan# 372  
Delta R.T. -0.000 min  
Lab File: 6G219.D  
Acq: 01 Nov 2016 17:50

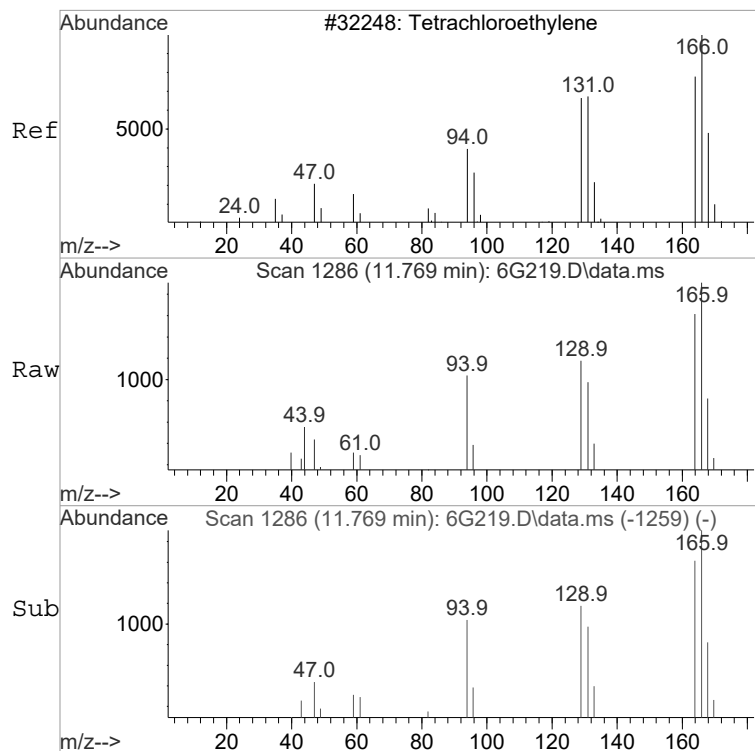
Tgt Ion: 43 Resp: 42991  
Ion Ratio Lower Upper  
43 100  
58 32.9 0.8 60.8



#21  
2-Butanone  
Concen: 3.07 ug/L  
RT: 8.178 min Scan# 697  
Delta R.T. 0.018 min  
Lab File: 6G219.D  
Acq: 01 Nov 2016 17:50

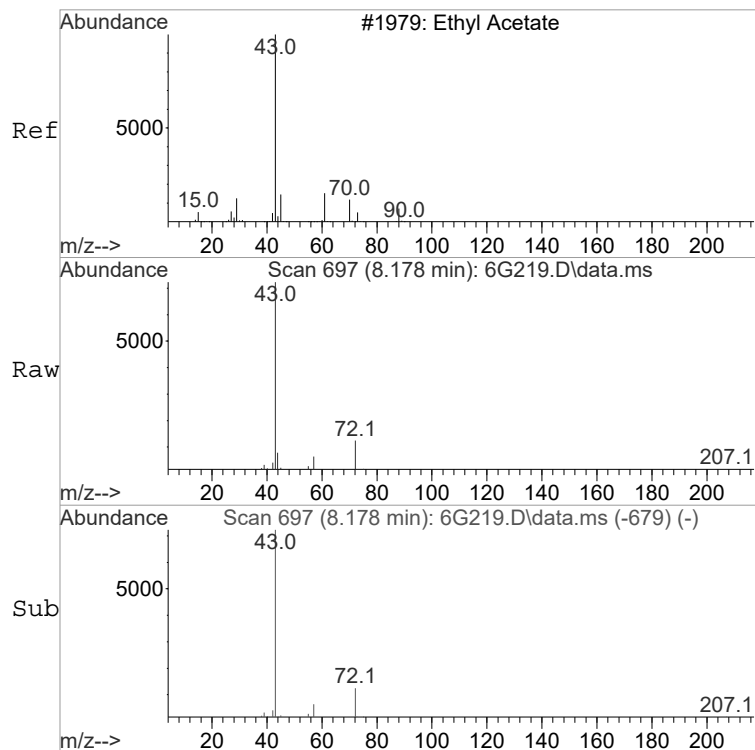
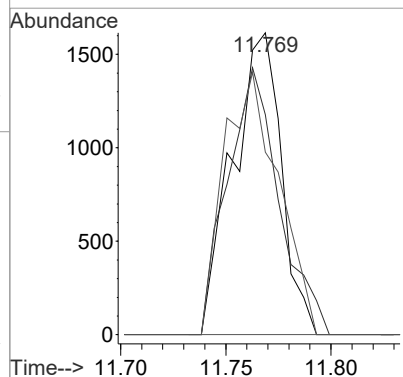
Tgt Ion: 43 Resp: 19482  
Ion Ratio Lower Upper  
43 100  
72 15.4 0.0 49.3





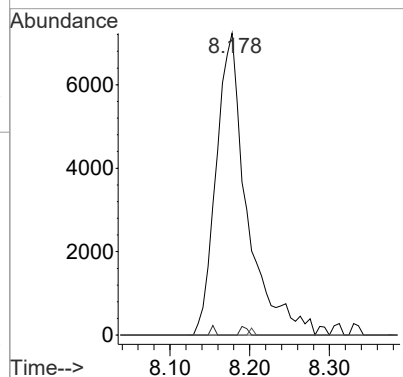
#51  
Tetrachloroethylene  
Concen: 0.37 ug/L  
RT: 11.769 min Scan# 1286  
Delta R.T. 0.006 min  
Lab File: 6G219.D  
Acq: 01 Nov 2016 17:50

| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 164     | 100   | 2608 |       |       |
| 129     | 93.6  | 61.6 | 121.6 |       |
| 131     | 97.2  | 59.4 | 119.4 |       |

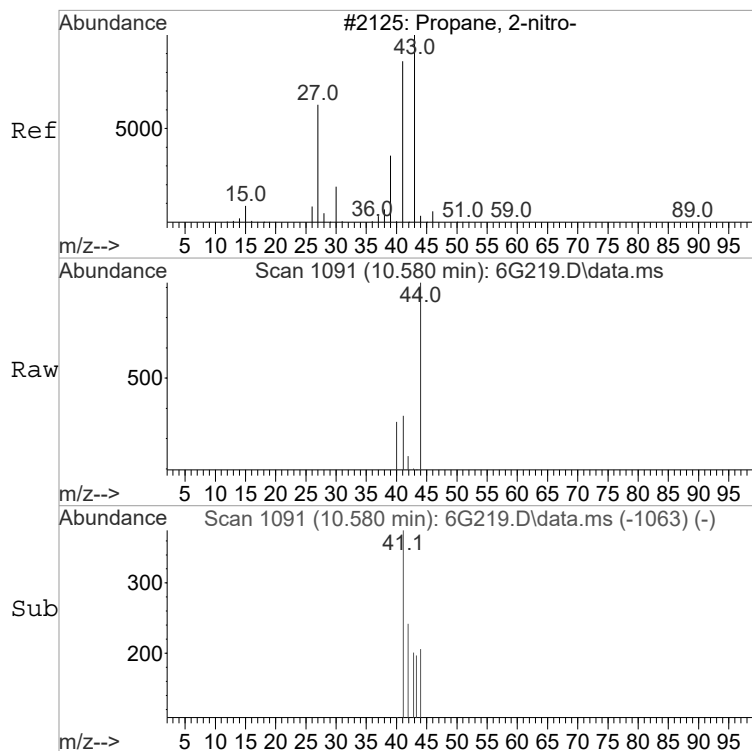


#94 BEFORE analyst DELETION  
Ethyl acetate  
Concen: 1.91 ug/L  
RT: 8.178 min Scan# 697  
Delta R.T. 0.000 min  
Lab File: 6G219.D  
Acq: 01 Nov 2016 17:50

| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 43      | 100   | 19628 |       |       |
| 61      | 0.7   | 0.0   | 42.7  |       |
| 70      | 0.0   | 0.0   | 38.5  |       |

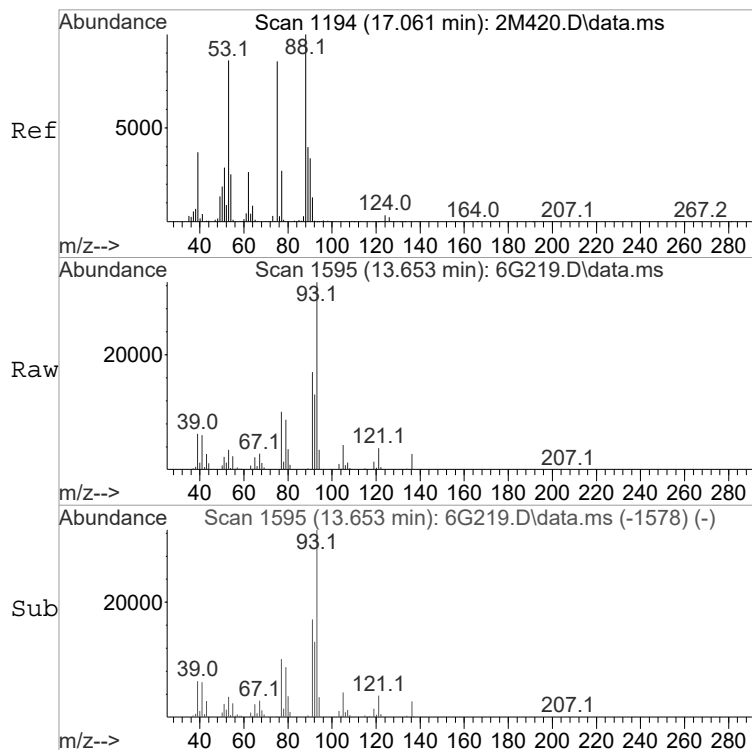
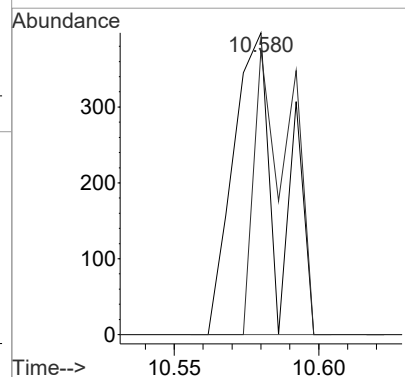






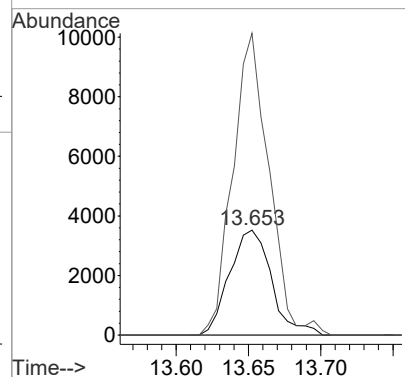
#102 BEFORE analyst DELETION  
2-Nitropropane  
Concen: 6.37 ug/L  
RT: 10.580 min Scan# 1091  
Delta R.T. 0.037 min  
Lab File: 6G219.D  
Acq: 01 Nov 2016 17:50

Tgt Ion: 43 Resp: 441  
Ion Ratio Lower Upper  
43 100  
41 74.6 49.3 109.3



#107 BEFORE analyst DELETION  
cis-1,4-Dichloro-2-butene  
Concen: 2.22 ug/L  
RT: 13.653 min Scan# 1595  
Delta R.T. -0.036 min  
Lab File: 6G219.D  
Acq: 01 Nov 2016 17:50

Tgt Ion: 53 Resp: 7114  
Ion Ratio Lower Upper  
53 100  
88 0.0 64.7 124.7#  
77 248.7 0.0 55.3#



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254016

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 36.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

**Client ID:** SD140100DUP  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 18:19  
**Prep Date:** 10/24/2016 12:35  
**Data File:** 110116V6\6G220.D

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.72   | ug/kg | 0.858   | 1.72    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 123-91-1 | 1,4-Dioxane                 | U         | 85.8   | ug/kg | 28.6    | 85.8    |
| 78-93-3  | 2-Butanone                  | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 591-78-6 | 2-Hexanone                  | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 67-64-1  | Acetone                     | J         | 7.28   | ug/kg | 2.86    | 8.58    |
| 71-43-2  | Benzene                     | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 74-97-5  | Bromochloromethane          | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-27-4  | Bromodichloromethane        | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-25-2  | Bromoform                   | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 74-83-9  | Bromomethane                | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-15-0  | Carbon disulfide            | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 108-90-7 | Chlorobenzene               | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-00-3  | Chloroethane                | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 67-66-3  | Chloroform                  | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 74-87-3  | Chloromethane               | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 110-82-7 | Cyclohexane                 | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 124-48-1 | Dibromochloromethane        | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 100-41-4 | Ethylbenzene                | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 98-82-8  | Isopropylbenzene            | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 79-20-9  | Methyl acetate              | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 108-87-2 | Methylcyclohexane           | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-09-2  | Methylene chloride          | U         | 8.58   | ug/kg | 2.86    | 8.58    |

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254016  
  
**Client ID:** SD140100DUP  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 18:19  
**Prep Date:** 10/24/2016 12:35  
**Data File:** 110116V6\6G220.D

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 4.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 36.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 108-88-3    | Toluene                     | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 79-01-6     | Trichloroethylene           | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 8.58   | ug/kg | 2.86    | 8.58    |
| 75-01-4     | Vinyl chloride              | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 179601-23-1 | m,p-Xylenes                 | U         | 3.43   | ug/kg | 1.14    | 3.43    |
| 95-47-6     | o-Xylene                    | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.72   | ug/kg | 0.571   | 1.72    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.72   | ug/kg | 0.571   | 1.72    |

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G220.D  
Acq On : 01 Nov 2016 18:19  
Operator : ACJ  
InstName : VOA6  
Sample : |409254016|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.6G N/A SOIL  
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 02 09:20:10 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1402220  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.635 | 12.629 | 1.000  | 1005733  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 443926   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1402220  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.635 | 12.628 | 1.000  | 1005733  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 443926   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 481662  | 52.23 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 1430453 | 53.34 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 502817  | 56.00 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 104%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 107%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 112%     |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000 | 4.001  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              | 50   | 4.410 | 4.282  | 0.467  | 165      | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000 | 4.498  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000 | 5.020  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000 | 5.156  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000 | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000 | 5.830  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    | 43   | 6.203 | 6.197  | 0.657  | 16451    | 4.24 | ug/L  | 91     |
| 10) 1,1-Dichloroethylene      | 61   | 6.325 | 6.191  | 0.670  | 2968     | N.D. |       |        |
| 11) Iodomethane               |      | 0.000 | 6.429  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              | 41   | 6.550 | 6.550  | 0.694  | 581      | N.D. |       |        |
| 13) Methyl acetate            | 43   | 6.587 | 6.575  | 0.698  | 570      | N.D. |       |        |
| 14) Carbon disulfide          | 76   | 6.550 | 6.550  | 0.694  | 2456     | N.D. |       |        |
| 15) Methylene chloride        | 84   | 6.752 | 6.764  | 0.715  | 1730     | N.D. |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.044 | 7.050  | 0.746  | 1048     | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000 | 7.093  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    | 57   | 7.367 | 7.367  | 0.780  | 2350     | N.D. |       |        |
| 19) Vinyl acetate             |      | 0.000 | 7.538  | 0.000  | 0        | N.D. |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000 | 7.575  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                | 43   | 8.172 | 8.160  | 0.866  | 7366     | N.D. |       |        |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.215 | 8.209  | 0.870  | 161      | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000 | 8.233  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000 | 8.483  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                | 83   | 8.507 | 8.520  | 0.901  | 179      | N.D. |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000 | 8.788  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 0.000 | 8.873  | 0.000  | 0        | N.D. |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000 | 8.946  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000 | 8.977  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        | 62   | 9.117 | 9.172  | 0.966  | 205      | N.D. |       |        |
| 32) Benzene                   | 78   | 9.178 | 9.184  | 0.972  | 851      | N.D. |       |        |
| 33) Cyclohexene               | 67   | 9.282 | 9.294  | 0.983  | 131      | N.D. |       |        |
| 34) n-Butyl alcohol           | 56   | 9.507 | 9.568  | 1.007  | 125      | N.D. |       |        |
| 35) Trichloroethylene         |      | 0.000 | 9.830  | 0.000  | 0        | N.D. |       |        |
| 36) 2-Pentanone               | 43   | 9.940 | 9.928  | 1.053  | 199      | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000 | 10.080 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 0.000 | 10.068 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G220.D  
Acq On : 01 Nov 2016 18:19  
Operator : ACJ  
InstName : VOA6  
Sample : |409254016|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.6G N/A SOIL  
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 02 09:20:10 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|-------------------------------|------|--------|--------|--------|----------|------|-------|
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D. |       |
| 40) Bromodichloromethane      |      | 0.000  | 10.330 | 0.000  | 0        | N.D. |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D. |       |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 10.787 | 0.000  | 0        | N.D. |       |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 10.891 | 0.000  | 0        | N.D. |       |
| 46) Toluene                   | 91   | 11.171 | 11.172 | 0.884  | 4604     | N.D. |       |
| 47) trans-1,3-Dichloroprop... |      | 0.000  | 11.342 | 0.000  | 0        | N.D. |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D. |       |
| 49) 2-Hexanone                | 43   | 11.781 | 11.745 | 0.932  | 355      | N.D. |       |
| 50) 1,3-Dichloropropane       |      | 0.000  | 11.751 | 0.000  | 0        | N.D. |       |
| 51) Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 1916     | N.D. |       |
| 52) Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D. |       |
| 53) 1,2-Dibromoethane         |      | 0.000  | 12.177 | 0.000  | 0        | N.D. |       |
| 54) Chlorobenzene             | 112  | 12.659 | 12.665 | 1.002  | 643      | N.D. |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.720 | 0.000  | 0        | N.D. |       |
| 56) Ethylbenzene              | 91   | 12.726 | 12.732 | 1.007  | 1062     | N.D. |       |
| 57) m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.016  | 947      | N.D. |       |
| 58) o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 636      | N.D. |       |
| 59) Styrene                   | 104  | 13.287 | 13.281 | 1.052  | 2325     | N.D. |       |
| 61) Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D. |       |
| 62) Isopropylbenzene          |      | 0.000  | 13.641 | 0.000  | 0        | N.D. |       |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 13.836 | 13.927 | 0.919  | 204      | N.D. |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D. |       |
| 66) Bromobenzene              |      | 0.000  | 14.043 | 0.000  | 0        | N.D. |       |
| 67) n-Propylbenzene           | 91   | 14.073 | 14.067 | 0.935  | 310      | N.D. |       |
| 68) 1,3,5-Trimethylbenzene    | 105  | 14.238 | 14.226 | 0.946  | 374      | N.D. |       |
| 69) 2-Chlorotoluene           |      | 0.000  | 14.214 | 0.000  | 0        | N.D. |       |
| 70) 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 600      | N.D. |       |
| 71) tert-Butylbenzene         |      | 0.000  | 14.592 | 0.000  | 0        | N.D. |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.634 | 0.972  | 839      | N.D. |       |
| 73) sec-Butylbenzene          |      | 0.000  | 14.817 | 0.000  | 0        | N.D. |       |
| 74) 4-Isopropyltoluene        |      | 0.000  | 14.592 | 0.000  | 0        | N.D. |       |
| 75) 1,3-Dichlorobenzene       | 146  | 14.994 | 14.994 | 0.996  | 879      | N.D. |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.091 | 15.085 | 1.002  | 1815     | N.D. |       |
| 77) n-Butylbenzene            | 91   | 15.384 | 15.372 | 1.022  | 319      | N.D. |       |
| 78) 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 569      | N.D. |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D. |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.286 | 17.280 | 1.148  | 617      | N.D. |       |
| 81) Hexachlorobutadiene       |      | 0.000  | 17.445 | 0.000  | 0        | N.D. |       |
| 82) Naphthalene               | 128  | 17.627 | 17.628 | 1.171  | 1969     | N.D. |       |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.951 | 17.945 | 1.192  | 476      | N.D. |       |
| 85) Acrolein                  |      | 0.000  | 6.026  | 0.000  | 0        | N.D. |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 6.185  | 0.000  | 0        | N.D. |       |
| 87) Isopropyl Alcohol         | 45   | 6.325  | 6.282  | 0.670  | 6472     | N.D. |       |
| 88) Allyl chloride            | 41   | 6.550  | 6.611  | 0.694  | 581      | N.D. |       |
| 89) tert-Butyl Alcohol        | 59   | 6.776  | 6.770  | 0.718  | 3482     | N.D. |       |
| 90) Acrylonitrile             |      | 0.000  | 7.014  | 0.000  | 0        | N.D. |       |
| 91) Isopropyl ether           |      | 0.000  | 7.556  | 0.000  | 0        | N.D. |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 7.672  | 0.000  | 0        | N.D. |       |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D. |       |
| 94) Ethyl acetate             | 43   | 8.172  | 8.178  | 0.866  | 7366     | N.D. |       |
| 95) Propionitrile             |      | 0.000  | 8.245  | 0.000  | 0        | N.D. |       |
| 96) Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D. |       |
| 97) Tetrahydrofuran           | 42   | 8.532  | 8.526  | 0.904  | 2575     | N.D. |       |
| 98) Isobutyl alcohol          |      | 0.000  | 8.873  | 0.000  | 0        | N.D. |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G220.D  
Acq On : 01 Nov 2016 18:19  
Operator : ACJ  
InstName : VOA6  
Sample : |409254016|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.6G N/A SOIL  
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 02 09:20:10 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

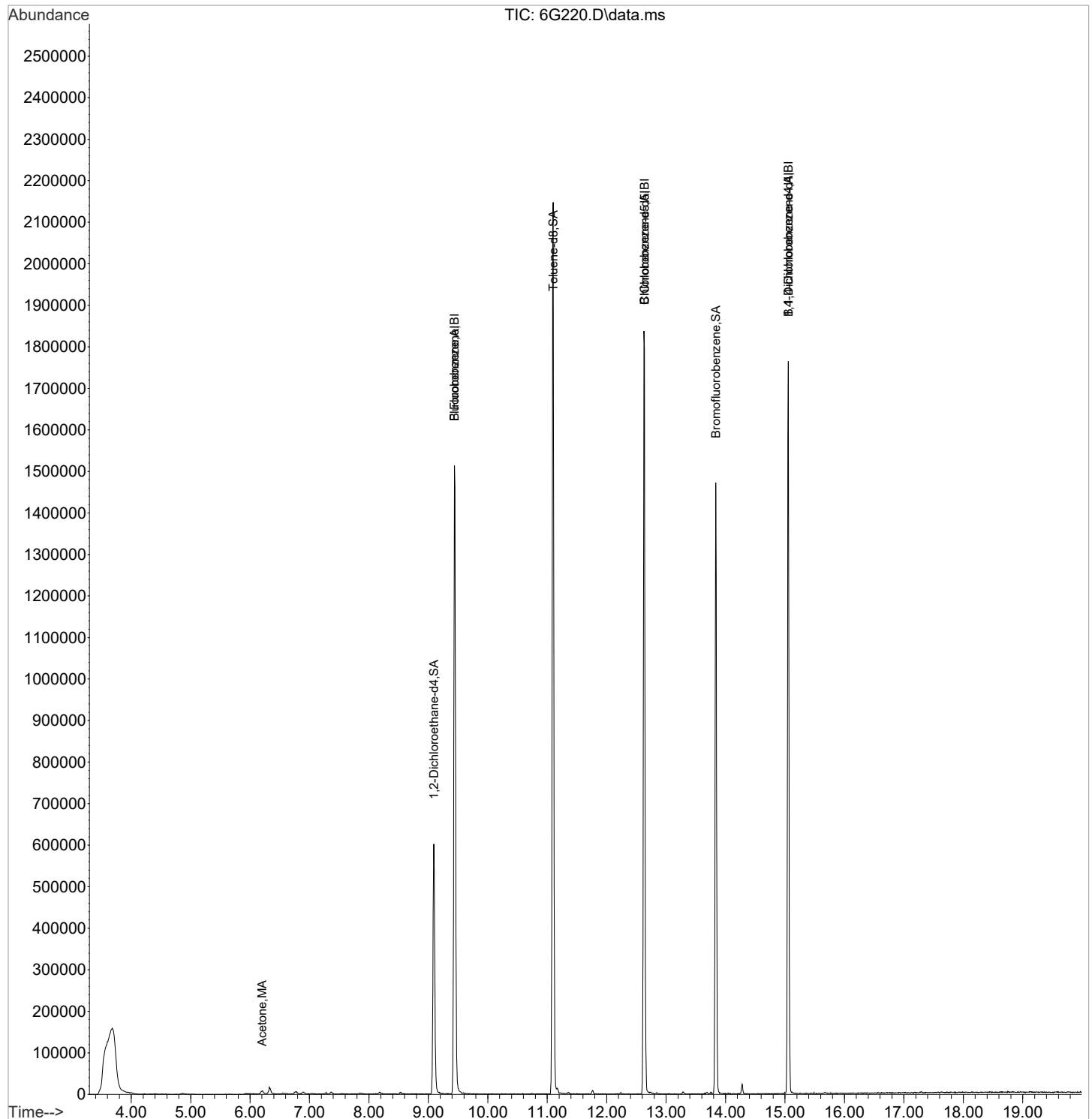
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 99) Methyl tert-amyl ether     |      | 0.000  | 9.214  | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       |      | 0.000  | 10.068 | 0.000  | 0        | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 10.172 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 10.543 | 0.000  | 0m       | N.D.      | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 11.348 | 0.000  | 0        | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D.      |       |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.683 | 13.689 | 0.909  | 192      | N.D.      |       |
| 108) Cyclohexanone             |      | 0.000  | 13.793 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.994 | 13.976 | 0.930  | 171      | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 14.658 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 15.207 | 15.201 | 1.010  | 284      | Below Cal | #     |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 15.591 | 0.000  | 0        | N.D.      |       |

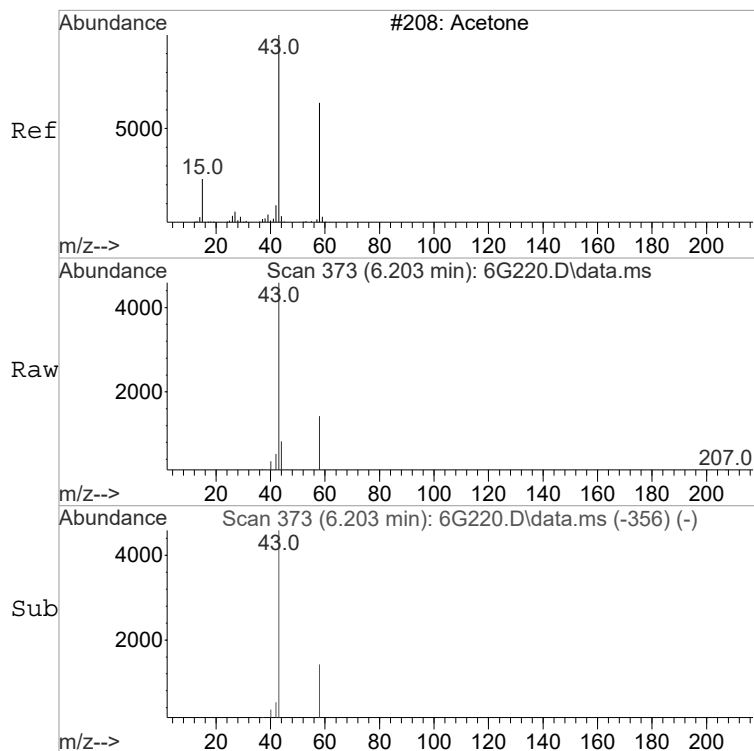
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G220.D  
Acq On : 01 Nov 2016 18:19  
Operator : ACJ  
InstName : VOA6  
Sample : |409254016|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.6G N/A SOIL  
ALS Vial : 20 Sample Multiplier: 1

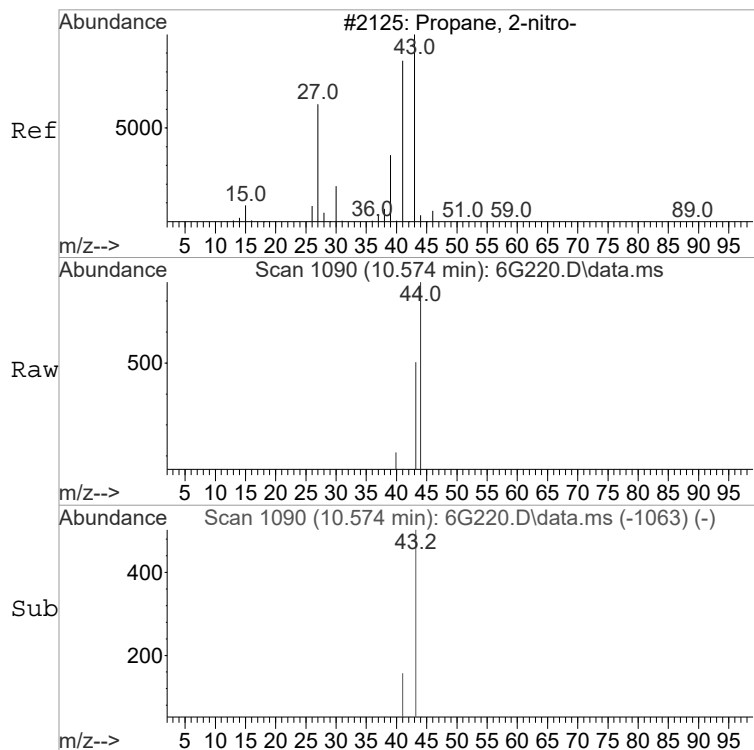
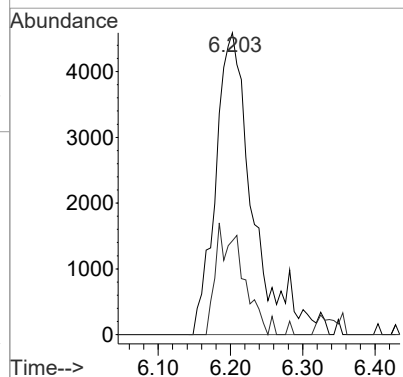
Quant Time: Nov 02 09:20:10 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE





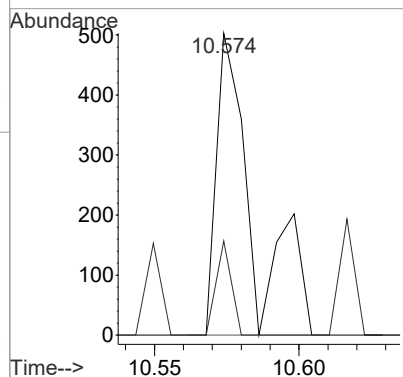
#9  
Acetone  
Concen: 4.24 ug/L  
RT: 6.203 min Scan# 373  
Delta R.T. 0.006 min  
Lab File: 6G220.D  
Acq: 01 Nov 2016 18:19

Tgt Ion: 43 Resp: 16451  
Ion Ratio Lower Upper  
43 100  
58 26.1 0.8 60.8



#102 BEFORE analyst DELETION  
2-Nitropropane  
Concen: 6.37 ug/L  
RT: 10.574 min Scan# 1090  
Delta R.T. 0.031 min  
Lab File: 6G220.D  
Acq: 01 Nov 2016 18:19

Tgt Ion: 43 Resp: 446  
Ion Ratio Lower Upper  
43 100  
41 0.0 49.3 109.3#





**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 2

**SDG Number:** 409254  
**Lab Sample ID:** 409254029

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 6.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 26.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

**Client ID:** DP020312  
**Batch ID:** 1612391  
**Run Date:** 11/02/2016 15:48  
**Prep Date:** 10/25/2016 13:25  
**Data File:** 110216V4\4H313.D

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.03   | ug/kg | 0.513   | 1.03    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 123-91-1 | 1,4-Dioxane                 | U         | 51.3   | ug/kg | 17.1    | 51.3    |
| 78-93-3  | 2-Butanone                  | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 591-78-6 | 2-Hexanone                  | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 67-64-1  | Acetone                     | J         | 2.45   | ug/kg | 1.71    | 5.13    |
| 71-43-2  | Benzene                     | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 74-97-5  | Bromochloromethane          | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-27-4  | Bromodichloromethane        | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-25-2  | Bromoform                   | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 74-83-9  | Bromomethane                | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-15-0  | Carbon disulfide            | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 108-90-7 | Chlorobenzene               | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-00-3  | Chloroethane                | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 67-66-3  | Chloroform                  | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 74-87-3  | Chloromethane               | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 110-82-7 | Cyclohexane                 | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 124-48-1 | Dibromochloromethane        | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 100-41-4 | Ethylbenzene                | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 98-82-8  | Isopropylbenzene            | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 79-20-9  | Methyl acetate              | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 108-87-2 | Methylcyclohexane           | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-09-2  | Methylene chloride          | U         | 5.13   | ug/kg | 1.71    | 5.13    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254029

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 6.6 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 26.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 127-18-4    | Tetrachloroethylene         | J         | 0.472  | ug/kg | 0.341   | 1.03    |
| 108-88-3    | Toluene                     | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 79-01-6     | Trichloroethylene           | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.13   | ug/kg | 1.71    | 5.13    |
| 75-01-4     | Vinyl chloride              | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.05   | ug/kg | 0.684   | 2.05    |
| 95-47-6     | o-Xylene                    | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.03   | ug/kg | 0.341   | 1.03    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.03   | ug/kg | 0.341   | 1.03    |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H313.D  
Acq On : 02 Nov 2016 15:48  
Operator : ACJ  
InstName : VOA4  
Sample : |409254029|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.6G N/A SOIL  
ALS Vial : 13 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 02 16:20:39 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1092772  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 773910   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.905 | 1.000  | 392295   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1092772  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 773910   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 392295   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 308826  | 52.00 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1077945 | 48.84 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 416925  | 48.98 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 104%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 98%      |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 98%      |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 0.000  | 5.094  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.370  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.706  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    | 43   | 7.072  | 7.059  | 0.685  | 8332     | 2.39 | ug/L  | 86     |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.090  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 0.000  | 7.327  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              | 41   | 7.639  | 7.407  | 0.740  | 1013     | N.D. |       |        |
| 13) Methyl acetate            | 43   | 7.468  | 7.456  | 0.723  | 1058     | N.D. |       |        |
| 14) Carbon disulfide          | 76   | 7.474  | 7.468  | 0.724  | 3653     | N.D. |       |        |
| 15) Methylene chloride        | 84   | 7.645  | 7.645  | 0.740  | 8328     | N.D. |       |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.955  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.992  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 397      | N.D. |       |        |
| 19) Vinyl acetate             | 43   | 8.431  | 8.413  | 0.816  | 1209     | N.D. |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000  | 8.461  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                | 43   | 9.059  | 9.028  | 0.877  | 5862     | N.D. |       |        |
| 22) cis-1,2-Dichloroethylene  |      | 0.000  | 9.095  | 0.000  | 0        | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 157      | N.D. |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 0.000  | 9.790  | 0.000  | 0        | N.D. |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000  | 9.839  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 0.000  | 10.046 | 0.000  | 0        | N.D. |       |        |
| 32) Benzene                   | 78   | 10.089 | 10.077 | 0.977  | 1051     | N.D. |       |        |
| 33) Cyclohexene               | 67   | 10.315 | 10.199 | 0.999  | 114      | N.D. |       |        |
| 34) n-Butyl alcohol           | 56   | 10.412 | 10.400 | 1.008  | 349      | N.D. |       |        |
| 35) Trichloroethylene         |      | 0.000  | 10.717 | 0.000  | 0        | N.D. |       |        |
| 36) 2-Pentanone               |      | 0.000  | 10.778 | 0.000  | 0        | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 0.000  | 10.973 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H313.D  
Acq On : 02 Nov 2016 15:48  
Operator : ACJ  
InstName : VOA4  
Sample : |409254029|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.6G N/A SOIL  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 02 16:20:39 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|-----|
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D.      |       |     |
| 40) Bromodichloromethane      |      | 0.000  | 11.193 | 0.000  | 0        | N.D.      |       |     |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.412 | 0.000  | 0        | N.D.      |       |     |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 11.644 | 0.000  | 0        | N.D.      |       |     |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 11.735 | 0.000  | 0        | N.D.      |       |     |
| 46) Toluene                   | 91   | 12.046 | 12.040 | 0.893  | 2407     | N.D.      |       |     |
| 47) trans-1,3-Dichloroprop... | 75   | 12.193 | 12.180 | 0.904  | 184      | N.D.      |       |     |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.      |       |     |
| 49) 2-Hexanone                | 43   | 12.595 | 12.583 | 0.934  | 1247     | N.D.      |       |     |
| 50) 1,3-Dichloropropane       |      | 0.000  | 12.595 | 0.000  | 0        | N.D.      |       |     |
| 51) Tetrachloroethylene       | 164  | 12.638 | 12.637 | 0.937  | 2480     | 0.46 ug/L |       | 96  |
| 52) Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.      |       |     |
| 53) 1,2-Dibromoethane         |      | 0.000  | 13.034 | 0.000  | 0        | N.D.      |       |     |
| 54) Chlorobenzene             | 112  | 13.528 | 13.521 | 1.003  | 731      | N.D.      |       |     |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 13.576 | 0.000  | 0        | N.D.      |       |     |
| 56) Ethylbenzene              | 91   | 13.589 | 13.588 | 1.007  | 1064     | N.D.      |       |     |
| 57) m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 675      | N.D.      |       |     |
| 58) o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 855      | N.D.      |       |     |
| 59) Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 3075     | N.D.      |       |     |
| 61) Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.      |       |     |
| 62) Isopropylbenzene          | 105  | 14.497 | 14.491 | 0.911  | 400      | N.D.      |       |     |
| 64) 1,1,2,2-Tetrachloroethane |      | 0.000  | 14.747 | 0.000  | 0        | N.D.      |       |     |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.      |       |     |
| 66) Bromobenzene              | 156  | 14.887 | 14.893 | 0.936  | 273      | N.D.      |       |     |
| 67) n-Propylbenzene           | 91   | 14.918 | 14.917 | 0.938  | 976      | N.D.      |       |     |
| 68) 1,3,5-Trimethylbenzene    | 105  | 15.064 | 15.070 | 0.947  | 692      | N.D.      |       |     |
| 69) 2-Chlorotoluene           |      | 0.000  | 15.064 | 0.000  | 0        | N.D.      |       |     |
| 70) 4-Chlorotoluene           | 91   | 15.161 | 15.161 | 0.953  | 2224     | N.D.      |       |     |
| 71) tert-Butylbenzene         |      | 0.000  | 15.442 | 0.000  | 0        | N.D.      |       |     |
| 72) 1,2,4-Trimethylbenzene    | 105  | 15.485 | 15.478 | 0.974  | 919      | N.D.      |       |     |
| 73) sec-Butylbenzene          | 105  | 15.655 | 15.661 | 0.984  | 553      | N.D.      |       |     |
| 74) 4-Isopropyltoluene        | 119  | 15.795 | 15.783 | 0.993  | 536      | N.D.      |       |     |
| 75) 1,3-Dichlorobenzene       | 146  | 15.850 | 15.844 | 0.997  | 1238     | N.D.      |       |     |
| 76) 1,4-Dichlorobenzene       | 146  | 15.924 | 15.929 | 1.001  | 2104     | N.D.      |       |     |
| 77) n-Butylbenzene            | 91   | 16.234 | 16.228 | 1.021  | 980      | N.D.      |       |     |
| 78) 1,2-Dichlorobenzene       | 146  | 16.362 | 16.356 | 1.029  | 1028     | N.D.      |       |     |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.      |       |     |
| 80) 1,2,4-Trichlorobenzene    | 180  | 18.307 | 18.301 | 1.151  | 842      | N.D.      |       |     |
| 81) Hexachlorobutadiene       |      | 0.000  | 18.490 | 0.000  | 0        | N.D.      |       |     |
| 82) Naphthalene               | 128  | 18.691 | 18.685 | 1.175  | 3576     | N.D.      |       |     |
| 83) 1,2,3-Trichlorobenzene    | 180  | 19.039 | 19.033 | 1.197  | 369      | N.D.      |       |     |
| 85) Acrolein                  |      | 0.000  | 6.895  | 0.000  | 0        | N.D.      |       |     |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.096  | 0.000  | 0        | N.D.      |       |     |
| 87) Isopropyl Alcohol         | 45   | 7.169  | 7.139  | 0.694  | 176      | Below Cal | #     | 58  |
| 88) Allyl chloride            | 41   | 7.565  | 7.511  | 0.733  | 309      | N.D.      |       |     |
| 89) tert-Butyl Alcohol        | 59   | 7.626  | 7.639  | 0.738  | 369      | Below Cal | #     | 100 |
| 90) Acrylonitrile             |      | 0.000  | 7.882  | 0.000  | 0        | N.D.      |       |     |
| 91) Isopropyl ether           |      | 0.000  | 8.455  | 0.000  | 0        | N.D.      |       |     |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 8.577  | 0.000  | 0        | N.D.      |       |     |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.      |       |     |
| 94) Ethyl acetate             | 43   | 9.059  | 9.047  | 0.877  | 5862     | Below Cal | #     | 72  |
| 95) Propionitrile             |      | 0.000  | 9.096  | 0.000  | 0        | N.D.      |       |     |
| 96) Methacrylonitrile         | 41   | 9.291  | 9.278  | 0.900  | 314      | Below Cal | #     | 25  |
| 97) Tetrahydrofuran           | 42   | 9.419  | 9.419  | 0.912  | 970      | Below Cal | #     | 40  |
| 98) Isobutyl alcohol          | 41   | 9.711  | 9.717  | 0.940  | 167      | Below Cal | #     | 1   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H313.D  
Acq On : 02 Nov 2016 15:48  
Operator : ACJ  
InstName : VOA4  
Sample : |409254029|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.6G N/A SOIL  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 02 16:20:39 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

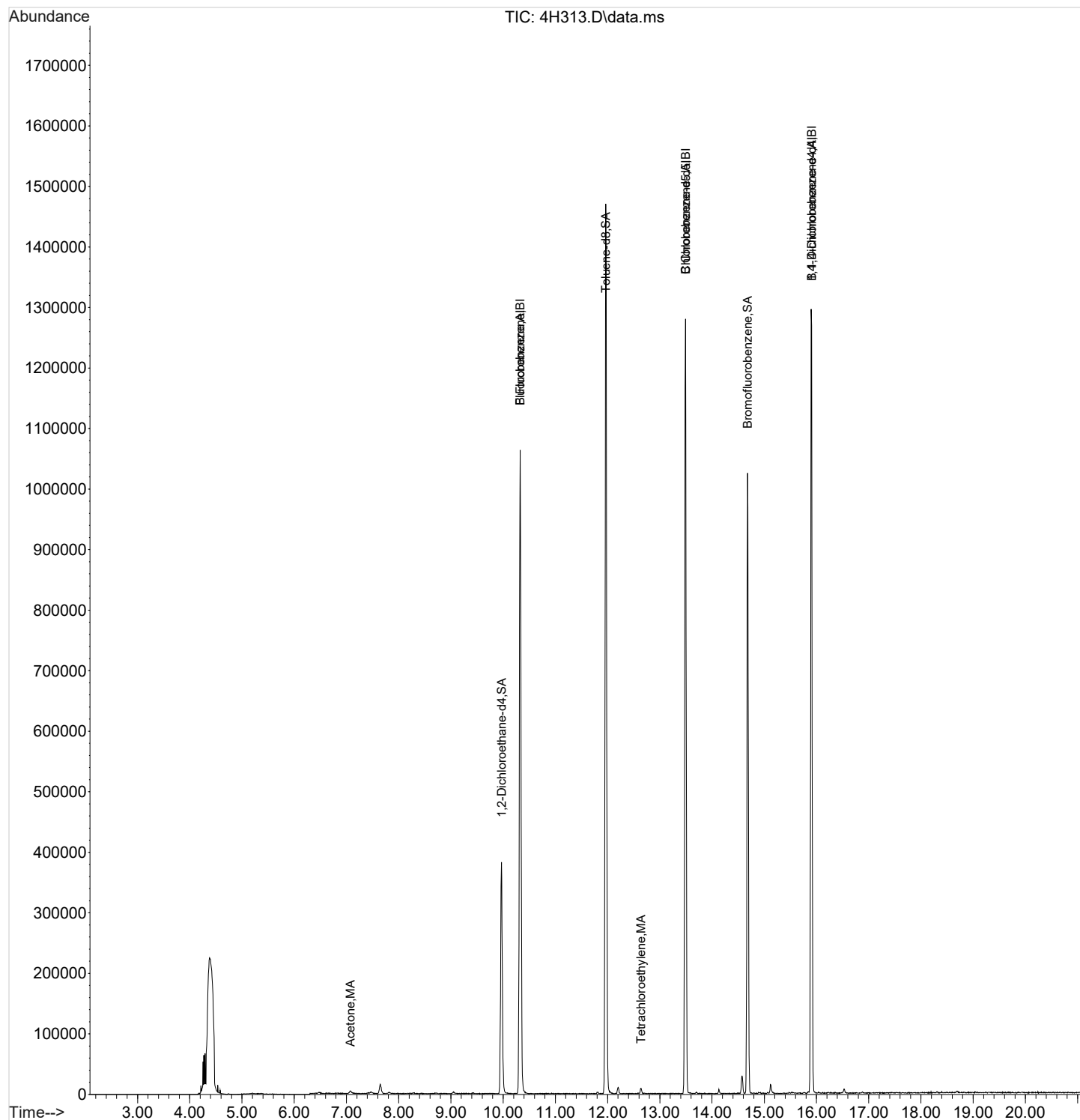
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |  |    |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|--|----|
| 99) Methyl tert-amyl ether     |      | 0.000  | 10.101 | 0.000  | 0        | N.D.      |       |  |    |
| 100) Methyl methacrylate       |      | 0.000  | 10.925 | 0.000  | 0        | N.D.      |       |  |    |
| 101) 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.      |       |  |    |
| 102) 2-Nitropropane            | 43   | 11.339 | 11.388 | 1.098  | 159      | Below Cal | #     |  | 53 |
| 104) Ethyl methacrylate        | 69   | 12.199 | 12.186 | 0.904  | 278      | Below Cal | #     |  | 18 |
| 106) 1-Chlorohexane            | 55   | 13.363 | 13.387 | 0.840  | 159      | Below Cal | #     |  | 1  |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 14.509 | 0.000  | 0        | N.D.      |       |  |    |
| 108) Cyclohexanone             |      | 0.000  | 14.631 | 0.000  | 0        | N.D.      |       |  |    |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.796 | 14.796 | 0.930  | 275      | Below Cal | #     |  | 51 |
| 110) Pentachloroethane         |      | 0.000  | 15.503 | 0.000  | 0        | N.D.      |       |  |    |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.008  | 1822     | Below Cal |       |  | 80 |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.527 | 16.442 | 1.039  | 336      | Below Cal | #     |  | 56 |

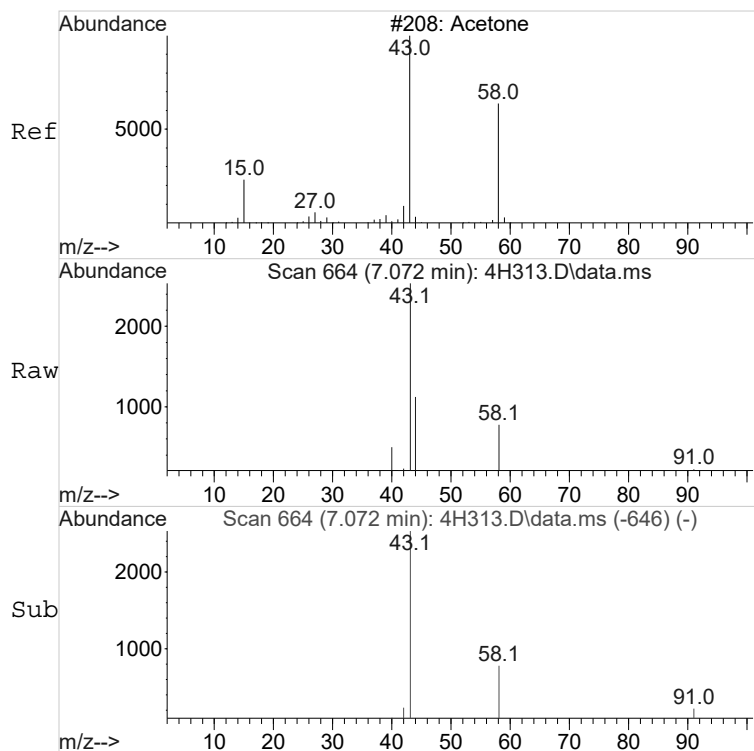
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H313.D  
Acq On : 02 Nov 2016 15:48  
Operator : ACJ  
InstName : VOA4  
Sample : |409254029|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.6G N/A SOIL  
ALS Vial : 13 Sample Multiplier: 1

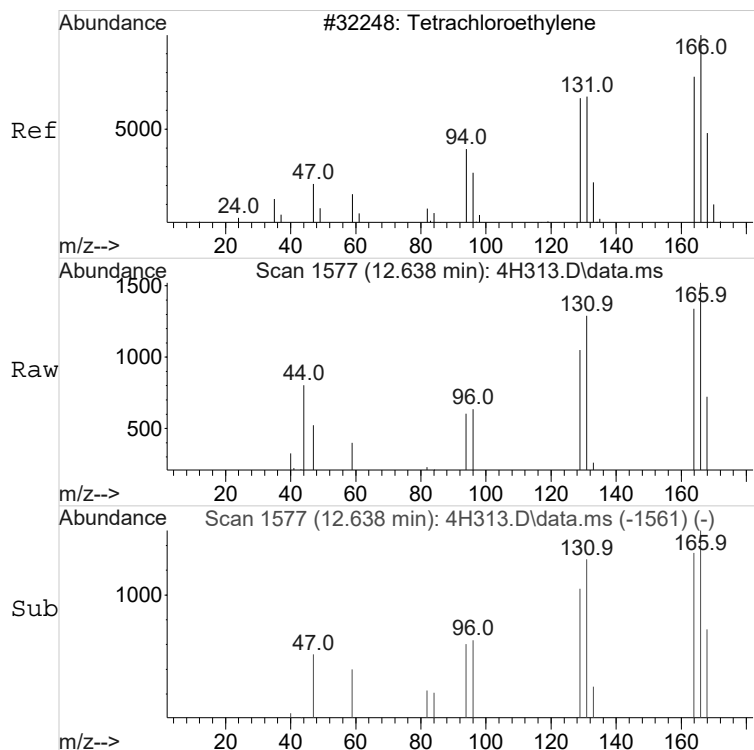
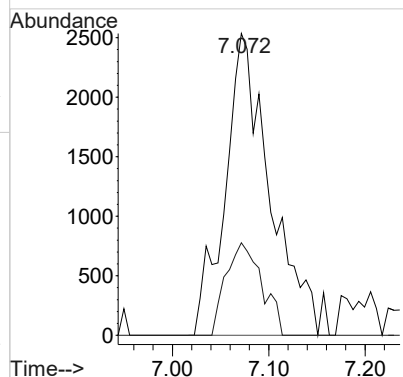
Quant Time: Nov 02 16:20:39 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE





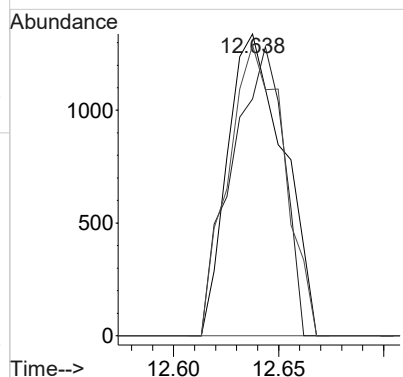
#9  
Acetone  
Concen: 2.39 ug/L  
RT: 7.072 min Scan# 664  
Delta R.T. 0.013 min  
Lab File: 4H313.D  
Acq: 02 Nov 2016 15:48

Tgt Ion: 43 Resp: 8332  
Ion Ratio Lower Upper  
43 100  
58 24.4 2.3 62.3



#51  
Tetrachloroethylene  
Concen: 0.46 ug/L  
RT: 12.638 min Scan# 1577  
Delta R.T. 0.001 min  
Lab File: 4H313.D  
Acq: 02 Nov 2016 15:48

Tgt Ion: 164 Resp: 2480  
Ion Ratio Lower Upper  
164 100  
129 88.8 66.1 126.1  
131 96.3 65.3 125.3



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254032

**Date Collected:** 10/25/2016 14:00  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 7.1 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 17.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-34-3  | 1,1-Dichloroethane          | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 0.855  | ug/kg | 0.428   | 0.855   |
| 106-93-4 | 1,2-Dibromoethane           | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 107-06-2 | 1,2-Dichloroethane          | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 78-87-5  | 1,2-Dichloropropane         | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 123-91-1 | 1,4-Dioxane                 | U         | 42.8   | ug/kg | 14.3    | 42.8    |
| 78-93-3  | 2-Butanone                  | J         | 4.16   | ug/kg | 1.43    | 4.28    |
| 591-78-6 | 2-Hexanone                  | U         | 4.28   | ug/kg | 1.43    | 4.28    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 4.28   | ug/kg | 1.43    | 4.28    |
| 67-64-1  | Acetone                     |           | 29.8   | ug/kg | 1.43    | 4.28    |
| 71-43-2  | Benzene                     | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 74-97-5  | Bromochloromethane          | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-27-4  | Bromodichloromethane        | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-25-2  | Bromoform                   | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 74-83-9  | Bromomethane                | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-15-0  | Carbon disulfide            | U         | 4.28   | ug/kg | 1.43    | 4.28    |
| 56-23-5  | Carbon tetrachloride        | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 108-90-7 | Chlorobenzene               | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-00-3  | Chloroethane                | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 67-66-3  | Chloroform                  | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 74-87-3  | Chloromethane               | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 110-82-7 | Cyclohexane                 | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 124-48-1 | Dibromochloromethane        | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-71-8  | Dichlorodifluoromethane     | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 100-41-4 | Ethylbenzene                | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 98-82-8  | Isopropylbenzene            | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 79-20-9  | Methyl acetate              | U         | 4.28   | ug/kg | 1.43    | 4.28    |
| 108-87-2 | Methylcyclohexane           | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-09-2  | Methylene chloride          | U         | 4.28   | ug/kg | 1.43    | 4.28    |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254032  
  
**Client ID:** DP020413  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 19:17  
**Prep Date:** 10/25/2016 14:00  
**Data File:** 110116V6\6G222.D

**Date Collected:** 10/25/2016 14:00  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 7.1 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 17.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 127-18-4    | Tetrachloroethylene         | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 108-88-3    | Toluene                     | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 79-01-6     | Trichloroethylene           | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 75-69-4     | Trichlorofluoromethane      | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 4.28   | ug/kg | 1.43    | 4.28    |
| 75-01-4     | Vinyl chloride              | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 179601-23-1 | m,p-Xylenes                 | U         | 1.71   | ug/kg | 0.570   | 1.71    |
| 95-47-6     | o-Xylene                    | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 0.855  | ug/kg | 0.285   | 0.855   |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.855  | ug/kg | 0.285   | 0.855   |

11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G222.D  
Acq On : 01 Nov 2016 19:17  
Operator : ACJ  
InstName : VOA6  
Sample : |409254032|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 7.1G N/A SOIL  
ALS Vial : 22 Sample Multiplier: 1

11/09/2016

Quant Time: Nov 02 09:20:14 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1511601  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.629 | 1.000  | 1163989  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 597925   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1511601  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.628 | 1.000  | 1163989  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 597925   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 563940  | 56.73 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1569383 | 50.56 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 622906  | 51.51 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 113%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 101%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 103%     |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000 | 4.001  | 0.000  | 0        | N.D.  |       |        |
| 3) Chloromethane              | 50   | 4.418 | 4.282  | 0.468  | 837      | N.D.  |       |        |
| 4) Vinyl chloride             |      | 0.000 | 4.498  | 0.000  | 0        | N.D.  |       |        |
| 5) Bromomethane               |      | 0.000 | 5.020  | 0.000  | 0        | N.D.  |       |        |
| 6) Chloroethane               |      | 0.000 | 5.156  | 0.000  | 0        | N.D.  |       |        |
| 7) Trichlorofluoromethane     |      | 0.000 | 5.509  | 0.000  | 0        | N.D.  |       |        |
| 8) Ethyl ether                | 59   | 5.846 | 5.830  | 0.619  | 333      | N.D.  |       |        |
| 9) Acetone                    | 43   | 6.191 | 6.197  | 0.656  | 145805   | 34.85 | ug/L  | 100    |
| 10) 1,1-Dichloroethylene      | 61   | 6.337 | 6.191  | 0.671  | 1027     | N.D.  |       |        |
| 11) Iodomethane               |      | 0.000 | 6.429  | 0.000  | 0        | N.D.  |       |        |
| 12) Acetonitrile              | 41   | 6.556 | 6.550  | 0.695  | 543      | N.D.  |       |        |
| 13) Methyl acetate            | 43   | 6.556 | 6.575  | 0.695  | 746      | N.D.  |       |        |
| 14) Carbon disulfide          | 76   | 6.550 | 6.550  | 0.694  | 32655    | N.D.  |       |        |
| 15) Methylene chloride        | 84   | 6.758 | 6.764  | 0.716  | 15604    | N.D.  |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.062 | 7.050  | 0.748  | 5877     | N.D.  |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000 | 7.093  | 0.000  | 0        | N.D.  |       |        |
| 18) Hexane                    | 57   | 7.367 | 7.367  | 0.780  | 1182     | N.D.  |       |        |
| 19) Vinyl acetate             |      | 0.000 | 7.538  | 0.000  | 0        | N.D.  |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000 | 7.575  | 0.000  | 0        | N.D.  |       |        |
| 21) 2-Butanone                | 43   | 8.172 | 8.160  | 0.866  | 31995    | 4.86  | ug/L  | 94     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.190 | 8.209  | 0.868  | 263      | N.D.  |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000 | 8.233  | 0.000  | 0        | N.D.  |       |        |
| 24) Bromochloromethane        |      | 0.000 | 8.483  | 0.000  | 0        | N.D.  |       |        |
| 25) Chloroform                |      | 0.000 | 8.520  | 0.000  | 0        | N.D.  |       |        |
| 26) 1,1,1-Trichloroethane     | 97   | 8.794 | 8.788  | 0.932  | 174      | N.D.  |       |        |
| 27) Cyclohexane               | 56   | 8.873 | 8.873  | 0.940  | 142      | N.D.  |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000 | 8.946  | 0.000  | 0        | N.D.  |       |        |
| 29) Carbon tetrachloride      |      | 0.000 | 8.977  | 0.000  | 0        | N.D.  |       |        |
| 31) 1,2-Dichloroethane        | 62   | 9.086 | 9.172  | 0.963  | 105      | N.D.  |       |        |
| 32) Benzene                   | 78   | 9.184 | 9.184  | 0.973  | 900      | N.D.  |       |        |
| 33) Cyclohexene               |      | 0.000 | 9.294  | 0.000  | 0        | N.D.  |       |        |
| 34) n-Butyl alcohol           |      | 0.000 | 9.568  | 0.000  | 0        | N.D.  |       |        |
| 35) Trichloroethylene         | 95   | 9.818 | 9.830  | 1.040  | 281      | N.D.  |       |        |
| 36) 2-Pentanone               | 43   | 9.934 | 9.928  | 1.052  | 795      | N.D.  |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000 | 10.080 | 0.000  | 0        | N.D.  |       |        |
| 38) Methylcyclohexane         |      | 0.000 | 10.068 | 0.000  | 0        | N.D.  |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G222.D  
Acq On : 01 Nov 2016 19:17  
Operator : ACJ  
InstName : VOA6  
Sample : |409254032|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 7.1G N/A SOIL  
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Nov 02 09:20:14 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|-------------------------------|------|--------|--------|--------|----------|------|-------|
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D. |       |
| 40) Bromodichloromethane      |      | 0.000  | 10.330 | 0.000  | 0        | N.D. |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D. |       |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 10.787 | 0.000  | 0        | N.D. |       |
| 44) 4-Methyl-2-pentanone      | 58   | 10.885 | 10.891 | 0.862  | 128      | N.D. |       |
| 46) Toluene                   | 91   | 11.177 | 11.172 | 0.885  | 4213     | N.D. |       |
| 47) trans-1,3-Dichloroprop... |      | 0.000  | 11.342 | 0.000  | 0        | N.D. |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D. |       |
| 49) 2-Hexanone                | 43   | 11.769 | 11.745 | 0.932  | 476      | N.D. |       |
| 50) 1,3-Dichloropropane       |      | 0.000  | 11.751 | 0.000  | 0        | N.D. |       |
| 51) Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 2122     | N.D. |       |
| 52) Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D. |       |
| 53) 1,2-Dibromoethane         |      | 0.000  | 12.177 | 0.000  | 0        | N.D. |       |
| 54) Chlorobenzene             | 112  | 12.665 | 12.665 | 1.003  | 708      | N.D. |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.720 | 0.000  | 0        | N.D. |       |
| 56) Ethylbenzene              | 91   | 12.726 | 12.732 | 1.008  | 788      | N.D. |       |
| 57) m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 629      | N.D. |       |
| 58) o-Xylene                  | 91   | 13.281 | 13.275 | 1.052  | 404      | N.D. |       |
| 59) Styrene                   | 104  | 13.287 | 13.281 | 1.052  | 1926     | N.D. |       |
| 61) Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D. |       |
| 62) Isopropylbenzene          |      | 0.000  | 13.641 | 0.000  | 0        | N.D. |       |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 13.842 | 13.927 | 0.919  | 313      | N.D. |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D. |       |
| 66) Bromobenzene              | 156  | 14.043 | 14.043 | 0.933  | 146      | N.D. |       |
| 67) n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 563      | N.D. |       |
| 68) 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 159      | N.D. |       |
| 69) 2-Chlorotoluene           |      | 0.000  | 14.214 | 0.000  | 0        | N.D. |       |
| 70) 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 1173     | N.D. |       |
| 71) tert-Butylbenzene         |      | 0.000  | 14.592 | 0.000  | 0        | N.D. |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.640 | 14.634 | 0.972  | 539      | N.D. |       |
| 73) sec-Butylbenzene          | 105  | 14.823 | 14.817 | 0.985  | 137      | N.D. |       |
| 74) 4-Isopropyltoluene        |      | 0.000  | 14.592 | 0.000  | 0        | N.D. |       |
| 75) 1,3-Dichlorobenzene       | 146  | 15.000 | 14.994 | 0.996  | 743      | N.D. |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 1484     | N.D. |       |
| 77) n-Butylbenzene            | 91   | 15.390 | 15.372 | 1.022  | 247      | N.D. |       |
| 78) 1,2-Dichlorobenzene       | 146  | 15.500 | 15.494 | 1.030  | 444      | N.D. |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D. |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.280 | 1.148  | 465      | N.D. |       |
| 81) Hexachlorobutadiene       |      | 0.000  | 17.445 | 0.000  | 0        | N.D. |       |
| 82) Naphthalene               | 128  | 17.633 | 17.628 | 1.171  | 1631     | N.D. |       |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.938 | 17.945 | 1.192  | 239      | N.D. |       |
| 85) Acrolein                  | 56   | 6.050  | 6.026  | 0.641  | 701      | N.D. |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 6.185  | 0.000  | 0        | N.D. |       |
| 87) Isopropyl Alcohol         | 45   | 6.282  | 6.282  | 0.665  | 322      | N.D. |       |
| 88) Allyl chloride            | 41   | 6.556  | 6.611  | 0.695  | 543      | N.D. |       |
| 89) tert-Butyl Alcohol        | 59   | 6.794  | 6.770  | 0.720  | 7665     | N.D. |       |
| 90) Acrylonitrile             |      | 0.000  | 7.014  | 0.000  | 0        | N.D. |       |
| 91) Isopropyl ether           |      | 0.000  | 7.556  | 0.000  | 0        | N.D. |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 7.672  | 0.000  | 0        | N.D. |       |
| 93) Ethyl tert-butyl ether    | 59   | 7.971  | 7.965  | 0.844  | 1916     | N.D. |       |
| 94) Ethyl acetate             |      | 0.000  | 8.178  | 0.000  | 0m       | N.D. | d     |
| 95) Propionitrile             |      | 0.000  | 8.245  | 0.000  | 0        | N.D. |       |
| 96) Methacrylonitrile         | 41   | 8.428  | 8.416  | 0.893  | 144      | N.D. |       |
| 97) Tetrahydrofuran           | 42   | 8.525  | 8.526  | 0.903  | 2637     | N.D. |       |
| 98) Isobutyl alcohol          | 41   | 8.934  | 8.873  | 0.946  | 150      | N.D. |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G222.D  
Acq On : 01 Nov 2016 19:17  
Operator : ACJ  
InstName : VOA6  
Sample : |409254032|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 7.1G N/A SOIL  
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Nov 02 09:20:14 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

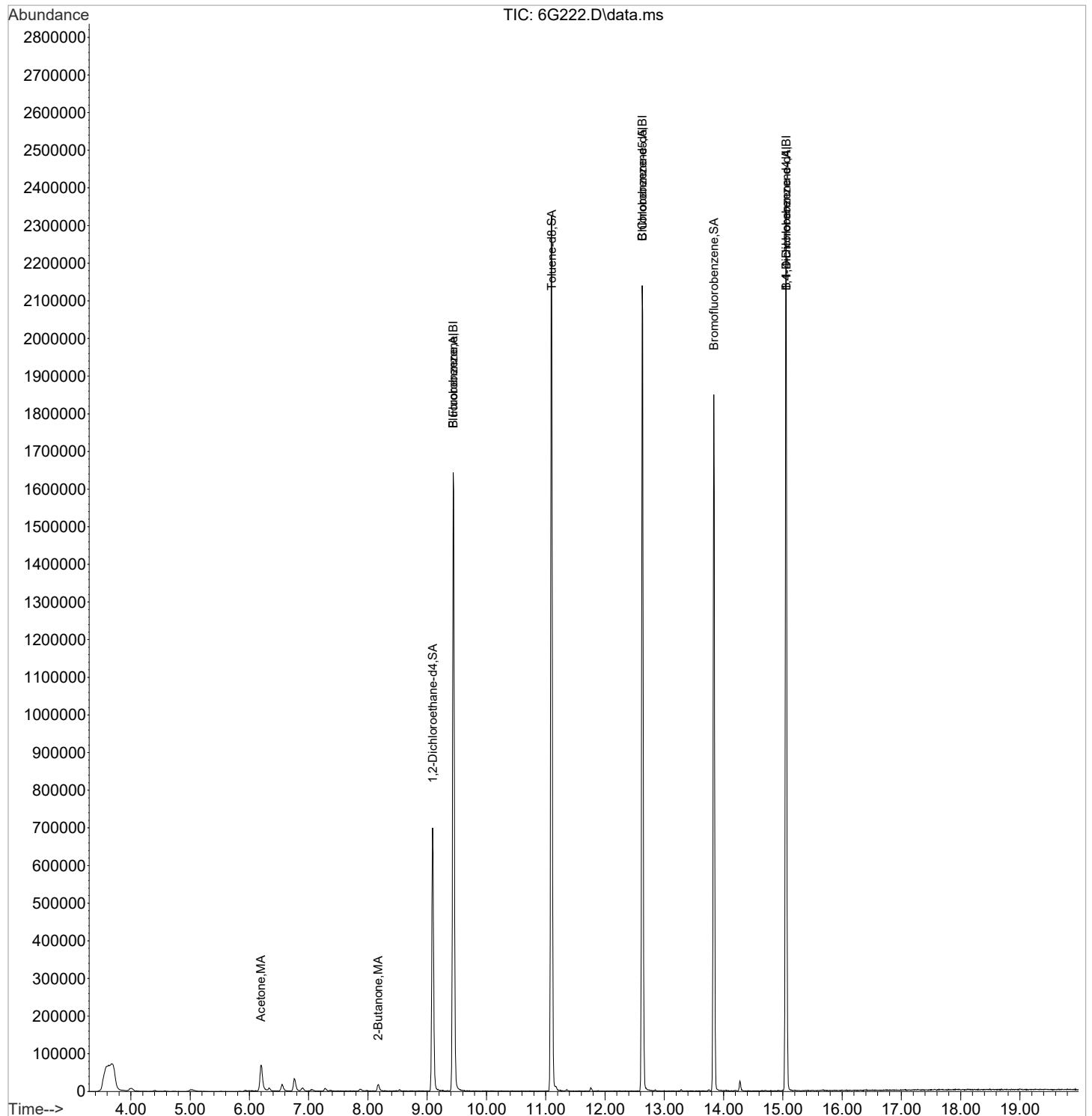
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 99) Methyl tert-amyl ether     |      | 0.000  | 9.214  | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       |      | 0.000  | 10.068 | 0.000  | 0        | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 10.172 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 10.543 | 0.000  | 0m       | N.D.      | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 11.348 | 0.000  | 0        | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D.      |       |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 13.689 | 0.000  | 0        | N.D.      |       |
| 108) Cyclohexanone             |      | 0.000  | 13.793 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 13.976 | 0.000  | 0        | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 14.658 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 15.195 | 15.201 | 1.009  | 184      | Below Cal | #     |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 15.591 | 0.000  | 0        | N.D.      |       |

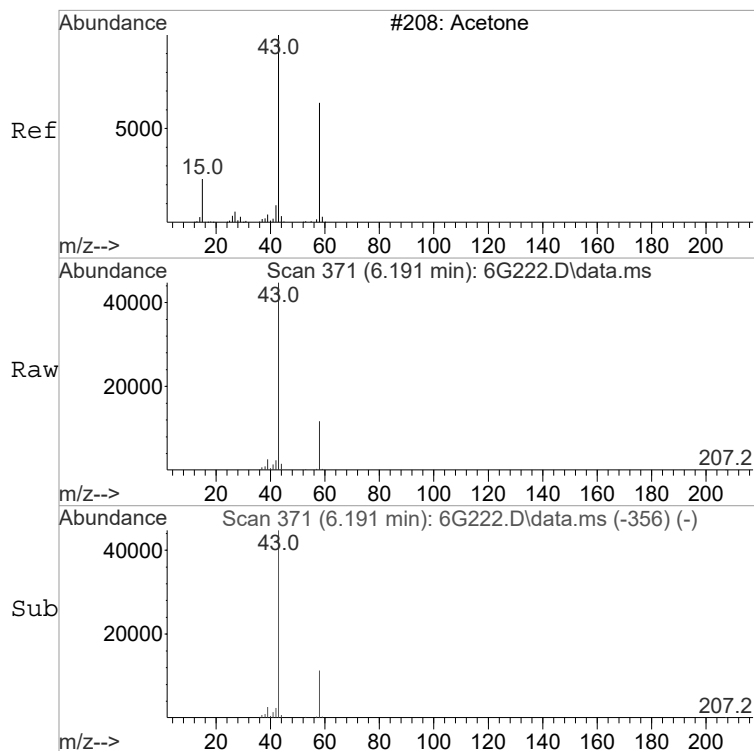
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G222.D  
Acq On : 01 Nov 2016 19:17  
Operator : ACJ  
InstName : VOA6  
Sample : |409254032|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 7.1G N/A SOIL  
ALS Vial : 22 Sample Multiplier: 1

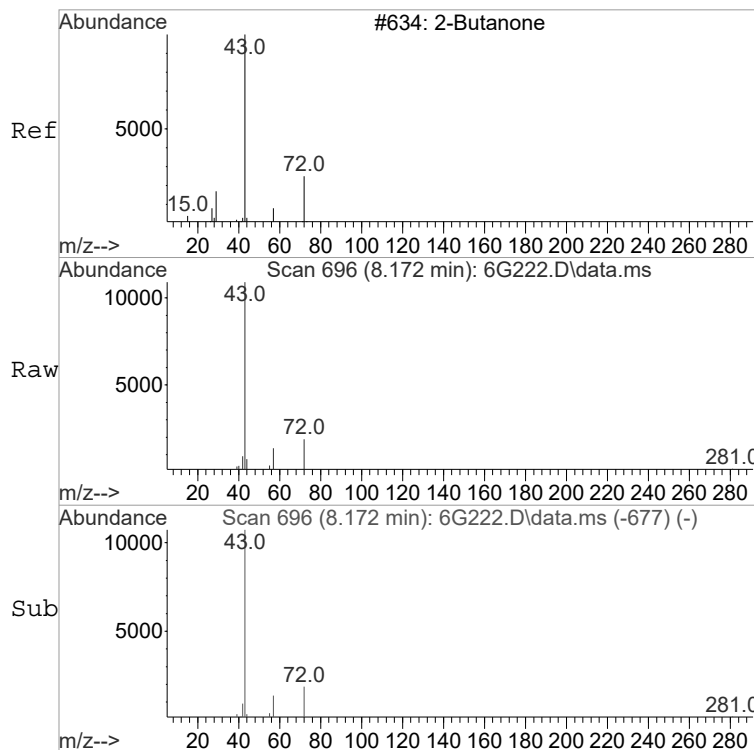
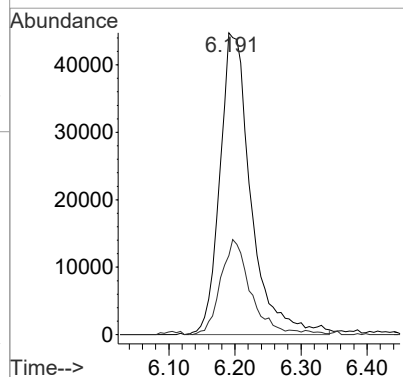
Quant Time: Nov 02 09:20:14 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE





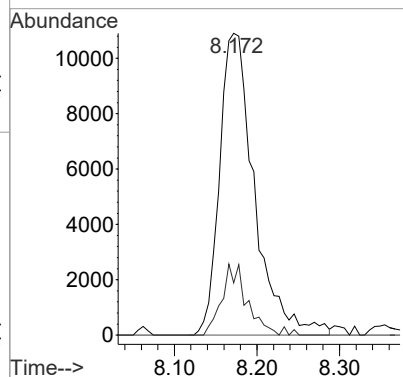
#9  
Acetone  
Concen: 34.85 ug/L  
RT: 6.191 min Scan# 371  
Delta R.T. -0.006 min  
Lab File: 6G222.D  
Acq: 01 Nov 2016 19:17

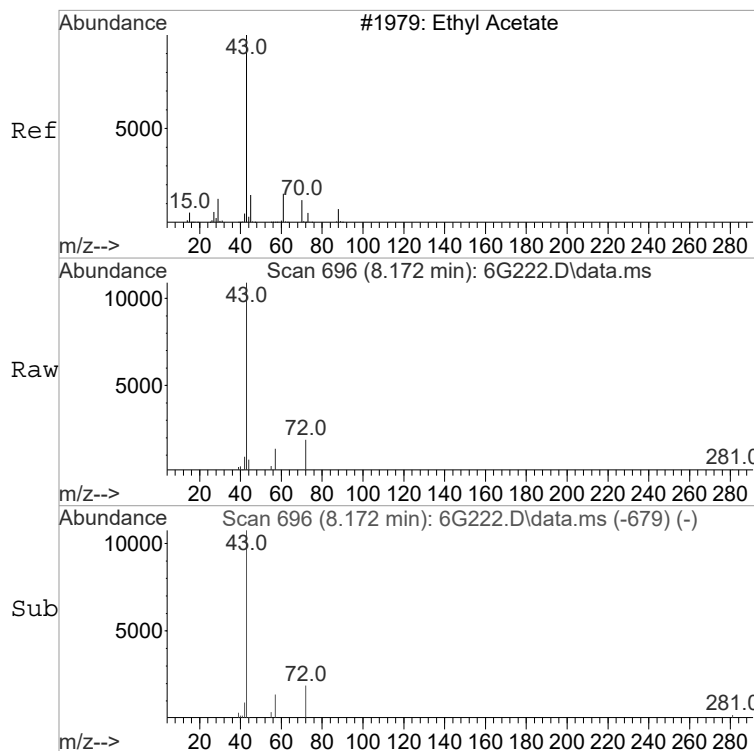
Tgt Ion: 43 Resp: 145805  
Ion Ratio Lower Upper  
43 100  
58 30.9 0.8 60.8



#21  
2-Butanone  
Concen: 4.86 ug/L  
RT: 8.172 min Scan# 696  
Delta R.T. 0.012 min  
Lab File: 6G222.D  
Acq: 01 Nov 2016 19:17

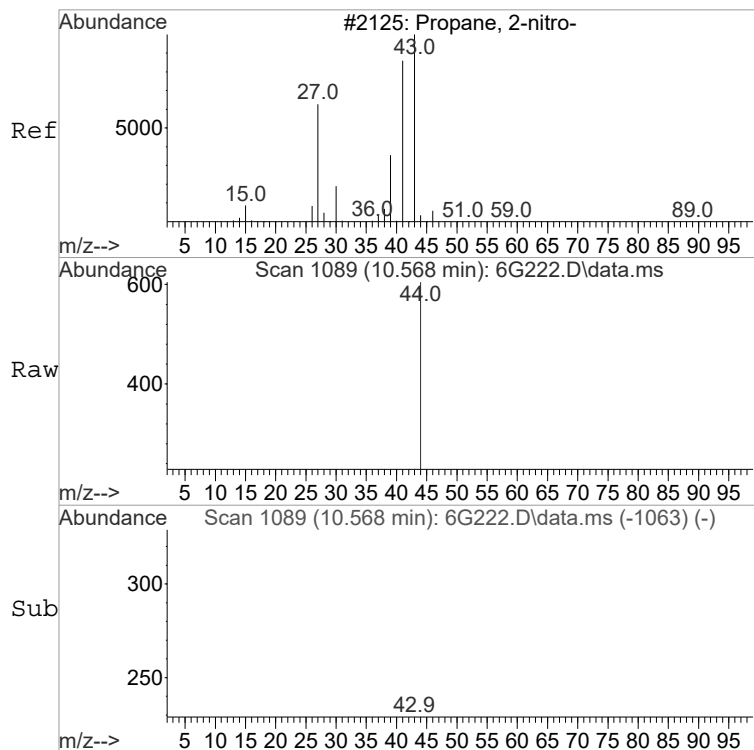
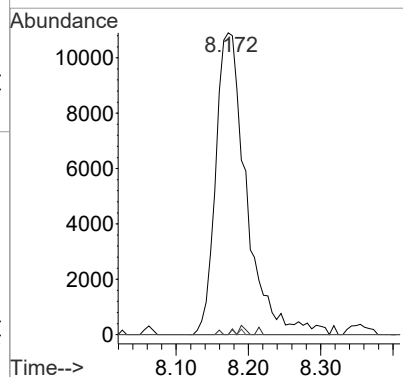
Tgt Ion: 43 Resp: 31995  
Ion Ratio Lower Upper  
43 100  
72 16.8 0.0 49.3





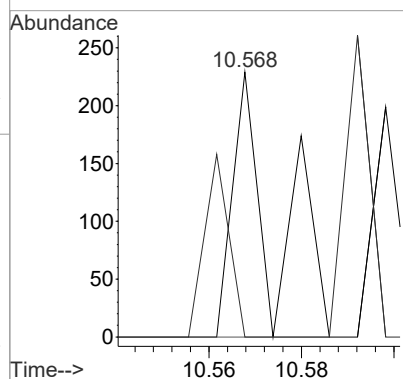
#94 BEFORE analyst DELETION  
Ethyl acetate  
Concen: 3.03 ug/L  
RT: 8.172 min Scan# 696  
Delta R.T. -0.006 min  
Lab File: 6G222.D  
Acq: 01 Nov 2016 19:17

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 43      | 100   |       |       |
| 61      | 0.8   | 0.0   | 42.7  |
| 70      | 0.4   | 0.0   | 38.5  |



#102 BEFORE analyst DELETION  
2-Nitropropane  
Concen: 6.29 ug/L  
RT: 10.568 min Scan# 1089  
Delta R.T. 0.025 min  
Lab File: 6G222.D  
Acq: 01 Nov 2016 19:17

| Tgt Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 43      | 100   |       |        |
| 41      | 0.0   | 49.3  | 109.3# |



**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254034

**Date Collected:** 10/26/2016 09:46  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 6.4 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 20.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-34-3  | 1,1-Dichloroethane          | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 0.978  | ug/kg | 0.489   | 0.978   |
| 106-93-4 | 1,2-Dibromoethane           | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 107-06-2 | 1,2-Dichloroethane          | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 78-87-5  | 1,2-Dichloropropane         | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 123-91-1 | 1,4-Dioxane                 | U         | 48.9   | ug/kg | 16.3    | 48.9    |
| 78-93-3  | 2-Butanone                  |           | 7.63   | ug/kg | 1.63    | 4.89    |
| 591-78-6 | 2-Hexanone                  | U         | 4.89   | ug/kg | 1.63    | 4.89    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 4.89   | ug/kg | 1.63    | 4.89    |
| 67-64-1  | Acetone                     |           | 41.2   | ug/kg | 1.63    | 4.89    |
| 71-43-2  | Benzene                     | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 74-97-5  | Bromochloromethane          | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-27-4  | Bromodichloromethane        | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-25-2  | Bromoform                   | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 74-83-9  | Bromomethane                | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-15-0  | Carbon disulfide            | U         | 4.89   | ug/kg | 1.63    | 4.89    |
| 56-23-5  | Carbon tetrachloride        | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 108-90-7 | Chlorobenzene               | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-00-3  | Chloroethane                | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 67-66-3  | Chloroform                  | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 74-87-3  | Chloromethane               | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 110-82-7 | Cyclohexane                 | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 124-48-1 | Dibromochloromethane        | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-71-8  | Dichlorodifluoromethane     | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 100-41-4 | Ethylbenzene                | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 98-82-8  | Isopropylbenzene            | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 79-20-9  | Methyl acetate              | U         | 4.89   | ug/kg | 1.63    | 4.89    |
| 108-87-2 | Methylcyclohexane           | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-09-2  | Methylene chloride          | U         | 4.89   | ug/kg | 1.63    | 4.89    |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254034  
  
**Client ID:** DP020207  
**Batch ID:** 1612391  
**Run Date:** 11/01/2016 19:46  
**Prep Date:** 10/26/2016 09:46  
**Data File:** 110116V6\6G223.D

**Date Collected:** 10/26/2016 09:46  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA6.I  
**Analyst:** ACJ  
**Aliquot:** 6.4 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 20.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 127-18-4    | Tetrachloroethylene         | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 108-88-3    | Toluene                     | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 79-01-6     | Trichloroethylene           | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 75-69-4     | Trichlorofluoromethane      | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 4.89   | ug/kg | 1.63    | 4.89    |
| 75-01-4     | Vinyl chloride              | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 179601-23-1 | m,p-Xylenes                 | U         | 1.96   | ug/kg | 0.652   | 1.96    |
| 95-47-6     | o-Xylene                    | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 0.978  | ug/kg | 0.326   | 0.978   |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.978  | ug/kg | 0.326   | 0.978   |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G223.D  
Acq On : 01 Nov 2016 19:46  
Operator : ACJ  
InstName : VOA6  
Sample : |409254034|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.4G N/A SOIL  
ALS Vial : 23 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 02 09:20:16 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1303748  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.629 | 1.000  | 1013750  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 537243   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1303748  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.628 | 1.000  | 1013750  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 537243   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 486800  | 56.77 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1349413 | 49.92 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 543557  | 50.03 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 114%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 100%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 100%     |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000 | 4.001  | 0.000  | 0        | N.D.  |       |        |
| 3) Chloromethane              | 50   | 4.386 | 4.282  | 0.465  | 365      | N.D.  |       |        |
| 4) Vinyl chloride             |      | 0.000 | 4.498  | 0.000  | 0        | N.D.  |       |        |
| 5) Bromomethane               |      | 0.000 | 5.020  | 0.000  | 0        | N.D.  |       |        |
| 6) Chloroethane               |      | 0.000 | 5.156  | 0.000  | 0        | N.D.  |       |        |
| 7) Trichlorofluoromethane     |      | 0.000 | 5.509  | 0.000  | 0        | N.D.  |       |        |
| 8) Ethyl ether                | 59   | 5.822 | 5.830  | 0.617  | 418      | N.D.  |       |        |
| 9) Acetone                    | 43   | 6.191 | 6.197  | 0.656  | 152115   | 42.15 | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      |      | 0.000 | 6.191  | 0.000  | 0        | N.D.  |       |        |
| 11) Iodomethane               |      | 0.000 | 6.429  | 0.000  | 0        | N.D.  |       |        |
| 12) Acetonitrile              | 41   | 6.550 | 6.550  | 0.694  | 411      | N.D.  |       |        |
| 13) Methyl acetate            | 43   | 6.593 | 6.575  | 0.698  | 3571     | N.D.  |       |        |
| 14) Carbon disulfide          | 76   | 6.550 | 6.550  | 0.694  | 12568    | N.D.  |       |        |
| 15) Methylene chloride        | 84   | 6.758 | 6.764  | 0.716  | 17895    | N.D.  |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.062 | 7.050  | 0.748  | 6716     | N.D.  |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000 | 7.093  | 0.000  | 0        | N.D.  |       |        |
| 18) Hexane                    | 57   | 7.367 | 7.367  | 0.780  | 929      | N.D.  |       |        |
| 19) Vinyl acetate             |      | 0.000 | 7.538  | 0.000  | 0        | N.D.  |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000 | 7.575  | 0.000  | 0        | N.D.  |       |        |
| 21) 2-Butanone                | 43   | 8.172 | 8.160  | 0.866  | 44298    | 7.80  | ug/L  | 96     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.203 | 8.209  | 0.869  | 265      | N.D.  |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000 | 8.233  | 0.000  | 0        | N.D.  |       |        |
| 24) Bromochloromethane        |      | 0.000 | 8.483  | 0.000  | 0        | N.D.  |       |        |
| 25) Chloroform                | 83   | 8.526 | 8.520  | 0.903  | 210      | N.D.  |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000 | 8.788  | 0.000  | 0        | N.D.  |       |        |
| 27) Cyclohexane               |      | 0.000 | 8.873  | 0.000  | 0        | N.D.  |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000 | 8.946  | 0.000  | 0        | N.D.  |       |        |
| 29) Carbon tetrachloride      |      | 0.000 | 8.977  | 0.000  | 0        | N.D.  |       |        |
| 31) 1,2-Dichloroethane        | 62   | 9.178 | 9.172  | 0.972  | 124      | N.D.  |       |        |
| 32) Benzene                   | 78   | 9.184 | 9.184  | 0.973  | 777      | N.D.  |       |        |
| 33) Cyclohexene               |      | 0.000 | 9.294  | 0.000  | 0        | N.D.  |       |        |
| 34) n-Butyl alcohol           | 56   | 9.574 | 9.568  | 1.014  | 355      | N.D.  |       |        |
| 35) Trichloroethylene         |      | 0.000 | 9.830  | 0.000  | 0        | N.D.  |       |        |
| 36) 2-Pentanone               | 43   | 9.940 | 9.928  | 1.053  | 503      | N.D.  |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000 | 10.080 | 0.000  | 0        | N.D.  |       |        |
| 38) Methylcyclohexane         |      | 0.000 | 10.068 | 0.000  | 0        | N.D.  |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G223.D  
Acq On : 01 Nov 2016 19:46  
Operator : ACJ  
InstName : VOA6  
Sample : |409254034|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.4G N/A SOIL  
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Nov 02 09:20:16 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc       | Units |
|-------------------------------|------|--------|--------|--------|----------|------------|-------|
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D.       |       |
| 40) Bromodichloromethane      |      | 0.000  | 10.330 | 0.000  | 0        | N.D.       |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D.       |       |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 10.787 | 0.000  | 0        | N.D.       |       |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 10.891 | 0.000  | 0        | N.D.       |       |
| 46) Toluene                   | 91   | 11.165 | 11.172 | 0.884  | 3526     | N.D.       |       |
| 47) trans-1,3-Dichloroprop... |      | 0.000  | 11.342 | 0.000  | 0        | N.D.       |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D.       |       |
| 49) 2-Hexanone                | 43   | 11.763 | 11.745 | 0.931  | 630      | N.D.       |       |
| 50) 1,3-Dichloropropane       |      | 0.000  | 11.751 | 0.000  | 0        | N.D.       |       |
| 51) Tetrachloroethylene       | 164  | 11.769 | 11.763 | 0.932  | 1530     | N.D.       |       |
| 52) Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D.       |       |
| 53) 1,2-Dibromoethane         |      | 0.000  | 12.177 | 0.000  | 0        | N.D.       |       |
| 54) Chlorobenzene             | 112  | 12.671 | 12.665 | 1.003  | 577      | N.D.       |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.720 | 0.000  | 0        | N.D.       |       |
| 56) Ethylbenzene              | 91   | 12.726 | 12.732 | 1.008  | 586      | N.D.       |       |
| 57) m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 570      | N.D.       |       |
| 58) o-Xylene                  |      | 0.000  | 13.275 | 0.000  | 0        | N.D.       |       |
| 59) Styrene                   | 104  | 13.287 | 13.281 | 1.052  | 1365     | N.D.       |       |
| 61) Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.       |       |
| 62) Isopropylbenzene          |      | 0.000  | 13.641 | 0.000  | 0        | N.D.       |       |
| 64) 1,1,2,2-Tetrachloroethane |      | 0.000  | 13.927 | 0.000  | 0        | N.D.       |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.       |       |
| 66) Bromobenzene              | 156  | 14.025 | 14.043 | 0.932  | 289      | N.D.       |       |
| 67) n-Propylbenzene           | 91   | 14.073 | 14.067 | 0.935  | 526      | N.D.       |       |
| 68) 1,3,5-Trimethylbenzene    |      | 0.000  | 14.226 | 0.000  | 0        | N.D.       |       |
| 69) 2-Chlorotoluene           |      | 0.000  | 14.214 | 0.000  | 0        | N.D.       |       |
| 70) 4-Chlorotoluene           | 91   | 14.323 | 14.317 | 0.951  | 912      | N.D.       |       |
| 71) tert-Butylbenzene         |      | 0.000  | 14.592 | 0.000  | 0        | N.D.       |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.646 | 14.634 | 0.973  | 427      | N.D.       |       |
| 73) sec-Butylbenzene          | 105  | 14.817 | 14.817 | 0.984  | 170      | N.D.       |       |
| 74) 4-Isopropyltoluene        |      | 0.000  | 14.592 | 0.000  | 0        | N.D.       |       |
| 75) 1,3-Dichlorobenzene       | 146  | 15.000 | 14.994 | 0.996  | 649      | N.D.       |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.085 | 15.085 | 1.002  | 1687     | N.D.       |       |
| 77) n-Butylbenzene            | 91   | 15.384 | 15.372 | 1.022  | 262      | N.D.       |       |
| 78) 1,2-Dichlorobenzene       | 146  | 15.494 | 15.494 | 1.029  | 698      | N.D.       |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.       |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.286 | 17.280 | 1.148  | 895      | N.D.       |       |
| 81) Hexachlorobutadiene       |      | 0.000  | 17.445 | 0.000  | 0        | N.D.       |       |
| 82) Naphthalene               | 128  | 17.634 | 17.628 | 1.171  | 1584     | N.D.       |       |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.945 | 17.945 | 1.192  | 316      | N.D.       |       |
| 85) Acrolein                  | 56   | 6.038  | 6.026  | 0.640  | 233      | N.D.       |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 6.185  | 0.000  | 0        | N.D.       |       |
| 87) Isopropyl Alcohol         | 45   | 6.276  | 6.282  | 0.665  | 3582     | N.D.       |       |
| 88) Allyl chloride            | 41   | 6.550  | 6.611  | 0.694  | 411      | N.D.       |       |
| 89) tert-Butyl Alcohol        | 59   | 6.776  | 6.770  | 0.718  | 20408    | 18.33 ug/L | 78    |
| 90) Acrylonitrile             |      | 0.000  | 7.014  | 0.000  | 0        | N.D.       |       |
| 91) Isopropyl ether           |      | 0.000  | 7.556  | 0.000  | 0        | N.D.       |       |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 7.672  | 0.000  | 0        | N.D.       |       |
| 93) Ethyl tert-butyl ether    | 59   | 7.959  | 7.965  | 0.843  | 3800     | N.D.       |       |
| 94) Ethyl acetate             |      | 0.000  | 8.178  | 0.000  | 0m       | N.D.       | d     |
| 95) Propionitrile             |      | 0.000  | 8.245  | 0.000  | 0        | N.D.       |       |
| 96) Methacrylonitrile         | 41   | 8.434  | 8.416  | 0.893  | 137      | N.D.       |       |
| 97) Tetrahydrofuran           | 42   | 8.532  | 8.526  | 0.904  | 2489     | N.D.       |       |
| 98) Isobutyl alcohol          | 41   | 8.879  | 8.873  | 0.941  | 150      | N.D.       |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G223.D  
Acq On : 01 Nov 2016 19:46  
Operator : ACJ  
InstName : VOA6  
Sample : |409254034|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.4G N/A SOIL  
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Nov 02 09:20:16 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

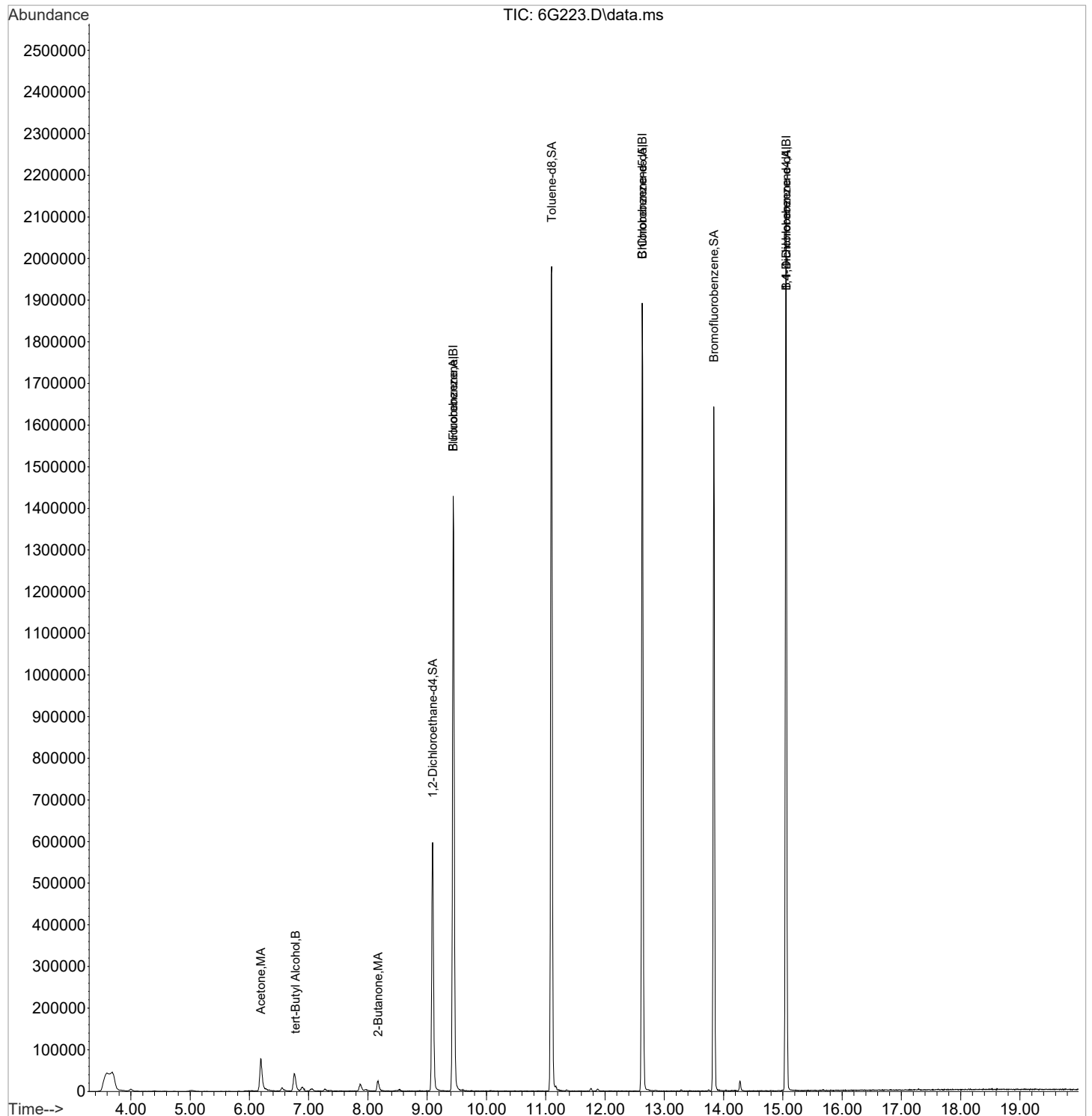
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 99) Methyl tert-amyl ether     |      | 0.000  | 9.214  | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       |      | 0.000  | 10.068 | 0.000  | 0        | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 10.172 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 10.543 | 0.000  | 0m       | N.D.      | d     |
| 104) Ethyl methacrylate        |      | 0.000  | 11.348 | 0.000  | 0        | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D.      |       |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 13.689 | 0.000  | 0        | N.D.      |       |
| 108) Cyclohexanone             |      | 0.000  | 13.793 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 13.976 | 0.000  | 0        | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 14.658 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 481      | Below Cal | #     |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 15.591 | 0.000  | 0        | N.D.      |       |

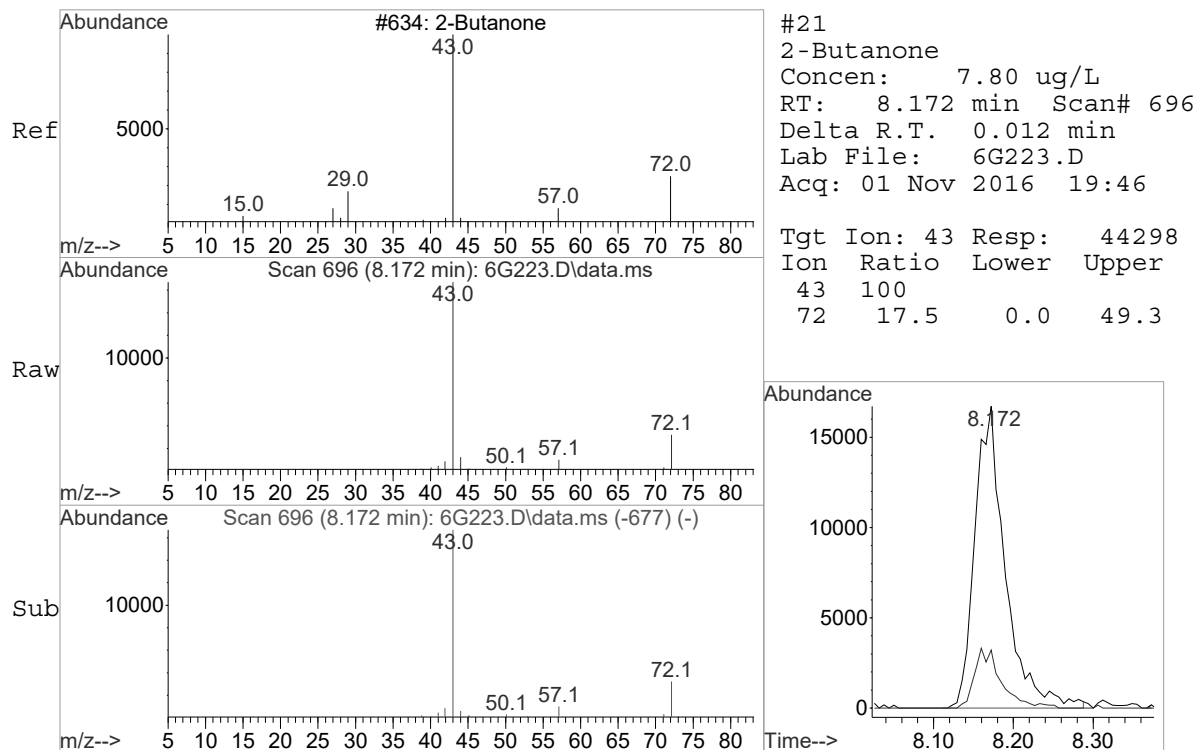
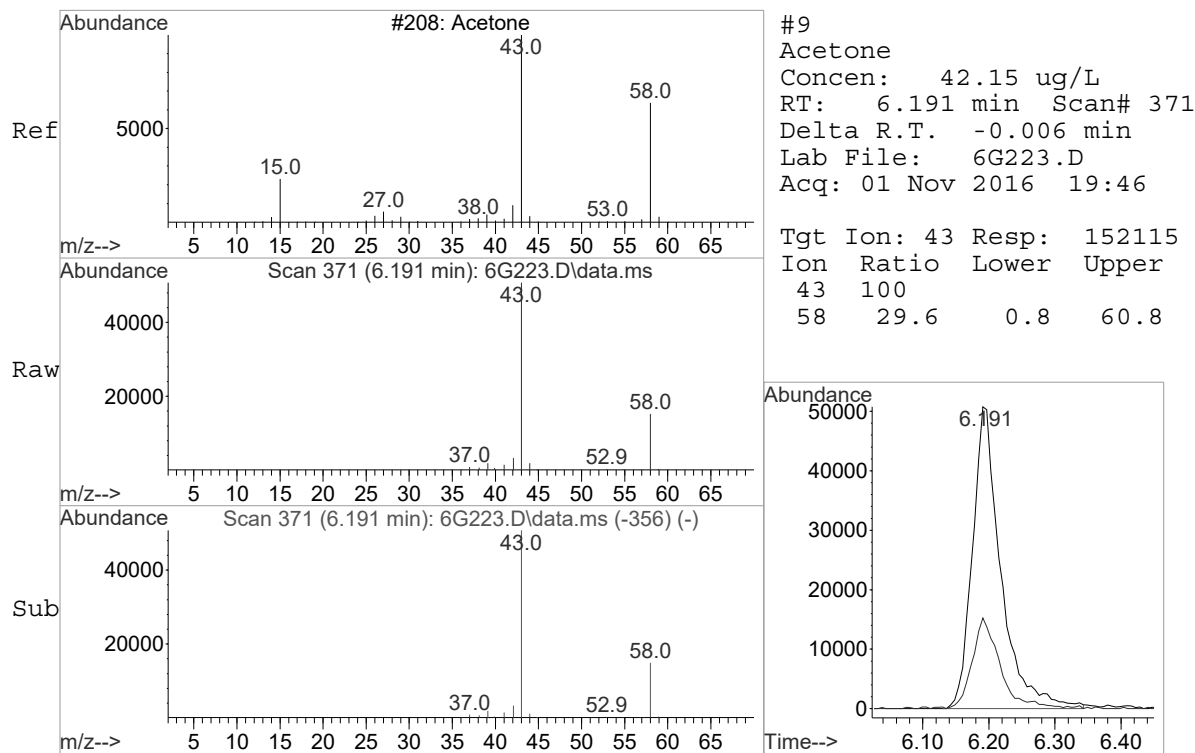
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

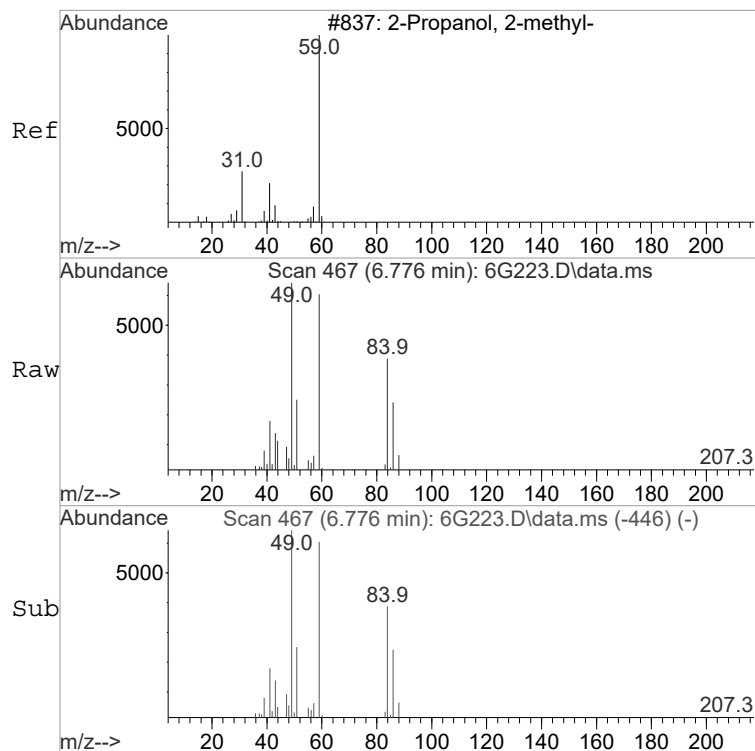
Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G223.D  
Acq On : 01 Nov 2016 19:46  
Operator : ACJ  
InstName : VOA6  
Sample : |409254034|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 6.4G N/A SOIL  
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Nov 02 09:20:16 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

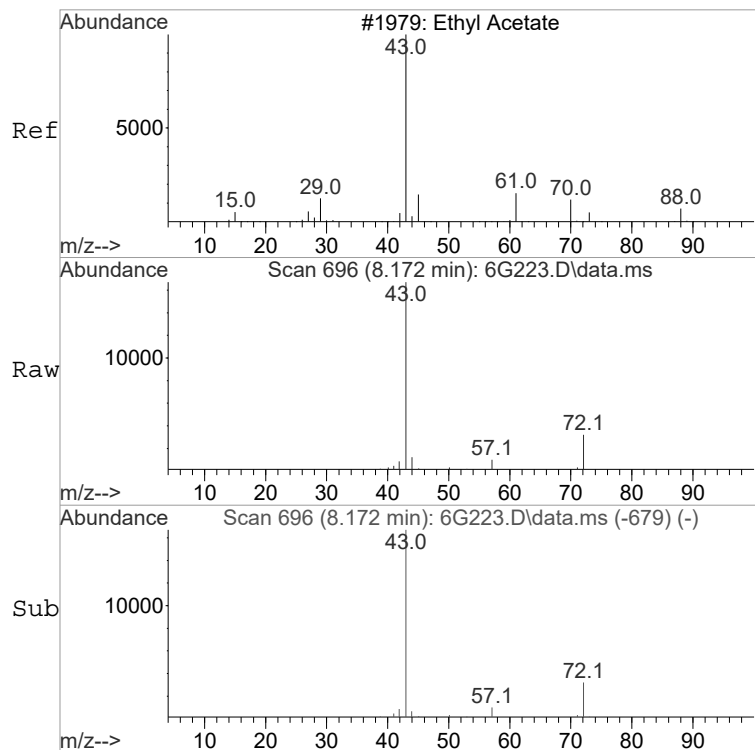
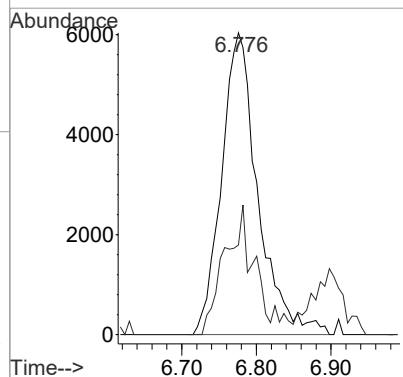






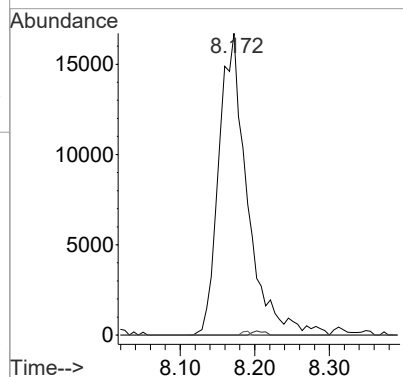
#89  
tert-Butyl Alcohol  
Concen: 18.33 ug/L  
RT: 6.776 min Scan# 467  
Delta R.T. 0.006 min  
Lab File: 6G223.D  
Acq: 01 Nov 2016 19:46

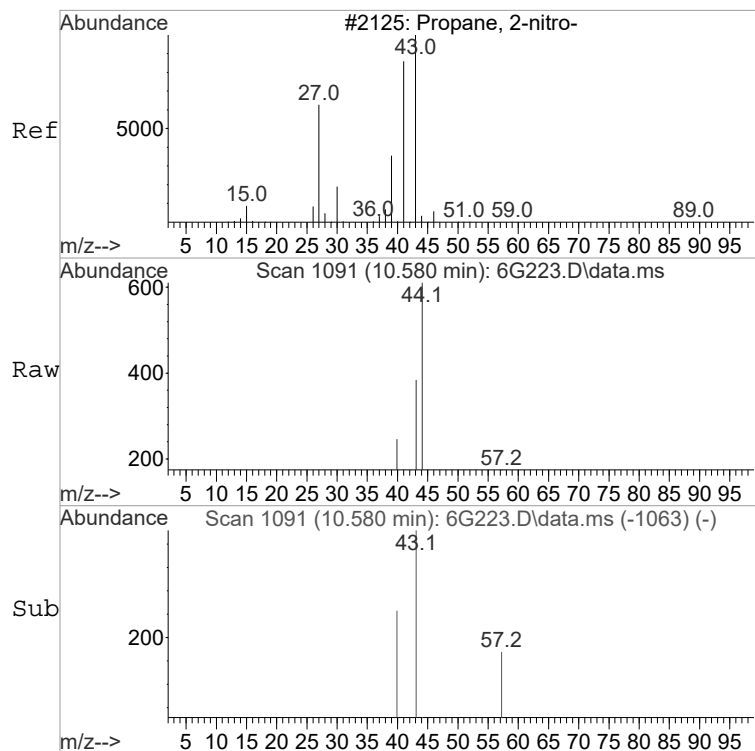
Tgt Ion: 59 Resp: 20408  
Ion Ratio Lower Upper  
59 100  
41 33.7 0.0 52.9



#94 BEFORE analyst DELETION  
Ethyl acetate  
Concen: 4.83 ug/L  
RT: 8.172 min Scan# 696  
Delta R.T. -0.006 min  
Lab File: 6G223.D  
Acq: 01 Nov 2016 19:46

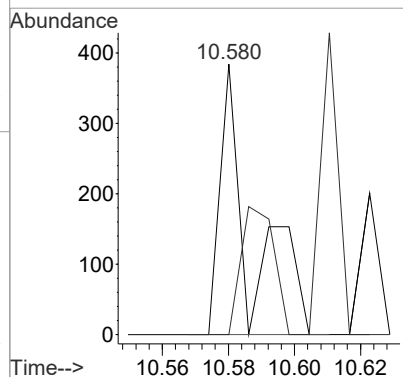
Tgt Ion: 43 Resp: 44385  
Ion Ratio Lower Upper  
43 100  
61 0.6 0.0 42.7  
70 0.3 0.0 38.5





#102 BEFORE analyst DELETION  
 2-Nitropropane  
 Concen: 6.33 ug/L  
 RT: 10.580 min Scan# 1091  
 Delta R.T. 0.037 min  
 Lab File: 6G223.D  
 Acq: 01 Nov 2016 19:46

Tgt Ion: 43 Resp: 252  
 Ion Ratio Lower Upper  
 43 100  
 41 50.4 49.3 109.3





**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254036

**Date Collected:** 10/26/2016 09:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 4.8 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.17   | ug/kg | 0.584   | 1.17    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 123-91-1 | 1,4-Dioxane                 | U         | 58.4   | ug/kg | 19.5    | 58.4    |
| 78-93-3  | 2-Butanone                  | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 591-78-6 | 2-Hexanone                  | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 67-64-1  | Acetone                     | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 71-43-2  | Benzene                     | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 74-97-5  | Bromochloromethane          | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-27-4  | Bromodichloromethane        | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-25-2  | Bromoform                   | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 74-83-9  | Bromomethane                | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-15-0  | Carbon disulfide            | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 108-90-7 | Chlorobenzene               | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-00-3  | Chloroethane                | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 67-66-3  | Chloroform                  | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 74-87-3  | Chloromethane               | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 110-82-7 | Cyclohexane                 | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 124-48-1 | Dibromochloromethane        | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 100-41-4 | Ethylbenzene                | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 98-82-8  | Isopropylbenzene            | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 79-20-9  | Methyl acetate              | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 108-87-2 | Methylcyclohexane           | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-09-2  | Methylene chloride          | U         | 5.84   | ug/kg | 1.95    | 5.84    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254036

**Date Collected:** 10/26/2016 09:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 4.8 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 108-88-3    | Toluene                     | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 79-01-6     | Trichloroethylene           | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.84   | ug/kg | 1.95    | 5.84    |
| 75-01-4     | Vinyl chloride              | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.34   | ug/kg | 0.779   | 2.34    |
| 95-47-6     | o-Xylene                    | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.17   | ug/kg | 0.389   | 1.17    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.17   | ug/kg | 0.389   | 1.17    |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H415.D  
Acq On : 03 Nov 2016 17:06  
Operator : ACJ  
InstName : VOA4  
Sample : |409254036|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.8G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 04 10:30:37 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1063915  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 745451   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.905 | 1.000  | 360676   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1063915  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 745451   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 360676   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 312009  | 53.96 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1112464 | 52.33 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 424167  | 54.20 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 108%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 105%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 108%     |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 0.000  | 5.094  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.370  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.706  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    | 43   | 7.084  | 7.059  | 0.686  | 3374     | N.D. |       |        |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.090  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 0.000  | 7.327  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              | 41   | 7.425  | 7.407  | 0.719  | 1633     | N.D. |       |        |
| 13) Methyl acetate            | 43   | 7.462  | 7.456  | 0.723  | 1367     | N.D. |       |        |
| 14) Carbon disulfide          | 76   | 7.468  | 7.468  | 0.723  | 1353     | N.D. |       |        |
| 15) Methylene chloride        | 84   | 7.644  | 7.645  | 0.740  | 5980     | N.D. |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.968  | 7.955  | 0.772  | 2836     | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.992  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    | 57   | 8.291  | 8.285  | 0.803  | 706      | N.D. |       |        |
| 19) Vinyl acetate             | 43   | 8.419  | 8.413  | 0.815  | 538      | N.D. |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000  | 8.461  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                | 43   | 9.059  | 9.028  | 0.877  | 4341     | N.D. |       |        |
| 22) cis-1,2-Dichloroethylene  |      | 0.000  | 9.095  | 0.000  | 0        | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 390      | N.D. |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               | 56   | 9.729  | 9.790  | 0.942  | 104      | N.D. |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000  | 9.839  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 0.000  | 10.046 | 0.000  | 0        | N.D. |       |        |
| 32) Benzene                   | 78   | 10.083 | 10.077 | 0.976  | 984      | N.D. |       |        |
| 33) Cyclohexene               |      | 0.000  | 10.199 | 0.000  | 0        | N.D. |       |        |
| 34) n-Butyl alcohol           | 56   | 10.412 | 10.400 | 1.008  | 401      | N.D. |       |        |
| 35) Trichloroethylene         |      | 0.000  | 10.717 | 0.000  | 0        | N.D. |       |        |
| 36) 2-Pentanone               |      | 0.000  | 10.778 | 0.000  | 0        | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         | 83   | 10.979 | 10.973 | 1.063  | 148      | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H415.D  
Acq On : 03 Nov 2016 17:06  
Operator : ACJ  
InstName : VOA4  
Sample : |409254036|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.8G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 04 10:30:37 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|-----|
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D.      |       |     |
| 40) Bromodichloromethane      |      | 0.000  | 11.193 | 0.000  | 0        | N.D.      |       |     |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.412 | 0.000  | 0        | N.D.      |       |     |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 11.644 | 0.000  | 0        | N.D.      |       |     |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 11.735 | 0.000  | 0        | N.D.      |       |     |
| 46) Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 2632     | N.D.      |       |     |
| 47) trans-1,3-Dichloroprop... |      | 0.000  | 12.180 | 0.000  | 0        | N.D.      |       |     |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.      |       |     |
| 49) 2-Hexanone                | 43   | 12.595 | 12.583 | 0.934  | 732      | N.D.      |       |     |
| 50) 1,3-Dichloropropane       |      | 0.000  | 12.595 | 0.000  | 0        | N.D.      |       |     |
| 51) Tetrachloroethylene       | 164  | 12.643 | 12.637 | 0.937  | 1601     | 0.31 ug/L |       | 95  |
| 52) Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.      |       |     |
| 53) 1,2-Dibromoethane         |      | 0.000  | 13.034 | 0.000  | 0        | N.D.      |       |     |
| 54) Chlorobenzene             | 112  | 13.527 | 13.521 | 1.003  | 543      | N.D.      |       |     |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 13.576 | 0.000  | 0        | N.D.      |       |     |
| 56) Ethylbenzene              | 91   | 13.582 | 13.588 | 1.007  | 1071     | N.D.      |       |     |
| 57) m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 760      | N.D.      |       |     |
| 58) o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 569      | N.D.      |       |     |
| 59) Styrene                   | 104  | 14.125 | 14.131 | 1.047  | 1730     | N.D.      |       |     |
| 61) Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.      |       |     |
| 62) Isopropylbenzene          |      | 0.000  | 14.491 | 0.000  | 0        | N.D.      |       |     |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 14.771 | 14.747 | 0.929  | 106      | N.D.      |       |     |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.      |       |     |
| 66) Bromobenzene              | 156  | 14.905 | 14.893 | 0.937  | 246      | N.D.      |       |     |
| 67) n-Propylbenzene           | 91   | 14.917 | 14.917 | 0.938  | 735      | N.D.      |       |     |
| 68) 1,3,5-Trimethylbenzene    | 105  | 15.076 | 15.070 | 0.948  | 304      | N.D.      |       |     |
| 69) 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 104      | N.D.      |       |     |
| 70) 4-Chlorotoluene           | 91   | 15.161 | 15.161 | 0.953  | 1440     | N.D.      |       |     |
| 71) tert-Butylbenzene         |      | 0.000  | 15.442 | 0.000  | 0        | N.D.      |       |     |
| 72) 1,2,4-Trimethylbenzene    | 105  | 15.484 | 15.478 | 0.974  | 814      | N.D.      |       |     |
| 73) sec-Butylbenzene          | 105  | 15.667 | 15.661 | 0.985  | 201      | N.D.      |       |     |
| 74) 4-Isopropyltoluene        | 119  | 15.777 | 15.783 | 0.992  | 396      | N.D.      |       |     |
| 75) 1,3-Dichlorobenzene       | 146  | 15.838 | 15.844 | 0.996  | 892      | N.D.      |       |     |
| 76) 1,4-Dichlorobenzene       | 146  | 15.923 | 15.929 | 1.001  | 1626     | N.D.      |       |     |
| 77) n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.020  | 661      | N.D.      |       |     |
| 78) 1,2-Dichlorobenzene       | 146  | 16.362 | 16.356 | 1.029  | 652      | N.D.      |       |     |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.      |       |     |
| 80) 1,2,4-Trichlorobenzene    | 180  | 18.307 | 18.301 | 1.151  | 596      | N.D.      |       |     |
| 81) Hexachlorobutadiene       |      | 0.000  | 18.490 | 0.000  | 0        | N.D.      |       |     |
| 82) Naphthalene               | 128  | 18.691 | 18.685 | 1.175  | 2202     | N.D.      |       |     |
| 83) 1,2,3-Trichlorobenzene    | 180  | 19.045 | 19.033 | 1.197  | 196      | N.D.      |       |     |
| 85) Acrolein                  |      | 0.000  | 6.895  | 0.000  | 0        | N.D.      |       |     |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.096  | 0.000  | 0        | N.D.      |       |     |
| 87) Isopropyl Alcohol         | 45   | 7.151  | 7.139  | 0.692  | 113      | Below Cal | #     | 58  |
| 88) Allyl chloride            | 41   | 7.523  | 7.511  | 0.728  | 333      | N.D.      |       |     |
| 89) tert-Butyl Alcohol        | 59   | 7.651  | 7.639  | 0.741  | 1216     | Below Cal | #     | 100 |
| 90) Acrylonitrile             |      | 0.000  | 7.882  | 0.000  | 0        | N.D.      |       |     |
| 91) Isopropyl ether           |      | 0.000  | 8.455  | 0.000  | 0        | N.D.      |       |     |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 8.577  | 0.000  | 0        | N.D.      |       |     |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.      |       |     |
| 94) Ethyl acetate             | 43   | 9.059  | 9.047  | 0.877  | 4341     | Below Cal |       | 84  |
| 95) Propionitrile             |      | 0.000  | 9.096  | 0.000  | 0        | N.D.      |       |     |
| 96) Methacrylonitrile         | 41   | 9.278  | 9.278  | 0.898  | 185      | Below Cal | #     | 25  |
| 97) Tetrahydrofuran           | 42   | 9.412  | 9.419  | 0.911  | 1477     | Below Cal | #     | 49  |
| 98) Isobutyl alcohol          | 41   | 9.796  | 9.717  | 0.949  | 143      | Below Cal |       | 90  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H415.D  
Acq On : 03 Nov 2016 17:06  
Operator : ACJ  
InstName : VOA4  
Sample : |409254036|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.8G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 04 10:30:37 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

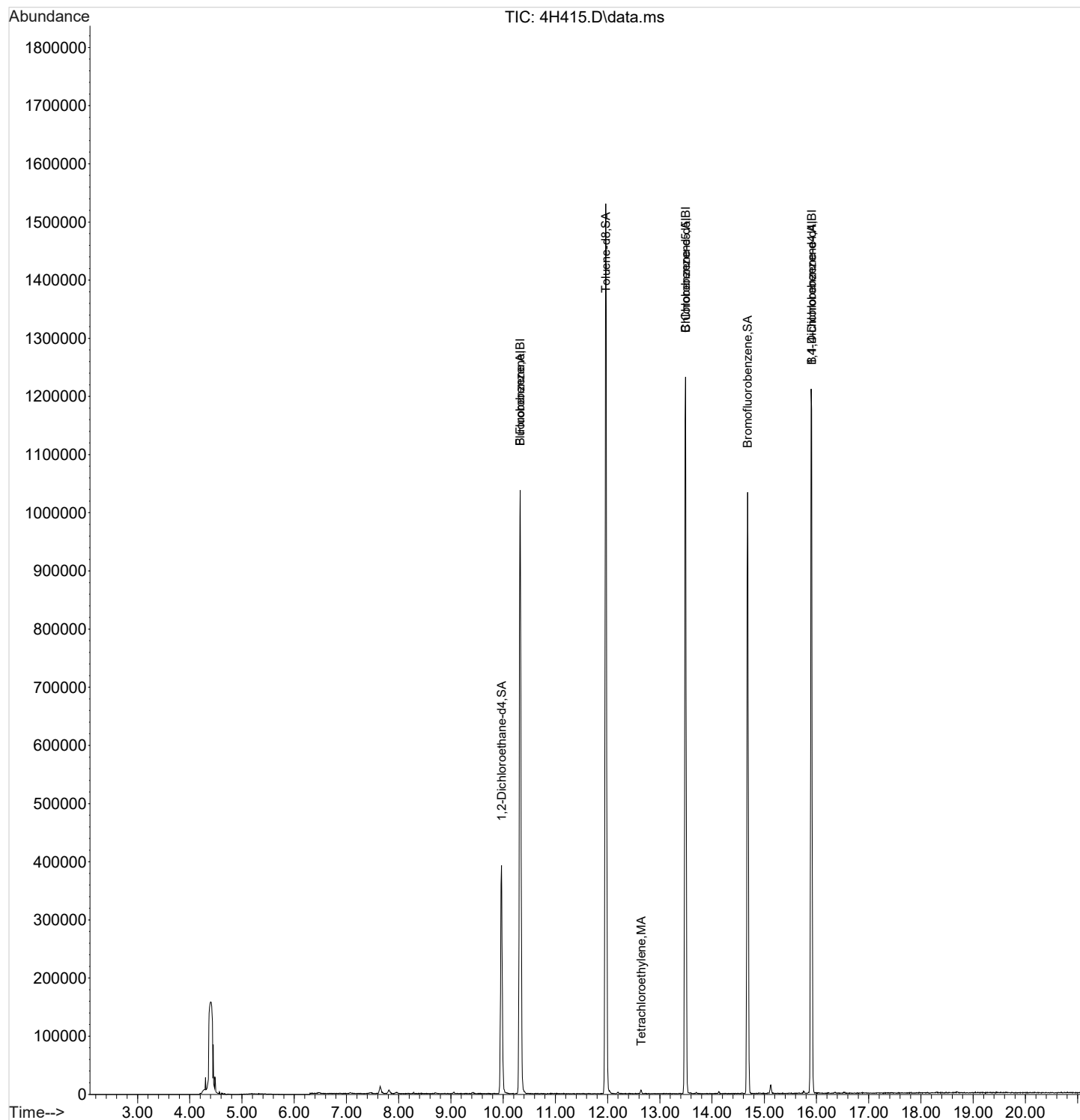
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 99) Methyl tert-amyl ether     |      | 0.000  | 10.101 | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       |      | 0.000  | 10.925 | 0.000  | 0        | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 11.388 | 0.000  | 0        | N.D.      |       |
| 104) Ethyl methacrylate        |      | 0.000  | 12.186 | 0.000  | 0        | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 13.387 | 0.000  | 0m       | N.D.      | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 14.509 | 0.000  | 0        | N.D.      |       |
| 108) Cyclohexanone             |      | 0.000  | 14.631 | 0.000  | 0        | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 14.796 | 0.000  | 0        | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 15.503 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 16.045 | 16.039 | 1.009  | 1029     | Below Cal | #     |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 16.442 | 0.000  | 0        | N.D.      |       |

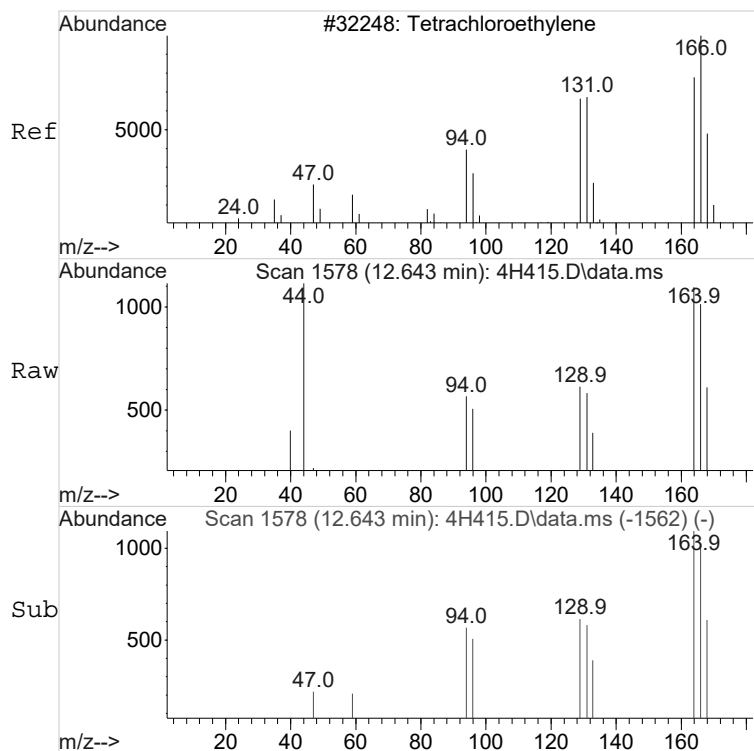
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H415.D  
Acq On : 03 Nov 2016 17:06  
Operator : ACJ  
InstName : VOA4  
Sample : |409254036|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 4.8G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

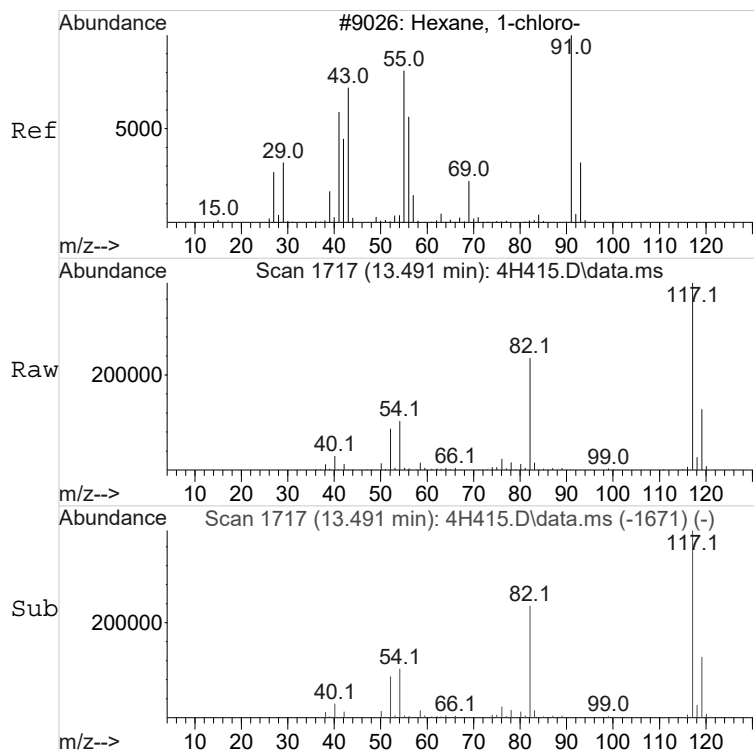
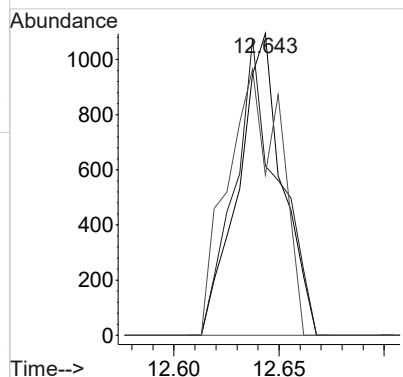
Quant Time: Nov 04 10:30:37 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE





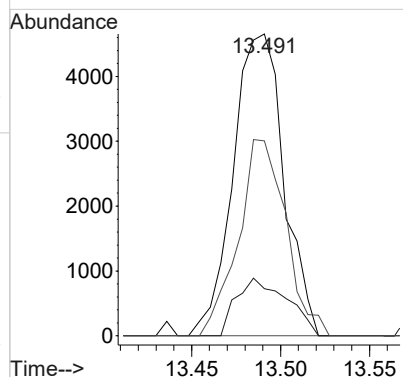
#51  
Tetrachloroethylene  
Concen: 0.31 ug/L  
RT: 12.643 min Scan# 1578  
Delta R.T. 0.006 min  
Lab File: 4H415.D  
Acq: 03 Nov 2016 17:06

Tgt Ion: 164 Resp: 1601  
Ion Ratio Lower Upper  
164 100  
129 96.6 66.1 126.1  
131 105.0 65.3 125.3



#106 BEFORE analyst DELETION  
1-Chlorohexane  
Concen: 0.68 ug/L  
RT: 13.491 min Scan# 1717  
Delta R.T. 0.104 min  
Lab File: 4H415.D  
Acq: 03 Nov 2016 17:06

Tgt Ion: 55 Resp: 9223  
Ion Ratio Lower Upper  
55 100  
91 19.1 94.9 154.9#  
56 61.1 28.8 88.8



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254038

**Date Collected:** 10/26/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 5.3 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-34-3  | 1,1-Dichloroethane          | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 0.963  | ug/kg | 0.481   | 0.963   |
| 106-93-4 | 1,2-Dibromoethane           | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 107-06-2 | 1,2-Dichloroethane          | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 78-87-5  | 1,2-Dichloropropane         | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 123-91-1 | 1,4-Dioxane                 | U         | 48.1   | ug/kg | 16.0    | 48.1    |
| 78-93-3  | 2-Butanone                  | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 591-78-6 | 2-Hexanone                  | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 67-64-1  | Acetone                     | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 71-43-2  | Benzene                     | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 74-97-5  | Bromochloromethane          | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-27-4  | Bromodichloromethane        | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-25-2  | Bromoform                   | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 74-83-9  | Bromomethane                | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-15-0  | Carbon disulfide            | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 56-23-5  | Carbon tetrachloride        | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 108-90-7 | Chlorobenzene               | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-00-3  | Chloroethane                | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 67-66-3  | Chloroform                  | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 74-87-3  | Chloromethane               | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 110-82-7 | Cyclohexane                 | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 124-48-1 | Dibromochloromethane        | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-71-8  | Dichlorodifluoromethane     | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 100-41-4 | Ethylbenzene                | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 98-82-8  | Isopropylbenzene            | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 79-20-9  | Methyl acetate              | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 108-87-2 | Methylcyclohexane           | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-09-2  | Methylene chloride          | U         | 4.81   | ug/kg | 1.60    | 4.81    |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254038

**Date Collected:** 10/26/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 5.3 g  
**Column:** DB-624

**Matrix:** SOIL  
**%Moisture:** 2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 127-18-4    | Tetrachloroethylene         | J         | 0.433  | ug/kg | 0.321   | 0.963   |
| 108-88-3    | Toluene                     | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 79-01-6     | Trichloroethylene           | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 75-69-4     | Trichlorofluoromethane      | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 4.81   | ug/kg | 1.60    | 4.81    |
| 75-01-4     | Vinyl chloride              | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 179601-23-1 | m,p-Xylenes                 | U         | 1.93   | ug/kg | 0.642   | 1.93    |
| 95-47-6     | o-Xylene                    | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 0.963  | ug/kg | 0.321   | 0.963   |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 0.963  | ug/kg | 0.321   | 0.963   |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H315.D  
Acq On : 02 Nov 2016 16:46  
Operator : ACJ  
InstName : VOA4  
Sample : |409254038|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.3G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 03 09:19:19 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1131661  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 799908   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.905 | 1.000  | 411993   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1131661  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 799908   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 411993   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 304701  | 49.54 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1132240 | 49.63 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 439287  | 49.14 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 99%      |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 99%      |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 98%      |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 0.000  | 5.094  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.370  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.706  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    | 43   | 7.084  | 7.059  | 0.686  | 4169     | N.D. |       |        |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.090  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 0.000  | 7.327  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              | 41   | 7.395  | 7.407  | 0.716  | 755      | N.D. |       |        |
| 13) Methyl acetate            | 43   | 7.425  | 7.456  | 0.719  | 171      | N.D. |       |        |
| 14) Carbon disulfide          | 76   | 7.468  | 7.468  | 0.723  | 1693     | N.D. |       |        |
| 15) Methylene chloride        | 84   | 7.651  | 7.645  | 0.741  | 7501     | N.D. |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.955  | 7.955  | 0.770  | 273      | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.992  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    | 57   | 8.291  | 8.285  | 0.803  | 1001     | N.D. |       |        |
| 19) Vinyl acetate             | 43   | 8.388  | 8.413  | 0.812  | 306      | N.D. |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000  | 8.461  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                | 43   | 9.053  | 9.028  | 0.877  | 4812     | N.D. |       |        |
| 22) cis-1,2-Dichloroethylene  |      | 0.000  | 9.095  | 0.000  | 0        | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                | 83   | 9.412  | 9.400  | 0.911  | 533      | N.D. |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               | 56   | 9.778  | 9.790  | 0.947  | 204      | N.D. |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000  | 9.839  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 0.000  | 10.046 | 0.000  | 0        | N.D. |       |        |
| 32) Benzene                   | 78   | 10.071 | 10.077 | 0.975  | 1058     | N.D. |       |        |
| 33) Cyclohexene               | 67   | 10.327 | 10.199 | 1.000  | 235      | N.D. |       |        |
| 34) n-Butyl alcohol           | 56   | 10.412 | 10.400 | 1.008  | 632      | N.D. |       |        |
| 35) Trichloroethylene         |      | 0.000  | 10.717 | 0.000  | 0        | N.D. |       |        |
| 36) 2-Pentanone               | 43   | 10.802 | 10.778 | 1.046  | 442      | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 0.000  | 10.973 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H315.D  
Acq On : 02 Nov 2016 16:46  
Operator : ACJ  
InstName : VOA4  
Sample : |409254038|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.3G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 03 09:19:19 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|-----|
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D.      |       |     |
| 40) Bromodichloromethane      |      | 0.000  | 11.193 | 0.000  | 0        | N.D.      |       |     |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.412 | 0.000  | 0        | N.D.      |       |     |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 11.644 | 0.000  | 0        | N.D.      |       |     |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 11.735 | 0.000  | 0        | N.D.      |       |     |
| 46) Toluene                   | 91   | 12.046 | 12.040 | 0.893  | 3036     | N.D.      |       |     |
| 47) trans-1,3-Dichloroprop... |      | 0.000  | 12.180 | 0.000  | 0        | N.D.      |       |     |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.      |       |     |
| 49) 2-Hexanone                | 43   | 12.601 | 12.583 | 0.934  | 914      | N.D.      |       |     |
| 50) 1,3-Dichloropropane       |      | 0.000  | 12.595 | 0.000  | 0        | N.D.      |       |     |
| 51) Tetrachloroethylene       | 164  | 12.637 | 12.637 | 0.937  | 2512     | 0.45 ug/L |       | 91  |
| 52) Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.      |       |     |
| 53) 1,2-Dibromoethane         |      | 0.000  | 13.034 | 0.000  | 0        | N.D.      |       |     |
| 54) Chlorobenzene             | 112  | 13.527 | 13.521 | 1.003  | 616      | N.D.      |       |     |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 13.576 | 0.000  | 0        | N.D.      |       |     |
| 56) Ethylbenzene              | 91   | 13.588 | 13.588 | 1.007  | 1014     | N.D.      |       |     |
| 57) m,p-Xylenes               | 106  | 13.704 | 13.698 | 1.016  | 550      | N.D.      |       |     |
| 58) o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 630      | N.D.      |       |     |
| 59) Styrene                   | 104  | 14.125 | 14.131 | 1.047  | 2822     | N.D.      |       |     |
| 61) Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.      |       |     |
| 62) Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 285      | N.D.      |       |     |
| 64) 1,1,2,2-Tetrachloroethane |      | 0.000  | 14.747 | 0.000  | 0        | N.D.      |       |     |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.      |       |     |
| 66) Bromobenzene              |      | 0.000  | 14.893 | 0.000  | 0        | N.D.      |       |     |
| 67) n-Propylbenzene           | 91   | 14.917 | 14.917 | 0.938  | 922      | N.D.      |       |     |
| 68) 1,3,5-Trimethylbenzene    | 105  | 15.082 | 15.070 | 0.949  | 470      | N.D.      |       |     |
| 69) 2-Chlorotoluene           |      | 0.000  | 15.064 | 0.000  | 0        | N.D.      |       |     |
| 70) 4-Chlorotoluene           | 91   | 15.161 | 15.161 | 0.954  | 1932     | N.D.      |       |     |
| 71) tert-Butylbenzene         |      | 0.000  | 15.442 | 0.000  | 0        | N.D.      |       |     |
| 72) 1,2,4-Trimethylbenzene    | 105  | 15.491 | 15.478 | 0.974  | 834      | N.D.      |       |     |
| 73) sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 220      | N.D.      |       |     |
| 74) 4-Isopropyltoluene        | 119  | 15.789 | 15.783 | 0.993  | 354      | N.D.      |       |     |
| 75) 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.997  | 1120     | N.D.      |       |     |
| 76) 1,4-Dichlorobenzene       | 146  | 15.923 | 15.929 | 1.002  | 1723     | N.D.      |       |     |
| 77) n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.021  | 1038     | N.D.      |       |     |
| 78) 1,2-Dichlorobenzene       | 146  | 16.368 | 16.356 | 1.030  | 804      | N.D.      |       |     |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.      |       |     |
| 80) 1,2,4-Trichlorobenzene    | 180  | 18.295 | 18.301 | 1.151  | 825      | N.D.      |       |     |
| 81) Hexachlorobutadiene       |      | 0.000  | 18.490 | 0.000  | 0        | N.D.      |       |     |
| 82) Naphthalene               | 128  | 18.691 | 18.685 | 1.176  | 2477     | N.D.      |       |     |
| 83) 1,2,3-Trichlorobenzene    | 180  | 19.039 | 19.033 | 1.197  | 191      | N.D.      |       |     |
| 85) Acrolein                  |      | 0.000  | 6.895  | 0.000  | 0        | N.D.      |       |     |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.096  | 0.000  | 0        | N.D.      |       |     |
| 87) Isopropyl Alcohol         | 45   | 7.138  | 7.139  | 0.691  | 101      | Below Cal | #     | 58  |
| 88) Allyl chloride            | 41   | 7.535  | 7.511  | 0.730  | 198      | N.D.      |       |     |
| 89) tert-Butyl Alcohol        | 59   | 7.626  | 7.639  | 0.738  | 440      | Below Cal | #     | 100 |
| 90) Acrylonitrile             | 53   | 7.821  | 7.882  | 0.757  | 1352     | Below Cal | #     | 24  |
| 91) Isopropyl ether           |      | 0.000  | 8.455  | 0.000  | 0        | N.D.      |       |     |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 8.577  | 0.000  | 0        | N.D.      |       |     |
| 93) Ethyl tert-butyl ether    | 59   | 8.852  | 8.858  | 0.857  | 100      | N.D.      |       |     |
| 94) Ethyl acetate             | 43   | 9.053  | 9.047  | 0.877  | 4812     | Below Cal | #     | 73  |
| 95) Propionitrile             |      | 0.000  | 9.096  | 0.000  | 0        | N.D.      |       |     |
| 96) Methacrylonitrile         | 41   | 9.260  | 9.278  | 0.897  | 107      | Below Cal | #     | 25  |
| 97) Tetrahydrofuran           | 42   | 9.418  | 9.419  | 0.912  | 682      | Below Cal | #     | 67  |
| 98) Isobutyl alcohol          | 41   | 9.693  | 9.717  | 0.939  | 251      | Below Cal | #     | 34  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H315.D  
Acq On : 02 Nov 2016 16:46  
Operator : ACJ  
InstName : VOA4  
Sample : |409254038|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.3G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 03 09:19:19 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

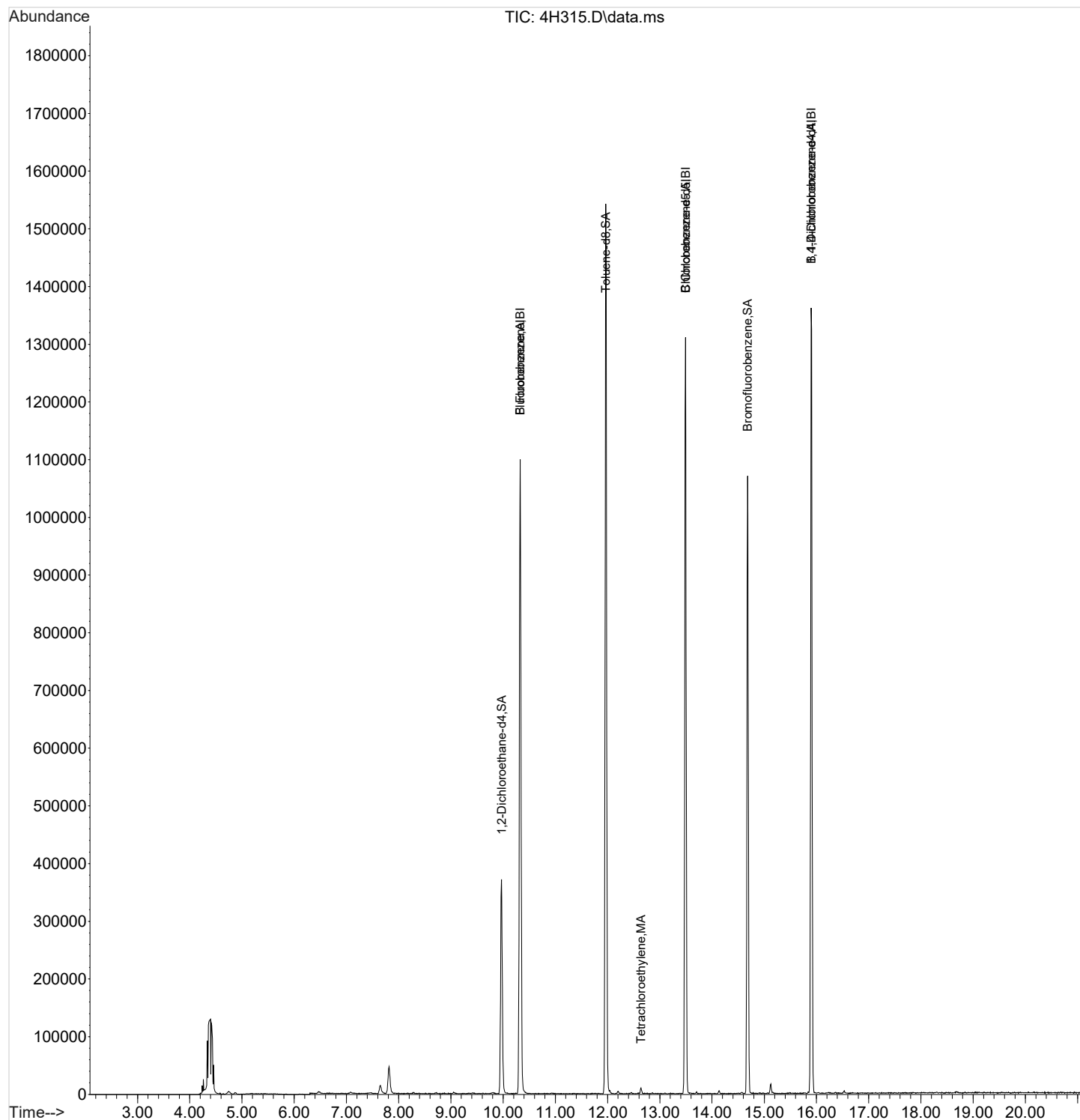
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |    |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|----|
| 99) Methyl tert-amyl ether     |      | 0.000  | 10.101 | 0.000  | 0        | N.D.      |       |    |
| 100) Methyl methacrylate       | 69   | 10.930 | 10.925 | 1.058  | 186      | Below Cal | #     | 1  |
| 101) 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.      |       |    |
| 102) 2-Nitropropane            | 43   | 11.369 | 11.388 | 1.101  | 104      | Below Cal | #     | 1  |
| 104) Ethyl methacrylate        | 69   | 12.205 | 12.186 | 0.905  | 396      | Below Cal | #     | 78 |
| 106) 1-Chlorohexane            |      | 0.000  | 13.387 | 0.000  | 0m       | N.D. d    |       |    |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 14.509 | 0.000  | 0        | N.D.      |       |    |
| 108) Cyclohexanone             |      | 0.000  | 14.631 | 0.000  | 0        | N.D.      |       |    |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 14.796 | 0.000  | 0        | N.D.      |       |    |
| 110) Pentachloroethane         |      | 0.000  | 15.503 | 0.000  | 0        | N.D.      |       |    |
| 111) Benzyl chloride           | 91   | 16.045 | 16.039 | 1.009  | 1384     | Below Cal | #     | 60 |
| 112) bis(2-Chloroisopropyl)... |      | 0.000  | 16.442 | 0.000  | 0        | N.D.      |       |    |

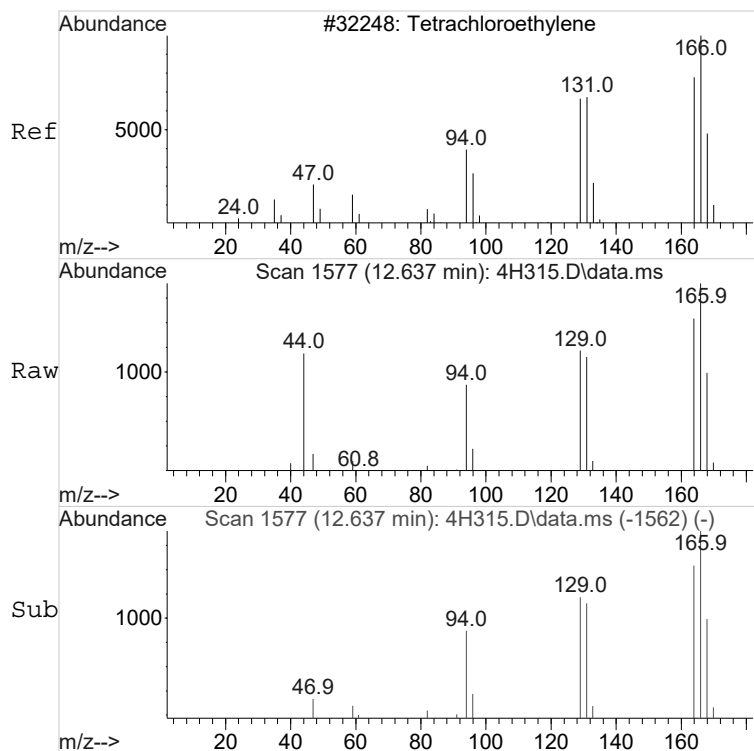
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H315.D  
Acq On : 02 Nov 2016 16:46  
Operator : ACJ  
InstName : VOA4  
Sample : |409254038|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.3G N/A SOIL  
ALS Vial : 15 Sample Multiplier: 1

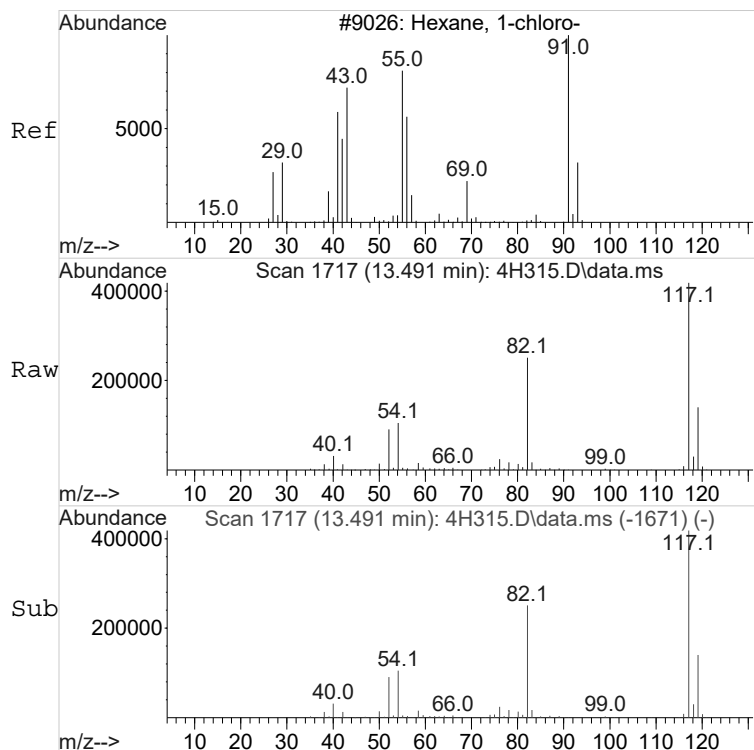
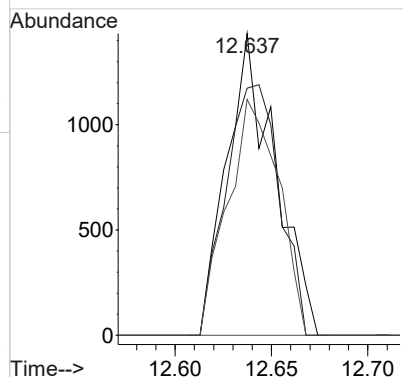
Quant Time: Nov 03 09:19:19 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE





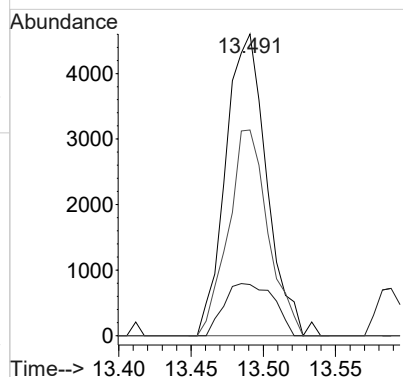
#51  
Tetrachloroethylene  
Concen: 0.45 ug/L  
RT: 12.637 min Scan# 1577  
Delta R.T. 0.000 min  
Lab File: 4H315.D  
Acq: 02 Nov 2016 16:46

Tgt Ion: 164 Resp: 2512  
Ion Ratio Lower Upper  
164 100  
129 91.6 66.1 126.1  
131 82.2 65.3 125.3



#106 BEFORE analyst DELETION  
1-Chlorohexane  
Concen: 0.47 ug/L  
RT: 13.491 min Scan# 1717  
Delta R.T. 0.104 min  
Lab File: 4H315.D  
Acq: 02 Nov 2016 16:46

Tgt Ion: 55 Resp: 9094  
Ion Ratio Lower Upper  
55 100  
91 20.9 94.9 154.9#  
56 65.9 28.8 88.8



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 2

**SDG Number:** 409254  
**Lab Sample ID:** 409254044

**Date Collected:** 10/26/2016 12:40  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 5 g  
**Column:** DB-624

**Matrix:** SOIL  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

**Client ID:** TB102616  
**Batch ID:** 1612391  
**Run Date:** 11/02/2016 17:15  
**Prep Date:** 10/26/2016 12:40  
**Data File:** 110216V4\4H316.D

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.00   | ug/kg | 0.500   | 1.00    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 123-91-1 | 1,4-Dioxane                 | U         | 50.0   | ug/kg | 16.7    | 50.0    |
| 78-93-3  | 2-Butanone                  | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 591-78-6 | 2-Hexanone                  | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 67-64-1  | Acetone                     | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 71-43-2  | Benzene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-97-5  | Bromochloromethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-27-4  | Bromodichloromethane        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-25-2  | Bromoform                   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-83-9  | Bromomethane                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-15-0  | Carbon disulfide            | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 108-90-7 | Chlorobenzene               | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-00-3  | Chloroethane                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 67-66-3  | Chloroform                  | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-87-3  | Chloromethane               | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 110-82-7 | Cyclohexane                 | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 124-48-1 | Dibromochloromethane        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 100-41-4 | Ethylbenzene                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 98-82-8  | Isopropylbenzene            | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-20-9  | Methyl acetate              | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 108-87-2 | Methylcyclohexane           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-09-2  | Methylene chloride          | J         | 2.79   | ug/kg | 1.67    | 5.00    |

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254044

**Date Collected:** 10/26/2016 12:40  
**Date Received:** 10/27/2016 09:00

**Matrix:** SOIL

**Client ID:** TB102616

**Client:** HAAL002

**Project:** HAAL00201

**Batch ID:** 1612391

**Method:** SW846 8260B

**SOP Ref:** GL-OA-E-038

**Run Date:** 11/02/2016 17:15

**Inst:** VOA4.I

**Dilution:** 1

**Prep Date:** 10/26/2016 12:40

**Analyst:** ACJ

**Purge Vol:** 5 mL

**Data File:** 110216V4\4H316.D

**Aliquot:** 5 g

**Final Volume:** 5 mL

**Column:** DB-624

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | J         | 0.400  | ug/kg | 0.333   | 1.00    |
| 108-88-3    | Toluene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-01-6     | Trichloroethylene           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 75-01-4     | Vinyl chloride              | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.00   | ug/kg | 0.667   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.00   | ug/kg | 0.333   | 1.00    |



Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H316.D  
Acq On : 02 Nov 2016 17:15  
Operator : ACJ  
InstName : VOA4  
Sample : |409254044|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.0G N/A SOIL TB NO SOIL ADDED  
ALS Vial : 16 Sample Multiplier: 1

Agf  
11/09/2016

Cell  
11/09/2016

Quant Time: Nov 03 09:19:23 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1140923  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 819972   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.905 | 1.000  | 423435   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1140923  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 819972   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 423435   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 290296  | 46.82 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1110136 | 47.47 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 437382  | 47.61 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 94%      |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 95%      |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 95%      |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    | 50   | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 5.188  | 5.094  | 0.502  | 119      | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     | 43   | 0.000  | 6.370  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.706  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 7.078  | 7.059  | 0.685  | 4516     | N.D. |       |        |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.090  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 0.000  | 7.327  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              | 41   | 7.364  | 7.407  | 0.713  | 357      | N.D. |       |        |
| 13) Methyl acetate            | 43   | 7.388  | 7.456  | 0.715  | 185      | N.D. |       |        |
| 14) Carbon disulfide          | 76   | 7.480  | 7.468  | 0.724  | 2109     | N.D. |       |        |
| 15) Methylene chloride        | 84   | 7.645  | 7.645  | 0.740  | 22130    | 2.79 | ug/L  | 97     |
| 16) tert-Butyl methyl ether   | 73   | 7.968  | 7.955  | 0.772  | 2648     | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... | 57   | 0.000  | 7.992  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    |      | 8.279  | 8.285  | 0.802  | 2554     | N.D. |       |        |
| 19) Vinyl acetate             |      | 8.425  | 8.413  | 0.816  | 502      | N.D. |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000  | 8.461  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                |      | 9.047  | 9.028  | 0.876  | 3505     | N.D. |       |        |
| 22) cis-1,2-Dichloroethylene  | 43   | 0.000  | 9.095  | 0.000  | 0        | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 0.000  | 9.400  | 0.000  | 0        | N.D. |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               | 43   | 0.000  | 9.790  | 0.000  | 0        | N.D. |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000  | 9.839  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 0.000  | 10.046 | 0.000  | 0        | N.D. |       |        |
| 32) Benzene                   |      | 10.083 | 10.077 | 0.976  | 614      | N.D. |       |        |
| 33) Cyclohexene               | 67   | 10.333 | 10.199 | 1.001  | 240      | N.D. |       |        |
| 34) n-Butyl alcohol           | 56   | 10.431 | 10.400 | 1.010  | 263      | N.D. |       |        |
| 35) Trichloroethylene         | 43   | 0.000  | 10.717 | 0.000  | 0        | N.D. |       |        |
| 36) 2-Pentanone               |      | 10.766 | 10.778 | 1.043  | 165      | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 0.000  | 10.973 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H316.D  
Acq On : 02 Nov 2016 17:15  
Operator : ACJ  
InstName : VOA4  
Sample : |409254044|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.0G N/A SOIL TB NO SOIL ADDED  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 03 09:19:23 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|-----|
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D.      |       |     |
| 40) Bromodichloromethane      |      | 0.000  | 11.193 | 0.000  | 0        | N.D.      |       |     |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.412 | 0.000  | 0        | N.D.      |       |     |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 11.644 | 0.000  | 0        | N.D.      |       |     |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 11.735 | 0.000  | 0        | N.D.      |       |     |
| 46) Toluene                   | 91   | 12.046 | 12.040 | 0.893  | 2500     | N.D.      |       |     |
| 47) trans-1,3-Dichloroprop... |      | 0.000  | 12.180 | 0.000  | 0        | N.D.      |       |     |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.      |       |     |
| 49) 2-Hexanone                | 43   | 12.589 | 12.583 | 0.933  | 749      | N.D.      |       |     |
| 50) 1,3-Dichloropropane       |      | 0.000  | 12.595 | 0.000  | 0        | N.D.      |       |     |
| 51) Tetrachloroethylene       | 164  | 12.644 | 12.637 | 0.937  | 2279     | 0.40 ug/L |       | 88  |
| 52) Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.      |       |     |
| 53) 1,2-Dibromoethane         |      | 0.000  | 13.034 | 0.000  | 0        | N.D.      |       |     |
| 54) Chlorobenzene             | 112  | 13.528 | 13.521 | 1.003  | 706      | N.D.      |       |     |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 13.576 | 0.000  | 0        | N.D.      |       |     |
| 56) Ethylbenzene              | 91   | 13.588 | 13.588 | 1.007  | 983      | N.D.      |       |     |
| 57) m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 557      | N.D.      |       |     |
| 58) o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 320      | N.D.      |       |     |
| 59) Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 2268     | N.D.      |       |     |
| 61) Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.      |       |     |
| 62) Isopropylbenzene          |      | 0.000  | 14.491 | 0.000  | 0        | N.D.      |       |     |
| 64) 1,1,2,2-Tetrachloroethane |      | 0.000  | 14.747 | 0.000  | 0        | N.D.      |       |     |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.      |       |     |
| 66) Bromobenzene              | 156  | 14.893 | 14.893 | 0.936  | 114      | N.D.      |       |     |
| 67) n-Propylbenzene           | 91   | 14.911 | 14.917 | 0.938  | 796      | N.D.      |       |     |
| 68) 1,3,5-Trimethylbenzene    |      | 0.000  | 15.070 | 0.000  | 0        | N.D.      |       |     |
| 69) 2-Chlorotoluene           |      | 0.000  | 15.064 | 0.000  | 0        | N.D.      |       |     |
| 70) 4-Chlorotoluene           | 91   | 15.167 | 15.161 | 0.954  | 1571     | N.D.      |       |     |
| 71) tert-Butylbenzene         |      | 0.000  | 15.442 | 0.000  | 0        | N.D.      |       |     |
| 72) 1,2,4-Trimethylbenzene    | 105  | 15.472 | 15.478 | 0.973  | 666      | N.D.      |       |     |
| 73) sec-Butylbenzene          | 105  | 15.655 | 15.661 | 0.984  | 176      | N.D.      |       |     |
| 74) 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.992  | 491      | N.D.      |       |     |
| 75) 1,3-Dichlorobenzene       | 146  | 15.838 | 15.844 | 0.996  | 888      | N.D.      |       |     |
| 76) 1,4-Dichlorobenzene       | 146  | 15.929 | 15.929 | 1.002  | 1672     | N.D.      |       |     |
| 77) n-Butylbenzene            | 91   | 16.234 | 16.228 | 1.021  | 931      | N.D.      |       |     |
| 78) 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.028  | 678      | N.D.      |       |     |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.      |       |     |
| 80) 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 770      | N.D.      |       |     |
| 81) Hexachlorobutadiene       |      | 0.000  | 18.490 | 0.000  | 0        | N.D.      |       |     |
| 82) Naphthalene               | 128  | 18.697 | 18.685 | 1.176  | 2771     | N.D.      |       |     |
| 83) 1,2,3-Trichlorobenzene    | 180  | 19.039 | 19.033 | 1.197  | 349      | N.D.      |       |     |
| 85) Acrolein                  | 56   | 6.761  | 6.895  | 0.655  | 164      | N.D.      |       |     |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.096  | 0.000  | 0        | N.D.      |       |     |
| 87) Isopropyl Alcohol         |      | 0.000  | 7.139  | 0.000  | 0        | N.D.      |       |     |
| 88) Allyl chloride            | 41   | 7.480  | 7.511  | 0.724  | 225      | N.D.      |       |     |
| 89) tert-Butyl Alcohol        | 59   | 7.645  | 7.639  | 0.740  | 2394     | Below Cal | #     | 100 |
| 90) Acrylonitrile             |      | 0.000  | 7.882  | 0.000  | 0        | N.D.      |       |     |
| 91) Isopropyl ether           |      | 0.000  | 8.455  | 0.000  | 0        | N.D.      |       |     |
| 92) 2-Chloro-1,3-butadiene    |      | 0.000  | 8.577  | 0.000  | 0        | N.D.      |       |     |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.      |       |     |
| 94) Ethyl acetate             | 43   | 9.047  | 9.047  | 0.876  | 3505     | Below Cal | #     | 69  |
| 95) Propionitrile             |      | 0.000  | 9.096  | 0.000  | 0        | N.D.      |       |     |
| 96) Methacrylonitrile         | 41   | 9.230  | 9.278  | 0.894  | 263      | Below Cal | #     | 34  |
| 97) Tetrahydrofuran           | 42   | 9.431  | 9.419  | 0.913  | 1370     | Below Cal |       | 68  |
| 98) Isobutyl alcohol          | 41   | 9.778  | 9.717  | 0.947  | 152      | Below Cal | #     | 71  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H316.D  
Acq On : 02 Nov 2016 17:15  
Operator : ACJ  
InstName : VOA4  
Sample : |409254044|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.0G N/A SOIL TB NO SOIL ADDED  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 03 09:19:23 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

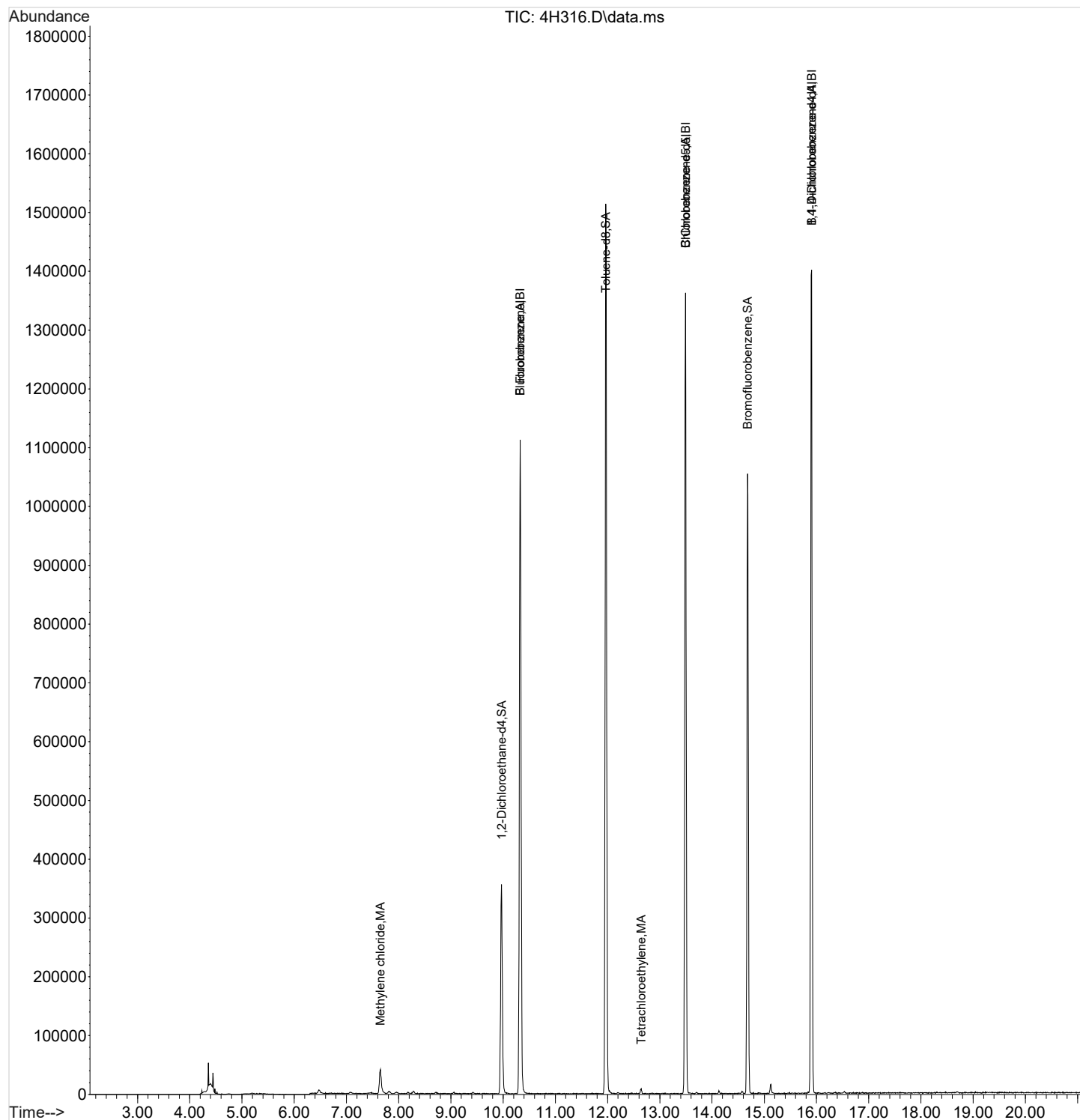
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |    |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|----|
| 99) Methyl tert-amyl ether     |      | 0.000  | 10.101 | 0.000  | 0        | N.D.      |       |    |
| 100) Methyl methacrylate       |      | 0.000  | 10.925 | 0.000  | 0        | N.D.      |       |    |
| 101) 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.      |       |    |
| 102) 2-Nitropropane            | 43   | 11.363 | 11.388 | 1.100  | 100      | Below Cal |       | 79 |
| 104) Ethyl methacrylate        |      | 0.000  | 12.186 | 0.000  | 0        | N.D.      |       |    |
| 106) 1-Chlorohexane            |      | 0.000  | 13.387 | 0.000  | 0m       | N.D. d    |       |    |
| 107) cis-1,4-Dichloro-2-butene |      | 0.000  | 14.509 | 0.000  | 0        | N.D.      |       |    |
| 108) Cyclohexanone             |      | 0.000  | 14.631 | 0.000  | 0        | N.D.      |       |    |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 14.796 | 0.000  | 0        | N.D.      |       |    |
| 110) Pentachloroethane         |      | 0.000  | 15.503 | 0.000  | 0        | N.D.      |       |    |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.008  | 1378     | Below Cal | #     | 60 |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.435 | 16.442 | 1.033  | 156      | Below Cal | #     | 56 |

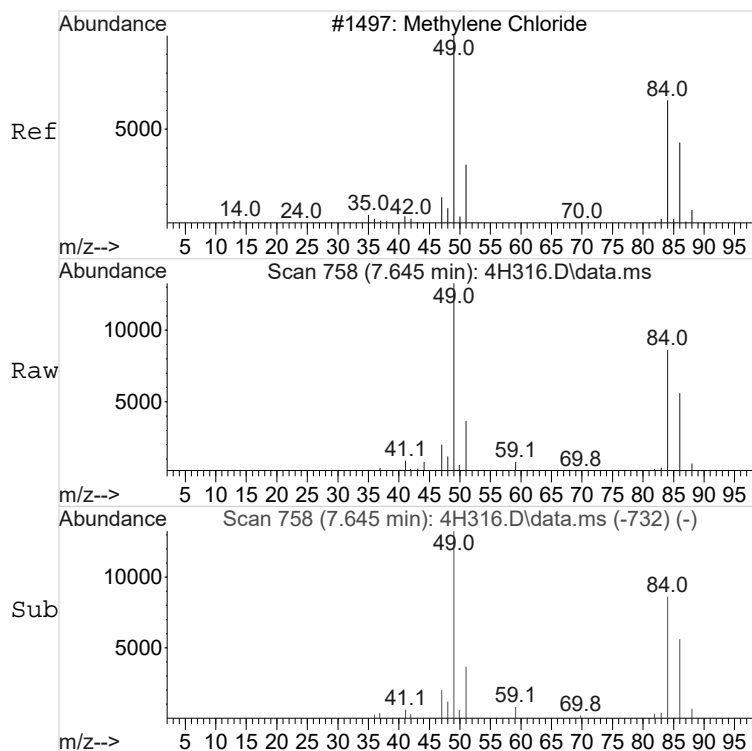
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H316.D  
Acq On : 02 Nov 2016 17:15  
Operator : ACJ  
InstName : VOA4  
Sample : |409254044|1612391|1|VOAF|1|VOA8260BS|  
Misc : HAAL 5.0G N/A SOIL TB NO SOIL ADDED  
ALS Vial : 16 Sample Multiplier: 1

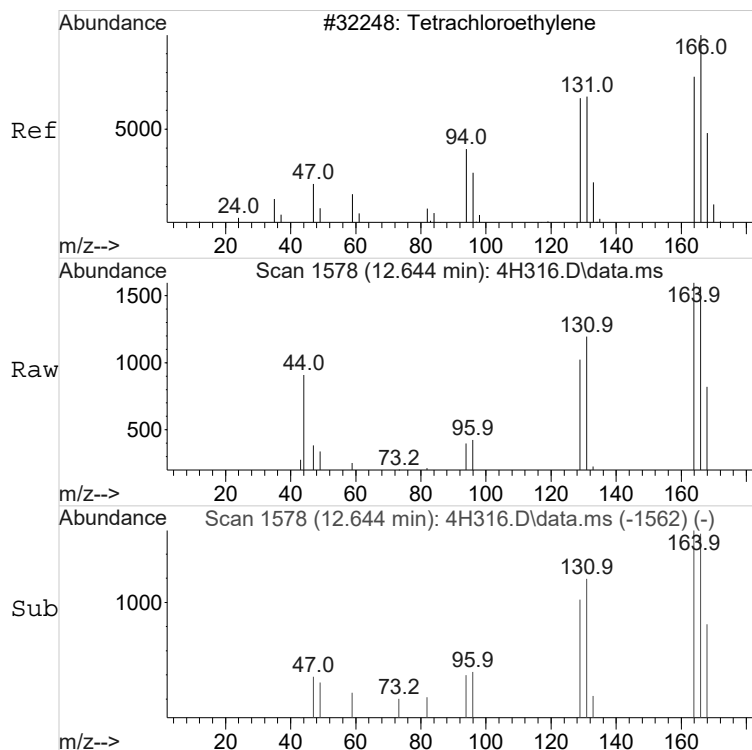
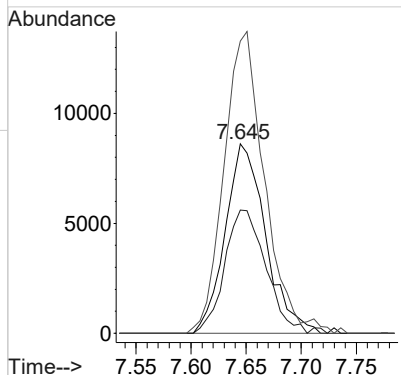
Quant Time: Nov 03 09:19:23 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE





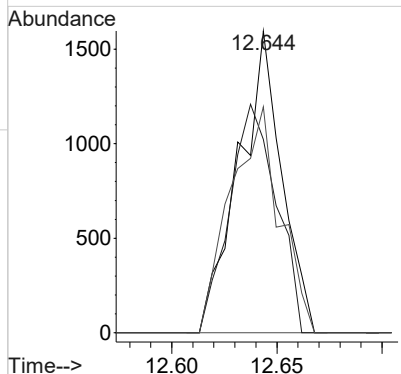
#15  
Methylene chloride  
Concen: 2.79 ug/L  
RT: 7.645 min Scan# 758  
Delta R.T. -0.000 min  
Lab File: 4H316.D  
Acq: 02 Nov 2016 17:15

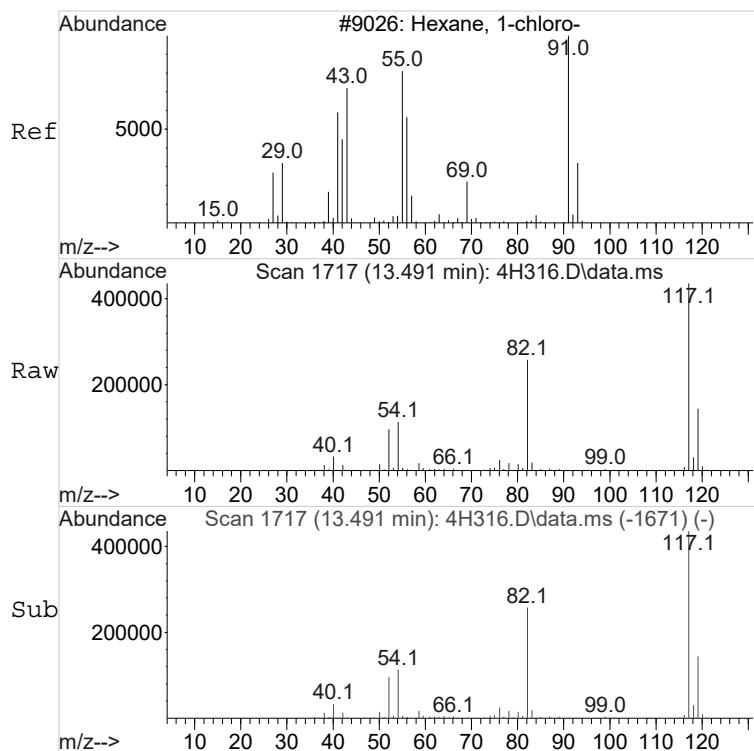
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 84      | 100   |       |       |
| 86      | 65.8  | 34.9  | 94.9  |
| 49      | 159.4 | 124.4 | 184.4 |



#51  
Tetrachloroethylene  
Concen: 0.40 ug/L  
RT: 12.644 min Scan# 1578  
Delta R.T. 0.007 min  
Lab File: 4H316.D  
Acq: 02 Nov 2016 17:15

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 164     | 100   |       |       |
| 129     | 82.3  | 66.1  | 126.1 |
| 131     | 85.3  | 65.3  | 125.3 |

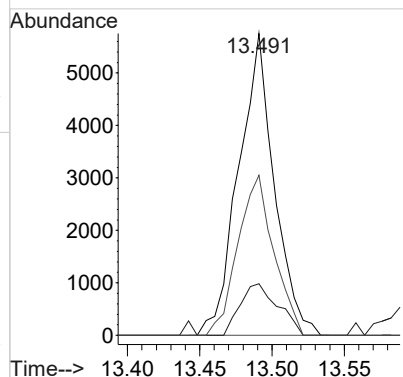




#106 BEFORE analyst DELETION  
1-Chlorohexane

Concen: 0.55 ug/L  
RT: 13.491 min Scan# 1717  
Delta R.T. 0.104 min  
Lab File: 4H316.D  
Acq: 02 Nov 2016 17:15

| Tgt Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 55      | 100   |       |        |
| 91      | 18.2  | 94.9  | 154.9# |
| 56      | 53.4  | 28.8  | 88.8   |



# Standards





## Calibration History Report VOA4

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M

Last Update : Tue Nov 01 08:22:19 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

Cal Lvl:8 Amt:0.00 Last Updated with: C:\msdchem\1\data\103116V4\4H102.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 31 Oct 2016 16:55 | A   | C:\msdchem\1\data\103116V4\4H102.D |

Cal Lvl:1 Amt:1.00 Last Updated with: C:\msdchem\1\data\103116V4\4H113.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 31 Oct 2016 17:24 | A   | C:\msdchem\1\data\103116V4\4H103.D |
| 31 Oct 2016 22:15 | B   | C:\msdchem\1\data\103116V4\4H113.D |

Cal Lvl:2 Amt:2.00 Last Updated with: C:\msdchem\1\data\103116V4\4H114.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 31 Oct 2016 17:53 | A   | C:\msdchem\1\data\103116V4\4H104.D |
| 31 Oct 2016 22:45 | B   | C:\msdchem\1\data\103116V4\4H114.D |

Cal Lvl:3 Amt:5.00 Last Updated with: C:\msdchem\1\data\103116V4\4H105.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 31 Oct 2016 18:22 | A   | C:\msdchem\1\data\103116V4\4H105.D |

Cal Lvl:4 Amt:10.00 Last Updated with: C:\msdchem\1\data\103116V4\4H115.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 31 Oct 2016 18:52 | A   | C:\msdchem\1\data\103116V4\4H106.D |
| 31 Oct 2016 23:14 | B   | C:\msdchem\1\data\103116V4\4H115.D |

Cal Lvl:5 Amt:20.00 Last Updated with: C:\msdchem\1\data\103116V4\4H116.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 31 Oct 2016 19:21 | A   | C:\msdchem\1\data\103116V4\4H107.D |
| 31 Oct 2016 23:43 | B   | C:\msdchem\1\data\103116V4\4H116.D |

Cal Lvl:6 Amt:50.00 Last Updated with: C:\msdchem\1\data\103116V4\4H117.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 31 Oct 2016 19:49 | A   | C:\msdchem\1\data\103116V4\4H108.D |
| 01 Nov 2016 00:12 | B   | C:\msdchem\1\data\103116V4\4H117.D |

Cal Lvl:7 Amt:100.00 Last Updated with: C:\msdchem\1\data\103116V4\4H118.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 31 Oct 2016 20:48 | A   | C:\msdchem\1\data\103116V4\4H110.D |
| 01 Nov 2016 00:41 | B   | C:\msdchem\1\data\103116V4\4H118.D |

Cal Lvl:9 Amt:80.00 Last Updated with: C:\msdchem\1\data\103116V4\4H109.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 31 Oct 2016 20:19 | A   | C:\msdchem\1\data\103116V4\4H109.D |

Calibration History Report VOA4

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M

Last Update : Tue Nov 01 08:22:19 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

VOA4-8260-103116.M Thu Nov 10 10:56:43 2016

## Response Factor Report VOA4

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M

Last Update : Tue Nov 01 08:22:19 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m_1(x) + m_2(xE2)$ 

| b      | Compound<br>m1          | m2 | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|--------|-------------------------|----|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 2)MA   | Dichlorodifluoromethane |    | 0.3236568 | 0.2753219<br>0.2525073 | 0.3180561<br>0.2555751 | 0.3562092 | 0.3118962 | 0.3160879 | 0.3012 | AVRG  |     | 12.0852 |
| 3)MPA  | Chloromethane           |    | 0.3194000 | 0.3645142<br>0.2713619 | 0.3746197<br>0.2817624 | 0.3725923 | 0.3442270 | 0.3325362 | 0.3326 | AVRG  |     | 11.9326 |
| 4)MCA  | Vinyl chloride          |    | 0.2801957 | 0.2447916<br>0.2459574 | 0.2874132<br>0.2509243 | 0.2904501 | 0.2732788 | 0.2760217 | 0.2686 | AVRG  |     | 6.9426  |
| 5)MA   | Bromomethane            |    | 0.2797639 | 0.2693257<br>0.2597082 | 0.2801778<br>0.2610746 | 0.2996767 | 0.2787858 | 0.2776348 | 0.2758 | AVRG  |     | 4.6174  |
| 6)MA   | Chloroethane            |    | 0.2706749 | 0.2598819<br>0.2488736 | 0.2803809<br>0.2529413 | 0.2897995 | 0.2721166 | 0.2706396 | 0.2682 | AVRG  |     | 5.1166  |
| 7)MA   | Trichlorofluoromethane  |    | 0.4644164 | 0.4008407<br>0.4239949 | 0.4683000<br>0.4341047 | 0.4845139 | 0.4646495 | 0.4517698 | 0.4491 | AVRG  |     | 6.1218  |
| 8)MA   | Ethyl ether             |    | 0.2600112 | 0.2473400<br>0.2470833 | 0.2580905<br>0.2431252 | 0.2568066 | 0.2528202 | 0.2611890 | 0.2533 | AVRG  |     | 2.6710  |
| 9)MA   | Acetone                 |    | 0.1486690 | 0.1787344<br>0.1348732 | 0.1893866<br>0.1391228 | 0.1624648 | 0.1677363 | 0.1567541 | 0.1597 | AVRG  |     | 11.7990 |
| 10)MCA | 1,1-Dichloroethylene    |    | 0.4991349 | 0.4887338<br>0.4785801 | 0.5351456<br>0.4862701 | 0.5205035 | 0.5339255 | 0.5071008 | 0.5062 | AVRG  |     | 4.3070  |
| 11)MA  | Iodomethane             |    | 0.4770931 | 0.4823479<br>0.4335327 | 0.5383851<br>0.4476491 | 0.5258206 | 0.5259833 | 0.5059812 | 0.4921 | AVRG  |     | 7.8126  |
| 12)MA  | Acetonitrile            |    | 0.0355262 | 0.0367082<br>0.0327745 | 0.0371431<br>0.0345313 | 0.0365881 | 0.0374381 | 0.0357483 | 0.0358 | AVRG  |     | 4.3231  |
| 13)MA  | Methyl acetate          |    | 0.1978002 | 0.2028088<br>0.1740142 | 0.2121288<br>0.1810099 | 0.1976855 | 0.2188741 | 0.2026164 | 0.1984 | AVRG  |     | 7.4841  |
| 14)MA  | Carbon disulfide        |    | 0.9362052 | 1.0193105<br>0.7779454 | 1.1576957<br>0.8429167 | 1.1135698 | 1.0958830 | 1.0236091 | 0.9959 | AVRG  |     | 13.4615 |
| 15)MA  | Methylene chloride      |    | 0.3128837 |                        | 0.4484977<br>0.3070001 | 0.3699012 | 0.3469437 | 0.3360129 | 0.3471 | AVRG  |     | 14.4857 |
| 16)MA  | tert-Butyl methyl ether |    | 0.8068619 | 0.7690524<br>0.7806100 | 0.8327900<br>0.7763150 | 0.8227234 | 0.8117207 | 0.8202718 | 0.8025 | AVRG  |     | 2.9897  |

## Response Factor Report VOA4

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M

Last Update : Tue Nov 01 08:22:19 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m_1(x) + m_2(xE2)$ 

| b      | Compound<br>m1           | m2 | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|--------|--------------------------|----|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 17)MA  | trans-1,2-Dichloroethyle |    | 0.4735236 | 0.4373171<br>0.4491991 | 0.5294842<br>0.4524017 | 0.4901031 | 0.5035072 | 0.4879959 | 0.4779 | AVRG  |     | 6.4768  |
| 18)MA  | Hexane                   |    | 0.5306288 | 0.4958174              | 0.5143590              | 0.5664590 | 0.5575568 | 0.5371763 | 0.5337 | AVRG  |     | 4.9385  |
| 19)MA  | Vinyl acetate            |    | 0.5395050 | 0.5789554<br>0.4752383 | 0.5868906<br>0.4982736 | 0.5839087 | 0.5597106 | 0.5884034 | 0.5514 | AVRG  |     | 7.8993  |
| 20)MPA | 1,1-Dichloroethane       |    | 0.5647357 | 0.5538417<br>0.5423702 | 0.6369500<br>0.5472473 | 0.6060071 | 0.5865726 | 0.5870785 | 0.5781 | AVRG  |     | 5.6205  |
| 21)MA  | 2-Butanone               |    | 0.1935484 | 0.2028987<br>0.1749047 | 0.2276457<br>0.1814929 | 0.2084656 | 0.2109731 | 0.2022088 | 0.2003 | AVRG  |     | 8.4043  |
| 22)MA  | cis-1,2-Dichloroethylene |    | 0.3319556 | 0.3142467<br>0.3175144 | 0.3489782<br>0.3207497 | 0.3487471 | 0.3474733 | 0.3440075 | 0.3342 | AVRG  |     | 4.4738  |
| 23)MA  | 2,2-Dichloropropane      |    | 0.4929339 | 0.4848363<br>0.4675159 | 0.5269454<br>0.4806073 | 0.5179307 | 0.5082246 | 0.4951532 | 0.4968 | AVRG  |     | 4.0017  |
| 24)MA  | Bromochloromethane       |    | 0.1393317 | 0.1354624<br>0.1372083 | 0.1433893<br>0.1363933 | 0.1386945 | 0.1402584 | 0.1442805 | 0.1394 | AVRG  |     | 2.2740  |
| 25)MCA | Chloroform               |    | 0.5205255 | 0.5069720<br>0.5017610 | 0.5732270<br>0.5039453 | 0.5402973 | 0.5418255 | 0.5343624 | 0.5279 | AVRG  |     | 4.6367  |
| 26)MA  | 1,1,1-Trichloroethane    |    | 0.5047404 | 0.4949797<br>0.4834164 | 0.5294334<br>0.4876208 | 0.5289612 | 0.5174389 | 0.5075060 | 0.5068 | AVRG  |     | 3.4789  |
| 27)MA  | Cyclohexane              |    | 0.6669308 | 0.6539269<br>0.6241319 | 0.7888441<br>0.6414700 | 0.7280129 | 0.6997621 | 0.6791586 | 0.6853 | AVRG  |     | 7.7564  |
| 28)MA  | 1,1-Dichloropropene      |    | 0.4231636 | 0.4217771<br>0.3973891 | 0.4753578<br>0.4069398 | 0.4367348 | 0.4446077 | 0.4345751 | 0.4301 | AVRG  |     | 5.5906  |
| 29)MA  | Carbon tetrachloride     |    | 0.4417947 | 0.4125331<br>0.4243788 | 0.4426331<br>0.4293978 | 0.4420677 | 0.4370215 | 0.4391862 | 0.4336 | AVRG  |     | 2.4805  |
| 30)SA  | 1,2-Dichloroethane-d4    |    | 0.2686363 | 0.2719860<br>0.2718092 | 0.2720121<br>0.2713822 | 0.2724395 | 0.2753257 | 0.2704073 | 0.2717 | AVRG  |     | 0.6957  |
| 31)MA  | 1,2-Dichloroethane       |    | 0.3828196 | 0.3692611<br>0.3680527 | 0.3951583<br>0.3691571 | 0.3817203 | 0.3856788 | 0.3889377 | 0.3801 | AVRG  |     | 2.6837  |

## Response Factor Report VOA4

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M

Last Update : Tue Nov 01 08:22:19 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m_1(x) + m_2(xE2)$ 

| b      | Compound<br>ml            | m2 | 8<br>6                 | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|--------|---------------------------|----|------------------------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 32)MA  | Benzene                   |    | 1.2055792              | 1.2920141<br>1.1130347 | 1.3654984<br>1.1452310 | 1.2875323 | 1.2840544 | 1.2489246 | 1.2427 | AVRG  |     | 6.7298  |
| 33)MA  | Cyclohexene               |    | 0.5981587              | 0.5994122<br>0.5584960 | 0.6712486<br>0.5715783 | 0.6463044 | 0.6150784 | 0.6104755 | 0.6088 | AVRG  |     | 6.0399  |
| 34)MA  | n-Butyl alcohol           |    | 0.0086181<br>0.0093340 | 0.0075891<br>0.0086540 | 0.0066841<br>0.0090807 | 0.0084871 | 0.0096434 | 0.0074136 | 0.0084 | AVRG  | #   | 11.5993 |
| 35)MA  | Trichloroethylene         |    | 0.3202656              | 0.3282376<br>0.2999736 | 0.3410319<br>0.3040507 | 0.3379236 | 0.3249943 | 0.3214061 | 0.3222 | AVRG  |     | 4.5031  |
| 36)MA  | 2-Pentanone               |    | 0.2207875              | 0.2049117              | 0.2136571<br>0.2106949 | 0.2141159 | 0.2230747 | 0.2192788 | 0.2152 | AVRG  |     | 2.9360  |
| 37)MCA | 1,2-Dichloropropane       |    | 0.3264887              | 0.3147464<br>0.3056809 | 0.3285919<br>0.3130283 | 0.3421032 | 0.3435698 | 0.3383209 | 0.3266 | AVRG  |     | 4.3797  |
| 38)MA  | Methylcyclohexane         |    | 0.6011311              | 0.5890689<br>0.5502186 | 0.6872936<br>0.5685148 | 0.6583995 | 0.6276664 | 0.6164910 | 0.6123 | AVRG  |     | 7.4168  |
| 39)MA  | Dibromomethane            |    | 0.1641637              | 0.1684410<br>0.1600389 | 0.1812422<br>0.1606669 | 0.1681781 | 0.1691810 | 0.1650478 | 0.1671 | AVRG  |     | 3.9908  |
| 40)MA  | Bromodichloromethane      |    | 0.3999634              | 0.3628153<br>0.3969779 | 0.4103655<br>0.3904653 | 0.3854662 | 0.3977078 | 0.4026066 | 0.3933 | AVRG  |     | 3.6644  |
| 41)MA  | 2-Chloroethylvinyl ether  |    | 0.1491568              | 0.1367115<br>0.1381147 | 0.1437345<br>0.1410028 | 0.1822324 | 0.1488195 | 0.1489280 | 0.1486 | AVRG  |     | 9.7337  |
| 42)MA  | cis-1,3-Dichloropropylene |    | 0.4872752              | 0.4498589<br>0.4782556 | 0.5026241<br>0.4797292 | 0.4942925 | 0.4971470 | 0.4991946 | 0.4860 | AVRG  |     | 3.5213  |
| 44)MA  | 4-Methyl-2-pentanone      |    | 0.1544977              | 0.1521653<br>0.1412451 | 0.1765909<br>0.1478495 | 0.1590832 | 0.1651938 | 0.1612326 | 0.1572 | AVRG  |     | 6.9436  |
| 45)SA  | Toluene-d8                |    | 1.4029245              | 1.4599180<br>1.4137137 | 1.4318285<br>1.4246942 | 1.4488981 | 1.4092147 | 1.4161083 | 1.4259 | AVRG  |     | 1.3959  |
| 46)MCA | Toluene                   |    | 1.7073162              | 1.8843332<br>1.5563178 | 2.0379214<br>1.6176189 | 1.8666643 | 1.8501546 | 1.8083677 | 1.7911 | AVRG  |     | 8.7352  |
| 47)MA  | trans-1,3-Dichloropropyl  |    | 0.5758160              | 0.5131284<br>0.5581646 | 0.5621049<br>0.5721135 | 0.5647121 | 0.5817443 | 0.5918986 | 0.5650 | AVRG  |     | 4.1872  |

## Response Factor Report VOA4

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M

Last Update : Tue Nov 01 08:22:19 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m_1(x) + m_2(xE2)$ 

| b      | Compound<br>m1           | m2 | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|--------|--------------------------|----|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 48)MA  | 1,1,2-Trichloroethane    |    | 0.2779272 | 0.2784856<br>0.2691675 | 0.3115978<br>0.2715085 | 0.2813906 | 0.2863625 | 0.2833495 | 0.2825 | AVRG  |     | 4.6335  |
| 49)MA  | 2-Hexanone               |    | 0.3592686 | 0.3937056<br>0.3062202 | 0.4666833<br>0.3441521 | 0.4361292 | 0.4178598 | 0.4037719 | 0.3910 | AVRG  |     | 13.3414 |
| 50)MA  | 1,3-Dichloropropane      |    | 0.5318935 | 0.5304421<br>0.4920049 | 0.5995361<br>0.5113549 | 0.5840075 | 0.5797783 | 0.5798673 | 0.5511 | AVRG  |     | 7.1755  |
| 51)MA  | Tetrachloroethylene      |    | 0.3389146 | 0.3642863<br>0.3170339 | 0.3880494<br>0.3259785 | 0.3758265 | 0.3426202 | 0.3547125 | 0.3509 | AVRG  |     | 6.9595  |
| 52)MA  | Dibromochloromethane     |    | 0.3816497 | 0.3201642<br>0.3832863 | 0.3642487<br>0.3833719 | 0.3556897 | 0.3785152 | 0.3831415 | 0.3688 | AVRG  |     | 6.0163  |
| 53)MA  | 1,2-Dibromoethane        |    | 0.3328780 | 0.2870727<br>0.3216343 | 0.3397419<br>0.3239899 | 0.3198160 | 0.3418973 | 0.3331819 | 0.3250 | AVRG  |     | 5.3411  |
| 54)MPA | Chlorobenzene            |    | 1.1361211 | 1.1843143<br>1.0506767 | 1.2841048<br>1.0827783 | 1.2098885 | 1.1964987 | 1.1673890 | 1.1640 | AVRG  |     | 6.3489  |
| 55)MA  | 1,1,1,2-Tetrachloroethan |    | 0.4120126 | 0.3938173<br>0.3897662 | 0.4512235<br>0.3983972 | 0.4185689 | 0.4152209 | 0.4241653 | 0.4129 | AVRG  |     | 4.7948  |
| 56)MCA | Ethylbenzene             |    | 1.9858080 | 2.1772702<br>1.7557670 | 2.3803117<br>1.8459701 | 2.2505179 | 2.1409153 | 2.1086647 | 2.0807 | AVRG  |     | 9.9832  |
| 57)MA  | m,p-Xylenes              |    | 0.7584882 | 0.8134656<br>0.6739281 | 0.8862562<br>0.7086450 | 0.8643637 | 0.8473015 | 0.8215523 | 0.7968 | AVRG  |     | 9.5284  |
| 58)MA  | o-Xylene                 |    | 1.6005644 | 1.9079301<br>1.4125785 | 1.8925750<br>1.4891300 | 1.8321559 | 1.7567858 | 1.7237058 | 1.7019 | AVRG  |     | 10.8458 |
| 59)MA  | Styrene                  |    | 1.2403514 | 1.3034160<br>1.1056523 | 1.4089699<br>1.1579502 | 1.3475081 | 1.3501586 | 1.3148630 | 1.2786 | AVRG  |     | 8.0807  |
| 61)MPA | Bromoform                |    | 0.4463923 | 0.3259264<br>0.4612162 | 0.3931366<br>0.4483448 | 0.3737819 | 0.4292556 | 0.4342191 | 0.4140 | AVRG  |     | 11.1467 |
| 62)MA  | Isopropylbenzene         |    | 3.9029753 | 4.2215292<br>3.4897665 | 4.5702130<br>3.6345884 | 4.2499962 | 4.2905206 | 4.1248197 | 4.0606 | AVRG  |     | 8.8826  |
| 63)SA  | Bromofluorobenzene       |    | 1.0824176 | 1.1023366<br>1.0897425 | 1.0837592<br>1.0838981 | 1.0816596 | 1.0814327 | 1.0736913 | 1.0849 | AVRG  |     | 0.7666  |

Response Factor Report VOA4

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M

Last Update : Tue Nov 01 08:22:19 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m_1(x) + m_2(xE2)$

| b      | Compound<br>m1           | m2 | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|--------|--------------------------|----|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 64)MPA | 1,1,2,2-Tetrachloroethan |    | 0.8808304 | 0.8880102<br>0.8448042 | 0.8921281<br>0.8484294 | 0.9027344 | 0.9061443 | 0.8893180 | 0.8815 | AVRG  |     | 2.6134  |
| 65)MA  | 1,2,3-Trichloropropane   |    | 0.2319875 | 0.2064554<br>0.2273882 | 0.2706532<br>0.2276203 | 0.2282189 | 0.2357152 | 0.2414259 | 0.2337 | AVRG  |     | 7.7253  |
| 66)MA  | Bromobenzene             |    | 0.9115637 | 0.8960987<br>0.8591900 | 0.9981181<br>0.8740216 | 0.9527549 | 0.9520013 | 0.9403289 | 0.9230 | AVRG  |     | 5.0143  |
| 67)MA  | n-Propylbenzene          |    | 4.6109881 | 5.3450338<br>4.0085865 | 5.6265986<br>4.2728669 | 5.2265160 | 5.0806418 | 4.9682162 | 4.8924 | AVRG  |     | 11.3038 |
| 68)MA  | 1,3,5-Trimethylbenzene   |    | 3.2527044 | 3.4158625<br>2.8821969 | 3.8820212<br>3.0394375 | 3.5898413 | 3.6398760 | 3.4915291 | 3.3992 | AVRG  |     | 9.6576  |
| 69)MA  | 2-Chlorotoluene          |    | 0.8842351 | 0.9690277<br>0.7994816 | 1.0119753<br>0.8324064 | 0.9648534 | 0.9654718 | 0.9380292 | 0.9207 | AVRG  |     | 8.0802  |
| 70)MA  | 4-Chlorotoluene          |    | 2.8978383 | 3.2715956<br>2.6533101 | 3.3079309<br>2.7505192 | 3.1665472 | 3.1260242 | 3.0225341 | 3.0245 | AVRG  |     | 7.9111  |
| 71)MA  | tert-Butylbenzene        |    | 0.7044287 | 0.7063507<br>0.6518893 | 0.7933708<br>0.6771592 | 0.7320594 | 0.7443032 | 0.7171631 | 0.7158 | AVRG  |     | 5.9951  |
| 72)MA  | 1,2,4-Trimethylbenzene   |    | 3.3695278 | 3.5306925<br>3.0292464 | 3.9463047<br>3.1570163 | 3.6851041 | 3.6357531 | 3.5658502 | 3.4899 | AVRG  |     | 8.4767  |
| 73)MA  | sec-Butylbenzene         |    | 4.3696813 | 4.4750570<br>3.8252534 | 4.9873461<br>4.0614181 | 4.8796253 | 4.8686653 | 4.6820579 | 4.5186 | AVRG  |     | 9.2130  |
| 74)MA  | 4-Isopropyltoluene       |    | 3.6308727 | 3.6227157<br>3.2677659 | 4.1986394<br>3.4142679 | 4.0011387 | 4.0094800 | 3.8719673 | 3.7521 | AVRG  |     | 8.5605  |
| 75)MA  | 1,3-Dichlorobenzene      |    | 1.8702444 | 2.0108518<br>1.7460870 | 2.0903295<br>1.7987478 | 1.9815066 | 1.9962350 | 1.9591600 | 1.9316 | AVRG  |     | 6.0225  |
| 76)MA  | 1,4-Dichlorobenzene      |    | 1.8414905 | 1.9037125<br>1.7347245 | 2.0724842<br>1.7809617 | 1.9423137 | 1.9402136 | 1.9230644 | 1.8924 | AVRG  |     | 5.5835  |
| 77)MA  | n-Butylbenzene           |    | 3.6234105 | 4.0573726<br>3.2400713 | 4.2051286<br>3.3931008 | 4.0646303 | 4.0012083 | 3.8756716 | 3.8076 | AVRG  |     | 9.1864  |
| 78)MA  | 1,2-Dichlorobenzene      |    | 1.7506145 | 1.8270707<br>1.6676291 | 1.9053876<br>1.6921929 | 1.8227268 | 1.8680638 | 1.8136015 | 1.7934 | AVRG  |     | 4.6370  |

## Response Factor Report VOA4

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M

Last Update : Tue Nov 01 08:22:19 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m_1(x) + m_2(xE2)$ 

| b     | Compound<br>m1                               | m2 | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|-------|--|----|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 79)MA | 1,2-Dibromo-3-chloroprop                     |    | 0.1754082 | 0.1271617<br>0.1751386 | 0.1454660<br>0.1720107 | 0.1443175 | 0.1611540 | 0.1617868 | 0.1578 | AVRG  |     | 11.0082 |
| 80)MA | 1,2,4-Trichlorobenzene                       |    | 1.1594121 | 1.1028193<br>1.1130078 | 1.2634313<br>1.1270742 | 1.2222002 | 1.2096661 | 1.1883663 | 1.1732 | AVRG  |     | 4.8853  |
| 81)MA | Hexachlorobutadiene                          |    | 0.6913275 | 0.6069020<br>0.6487213 | 0.7231388<br>0.6611181 | 0.6793192 | 0.6941808 | 0.7087811 | 0.6767 | AVRG  |     | 5.4754  |
| 82)MA | Naphthalene                                  |    | 2.5750529 | 2.4327793<br>2.4815621 | 2.5540360<br>2.5165903 | 2.5529054 | 2.6447923 | 2.6467410 | 2.5506 | AVRG  |     | 2.9090  |
| 83)MA | 1,2,3-Trichlorobenzene                       |    | 1.0243869 | 0.9064414<br>0.9945790 | 1.0329299<br>0.9987502 | 1.0462640 | 1.0683614 | 1.0246456 | 1.0120 | AVRG  |     | 4.8297  |
| 85)B  | Acrolein                                     |    | 0.0480362 | 0.0482524<br>0.0458191 | 0.0387182              |           | 0.0449619 | 0.0436578 | 0.0449 | AVRG  |     | 7.8211  |
| 86)B  | Trichlorotrifluoroethane                     |    | 0.1206906 | 0.1426851<br>0.1127733 | 0.0905405              |           | 0.1219794 | 0.1244292 | 0.1188 | AVRG  |     | 14.3323 |
| 87)B  | Isopropyl Alcohol<br>0.0312   0.0191   0.00  |    | 1149555   | 27274<br>1997808       | 29153                  |           | 228789    | 424797    |        | LINR  | #   | 0.9933  |
| 88)B  | Allyl chloride                               |    | 0.5184631 | 0.5888172<br>0.4605448 | 0.4104241              |           | 0.5530493 | 0.5725825 | 0.5173 | AVRG  |     | 13.4188 |
| 89)B  | tert-Butyl Alcohol<br>0.0469   0.0287   0.00 |    | 1737086   | 41185<br>2998811       | 42463                  |           | 336042    | 643092    |        | LINR  | #   | 0.9926  |
| 90)B  | Acrylonitrile<br>0.0088   0.0861   0.00      |    | 489800    | 11131<br>905676        | 13625                  |           | 97958     | 187065    |        | LINR  | #   | 0.9976  |
| 91)B  | Isopropyl ether                              |    | 1.1316793 | 1.2797925<br>1.0668769 | 0.8272586              |           | 1.1235138 | 1.1637317 | 1.0988 | AVRG  |     | 13.7069 |
| 92)B  | 2-Chloro-1,3-butadiene                       |    | 0.4902357 | 0.5548123<br>0.4744928 | 0.3473312              |           | 0.4823384 | 0.5117029 | 0.4768 | AVRG  |     | 14.6154 |
| 93)B  | Ethyl tert-butyl ether                       |    | 0.9631465 | 1.0639314<br>0.9156030 | 0.6701995              |           | 0.9565245 | 0.9841002 | 0.9256 | AVRG  |     | 14.5155 |
| 94)B  | Ethyl acetate<br>0.0432   0.2221   0.00      |    | 1332801   | 35088<br>2330834       | 39362                  |           | 269952    | 516665    |        | LINR  | #   | 0.9937  |



## Response Factor Report VOA4

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M

Last Update : Tue Nov 01 08:22:19 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m_1(x) + m_2(xE2)$ 

| b      | Compound<br>m1           | m2   | 8<br>6    | 1<br>7    | 2<br>9    | 3 | 4         | 5         | Avg    | Curve | Exp  | %RSD/r2  |
|--------|--------------------------|------|-----------|-----------|-----------|---|-----------|-----------|--------|-------|------|----------|
| 95)B   | Propionitrile            |      |           | 4376      | 5331      |   | 38428     | 74859     |        |       |      |          |
| 0.0033 | 0.0348                   | 0.00 | 199591    | 364703    |           |   |           |           |        | LINR  | #    | 0.9970   |
| 96)B   | Methacrylonitrile        |      |           | 20104     | 25597     |   | 168736    | 319127    |        |       |      |          |
| 0.0192 | 0.1436                   | 0.00 | 826351    | 1512181   |           |   |           |           |        | LINR  | #    | 0.9970   |
| 97)B   | Tetrahydrofuran          |      |           | 12390     | 13128     |   | 92541     | 171931    |        |       |      |          |
| 0.0110 | 0.0775                   | 0.00 | 447131    | 816409    |           |   |           |           |        | LINR  | #    | 0.9969   |
| 98)B   | Isobutyl alcohol         |      |           | 16751     | 17727     |   | 110106    | 208385    |        |       |      |          |
| 0.0175 | 0.0092                   | 0.00 | 553238    | 964615    |           |   |           |           |        | LINR  | \$ # | 0.9938   |
| 99)B   | Methyl tert-amyl ether   |      |           | 0.8990633 | 0.5556370 |   | 0.7672401 | 0.8019037 |        |       |      |          |
|        |                          |      | 0.7765606 | 0.7430705 |           |   |           |           | 0.7572 | AVRG  |      | 14.8735  |
| 100)B  | Methyl methacrylate      |      |           | 22417     | 24752     |   | 182704    | 342569    |        |       |      |          |
| 0.0301 | 0.1449                   | 0.00 | 867689    | 1523469   |           |   |           |           |        | LINR  | #    | 0.9938   |
| 101)B  | 1,4-Dioxane              |      |           | 3447      | 3620      |   | 29270     | 53179     |        |       |      |          |
| 0.0043 | 0.0023                   | 0.00 | 140067    | 244804    |           |   |           |           |        | LINR  | # #  | 0.9936   |
| 102)B  | 2-Nitropropane           |      |           | 9242      | 10660     |   | 75958     | 144736    |        |       |      |          |
| 0.0045 | 0.0702                   | 0.00 | 396647    | 736685    |           |   |           |           |        | LINR  | #    | 0.9979   |
| 104)B  | Ethyl methacrylate       |      |           | 43437     | 49573     |   | 361510    | 668367    |        |       |      |          |
| 0.1110 | 0.3598                   | 0.00 | 1623737   | 2765094   |           |   |           |           |        | LINR  | #    | 0.9896 # |
| 106)B  | 1-Chlorohexane           |      |           | 9828      | 11276     |   | 72061     | 139276    |        |       |      |          |
| 0.0143 | 0.8197                   | 0.00 | 342715    | 679965    |           |   |           |           |        | LINR  | #    | 0.9995   |
| 107)B  | cis-1,4-Dichloro-2-buten |      |           | 12631     | 14930     |   | 109717    | 216614    |        |       |      |          |
| 0.0348 | 0.2482                   | 0.00 | 561516    | 1016706   |           |   |           |           |        | LINR  | #    | 0.9968   |
| 108)B  | Cyclohexanone            |      |           | 0.0228806 | 0.0171563 |   | 0.0214503 | 0.0212597 |        |       |      |          |
|        |                          |      | 0.0202782 | 0.0181292 |           |   |           |           | 0.0202 | AVRG  |      | 10.7204  |
| 109)B  | trans-1,4-Dichloro-2-but |      |           | 11957     | 13071     |   | 99455     | 194436    |        |       |      |          |
| 0.0300 | 0.2258                   | 0.00 | 510379    | 924462    |           |   |           |           |        | LINR  | #    | 0.9969   |
| 110)B  | Pentachloroethane        |      |           | 23077     | 27748     |   | 195519    | 377097    |        |       |      |          |
| 0.0918 | 0.3938                   | 0.00 | 903545    | 1624581   |           |   |           |           |        | LINR  | #    | 0.9953   |
| 111)B  | Benzyl chloride          |      |           | 68931     | 77370     |   | 605835    | 1135638   |        |       |      |          |
| 0.3729 | 1.1341                   | 0.00 | 2807855   | 4642640   |           |   |           |           |        | LINR  | #    | 0.9876 # |

Response Factor Report VOA4

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M

Last Update : Tue Nov 01 08:22:19 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio.  $y = b + m1(x) + m2(xE2)$

| b      | Compound<br>m1           | m2   | 8<br>6 | 1<br>7  | 2<br>9 | 3 | 4      | 5      | Avg | Curve | Exp | %RSD/r2 |
|--------|--------------------------|------|--------|---------|--------|---|--------|--------|-----|-------|-----|---------|
| 112)B  | bis(2-Chloroisopropyl)et |      |        | 22681   | 22934  |   | 181179 | 345542 |     |       |     |         |
| 0.0717 | 0.3951                   | 0.00 | 932501 | 1610266 |        |   |        |        |     | LINR  | #   | 0.9936  |

(#) = Out of Range (\$) = Individual RF Out of Range

AVRG = Average, LINR = Linear Regression,  $1/x$  = the inverse of concentration,  $1/x^2$  = the inverse square of concentration

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H102.D  
Acq On : 31 Oct 2016 16:55  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-01|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD0005 5UL N/A MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 01 08:08:42 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1032830  | 50.00 | ug/L  | 0.00     |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 748214   | 50.00 | ug/L  | 0.00     |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.899 | 1.000  | 392507   | 50.00 | ug/L  | 0.00     |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 275353  | 40.98 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1060003 | 55.12 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 423827  | 49.66 | ug/L | 0.00 |

| Target Compounds              |      |        |        |        |          |       |        |        |
|-------------------------------|------|--------|--------|--------|----------|-------|--------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  | QValue |
| 2) Dichlorodifluoromethane    | 85   | 4.741  | 4.749  | 0.459  | 2719     | 0.31  | ug/L # | 43     |
| 3) Chloromethane              | 50   | 5.078  | 5.102  | 0.492  | 4361     | 0.42  | ug/L   | 94     |
| 4) Vinyl chloride             | 62   | 5.306  | 5.322  | 0.514  | 2192     | N.D.  |        |        |
| 5) Bromomethane               | 94   | 5.887  | 5.887  | 0.570  | 2787     | 0.37  | ug/L   | 86     |
| 6) Chloroethane               | 64   | 5.989  | 6.005  | 0.580  | 2933     | 0.43  | ug/L   | 62     |
| 7) Trichlorofluoromethane     | 101  | 6.370  | 6.377  | 0.617  | 4284     | 0.33  | ug/L   | 97     |
| 8) Ethyl ether                | 59   | 6.724  | 6.712  | 0.651  | 2532     | 0.47  | ug/L   | 83     |
| 9) Acetone                    | 43   | 7.077  | 7.066  | 0.685  | 10836    | 2.82  | ug/L   | 95     |
| 10) 1,1-Dichloroethylene      | 61   | 7.090  | 7.090  | 0.687  | 5079     | 0.44  | ug/L   | 98     |
| 11) Iodomethane               | 142  | 7.334  | 7.334  | 0.710  | 28109    | 2.54  | ug/L   | 92     |
| 12) Acetonitrile              | 41   | 7.419  | 7.413  | 0.718  | 10263    | 13.33 | ug/L # | 34     |
| 13) Methyl acetate            | 43   | 7.468  | 7.456  | 0.723  | 9931     | 2.26  | ug/L   | 96     |
| 14) Carbon disulfide          | 76   | 7.474  | 7.474  | 0.724  | 61843    | 3.06  | ug/L   | 95     |
| 15) Methylene chloride        | 84   | 7.644  | 7.651  | 0.740  | 9728     | 1.35  | ug/L   | 92     |
| 16) tert-Butyl methyl ether   | 73   | 7.955  | 7.956  | 0.770  | 8738     | 0.53  | ug/L   | 86     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 5302     | 0.48  | ug/L   | 95     |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 7779     | N.D.  |        |        |
| 19) Vinyl acetate             | 43   | 8.419  | 8.419  | 0.815  | 31409    | 2.63  | ug/L   | 92     |
| 20) 1,1-Dichloroethane        | 63   | 8.467  | 8.462  | 0.820  | 6218     | 0.48  | ug/L   | 98     |
| 21) 2-Butanone                | 43   | 9.041  | 9.035  | 0.875  | 11098    | 2.58  | ug/L   | 97     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.095  | 9.096  | 0.881  | 3594     | 0.50  | ug/L   | 98     |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 5387     | 0.48  | ug/L # | 18     |
| 24) Bromochloromethane        | 128  | 9.370  | 9.364  | 0.907  | 1273     | 0.38  | ug/L # | 78     |
| 25) Chloroform                | 83   | 9.394  | 9.400  | 0.910  | 5891     | 0.46  | ug/L   | 89     |
| 26) 1,1,1-Trichloroethane     | 97   | 9.693  | 9.687  | 0.939  | 5068     | 0.42  | ug/L   | 93     |
| 27) Cyclohexane               | 56   | 9.796  | 9.791  | 0.949  | 8564     | 0.67  | ug/L   | 86     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.845  | 0.953  | 4265     | 0.46  | ug/L # | 95     |
| 29) Carbon tetrachloride      | 117  | 9.888  | 9.882  | 0.957  | 4631     | 0.41  | ug/L   | 98     |
| 31) 1,2-Dichloroethane        | 62   | 10.053 | 10.047 | 0.973  | 3939     | 0.39  | ug/L # | 43     |
| 32) Benzene                   | 78   | 10.083 | 10.077 | 0.976  | 14377    | 0.57  | ug/L # | 76     |
| 33) Cyclohexene               | 67   | 10.205 | 10.205 | 0.988  | 6781     | 0.54  | ug/L   | 97     |
| 34) n-Butyl alcohol           | 56   | 10.406 | 10.406 | 1.008  | 8901     | 52.63 | ug/L   | 93     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 3536     | 0.48  | ug/L   | 96     |
| 36) 2-Pentanone               | 43   | 10.790 | 10.784 | 1.045  | 11369    | N.D.  |        |        |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 3613     | 0.53  | ug/L   | 89     |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.979 | 1.063  | 6957     | 0.61  | ug/L   | 84     |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 1908     | 0.47  | ug/L   | 92     |
| 40) Bromodichloromethane      | 83   | 11.199 | 11.199 | 1.084  | 3849     | 0.40  | ug/L # | 94     |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.424 | 11.418 | 1.106  | 6713     | 2.61  | ug/L   | 94     |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 4872     | 0.50  | ug/L   | 77     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H102.D  
Acq On : 31 Oct 2016 16:55  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-01|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD0005 5UL N/A MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 01 08:08:42 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|-----------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 5891     | 2.78 ug/L | #     | 76  |
| 46)  | Toluene                   | 91   | 12.046 | 12.040 | 0.893  | 15887    | 0.64 ug/L |       | 98  |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.192 | 12.180 | 0.904  | 3941     | 0.48 ug/L | #     | 64  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 2278     | 0.56 ug/L |       | 98  |
| 49)  | 2-Hexanone                | 43   | 12.589 | 12.583 | 0.933  | 16729    | 3.11 ug/L |       | 94  |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 3902     | 0.49 ug/L | #     | 44  |
| 51)  | Tetrachloroethylene       | 164  | 12.637 | 12.638 | 0.937  | 3125     | 0.59 ug/L |       | 95  |
| 52)  | Dibromochloromethane      | 129  | 12.869 | 12.863 | 0.954  | 2680     | 0.45 ug/L |       | 100 |
| 53)  | 1,2-Dibromoethane         | 107  | 13.040 | 13.034 | 0.967  | 2261     | 0.45 ug/L |       | 99  |
| 54)  | Chlorobenzene             | 112  | 13.521 | 13.522 | 1.002  | 8815     | 0.52 ug/L | #     | 31  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.582 | 13.570 | 1.007  | 3210     | 0.48 ug/L | #     | 64  |
| 56)  | Ethylbenzene              | 91   | 13.588 | 13.589 | 1.007  | 17377    | 0.60 ug/L |       | 90  |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 13015    | 1.22 ug/L |       | 86  |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 13291    | 0.57 ug/L |       | 98  |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 10220    | 0.62 ug/L |       | 99  |
| 61)  | Bromoform                 | 173  | 14.393 | 14.381 | 0.905  | 1454     | 0.41 ug/L |       | 99  |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 18303    | 0.64 ug/L |       | 96  |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.927  | 3472     | 0.52 ug/L |       | 98  |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.844 | 14.838 | 0.933  | 768      | 0.39 ug/L | #     | 79  |
| 66)  | Bromobenzene              | 156  | 14.899 | 14.893 | 0.937  | 4166     | 0.55 ug/L |       | 95  |
| 67)  | n-Propylbenzene           | 91   | 14.917 | 14.918 | 0.938  | 22831    | 0.65 ug/L |       | 95  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.070 | 15.070 | 0.947  | 14332    | 0.56 ug/L |       | 90  |
| 69)  | 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 3697     | 0.50 ug/L | #     | 84  |
| 70)  | 4-Chlorotoluene           | 91   | 15.167 | 15.162 | 0.954  | 14130    | 0.61 ug/L |       | 90  |
| 71)  | tert-Butylbenzene         | 134  | 15.436 | 15.442 | 0.970  | 2475     | 0.50 ug/L | #     | 64  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.478 | 15.479 | 0.973  | 13875    | 0.53 ug/L |       | 98  |
| 73)  | sec-Butylbenzene          | 105  | 15.667 | 15.661 | 0.985  | 19082    | 0.58 ug/L |       | 97  |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.992  | 15472    | 0.55 ug/L |       | 97  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.850 | 15.844 | 0.997  | 8531     | 0.56 ug/L |       | 96  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.929 | 15.930 | 1.002  | 7935     | 0.52 ug/L | #     | 50  |
| 77)  | n-Butylbenzene            | 91   | 16.234 | 16.228 | 1.021  | 16532    | 0.60 ug/L |       | 92  |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.028  | 7186     | 0.51 ug/L |       | 93  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.216 | 17.228 | 1.082  | 122      | N.D.      |       |     |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.307 | 18.301 | 1.151  | 5216     | 0.51 ug/L |       | 99  |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 2605     | 0.38 ug/L |       | 96  |
| 82)  | Naphthalene               | 128  | 18.691 | 18.691 | 1.175  | 11188    | 0.58 ug/L |       | 95  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.032 | 19.033 | 1.197  | 4432     | 0.48 ug/L |       | 98  |
| 85)  | Acrolein                  |      | 6.931  | 6.889  | 0.671  | 0m       | N.D.      | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 7.090  | 0.000  | 0        | N.D.      |       |     |
| 87)  | Isopropyl Alcohol         |      | 0.000  | 7.145  | 0.000  | 0        | N.D.      |       |     |
| 88)  | Allyl chloride            |      | 7.419  | 7.504  | 0.718  | 0m       | N.D.      | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 0.000  | 7.639  | 0.000  | 0        | N.D.      |       |     |
| 90)  | Acrylonitrile             |      | 0.000  | 7.882  | 0.000  | 0        | N.D.      |       |     |
| 91)  | Isopropyl ether           |      | 0.000  | 8.456  | 0.000  | 0        | N.D.      |       |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 0.000  | 8.577  | 0.000  | 0        | N.D.      |       |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.      |       |     |
| 94)  | Ethyl acetate             |      | 9.041  | 9.053  | 0.875  | 0m       | N.D.      | d     |     |
| 95)  | Propionitrile             |      | 0.000  | 9.096  | 0.000  | 0        | N.D.      |       |     |
| 96)  | Methacrylonitrile         |      | 9.284  | 9.278  | 0.899  | 0m       | N.D.      | d     |     |
| 97)  | Tetrahydrofuran           |      | 9.431  | 9.419  | 0.913  | 0m       | N.D.      | d     |     |
| 98)  | Isobutyl alcohol          |      | 9.711  | 9.717  | 0.940  | 0m       | N.D.      | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 0.000  | 10.102 | 0.000  | 0        | N.D.      |       |     |
| 100) | Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D.      | d     |     |
| 101) | 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.      |       |     |
| 102) | 2-Nitropropane            |      | 11.418 | 11.388 | 1.106  | 0m       | N.D.      | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H102.D  
Acq On : 31 Oct 2016 16:55  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-01|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD0005 5UL N/A MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 01 08:08:42 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 0.000  | 12.186 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 13.412 | 13.394 | 0.843  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.497 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.552 | 14.625 | 0.915  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 14.796 | 0.000  | 0        | N.D. |       |
| 110) Pentachloroethane         |      | 0.000  | 15.503 | 0.000  | 0        | N.D. |       |
| 111) Benzyl chloride           |      | 15.990 | 16.039 | 1.005  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 16.527 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H103.D  
Acq On : 31 Oct 2016 17:24  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-02|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD001 5UL N/A MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 08:08:46 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1000647  | 50.00 | ug/L  | 0.00     |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 716195   | 50.00 | ug/L  | 0.00     |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.899 | 1.000  | 377079   | 50.00 | ug/L  | 0.00     |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 272162  | 41.81 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1045586 | 56.80 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 415668  | 50.70 | ug/L | 0.00 |

| Target Compounds              |      |        |        |        |          |       |       |        |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | QValue |
| 2) Dichlorodifluoromethane    | 85   | 4.749  | 4.749  | 0.460  | 5510     | 0.65  | ug/L  | 66     |
| 3) Chloromethane              | 50   | 5.071  | 5.102  | 0.491  | 7295     | 0.72  | ug/L  | 99     |
| 4) Vinyl chloride             | 62   | 5.314  | 5.322  | 0.515  | 4899     | 0.61  | ug/L  | 74     |
| 5) Bromomethane               | 94   | 5.864  | 5.887  | 0.568  | 5390     | 0.74  | ug/L  | 92     |
| 6) Chloroethane               | 64   | 5.989  | 6.005  | 0.580  | 5201     | 0.79  | ug/L  | 96     |
| 7) Trichlorofluoromethane     | 101  | 6.383  | 6.377  | 0.618  | 8022     | 0.65  | ug/L  | 92     |
| 8) Ethyl ether                | 59   | 6.712  | 6.712  | 0.650  | 4950     | 0.94  | ug/L  | 93     |
| 9) Acetone                    | 43   | 7.065  | 7.066  | 0.684  | 17885    | 4.81  | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      | 61   | 7.096  | 7.090  | 0.687  | 9781     | 0.87  | ug/L  | 97     |
| 11) Iodomethane               | 142  | 7.327  | 7.334  | 0.710  | 48266    | 4.51  | ug/L  | 90     |
| 12) Acetonitrile              | 41   | 7.413  | 7.413  | 0.718  | 18366    | 24.62 | ug/L  | 87     |
| 13) Methyl acetate            | 43   | 7.462  | 7.456  | 0.723  | 20294    | 4.78  | ug/L  | 94     |
| 14) Carbon disulfide          | 76   | 7.474  | 7.474  | 0.724  | 101997   | 5.20  | ug/L  | 93     |
| 15) Methylene chloride        | 84   | 7.651  | 7.651  | 0.741  | 13213    | 1.89  | ug/L  | 98     |
| 16) tert-Butyl methyl ether   | 73   | 7.949  | 7.956  | 0.770  | 15391    | 0.97  | ug/L  | 93     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.986  | 7.992  | 0.773  | 8752     | 0.82  | ug/L  | 95     |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 13141    | 1.34  | ug/L  | 91     |
| 19) Vinyl acetate             | 43   | 8.419  | 8.419  | 0.815  | 57933    | 5.01  | ug/L  | 93     |
| 20) 1,1-Dichloroethane        | 63   | 8.461  | 8.462  | 0.819  | 11084    | 0.88  | ug/L  | 94     |
| 21) 2-Butanone                | 43   | 9.034  | 9.035  | 0.875  | 20303    | 4.88  | ug/L  | 93     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.095  | 9.096  | 0.881  | 6289     | 0.90  | ug/L  | 95     |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 9703     | 0.89  | ug/L  | # 18   |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 2711     | 0.84  | ug/L  | 93     |
| 25) Chloroform                | 83   | 9.394  | 9.400  | 0.910  | 10146    | 0.81  | ug/L  | 99     |
| 26) 1,1,1-Trichloroethane     | 97   | 9.693  | 9.687  | 0.939  | 9906     | 0.84  | ug/L  | 87     |
| 27) Cyclohexane               | 56   | 9.790  | 9.791  | 0.948  | 13087    | 1.06  | ug/L  | 99     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.845  | 0.953  | 8441     | 0.95  | ug/L  | # 91   |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 8256     | 0.75  | ug/L  | 93     |
| 31) 1,2-Dichloroethane        | 62   | 10.046 | 10.047 | 0.973  | 7390     | 0.75  | ug/L  | # 43   |
| 32) Benzene                   | 78   | 10.083 | 10.077 | 0.976  | 25857    | 1.05  | ug/L  | # 78   |
| 33) Cyclohexene               | 67   | 10.199 | 10.205 | 0.988  | 11996    | 0.99  | ug/L  | 97     |
| 34) n-Butyl alcohol           | 56   | 10.412 | 10.406 | 1.008  | 15188    | 92.69 | ug/L  | 96     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 6569     | 0.93  | ug/L  | 96     |
| 36) 2-Pentanone               | 43   | 10.778 | 10.784 | 1.044  | 22558    | 5.06  | ug/L  | 95     |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 6299     | 0.96  | ug/L  | # 24   |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.979 | 1.063  | 11789    | 1.06  | ug/L  | 89     |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 3371     | 0.86  | ug/L  | 94     |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.199 | 1.084  | 7261     | 0.79  | ug/L  | 97     |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.418 | 1.106  | 13680    | 5.50  | ug/L  | 96     |
| 42) cis-1,3-Dichloropropylene | 75   | 11.650 | 11.644 | 1.128  | 9003     | 0.95  | ug/L  | 88     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H103.D  
Acq On : 31 Oct 2016 17:24  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-02|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD001 5UL N/A MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 08:08:46 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |      |
|------|---------------------------|------|--------|--------|--------|----------|------|-------|------|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.741 | 11.735 | 0.870  | 10898    | 5.37 | ug/L  | 85   |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 26991    | 1.14 | ug/L  | 98   |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.186 | 12.180 | 0.903  | 7350     | 0.93 | ug/L  | 86   |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 3989     | 1.02 | ug/L  | 95   |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 28197    | 5.48 | ug/L  | 97   |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 7598     | 0.99 | ug/L  | # 58 |
| 51)  | Tetrachloroethylene       | 164  | 12.637 | 12.638 | 0.937  | 5218     | 1.03 | ug/L  | 98   |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 4586     | 0.80 | ug/L  | 91   |
| 53)  | 1,2-Dibromoethane         | 107  | 13.040 | 13.034 | 0.967  | 4112     | 0.85 | ug/L  | 93   |
| 54)  | Chlorobenzene             | 112  | 13.521 | 13.522 | 1.002  | 16964    | 1.04 | ug/L  | 78   |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.570 | 1.006  | 5641     | 0.89 | ug/L  | 97   |
| 56)  | Ethylbenzene              | 91   | 13.588 | 13.589 | 1.007  | 31187    | 1.13 | ug/L  | 97   |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 23304    | 2.28 | ug/L  | 85   |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 27329    | 1.22 | ug/L  | 86   |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 18670    | 1.18 | ug/L  | 97   |
| 61)  | Bromoform                 | 173  | 14.381 | 14.381 | 0.904  | 2458     | 0.72 | ug/L  | 92   |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 31837    | 1.16 | ug/L  | 96   |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.927  | 6697     | 1.05 | ug/L  | 89   |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 1557     | 0.82 | ug/L  | # 85 |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.936  | 6758     | 0.93 | ug/L  | 97   |
| 67)  | n-Propylbenzene           | 91   | 14.917 | 14.918 | 0.938  | 40310    | 1.19 | ug/L  | 92   |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.064 | 15.070 | 0.947  | 25761    | 1.06 | ug/L  | 93   |
| 69)  | 2-Chlorotoluene           | 126  | 15.058 | 15.064 | 0.947  | 7308     | 1.03 | ug/L  | 100  |
| 70)  | 4-Chlorotoluene           | 91   | 15.167 | 15.162 | 0.954  | 24673    | 1.11 | ug/L  | 93   |
| 71)  | tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 5327     | 1.11 | ug/L  | 95   |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.478 | 15.479 | 0.973  | 26627    | 1.06 | ug/L  | 84   |
| 73)  | sec-Butylbenzene          | 105  | 15.667 | 15.661 | 0.985  | 33749    | 1.06 | ug/L  | 95   |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.992  | 27321    | 1.01 | ug/L  | 98   |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.996  | 15165    | 1.05 | ug/L  | 97   |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.929 | 15.930 | 1.002  | 14357    | 0.99 | ug/L  | 80   |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.020  | 30599    | 1.15 | ug/L  | 92   |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.028  | 13779    | 1.02 | ug/L  | 94   |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.228 | 17.228 | 1.083  | 959      | 0.79 | ug/L  | # 71 |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.313 | 18.301 | 1.151  | 8317     | 0.84 | ug/L  | 96   |
| 81)  | Hexachlorobutadiene       | 225  | 18.484 | 18.490 | 1.162  | 4577     | 0.69 | ug/L  | 98   |
| 82)  | Naphthalene               | 128  | 18.691 | 18.691 | 1.175  | 18347    | 1.00 | ug/L  | 99   |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.039 | 19.033 | 1.197  | 6836     | 0.77 | ug/L  | 92   |
| 85)  | Acrolein                  |      | 6.882  | 6.889  | 0.666  | 0m       | N.D. | d     |      |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 7.090  | 0.000  | 0        | N.D. |       |      |
| 87)  | Isopropyl Alcohol         |      | 0.000  | 7.145  | 0.000  | 0        | N.D. |       |      |
| 88)  | Allyl chloride            |      | 7.413  | 7.504  | 0.718  | 0m       | N.D. | d     |      |
| 89)  | tert-Butyl Alcohol        |      | 0.000  | 7.639  | 0.000  | 0        | N.D. |       |      |
| 90)  | Acrylonitrile             |      | 0.000  | 7.882  | 0.000  | 0        | N.D. |       |      |
| 91)  | Isopropyl ether           |      | 8.400  | 8.456  | 0.813  | 0m       | N.D. | d     |      |
| 92)  | 2-Chloro-1,3-butadiene    |      | 0.000  | 8.577  | 0.000  | 0        | N.D. |       |      |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D. |       |      |
| 94)  | Ethyl acetate             |      | 9.034  | 9.053  | 0.875  | 0m       | N.D. | d     |      |
| 95)  | Propionitrile             |      | 0.000  | 9.096  | 0.000  | 0        | N.D. |       |      |
| 96)  | Methacrylonitrile         |      | 0.000  | 9.278  | 0.000  | 0        | N.D. |       |      |
| 97)  | Tetrahydrofuran           |      | 9.431  | 9.419  | 0.913  | 0m       | N.D. | d     |      |
| 98)  | Isobutyl alcohol          |      | 9.711  | 9.717  | 0.940  | 0m       | N.D. | d     |      |
| 99)  | Methyl tert-amyl ether    |      | 10.083 | 10.102 | 0.976  | 0m       | N.D. | d     |      |
| 100) | Methyl methacrylate       |      | 10.924 | 10.925 | 1.058  | 0m       | N.D. | d     |      |
| 101) | 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D. |       |      |
| 102) | 2-Nitropropane            |      | 11.418 | 11.388 | 1.106  | 0m       | N.D. | d     |      |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H103.D  
Acq On : 31 Oct 2016 17:24  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-02|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD001 5UL N/A MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 08:08:46 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 0.000  | 12.186 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 13.357 | 13.394 | 0.840  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.491 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.619 | 14.625 | 0.919  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 14.796 | 0.000  | 0        | N.D. |       |
| 110) Pentachloroethane         |      | 0.000  | 15.503 | 0.000  | 0        | N.D. |       |
| 111) Benzyl chloride           |      | 15.978 | 16.039 | 1.005  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 16.515 | 16.442 | 1.038  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path   : C:\msdchem\1\data\103116V4\
Data File   : 4H103.D
Acq On      : 31 Oct 2016  17:24
Operator    : ACJ
InstName    : VOA4
Sample      : |W4VM161031-02|ICAL|1|VOAF|1|VOA8260BL|
Misc        : VSTD001 5UL N/A MIX[A]
ALS Vial    : 3      Sample Multiplier: 1
```

[illegible]

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H104.D  
Acq On : 31 Oct 2016 17:53  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-03|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD002 5UL N/A MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 01 08:08:49 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 984732   | 50.00 | ug/L  | 0.00     |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 707964   | 50.00 | ug/L  | 0.00     |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.899 | 1.000  | 369846   | 50.00 | ug/L  | 0.00     |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 267859  | 41.82 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1013683 | 55.71 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 400824  | 49.85 | ug/L | 0.00 |

| Target Compounds              |      |        |        |        |          |        |       |        |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | QValue |
| 2) Dichlorodifluoromethane    | 85   | 4.756  | 4.749  | 0.461  | 12528    | 1.49   | ug/L  | 86     |
| 3) Chloromethane              | 50   | 5.078  | 5.102  | 0.492  | 14756    | 1.48   | ug/L  | 97     |
| 4) Vinyl chloride             | 62   | 5.314  | 5.322  | 0.515  | 11321    | 1.42   | ug/L  | # 43   |
| 5) Bromomethane               | 94   | 5.871  | 5.887  | 0.569  | 11036    | 1.55   | ug/L  | 98     |
| 6) Chloroethane               | 64   | 5.997  | 6.005  | 0.581  | 11044    | 1.71   | ug/L  | 95     |
| 7) Trichlorofluoromethane     | 101  | 6.370  | 6.377  | 0.617  | 18446    | 1.51   | ug/L  | 97     |
| 8) Ethyl ether                | 59   | 6.718  | 6.712  | 0.651  | 10166    | 1.96   | ug/L  | 98     |
| 9) Acetone                    | 43   | 7.065  | 7.066  | 0.684  | 37299    | 10.20  | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      | 61   | 7.096  | 7.090  | 0.687  | 21079    | 1.90   | ug/L  | 96     |
| 11) Iodomethane               | 142  | 7.334  | 7.334  | 0.710  | 106033   | 10.06  | ug/L  | 91     |
| 12) Acetonitrile              | 41   | 7.413  | 7.413  | 0.718  | 36576    | 49.82  | ug/L  | 97     |
| 13) Methyl acetate            | 43   | 7.462  | 7.456  | 0.723  | 41778    | 9.99   | ug/L  | 93     |
| 14) Carbon disulfide          | 76   | 7.468  | 7.474  | 0.723  | 228004   | 11.81  | ug/L  | 93     |
| 15) Methylene chloride        | 84   | 7.651  | 7.651  | 0.741  | 17666    | 2.57   | ug/L  | 93     |
| 16) tert-Butyl methyl ether   | 73   | 7.955  | 7.956  | 0.770  | 32803    | 2.10   | ug/L  | 91     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 20856    | 1.98   | ug/L  | 99     |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 24048    | 2.49   | ug/L  | 99     |
| 19) Vinyl acetate             | 43   | 8.419  | 8.419  | 0.815  | 115586   | 10.17  | ug/L  | 95     |
| 20) 1,1-Dichloroethane        | 63   | 8.455  | 8.462  | 0.819  | 25089    | 2.02   | ug/L  | 98     |
| 21) 2-Butanone                | 43   | 9.034  | 9.035  | 0.875  | 44834    | 10.95  | ug/L  | 96     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.089  | 9.096  | 0.880  | 13746    | 2.00   | ug/L  | 98     |
| 23) 2,2-Dichloropropane       | 77   | 9.126  | 9.132  | 0.884  | 20756    | 1.93   | ug/L  | 91     |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 5648     | 1.77   | ug/L  | 92     |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 22579    | 1.84   | ug/L  | 93     |
| 26) 1,1,1-Trichloroethane     | 97   | 9.693  | 9.687  | 0.939  | 20854    | 1.81   | ug/L  | 93     |
| 27) Cyclohexane               | 56   | 9.797  | 9.791  | 0.949  | 31072    | 2.57   | ug/L  | 95     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.845  | 0.953  | 18724    | 2.14   | ug/L  | # 100  |
| 29) Carbon tetrachloride      | 117  | 9.888  | 9.882  | 0.957  | 17435    | 1.62   | ug/L  | 99     |
| 31) 1,2-Dichloroethane        | 62   | 10.053 | 10.047 | 0.973  | 15565    | 1.60   | ug/L  | 98     |
| 32) Benzene                   | 78   | 10.083 | 10.077 | 0.976  | 53786    | 2.22   | ug/L  | # 79   |
| 33) Cyclohexene               | 67   | 10.199 | 10.205 | 0.988  | 26440    | 2.23   | ug/L  | 96     |
| 34) n-Butyl alcohol           | 56   | 10.412 | 10.406 | 1.008  | 32910    | 204.08 | ug/L  | 96     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 13433    | 1.93   | ug/L  | 97     |
| 36) 2-Pentanone               | 43   | 10.784 | 10.784 | 1.044  | 42079    | 9.59   | ug/L  | 95     |
| 37) 1,2-Dichloropropane       | 63   | 10.949 | 10.955 | 1.060  | 12943    | 2.00   | ug/L  | 82     |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.979 | 1.063  | 27072    | 2.48   | ug/L  | 95     |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 7139     | 1.86   | ug/L  | 98     |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.199 | 1.084  | 16164    | 1.78   | ug/L  | 98     |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.418 | 1.106  | 28308    | 11.56  | ug/L  | 98     |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 19798    | 2.12   | ug/L  | 94     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H104.D  
Acq On : 31 Oct 2016 17:53  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-03|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD002 5UL N/A MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 01 08:08:49 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|------|---------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 25004    | 12.45 | ug/L   | 89  |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 57711    | 2.46  | ug/L   | 97  |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.186 | 12.180 | 0.903  | 15918    | 2.03  | ug/L   | 93  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.406 | 12.400 | 0.920  | 8824     | 2.28  | ug/L   | 97  |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 66079    | 12.99 | ug/L   | 95  |
| 50)  | 1,3-Dichloropropane       | 76   | 12.589 | 12.595 | 0.933  | 16978    | 2.24  | ug/L   | 93  |
| 51)  | Tetrachloroethylene       | 164  | 12.637 | 12.638 | 0.937  | 10989    | 2.19  | ug/L   | 97  |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 10315    | 1.81  | ug/L   | 94  |
| 53)  | 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 9621     | 2.01  | ug/L   | 100 |
| 54)  | Chlorobenzene             | 112  | 13.521 | 13.522 | 1.002  | 36364    | 2.26  | ug/L   | 89  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.570 | 13.570 | 1.006  | 12778    | 2.04  | ug/L   | 95  |
| 56)  | Ethylbenzene              | 91   | 13.588 | 13.589 | 1.007  | 67407    | 2.47  | ug/L   | 96  |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 50195    | 4.97  | ug/L   | 88  |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 53595    | 2.41  | ug/L   | 97  |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 39900    | 2.54  | ug/L   | 94  |
| 61)  | Bromoform                 | 173  | 14.381 | 14.381 | 0.905  | 5816     | 1.74  | ug/L   | 99  |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 67611    | 2.52  | ug/L   | 96  |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.928  | 13198    | 2.11  | ug/L   | 97  |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 4004     | 2.15  | ug/L # | 83  |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.937  | 14766    | 2.07  | ug/L   | 97  |
| 67)  | n-Propylbenzene           | 91   | 14.911 | 14.918 | 0.938  | 83239    | 2.51  | ug/L   | 93  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.064 | 15.070 | 0.947  | 57430    | 2.40  | ug/L   | 93  |
| 69)  | 2-Chlorotoluene           | 126  | 15.058 | 15.064 | 0.947  | 14971    | 2.15  | ug/L # | 83  |
| 70)  | 4-Chlorotoluene           | 91   | 15.161 | 15.162 | 0.954  | 48937    | 2.24  | ug/L   | 96  |
| 71)  | tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 11737    | 2.49  | ug/L   | 97  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.478 | 15.479 | 0.974  | 58381    | 2.37  | ug/L   | 81  |
| 73)  | sec-Butylbenzene          | 105  | 15.667 | 15.661 | 0.985  | 73782    | 2.37  | ug/L   | 98  |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.993  | 62114    | 2.34  | ug/L   | 99  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.997  | 30924    | 2.17  | ug/L   | 97  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.929 | 15.930 | 1.002  | 30660    | 2.15  | ug/L # | 72  |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.021  | 62210    | 2.39  | ug/L   | 98  |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.362 | 16.356 | 1.029  | 28188    | 2.13  | ug/L   | 97  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.228 | 17.228 | 1.084  | 2152     | 1.81  | ug/L   | 97  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 18691    | 1.92  | ug/L   | 99  |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 10698    | 1.65  | ug/L   | 98  |
| 82)  | Naphthalene               | 128  | 18.691 | 18.691 | 1.176  | 37784    | 2.09  | ug/L   | 99  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.039 | 19.033 | 1.197  | 15281    | 1.76  | ug/L   | 96  |
| 85)  | Acrolein                  |      | 6.889  | 6.889  | 0.667  | 0m       | N.D.  | d      |     |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 7.090  | 0.000  | 0        | N.D.  |        |     |
| 87)  | Isopropyl Alcohol         |      | 0.000  | 7.145  | 0.000  | 0        | N.D.  |        |     |
| 88)  | Allyl chloride            |      | 7.413  | 7.504  | 0.718  | 0m       | N.D.  | d      |     |
| 89)  | tert-Butyl Alcohol        |      | 0.000  | 7.639  | 0.000  | 0        | N.D.  |        |     |
| 90)  | Acrylonitrile             |      | 7.943  | 7.882  | 0.769  | 0m       | N.D.  | d      |     |
| 91)  | Isopropyl ether           |      | 8.419  | 8.456  | 0.815  | 0m       | N.D.  | d      |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 0.000  | 8.577  | 0.000  | 0        | N.D.  |        |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.  |        |     |
| 94)  | Ethyl acetate             |      | 9.034  | 9.053  | 0.875  | 0m       | N.D.  | d      |     |
| 95)  | Propionitrile             |      | 0.000  | 9.096  | 0.000  | 0        | N.D.  |        |     |
| 96)  | Methacrylonitrile         |      | 0.000  | 9.278  | 0.000  | 0        | N.D.  |        |     |
| 97)  | Tetrahydrofuran           |      | 9.431  | 9.419  | 0.913  | 0m       | N.D.  | d      |     |
| 98)  | Isobutyl alcohol          |      | 9.784  | 9.717  | 0.947  | 0m       | N.D.  | d      |     |
| 99)  | Methyl tert-amyl ether    |      | 10.083 | 10.102 | 0.976  | 0m       | N.D.  | d      |     |
| 100) | Methyl methacrylate       |      | 10.906 | 10.925 | 1.056  | 0m       | N.D.  | d      |     |
| 101) | 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.  |        |     |
| 102) | 2-Nitropropane            |      | 11.418 | 11.388 | 1.106  | 0m       | N.D.  | d      |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H104.D  
Acq On : 31 Oct 2016 17:53  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-03|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD002 5UL N/A MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 01 08:08:49 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

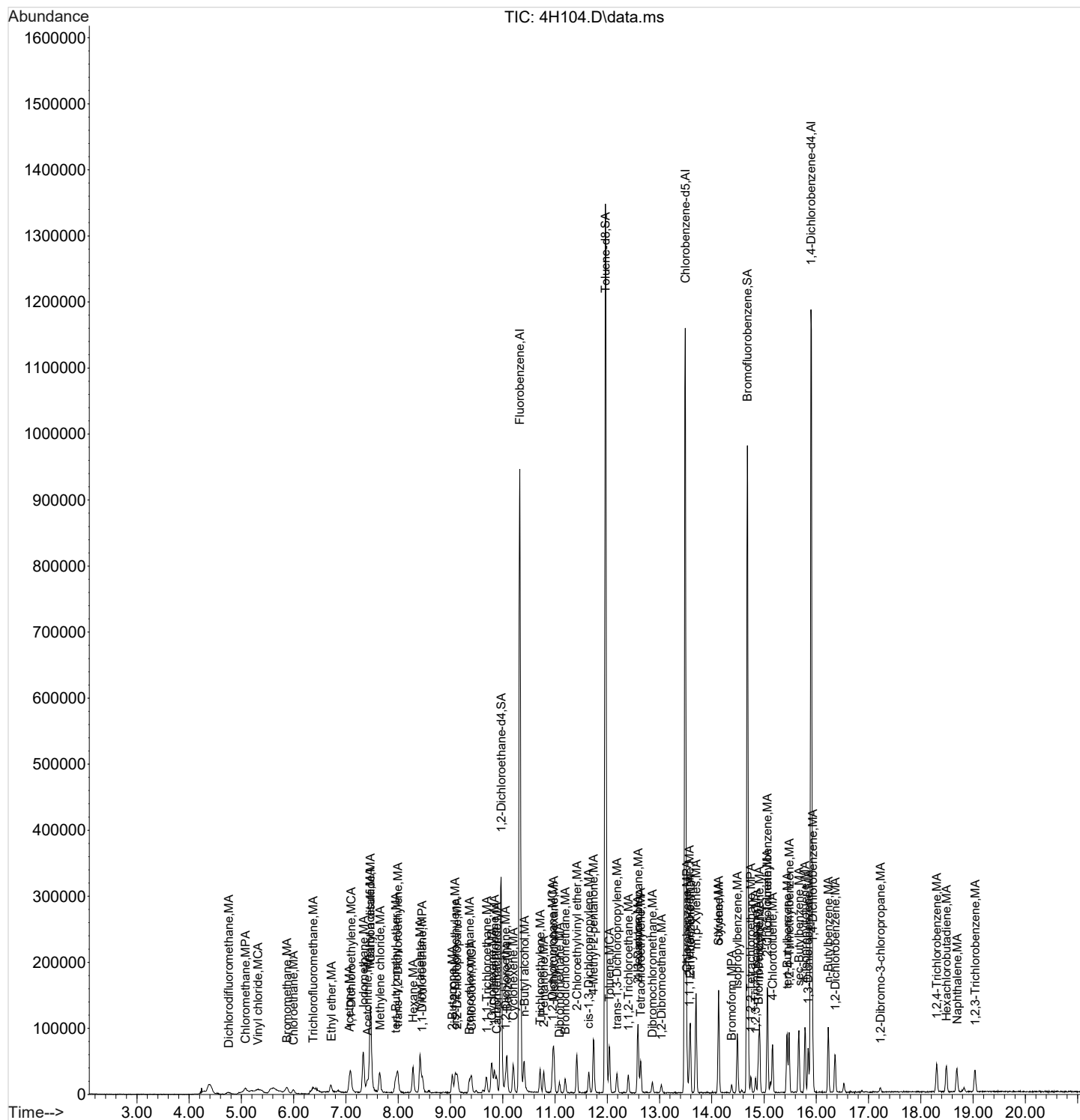
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 0.000  | 12.186 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 13.369 | 13.394 | 0.841  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.479 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.564 | 14.625 | 0.916  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.911 | 14.796 | 0.938  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 0.000  | 15.503 | 0.000  | 0        | N.D. |       |
| 111) Benzyl chloride           |      | 0.000  | 16.039 | 0.000  | 0        | N.D. |       |
| 112) bis(2-Chloroisopropyl)... |      | 16.515 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H104.D  
Acq On : 31 Oct 2016 17:53  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-03|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD002 5UL N/A MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 01 08:08:49 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H105.D  
Acq On : 31 Oct 2016 18:22  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-04|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD005 5UL N/A MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 01 08:08:51 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1014460  | 50.00 | ug/L  | 0.00     |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 725042   | 50.00 | ug/L  | 0.00     |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.899 | 1.000  | 393438   | 50.00 | ug/L  | 0.00     |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 276379  | 41.88 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1050512 | 56.37 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 425566  | 49.75 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.757  | 4.749  | 0.461  | 36136    | 4.18   | ug/L  | 95     |
| 3) Chloromethane              | 50   | 5.079  | 5.102  | 0.492  | 37798    | 3.67   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 5.322  | 5.322  | 0.515  | 29465    | 3.60   | ug/L  | 87     |
| 5) Bromomethane               | 94   | 5.879  | 5.887  | 0.569  | 30401    | 4.14   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 5.997  | 6.005  | 0.581  | 29399    | 4.41   | ug/L  | 99     |
| 7) Trichlorofluoromethane     | 101  | 6.371  | 6.377  | 0.617  | 49152    | 3.90   | ug/L  | 97     |
| 8) Ethyl ether                | 59   | 6.712  | 6.712  | 0.650  | 26052    | 4.87   | ug/L  | 94     |
| 9) Acetone                    | 43   | 7.066  | 7.066  | 0.684  | 82407    | 21.87  | ug/L  | 97     |
| 10) 1,1-Dichloroethylene      | 61   | 7.090  | 7.090  | 0.687  | 52803    | 4.63   | ug/L  | 100    |
| 11) Iodomethane               | 142  | 7.334  | 7.334  | 0.710  | 266712   | 24.56  | ug/L  | 91     |
| 12) Acetonitrile              | 41   | 7.413  | 7.413  | 0.718  | 92793    | 122.69 | ug/L  | 97     |
| 13) Methyl acetate            | 43   | 7.462  | 7.456  | 0.723  | 100272   | 23.28  | ug/L  | 96     |
| 14) Carbon disulfide          | 76   | 7.468  | 7.474  | 0.723  | 564836   | 28.41  | ug/L  | 93     |
| 15) Methylene chloride        | 84   | 7.651  | 7.651  | 0.741  | 37525    | 5.30   | ug/L  | 97     |
| 16) tert-Butyl methyl ether   | 73   | 7.956  | 7.956  | 0.770  | 83462    | 5.19   | ug/L  | 97     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 49719    | 4.59   | ug/L  | 98     |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 57465    | 5.77   | ug/L  | 99     |
| 19) Vinyl acetate             | 43   | 8.419  | 8.419  | 0.815  | 296176   | 25.28  | ug/L  | 96     |
| 20) 1,1-Dichloroethane        | 63   | 8.468  | 8.462  | 0.820  | 61477    | 4.80   | ug/L  | 99     |
| 21) 2-Butanone                | 43   | 9.035  | 9.035  | 0.875  | 105740   | 25.06  | ug/L  | 95     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.089  | 9.096  | 0.880  | 35379    | 5.00   | ug/L  | 98     |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 52542    | 4.74   | ug/L  | 97     |
| 24) Bromochloromethane        | 128  | 9.370  | 9.364  | 0.907  | 14070    | 4.28   | ug/L  | 93     |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 54811    | 4.33   | ug/L  | 100    |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 53661    | 4.51   | ug/L  | 93     |
| 27) Cyclohexane               | 56   | 9.791  | 9.791  | 0.948  | 73854    | 5.92   | ug/L  | 97     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.845  | 0.953  | 44305    | 4.91   | ug/L  | # 98   |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 44846    | 4.03   | ug/L  | 100    |
| 31) 1,2-Dichloroethane        | 62   | 10.047 | 10.047 | 0.973  | 38724    | 3.87   | ug/L  | 100    |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 130615   | 5.23   | ug/L  | # 77   |
| 33) Cyclohexene               | 67   | 10.205 | 10.205 | 0.988  | 65565    | 5.36   | ug/L  | 95     |
| 34) n-Butyl alcohol           | 56   | 10.406 | 10.406 | 1.008  | 86098    | 518.26 | ug/L  | 97     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 34281    | 4.77   | ug/L  | 99     |
| 36) 2-Pentanone               | 43   | 10.784 | 10.784 | 1.044  | 108606   | 24.02  | ug/L  | 97     |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 34705    | 5.20   | ug/L  | 92     |
| 38) Methylcyclohexane         | 83   | 10.979 | 10.979 | 1.063  | 66792    | 5.93   | ug/L  | 94     |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 17061    | 4.32   | ug/L  | 99     |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.199 | 1.084  | 39104    | 4.19   | ug/L  | 100    |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.418 | 1.106  | 73947    | 29.30  | ug/L  | 98     |
| 42) cis-1,3-Dichloropropylene | 75   | 11.650 | 11.644 | 1.128  | 50144    | 5.21   | ug/L  | 98     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H105.D  
Acq On : 31 Oct 2016 18:22  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-04|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD005 5UL N/A MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 01 08:08:51 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |      |
|------|---------------------------|------|--------|--------|--------|----------|-------|-------|------|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.741 | 11.735 | 0.870  | 57671    | 28.05 | ug/L  | # 84 |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 135341   | 5.63  | ug/L  | 100  |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.186 | 12.180 | 0.903  | 40944    | 5.11  | ug/L  | 99   |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 20402    | 5.14  | ug/L  | 97   |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 158106   | 30.34 | ug/L  | 95   |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 42343    | 5.46  | ug/L  | 98   |
| 51)  | Tetrachloroethylene       | 164  | 12.638 | 12.638 | 0.937  | 27249    | 5.29  | ug/L  | 96   |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 25789    | 4.42  | ug/L  | 99   |
| 53)  | 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 23188    | 4.74  | ug/L  | 100  |
| 54)  | Chlorobenzene             | 112  | 13.522 | 13.522 | 1.002  | 87722    | 5.33  | ug/L  | 95   |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.570 | 1.006  | 30348    | 4.73  | ug/L  | 96   |
| 56)  | Ethylbenzene              | 91   | 13.589 | 13.589 | 1.007  | 163172   | 5.85  | ug/L  | 96   |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 125340   | 12.11 | ug/L  | 89   |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 132839   | 5.84  | ug/L  | 99   |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 97700    | 6.07  | ug/L  | 97   |
| 61)  | Bromoform                 | 173  | 14.387 | 14.381 | 0.905  | 14706    | 4.15  | ug/L  | 99   |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 167211   | 5.86  | ug/L  | 95   |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.927  | 35517    | 5.34  | ug/L  | 94   |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 8979     | 4.53  | ug/L  | 96   |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.936  | 37485    | 4.95  | ug/L  | 99   |
| 67)  | n-Propylbenzene           | 91   | 14.912 | 14.918 | 0.938  | 205631   | 5.83  | ug/L  | 96   |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.070 | 15.070 | 0.947  | 141238   | 5.55  | ug/L  | 98   |
| 69)  | 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 37961    | 5.12  | ug/L  | 88   |
| 70)  | 4-Chlorotoluene           | 91   | 15.161 | 15.162 | 0.953  | 124584   | 5.35  | ug/L  | 96   |
| 71)  | tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 28802    | 5.75  | ug/L  | 98   |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.479 | 15.479 | 0.973  | 144986   | 5.53  | ug/L  | 84   |
| 73)  | sec-Butylbenzene          | 105  | 15.667 | 15.661 | 0.985  | 191983   | 5.80  | ug/L  | 98   |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.992  | 157420   | 5.58  | ug/L  | 97   |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.996  | 77960    | 5.15  | ug/L  | 98   |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.930 | 15.930 | 1.002  | 76418    | 5.03  | ug/L  | 98   |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.020  | 159918   | 5.78  | ug/L  | 99   |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.362 | 16.356 | 1.029  | 71713    | 5.10  | ug/L  | 97   |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.222 | 17.228 | 1.083  | 5678     | 4.50  | ug/L  | 97   |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.307 | 18.301 | 1.151  | 48086    | 4.65  | ug/L  | 98   |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 26727    | 3.88  | ug/L  | 97   |
| 82)  | Naphthalene               | 128  | 18.685 | 18.691 | 1.175  | 100441   | 5.23  | ug/L  | 99   |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.033 | 19.033 | 1.197  | 41164    | 4.45  | ug/L  | 96   |
| 85)  | Acrolein                  |      | 6.901  | 6.889  | 0.668  | 0m       | N.D.  | d     |      |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 7.090  | 0.000  | 0        | N.D.  |       |      |
| 87)  | Isopropyl Alcohol         |      | 0.000  | 7.145  | 0.000  | 0        | N.D.  |       |      |
| 88)  | Allyl chloride            |      | 7.413  | 7.504  | 0.718  | 0m       | N.D.  | d     |      |
| 89)  | tert-Butyl Alcohol        |      | 0.000  | 7.639  | 0.000  | 0        | N.D.  |       |      |
| 90)  | Acrylonitrile             |      | 7.956  | 7.882  | 0.770  | 0m       | N.D.  | d     |      |
| 91)  | Isopropyl ether           |      | 8.419  | 8.456  | 0.815  | 0m       | N.D.  | d     |      |
| 92)  | 2-Chloro-1,3-butadiene    |      | 8.584  | 8.577  | 0.831  | 0m       | N.D.  | d     |      |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.  |       |      |
| 94)  | Ethyl acetate             |      | 9.035  | 9.053  | 0.875  | 0m       | N.D.  | d     |      |
| 95)  | Propionitrile             |      | 0.000  | 9.096  | 0.000  | 0        | N.D.  |       |      |
| 96)  | Methacrylonitrile         |      | 9.315  | 9.278  | 0.902  | 0m       | N.D.  | d     |      |
| 97)  | Tetrahydrofuran           |      | 9.419  | 9.419  | 0.912  | 0m       | N.D.  | d     |      |
| 98)  | Isobutyl alcohol          |      | 9.791  | 9.717  | 0.948  | 0m       | N.D.  | d     |      |
| 99)  | Methyl tert-amyl ether    |      | 10.077 | 10.102 | 0.976  | 0m       | N.D.  | d     |      |
| 100) | Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D.  | d     |      |
| 101) | 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.  |       |      |
| 102) | 2-Nitropropane            |      | 11.412 | 11.388 | 1.105  | 0m       | N.D.  | d     |      |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H105.D  
Acq On : 31 Oct 2016 18:22  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-04|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD005 5UL N/A MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 01 08:08:51 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 12.132 | 12.186 | 0.899  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 13.424 | 13.394 | 0.844  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.491 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.729 | 14.625 | 0.926  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.918 | 14.796 | 0.938  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 0.000  | 15.503 | 0.000  | 0        | N.D. |       |
| 111) Benzyl chloride           |      | 0.000  | 16.039 | 0.000  | 0        | N.D. |       |
| 112) bis(2-Chloroisopropyl)... |      | 16.527 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path   : C:\msdchem\1\data\103116V4\
Data File   : 4H105.D
Acq On      : 31 Oct 2016   18:22
Operator    : ACJ
InstName    : VOA4
Sample      : |W4VM161031-04|ICAL|1|VOAF|1|VOA8260BL|
Misc        : VSTD005 SUL N/A MIX[A]
ALS Vial    : 5      Sample Multiplier: 1
```

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H106.D  
Acq On : 31 Oct 2016 18:52  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-05|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD010 5UL N/A MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 01 08:08:54 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1019618  | 50.00 | ug/L  | 0.00     |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 740076   | 50.00 | ug/L  | 0.00     |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.899 | 1.000  | 385656   | 50.00 | ug/L  | 0.00     |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 280727  | 42.33 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1042926 | 54.83 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 417061  | 49.74 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.756  | 4.749  | 0.461  | 63603    | 7.32    | ug/L  | 98     |
| 3) Chloromethane              | 50   | 5.086  | 5.102  | 0.493  | 70196    | 6.78    | ug/L  | 97     |
| 4) Vinyl chloride             | 62   | 5.322  | 5.322  | 0.515  | 55728    | 6.77    | ug/L  | 94     |
| 5) Bromomethane               | 94   | 5.879  | 5.887  | 0.569  | 56851    | 7.69    | ug/L  | 98     |
| 6) Chloroethane               | 64   | 5.997  | 6.005  | 0.581  | 55491    | 8.29    | ug/L  | 100    |
| 7) Trichlorofluoromethane     | 101  | 6.370  | 6.377  | 0.617  | 94753    | 7.48    | ug/L  | 98     |
| 8) Ethyl ether                | 59   | 6.712  | 6.712  | 0.650  | 51556    | 9.59    | ug/L  | 92     |
| 9) Acetone                    | 43   | 7.065  | 7.066  | 0.684  | 171027   | 45.16   | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      | 61   | 7.090  | 7.090  | 0.687  | 108880   | 9.49    | ug/L  | 100    |
| 11) Iodomethane               | 142  | 7.334  | 7.334  | 0.710  | 536302   | 49.13   | ug/L  | 91     |
| 12) Acetonitrile              | 41   | 7.413  | 7.413  | 0.718  | 190863   | 251.07  | ug/L  | 99     |
| 13) Methyl acetate            | 43   | 7.462  | 7.456  | 0.723  | 223168   | 51.55   | ug/L  | 95     |
| 14) Carbon disulfide          | 76   | 7.474  | 7.474  | 0.724  | 1117382  | 55.92   | ug/L  | 93     |
| 15) Methylene chloride        | 84   | 7.645  | 7.651  | 0.740  | 70750    | 9.95    | ug/L  | 95     |
| 16) tert-Butyl methyl ether   | 73   | 7.955  | 7.956  | 0.770  | 165529   | 10.23   | ug/L  | 98     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 102677   | 9.42    | ug/L  | 99     |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 113699   | 11.36   | ug/L  | 99     |
| 19) Vinyl acetate             | 43   | 8.419  | 8.419  | 0.815  | 570691   | 48.47   | ug/L  | 95     |
| 20) 1,1-Dichloroethane        | 63   | 8.468  | 8.462  | 0.820  | 119616   | 9.29    | ug/L  | 100    |
| 21) 2-Butanone                | 43   | 9.034  | 9.035  | 0.875  | 215112   | 50.73   | ug/L  | 97     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.095  | 9.096  | 0.881  | 70858    | 9.96    | ug/L  | 97     |
| 23) 2,2-Dichloropropane       | 77   | 9.126  | 9.132  | 0.884  | 103639   | 9.31    | ug/L  | 96     |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 28602    | 8.65    | ug/L  | 95     |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 110491   | 8.68    | ug/L  | 99     |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 105518   | 8.83    | ug/L  | 95     |
| 27) Cyclohexane               | 56   | 9.790  | 9.791  | 0.948  | 142698   | 11.38   | ug/L  | 97     |
| 28) 1,1-Dichloropropene       | 75   | 9.845  | 9.845  | 0.953  | 90666    | 10.00   | ug/L  | # 98   |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 89119    | 7.98    | ug/L  | 98     |
| 31) 1,2-Dichloroethane        | 62   | 10.047 | 10.047 | 0.973  | 78649    | 7.82    | ug/L  | 100    |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 261849   | 10.43   | ug/L  | # 77   |
| 33) Cyclohexene               | 67   | 10.205 | 10.205 | 0.988  | 125429   | 10.20   | ug/L  | 94     |
| 34) n-Butyl alcohol           | 56   | 10.406 | 10.406 | 1.008  | 196652   | 1177.74 | ug/L  | 97     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 66274    | 9.18    | ug/L  | 96     |
| 36) 2-Pentanone               | 43   | 10.784 | 10.784 | 1.044  | 227451   | 50.06   | ug/L  | 97     |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 70062    | 10.44   | ug/L  | 96     |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.979 | 1.063  | 127996   | 11.30   | ug/L  | 95     |
| 39) Dibromomethane            | 93   | 11.089 | 11.083 | 1.074  | 34500    | 8.69    | ug/L  | 96     |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.199 | 1.084  | 81102    | 8.64    | ug/L  | 100    |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.418 | 1.106  | 151739   | 59.83   | ug/L  | 98     |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 101380   | 10.49   | ug/L  | 99     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H106.D  
Acq On : 31 Oct 2016 18:52  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-05|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD010 5UL N/A MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 01 08:08:54 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |    |
|------|---------------------------|------|--------|--------|--------|----------|-------|-------|----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.741 | 11.735 | 0.870  | 122256   | 58.25 | ug/L  | 89 |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 273851   | 11.15 | ug/L  | 99 |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 86107    | 10.53 | ug/L  | 99 |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 42386    | 10.47 | ug/L  | 96 |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 309248   | 58.14 | ug/L  | 96 |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 85816    | 10.85 | ug/L  | 94 |
| 51)  | Tetrachloroethylene       | 164  | 12.637 | 12.638 | 0.937  | 50713    | 9.65  | ug/L  | 98 |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 56026    | 9.41  | ug/L  | 98 |
| 53)  | 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 50606    | 10.13 | ug/L  | 95 |
| 54)  | Chlorobenzene             | 112  | 13.521 | 13.522 | 1.002  | 177100   | 10.55 | ug/L  | 98 |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.570 | 1.006  | 61459    | 9.39  | ug/L  | 98 |
| 56)  | Ethylbenzene              | 91   | 13.589 | 13.589 | 1.007  | 316888   | 11.12 | ug/L  | 97 |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 250827   | 23.74 | ug/L  | 90 |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 260031   | 11.20 | ug/L  | 97 |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 199844   | 12.17 | ug/L  | 95 |
| 61)  | Bromoform                 | 173  | 14.381 | 14.381 | 0.905  | 33109    | 9.52  | ug/L  | 96 |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 330933   | 11.83 | ug/L  | 96 |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.928  | 69892    | 10.72 | ug/L  | 99 |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 18181    | 9.35  | ug/L  | 97 |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.937  | 73429    | 9.88  | ug/L  | 98 |
| 67)  | n-Propylbenzene           | 91   | 14.911 | 14.918 | 0.938  | 391876   | 11.33 | ug/L  | 96 |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.064 | 15.070 | 0.947  | 280748   | 11.26 | ug/L  | 96 |
| 69)  | 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 74468    | 10.24 | ug/L  | 87 |
| 70)  | 4-Chlorotoluene           | 91   | 15.161 | 15.162 | 0.954  | 241114   | 10.57 | ug/L  | 95 |
| 71)  | tert-Butylbenzene         | 134  | 15.436 | 15.442 | 0.971  | 57409    | 11.70 | ug/L  | 96 |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.478 | 15.479 | 0.974  | 280430   | 10.90 | ug/L  | 87 |
| 73)  | sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 375526   | 11.56 | ug/L  | 98 |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.993  | 309256   | 11.18 | ug/L  | 98 |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.997  | 153972   | 10.38 | ug/L  | 97 |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.930 | 15.930 | 1.002  | 149651   | 10.05 | ug/L  | 98 |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.021  | 308618   | 11.37 | ug/L  | 97 |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.029  | 144086   | 10.45 | ug/L  | 97 |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.222 | 17.228 | 1.083  | 12430    | 10.04 | ug/L  | 97 |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 93303    | 9.21  | ug/L  | 99 |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 53543    | 7.94  | ug/L  | 98 |
| 82)  | Naphthalene               | 128  | 18.685 | 18.691 | 1.175  | 203996   | 10.84 | ug/L  | 99 |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.039 | 19.033 | 1.197  | 82404    | 9.09  | ug/L  | 96 |
| 85)  | Acrolein                  |      | 6.968  | 6.889  | 0.675  | 0m       | N.D.  | d     |    |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 7.090  | 0.000  | 0        | N.D.  |       |    |
| 87)  | Isopropyl Alcohol         |      | 0.000  | 7.145  | 0.000  | 0        | N.D.  |       |    |
| 88)  | Allyl chloride            |      | 7.413  | 7.504  | 0.718  | 0m       | N.D.  | d     |    |
| 89)  | tert-Butyl Alcohol        |      | 7.626  | 7.639  | 0.738  | 0m       | N.D.  | d     |    |
| 90)  | Acrylonitrile             |      | 7.955  | 7.882  | 0.770  | 0m       | N.D.  | d     |    |
| 91)  | Isopropyl ether           |      | 8.425  | 8.456  | 0.816  | 0m       | N.D.  | d     |    |
| 92)  | 2-Chloro-1,3-butadiene    |      | 8.602  | 8.577  | 0.833  | 0m       | N.D.  | d     |    |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.  |       |    |
| 94)  | Ethyl acetate             |      | 9.034  | 9.053  | 0.875  | 0m       | N.D.  | d     |    |
| 95)  | Propionitrile             |      | 9.022  | 9.096  | 0.874  | 0m       | N.D.  | d     |    |
| 96)  | Methacrylonitrile         |      | 9.327  | 9.278  | 0.903  | 0m       | N.D.  | d     |    |
| 97)  | Tetrahydrofuran           |      | 9.412  | 9.419  | 0.911  | 0m       | N.D.  | d     |    |
| 98)  | Isobutyl alcohol          |      | 9.626  | 9.717  | 0.932  | 0m       | N.D.  | d     |    |
| 99)  | Methyl tert-amyl ether    |      | 10.083 | 10.102 | 0.976  | 0m       | N.D.  | d     |    |
| 100) | Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D.  | d     |    |
| 101) | 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.  |       |    |
| 102) | 2-Nitropropane            |      | 11.418 | 11.388 | 1.106  | 0m       | N.D.  | d     |    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H106.D  
Acq On : 31 Oct 2016 18:52  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-05|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD010 5UL N/A MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 01 08:08:54 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

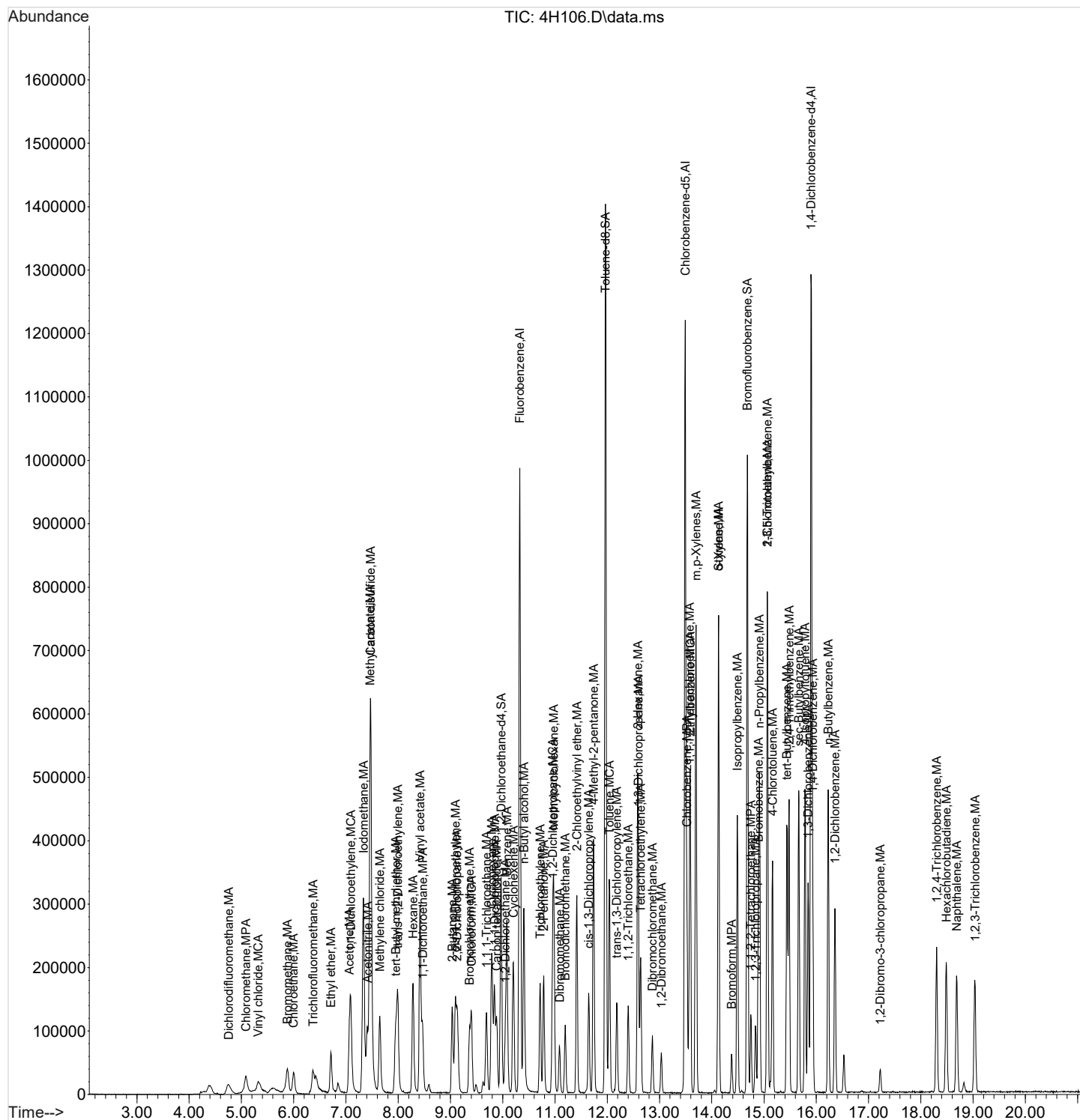
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 12.211 | 12.186 | 0.905  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 13.381 | 13.394 | 0.842  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.485 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.564 | 14.625 | 0.916  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.905 | 14.796 | 0.937  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 15.503 | 15.503 | 0.975  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 16.045 | 16.039 | 1.009  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 16.527 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H106.D  
Acq On : 31 Oct 2016 18:52  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-05|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD010 5UL N/A MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 01 08:08:54 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H107.D  
Acq On : 31 Oct 2016 19:21  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-06|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD020 5UL N/A MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 01 08:08:57 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1018190  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 727688   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.899 | 1.000  | 382664   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 275326  | 41.57 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1030485 | 55.10 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 410863  | 49.38 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.749  | 4.749  | 0.460  | 128735   | 14.84   | ug/L  | 99     |
| 3) Chloromethane              | 50   | 5.094  | 5.102  | 0.493  | 135434   | 13.11   | ug/L  | 99     |
| 4) Vinyl chloride             | 62   | 5.330  | 5.322  | 0.516  | 112417   | 13.67   | ug/L  | 98     |
| 5) Bromomethane               | 94   | 5.887  | 5.887  | 0.570  | 113074   | 15.32   | ug/L  | 99     |
| 6) Chloroethane               | 64   | 6.005  | 6.005  | 0.581  | 110225   | 16.48   | ug/L  | 99     |
| 7) Trichlorofluoromethane     | 101  | 6.370  | 6.377  | 0.617  | 183995   | 14.55   | ug/L  | 98     |
| 8) Ethyl ether                | 59   | 6.712  | 6.712  | 0.650  | 106376   | 19.82   | ug/L  | 96     |
| 9) Acetone                    | 43   | 7.071  | 7.066  | 0.685  | 319211   | 84.42   | ug/L  | 97     |
| 10) 1,1-Dichloroethylene      | 61   | 7.096  | 7.090  | 0.687  | 206530   | 18.03   | ug/L  | 97     |
| 11) Iodomethane               | 142  | 7.334  | 7.334  | 0.710  | 1030370  | 94.53   | ug/L  | 92     |
| 12) Acetonitrile              | 41   | 7.407  | 7.413  | 0.717  | 363986   | 479.48  | ug/L  | 98     |
| 13) Methyl acetate            | 43   | 7.462  | 7.456  | 0.723  | 412604   | 95.45   | ug/L  | 96     |
| 14) Carbon disulfide          | 76   | 7.474  | 7.474  | 0.724  | 2084457  | 104.47  | ug/L  | 94     |
| 15) Methylene chloride        | 84   | 7.651  | 7.651  | 0.741  | 136850   | 19.27   | ug/L  | 96     |
| 16) tert-Butyl methyl ether   | 73   | 7.955  | 7.956  | 0.770  | 334077   | 20.68   | ug/L  | 100    |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 198749   | 18.27   | ug/L  | 98     |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 218779   | 21.89   | ug/L  | 98     |
| 19) Vinyl acetate             | 43   | 8.419  | 8.419  | 0.815  | 1198213  | 101.92  | ug/L  | 96     |
| 20) 1,1-Dichloroethane        | 63   | 8.461  | 8.462  | 0.819  | 239103   | 18.59   | ug/L  | 98     |
| 21) 2-Butanone                | 43   | 9.034  | 9.035  | 0.875  | 411774   | 97.25   | ug/L  | 96     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.095  | 9.096  | 0.881  | 140106   | 19.71   | ug/L  | 98     |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 201664   | 18.14   | ug/L  | 95     |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 58762    | 17.80   | ug/L  | 98     |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 217633   | 17.13   | ug/L  | 100    |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 206695   | 17.32   | ug/L  | 95     |
| 27) Cyclohexane               | 56   | 9.790  | 9.791  | 0.948  | 276605   | 22.09   | ug/L  | 98     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.845  | 0.953  | 176992   | 19.55   | ug/L  | # 98   |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 178870   | 16.03   | ug/L  | 99     |
| 31) 1,2-Dichloroethane        | 62   | 10.046 | 10.047 | 0.973  | 158405   | 15.76   | ug/L  | 100    |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 508657   | 20.28   | ug/L  | # 77   |
| 33) Cyclohexene               | 67   | 10.205 | 10.205 | 0.988  | 248632   | 20.24   | ug/L  | 96     |
| 34) n-Butyl alcohol           | 56   | 10.406 | 10.406 | 1.008  | 377422   | 2263.54 | ug/L  | 99     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 130901   | 18.16   | ug/L  | 97     |
| 36) 2-Pentanone               | 43   | 10.784 | 10.784 | 1.044  | 446535   | 98.41   | ug/L  | 97     |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 137790   | 20.56   | ug/L  | 97     |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.979 | 1.063  | 251082   | 22.21   | ug/L  | 97     |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 67220    | 16.95   | ug/L  | 93     |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.199 | 1.084  | 163972   | 17.50   | ug/L  | 99     |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.418 | 1.106  | 303274   | 119.74  | ug/L  | 98     |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 203310   | 21.06   | ug/L  | 99     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H107.D  
Acq On : 31 Oct 2016 19:21  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-06|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD020 5UL N/A MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 01 08:08:57 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 234654   | 113.71 | ug/L  | 89  |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 526371   | 21.80  | ug/L  | 99  |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 172287   | 21.43  | ug/L  | 99  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 82476    | 20.72  | ug/L  | 96  |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 587640   | 112.37 | ug/L  | 95  |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 168785   | 21.70  | ug/L  | 99  |
| 51)  | Tetrachloroethylene       | 164  | 12.637 | 12.638 | 0.937  | 103248   | 19.99  | ug/L  | 97  |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 111523   | 19.04  | ug/L  | 99  |
| 53)  | 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 96981    | 19.74  | ug/L  | 100 |
| 54)  | Chlorobenzene             | 112  | 13.521 | 13.522 | 1.002  | 339798   | 20.58  | ug/L  | 100 |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.570 | 13.570 | 1.006  | 123464   | 19.18  | ug/L  | 97  |
| 56)  | Ethylbenzene              | 91   | 13.588 | 13.589 | 1.007  | 613780   | 21.91  | ug/L  | 97  |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 478267   | 46.05  | ug/L  | 89  |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 501728   | 21.98  | ug/L  | 98  |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 382724   | 23.71  | ug/L  | 97  |
| 61)  | Bromoform                 | 173  | 14.381 | 14.381 | 0.905  | 66464    | 19.27  | ug/L  | 98  |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 631368   | 22.75  | ug/L  | 96  |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.928  | 136124   | 21.05  | ug/L  | 99  |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 36954    | 19.16  | ug/L  | 91  |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.937  | 143932   | 19.52  | ug/L  | 98  |
| 67)  | n-Propylbenzene           | 91   | 14.917 | 14.918 | 0.938  | 760463   | 22.16  | ug/L  | 97  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.064 | 15.070 | 0.947  | 534433   | 21.60  | ug/L  | 97  |
| 69)  | 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 143580   | 19.90  | ug/L  | 89  |
| 70)  | 4-Chlorotoluene           | 91   | 15.161 | 15.162 | 0.954  | 462646   | 20.44  | ug/L  | 96  |
| 71)  | tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 109773   | 22.55  | ug/L  | 97  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.478 | 15.479 | 0.974  | 545809   | 21.39  | ug/L  | 88  |
| 73)  | sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 716662   | 22.24  | ug/L  | 98  |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.993  | 592665   | 21.59  | ug/L  | 98  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.997  | 299880   | 20.36  | ug/L  | 97  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.929 | 15.930 | 1.002  | 294355   | 19.91  | ug/L  | 97  |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.021  | 593232   | 22.03  | ug/L  | 98  |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.029  | 277600   | 20.28  | ug/L  | 97  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.228 | 17.228 | 1.084  | 24764    | 20.16  | ug/L  | 98  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 181898   | 18.09  | ug/L  | 99  |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 108490   | 16.21  | ug/L  | 98  |
| 82)  | Naphthalene               | 128  | 18.685 | 18.691 | 1.175  | 405125   | 21.69  | ug/L  | 99  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.039 | 19.033 | 1.197  | 156838   | 17.43  | ug/L  | 97  |
| 85)  | Acrolein                  |      | 6.870  | 6.889  | 0.665  | 0m       | N.D.   | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 7.090  | 0.000  | 0        | N.D.   |       |     |
| 87)  | Isopropyl Alcohol         |      | 7.059  | 7.145  | 0.684  | 0m       | N.D.   | d     |     |
| 88)  | Allyl chloride            |      | 7.407  | 7.504  | 0.717  | 0m       | N.D.   | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 0.000  | 7.639  | 0.000  | 0        | N.D.   |       |     |
| 90)  | Acrylonitrile             |      | 7.962  | 7.882  | 0.771  | 0m       | N.D.   | d     |     |
| 91)  | Isopropyl ether           |      | 8.419  | 8.456  | 0.815  | 0m       | N.D.   | d     |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 8.577  | 8.577  | 0.831  | 0m       | N.D.   | d     |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.   |       |     |
| 94)  | Ethyl acetate             |      | 9.034  | 9.053  | 0.875  | 0m       | N.D.   | d     |     |
| 95)  | Propionitrile             |      | 9.028  | 9.096  | 0.874  | 0m       | N.D.   | d     |     |
| 96)  | Methacrylonitrile         |      | 9.291  | 9.278  | 0.900  | 0m       | N.D.   | d     |     |
| 97)  | Tetrahydrofuran           |      | 9.394  | 9.419  | 0.910  | 0m       | N.D.   | d     |     |
| 98)  | Isobutyl alcohol          |      | 9.790  | 9.717  | 0.948  | 0m       | N.D.   | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 10.077 | 10.102 | 0.976  | 0m       | N.D.   | d     |     |
| 100) | Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D.   | d     |     |
| 101) | 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.   |       |     |
| 102) | 2-Nitropropane            |      | 11.418 | 11.388 | 1.106  | 0m       | N.D.   | d     |     |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H107.D  
Acq On : 31 Oct 2016 19:21  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-06|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD020 5UL N/A MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 01 08:08:57 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 0.000  | 12.186 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 13.387 | 13.394 | 0.842  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.491 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.576 | 14.625 | 0.917  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.917 | 14.796 | 0.938  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 15.503 | 15.503 | 0.975  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 0.000  | 16.039 | 0.000  | 0        | N.D. |       |
| 112) bis(2-Chloroisopropyl)... |      | 16.527 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H107.D  
Acq On    : 31 Oct 2016  19:21  
Operator  : ACJ  
InstName  : VOA4  
Sample    : |W4VM161031-06|ICAL|1|VOAF|1|VOA8260BL|  
Misc      : VSTD020 5UL N/A MIX[A]  
ALS Vial  : 7      Sample Multiplier: 1
```

[illegible]

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H108.D  
Acq On : 31 Oct 2016 19:49  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-07|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD050 5UL N/A MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 01 08:09:00 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 995811   | 50.00 | ug/L  | 0.00     |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 722592   | 50.00 | ug/L  | 0.00     |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.899 | 1.000  | 384469   | 50.00 | ug/L  | 0.00     |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 267511  | 41.30 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1013742 | 54.59 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 416156  | 49.79 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.749  | 4.749  | 0.460  | 322301   | 37.98   | ug/L  | 99     |
| 3) Chloromethane              | 50   | 5.094  | 5.102  | 0.493  | 318062   | 31.47   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 5.322  | 5.322  | 0.515  | 279022   | 34.70   | ug/L  | 100    |
| 5) Bromomethane               | 94   | 5.887  | 5.887  | 0.570  | 278592   | 38.60   | ug/L  | 99     |
| 6) Chloroethane               | 64   | 6.005  | 6.005  | 0.581  | 269541   | 41.22   | ug/L  | 99     |
| 7) Trichlorofluoromethane     | 101  | 6.370  | 6.377  | 0.617  | 462471   | 37.38   | ug/L  | 100    |
| 8) Ethyl ether                | 59   | 6.706  | 6.712  | 0.649  | 258922   | 49.33   | ug/L  | 95     |
| 9) Acetone                    | 43   | 7.059  | 7.066  | 0.684  | 740231   | 200.15  | ug/L  | 99     |
| 10) 1,1-Dichloroethylene      | 61   | 7.090  | 7.090  | 0.687  | 497044   | 44.36   | ug/L  | 98     |
| 11) Iodomethane               | 142  | 7.327  | 7.334  | 0.710  | 2375473  | 222.83  | ug/L  | 93     |
| 12) Acetonitrile              | 41   | 7.407  | 7.413  | 0.717  | 884435   | 1191.26 | ug/L  | 98     |
| 13) Methyl acetate            | 43   | 7.456  | 7.456  | 0.722  | 984858   | 232.95  | ug/L  | 95     |
| 14) Carbon disulfide          | 76   | 7.468  | 7.474  | 0.723  | 4661417  | 238.86  | ug/L  | 95     |
| 15) Methylene chloride        | 84   | 7.645  | 7.651  | 0.740  | 311573   | 44.85   | ug/L  | 94     |
| 16) tert-Butyl methyl ether   | 73   | 7.955  | 7.956  | 0.770  | 803482   | 50.85   | ug/L  | 100    |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 471540   | 44.31   | ug/L  | 98     |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 528406   | 54.05   | ug/L  | 99     |
| 19) Vinyl acetate             | 43   | 8.413  | 8.419  | 0.815  | 2686225  | 233.62  | ug/L  | 97     |
| 20) 1,1-Dichloroethane        | 63   | 8.461  | 8.462  | 0.819  | 562370   | 44.70   | ug/L  | 100    |
| 21) 2-Butanone                | 43   | 9.028  | 9.035  | 0.874  | 963688   | 232.71  | ug/L  | 97     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.095  | 9.096  | 0.881  | 330565   | 47.56   | ug/L  | 99     |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 490869   | 45.15   | ug/L  | 94     |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 138748   | 42.97   | ug/L  | 98     |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 518345   | 41.71   | ug/L  | 98     |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 502626   | 43.06   | ug/L  | 95     |
| 27) Cyclohexane               | 56   | 9.790  | 9.791  | 0.948  | 664137   | 54.23   | ug/L  | 97     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.845  | 0.953  | 421391   | 47.58   | ug/L  | # 98   |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 439944   | 40.32   | ug/L  | 99     |
| 31) 1,2-Dichloroethane        | 62   | 10.046 | 10.047 | 0.973  | 381216   | 38.79   | ug/L  | 99     |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 1200529  | 48.95   | ug/L  | 99     |
| 33) Cyclohexene               | 67   | 10.199 | 10.205 | 0.988  | 595653   | 49.58   | ug/L  | 95     |
| 34) n-Butyl alcohol           | 56   | 10.400 | 10.406 | 1.007  | 929489   | 5699.77 | ug/L  | 99     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 318924   | 45.24   | ug/L  | 99     |
| 36) 2-Pentanone               | 43   | 10.778 | 10.784 | 1.044  | 1099313  | 247.71  | ug/L  | 98     |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 325121   | 49.60   | ug/L  | 97     |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.979 | 1.063  | 598613   | 54.13   | ug/L  | 96     |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 163476   | 42.14   | ug/L  | 95     |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.199 | 1.084  | 398288   | 43.46   | ug/L  | 99     |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.412 | 11.418 | 1.105  | 742660   | 299.81  | ug/L  | 98     |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 485234   | 51.39   | ug/L  | 99     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H108.D  
Acq On : 31 Oct 2016 19:49  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-07|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD050 5UL N/A MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 01 08:09:00 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 558194   | 272.41 | ug/L  | 90  |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 1233693  | 51.46  | ug/L  | 100 |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 416080   | 52.11  | ug/L  | 99  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 200828   | 50.81  | ug/L  | 98  |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 1298023  | 249.95 | ug/L  | 96  |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 384342   | 49.75  | ug/L  | 98  |
| 51)  | Tetrachloroethylene       | 164  | 12.637 | 12.638 | 0.937  | 244897   | 47.74  | ug/L  | 97  |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 275777   | 47.42  | ug/L  | 99  |
| 53)  | 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 240535   | 49.31  | ug/L  | 98  |
| 54)  | Chlorobenzene             | 112  | 13.521 | 13.522 | 1.002  | 820952   | 50.08  | ug/L  | 98  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.570 | 1.006  | 297717   | 46.57  | ug/L  | 97  |
| 56)  | Ethylbenzene              | 91   | 13.588 | 13.589 | 1.007  | 1434929  | 51.58  | ug/L  | 97  |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 1096155  | 106.28 | ug/L  | 91  |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 1156555  | 51.03  | ug/L  | 99  |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 896268   | 55.91  | ug/L  | 96  |
| 61)  | Bromoform                 | 173  | 14.381 | 14.381 | 0.904  | 171624   | 49.52  | ug/L  | 100 |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 1500573  | 53.81  | ug/L  | 97  |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.927  | 338652   | 52.11  | ug/L  | 98  |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 89192    | 46.03  | ug/L  | 93  |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.936  | 350468   | 47.32  | ug/L  | 96  |
| 67)  | n-Propylbenzene           | 91   | 14.917 | 14.918 | 0.938  | 1772782  | 51.41  | ug/L  | 97  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.070 | 15.070 | 0.947  | 1250564  | 50.30  | ug/L  | 97  |
| 69)  | 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 339961   | 46.89  | ug/L  | 92  |
| 70)  | 4-Chlorotoluene           | 91   | 15.161 | 15.162 | 0.953  | 1114129  | 48.99  | ug/L  | 97  |
| 71)  | tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 270831   | 55.38  | ug/L  | 96  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.478 | 15.479 | 0.973  | 1295479  | 50.52  | ug/L  | 86  |
| 73)  | sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 1680007  | 51.90  | ug/L  | 100 |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.992  | 1395958  | 50.62  | ug/L  | 98  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.996  | 719051   | 48.60  | ug/L  | 97  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.929 | 15.930 | 1.002  | 707996   | 47.67  | ug/L  | 97  |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.020  | 1393089  | 51.48  | ug/L  | 98  |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.028  | 673057   | 48.95  | ug/L  | 98  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.228 | 17.228 | 1.083  | 67439    | 54.65  | ug/L  | 94  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 445758   | 44.13  | ug/L  | 99  |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 265794   | 39.54  | ug/L  | 100 |
| 82)  | Naphthalene               | 128  | 18.685 | 18.691 | 1.175  | 990028   | 52.75  | ug/L  | 99  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.033 | 19.033 | 1.197  | 393845   | 43.56  | ug/L  | 96  |
| 85)  | Acrolein                  |      | 6.895  | 6.889  | 0.668  | 0m       | N.D.   | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 7.090  | 0.000  | 0        | N.D.   |       |     |
| 87)  | Isopropyl Alcohol         |      | 7.163  | 7.145  | 0.694  | 0m       | N.D.   | d     |     |
| 88)  | Allyl chloride            |      | 7.407  | 7.504  | 0.717  | 0m       | N.D.   | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 7.632  | 7.639  | 0.739  | 0m       | N.D.   | d     |     |
| 90)  | Acrylonitrile             |      | 7.955  | 7.882  | 0.770  | 0m       | N.D.   | d     |     |
| 91)  | Isopropyl ether           |      | 8.413  | 8.456  | 0.815  | 0m       | N.D.   | d     |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 8.583  | 8.577  | 0.831  | 0m       | N.D.   | d     |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.   |       |     |
| 94)  | Ethyl acetate             |      | 9.028  | 9.053  | 0.874  | 0m       | N.D.   | d     |     |
| 95)  | Propionitrile             |      | 9.028  | 9.096  | 0.874  | 0m       | N.D.   | d     |     |
| 96)  | Methacrylonitrile         |      | 9.315  | 9.278  | 0.902  | 0m       | N.D.   | d     |     |
| 97)  | Tetrahydrofuran           |      | 9.412  | 9.419  | 0.911  | 0m       | N.D.   | d     |     |
| 98)  | Isobutyl alcohol          |      | 9.705  | 9.717  | 0.940  | 0m       | N.D.   | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 10.077 | 10.102 | 0.976  | 0m       | N.D.   | d     |     |
| 100) | Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D.   | d     |     |
| 101) | 1,4-Dioxane               |      | 11.089 | 11.034 | 1.074  | 0m       | N.D.   | d     |     |
| 102) | 2-Nitropropane            |      | 11.412 | 11.388 | 1.105  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H108.D  
Acq On : 31 Oct 2016 19:49  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-07|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD050 5UL N/A MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 01 08:09:00 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 12.144 | 12.186 | 0.900  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 13.442 | 13.394 | 0.845  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.491 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.692 | 14.625 | 0.924  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.917 | 14.796 | 0.938  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 15.509 | 15.503 | 0.975  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 0.000  | 16.039 | 0.000  | 0        | N.D. |       |
| 112) bis(2-Chloroisopropyl)... |      | 16.533 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H109.D  
Acq On : 31 Oct 2016 20:19  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-08|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD080 5UL N/A MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 01 08:09:03 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev(Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards            |      |        |        |        |          |       |       |          |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 980079   | 50.00 | ug/L  | 0.00     |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 712800   | 50.00 | ug/L  | 0.00     |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.899 | 1.000  | 378948   | 50.00 | ug/L  | 0.00     |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00     |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 265976  | 41.72 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1015522 | 55.43 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 410741  | 49.85 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.749  | 4.749  | 0.460  | 400774   | 47.98   | ug/L  | 99     |
| 3) Chloromethane              | 50   | 5.102  | 5.102  | 0.494  | 441839   | 44.42   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 5.330  | 5.322  | 0.516  | 393481   | 49.73   | ug/L  | 100    |
| 5) Bromomethane               | 94   | 5.887  | 5.887  | 0.570  | 409398   | 57.64   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 6.005  | 6.005  | 0.581  | 396644   | 61.62   | ug/L  | 99     |
| 7) Trichlorofluoromethane     | 101  | 6.371  | 6.377  | 0.617  | 680731   | 55.91   | ug/L  | 100    |
| 8) Ethyl ether                | 59   | 6.712  | 6.712  | 0.650  | 381251   | 73.80   | ug/L  | 93     |
| 9) Acetone                    | 43   | 7.059  | 7.066  | 0.684  | 1090811  | 299.68  | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      | 61   | 7.090  | 7.090  | 0.687  | 762533   | 69.14   | ug/L  | 98     |
| 11) Iodomethane               | 142  | 7.328  | 7.334  | 0.710  | 3509852  | 334.52  | ug/L  | 94     |
| 12) Acetonitrile              | 41   | 7.407  | 7.413  | 0.717  | 1353736  | 1852.64 | ug/L  | 98     |
| 13) Methyl acetate            | 43   | 7.456  | 7.456  | 0.722  | 1419232  | 341.08  | ug/L  | 96     |
| 14) Carbon disulfide          | 76   | 7.468  | 7.474  | 0.723  | 6609000  | 344.10  | ug/L  | 96     |
| 15) Methylene chloride        | 84   | 7.645  | 7.651  | 0.740  | 481415   | 70.41   | ug/L  | 95     |
| 16) tert-Butyl methyl ether   | 73   | 7.956  | 7.956  | 0.770  | 1217360  | 78.28   | ug/L  | 100    |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 709423   | 67.74   | ug/L  | 98     |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 806580   | 83.83   | ug/L  | 99     |
| 19) Vinyl acetate             | 43   | 8.413  | 8.419  | 0.815  | 3906780  | 345.22  | ug/L  | 97     |
| 20) 1,1-Dichloroethane        | 63   | 8.462  | 8.462  | 0.819  | 858153   | 69.30   | ug/L  | 100    |
| 21) 2-Butanone                | 43   | 9.029  | 9.035  | 0.874  | 1423019  | 349.15  | ug/L  | 96     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.096  | 9.096  | 0.881  | 502976   | 73.52   | ug/L  | 97     |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 753653   | 70.44   | ug/L  | 93     |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 213882   | 67.31   | ug/L  | 98     |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 790250   | 64.61   | ug/L  | 98     |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 764651   | 66.56   | ug/L  | 95     |
| 27) Cyclohexane               | 56   | 9.791  | 9.791  | 0.948  | 1005906  | 83.46   | ug/L  | 97     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.845  | 0.953  | 638133   | 73.21   | ug/L  | # 98   |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 673350   | 62.70   | ug/L  | 100    |
| 31) 1,2-Dichloroethane        | 62   | 10.047 | 10.047 | 0.973  | 578885   | 59.85   | ug/L  | 99     |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 1795867  | 74.39   | ug/L  | 98     |
| 33) Cyclohexene               | 67   | 10.199 | 10.205 | 0.988  | 896307   | 75.80   | ug/L  | 94     |
| 34) n-Butyl alcohol           | 56   | 10.400 | 10.406 | 1.007  | 1423972  | 8872.18 | ug/L  | 98     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 476790   | 68.72   | ug/L  | 98     |
| 36) 2-Pentanone               | 43   | 10.784 | 10.784 | 1.044  | 1651981  | 378.22  | ug/L  | 98     |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 490868   | 76.09   | ug/L  | 97     |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.979 | 1.063  | 891503   | 81.91   | ug/L  | 96     |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 251946   | 65.99   | ug/L  | 95     |
| 40) Bromodichloromethane      | 83   | 11.199 | 11.199 | 1.084  | 612299   | 67.89   | ug/L  | 100    |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.418 | 1.106  | 1105551  | 453.47  | ug/L  | 98     |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 752276   | 80.95   | ug/L  | 99     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H109.D  
Acq On : 31 Oct 2016 20:19  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-08|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD080 5UL N/A MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 01 08:09:03 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 843097   | 417.10 | ug/L  | 93  |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 1844862  | 78.00  | ug/L  | 98  |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 652484   | 82.85  | ug/L  | 99  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 309650   | 79.42  | ug/L  | 98  |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 1962493  | 383.10 | ug/L  | 97  |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 583190   | 76.53  | ug/L  | 99  |
| 51)  | Tetrachloroethylene       | 164  | 12.638 | 12.638 | 0.937  | 371772   | 73.47  | ug/L  | 96  |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 437228   | 76.21  | ug/L  | 100 |
| 53)  | 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 369504   | 76.78  | ug/L  | 97  |
| 54)  | Chlorobenzene             | 112  | 13.522 | 13.522 | 1.002  | 1234887  | 76.37  | ug/L  | 99  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.570 | 1.006  | 454364   | 72.04  | ug/L  | 97  |
| 56)  | Ethylbenzene              | 91   | 13.589 | 13.589 | 1.007  | 2105292  | 76.71  | ug/L  | 98  |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 1616391  | 158.87 | ug/L  | 92  |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 1698323  | 75.96  | ug/L  | 99  |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 1320619  | 83.51  | ug/L  | 97  |
| 61)  | Bromoform                 | 173  | 14.381 | 14.381 | 0.905  | 271839   | 79.58  | ug/L  | 98  |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 2203712  | 80.18  | ug/L  | 98  |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.928  | 514417   | 80.31  | ug/L  | 100 |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 138010   | 72.27  | ug/L  | 90  |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.937  | 529934   | 72.59  | ug/L  | 96  |
| 67)  | n-Propylbenzene           | 91   | 14.918 | 14.918 | 0.938  | 2590711  | 76.23  | ug/L  | 99  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.070 | 15.070 | 0.948  | 1842862  | 75.20  | ug/L  | 97  |
| 69)  | 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 504702   | 70.63  | ug/L  | 91  |
| 70)  | 4-Chlorotoluene           | 91   | 15.161 | 15.162 | 0.954  | 1667686  | 74.40  | ug/L  | 97  |
| 71)  | tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 410573   | 85.17  | ug/L  | 94  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.479 | 15.479 | 0.974  | 1914152  | 75.74  | ug/L  | 89  |
| 73)  | sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 2462506  | 77.17  | ug/L  | 99  |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.993  | 2070128  | 76.16  | ug/L  | 99  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.997  | 1090611  | 74.79  | ug/L  | 97  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.930 | 15.930 | 1.002  | 1079827  | 73.77  | ug/L  | 96  |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.021  | 2057294  | 77.14  | ug/L  | 98  |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.029  | 1026005  | 75.70  | ug/L  | 98  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.222 | 17.228 | 1.083  | 104293   | 85.75  | ug/L  | 95  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 683364   | 68.63  | ug/L  | 99  |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 400847   | 60.49  | ug/L  | 100 |
| 82)  | Naphthalene               | 128  | 18.685 | 18.691 | 1.175  | 1525851  | 82.49  | ug/L  | 100 |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.033 | 19.033 | 1.197  | 605559   | 67.95  | ug/L  | 97  |
| 85)  | Acrolein                  |      | 6.767  | 6.889  | 0.655  | 0m       | N.D.   | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 7.102  | 7.090  | 0.688  | 0m       | N.D.   | d     |     |
| 87)  | Isopropyl Alcohol         |      | 7.066  | 7.145  | 0.684  | 0m       | N.D.   | d     |     |
| 88)  | Allyl chloride            |      | 7.407  | 7.504  | 0.717  | 0m       | N.D.   | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 0.000  | 7.639  | 0.000  | 0        | N.D.   |       |     |
| 90)  | Acrylonitrile             |      | 7.956  | 7.882  | 0.770  | 0m       | N.D.   | d     |     |
| 91)  | Isopropyl ether           |      | 8.419  | 8.456  | 0.815  | 0m       | N.D.   | d     |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 8.590  | 8.577  | 0.832  | 0m       | N.D.   | d     |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.   |       |     |
| 94)  | Ethyl acetate             |      | 9.029  | 9.053  | 0.874  | 0m       | N.D.   | d     |     |
| 95)  | Propionitrile             |      | 9.035  | 9.096  | 0.875  | 0m       | N.D.   | d     |     |
| 96)  | Methacrylonitrile         |      | 0.000  | 9.278  | 0.000  | 0        | N.D.   |       |     |
| 97)  | Tetrahydrofuran           |      | 9.400  | 9.419  | 0.910  | 0m       | N.D.   | d     |     |
| 98)  | Isobutyl alcohol          |      | 9.791  | 9.717  | 0.948  | 0m       | N.D.   | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 10.077 | 10.102 | 0.976  | 0m       | N.D.   | d     |     |
| 100) | Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D.   | d     |     |
| 101) | 1,4-Dioxane               |      | 11.083 | 11.034 | 1.073  | 0m       | N.D.   | d     |     |
| 102) | 2-Nitropropane            |      | 11.412 | 11.388 | 1.105  | 0m       | N.D.   | d     |     |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H109.D  
Acq On : 31 Oct 2016 20:19  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-08|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD080 5UL N/A MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 01 08:09:03 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

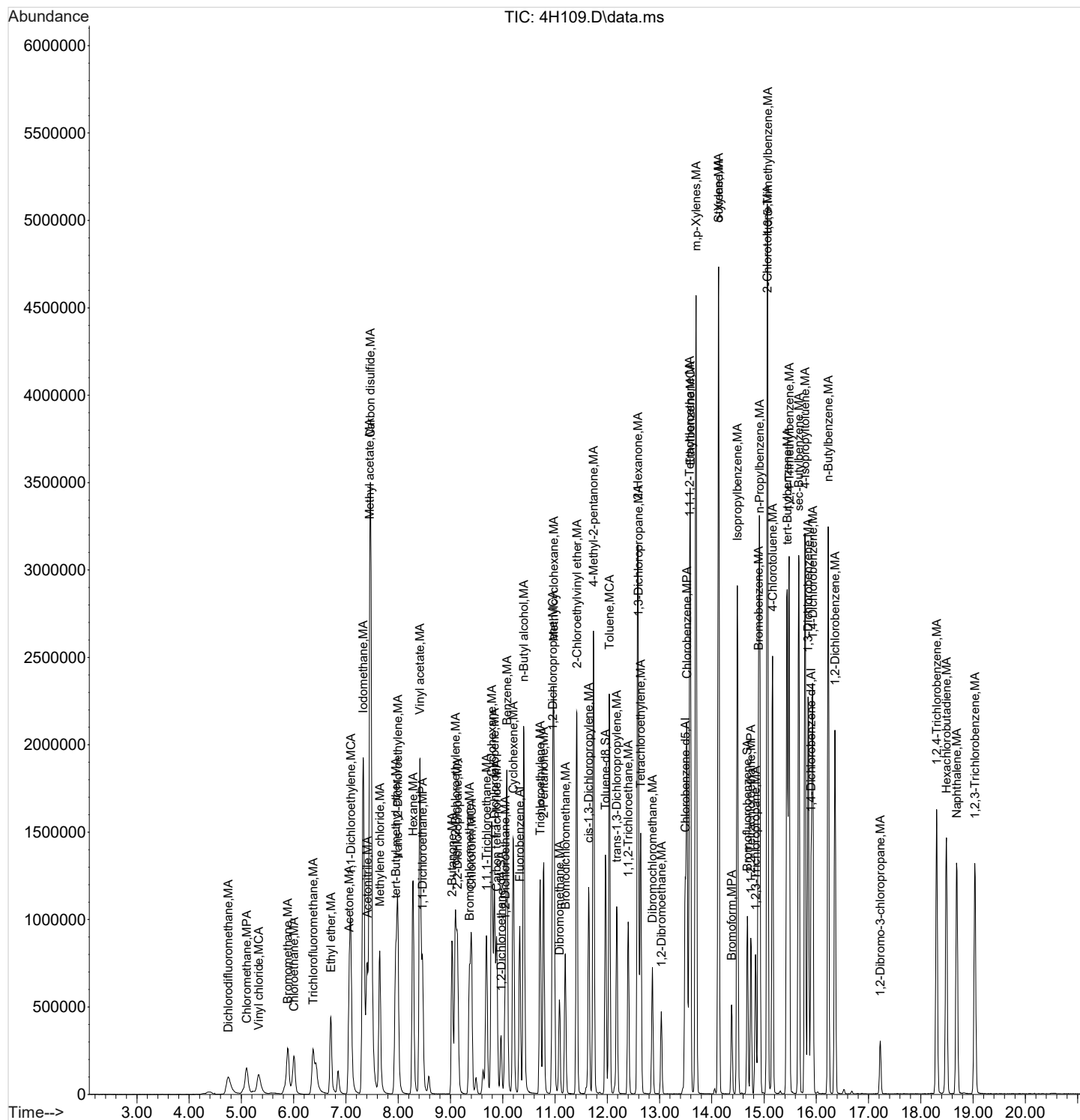
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 12.174 | 12.186 | 0.902  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 13.363 | 13.394 | 0.840  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.491 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.649 | 14.625 | 0.921  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.912 | 14.796 | 0.938  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 15.497 | 15.503 | 0.975  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 16.039 | 16.039 | 1.009  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 16.527 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H109.D  
Acq On : 31 Oct 2016 20:19  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-08|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD080 5UL N/A MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 01 08:09:03 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H110.D  
Acq On : 31 Oct 2016 20:48  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-09|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD100 5UL N/A MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 01 08:09:06 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units  |          |
|-------------------------------|------|--------|--------|--------|----------|----------|--------|----------|
| -----                         |      |        |        |        |          |          |        |          |
| Internal Standards            |      |        |        |        |          |          |        | Dev(Min) |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1043140  | 50.00    | ug/L   | 0.00     |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 765904   | 50.00    | ug/L   | 0.00     |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.899 | 1.000  | 404357   | 50.00    | ug/L   | 0.00     |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00    | ug/L   | 0.00     |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00    | ug/L   | 0.00     |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 0m       | 50.00    | ug/L   | 0.00     |
| -----                         |      |        |        |        |          |          |        |          |
| System Monitoring Compounds   |      |        |        |        |          |          |        | Dev(Min) |
| 30) 1,2-Dichloroethane-d4     | 65   | 9.967  | 9.967  | 0.965  | 283535   | 41.78    | ug/L   | 0.00     |
| 45) Toluene-d8                | 98   | 11.967 | 11.967 | 0.887  | 1082769  | 55.01    | ug/L   | 0.00     |
| 63) Bromofluorobenzene        | 95   | 14.680 | 14.680 | 0.923  | 440645   | 50.12    | ug/L   | 0.00     |
| -----                         |      |        |        |        |          |          |        |          |
| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units  | QValue   |
| 2) Dichlorodifluoromethane    | 85   | 4.756  | 4.749  | 0.461  | 526801   | 59.26    | ug/L   | 100      |
| 3) Chloromethane              | 50   | 5.110  | 5.102  | 0.495  | 566137   | 53.47    | ug/L   | 100      |
| 4) Vinyl chloride             | 62   | 5.330  | 5.322  | 0.516  | 513136   | 60.93    | ug/L   | 99       |
| 5) Bromomethane               | 94   | 5.895  | 5.887  | 0.571  | 541824   | 71.67    | ug/L   | 99       |
| 6) Chloroethane               | 64   | 6.013  | 6.005  | 0.582  | 519220   | 75.79    | ug/L   | 99       |
| 7) Trichlorofluoromethane     | 101  | 6.376  | 6.377  | 0.617  | 884572   | 68.26    | ug/L   | 99       |
| 8) Ethyl ether                | 59   | 6.712  | 6.712  | 0.650  | 515485   | 93.75    | ug/L   | 94       |
| 9) Acetone                    | 43   | 7.065  | 7.066  | 0.684  | 1406916  | 363.16   | ug/L   | 98       |
| 10) 1,1-Dichloroethylene      | 61   | 7.096  | 7.090  | 0.687  | 998452   | 85.06    | ug/L   | 96       |
| 11) Iodomethane               | 142  | 7.334  | 7.334  | 0.710  | 4522353  | 404.97   | ug/L   | 95       |
| 12) Acetonitrile              | 41   | 7.407  | 7.413  | 0.717  | 1709420  | 2197.98  | ug/L   | 99       |
| 13) Methyl acetate            | 43   | 7.455  | 7.456  | 0.722  | 1815212  | 409.88   | ug/L   | 96       |
| 14) Carbon disulfide          | 76   | 7.474  | 7.474  | 0.724  | 8115060  | 396.97   | ug/L   | 97       |
| 15) Methylene chloride        | 84   | 7.644  | 7.651  | 0.740  | 644179   | 88.53    | ug/L   | 95       |
| 16) tert-Butyl methyl ether   | 73   | 7.955  | 7.956  | 0.770  | 1628571  | 98.39    | ug/L   | 100      |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 937155   | 84.07    | ug/L   | 98       |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 1034414  | 101.02   | ug/L   | 99 A     |
| 19) Vinyl acetate             | 43   | 8.419  | 8.419  | 0.815  | 4957401  | 411.58   | ug/L   | 97       |
| 20) 1,1-Dichloroethane        | 63   | 8.467  | 8.462  | 0.820  | 1131536  | 85.86    | ug/L   | 100      |
| 21) 2-Butanone                | 43   | 9.028  | 9.035  | 0.874  | 1824501  | 420.59   | ug/L   | 97       |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.095  | 9.096  | 0.881  | 662424   | 90.97    | ug/L   | 97       |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 975369   | 85.65    | ug/L   | 94       |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 286255   | 84.64    | ug/L   | 98       |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 1046814  | 80.41    | ug/L   | 98       |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 1008542  | 82.48    | ug/L   | 95       |
| 27) Cyclohexane               | 56   | 9.790  | 9.791  | 0.948  | 1302114  | 101.51   | ug/L   | 98 A     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.845  | 0.953  | 829065   | 89.36    | ug/L # | 97       |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 885373   | 77.46    | ug/L   | 99       |
| 31) 1,2-Dichloroethane        | 62   | 10.046 | 10.047 | 0.973  | 767861   | 74.59    | ug/L   | 100      |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 2322102  | 90.38    | ug/L   | 98       |
| 33) Cyclohexene               | 67   | 10.199 | 10.205 | 0.988  | 1165179  | 92.58    | ug/L   | 94       |
| 34) n-Butyl alcohol           | 56   | 10.406 | 10.406 | 1.008  | 1805461  | 10569.03 | ug/L   | 98 A     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 625829   | 84.75    | ug/L   | 98       |
| 36) 2-Pentanone               | 43   | 10.784 | 10.784 | 1.044  | 2137516  | 459.80   | ug/L   | 98       |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 637736   | 92.88    | ug/L   | 97       |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.979 | 1.063  | 1147910  | 99.09    | ug/L   | 96       |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 333886   | 82.17    | ug/L   | 93       |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.199 | 1.084  | 828207   | 86.27    | ug/L   | 99       |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.418 | 1.106  | 1440730  | 555.22   | ug/L   | 98 A     |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 997775   | 100.88   | ug/L   | 99 A     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H110.D  
Acq On : 31 Oct 2016 20:48  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-09|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD100 5UL N/A MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 01 08:09:06 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |      |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|------|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 1081802  | 498.09 | ug/L  | 95   |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 2383980  | 93.81  | ug/L  | 99   |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 855001   | 101.03 | ug/L  | 99 A |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 412313   | 98.42  | ug/L  | 98   |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 2345353  | 426.09 | ug/L  | 97   |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 753657   | 92.04  | ug/L  | 99   |
| 51)  | Tetrachloroethylene       | 164  | 12.637 | 12.638 | 0.937  | 485635   | 89.32  | ug/L  | 97   |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 587121   | 95.24  | ug/L  | 99   |
| 53)  | 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 492682   | 95.28  | ug/L  | 98   |
| 54)  | Chlorobenzene             | 112  | 13.521 | 13.522 | 1.002  | 1609435  | 92.63  | ug/L  | 99   |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.570 | 1.006  | 597047   | 88.10  | ug/L  | 97   |
| 56)  | Ethylbenzene              | 91   | 13.588 | 13.589 | 1.007  | 2689498  | 91.20  | ug/L  | 99   |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 2064657  | 188.86 | ug/L  | 96   |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 2163799  | 90.07  | ug/L  | 100  |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 1693647  | 99.67  | ug/L  | 98   |
| 61)  | Bromoform                 | 173  | 14.381 | 14.381 | 0.904  | 372992   | 102.34 | ug/L  | 98 A |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 2822223  | 96.23  | ug/L  | 99   |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.927  | 683205   | 99.96  | ug/L  | 99   |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 183892   | 90.24  | ug/L  | 91   |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.936  | 694839   | 89.20  | ug/L  | 95   |
| 67)  | n-Propylbenzene           | 91   | 14.917 | 14.918 | 0.938  | 3241800  | 89.39  | ug/L  | 100  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.070 | 15.070 | 0.947  | 2330873  | 89.14  | ug/L  | 98   |
| 69)  | 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 646552   | 84.80  | ug/L  | 94   |
| 70)  | 4-Chlorotoluene           | 91   | 15.161 | 15.162 | 0.953  | 2145769  | 89.71  | ug/L  | 98   |
| 71)  | tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 527192   | 102.49 | ug/L  | 94 A |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.478 | 15.479 | 0.973  | 2449794  | 90.84  | ug/L  | 89   |
| 73)  | sec-Butylbenzene          | 105  | 15.667 | 15.661 | 0.985  | 3093536  | 90.86  | ug/L  | 98   |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.992  | 2642688  | 91.12  | ug/L  | 98   |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.996  | 1412085  | 90.75  | ug/L  | 97   |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.929 | 15.930 | 1.002  | 1402896  | 89.82  | ug/L  | 97   |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.020  | 2620291  | 92.07  | ug/L  | 98   |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.028  | 1348635  | 93.25  | ug/L  | 97   |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.228 | 17.228 | 1.083  | 141637   | 109.13 | ug/L  | 95 A |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 900105   | 84.72  | ug/L  | 100  |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 524630   | 74.20  | ug/L  | 100  |
| 82)  | Naphthalene               | 128  | 18.685 | 18.691 | 1.175  | 2006874  | 101.68 | ug/L  | 99 A |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.032 | 19.033 | 1.197  | 804330   | 84.59  | ug/L  | 98   |
| 85)  | Acrolein                  |      | 6.846  | 6.889  | 0.663  | 0m       | N.D.   | d     |      |
| 86)  | Trichlorotrifluoroethane  |      | 7.071  | 7.090  | 0.685  | 0m       | N.D.   | d     |      |
| 87)  | Isopropyl Alcohol         |      | 7.059  | 7.145  | 0.684  | 0m       | N.D.   | d     |      |
| 88)  | Allyl chloride            |      | 7.407  | 7.504  | 0.717  | 0m       | N.D.   | d     |      |
| 89)  | tert-Butyl Alcohol        |      | 0.000  | 7.639  | 0.000  | 0        | N.D.   |       |      |
| 90)  | Acrylonitrile             |      | 7.955  | 7.882  | 0.770  | 0m       | N.D.   | d     |      |
| 91)  | Isopropyl ether           |      | 8.419  | 8.456  | 0.815  | 0m       | N.D.   | d     |      |
| 92)  | 2-Chloro-1,3-butadiene    |      | 8.583  | 8.577  | 0.831  | 0m       | N.D.   | d     |      |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.   |       |      |
| 94)  | Ethyl acetate             |      | 9.028  | 9.053  | 0.874  | 0m       | N.D.   | d     |      |
| 95)  | Propionitrile             |      | 9.034  | 9.096  | 0.875  | 0m       | N.D.   | d     |      |
| 96)  | Methacrylonitrile         |      | 0.000  | 9.278  | 0.000  | 0        | N.D.   |       |      |
| 97)  | Tetrahydrofuran           |      | 9.406  | 9.419  | 0.911  | 0m       | N.D.   | d     |      |
| 98)  | Isobutyl alcohol          |      | 9.790  | 9.717  | 0.948  | 0m       | N.D.   | d     |      |
| 99)  | Methyl tert-amyl ether    |      | 10.077 | 10.102 | 0.976  | 0m       | N.D.   | d     |      |
| 100) | Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D.   | d     |      |
| 101) | 1,4-Dioxane               |      | 11.089 | 11.034 | 1.074  | 0m       | N.D.   | d     |      |
| 102) | 2-Nitropropane            |      | 11.418 | 11.388 | 1.106  | 0m       | N.D.   | d     |      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H110.D  
Acq On : 31 Oct 2016 20:48  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-09|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD100 5UL N/A MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 01 08:09:06 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 12.137 | 12.186 | 0.900  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 13.442 | 13.394 | 0.845  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.485 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.625 | 14.625 | 0.920  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.911 | 14.796 | 0.938  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 15.503 | 15.503 | 0.975  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 16.033 | 16.039 | 1.008  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 16.533 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path : C:\msdchem\1\data\103116V4\
Data File : 4H110.D
Acq On    : 31 Oct 2016   20:48
Operator  : ACJ
InstName  : VOA4
Sample    : |W4VM161031-09|ICAL|1|VOAF|1|VOA8260BL|
Misc      : VSTD100 5UL N/A MIX[A]
ALS Vial  : 10      Sample Multiplier: 1
```

## Continuing Calibration Summary

**Client SDG:** 409254  
**Instrument ID:** VOA4.I  
**Injection Date:** 31-OCT-16 21:46  
**Data File:** 103116V4\4H112.D  
**Init. Cal. Date(s)** 31-OCT-16 16:55 - 01-NOV-16 00:4  
**Lab Sample ID** W4VM161031-10  
**Method:** 103116V4\VOA4-8260-103116.M  
**Quant Type** ISTD  
**Method Update:** 01-NOV-16 08:22

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| S 1,2-Dichloroethane-d4     | 0.2717         | 0.26944 |             | .01    |      | -0.8318     | 60  |         | Averaged   |      |
| S Toluene-d8                | 1.4259         | 1.4428  |             | .01    |      | 1.18522     | 60  |         | Averaged   |      |
| S Bromofluorobenzene        | 1.0849         | 1.07816 |             | .01    |      | -0.62126    | 60  |         | Averaged   |      |
| Dichlorodifluoromethane     | 0.3012         | 0.31556 |             | .01    |      | 4.7676      | 60  |         | Averaged   |      |
| Chloromethane               | 0.3326         | 0.31103 |             | .1     |      | -6.48527    | 60  |         | Averaged   | SPCC |
| Vinyl chloride              | 0.2686         | 0.26926 |             | .01    |      | 0.24572     | 20  |         | Averaged   | CCC  |
| Bromomethane                | 0.2758         | 0.27518 |             | .01    |      | -0.2248     | 60  |         | Averaged   |      |
| Chloroethane                | 0.2682         | 0.26659 |             | .01    |      | -0.6003     | 60  |         | Averaged   |      |
| Trichlorofluoromethane      | 0.4491         | 0.45021 |             | .01    |      | 0.24716     | 60  |         | Averaged   |      |
| Acetone                     | 0.1597         | 0.13643 |             | .01    |      | -14.57107   | 60  |         | Averaged   |      |
| 1,1-Dichloroethylene        | 0.5062         | 0.44604 |             | .01    |      | -11.88463   | 20  |         | Averaged   | CCC  |
| Methyl acetate              | 0.1984         | 0.1836  |             | .01    |      | -7.45968    | 60  |         | Averaged   |      |
| Carbon disulfide            | 0.9959         | 0.89991 |             | .01    |      | -9.63852    | 60  |         | Averaged   |      |
| Methylene chloride          | 0.3471         | 0.30692 |             | .01    |      | -11.57591   | 60  |         | Averaged   |      |
| tert-Butyl methyl ether     | 0.8025         | 0.78377 |             | .01    |      | -2.33396    | 60  |         | Averaged   |      |
| trans-1,2-Dichloroethylene  | 0.4779         | 0.45629 |             | .01    |      | -4.52187    | 60  |         | Averaged   |      |
| 1,1-Dichloroethane          | 0.5781         | 0.55219 |             | .1     |      | -4.48192    | 60  |         | Averaged   | SPCC |
| 2-Butanone                  | 0.2003         | 0.17925 |             | .01    |      | -10.50924   | 60  |         | Averaged   |      |
| cis-1,2-Dichloroethylene    | 0.3342         | 0.32894 |             | .01    |      | -1.57391    | 60  |         | Averaged   |      |
| Bromochloromethane          | 0.1394         | 0.13635 |             | .01    |      | -2.18795    | 60  |         | Averaged   |      |
| Chloroform                  | 0.5279         | 0.50662 |             | .01    |      | -4.03107    | 20  |         | Averaged   | CCC  |
| 1,1,1-Trichloroethane       | 0.5068         | 0.4647  |             | .01    |      | -8.30702    | 60  |         | Averaged   |      |
| Cyclohexane                 | 0.6853         | 0.6467  |             | .01    |      | -5.63257    | 60  |         | Averaged   |      |
| Carbon tetrachloride        | 0.4336         | 0.41363 |             | .01    |      | -4.60563    | 60  |         | Averaged   |      |
| 1,2-Dichloroethane          | 0.3801         | 0.36709 |             | .01    |      | -3.42278    | 60  |         | Averaged   |      |
| Benzene                     | 1.2427         | 1.15599 |             | .01    |      | -6.97755    | 60  |         | Averaged   |      |
| Trichloroethylene           | 0.3222         | 0.30742 |             | .01    |      | -4.58721    | 60  |         | Averaged   |      |
| 1,2-Dichloropropane         | 0.3266         | 0.32015 |             | .01    |      | -1.97489    | 20  |         | Averaged   | CCC  |
| Methylcyclohexane           | 0.6123         | 0.58609 |             | .01    |      | -4.28058    | 60  |         | Averaged   |      |
| Bromodichloromethane        | 0.3933         | 0.3927  |             | .01    |      | -0.15256    | 60  |         | Averaged   |      |
| cis-1,3-Dichloropropylene   | 0.486          | 0.4732  |             | .01    |      | -2.63374    | 60  |         | Averaged   |      |
| 4-Methyl-2-pentanone        | 0.1572         | 0.14445 |             | .01    |      | -8.11069    | 60  |         | Averaged   |      |
| Toluene                     | 1.7911         | 1.69604 |             | .01    |      | -5.30735    | 20  |         | Averaged   | CCC  |
| trans-1,3-Dichloropropylene | 0.565          | 0.57502 |             | .01    |      | 1.77345     | 60  |         | Averaged   |      |
| 1,1,2-Trichloroethane       | 0.2825         | 0.27238 |             | .01    |      | -3.5823     | 60  |         | Averaged   |      |
| 2-Hexanone                  | 0.391          | 0.33753 |             | .01    |      | -13.67519   | 60  |         | Averaged   |      |
| Tetrachloroethylene         | 0.3509         | 0.32657 |             | .01    |      | -6.9336     | 60  |         | Averaged   |      |

## Continuing Calibration Summary

**Instrument ID:** VOA4.I  
**Data File:** 103116V4\4H112.D  
**Lab Sample ID** W4VM161031-10  
**Quant Type** ISTD

**Injection Date:** 31-OCT-16 21:46  
**Init. Cal. Date(s)** 31-OCT-16 16:55 01-NOV-16 00:4  
**Method:** 103116V4\VOA4-8260-103116.M

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| Dibromochloromethane        | 0.3688         | 0.38291 |             | .01    |      | 3.82592     | 60  |         | Averaged   |      |
| 1,2-Dibromoethane           | 0.325          | 0.32405 |             | .01    |      | -0.29231    | 60  |         | Averaged   |      |
| Chlorobenzene               | 1.164          | 1.10087 |             | .3     |      | -5.42354    | 60  |         | Averaged   | SPCC |
| Ethylbenzene                | 2.0807         | 1.97216 |             | .01    |      | -5.21651    | 20  |         | Averaged   | CCC  |
| m,p-Xylenes                 | 0.7968         | 0.7462  |             | .01    |      | -6.3504     | 60  |         | Averaged   |      |
| Styrene                     | 1.2786         | 1.21531 |             | .01    |      | -4.94995    | 60  |         | Averaged   |      |
| o-Xylene                    | 1.7019         | 1.55979 |             | .01    |      | -8.35008    | 60  |         | Averaged   |      |
| Bromoform                   | 0.414          | 0.4384  |             | .1     |      | 5.89372     | 60  |         | Averaged   | SPCC |
| Isopropylbenzene            | 4.0606         | 3.83771 |             | .01    |      | -5.48909    | 60  |         | Averaged   |      |
| 1,1,2,2-Tetrachloroethane   | 0.8815         | 0.82725 |             | .3     |      | -6.15428    | 60  |         | Averaged   | SPCC |
| 1,3-Dichlorobenzene         | 1.9316         | 1.79889 |             | .01    |      | -6.87047    | 60  |         | Averaged   |      |
| 1,4-Dichlorobenzene         | 1.8924         | 1.79726 |             | .01    |      | -5.02748    | 60  |         | Averaged   |      |
| 1,2-Dichlorobenzene         | 1.7934         | 1.71021 |             | .01    |      | -4.63868    | 60  |         | Averaged   |      |
| 1,2-Dibromo-3-chloropropane | 0.1578         | 0.16274 |             | .01    |      | 3.13054     | 60  |         | Averaged   |      |
| 1,2,4-Trichlorobenzene      | 1.1732         | 1.10273 |             | .01    |      | -6.00665    | 60  |         | Averaged   |      |
| 1,2,3-Trichlorobenzene      | 1.012          | 0.97789 |             | .01    |      | -3.37055    | 60  |         | Averaged   |      |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H112.D  
Acq On : 31 Oct 2016 21:46  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-10|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5UL N/A MIX[A]  
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 01 10:41:27 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 998619   | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 720659   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.905 | 1.000  | 380235   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 998619   | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 720659   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 380235   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 269065  | 49.57 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1039767 | 50.59 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 409956  | 49.69 | ug/L | 0.00 |

| Target Compounds              |      |        |        |        |          |         |       |        |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
| 2) Dichlorodifluoromethane    | 85   | 4.749  | 4.749  | 0.460  | 315129   | 52.39   | ug/L  | 100    |
| 3) Chloromethane              | 50   | 5.094  | 5.094  | 0.493  | 310604   | 46.75   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 5.330  | 5.322  | 0.516  | 268893   | 50.12   | ug/L  | 100    |
| 5) Bromomethane               | 94   | 5.887  | 5.887  | 0.570  | 274801   | 49.89   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 6.005  | 6.005  | 0.581  | 266219   | 49.71   | ug/L  | 99     |
| 7) Trichlorofluoromethane     | 101  | 6.371  | 6.370  | 0.617  | 449588   | 50.13   | ug/L  | 99     |
| 8) Ethyl ether                | 59   | 6.712  | 6.706  | 0.650  | 252214   | 49.85   | ug/L  | 99     |
| 9) Acetone                    | 43   | 7.066  | 7.059  | 0.684  | 681208   | 213.55  | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      | 61   | 7.096  | 7.090  | 0.687  | 445427   | 44.06   | ug/L  | 99     |
| 11) Iodomethane               | 142  | 7.334  | 7.327  | 0.710  | 2283669  | 232.35  | ug/L  | 100    |
| 12) Acetonitrile              | 41   | 7.407  | 7.407  | 0.717  | 827380   | 1156.92 | ug/L  | 99     |
| 13) Methyl acetate            | 43   | 7.456  | 7.456  | 0.722  | 916735   | 231.39  | ug/L  | 99     |
| 14) Carbon disulfide          | 76   | 7.468  | 7.468  | 0.723  | 4493344  | 225.91  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 7.645  | 7.645  | 0.740  | 306499   | 44.21   | ug/L  | 97     |
| 16) tert-Butyl methyl ether   | 73   | 7.956  | 7.955  | 0.770  | 782683   | 48.83   | ug/L  | 99     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 455660   | 47.73   | ug/L  | 100    |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 467632   | 43.87   | ug/L  | 99     |
| 19) Vinyl acetate             | 43   | 8.419  | 8.413  | 0.815  | 2773619  | 251.87  | ug/L  | 100    |
| 20) 1,1-Dichloroethane        | 63   | 8.468  | 8.461  | 0.820  | 551423   | 47.76   | ug/L  | 100    |
| 21) 2-Butanone                | 43   | 9.035  | 9.028  | 0.875  | 895027   | 223.77  | ug/L  | 99     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.096  | 9.095  | 0.881  | 328484   | 49.21   | ug/L  | 99     |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 463380   | 46.70   | ug/L  | 100    |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 136159   | 48.91   | ug/L  | 99     |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 505923   | 47.99   | ug/L  | 100    |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 464059   | 45.85   | ug/L  | 100    |
| 27) Cyclohexane               | 56   | 9.791  | 9.790  | 0.948  | 645806   | 47.19   | ug/L  | 100    |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.839  | 0.953  | 398555   | 46.40   | ug/L  | 99     |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 413058   | 47.69   | ug/L  | 100    |
| 31) 1,2-Dichloroethane        | 62   | 10.047 | 10.046 | 0.973  | 366580   | 48.29   | ug/L  | 100    |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 1154389  | 46.51   | ug/L  | 100    |
| 33) Cyclohexene               | 67   | 10.205 | 10.199 | 0.988  | 617553   | 50.79   | ug/L  | 100    |
| 34) n-Butyl alcohol           | 56   | 10.406 | 10.400 | 1.008  | 868870   | 5185.58 | ug/L  | 99     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 307000   | 47.70   | ug/L  | 99     |
| 36) 2-Pentanone               | 43   | 10.784 | 10.778 | 1.044  | 1052076  | 244.76  | ug/L  | 99     |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 319708   | 49.02   | ug/L  | 100    |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.973 | 1.063  | 585281   | 47.86   | ug/L  | 100    |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 159421   | 47.76   | ug/L  | 99     |
| 40) Bromodichloromethane      | 83   | 11.199 | 11.193 | 1.084  | 392160   | 49.92   | ug/L  | 99     |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.412 | 1.106  | 593365   | 199.94  | ug/L  | 100    |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 472547   | 48.68   | ug/L  | 99     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H112.D  
Acq On : 31 Oct 2016 21:46  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-10|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5UL N/A MIX[A]  
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 01 10:41:27 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 520513   | 229.68 | ug/L  | 100 |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 1222267  | 47.35  | ug/L  | 100 |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 414390   | 50.89  | ug/L  | 100 |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 196293   | 48.21  | ug/L  | 99  |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 1216206  | 215.82 | ug/L  | 99  |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 385365   | 48.51  | ug/L  | 96  |
| 51)  | Tetrachloroethylene       | 164  | 12.638 | 12.637 | 0.937  | 235347   | 46.53  | ug/L  | 100 |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 275949   | 51.92  | ug/L  | 100 |
| 53)  | 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 233528   | 49.85  | ug/L  | 99  |
| 54)  | Chlorobenzene             | 112  | 13.522 | 13.521 | 1.002  | 793352   | 47.29  | ug/L  | 99  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.576 | 1.006  | 296975   | 49.90  | ug/L  | 99  |
| 56)  | Ethylbenzene              | 91   | 13.589 | 13.588 | 1.007  | 1421255  | 47.39  | ug/L  | 100 |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 1075508  | 93.66  | ug/L  | 100 |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 1124074  | 45.82  | ug/L  | 100 |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 875823   | 47.52  | ug/L  | 100 |
| 61)  | Bromoform                 | 173  | 14.381 | 14.381 | 0.904  | 166696   | 52.94  | ug/L  | 97  |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 1459231  | 47.26  | ug/L  | 100 |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.927  | 314549   | 46.92  | ug/L  | 99  |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 85146    | 47.91  | ug/L  | 99  |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.936  | 338542   | 48.23  | ug/L  | 99  |
| 67)  | n-Propylbenzene           | 91   | 14.918 | 14.917 | 0.938  | 1681072  | 45.18  | ug/L  | 100 |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.070 | 15.070 | 0.947  | 1208694  | 46.76  | ug/L  | 100 |
| 69)  | 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 330130   | 47.15  | ug/L  | 98  |
| 70)  | 4-Chlorotoluene           | 91   | 15.162 | 15.161 | 0.953  | 1059186  | 46.05  | ug/L  | 100 |
| 71)  | tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 262582   | 48.24  | ug/L  | 99  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.479 | 15.478 | 0.973  | 1249582  | 47.08  | ug/L  | 87  |
| 73)  | sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 1629339  | 47.42  | ug/L  | 100 |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.992  | 1331665  | 46.67  | ug/L  | 100 |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.996  | 684000   | 46.56  | ug/L  | 99  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.930 | 15.929 | 1.002  | 683382   | 47.49  | ug/L  | 99  |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.020  | 1347359  | 46.53  | ug/L  | 100 |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.028  | 650281   | 47.68  | ug/L  | 99  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.228 | 17.228 | 1.083  | 61878    | 51.56  | ug/L  | 98  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 419295   | 46.99  | ug/L  | 99  |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 252426   | 49.05  | ug/L  | 100 |
| 82)  | Naphthalene               | 128  | 18.685 | 18.685 | 1.175  | 950735   | 49.02  | ug/L  | 99  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.033 | 19.033 | 1.197  | 371827   | 48.31  | ug/L  | 98  |
| 85)  | Acrolein                  |      | 6.931  | 6.895  | 0.671  | 0m       | N.D.   | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 7.096  | 0.000  | 0        | N.D.   |       |     |
| 87)  | Isopropyl Alcohol         |      | 7.157  | 7.139  | 0.693  | 0m       | N.D.   | d     |     |
| 88)  | Allyl chloride            |      | 7.407  | 7.511  | 0.717  | 0m       | N.D.   | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 7.626  | 7.639  | 0.738  | 0m       | N.D.   | d     |     |
| 90)  | Acrylonitrile             |      | 7.956  | 7.882  | 0.770  | 0m       | N.D.   | d     |     |
| 91)  | Isopropyl ether           |      | 8.419  | 8.455  | 0.815  | 0m       | N.D.   | d     |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 8.584  | 8.577  | 0.831  | 0m       | N.D.   | d     |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.   |       |     |
| 94)  | Ethyl acetate             |      | 9.035  | 9.047  | 0.875  | 0m       | N.D.   | d     |     |
| 95)  | Propionitrile             |      | 9.047  | 9.096  | 0.876  | 0m       | N.D.   | d     |     |
| 96)  | Methacrylonitrile         |      | 0.000  | 9.278  | 0.000  | 0        | N.D.   |       |     |
| 97)  | Tetrahydrofuran           |      | 9.388  | 9.419  | 0.909  | 0m       | N.D.   | d     |     |
| 98)  | Isobutyl alcohol          |      | 9.791  | 9.717  | 0.948  | 0m       | N.D.   | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 10.083 | 10.101 | 0.976  | 0m       | N.D.   | d     |     |
| 100) | Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D.   | d     |     |
| 101) | 1,4-Dioxane               |      | 11.083 | 11.034 | 1.073  | 0m       | N.D.   | d     |     |
| 102) | 2-Nitropropane            |      | 11.412 | 11.388 | 1.105  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H112.D  
Acq On : 31 Oct 2016 21:46  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-10|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5UL N/A MIX[A]  
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 01 10:41:27 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 12.138 | 12.186 | 0.900  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 13.333 | 13.387 | 0.838  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.491 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.643 | 14.631 | 0.921  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.918 | 14.796 | 0.938  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 15.509 | 15.503 | 0.975  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 0.000  | 16.039 | 0.000  | 0        | N.D. |       |
| 112) bis(2-Chloroisopropyl)... |      | 16.533 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

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Data Path   : C:\msdchem\1\data\103116V4\  
Data File  : 4H112.D  
Acq On     : 31 Oct 2016   21:46  
Operator   : ACJ  
InstName   : VOA4  
Sample     : |W4VM161031-10|ICV|1|VOAF|1|VOA8260BL|  
Misc       : ICV 5UL N/A MIX[A]  
ALS Vial   : 12      Sample Multiplier: 1
```

[illegible]

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H113.D  
Acq On : 31 Oct 2016 22:15  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-11|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD005S 5UL N/A MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 01 08:09:14 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1047201  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 751089   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 394046   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      |           |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 0d | 0.00 | ug/L | Dev (Min) |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 5.071  | 5.102  | 0.491  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.377  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.712  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 7.071  | 7.066  | 0.685  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.090  | 7.090  | 0.687  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 7.327  | 7.334  | 0.710  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 7.419  | 7.413  | 0.718  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 0.000  | 7.456  | 0.000  | 0        | N.D. |       |        |
| 14) Carbon disulfide          |      | 7.510  | 7.474  | 0.727  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 7.645  | 7.651  | 0.740  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.956  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 7.992  | 7.992  | 0.774  | 0m       | N.D. | d     |        |
| 18) Hexane                    |      | 8.272  | 8.285  | 0.801  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 8.455  | 8.419  | 0.819  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 8.449  | 8.462  | 0.818  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 9.059  | 9.035  | 0.877  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 9.089  | 9.096  | 0.880  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 9.388  | 9.400  | 0.909  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 9.729  | 9.791  | 0.942  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 9.851  | 9.845  | 0.954  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 10.040 | 10.047 | 0.972  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 10.077 | 10.077 | 0.976  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 10.205 | 10.205 | 0.988  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 10.418 | 10.406 | 1.009  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 10.717 | 10.717 | 1.038  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.784 | 10.784 | 1.044  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 10.943 | 10.955 | 1.060  | 0m       | N.D. | d     |        |
| 38) Methylcyclohexane         |      | 10.979 | 10.979 | 1.063  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 11.089 | 11.083 | 1.074  | 0m       | N.D. | d     |        |
| 40) Bromodichloromethane      |      | 11.199 | 11.199 | 1.084  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.418 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 11.650 | 11.644 | 1.128  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H113.D  
Acq On : 31 Oct 2016 22:15  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-11|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD005S 5UL N/A MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 01 08:09:14 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc       | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|------------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 11.741 | 11.735 | 0.870  | 0m       | N.D.       | d     |     |
| 46)  | Toluene                   |      | 12.034 | 12.040 | 0.892  | 0m       | N.D.       | d     |     |
| 47)  | trans-1,3-Dichloroprop... |      | 12.186 | 12.180 | 0.903  | 0m       | N.D.       | d     |     |
| 48)  | 1,1,2-Trichloroethane     |      | 12.400 | 12.400 | 0.919  | 0m       | N.D.       | d     |     |
| 49)  | 2-Hexanone                |      | 12.583 | 12.583 | 0.933  | 0m       | N.D.       | d     |     |
| 50)  | 1,3-Dichloropropane       |      | 12.601 | 12.595 | 0.934  | 0m       | N.D.       | d     |     |
| 51)  | Tetrachloroethylene       |      | 12.637 | 12.638 | 0.937  | 0m       | N.D.       | d     |     |
| 52)  | Dibromochloromethane      |      | 12.863 | 12.863 | 0.953  | 0m       | N.D.       | d     |     |
| 53)  | 1,2-Dibromoethane         |      | 13.034 | 13.034 | 0.966  | 0m       | N.D.       | d     |     |
| 54)  | Chlorobenzene             |      | 13.528 | 13.522 | 1.003  | 0m       | N.D.       | d     |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 13.570 | 13.570 | 1.006  | 0m       | N.D.       | d     |     |
| 56)  | Ethylbenzene              |      | 13.588 | 13.589 | 1.007  | 0m       | N.D.       | d     |     |
| 57)  | m,p-Xylenes               |      | 13.698 | 13.698 | 1.015  | 0m       | N.D.       | d     |     |
| 58)  | o-Xylene                  |      | 14.131 | 14.131 | 1.047  | 0m       | N.D.       | d     |     |
| 59)  | Styrene                   |      | 14.131 | 14.131 | 1.047  | 0m       | N.D.       | d     |     |
| 61)  | Bromoform                 |      | 14.381 | 14.381 | 0.904  | 0m       | N.D.       | d     |     |
| 62)  | Isopropylbenzene          |      | 14.485 | 14.491 | 0.911  | 0m       | N.D.       | d     |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 14.747 | 14.747 | 0.927  | 0m       | N.D.       | d     |     |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.       |       |     |
| 66)  | Bromobenzene              |      | 14.899 | 14.893 | 0.937  | 0m       | N.D.       | d     |     |
| 67)  | n-Propylbenzene           |      | 14.917 | 14.918 | 0.938  | 0m       | N.D.       | d     |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 15.064 | 15.070 | 0.947  | 0m       | N.D.       | d     |     |
| 69)  | 2-Chlorotoluene           |      | 15.064 | 15.064 | 0.947  | 0m       | N.D.       | d     |     |
| 70)  | 4-Chlorotoluene           |      | 15.161 | 15.162 | 0.953  | 0m       | N.D.       | d     |     |
| 71)  | tert-Butylbenzene         |      | 15.436 | 15.442 | 0.970  | 0m       | N.D.       | d     |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 15.478 | 15.479 | 0.973  | 0m       | N.D.       | d     |     |
| 73)  | sec-Butylbenzene          |      | 15.661 | 15.661 | 0.985  | 0m       | N.D.       | d     |     |
| 74)  | 4-Isopropyltoluene        |      | 15.783 | 15.783 | 0.992  | 0m       | N.D.       | d     |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.844 | 15.844 | 0.996  | 0m       | N.D.       | d     |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.929 | 15.930 | 1.002  | 0m       | N.D.       | d     |     |
| 77)  | n-Butylbenzene            |      | 16.234 | 16.228 | 1.021  | 0m       | N.D.       | d     |     |
| 78)  | 1,2-Dichlorobenzene       |      | 16.362 | 16.356 | 1.029  | 0m       | N.D.       | d     |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 17.228 | 17.228 | 1.083  | 0m       | N.D.       | d     |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 18.301 | 18.301 | 1.151  | 0m       | N.D.       | d     |     |
| 81)  | Hexachlorobutadiene       |      | 18.484 | 18.490 | 1.162  | 0m       | N.D.       | d     |     |
| 82)  | Naphthalene               |      | 18.691 | 18.691 | 1.175  | 0m       | N.D.       | d     |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 19.033 | 19.033 | 1.197  | 0m       | N.D.       | d     |     |
| 85)  | Acrolein                  | 56   | 6.895  | 6.889  | 0.668  | 5053     | 5.30 ug/L  | #     | 56  |
| 86)  | Trichlorotrifluoroethane  | 85   | 7.096  | 7.090  | 0.687  | 14942    | 4.69 ug/L  |       | 89  |
| 87)  | Isopropyl Alcohol         | 45   | 7.151  | 7.145  | 0.692  | 27274    | 68.91 ug/L | #     | 53  |
| 88)  | Allyl chloride            | 41   | 7.510  | 7.504  | 0.727  | 61661    | 5.41 ug/L  |       | 84  |
| 89)  | tert-Butyl Alcohol        | 59   | 7.638  | 7.639  | 0.740  | 41185    | 64.11 ug/L | #     | 100 |
| 90)  | Acrylonitrile             | 53   | 7.882  | 7.882  | 0.763  | 11131    | 5.74 ug/L  |       | 97  |
| 91)  | Isopropyl ether           | 45   | 8.455  | 8.456  | 0.819  | 26804    | 1.22 ug/L  | #     | 64  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 8.583  | 8.577  | 0.831  | 11620    | 1.01 ug/L  |       | 94  |
| 93)  | Ethyl tert-butyl ether    | 59   | 8.858  | 8.858  | 0.858  | 22283    | 1.15 ug/L  |       | 95  |
| 94)  | Ethyl acetate             | 43   | 9.059  | 9.053  | 0.877  | 35088    | 6.52 ug/L  |       | 97  |
| 95)  | Propionitrile             | 54   | 9.108  | 9.096  | 0.882  | 4376     | 5.61 ug/L  |       | 78  |
| 96)  | Methacrylonitrile         | 41   | 9.278  | 9.278  | 0.898  | 20104    | 6.11 ug/L  |       | 95  |
| 97)  | Tetrahydrofuran           | 42   | 9.425  | 9.419  | 0.913  | 12390    | 7.47 ug/L  |       | 91  |
| 98)  | Isobutyl alcohol          | 41   | 9.723  | 9.717  | 0.942  | 16751    | 79.79 ug/L |       | 96  |
| 99)  | Methyl tert-amyl ether    | 73   | 10.101 | 10.102 | 0.978  | 18830    | 1.33 ug/L  |       | 92  |
| 100) | Methyl methacrylate       | 69   | 10.930 | 10.925 | 1.058  | 22417    | 7.07 ug/L  |       | 92  |
| 101) | 1,4-Dioxane               | 88   | 11.046 | 11.034 | 1.070  | 3447     | 70.41 ug/L |       | 95  |
| 102) | 2-Nitropropane            | 43   | 11.388 | 11.388 | 1.103  | 9242     | 5.83 ug/L  |       | 83  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H113.D  
Acq On : 31 Oct 2016 22:15  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-11|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD005S 5UL N/A MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 01 08:09:14 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

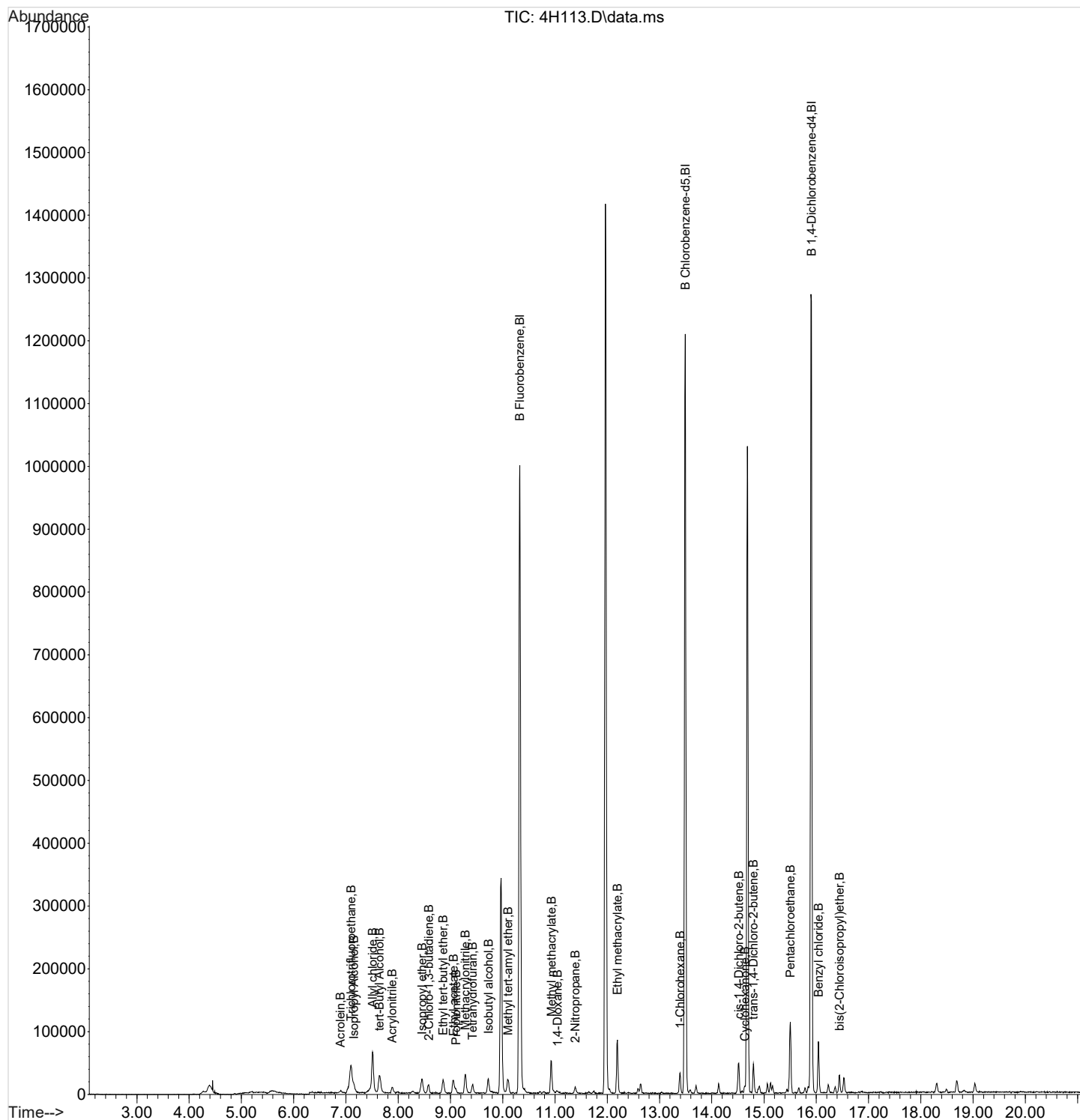
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |    |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|----|
| 104) Ethyl methacrylate        | 69   | 12.192 | 12.186 | 0.904  | 43437    | 7.91  | ug/L   | 98 |
| 106) 1-Chlorohexane            | 55   | 13.393 | 13.394 | 0.842  | 9828     | 1.48  | ug/L   | 99 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.515 | 14.509 | 0.913  | 12631    | 5.50  | ug/L   | 94 |
| 108) Cyclohexanone             | 42   | 14.631 | 14.625 | 0.920  | 4508     | 32.83 | ug/L # | 74 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.796 | 14.796 | 0.930  | 11957    | 5.52  | ug/L   | 96 |
| 110) Pentachloroethane         | 167  | 15.503 | 15.503 | 0.975  | 23077    | 5.31  | ug/L   | 96 |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.008  | 68931    | 5.58  | ug/L   | 91 |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 22681    | 7.99  | ug/L   | 95 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H113.D  
Acq On : 31 Oct 2016 22:15  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-11|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD005S 5UL N/A MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 01 08:09:14 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H114.D  
Acq On : 31 Oct 2016 22:45  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-12|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD010S 5UL N/A MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 01 08:09:17 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1077142  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 766133   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 397404   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      |           |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 0d | 0.00 | ug/L | Dev (Min) |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 5.196  | 5.102  | 0.503  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.377  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.712  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 0.000  | 7.066  | 0.000  | 0        | N.D. |       |        |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.090  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 7.328  | 7.334  | 0.710  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 7.407  | 7.413  | 0.717  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 0.000  | 7.456  | 0.000  | 0        | N.D. |       |        |
| 14) Carbon disulfide          |      | 7.517  | 7.474  | 0.728  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 7.651  | 7.651  | 0.741  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.956  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 7.986  | 7.992  | 0.773  | 0m       | N.D. | d     |        |
| 18) Hexane                    |      | 8.291  | 8.285  | 0.803  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 8.455  | 8.419  | 0.819  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 0.000  | 8.462  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                |      | 9.053  | 9.035  | 0.877  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 9.108  | 9.096  | 0.882  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 9.388  | 9.400  | 0.909  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 9.772  | 9.791  | 0.946  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 9.851  | 9.845  | 0.954  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 10.047 | 10.047 | 0.973  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 10.089 | 10.077 | 0.977  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 10.199 | 10.205 | 0.988  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 10.412 | 10.406 | 1.008  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 10.717 | 10.717 | 1.038  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.796 | 10.784 | 1.045  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 0.000  | 10.979 | 0.000  | 0        | N.D. |       |        |
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 11.199 | 11.199 | 1.084  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.418 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 11.650 | 11.644 | 1.128  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H114.D  
Acq On : 31 Oct 2016 22:45  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-12|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD010S 5UL N/A MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 01 08:09:17 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|------|---------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 11.747 | 11.735 | 0.871  | 0m       | N.D.  | d      |     |
| 46)  | Toluene                   |      | 12.040 | 12.040 | 0.892  | 0m       | N.D.  | d      |     |
| 47)  | trans-1,3-Dichloroprop... |      | 12.192 | 12.180 | 0.904  | 0m       | N.D.  | d      |     |
| 48)  | 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.  |        |     |
| 49)  | 2-Hexanone                |      | 12.595 | 12.583 | 0.934  | 0m       | N.D.  | d      |     |
| 50)  | 1,3-Dichloropropane       |      | 12.595 | 12.595 | 0.934  | 0m       | N.D.  | d      |     |
| 51)  | Tetrachloroethylene       |      | 12.637 | 12.638 | 0.937  | 0m       | N.D.  | d      |     |
| 52)  | Dibromochloromethane      |      | 12.863 | 12.863 | 0.953  | 0m       | N.D.  | d      |     |
| 53)  | 1,2-Dibromoethane         |      | 13.028 | 13.034 | 0.966  | 0m       | N.D.  | d      |     |
| 54)  | Chlorobenzene             |      | 13.521 | 13.522 | 1.002  | 0m       | N.D.  | d      |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 0.000  | 13.570 | 0.000  | 0        | N.D.  |        |     |
| 56)  | Ethylbenzene              |      | 13.589 | 13.589 | 1.007  | 0m       | N.D.  | d      |     |
| 57)  | m,p-Xylenes               |      | 13.698 | 13.698 | 1.015  | 0m       | N.D.  | d      |     |
| 58)  | o-Xylene                  |      | 14.137 | 14.131 | 1.048  | 0m       | N.D.  | d      |     |
| 59)  | Styrene                   |      | 14.131 | 14.131 | 1.047  | 0m       | N.D.  | d      |     |
| 61)  | Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.  |        |     |
| 62)  | Isopropylbenzene          |      | 14.491 | 14.491 | 0.911  | 0m       | N.D.  | d      |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 14.735 | 14.747 | 0.926  | 0m       | N.D.  | d      |     |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.  |        |     |
| 66)  | Bromobenzene              |      | 14.899 | 14.893 | 0.937  | 0m       | N.D.  | d      |     |
| 67)  | n-Propylbenzene           |      | 14.918 | 14.918 | 0.938  | 0m       | N.D.  | d      |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 15.064 | 15.070 | 0.947  | 0m       | N.D.  | d      |     |
| 69)  | 2-Chlorotoluene           |      | 15.064 | 15.064 | 0.947  | 0m       | N.D.  | d      |     |
| 70)  | 4-Chlorotoluene           |      | 15.161 | 15.162 | 0.953  | 0m       | N.D.  | d      |     |
| 71)  | tert-Butylbenzene         |      | 15.503 | 15.442 | 0.975  | 0m       | N.D.  | d      |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 15.485 | 15.479 | 0.974  | 0m       | N.D.  | d      |     |
| 73)  | sec-Butylbenzene          |      | 15.661 | 15.661 | 0.985  | 0m       | N.D.  | d      |     |
| 74)  | 4-Isopropyltoluene        |      | 15.777 | 15.783 | 0.992  | 0m       | N.D.  | d      |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.844 | 15.844 | 0.996  | 0m       | N.D.  | d      |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.930 | 15.930 | 1.002  | 0m       | N.D.  | d      |     |
| 77)  | n-Butylbenzene            |      | 16.228 | 16.228 | 1.020  | 0m       | N.D.  | d      |     |
| 78)  | 1,2-Dichlorobenzene       |      | 16.368 | 16.356 | 1.029  | 0m       | N.D.  | d      |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.  |        |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 18.307 | 18.301 | 1.151  | 0m       | N.D.  | d      |     |
| 81)  | Hexachlorobutadiene       |      | 18.484 | 18.490 | 1.162  | 0m       | N.D.  | d      |     |
| 82)  | Naphthalene               |      | 18.691 | 18.691 | 1.175  | 0m       | N.D.  | d      |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 19.039 | 19.033 | 1.197  | 0m       | N.D.  | d      |     |
| 85)  | Acrolein                  | 56   | 6.901  | 6.889  | 0.668  | 8341     | 8.51  | ug/L   | 77  |
| 86)  | Trichlorotrifluoroethane  | 85   | 7.096  | 7.090  | 0.687  | 19505    | 5.95  | ug/L   | 96  |
| 87)  | Isopropyl Alcohol         | 45   | 7.145  | 7.145  | 0.692  | 29153    | 71.61 | ug/L # | 53  |
| 88)  | Allyl chloride            | 41   | 7.510  | 7.504  | 0.727  | 88417    | 7.54  | ug/L   | 89  |
| 89)  | tert-Butyl Alcohol        | 59   | 7.638  | 7.639  | 0.740  | 42463    | 64.26 | ug/L # | 100 |
| 90)  | Acrylonitrile             | 53   | 7.882  | 7.882  | 0.763  | 13625    | 6.83  | ug/L   | 97  |
| 91)  | Isopropyl ether           | 45   | 8.455  | 8.456  | 0.819  | 35643    | 1.57  | ug/L   | 90  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 8.577  | 8.577  | 0.831  | 14965    | 1.26  | ug/L   | 99  |
| 93)  | Ethyl tert-butyl ether    | 59   | 8.858  | 8.858  | 0.858  | 28876    | 1.44  | ug/L   | 98  |
| 94)  | Ethyl acetate             | 43   | 9.053  | 9.053  | 0.877  | 39362    | 7.11  | ug/L   | 98  |
| 95)  | Propionitrile             | 54   | 9.096  | 9.096  | 0.881  | 5331     | 6.65  | ug/L   | 61  |
| 96)  | Methacrylonitrile         | 41   | 9.284  | 9.278  | 0.899  | 25597    | 7.56  | ug/L   | 96  |
| 97)  | Tetrahydrofuran           | 42   | 9.419  | 9.419  | 0.912  | 13128    | 7.69  | ug/L   | 91  |
| 98)  | Isobutyl alcohol          | 41   | 9.723  | 9.717  | 0.942  | 17727    | 82.10 | ug/L   | 88  |
| 99)  | Methyl tert-amyl ether    | 73   | 10.101 | 10.102 | 0.978  | 23940    | 1.64  | ug/L   | 96  |
| 100) | Methyl methacrylate       | 69   | 10.924 | 10.925 | 1.058  | 24752    | 7.59  | ug/L   | 85  |
| 101) | 1,4-Dioxane               | 88   | 11.034 | 11.034 | 1.068  | 3620     | 71.89 | ug/L   | 94  |
| 102) | 2-Nitropropane            | 43   | 11.388 | 11.388 | 1.103  | 10660    | 6.54  | ug/L   | 99  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H114.D  
Acq On : 31 Oct 2016 22:45  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-12|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD010S 5UL N/A MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 01 08:09:17 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

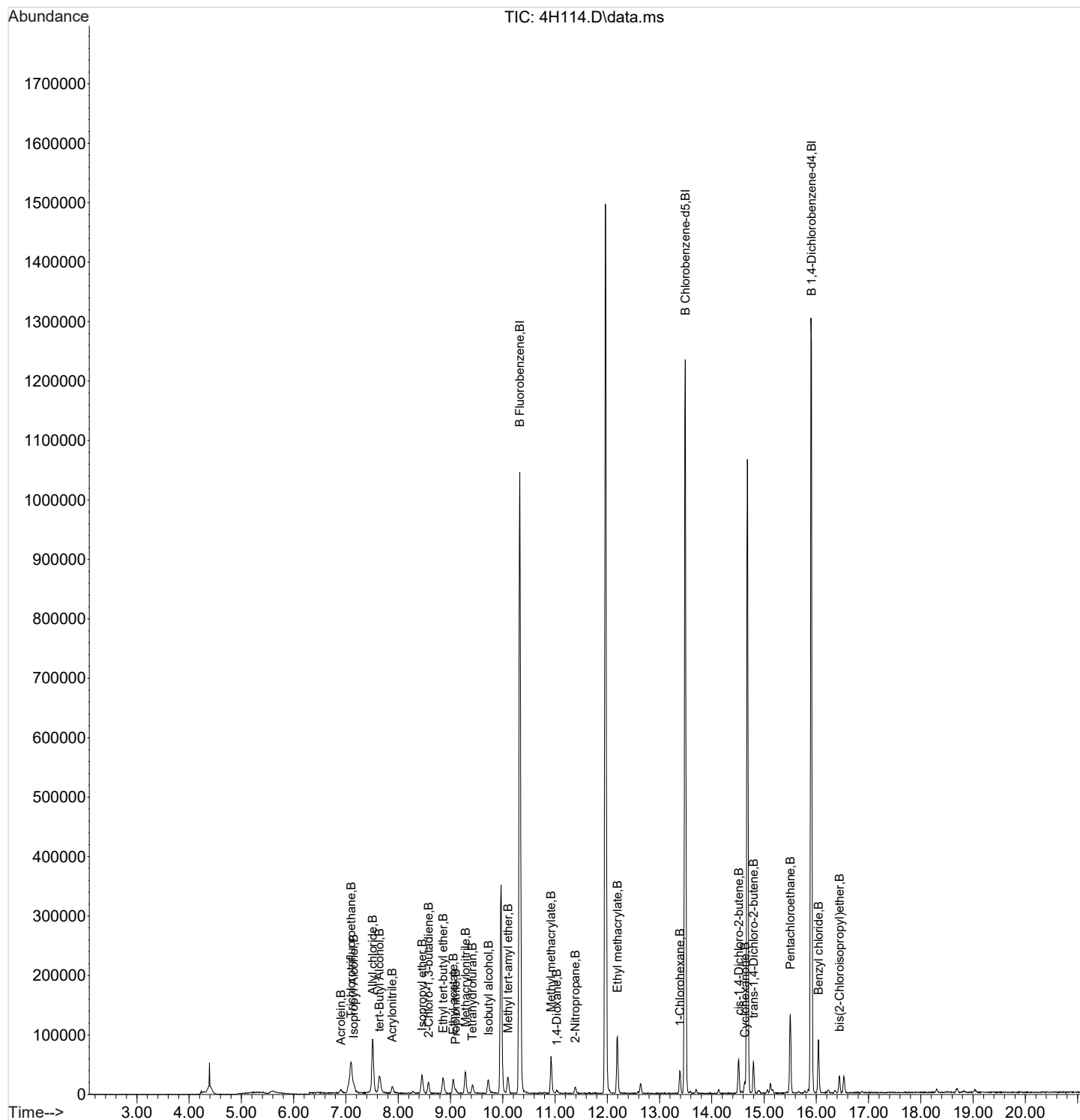
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |    |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|----|
| 104) Ethyl methacrylate        | 69   | 12.192 | 12.186 | 0.904  | 49573    | 8.85  | ug/L  | 96 |
| 106) 1-Chlorohexane            | 55   | 13.387 | 13.394 | 0.842  | 11276    | 1.68  | ug/L  | 98 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.515 | 14.509 | 0.913  | 14930    | 6.45  | ug/L  | 93 |
| 108) Cyclohexanone             | 42   | 14.631 | 14.625 | 0.920  | 6818     | 49.23 | ug/L  | 96 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.802 | 14.796 | 0.931  | 13071    | 5.98  | ug/L  | 94 |
| 110) Pentachloroethane         | 167  | 15.503 | 15.503 | 0.975  | 27748    | 6.33  | ug/L  | 99 |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.008  | 77370    | 6.21  | ug/L  | 93 |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 22934    | 8.01  | ug/L  | 94 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H114.D  
Acq On : 31 Oct 2016 22:45  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-12|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD010S 5UL N/A MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 01 08:09:17 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H115.D  
Acq On : 31 Oct 2016 23:14  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-13|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD050S 5UL N/A MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 01 08:09:21 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1040815  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 750545   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 392087   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      |           |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 0d | 0.00 | ug/L | Dev (Min) |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 5.086  | 5.102  | 0.493  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.377  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.712  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 6.998  | 7.066  | 0.678  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.078  | 7.090  | 0.685  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 7.309  | 7.334  | 0.708  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 7.358  | 7.413  | 0.713  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 0.000  | 7.456  | 0.000  | 0        | N.D. |       |        |
| 14) Carbon disulfide          |      | 7.510  | 7.474  | 0.727  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 7.645  | 7.651  | 0.740  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.956  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.992  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    |      | 8.285  | 8.285  | 0.802  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 8.455  | 8.419  | 0.819  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 8.571  | 8.462  | 0.830  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 9.053  | 9.035  | 0.877  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 9.102  | 9.096  | 0.881  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 9.400  | 9.400  | 0.910  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 9.833  | 9.791  | 0.952  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 0.000  | 9.845  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 9.882  | 9.882  | 0.957  | 0m       | N.D. | d     |        |
| 31) 1,2-Dichloroethane        |      | 0.000  | 10.047 | 0.000  | 0        | N.D. |       |        |
| 32) Benzene                   |      | 10.077 | 10.077 | 0.976  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 10.321 | 10.205 | 0.999  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 10.400 | 10.406 | 1.007  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 10.717 | 10.717 | 1.038  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.784 | 10.784 | 1.044  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 10.924 | 10.979 | 1.058  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 0.000  | 11.199 | 0.000  | 0        | N.D. |       |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.418 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 11.644 | 11.644 | 1.128  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H115.D  
Acq On : 31 Oct 2016 23:14  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-13|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD050S 5UL N/A MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 01 08:09:21 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units  |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|--------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 0.000  | 11.735 | 0.000  | 0        | N.D.   |        |     |
| 46)  | Toluene                   |      | 12.046 | 12.040 | 0.893  | 0m       | N.D.   | d      |     |
| 47)  | trans-1,3-Dichloroprop... |      | 12.192 | 12.180 | 0.904  | 0m       | N.D.   | d      |     |
| 48)  | 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.   |        |     |
| 49)  | 2-Hexanone                |      | 12.583 | 12.583 | 0.933  | 0m       | N.D.   | d      |     |
| 50)  | 1,3-Dichloropropane       |      | 0.000  | 12.595 | 0.000  | 0        | N.D.   |        |     |
| 51)  | Tetrachloroethylene       |      | 12.637 | 12.638 | 0.937  | 0m       | N.D.   | d      |     |
| 52)  | Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.   |        |     |
| 53)  | 1,2-Dibromoethane         |      | 13.028 | 13.034 | 0.966  | 0m       | N.D.   | d      |     |
| 54)  | Chlorobenzene             |      | 13.521 | 13.522 | 1.002  | 0m       | N.D.   | d      |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 0.000  | 13.570 | 0.000  | 0        | N.D.   |        |     |
| 56)  | Ethylbenzene              |      | 13.582 | 13.589 | 1.007  | 0m       | N.D.   | d      |     |
| 57)  | m,p-Xylenes               |      | 13.692 | 13.698 | 1.015  | 0m       | N.D.   | d      |     |
| 58)  | o-Xylene                  |      | 14.125 | 14.131 | 1.047  | 0m       | N.D.   | d      |     |
| 59)  | Styrene                   |      | 14.131 | 14.131 | 1.047  | 0m       | N.D.   | d      |     |
| 61)  | Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.   |        |     |
| 62)  | Isopropylbenzene          |      | 14.497 | 14.491 | 0.912  | 0m       | N.D.   | d      |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 14.765 | 14.747 | 0.929  | 0m       | N.D.   | d      |     |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.   |        |     |
| 66)  | Bromobenzene              |      | 14.893 | 14.893 | 0.937  | 0m       | N.D.   | d      |     |
| 67)  | n-Propylbenzene           |      | 14.911 | 14.918 | 0.938  | 0m       | N.D.   | d      |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 15.070 | 15.070 | 0.948  | 0m       | N.D.   | d      |     |
| 69)  | 2-Chlorotoluene           |      | 15.064 | 15.064 | 0.947  | 0m       | N.D.   | d      |     |
| 70)  | 4-Chlorotoluene           |      | 15.167 | 15.162 | 0.954  | 0m       | N.D.   | d      |     |
| 71)  | tert-Butylbenzene         |      | 15.503 | 15.442 | 0.975  | 0m       | N.D.   | d      |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 15.485 | 15.479 | 0.974  | 0m       | N.D.   | d      |     |
| 73)  | sec-Butylbenzene          |      | 15.655 | 15.661 | 0.985  | 0m       | N.D.   | d      |     |
| 74)  | 4-Isopropyltoluene        |      | 15.783 | 15.783 | 0.993  | 0m       | N.D.   | d      |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.844 | 15.844 | 0.997  | 0m       | N.D.   | d      |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.930 | 15.930 | 1.002  | 0m       | N.D.   | d      |     |
| 77)  | n-Butylbenzene            |      | 16.295 | 16.228 | 1.025  | 0m       | N.D.   | d      |     |
| 78)  | 1,2-Dichlorobenzene       |      | 16.350 | 16.356 | 1.028  | 0m       | N.D.   | d      |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.   |        |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 18.307 | 18.301 | 1.151  | 0m       | N.D.   | d      |     |
| 81)  | Hexachlorobutadiene       |      | 0.000  | 18.490 | 0.000  | 0        | N.D.   |        |     |
| 82)  | Naphthalene               |      | 18.697 | 18.691 | 1.176  | 0m       | N.D.   | d      |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 19.033 | 19.033 | 1.197  | 0m       | N.D.   | d      |     |
| 85)  | Acrolein                  | 56   | 6.901  | 6.889  | 0.668  | 46797    | 49.43  | ug/L   | 99  |
| 86)  | Trichlorotrifluoroethane  | 85   | 7.096  | 7.090  | 0.687  | 126958   | 40.06  | ug/L   | 95  |
| 87)  | Isopropyl Alcohol         | 45   | 7.145  | 7.145  | 0.692  | 228789   | 581.64 | ug/L   | 91  |
| 88)  | Allyl chloride            | 41   | 7.510  | 7.504  | 0.727  | 575622   | 50.82  | ug/L   | 89  |
| 89)  | tert-Butyl Alcohol        | 59   | 7.638  | 7.639  | 0.740  | 336042   | 526.32 | ug/L # | 100 |
| 90)  | Acrylonitrile             | 53   | 7.882  | 7.882  | 0.763  | 97958    | 50.84  | ug/L   | 100 |
| 91)  | Isopropyl ether           | 45   | 8.455  | 8.456  | 0.819  | 233874   | 10.68  | ug/L   | 96  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 8.577  | 8.577  | 0.831  | 100405   | 8.76   | ug/L   | 99  |
| 93)  | Ethyl tert-butyl ether    | 59   | 8.858  | 8.858  | 0.858  | 199113   | 10.30  | ug/L   | 100 |
| 94)  | Ethyl acetate             | 43   | 9.053  | 9.053  | 0.877  | 269952   | 50.47  | ug/L   | 98  |
| 95)  | Propionitrile             | 54   | 9.095  | 9.096  | 0.881  | 38428    | 49.60  | ug/L   | 98  |
| 96)  | Methacrylonitrile         | 41   | 9.284  | 9.278  | 0.899  | 168736   | 51.58  | ug/L   | 97  |
| 97)  | Tetrahydrofuran           | 42   | 9.419  | 9.419  | 0.912  | 92541    | 56.11  | ug/L   | 92  |
| 98)  | Isobutyl alcohol          | 41   | 9.717  | 9.717  | 0.941  | 110106   | 527.71 | ug/L   | 91  |
| 99)  | Methyl tert-amyl ether    | 73   | 10.101 | 10.102 | 0.978  | 159711   | 11.33  | ug/L   | 99  |
| 100) | Methyl methacrylate       | 69   | 10.924 | 10.925 | 1.058  | 182704   | 57.97  | ug/L   | 91  |
| 101) | 1,4-Dioxane               | 88   | 11.034 | 11.034 | 1.068  | 29270    | 601.55 | ug/L   | 99  |
| 102) | 2-Nitropropane            | 43   | 11.388 | 11.388 | 1.103  | 75958    | 48.20  | ug/L   | 97  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H115.D  
Acq On : 31 Oct 2016 23:14  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-13|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD050S 5UL N/A MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 01 08:09:21 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

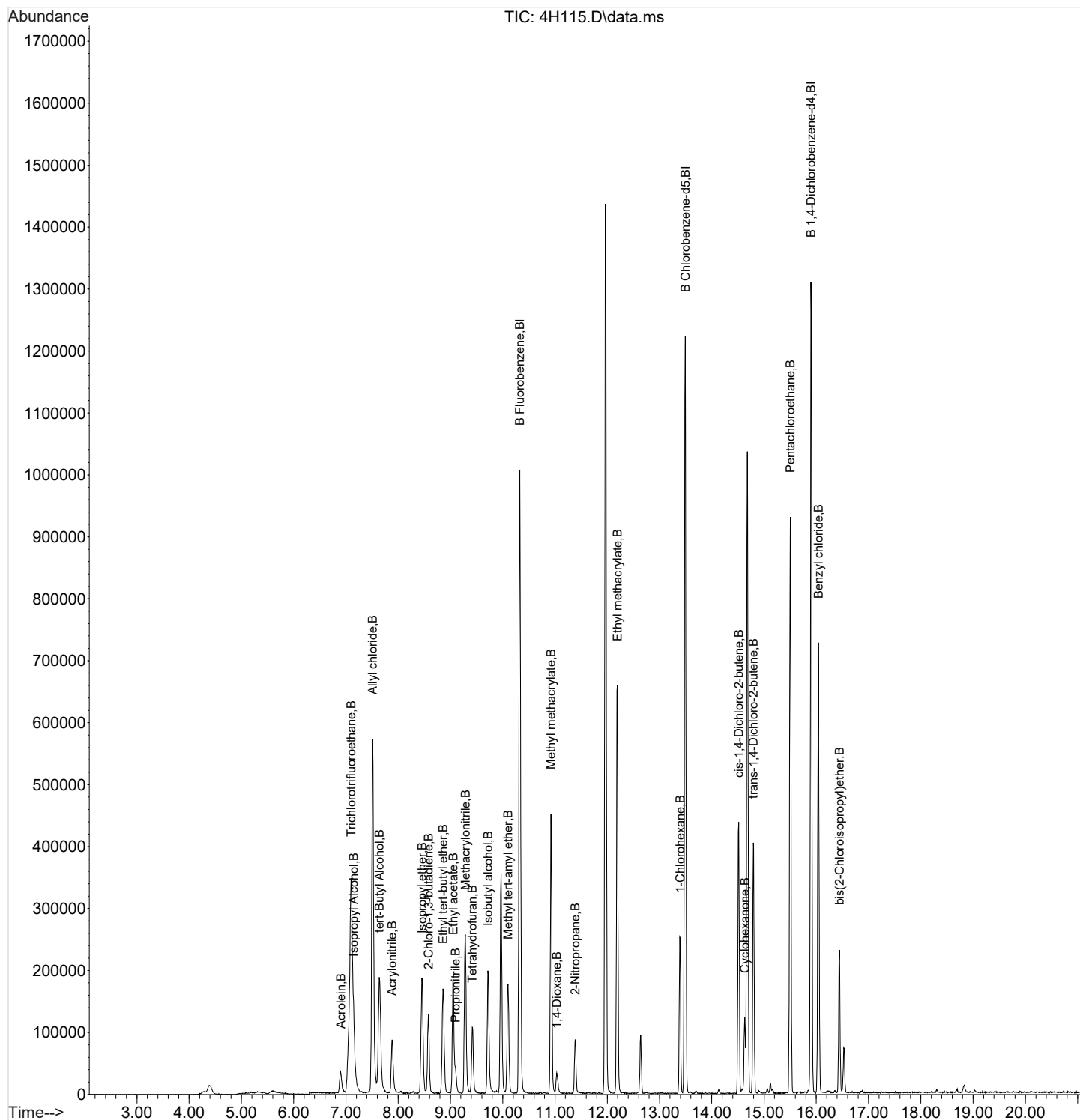
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |    |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|----|
| 104) Ethyl methacrylate        | 69   | 12.192 | 12.186 | 0.904  | 361510   | 65.91  | ug/L  | 99 |
| 106) 1-Chlorohexane            | 55   | 13.393 | 13.394 | 0.842  | 72061    | 10.90  | ug/L  | 97 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.515 | 14.509 | 0.913  | 109717   | 48.02  | ug/L  | 98 |
| 108) Cyclohexanone             | 42   | 14.631 | 14.625 | 0.920  | 42052    | 307.77 | ug/L  | 90 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.796 | 14.796 | 0.931  | 99455    | 46.12  | ug/L  | 99 |
| 110) Pentachloroethane         | 167  | 15.503 | 15.503 | 0.975  | 195519   | 45.20  | ug/L  | 94 |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.009  | 605835   | 49.27  | ug/L  | 92 |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 181179   | 64.16  | ug/L  | 94 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H115.D  
Acq On : 31 Oct 2016 23:14  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-13|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD050S 5UL N/A MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 01 08:09:21 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H116.D  
Acq On : 31 Oct 2016 23:43  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-14|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD100S 5UL N/A MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 01 08:09:25 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 991210   | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 716803   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 379258   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      |           |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 0d | 0.00 | ug/L | Dev (Min) |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 5.306  | 5.102  | 0.514  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.377  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.712  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 7.145  | 7.066  | 0.692  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.090  | 7.090  | 0.687  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 0.000  | 7.334  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              |      | 7.401  | 7.413  | 0.717  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 0.000  | 7.456  | 0.000  | 0        | N.D. |       |        |
| 14) Carbon disulfide          |      | 7.511  | 7.474  | 0.727  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 7.651  | 7.651  | 0.741  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.956  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.992  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    |      | 8.279  | 8.285  | 0.802  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 8.456  | 8.419  | 0.819  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 8.577  | 8.462  | 0.831  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 9.053  | 9.035  | 0.877  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 0.000  | 9.096  | 0.000  | 0        | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 9.382  | 9.400  | 0.908  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 9.845  | 9.791  | 0.953  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 0.000  | 9.845  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 10.034 | 10.047 | 0.972  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 10.083 | 10.077 | 0.976  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 10.339 | 10.205 | 1.001  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 10.412 | 10.406 | 1.008  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 10.711 | 10.717 | 1.037  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 0.000  | 10.784 | 0.000  | 0        | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 10.912 | 10.979 | 1.057  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 11.199 | 11.199 | 1.084  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.418 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 11.626 | 11.644 | 1.126  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H116.D  
Acq On : 31 Oct 2016 23:43  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-14|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD100S 5UL N/A MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 01 08:09:25 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units  |     |
|------|---------------------------|------|--------|--------|--------|----------|---------|--------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 0.000  | 11.735 | 0.000  | 0        | N.D.    |        |     |
| 46)  | Toluene                   |      | 12.040 | 12.040 | 0.892  | 0m       | N.D.    | d      |     |
| 47)  | trans-1,3-Dichloroprop... |      | 12.186 | 12.180 | 0.903  | 0m       | N.D.    | d      |     |
| 48)  | 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.    |        |     |
| 49)  | 2-Hexanone                |      | 12.601 | 12.583 | 0.934  | 0m       | N.D.    | d      |     |
| 50)  | 1,3-Dichloropropane       |      | 12.601 | 12.595 | 0.934  | 0m       | N.D.    | d      |     |
| 51)  | Tetrachloroethylene       |      | 12.638 | 12.638 | 0.937  | 0m       | N.D.    | d      |     |
| 52)  | Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.    |        |     |
| 53)  | 1,2-Dibromoethane         |      | 13.028 | 13.034 | 0.966  | 0m       | N.D.    | d      |     |
| 54)  | Chlorobenzene             |      | 13.522 | 13.522 | 1.002  | 0m       | N.D.    | d      |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 0.000  | 13.570 | 0.000  | 0        | N.D.    |        |     |
| 56)  | Ethylbenzene              |      | 13.589 | 13.589 | 1.007  | 0m       | N.D.    | d      |     |
| 57)  | m,p-Xylenes               |      | 13.692 | 13.698 | 1.015  | 0m       | N.D.    | d      |     |
| 58)  | o-Xylene                  |      | 14.131 | 14.131 | 1.047  | 0m       | N.D.    | d      |     |
| 59)  | Styrene                   |      | 14.137 | 14.131 | 1.048  | 0m       | N.D.    | d      |     |
| 61)  | Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.    |        |     |
| 62)  | Isopropylbenzene          |      | 14.485 | 14.491 | 0.911  | 0m       | N.D.    | d      |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 14.747 | 14.747 | 0.928  | 0m       | N.D.    | d      |     |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.    |        |     |
| 66)  | Bromobenzene              |      | 14.893 | 14.893 | 0.937  | 0m       | N.D.    | d      |     |
| 67)  | n-Propylbenzene           |      | 14.912 | 14.918 | 0.938  | 0m       | N.D.    | d      |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 15.064 | 15.070 | 0.947  | 0m       | N.D.    | d      |     |
| 69)  | 2-Chlorotoluene           |      | 15.064 | 15.064 | 0.947  | 0m       | N.D.    | d      |     |
| 70)  | 4-Chlorotoluene           |      | 15.162 | 15.162 | 0.954  | 0m       | N.D.    | d      |     |
| 71)  | tert-Butylbenzene         |      | 15.503 | 15.442 | 0.975  | 0m       | N.D.    | d      |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 15.485 | 15.479 | 0.974  | 0m       | N.D.    | d      |     |
| 73)  | sec-Butylbenzene          |      | 15.661 | 15.661 | 0.985  | 0m       | N.D.    | d      |     |
| 74)  | 4-Isopropyltoluene        |      | 15.783 | 15.783 | 0.993  | 0m       | N.D.    | d      |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.850 | 15.844 | 0.997  | 0m       | N.D.    | d      |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.930 | 15.930 | 1.002  | 0m       | N.D.    | d      |     |
| 77)  | n-Butylbenzene            |      | 16.295 | 16.228 | 1.025  | 0m       | N.D.    | d      |     |
| 78)  | 1,2-Dichlorobenzene       |      | 16.356 | 16.356 | 1.029  | 0m       | N.D.    | d      |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.    |        |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 18.307 | 18.301 | 1.151  | 0m       | N.D.    | d      |     |
| 81)  | Hexachlorobutadiene       |      | 18.490 | 18.490 | 1.163  | 0m       | N.D.    | d      |     |
| 82)  | Naphthalene               |      | 18.697 | 18.691 | 1.176  | 0m       | N.D.    | d      |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 19.027 | 19.033 | 1.197  | 0m       | N.D.    | d      |     |
| 85)  | Acrolein                  | 56   | 6.895  | 6.889  | 0.668  | 86548    | 96.00   | ug/L   | 94  |
| 86)  | Trichlorotrifluoroethane  | 85   | 7.096  | 7.090  | 0.687  | 246671   | 81.74   | ug/L   | 94  |
| 87)  | Isopropyl Alcohol         | 45   | 7.145  | 7.145  | 0.692  | 424797   | 1133.99 | ug/L   | 89  |
| 88)  | Allyl chloride            | 41   | 7.511  | 7.504  | 0.727  | 1135099  | 105.24  | ug/L   | 89  |
| 89)  | tert-Butyl Alcohol        | 59   | 7.639  | 7.639  | 0.740  | 643092   | 1057.64 | ug/L # | 100 |
| 90)  | Acrylonitrile             | 53   | 7.882  | 7.882  | 0.763  | 187065   | 101.94  | ug/L   | 99  |
| 91)  | Isopropyl ether           | 45   | 8.456  | 8.456  | 0.819  | 461401   | 22.13   | ug/L   | 97  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 8.571  | 8.577  | 0.830  | 202882   | 18.58   | ug/L   | 97  |
| 93)  | Ethyl tert-butyl ether    | 59   | 8.858  | 8.858  | 0.858  | 390180   | 21.20   | ug/L   | 100 |
| 94)  | Ethyl acetate             | 43   | 9.053  | 9.053  | 0.877  | 516665   | 101.42  | ug/L   | 97  |
| 95)  | Propionitrile             | 54   | 9.096  | 9.096  | 0.881  | 74859    | 101.47  | ug/L   | 96  |
| 96)  | Methacrylonitrile         | 41   | 9.279  | 9.278  | 0.898  | 319127   | 102.43  | ug/L   | 97  |
| 97)  | Tetrahydrofuran           | 42   | 9.419  | 9.419  | 0.912  | 171931   | 109.46  | ug/L   | 94  |
| 98)  | Isobutyl alcohol          | 41   | 9.717  | 9.717  | 0.941  | 208385   | 1048.71 | ug/L   | 93  |
| 99)  | Methyl tert-amyl ether    | 73   | 10.102 | 10.102 | 0.978  | 317942   | 23.69   | ug/L   | 99  |
| 100) | Methyl methacrylate       | 69   | 10.925 | 10.925 | 1.058  | 342569   | 114.13  | ug/L   | 89  |
| 101) | 1,4-Dioxane               | 88   | 11.034 | 11.034 | 1.068  | 53179    | 1147.61 | ug/L   | 97  |
| 102) | 2-Nitropropane            | 43   | 11.388 | 11.388 | 1.103  | 144736   | 96.44   | ug/L   | 96  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H116.D  
Acq On : 31 Oct 2016 23:43  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-14|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD100S 5UL N/A MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 01 08:09:25 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

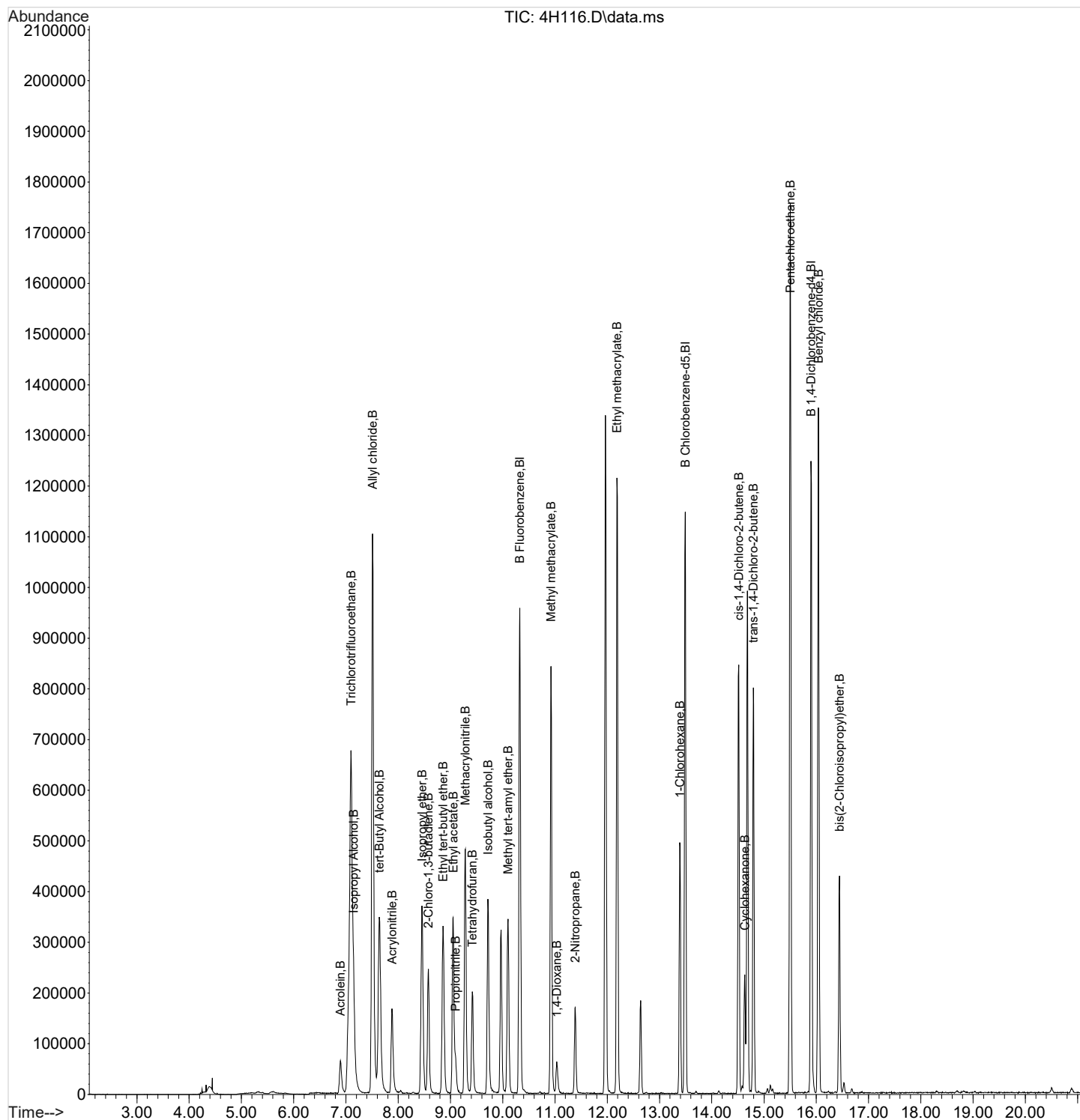
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |    |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|----|
| 104) Ethyl methacrylate        | 69   | 12.186 | 12.186 | 0.903  | 668367   | 127.59 | ug/L  | 98 |
| 106) 1-Chlorohexane            | 55   | 13.387 | 13.394 | 0.842  | 139276   | 21.78  | ug/L  | 98 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.515 | 14.509 | 0.913  | 216614   | 98.02  | ug/L  | 99 |
| 108) Cyclohexanone             | 42   | 14.631 | 14.625 | 0.920  | 80629    | 610.07 | ug/L  | 99 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.796 | 14.796 | 0.931  | 194436   | 93.21  | ug/L  | 99 |
| 110) Pentachloroethane         | 167  | 15.503 | 15.503 | 0.975  | 377097   | 90.13  | ug/L  | 92 |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.009  | 1135638  | 95.48  | ug/L  | 93 |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 345542   | 126.51 | ug/L  | 93 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H116.D  
Acq On : 31 Oct 2016 23:43  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-14|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD100S 5UL N/A MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 01 08:09:25 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H117.D  
Acq On : 01 Nov 2016 00:12  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-15|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD250S 5UL N/A MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 01 08:09:29 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1046360  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 760139   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 411704   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |  |
|-----------------------------|----|--------|--------|-------|----|------|------|--|
| System Monitoring Compounds |    |        |        |       |    |      |      |  |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 0d | 0.00 | ug/L |  |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 0d | 0.00 | ug/L |  |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 0d | 0.00 | ug/L |  |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 5.322  | 5.102  | 0.515  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.377  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.712  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 7.145  | 7.066  | 0.692  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.096  | 7.090  | 0.687  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 0.000  | 7.334  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              |      | 7.511  | 7.413  | 0.727  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 7.450  | 7.456  | 0.721  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 7.511  | 7.474  | 0.727  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 7.645  | 7.651  | 0.740  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 7.949  | 7.956  | 0.770  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.992  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    |      | 8.279  | 8.285  | 0.802  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 8.455  | 8.419  | 0.819  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 8.577  | 8.462  | 0.831  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 9.047  | 9.035  | 0.876  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 0.000  | 9.096  | 0.000  | 0        | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 9.388  | 9.400  | 0.909  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 9.717  | 9.791  | 0.941  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 0.000  | 9.845  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 10.108 | 10.047 | 0.979  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 10.077 | 10.077 | 0.976  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 10.315 | 10.205 | 0.999  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 10.412 | 10.406 | 1.008  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 10.717 | 10.717 | 1.038  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.790 | 10.784 | 1.045  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 10.918 | 10.979 | 1.057  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 0.000  | 11.199 | 0.000  | 0        | N.D. |       |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.418 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 11.644 | 11.644 | 1.128  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H117.D  
Acq On : 01 Nov 2016 00:12  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-15|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD250S 5UL N/A MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 01 08:09:29 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units  |     |
|------|---------------------------|------|--------|--------|--------|----------|---------|--------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 11.741 | 11.735 | 0.870  | 0m       | N.D.    | d      |     |
| 46)  | Toluene                   |      | 12.046 | 12.040 | 0.893  | 0m       | N.D.    | d      |     |
| 47)  | trans-1,3-Dichloroprop... |      | 12.186 | 12.180 | 0.903  | 0m       | N.D.    | d      |     |
| 48)  | 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.    |        |     |
| 49)  | 2-Hexanone                |      | 12.589 | 12.583 | 0.933  | 0m       | N.D.    | d      |     |
| 50)  | 1,3-Dichloropropane       |      | 12.644 | 12.595 | 0.937  | 0m       | N.D.    | d      |     |
| 51)  | Tetrachloroethylene       |      | 12.638 | 12.638 | 0.937  | 0m       | N.D.    | d      |     |
| 52)  | Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.    |        |     |
| 53)  | 1,2-Dibromoethane         |      | 13.034 | 13.034 | 0.966  | 0m       | N.D.    | d      |     |
| 54)  | Chlorobenzene             |      | 13.528 | 13.522 | 1.003  | 0m       | N.D.    | d      |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 13.570 | 13.570 | 1.006  | 0m       | N.D.    | d      |     |
| 56)  | Ethylbenzene              |      | 13.583 | 13.589 | 1.007  | 0m       | N.D.    | d      |     |
| 57)  | m,p-Xylenes               |      | 13.698 | 13.698 | 1.015  | 0m       | N.D.    | d      |     |
| 58)  | o-Xylene                  |      | 14.125 | 14.131 | 1.047  | 0m       | N.D.    | d      |     |
| 59)  | Styrene                   |      | 14.137 | 14.131 | 1.048  | 0m       | N.D.    | d      |     |
| 61)  | Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.    |        |     |
| 62)  | Isopropylbenzene          |      | 14.491 | 14.491 | 0.911  | 0m       | N.D.    | d      |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 14.747 | 14.747 | 0.928  | 0m       | N.D.    | d      |     |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.    |        |     |
| 66)  | Bromobenzene              |      | 14.887 | 14.893 | 0.936  | 0m       | N.D.    | d      |     |
| 67)  | n-Propylbenzene           |      | 14.912 | 14.918 | 0.938  | 0m       | N.D.    | d      |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 15.070 | 15.070 | 0.948  | 0m       | N.D.    | d      |     |
| 69)  | 2-Chlorotoluene           |      | 15.058 | 15.064 | 0.947  | 0m       | N.D.    | d      |     |
| 70)  | 4-Chlorotoluene           |      | 15.161 | 15.162 | 0.954  | 0m       | N.D.    | d      |     |
| 71)  | tert-Butylbenzene         |      | 15.503 | 15.442 | 0.975  | 0m       | N.D.    | d      |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 15.478 | 15.479 | 0.974  | 0m       | N.D.    | d      |     |
| 73)  | sec-Butylbenzene          |      | 15.667 | 15.661 | 0.985  | 0m       | N.D.    | d      |     |
| 74)  | 4-Isopropyltoluene        |      | 15.796 | 15.783 | 0.993  | 0m       | N.D.    | d      |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.844 | 15.844 | 0.997  | 0m       | N.D.    | d      |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.930 | 15.930 | 1.002  | 0m       | N.D.    | d      |     |
| 77)  | n-Butylbenzene            |      | 0.000  | 16.228 | 0.000  | 0        | N.D.    |        |     |
| 78)  | 1,2-Dichlorobenzene       |      | 16.362 | 16.356 | 1.029  | 0m       | N.D.    | d      |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.    |        |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 18.301 | 18.301 | 1.151  | 0m       | N.D.    | d      |     |
| 81)  | Hexachlorobutadiene       |      | 0.000  | 18.490 | 0.000  | 0        | N.D.    |        |     |
| 82)  | Naphthalene               |      | 18.685 | 18.691 | 1.175  | 0m       | N.D.    | d      |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 19.039 | 19.033 | 1.197  | 0m       | N.D.    | d      |     |
| 85)  | Acrolein                  | 56   | 6.895  | 6.889  | 0.668  | 251316   | 264.06  | ug/L   | 99  |
| 86)  | Trichlorotrifluoroethane  | 85   | 7.096  | 7.090  | 0.687  | 631429   | 198.20  | ug/L   | 96  |
| 87)  | Isopropyl Alcohol         | 45   | 7.139  | 7.145  | 0.691  | 1149555  | 2906.97 | ug/L   | 92  |
| 88)  | Allyl chloride            | 41   | 7.511  | 7.504  | 0.727  | 2712495  | 238.22  | ug/L   | 90  |
| 89)  | tert-Butyl Alcohol        | 59   | 7.639  | 7.639  | 0.740  | 1737086  | 2706.26 | ug/L # | 100 |
| 90)  | Acrylonitrile             | 53   | 7.882  | 7.882  | 0.763  | 489800   | 252.84  | ug/L   | 99  |
| 91)  | Isopropyl ether           | 45   | 8.455  | 8.456  | 0.819  | 1184144  | 53.81   | ug/L   | 96  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 8.577  | 8.577  | 0.831  | 512963   | 44.49   | ug/L   | 97  |
| 93)  | Ethyl tert-butyl ether    | 59   | 8.858  | 8.858  | 0.858  | 1007798  | 51.88   | ug/L   | 99  |
| 94)  | Ethyl acetate             | 43   | 9.047  | 9.053  | 0.876  | 1332801  | 247.84  | ug/L   | 98  |
| 95)  | Propionitrile             | 54   | 9.096  | 9.096  | 0.881  | 199591   | 256.27  | ug/L   | 100 |
| 96)  | Methacrylonitrile         | 41   | 9.278  | 9.278  | 0.898  | 826351   | 251.25  | ug/L   | 98  |
| 97)  | Tetrahydrofuran           | 42   | 9.419  | 9.419  | 0.912  | 447131   | 269.65  | ug/L   | 95  |
| 98)  | Isobutyl alcohol          | 41   | 9.717  | 9.717  | 0.941  | 553238   | 2637.47 | ug/L   | 93  |
| 99)  | Methyl tert-amyl ether    | 73   | 10.101 | 10.102 | 0.978  | 812562   | 57.36   | ug/L   | 98  |
| 100) | Methyl methacrylate       | 69   | 10.925 | 10.925 | 1.058  | 867689   | 273.85  | ug/L   | 90  |
| 101) | 1,4-Dioxane               | 88   | 11.034 | 11.034 | 1.068  | 140067   | 2863.36 | ug/L   | 95  |
| 102) | 2-Nitropropane            | 43   | 11.388 | 11.388 | 1.103  | 396647   | 250.37  | ug/L   | 97  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H117.D  
Acq On : 01 Nov 2016 00:12  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-15|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD250S 5UL N/A MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 01 08:09:29 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

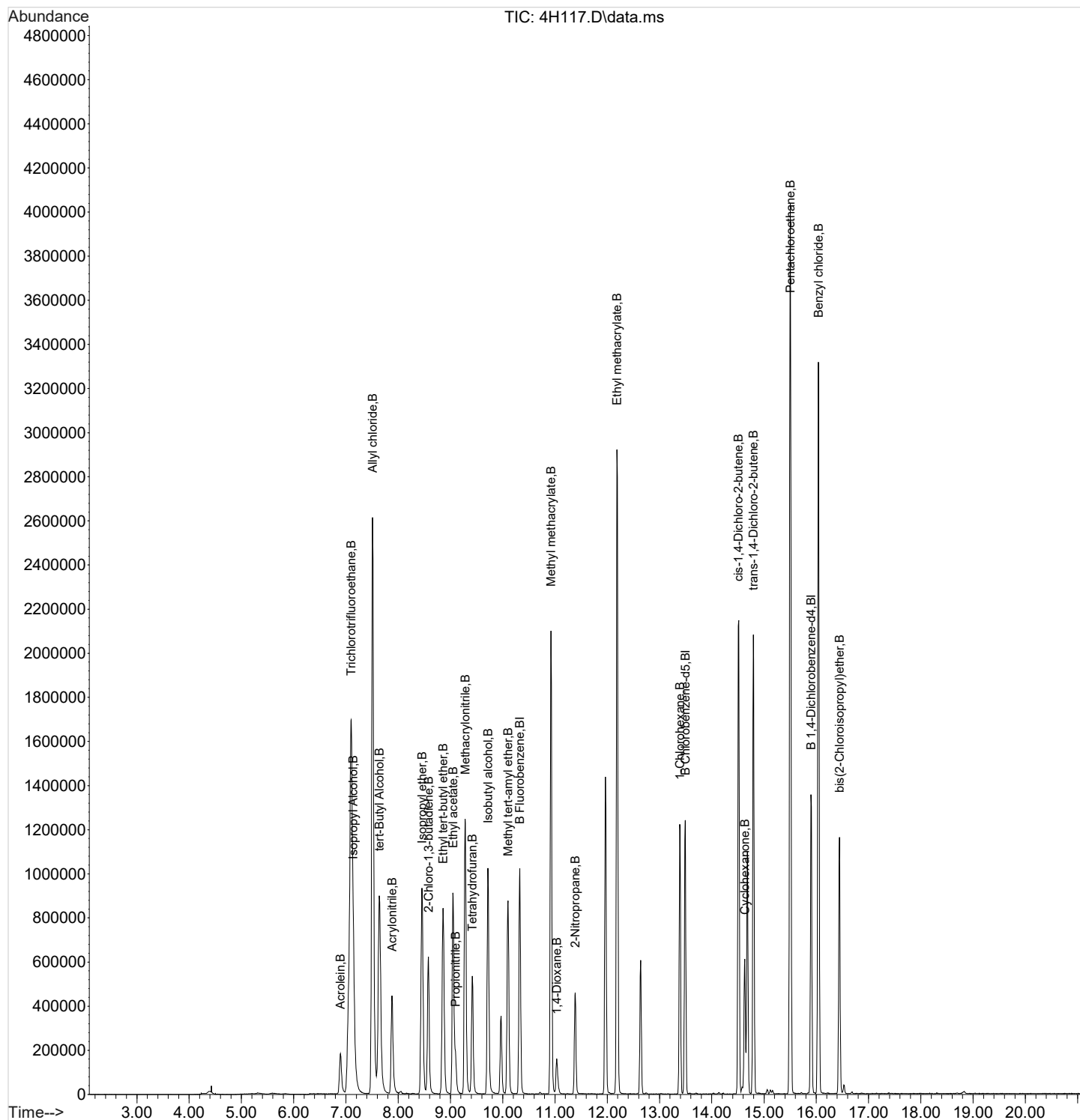
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |    |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|----|
| 104) Ethyl methacrylate        | 69   | 12.186 | 12.186 | 0.903  | 1623737  | 292.29  | ug/L  | 98 |
| 106) 1-Chlorohexane            | 55   | 13.387 | 13.394 | 0.842  | 342715   | 49.37   | ug/L  | 97 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.509 | 14.509 | 0.913  | 561516   | 234.07  | ug/L  | 97 |
| 108) Cyclohexanone             | 42   | 14.631 | 14.625 | 0.920  | 208715   | 1454.75 | ug/L  | 96 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.796 | 14.796 | 0.931  | 510379   | 225.39  | ug/L  | 99 |
| 110) Pentachloroethane         | 167  | 15.503 | 15.503 | 0.975  | 903545   | 198.93  | ug/L  | 89 |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.009  | 2807855  | 217.46  | ug/L  | 94 |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 932501   | 314.50  | ug/L  | 94 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H117.D  
Acq On : 01 Nov 2016 00:12  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-15|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD250S 5UL N/A MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 01 08:09:29 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H118.D  
Acq On : 01 Nov 2016 00:41  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-16|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD500S 5UL N/A MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 01 08:09:33 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.899 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1059641  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 772851   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 412223   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      |           |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 0d | 0.00 | ug/L | Dev (Min) |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 5.322  | 5.102  | 0.515  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.377  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 6.706  | 6.712  | 0.649  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 7.138  | 7.066  | 0.691  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.102  | 7.090  | 0.688  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 0.000  | 7.334  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              |      | 7.413  | 7.413  | 0.718  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 7.455  | 7.456  | 0.722  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 7.510  | 7.474  | 0.727  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 7.651  | 7.651  | 0.741  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 7.968  | 7.956  | 0.772  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.992  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    |      | 8.291  | 8.285  | 0.803  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 8.455  | 8.419  | 0.819  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 8.577  | 8.462  | 0.831  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 9.047  | 9.035  | 0.876  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 0.000  | 9.096  | 0.000  | 0        | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 9.394  | 9.400  | 0.910  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 9.717  | 9.791  | 0.941  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 0.000  | 9.845  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 10.101 | 10.047 | 0.978  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 10.083 | 10.077 | 0.976  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 10.327 | 10.205 | 1.000  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 10.400 | 10.406 | 1.007  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 10.717 | 10.717 | 1.038  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 0.000  | 10.784 | 0.000  | 0        | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 10.918 | 10.979 | 1.057  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 0.000  | 11.199 | 0.000  | 0        | N.D. |       |        |
| 41) 2-Chloroethylvinyl ether  |      | 11.436 | 11.418 | 1.107  | 0m       | N.D. | d     |        |
| 42) cis-1,3-Dichloropropylene |      | 11.650 | 11.644 | 1.128  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H118.D  
Acq On : 01 Nov 2016 00:41  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-16|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD500S 5UL N/A MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 01 08:09:33 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units  |       |
|------|---------------------------|------|--------|--------|--------|----------|---------|--------|-------|
| 44)  | 4-Methyl-2-pentanone      |      | 0.000  | 11.735 | 0.000  | 0        | N.D.    |        |       |
| 46)  | Toluene                   |      | 12.046 | 12.040 | 0.893  | 0m       | N.D.    | d      |       |
| 47)  | trans-1,3-Dichloroprop... |      | 12.180 | 12.180 | 0.903  | 0m       | N.D.    | d      |       |
| 48)  | 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.    |        |       |
| 49)  | 2-Hexanone                |      | 12.576 | 12.583 | 0.932  | 0m       | N.D.    | d      |       |
| 50)  | 1,3-Dichloropropane       |      | 12.601 | 12.595 | 0.934  | 0m       | N.D.    | d      |       |
| 51)  | Tetrachloroethylene       |      | 12.637 | 12.638 | 0.937  | 0m       | N.D.    | d      |       |
| 52)  | Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.    |        |       |
| 53)  | 1,2-Dibromoethane         |      | 13.034 | 13.034 | 0.966  | 0m       | N.D.    | d      |       |
| 54)  | Chlorobenzene             |      | 13.521 | 13.522 | 1.002  | 0m       | N.D.    | d      |       |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 13.576 | 13.570 | 1.006  | 0m       | N.D.    | d      |       |
| 56)  | Ethylbenzene              |      | 13.588 | 13.589 | 1.007  | 0m       | N.D.    | d      |       |
| 57)  | m,p-Xylenes               |      | 13.698 | 13.698 | 1.015  | 0m       | N.D.    | d      |       |
| 58)  | o-Xylene                  |      | 14.235 | 14.131 | 1.055  | 0m       | N.D.    | d      |       |
| 59)  | Styrene                   |      | 14.131 | 14.131 | 1.047  | 0m       | N.D.    | d      |       |
| 61)  | Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.    |        |       |
| 62)  | Isopropylbenzene          |      | 14.503 | 14.491 | 0.912  | 0m       | N.D.    | d      |       |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 14.747 | 14.747 | 0.927  | 0m       | N.D.    | d      |       |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.    |        |       |
| 66)  | Bromobenzene              |      | 14.899 | 14.893 | 0.937  | 0m       | N.D.    | d      |       |
| 67)  | n-Propylbenzene           |      | 14.917 | 14.918 | 0.938  | 0m       | N.D.    | d      |       |
| 68)  | 1,3,5-Trimethylbenzene    |      | 15.064 | 15.070 | 0.947  | 0m       | N.D.    | d      |       |
| 69)  | 2-Chlorotoluene           |      | 15.064 | 15.064 | 0.947  | 0m       | N.D.    | d      |       |
| 70)  | 4-Chlorotoluene           |      | 15.161 | 15.162 | 0.953  | 0m       | N.D.    | d      |       |
| 71)  | tert-Butylbenzene         |      | 15.503 | 15.442 | 0.975  | 0m       | N.D.    | d      |       |
| 72)  | 1,2,4-Trimethylbenzene    |      | 15.478 | 15.479 | 0.973  | 0m       | N.D.    | d      |       |
| 73)  | sec-Butylbenzene          |      | 15.661 | 15.661 | 0.985  | 0m       | N.D.    | d      |       |
| 74)  | 4-Isopropyltoluene        |      | 15.783 | 15.783 | 0.992  | 0m       | N.D.    | d      |       |
| 75)  | 1,3-Dichlorobenzene       |      | 15.844 | 15.844 | 0.996  | 0m       | N.D.    | d      |       |
| 76)  | 1,4-Dichlorobenzene       |      | 15.929 | 15.930 | 1.002  | 0m       | N.D.    | d      |       |
| 77)  | n-Butylbenzene            |      | 0.000  | 16.228 | 0.000  | 0        | N.D.    |        |       |
| 78)  | 1,2-Dichlorobenzene       |      | 16.362 | 16.356 | 1.029  | 0m       | N.D.    | d      |       |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.    |        |       |
| 80)  | 1,2,4-Trichlorobenzene    |      | 18.301 | 18.301 | 1.151  | 0m       | N.D.    | d      |       |
| 81)  | Hexachlorobutadiene       |      | 0.000  | 18.490 | 0.000  | 0        | N.D.    |        |       |
| 82)  | Naphthalene               |      | 18.691 | 18.691 | 1.175  | 0m       | N.D.    | d      |       |
| 83)  | 1,2,3-Trichlorobenzene    |      | 19.045 | 19.033 | 1.197  | 0m       | N.D.    | d      |       |
| 85)  | Acrolein                  | 56   | 6.895  | 6.889  | 0.668  | 485518   | 503.74  | ug/L   | 99 A  |
| 86)  | Trichlorotrifluoroethane  | 85   | 7.102  | 7.090  | 0.688  | 1194992  | 370.39  | ug/L   | 97    |
| 87)  | Isopropyl Alcohol         | 45   | 7.145  | 7.145  | 0.692  | 1997808  | 4988.70 | ug/L   | 91 A  |
| 88)  | Allyl chloride            | 41   | 7.510  | 7.504  | 0.727  | 4880122  | 423.22  | ug/L   | 92    |
| 89)  | tert-Butyl Alcohol        | 59   | 7.638  | 7.639  | 0.740  | 2998811  | 4613.38 | ug/L # | 100 A |
| 90)  | Acrylonitrile             | 53   | 7.882  | 7.882  | 0.763  | 905676   | 461.66  | ug/L   | 98    |
| 91)  | Isopropyl ether           | 45   | 8.455  | 8.456  | 0.819  | 2261013  | 101.45  | ug/L   | 97 A  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 8.577  | 8.577  | 0.831  | 1005584  | 86.13   | ug/L   | 98    |
| 93)  | Ethyl tert-butyl ether    | 59   | 8.858  | 8.858  | 0.858  | 1940421  | 98.64   | ug/L   | 99    |
| 94)  | Ethyl acetate             | 43   | 9.047  | 9.053  | 0.876  | 2330834  | 427.99  | ug/L   | 98    |
| 95)  | Propionitrile             | 54   | 9.095  | 9.096  | 0.881  | 364703   | 462.40  | ug/L   | 99    |
| 96)  | Methacrylonitrile         | 41   | 9.278  | 9.278  | 0.898  | 1512181  | 454.01  | ug/L   | 98    |
| 97)  | Tetrahydrofuran           | 42   | 9.418  | 9.419  | 0.912  | 816409   | 486.18  | ug/L   | 95    |
| 98)  | Isobutyl alcohol          | 41   | 9.717  | 9.717  | 0.941  | 964615   | 4541.00 | ug/L   | 93    |
| 99)  | Methyl tert-amyl ether    | 73   | 10.101 | 10.102 | 0.978  | 1574776  | 109.77  | ug/L   | 97 A  |
| 100) | Methyl methacrylate       | 69   | 10.924 | 10.925 | 1.058  | 1523469  | 474.79  | ug/L   | 91    |
| 101) | 1,4-Dioxane               | 88   | 11.034 | 11.034 | 1.068  | 244804   | 4941.75 | ug/L   | 95    |
| 102) | 2-Nitropropane            | 43   | 11.388 | 11.388 | 1.103  | 736685   | 459.19  | ug/L   | 95    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H118.D  
Acq On : 01 Nov 2016 00:41  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-16|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD500S 5UL N/A MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 01 08:09:33 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE

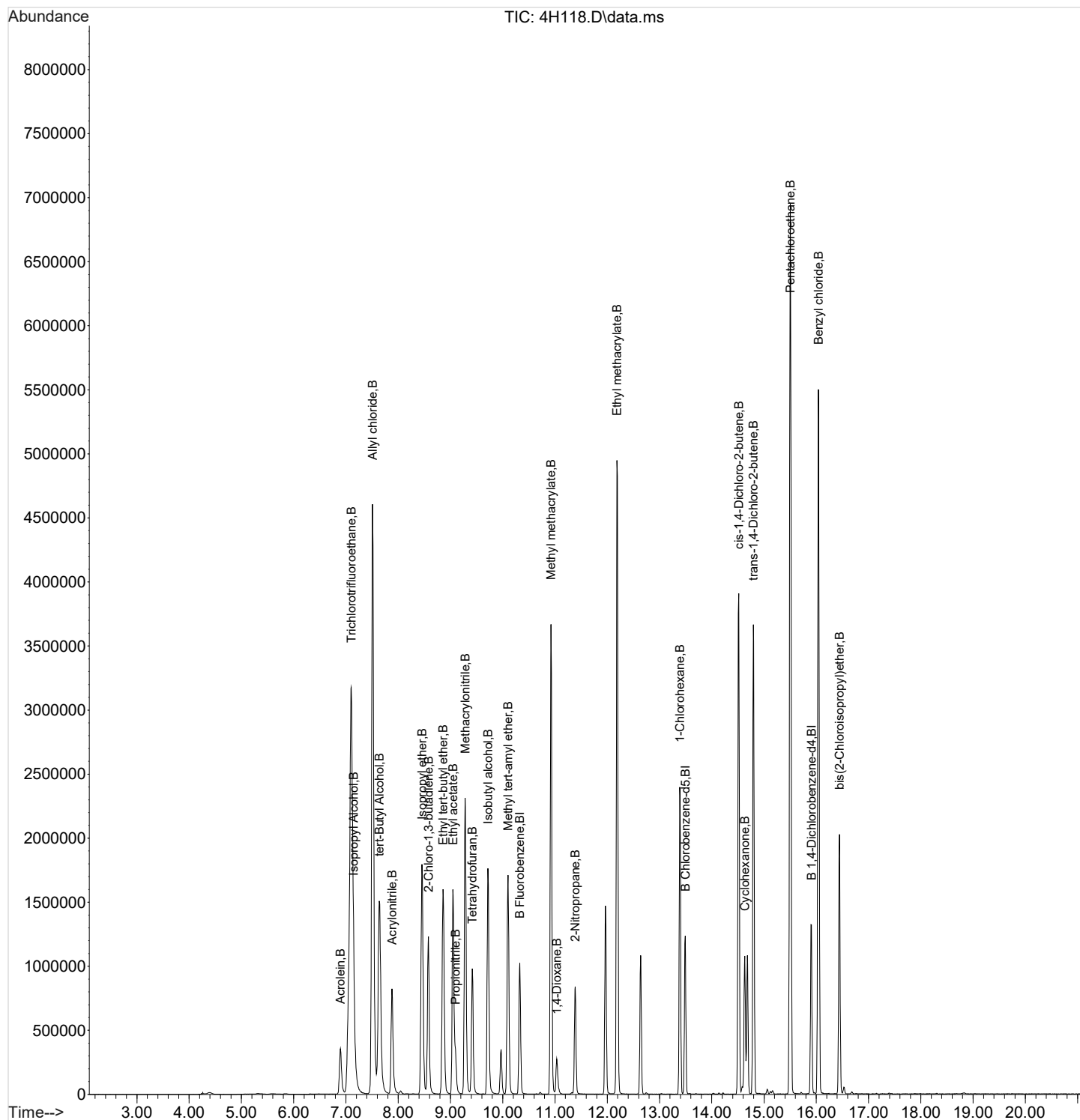
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |      |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|------|
| 104) Ethyl methacrylate        | 69   | 12.186 | 12.186 | 0.903  | 2765094  | 489.56  | ug/L  | 97   |
| 106) 1-Chlorohexane            | 55   | 13.387 | 13.394 | 0.842  | 679965   | 97.83   | ug/L  | 96   |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.515 | 14.509 | 0.913  | 1016706  | 423.29  | ug/L  | 95   |
| 108) Cyclohexanone             | 42   | 14.631 | 14.625 | 0.920  | 373663   | 2601.17 | ug/L  | 95 A |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.796 | 14.796 | 0.930  | 924462   | 407.75  | ug/L  | 98   |
| 110) Pentachloroethane         | 167  | 15.503 | 15.503 | 0.975  | 1624581  | 357.23  | ug/L  | 91   |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.008  | 4642640  | 359.11  | ug/L  | 98 A |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 1610266  | 542.41  | ug/L  | 95 A |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H118.D  
Acq On : 01 Nov 2016 00:41  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161031-16|ICAL|1|VOAF|1|VOA8260BL|  
Misc : VSTD500S 5UL N/A MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 01 08:09:33 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:08:00 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Instrument ID:** VOA4.I  
**Data File:** 110116V4\4H202.D  
**Lab Sample ID** W4VM161101-01  
**Quant Type** ISTD

**Client SDG:** 409254  
**Injection Date:** 01-NOV-16 09:21  
**Init. Cal. Date(s)** 31-OCT-16 16:55 - 01-NOV-16 00:4  
**Method:** 103116V4\VOA4-8260-103116.M  
**Method Update:** 01-NOV-16 08:22

| Compound                 | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|--------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| S1,2-Dichloroethane-d4   | 0.2717            | 0.26886   |                | .01    |         | -1.04527       | 60  |            | Averaged      |
| SToluene-d8              | 1.4259            | 1.40697   |                | .01    |         | -1.32758       | 60  |            | Averaged      |
| SBromofluorobenzene      | 1.0849            | 1.05285   |                | .01    |         | -2.95419       | 60  |            | Averaged      |
| Trichlorotrifluoroethane | 0.1188            | 0.12631   |                | .01    |         | 6.32155        | 60  |            | Averaged      |
| 1,4-Dioxane              | 2500              | 2535.07   | 2500           |        |         | 1.4028         | 60  |            | Linear        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V4\  
Data File : 4H202.D  
Acq On : 01 Nov 2016 09:21  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161101-01|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5UL N/A MIX[B]  
ALS Vial : 2 Sample Multiplier: 1

*ell*  
11/08/2016

Quant Time: Nov 01 10:41:51 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1133380  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 833087   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.905 | 1.000  | 449991   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1133380  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 833087   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 449991   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 304715  | 49.47 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1172130 | 49.34 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 473771  | 48.52 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 5.306  | 5.094  | 0.514  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.370  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.706  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 7.145  | 7.059  | 0.692  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.090  | 7.090  | 0.687  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 7.321  | 7.327  | 0.709  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 7.388  | 7.407  | 0.715  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 7.456  | 7.456  | 0.722  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 7.510  | 7.468  | 0.727  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 7.651  | 7.645  | 0.741  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.955  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.992  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    |      | 8.297  | 8.285  | 0.803  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 8.455  | 8.413  | 0.819  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 8.577  | 8.461  | 0.831  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 9.047  | 9.028  | 0.876  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 0.000  | 9.095  | 0.000  | 0        | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 9.412  | 9.400  | 0.911  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 9.717  | 9.790  | 0.941  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 0.000  | 9.839  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 10.040 | 10.046 | 0.972  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 10.083 | 10.077 | 0.976  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 10.339 | 10.199 | 1.001  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 10.321 | 10.400 | 0.999  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 10.717 | 10.717 | 1.038  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.790 | 10.778 | 1.045  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 10.924 | 10.973 | 1.058  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 0.000  | 11.193 | 0.000  | 0        | N.D. |       |        |
| 41) 2-Chloroethylvinyl ether  |      | 11.430 | 11.412 | 1.107  | 0m       | N.D. | d     |        |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 11.644 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V4\  
Data File : 4H202.D  
Acq On : 01 Nov 2016 09:21  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161101-01|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5UL N/A MIX[B]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 01 10:41:51 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units  |     |
|------|---------------------------|------|--------|--------|--------|----------|---------|--------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 0.000  | 11.735 | 0.000  | 0        | N.D.    |        |     |
| 46)  | Toluene                   |      | 12.040 | 12.040 | 0.892  | 0m       | N.D.    | d      |     |
| 47)  | trans-1,3-Dichloroprop... |      | 12.186 | 12.180 | 0.903  | 0m       | N.D.    | d      |     |
| 48)  | 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.    |        |     |
| 49)  | 2-Hexanone                |      | 12.583 | 12.583 | 0.933  | 0m       | N.D.    | d      |     |
| 50)  | 1,3-Dichloropropane       |      | 12.637 | 12.595 | 0.937  | 0m       | N.D.    | d      |     |
| 51)  | Tetrachloroethylene       |      | 12.637 | 12.637 | 0.937  | 0m       | N.D.    | d      |     |
| 52)  | Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.    |        |     |
| 53)  | 1,2-Dibromoethane         |      | 13.034 | 13.034 | 0.966  | 0m       | N.D.    | d      |     |
| 54)  | Chlorobenzene             |      | 13.515 | 13.521 | 1.002  | 0m       | N.D.    | d      |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 13.570 | 13.576 | 1.006  | 0m       | N.D.    | d      |     |
| 56)  | Ethylbenzene              |      | 13.582 | 13.588 | 1.007  | 0m       | N.D.    | d      |     |
| 57)  | m,p-Xylenes               |      | 13.698 | 13.698 | 1.015  | 0m       | N.D.    | d      |     |
| 58)  | o-Xylene                  |      | 14.119 | 14.131 | 1.047  | 0m       | N.D.    | d      |     |
| 59)  | Styrene                   |      | 14.131 | 14.131 | 1.047  | 0m       | N.D.    | d      |     |
| 61)  | Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.    |        |     |
| 62)  | Isopropylbenzene          |      | 14.491 | 14.491 | 0.911  | 0m       | N.D.    | d      |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 14.753 | 14.747 | 0.928  | 0m       | N.D.    | d      |     |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.    |        |     |
| 66)  | Bromobenzene              |      | 14.899 | 14.893 | 0.937  | 0m       | N.D.    | d      |     |
| 67)  | n-Propylbenzene           |      | 15.058 | 14.917 | 0.947  | 0m       | N.D.    | d      |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 15.076 | 15.070 | 0.948  | 0m       | N.D.    | d      |     |
| 69)  | 2-Chlorotoluene           |      | 15.058 | 15.064 | 0.947  | 0m       | N.D.    | d      |     |
| 70)  | 4-Chlorotoluene           |      | 15.161 | 15.161 | 0.953  | 0m       | N.D.    | d      |     |
| 71)  | tert-Butylbenzene         |      | 15.503 | 15.442 | 0.975  | 0m       | N.D.    | d      |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 15.478 | 15.478 | 0.973  | 0m       | N.D.    | d      |     |
| 73)  | sec-Butylbenzene          |      | 15.667 | 15.661 | 0.985  | 0m       | N.D.    | d      |     |
| 74)  | 4-Isopropyltoluene        |      | 15.777 | 15.783 | 0.992  | 0m       | N.D.    | d      |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.838 | 15.844 | 0.996  | 0m       | N.D.    | d      |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.929 | 15.929 | 1.002  | 0m       | N.D.    | d      |     |
| 77)  | n-Butylbenzene            |      | 16.338 | 16.228 | 1.027  | 0m       | N.D.    | d      |     |
| 78)  | 1,2-Dichlorobenzene       |      | 16.362 | 16.356 | 1.029  | 0m       | N.D.    | d      |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.    |        |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 18.301 | 18.301 | 1.151  | 0m       | N.D.    | d      |     |
| 81)  | Hexachlorobutadiene       |      | 0.000  | 18.490 | 0.000  | 0        | N.D.    |        |     |
| 82)  | Naphthalene               |      | 18.691 | 18.685 | 1.175  | 0m       | N.D.    | d      |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 19.039 | 19.033 | 1.197  | 0m       | N.D.    | d      |     |
| 85)  | Acrolein                  | 56   | 6.895  | 6.895  | 0.668  | 234427   | 230.29  | ug/L   | 98  |
| 86)  | Trichlorotrifluoroethane  | 85   | 7.090  | 7.096  | 0.687  | 715780   | 265.69  | ug/L   | 99  |
| 87)  | Isopropyl Alcohol         | 45   | 7.138  | 7.139  | 0.691  | 1126369  | 2517.78 | ug/L   | 99  |
| 88)  | Allyl chloride            | 41   | 7.510  | 7.511  | 0.727  | 2746051  | 234.18  | ug/L   | 99  |
| 89)  | tert-Butyl Alcohol        | 59   | 7.638  | 7.639  | 0.740  | 1741424  | 2591.60 | ug/L # | 100 |
| 90)  | Acrylonitrile             | 53   | 7.882  | 7.882  | 0.763  | 498682   | 250.31  | ug/L   | 99  |
| 91)  | Isopropyl ether           | 45   | 8.455  | 8.455  | 0.819  | 1084791  | 43.55   | ug/L   | 100 |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 8.571  | 8.577  | 0.830  | 605267   | 56.00   | ug/L   | 98  |
| 93)  | Ethyl tert-butyl ether    | 59   | 8.858  | 8.858  | 0.858  | 948470   | 45.21   | ug/L   | 100 |
| 94)  | Ethyl acetate             | 43   | 9.047  | 9.047  | 0.876  | 1352478  | 258.89  | ug/L   | 100 |
| 95)  | Propionitrile             | 54   | 9.095  | 9.096  | 0.881  | 194776   | 242.24  | ug/L   | 98  |
| 96)  | Methacrylonitrile         | 41   | 9.278  | 9.278  | 0.898  | 827516   | 247.47  | ug/L   | 99  |
| 97)  | Tetrahydrofuran           | 42   | 9.419  | 9.419  | 0.912  | 458270   | 253.76  | ug/L   | 100 |
| 98)  | Isobutyl alcohol          | 41   | 9.717  | 9.717  | 0.941  | 570741   | 2643.27 | ug/L   | 100 |
| 99)  | Methyl tert-amyl ether    | 73   | 10.101 | 10.101 | 0.978  | 801128   | 46.67   | ug/L   | 99  |
| 100) | Methyl methacrylate       | 69   | 10.924 | 10.925 | 1.058  | 872221   | 255.14  | ug/L   | 100 |
| 101) | 1,4-Dioxane               | 88   | 11.034 | 11.034 | 1.068  | 139091   | 2535.07 | ug/L   | 99  |
| 102) | 2-Nitropropane            | 43   | 11.388 | 11.388 | 1.103  | 400884   | 248.63  | ug/L   | 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V4\  
Data File : 4H202.D  
Acq On : 01 Nov 2016 09:21  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161101-01|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5UL N/A MIX[B]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 01 10:41:51 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 104) Ethyl methacrylate        | 69   | 12.186 | 12.186 | 0.903  | 1676766  | 264.27  | ug/L  | 100 |
| 106) 1-Chlorohexane            | 55   | 13.393 | 13.387 | 0.842  | 370363   | 49.33   | ug/L  | 99  |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.515 | 14.509 | 0.913  | 599661   | 261.44  | ug/L  | 98  |
| 108) Cyclohexanone             | 42   | 14.631 | 14.631 | 0.920  | 185020   | 1018.12 | ug/L  | 96  |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.796 | 14.796 | 0.930  | 515890   | 247.23  | ug/L  | 99  |
| 110) Pentachloroethane         | 167  | 15.503 | 15.503 | 0.975  | 1061513  | 287.87  | ug/L  | 99  |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.008  | 3282958  | 305.20  | ug/L  | 99  |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 969839   | 263.70  | ug/L  | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



```
Data Path   : C:\msdchem\1\data\110116V4\  
Data File  : 4H202.D  
Acq On     : 01 Nov 2016   09:21  
Operator   : ACJ  
InstName   : VOA4  
Sample     : |W4VM161101-01|ICV|1|VOAF|1|VOA8260BL|  
Misc       : ICV 5UL N/A MIX[B]  
ALS Vial   : 2      Sample Multiplier: 1
```

The chromatogram displays a series of peaks corresponding to different chemical compounds. The x-axis represents Time in minutes, ranging from 3.00 to 20.00. The y-axis represents Abundance, ranging from 0 to 5,600,000. The following table lists the compounds identified in the chromatogram, along with their approximate retention times and relative abundances.

| Compound                        | Retention Time (min) | Abundance |
|---------------------------------|----------------------|-----------|
| Acrolein, B                     | 7.00                 | 150,000   |
| Isopropyl Alcohol, B            | 7.20                 | 1,800,000 |
| Trichlorotrifluoroethane, B     | 7.50                 | 2,800,000 |
| tert-Butyl Alcohol, B           | 7.80                 | 2,600,000 |
| Acrylonitrile, B                | 8.00                 | 1,000,000 |
| 2-Chloropropyl ether, B         | 8.50                 | 800,000   |
| Ethyl tert-butyl ether, B       | 8.80                 | 700,000   |
| Ethyl acetate, B                | 9.00                 | 600,000   |
| Methacrylonitrile, B            | 9.20                 | 500,000   |
| Tetrahydrofuran, B              | 9.50                 | 400,000   |
| Isobutyl alcohol, B             | 9.80                 | 300,000   |
| 1,2-Dichloroethane-d4 SA        | 10.00                | 200,000   |
| Methyl tert-butyl ether, B      | 10.20                | 150,000   |
| Bromobenzene, B                 | 10.50                | 100,000   |
| 1,4-Dioxane, B                  | 11.00                | 2,200,000 |
| 2-Nitropropane, B               | 11.50                | 400,000   |
| Toluene-d8 SA                   | 12.00                | 1,500,000 |
| Ethyl methacrylate, B           | 12.50                | 3,000,000 |
| Cyclohexanone, B                | 13.50                | 1,300,000 |
| Bromofluorobenzene, SA          | 14.00                | 1,200,000 |
| cis-1,4-Dichloro-2-butene, B    | 14.50                | 2,300,000 |
| trans-1,4-Dichloro-2-butene, B  | 14.80                | 2,200,000 |
| Pentachloroethane, B            | 15.50                | 4,200,000 |
| Benzyl chloride, B              | 16.00                | 3,800,000 |
| bis(2-Chloroisopropyl) ether, B | 16.50                | 1,200,000 |

## Continuing Calibration Summary

**Client SDG:** 409254  
**Instrument ID:** VOA4.I  
**Injection Date:** 02-NOV-16 10:27  
**Data File:** 110216V4\4H302.D  
**Init. Cal. Date(s)** 31-OCT-16 16:55 - 01-NOV-16 00:4  
**Lab Sample ID** W4VM161102-01  
**Method:** 103116V4\VOA4-8260-103116.M  
**Quant Type** ISTD  
**Method Update:** 01-NOV-16 08:22

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| S 1,2-Dichloroethane-d4     | 0.2717         | 0.26015 |             | .01    |      | -4.25101    | 60  |         | Averaged   |      |
| S Toluene-d8                | 1.4259         | 1.33964 |             | .01    |      | -6.04951    | 60  |         | Averaged   |      |
| S Bromofluorobenzene        | 1.0849         | 1.03058 |             | .01    |      | -5.00691    | 60  |         | Averaged   |      |
| Dichlorodifluoromethane     | 0.3012         | 0.30285 |             | .01    |      | 0.54781     | 60  |         | Averaged   |      |
| Chloromethane               | 0.3326         | 0.28253 |             | .1     |      | -15.05412   | 60  |         | Averaged   | SPCC |
| Vinyl chloride              | 0.2686         | 0.26671 |             | .01    |      | -0.70365    | 20  |         | Averaged   | CCC  |
| Bromomethane                | 0.2758         | 0.26593 |             | .01    |      | -3.57868    | 60  |         | Averaged   |      |
| Chloroethane                | 0.2682         | 0.25354 |             | .01    |      | -5.46607    | 60  |         | Averaged   |      |
| Trichlorofluoromethane      | 0.4491         | 0.4337  |             | .01    |      | -3.42908    | 60  |         | Averaged   |      |
| Acetone                     | 0.1597         | 0.143   |             | .01    |      | -10.45711   | 60  |         | Averaged   |      |
| 1,1-Dichloroethylene        | 0.5062         | 0.45028 |             | .01    |      | -11.04702   | 20  |         | Averaged   | CCC  |
| Methyl acetate              | 0.1984         | 0.16039 |             | .01    |      | -19.15827   | 60  |         | Averaged   |      |
| Carbon disulfide            | 0.9959         | 0.83912 |             | .01    |      | -15.74254   | 60  |         | Averaged   |      |
| Methylene chloride          | 0.3471         | 0.27595 |             | .01    |      | -20.49842   | 60  |         | Averaged   |      |
| tert-Butyl methyl ether     | 0.8025         | 0.68556 |             | .01    |      | -14.57196   | 60  |         | Averaged   |      |
| trans-1,2-Dichloroethylene  | 0.4779         | 0.42136 |             | .01    |      | -11.83093   | 60  |         | Averaged   |      |
| 1,1-Dichloroethane          | 0.5781         | 0.50607 |             | .1     |      | -12.45978   | 60  |         | Averaged   | SPCC |
| 2-Butanone                  | 0.2003         | 0.18045 |             | .01    |      | -9.91013    | 60  |         | Averaged   |      |
| cis-1,2-Dichloroethylene    | 0.3342         | 0.29636 |             | .01    |      | -11.32256   | 60  |         | Averaged   |      |
| Bromochloromethane          | 0.1394         | 0.12101 |             | .01    |      | -13.19225   | 60  |         | Averaged   |      |
| Chloroform                  | 0.5279         | 0.4659  |             | .01    |      | -11.74465   | 20  |         | Averaged   | CCC  |
| 1,1,1-Trichloroethane       | 0.5068         | 0.4534  |             | .01    |      | -10.5367    | 60  |         | Averaged   |      |
| Cyclohexane                 | 0.6853         | 0.58675 |             | .01    |      | -14.38056   | 60  |         | Averaged   |      |
| Carbon tetrachloride        | 0.4336         | 0.39232 |             | .01    |      | -9.5203     | 60  |         | Averaged   |      |
| 1,2-Dichloroethane          | 0.3801         | 0.32568 |             | .01    |      | -14.31728   | 60  |         | Averaged   |      |
| Benzene                     | 1.2427         | 1.06707 |             | .01    |      | -14.13294   | 60  |         | Averaged   |      |
| Trichloroethylene           | 0.3222         | 0.28416 |             | .01    |      | -11.80633   | 60  |         | Averaged   |      |
| 1,2-Dichloropropane         | 0.3266         | 0.29344 |             | .01    |      | -10.15309   | 20  |         | Averaged   | CCC  |
| Methylcyclohexane           | 0.6123         | 0.52642 |             | .01    |      | -14.0258    | 60  |         | Averaged   |      |
| Bromodichloromethane        | 0.3933         | 0.35565 |             | .01    |      | -9.57285    | 60  |         | Averaged   |      |
| cis-1,3-Dichloropropylene   | 0.486          | 0.43583 |             | .01    |      | -10.32305   | 60  |         | Averaged   |      |
| 4-Methyl-2-pentanone        | 0.1572         | 0.13315 |             | .01    |      | -15.29898   | 60  |         | Averaged   |      |
| Toluene                     | 1.7911         | 1.51061 |             | .01    |      | -15.66021   | 20  |         | Averaged   | CCC  |
| trans-1,3-Dichloropropylene | 0.565          | 0.50334 |             | .01    |      | -10.91327   | 60  |         | Averaged   |      |
| 1,1,2-Trichloroethane       | 0.2825         | 0.23927 |             | .01    |      | -15.30265   | 60  |         | Averaged   |      |
| 2-Hexanone                  | 0.391          | 0.3452  |             | .01    |      | -11.71355   | 60  |         | Averaged   |      |
| Tetrachloroethylene         | 0.3509         | 0.29774 |             | .01    |      | -15.14962   | 60  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: VOA4.I

Injection Date: 02-NOV-16 10:27

Data File: 110216V4\4H302.D

Init. Cal. Date(s) 31-OCT-16 16:55 01-NOV-16 00:4

Lab Sample ID W4VM161102-01

Method: 103116V4\VOA4-8260-103116.M

Quant Type ISTD

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| Dibromochloromethane        | 0.3688         | 0.33458 |             | .01    |      | -9.27874    | 60  |         | Averaged   |      |
| 1,2-Dibromoethane           | 0.325          | 0.2828  |             | .01    |      | -12.98462   | 60  |         | Averaged   |      |
| Chlorobenzene               | 1.164          | 0.99035 |             | .3     |      | -14.91838   | 60  |         | Averaged   | SPCC |
| Ethylbenzene                | 2.0807         | 1.75721 |             | .01    |      | -15.54717   | 20  |         | Averaged   | CCC  |
| m,p-Xylenes                 | 0.7968         | 0.67012 |             | .01    |      | -15.89859   | 60  |         | Averaged   |      |
| Styrene                     | 1.2786         | 1.0924  |             | .01    |      | -14.5628    | 60  |         | Averaged   |      |
| o-Xylene                    | 1.7019         | 1.40252 |             | .01    |      | -17.59093   | 60  |         | Averaged   |      |
| Bromoform                   | 0.414          | 0.38513 |             | .1     |      | -6.97343    | 60  |         | Averaged   | SPCC |
| Isopropylbenzene            | 4.0606         | 3.41689 |             | .01    |      | -15.85258   | 60  |         | Averaged   |      |
| 1,1,2,2-Tetrachloroethane   | 0.8815         | 0.74663 |             | .3     |      | -15.30006   | 60  |         | Averaged   | SPCC |
| 1,3-Dichlorobenzene         | 1.9316         | 1.64958 |             | .01    |      | -14.60033   | 60  |         | Averaged   |      |
| 1,4-Dichlorobenzene         | 1.8924         | 1.61173 |             | .01    |      | -14.83143   | 60  |         | Averaged   |      |
| 1,2-Dichlorobenzene         | 1.7934         | 1.50269 |             | .01    |      | -16.20999   | 60  |         | Averaged   |      |
| 1,2-Dibromo-3-chloropropane | 0.1578         | 0.14567 |             | .01    |      | -7.68695    | 60  |         | Averaged   |      |
| 1,2,4-Trichlorobenzene      | 1.1732         | 0.99311 |             | .01    |      | -15.35032   | 60  |         | Averaged   |      |
| 1,2,3-Trichlorobenzene      | 1.012          | 0.86004 |             | .01    |      | -15.01581   | 60  |         | Averaged   |      |

Agf  
11/15/2016

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H302.D  
Acq On : 02 Nov 2016 10:27  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161102-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[A] 1026-07E/1024-07E  
ALS Vial : 2 Sample Multiplier: 1

Cell  
11/03/2016

Quant Time: Nov 02 11:23:04 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1162907  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 859639   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.905 | 15.905 | 1.000  | 455873   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1162907  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 859639   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.905 | 15.899 | 1.000  | 455873   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 302525  | 47.86 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1151609 | 46.97 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 469814  | 47.50 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.749  | 4.749  | 0.460  | 352183   | 50.28   | ug/L  | 100    |
| 3) Chloromethane              | 50   | 5.102  | 5.094  | 0.494  | 328561   | 42.47   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 5.330  | 5.322  | 0.516  | 310157   | 49.64   | ug/L  | 100    |
| 5) Bromomethane               | 94   | 5.895  | 5.887  | 0.571  | 309255   | 48.22   | ug/L  | 99     |
| 6) Chloroethane               | 64   | 6.005  | 6.005  | 0.581  | 294849   | 47.27   | ug/L  | 100    |
| 7) Trichlorofluoromethane     | 101  | 6.371  | 6.370  | 0.617  | 504353   | 48.29   | ug/L  | 99     |
| 8) Ethyl ether                | 59   | 6.712  | 6.706  | 0.650  | 265032   | 44.99   | ug/L  | 98     |
| 9) Acetone                    | 43   | 7.066  | 7.059  | 0.684  | 831464   | 223.83  | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      | 61   | 7.090  | 7.090  | 0.687  | 523628   | 44.48   | ug/L  | 99     |
| 11) Iodomethane               | 142  | 7.334  | 7.327  | 0.710  | 2437840  | 213.00  | ug/L  | 100    |
| 12) Acetonitrile              | 41   | 7.407  | 7.407  | 0.717  | 863857   | 1037.28 | ug/L  | 99     |
| 13) Methyl acetate            | 43   | 7.456  | 7.456  | 0.722  | 932608   | 202.14  | ug/L  | 99     |
| 14) Carbon disulfide          | 76   | 7.474  | 7.468  | 0.724  | 4879091  | 210.65  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 7.645  | 7.645  | 0.740  | 320910   | 39.75   | ug/L  | 99     |
| 16) tert-Butyl methyl ether   | 73   | 7.956  | 7.955  | 0.770  | 797245   | 42.71   | ug/L  | 99     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 489997   | 44.08   | ug/L  | 99     |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 1323     | N.D.    |       |        |
| 19) Vinyl acetate             | 43   | 8.413  | 8.413  | 0.815  | 2858025  | 222.87  | ug/L  | 100    |
| 20) 1,1-Dichloroethane        | 63   | 8.462  | 8.461  | 0.819  | 588512   | 43.77   | ug/L  | 100    |
| 21) 2-Butanone                | 43   | 9.035  | 9.028  | 0.875  | 1049248  | 225.26  | ug/L  | 99     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.096  | 9.095  | 0.881  | 344639   | 44.34   | ug/L  | 100    |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 530291   | 45.90   | ug/L  | 100    |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 140723   | 43.41   | ug/L  | 100    |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 541795   | 44.13   | ug/L  | 100    |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 527263   | 44.74   | ug/L  | 100    |
| 27) Cyclohexane               | 56   | 9.791  | 9.790  | 0.948  | 682332   | 42.81   | ug/L  | 99     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.839  | 0.953  | 446139   | 44.60   | ug/L  | 100    |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 456234   | 45.24   | ug/L  | 99     |
| 31) 1,2-Dichloroethane        | 62   | 10.047 | 10.046 | 0.973  | 378730   | 42.84   | ug/L  | 100    |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 1240904  | 42.93   | ug/L  | 100    |
| 33) Cyclohexene               | 67   | 10.205 | 10.199 | 0.988  | 631966   | 44.63   | ug/L  | 99     |
| 34) n-Butyl alcohol           | 56   | 10.400 | 10.400 | 1.007  | 922399   | 4727.34 | ug/L  | 99     |
| 35) Trichloroethylene         | 95   | 10.711 | 10.717 | 1.037  | 330452   | 44.09   | ug/L  | 100    |
| 36) 2-Pentanone               | 43   | 10.851 | 10.778 | 1.051  | 255      | N.D.    |       |        |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 341246   | 44.93   | ug/L  | 100    |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.973 | 1.063  | 612173   | 42.98   | ug/L  | 99     |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 167644   | 43.13   | ug/L  | 98     |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.193 | 1.084  | 413588   | 45.21   | ug/L  | 100    |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.412 | 1.106  | 726806   | 210.31  | ug/L  | 99     |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 506833   | 44.83   | ug/L  | 100    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H302.D  
Acq On : 02 Nov 2016 10:27  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161102-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[A] 1026-07E/1024-07E  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 02 11:23:04 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 572324   | 211.72 | ug/L  | 99  |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 1298581  | 42.17  | ug/L  | 100 |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 432692   | 44.55  | ug/L  | 100 |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 205687   | 42.35  | ug/L  | 100 |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 1483738  | 220.73 | ug/L  | 100 |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 392640   | 41.44  | ug/L  | 95  |
| 51)  | Tetrachloroethylene       | 164  | 12.638 | 12.637 | 0.937  | 255950   | 42.42  | ug/L  | 99  |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 287615   | 45.37  | ug/L  | 98  |
| 53)  | 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 243108   | 43.50  | ug/L  | 98  |
| 54)  | Chlorobenzene             | 112  | 13.522 | 13.521 | 1.002  | 851342   | 42.54  | ug/L  | 99  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.576 | 1.006  | 309802   | 43.64  | ug/L  | 100 |
| 56)  | Ethylbenzene              | 91   | 13.589 | 13.588 | 1.007  | 1510566  | 42.23  | ug/L  | 100 |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 1152122  | 84.11  | ug/L  | 99  |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 1205657  | 41.20  | ug/L  | 100 |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 939073   | 42.72  | ug/L  | 100 |
| 61)  | Bromoform                 | 173  | 14.381 | 14.381 | 0.904  | 175569   | 46.51  | ug/L  | 99  |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 1557667  | 42.07  | ug/L  | 100 |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.927  | 340367   | 42.35  | ug/L  | 100 |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 90011    | 42.25  | ug/L  | 97  |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.936  | 362292   | 43.05  | ug/L  | 99  |
| 67)  | n-Propylbenzene           | 91   | 14.918 | 14.917 | 0.938  | 1857238  | 41.64  | ug/L  | 100 |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.064 | 15.070 | 0.947  | 1297463  | 41.86  | ug/L  | 100 |
| 69)  | 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 352466   | 41.99  | ug/L  | 97  |
| 70)  | 4-Chlorotoluene           | 91   | 15.161 | 15.161 | 0.953  | 1163794  | 42.20  | ug/L  | 100 |
| 71)  | tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 280645   | 43.00  | ug/L  | 99  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.479 | 15.478 | 0.973  | 1343454  | 42.22  | ug/L  | 86  |
| 73)  | sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 1756798  | 42.64  | ug/L  | 99  |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.992  | 1465298  | 42.83  | ug/L  | 100 |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.996  | 751998   | 42.70  | ug/L  | 100 |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.930 | 15.929 | 1.002  | 734743   | 42.58  | ug/L  | 100 |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.020  | 1461365  | 42.10  | ug/L  | 100 |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.028  | 685036   | 41.89  | ug/L  | 100 |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.222 | 17.228 | 1.083  | 66406    | 46.15  | ug/L  | 98  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 452733   | 42.32  | ug/L  | 100 |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 268989   | 43.60  | ug/L  | 100 |
| 82)  | Naphthalene               | 128  | 18.685 | 18.685 | 1.175  | 971870   | 41.79  | ug/L  | 100 |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.033 | 19.033 | 1.197  | 392071   | 42.49  | ug/L  | 99  |
| 85)  | Acrolein                  |      | 6.852  | 6.895  | 0.664  | 0m       | N.D.   | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 7.096  | 0.000  | 0        | N.D.   |       |     |
| 87)  | Isopropyl Alcohol         |      | 7.059  | 7.139  | 0.684  | 0m       | N.D.   | d     |     |
| 88)  | Allyl chloride            |      | 7.407  | 7.511  | 0.717  | 0m       | N.D.   | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 7.645  | 7.639  | 0.740  | 0m       | N.D.   | d     |     |
| 90)  | Acrylonitrile             |      | 7.949  | 7.882  | 0.770  | 0m       | N.D.   | d     |     |
| 91)  | Isopropyl ether           |      | 8.413  | 8.455  | 0.815  | 0m       | N.D.   | d     |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 8.584  | 8.577  | 0.831  | 0m       | N.D.   | d     |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.   |       |     |
| 94)  | Ethyl acetate             |      | 9.035  | 9.047  | 0.875  | 0m       | N.D.   | d     |     |
| 95)  | Propionitrile             |      | 9.035  | 9.096  | 0.875  | 0m       | N.D.   | d     |     |
| 96)  | Methacrylonitrile         |      | 0.000  | 9.278  | 0.000  | 0        | N.D.   |       |     |
| 97)  | Tetrahydrofuran           |      | 9.413  | 9.419  | 0.911  | 0m       | N.D.   | d     |     |
| 98)  | Isobutyl alcohol          |      | 9.791  | 9.717  | 0.948  | 0m       | N.D.   | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 10.083 | 10.101 | 0.976  | 0m       | N.D.   | d     |     |
| 100) | Methyl methacrylate       |      | 10.979 | 10.925 | 1.063  | 0m       | N.D.   | d     |     |
| 101) | 1,4-Dioxane               |      | 11.083 | 11.034 | 1.073  | 0m       | N.D.   | d     |     |
| 102) | 2-Nitropropane            |      | 11.412 | 11.388 | 1.105  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H302.D  
Acq On : 02 Nov 2016 10:27  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161102-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[A] 1026-07E/1024-07E  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 02 11:23:04 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 12.193 | 12.186 | 0.904  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 13.387 | 13.387 | 0.842  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.491 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.637 | 14.631 | 0.920  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.918 | 14.796 | 0.938  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 15.503 | 15.503 | 0.975  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 16.045 | 16.039 | 1.009  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 16.527 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H302.D  
Acq On : 02 Nov 2016 10:27  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161102-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[A] 1026-07E/1024-07E  
ALS Vial : 2 Sample Multiplier:1

[illegible]

## Continuing Calibration Summary

**Instrument ID:** VOA4.I  
**Data File:** 110216V4\4H306.D  
**Lab Sample ID:** W4VM161102-05  
**Quant Type:** ISTD

**Client SDG:** 409254  
**Injection Date:** 02-NOV-16 12:24  
**Init. Cal. Date(s):** 31-OCT-16 16:55 - 01-NOV-16 00:4  
**Method:** 103116V4\VOA4-8260-103116.M  
**Method Update:** 01-NOV-16 08:22

| Compound                 | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|--------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| S1,2-Dichloroethane-d4   | 0.2717            | 0.25921   |                | .01    |         | -4.59698       | 60  |            | Averaged      |
| SToluene-d8              | 1.4259            | 1.37618   |                | .01    |         | -3.48692       | 60  |            | Averaged      |
| SBromofluorobenzene      | 1.0849            | 1.04312   |                | .01    |         | -3.85105       | 60  |            | Averaged      |
| Trichlorotrifluoroethane | 0.1188            | 0.12      |                | .01    |         | 1.0101         | 60  |            | Averaged      |
| 1,4-Dioxane              | 2500              | 2460.38   | 2500           |        |         | -1.5848        | 60  |            | Linear        |



Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H306.D  
Acq On : 02 Nov 2016 12:24  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161102-05|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[B] 1025-06E/0913-06F  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 02 13:31:09 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1061700  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 776821   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.905 | 1.000  | 410886   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1061700  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 776821   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 410886   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 275208  | 47.69 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1069043 | 48.26 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 428602  | 48.08 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.749  | 4.749  | 0.460  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 5.071  | 5.094  | 0.491  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 5.322  | 5.322  | 0.515  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 5.879  | 5.887  | 0.569  | 0m       | N.D. | d     |        |
| 6) Chloroethane               |      | 5.997  | 6.005  | 0.581  | 0m       | N.D. | d     |        |
| 7) Trichlorofluoromethane     |      | 6.389  | 6.370  | 0.619  | 0m       | N.D. | d     |        |
| 8) Ethyl ether                |      | 6.712  | 6.706  | 0.650  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 7.138  | 7.059  | 0.691  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.102  | 7.090  | 0.688  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 7.327  | 7.327  | 0.710  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 7.413  | 7.407  | 0.718  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 7.455  | 7.456  | 0.722  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 7.510  | 7.468  | 0.727  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 7.644  | 7.645  | 0.740  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 7.943  | 7.955  | 0.769  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 7.980  | 7.992  | 0.773  | 0m       | N.D. | d     |        |
| 18) Hexane                    |      | 8.291  | 8.285  | 0.803  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 8.455  | 8.413  | 0.819  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 8.467  | 8.461  | 0.820  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 9.047  | 9.028  | 0.876  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 9.089  | 9.095  | 0.880  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 9.394  | 9.400  | 0.910  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 9.681  | 9.687  | 0.937  | 0m       | N.D. | d     |        |
| 27) Cyclohexane               |      | 9.717  | 9.790  | 0.941  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 9.845  | 9.839  | 0.953  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 9.882  | 9.882  | 0.957  | 0m       | N.D. | d     |        |
| 31) 1,2-Dichloroethane        |      | 10.040 | 10.046 | 0.972  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 10.071 | 10.077 | 0.975  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 10.199 | 10.199 | 0.988  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 10.565 | 10.400 | 1.023  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 10.717 | 10.717 | 1.038  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.790 | 10.778 | 1.045  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 10.961 | 10.955 | 1.061  | 0m       | N.D. | d     |        |
| 38) Methylcyclohexane         |      | 10.924 | 10.973 | 1.058  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 11.065 | 11.083 | 1.071  | 0m       | N.D. | d     |        |
| 40) Bromodichloromethane      |      | 11.199 | 11.193 | 1.084  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 11.412 | 11.412 | 1.105  | 0m       | N.D. | d     |        |
| 42) cis-1,3-Dichloropropylene |      | 11.650 | 11.644 | 1.128  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H306.D  
Acq On : 02 Nov 2016 12:24  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161102-05|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[B] 1025-06E/0913-06F  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 02 13:31:09 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units  |     |
|------|---------------------------|------|--------|--------|--------|----------|---------|--------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 11.735 | 11.735 | 0.870  | 0m       | N.D.    | d      |     |
| 46)  | Toluene                   |      | 12.040 | 12.040 | 0.892  | 0m       | N.D.    | d      |     |
| 47)  | trans-1,3-Dichloroprop... |      | 12.180 | 12.180 | 0.903  | 0m       | N.D.    | d      |     |
| 48)  | 1,1,2-Trichloroethane     |      | 12.387 | 12.400 | 0.918  | 0m       | N.D.    | d      |     |
| 49)  | 2-Hexanone                |      | 12.583 | 12.583 | 0.933  | 0m       | N.D.    | d      |     |
| 50)  | 1,3-Dichloropropane       |      | 12.595 | 12.595 | 0.934  | 0m       | N.D.    | d      |     |
| 51)  | Tetrachloroethylene       |      | 12.637 | 12.637 | 0.937  | 0m       | N.D.    | d      |     |
| 52)  | Dibromochloromethane      |      | 12.863 | 12.863 | 0.953  | 0m       | N.D.    | d      |     |
| 53)  | 1,2-Dibromoethane         |      | 13.028 | 13.034 | 0.966  | 0m       | N.D.    | d      |     |
| 54)  | Chlorobenzene             |      | 13.527 | 13.521 | 1.003  | 0m       | N.D.    | d      |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 13.576 | 13.576 | 1.006  | 0m       | N.D.    | d      |     |
| 56)  | Ethylbenzene              |      | 13.588 | 13.588 | 1.007  | 0m       | N.D.    | d      |     |
| 57)  | m,p-Xylenes               |      | 13.698 | 13.698 | 1.015  | 0m       | N.D.    | d      |     |
| 58)  | o-Xylene                  |      | 14.131 | 14.131 | 1.047  | 0m       | N.D.    | d      |     |
| 59)  | Styrene                   |      | 14.131 | 14.131 | 1.047  | 0m       | N.D.    | d      |     |
| 61)  | Bromoform                 |      | 14.381 | 14.381 | 0.905  | 0m       | N.D.    | d      |     |
| 62)  | Isopropylbenzene          |      | 14.491 | 14.491 | 0.911  | 0m       | N.D.    | d      |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 14.759 | 14.747 | 0.928  | 0m       | N.D.    | d      |     |
| 65)  | 1,2,3-Trichloropropane    |      | 14.832 | 14.838 | 0.933  | 0m       | N.D.    | d      |     |
| 66)  | Bromobenzene              |      | 14.899 | 14.893 | 0.937  | 0m       | N.D.    | d      |     |
| 67)  | n-Propylbenzene           |      | 14.911 | 14.917 | 0.938  | 0m       | N.D.    | d      |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 15.064 | 15.070 | 0.947  | 0m       | N.D.    | d      |     |
| 69)  | 2-Chlorotoluene           |      | 15.064 | 15.064 | 0.947  | 0m       | N.D.    | d      |     |
| 70)  | 4-Chlorotoluene           |      | 15.161 | 15.161 | 0.954  | 0m       | N.D.    | d      |     |
| 71)  | tert-Butylbenzene         |      | 15.436 | 15.442 | 0.971  | 0m       | N.D.    | d      |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 15.478 | 15.478 | 0.974  | 0m       | N.D.    | d      |     |
| 73)  | sec-Butylbenzene          |      | 15.661 | 15.661 | 0.985  | 0m       | N.D.    | d      |     |
| 74)  | 4-Isopropyltoluene        |      | 15.783 | 15.783 | 0.993  | 0m       | N.D.    | d      |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.850 | 15.844 | 0.997  | 0m       | N.D.    | d      |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.929 | 15.929 | 1.002  | 0m       | N.D.    | d      |     |
| 77)  | n-Butylbenzene            |      | 16.228 | 16.228 | 1.021  | 0m       | N.D.    | d      |     |
| 78)  | 1,2-Dichlorobenzene       |      | 16.362 | 16.356 | 1.029  | 0m       | N.D.    | d      |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 17.228 | 17.228 | 1.084  | 0m       | N.D.    | d      |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 18.301 | 18.301 | 1.151  | 0m       | N.D.    | d      |     |
| 81)  | Hexachlorobutadiene       |      | 18.490 | 18.490 | 1.163  | 0m       | N.D.    | d      |     |
| 82)  | Naphthalene               |      | 18.691 | 18.685 | 1.176  | 0m       | N.D.    | d      |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 19.032 | 19.033 | 1.197  | 0m       | N.D.    | d      |     |
| 85)  | Acrolein                  | 56   | 6.889  | 6.895  | 0.667  | 252402   | 264.69  | ug/L   | 99  |
| 86)  | Trichlorotrifluoroethane  | 85   | 7.090  | 7.096  | 0.687  | 637009   | 252.42  | ug/L   | 99  |
| 87)  | Isopropyl Alcohol         | 45   | 7.138  | 7.139  | 0.691  | 1032886  | 2462.98 | ug/L   | 98  |
| 88)  | Allyl chloride            | 41   | 7.510  | 7.511  | 0.727  | 2685278  | 244.46  | ug/L   | 99  |
| 89)  | tert-Butyl Alcohol        | 59   | 7.638  | 7.639  | 0.740  | 1578834  | 2505.64 | ug/L # | 100 |
| 90)  | Acrylonitrile             | 53   | 7.876  | 7.882  | 0.763  | 455377   | 243.88  | ug/L   | 99  |
| 91)  | Isopropyl ether           | 45   | 8.455  | 8.455  | 0.819  | 1115125  | 47.79   | ug/L   | 97  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 8.571  | 8.577  | 0.830  | 507763   | 50.15   | ug/L   | 99  |
| 93)  | Ethyl tert-butyl ether    | 59   | 8.858  | 8.858  | 0.858  | 944570   | 48.06   | ug/L   | 100 |
| 94)  | Ethyl acetate             | 43   | 9.047  | 9.047  | 0.876  | 1242267  | 253.66  | ug/L   | 100 |
| 95)  | Propionitrile             | 54   | 9.095  | 9.096  | 0.881  | 182809   | 242.71  | ug/L   | 99  |
| 96)  | Methacrylonitrile         | 41   | 9.278  | 9.278  | 0.898  | 777164   | 248.12  | ug/L   | 99  |
| 97)  | Tetrahydrofuran           | 42   | 9.419  | 9.419  | 0.912  | 414001   | 244.48  | ug/L   | 100 |
| 98)  | Isobutyl alcohol          | 41   | 9.717  | 9.717  | 0.941  | 508059   | 2507.10 | ug/L   | 98  |
| 99)  | Methyl tert-amyl ether    | 73   | 10.101 | 10.101 | 0.978  | 773540   | 48.11   | ug/L   | 99  |
| 100) | Methyl methacrylate       | 69   | 10.924 | 10.925 | 1.058  | 826839   | 258.32  | ug/L   | 99  |
| 101) | 1,4-Dioxane               | 88   | 11.034 | 11.034 | 1.068  | 126591   | 2460.38 | ug/L   | 100 |
| 102) | 2-Nitropropane            | 43   | 11.388 | 11.388 | 1.103  | 378281   | 250.48  | ug/L   | 96  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H306.D  
Acq On : 02 Nov 2016 12:24  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161102-05|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[B] 1025-06E/0913-06F  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 02 13:31:09 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 104) Ethyl methacrylate        | 69   | 12.186 | 12.186 | 0.903  | 1549696  | 261.80  | ug/L  | 99  |
| 106) 1-Chlorohexane            | 55   | 13.387 | 13.387 | 0.842  | 344118   | 50.21   | ug/L  | 99  |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.509 | 14.509 | 0.913  | 533816   | 254.70  | ug/L  | 99  |
| 108) Cyclohexanone             | 42   | 14.625 | 14.631 | 0.920  | 193052   | 1163.42 | ug/L  | 98  |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.796 | 14.796 | 0.931  | 485988   | 255.28  | ug/L  | 100 |
| 110) Pentachloroethane         | 167  | 15.503 | 15.503 | 0.975  | 913185   | 270.54  | ug/L  | 100 |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.009  | 2900936  | 294.83  | ug/L  | 99  |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 843779   | 250.83  | ug/L  | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



## Continuing Calibration Summary

**Client SDG:** 409254  
**Instrument ID:** VOA4.I  
**Injection Date:** 03-NOV-16 10:46  
**Data File:** 110316V4\4H402.D  
**Init. Cal. Date(s)** 31-OCT-16 16:55 - 01-NOV-16 00:4  
**Lab Sample ID** W4VM161103-01  
**Method:** 103116V4\VOA4-8260-103116.M  
**Quant Type** ISTD  
**Method Update:** 01-NOV-16 08:22

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| S 1,2-Dichloroethane-d4     | 0.2717         | 0.25103 |             | .01    |      | -7.60766    | 60  |         | Averaged   |      |
| S Toluene-d8                | 1.4259         | 1.27862 |             | .01    |      | -10.32892   | 60  |         | Averaged   |      |
| S Bromofluorobenzene        | 1.0849         | 0.96994 |             | .01    |      | -10.59637   | 60  |         | Averaged   |      |
| Dichlorodifluoromethane     | 0.3012         | 0.31048 |             | .01    |      | 3.08101     | 60  |         | Averaged   |      |
| Chloromethane               | 0.3326         | 0.29718 |             | .1     |      | -10.64943   | 60  |         | Averaged   | SPCC |
| Vinyl chloride              | 0.2686         | 0.27256 |             | .01    |      | 1.47431     | 20  |         | Averaged   | CCC  |
| Bromomethane                | 0.2758         | 0.26984 |             | .01    |      | -2.16099    | 60  |         | Averaged   |      |
| Chloroethane                | 0.2682         | 0.25941 |             | .01    |      | -3.2774     | 60  |         | Averaged   |      |
| Trichlorofluoromethane      | 0.4491         | 0.44122 |             | .01    |      | -1.75462    | 60  |         | Averaged   |      |
| Acetone                     | 0.1597         | 0.15349 |             | .01    |      | -3.88854    | 60  |         | Averaged   |      |
| 1,1-Dichloroethylene        | 0.5062         | 0.4297  |             | .01    |      | -15.1126    | 20  |         | Averaged   | CCC  |
| Methyl acetate              | 0.1984         | 0.16904 |             | .01    |      | -14.79839   | 60  |         | Averaged   |      |
| Carbon disulfide            | 0.9959         | 0.7435  |             | .01    |      | -25.34391   | 60  |         | Averaged   |      |
| Methylene chloride          | 0.3471         | 0.27956 |             | .01    |      | -19.45837   | 60  |         | Averaged   |      |
| tert-Butyl methyl ether     | 0.8025         | 0.71231 |             | .01    |      | -11.23863   | 60  |         | Averaged   |      |
| trans-1,2-Dichloroethylene  | 0.4779         | 0.42662 |             | .01    |      | -10.73028   | 60  |         | Averaged   |      |
| 1,1-Dichloroethane          | 0.5781         | 0.51881 |             | .1     |      | -10.25601   | 60  |         | Averaged   | SPCC |
| 2-Butanone                  | 0.2003         | 0.19683 |             | .01    |      | -1.7324     | 60  |         | Averaged   |      |
| cis-1,2-Dichloroethylene    | 0.3342         | 0.30587 |             | .01    |      | -8.47696    | 60  |         | Averaged   |      |
| Bromochloromethane          | 0.1394         | 0.12624 |             | .01    |      | -9.44046    | 60  |         | Averaged   |      |
| Chloroform                  | 0.5279         | 0.49196 |             | .01    |      | -6.80811    | 20  |         | Averaged   | CCC  |
| 1,1,1-Trichloroethane       | 0.5068         | 0.46687 |             | .01    |      | -7.87885    | 60  |         | Averaged   |      |
| Cyclohexane                 | 0.6853         | 0.58276 |             | .01    |      | -14.96279   | 60  |         | Averaged   |      |
| Carbon tetrachloride        | 0.4336         | 0.40661 |             | .01    |      | -6.22463    | 60  |         | Averaged   |      |
| 1,2-Dichloroethane          | 0.3801         | 0.34559 |             | .01    |      | -9.07919    | 60  |         | Averaged   |      |
| Benzene                     | 1.2427         | 1.10445 |             | .01    |      | -11.12497   | 60  |         | Averaged   |      |
| Trichloroethylene           | 0.3222         | 0.29707 |             | .01    |      | -7.7995     | 60  |         | Averaged   |      |
| 1,2-Dichloropropane         | 0.3266         | 0.31162 |             | .01    |      | -4.58665    | 20  |         | Averaged   | CCC  |
| Methylcyclohexane           | 0.6123         | 0.53872 |             | .01    |      | -12.01699   | 60  |         | Averaged   |      |
| Bromodichloromethane        | 0.3933         | 0.38387 |             | .01    |      | -2.39766    | 60  |         | Averaged   |      |
| cis-1,3-Dichloropropylene   | 0.486          | 0.46739 |             | .01    |      | -3.82922    | 60  |         | Averaged   |      |
| 4-Methyl-2-pentanone        | 0.1572         | 0.14686 |             | .01    |      | -6.57761    | 60  |         | Averaged   |      |
| Toluene                     | 1.7911         | 1.59876 |             | .01    |      | -10.73865   | 20  |         | Averaged   | CCC  |
| trans-1,3-Dichloropropylene | 0.565          | 0.55206 |             | .01    |      | -2.29027    | 60  |         | Averaged   |      |
| 1,1,2-Trichloroethane       | 0.2825         | 0.26248 |             | .01    |      | -7.08673    | 60  |         | Averaged   |      |
| 2-Hexanone                  | 0.391          | 0.39738 |             | .01    |      | 1.63171     | 60  |         | Averaged   |      |
| Tetrachloroethylene         | 0.3509         | 0.31041 |             | .01    |      | -11.5389    | 60  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: VOA4.I

Injection Date: 03-NOV-16 10:46

Data File: 110316V4\4H402.D

Init. Cal. Date(s) 31-OCT-16 16:55 01-NOV-16 00:4

Lab Sample ID W4VM161103-01

Method: 103116V4\VOA4-8260-103116.M

Quant Type ISTD

| Compound                    | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |      |
|-----------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|------|
| Dibromochloromethane        | 0.3688            | 0.36722   |                | .01    |         | -0.42842       | 60  |            | Averaged      |      |
| 1,2-Dibromoethane           | 0.325             | 0.30659   |                | .01    |         | -5.66462       | 60  |            | Averaged      |      |
| Chlorobenzene               | 1.164             | 1.06171   |                | .3     |         | -8.7878        | 60  |            | Averaged      | SPCC |
| Ethylbenzene                | 2.0807            | 1.86295   |                | .01    |         | -10.46523      | 20  |            | Averaged      | CCC  |
| m,p-Xylenes                 | 0.7968            | 0.71513   |                | .01    |         | -10.24975      | 60  |            | Averaged      |      |
| Styrene                     | 1.2786            | 1.15642   |                | .01    |         | -9.55576       | 60  |            | Averaged      |      |
| o-Xylene                    | 1.7019            | 1.49994   |                | .01    |         | -11.86674      | 60  |            | Averaged      |      |
| Bromoform                   | 0.414             | 0.4237    |                | .1     |         | 2.343          | 60  |            | Averaged      | SPCC |
| Isopropylbenzene            | 4.0606            | 3.68424   |                | .01    |         | -9.26858       | 60  |            | Averaged      |      |
| 1,1,2,2-Tetrachloroethane   | 0.8815            | 0.82864   |                | .3     |         | -5.9966        | 60  |            | Averaged      | SPCC |
| 1,3-Dichlorobenzene         | 1.9316            | 1.79509   |                | .01    |         | -7.0672        | 60  |            | Averaged      |      |
| 1,4-Dichlorobenzene         | 1.8924            | 1.75018   |                | .01    |         | -7.51532       | 60  |            | Averaged      |      |
| 1,2-Dichlorobenzene         | 1.7934            | 1.65713   |                | .01    |         | -7.59842       | 60  |            | Averaged      |      |
| 1,2-Dibromo-3-chloropropane | 0.1578            | 0.1616    |                | .01    |         | 2.40811        | 60  |            | Averaged      |      |
| 1,2,4-Trichlorobenzene      | 1.1732            | 1.11159   |                | .01    |         | -5.25145       | 60  |            | Averaged      |      |
| 1,2,3-Trichlorobenzene      | 1.012             | 0.96988   |                | .01    |         | -4.16206       | 60  |            | Averaged      |      |

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H402.D  
Acq On : 03 Nov 2016 10:46  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161103-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[A] 1026-07E/1024-07E  
ALS Vial : 2 Sample Multiplier: 1

*Agf*  
11/09/2016

*Cell*  
11/09/2016

Quant Time: Nov 03 11:11:58 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1176019  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 869583   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.905 | 1.000  | 457978   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1176019  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 869583   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 457978   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 295215  | 46.19 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1111863 | 44.84 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 444212  | 44.70 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.749  | 4.749  | 0.460  | 365133   | 51.55   | ug/L  | 99     |
| 3) Chloromethane              | 50   | 5.094  | 5.094  | 0.493  | 349491   | 44.67   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 5.330  | 5.322  | 0.516  | 320539   | 50.73   | ug/L  | 99     |
| 5) Bromomethane               | 94   | 5.895  | 5.887  | 0.571  | 317337   | 48.93   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 6.005  | 6.005  | 0.581  | 305073   | 48.37   | ug/L  | 100    |
| 7) Trichlorofluoromethane     | 101  | 6.370  | 6.370  | 0.617  | 518884   | 49.13   | ug/L  | 99     |
| 8) Ethyl ether                | 59   | 6.706  | 6.706  | 0.649  | 276424   | 46.40   | ug/L  | 98     |
| 9) Acetone                    | 43   | 7.059  | 7.059  | 0.684  | 902512   | 240.25  | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      | 61   | 7.090  | 7.090  | 0.687  | 505331   | 42.45   | ug/L  | 99     |
| 11) Iodomethane               | 142  | 7.334  | 7.327  | 0.710  | 2324521  | 200.83  | ug/L  | 100    |
| 12) Acetonitrile              | 41   | 7.401  | 7.407  | 0.717  | 913920   | 1085.16 | ug/L  | 98     |
| 13) Methyl acetate            | 43   | 7.455  | 7.456  | 0.722  | 993996   | 213.04  | ug/L  | 99     |
| 14) Carbon disulfide          | 76   | 7.468  | 7.468  | 0.723  | 4371846  | 186.64  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 7.644  | 7.645  | 0.740  | 328766   | 40.27   | ug/L  | 100    |
| 16) tert-Butyl methyl ether   | 73   | 7.955  | 7.955  | 0.770  | 837695   | 44.38   | ug/L  | 100    |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 501710   | 44.63   | ug/L  | 99     |
| 18) Hexane                    | 57   | 8.278  | 8.285  | 0.802  | 1621     | N.D.    |       |        |
| 19) Vinyl acetate             | 43   | 8.413  | 8.413  | 0.815  | 2966122  | 228.72  | ug/L  | 100    |
| 20) 1,1-Dichloroethane        | 63   | 8.461  | 8.461  | 0.819  | 610127   | 44.87   | ug/L  | 100    |
| 21) 2-Butanone                | 43   | 9.028  | 9.028  | 0.874  | 1157373  | 245.71  | ug/L  | 99     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.089  | 9.095  | 0.880  | 359704   | 45.76   | ug/L  | 99     |
| 23) 2,2-Dichloropropane       | 77   | 9.126  | 9.132  | 0.884  | 548668   | 46.96   | ug/L  | 99     |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 148460   | 45.29   | ug/L  | 98     |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 578552   | 46.60   | ug/L  | 100    |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 549052   | 46.06   | ug/L  | 99     |
| 27) Cyclohexane               | 56   | 9.790  | 9.790  | 0.948  | 685336   | 42.52   | ug/L  | 100    |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.839  | 0.953  | 458338   | 45.31   | ug/L  | 99     |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 478186   | 46.89   | ug/L  | 99     |
| 31) 1,2-Dichloroethane        | 62   | 10.046 | 10.046 | 0.973  | 406416   | 45.46   | ug/L  | 100    |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 1298853  | 44.44   | ug/L  | 99     |
| 33) Cyclohexene               | 67   | 10.199 | 10.199 | 0.988  | 639868   | 44.68   | ug/L  | 100    |
| 34) n-Butyl alcohol           | 56   | 10.400 | 10.400 | 1.007  | 1030422  | 5222.08 | ug/L  | 99     |
| 35) Trichloroethylene         | 95   | 10.717 | 10.717 | 1.038  | 349358   | 46.09   | ug/L  | 99     |
| 36) 2-Pentanone               |      | 0.000  | 10.778 | 0.000  | 0        | N.D.    |       |        |
| 37) 1,2-Dichloropropane       | 63   | 10.949 | 10.955 | 1.060  | 366472   | 47.71   | ug/L  | 98     |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.973 | 1.063  | 633546   | 43.99   | ug/L  | 100    |
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 180362   | 45.89   | ug/L  | 99     |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.193 | 1.084  | 451444   | 48.80   | ug/L  | 100    |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.412 | 1.106  | 774361   | 221.57  | ug/L  | 100    |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 549662   | 48.08   | ug/L  | 98     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H402.D  
Acq On : 03 Nov 2016 10:46  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161103-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[A] 1026-07E/1024-07E  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 03 11:11:58 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 638547   | 233.51 | ug/L  | 99  |
| 46)  | Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 1390258  | 44.63  | ug/L  | 100 |
| 47)  | trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 480060   | 48.86  | ug/L  | 99  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 228245   | 46.46  | ug/L  | 100 |
| 49)  | 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 1727773  | 254.10 | ug/L  | 100 |
| 50)  | 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 432505   | 45.12  | ug/L  | 92  |
| 51)  | Tetrachloroethylene       | 164  | 12.637 | 12.637 | 0.937  | 269927   | 44.23  | ug/L  | 99  |
| 52)  | Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 319328   | 49.79  | ug/L  | 100 |
| 53)  | 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 266605   | 47.16  | ug/L  | 99  |
| 54)  | Chlorobenzene             | 112  | 13.521 | 13.521 | 1.002  | 923246   | 45.61  | ug/L  | 99  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.576 | 1.006  | 341410   | 47.54  | ug/L  | 99  |
| 56)  | Ethylbenzene              | 91   | 13.588 | 13.588 | 1.007  | 1619992  | 44.77  | ug/L  | 100 |
| 57)  | m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 1243727  | 89.76  | ug/L  | 100 |
| 58)  | o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 1304323  | 44.07  | ug/L  | 100 |
| 59)  | Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 1005602  | 45.22  | ug/L  | 98  |
| 61)  | Bromoform                 | 173  | 14.381 | 14.381 | 0.905  | 194047   | 51.17  | ug/L  | 99  |
| 62)  | Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 1687299  | 45.37  | ug/L  | 100 |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.928  | 379499   | 47.00  | ug/L  | 98  |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 99576    | 46.52  | ug/L  | 98  |
| 66)  | Bromobenzene              | 156  | 14.893 | 14.893 | 0.937  | 394944   | 46.71  | ug/L  | 98  |
| 67)  | n-Propylbenzene           | 91   | 14.917 | 14.917 | 0.938  | 2011371  | 44.88  | ug/L  | 100 |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 15.070 | 15.070 | 0.948  | 1409853  | 45.28  | ug/L  | 100 |
| 69)  | 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 387462   | 45.95  | ug/L  | 100 |
| 70)  | 4-Chlorotoluene           | 91   | 15.161 | 15.161 | 0.954  | 1276165  | 46.07  | ug/L  | 99  |
| 71)  | tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 306839   | 46.80  | ug/L  | 99  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 15.478 | 15.478 | 0.974  | 1463207  | 45.77  | ug/L  | 86  |
| 73)  | sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 1893918  | 45.76  | ug/L  | 100 |
| 74)  | 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.993  | 1587309  | 46.19  | ug/L  | 99  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.997  | 822110   | 46.47  | ug/L  | 100 |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.929 | 15.929 | 1.002  | 801543   | 46.24  | ug/L  | 100 |
| 77)  | n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.021  | 1607893  | 46.10  | ug/L  | 100 |
| 78)  | 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.029  | 758927   | 46.20  | ug/L  | 99  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 17.222 | 17.222 | 1.083  | 74008    | 51.20  | ug/L  | 99  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 509086   | 47.37  | ug/L  | 100 |
| 81)  | Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 295951   | 47.75  | ug/L  | 100 |
| 82)  | Naphthalene               | 128  | 18.685 | 18.685 | 1.175  | 1086842  | 46.52  | ug/L  | 100 |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 19.032 | 19.033 | 1.197  | 444185   | 47.92  | ug/L  | 100 |
| 85)  | Acrolein                  |      | 6.925  | 6.895  | 0.671  | 0m       | N.D.   | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 7.096  | 0.000  | 0        | N.D.   |       |     |
| 87)  | Isopropyl Alcohol         |      | 7.126  | 7.139  | 0.690  | 0m       | N.D.   | d     |     |
| 88)  | Allyl chloride            |      | 7.401  | 7.511  | 0.717  | 0m       | N.D.   | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 7.638  | 7.639  | 0.740  | 0m       | N.D.   | d     |     |
| 90)  | Acrylonitrile             |      | 7.949  | 7.882  | 0.770  | 0m       | N.D.   | d     |     |
| 91)  | Isopropyl ether           |      | 8.413  | 8.455  | 0.815  | 0m       | N.D.   | d     |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 8.577  | 8.577  | 0.831  | 0m       | N.D.   | d     |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.   |       |     |
| 94)  | Ethyl acetate             |      | 9.028  | 9.047  | 0.874  | 0m       | N.D.   | d     |     |
| 95)  | Propionitrile             |      | 9.034  | 9.096  | 0.875  | 0m       | N.D.   | d     |     |
| 96)  | Methacrylonitrile         |      | 0.000  | 9.278  | 0.000  | 0        | N.D.   |       |     |
| 97)  | Tetrahydrofuran           |      | 9.412  | 9.419  | 0.911  | 0m       | N.D.   | d     |     |
| 98)  | Isobutyl alcohol          |      | 9.790  | 9.717  | 0.948  | 0m       | N.D.   | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 10.077 | 10.101 | 0.976  | 0m       | N.D.   | d     |     |
| 100) | Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D.   | d     |     |
| 101) | 1,4-Dioxane               |      | 11.083 | 11.034 | 1.073  | 0m       | N.D.   | d     |     |
| 102) | 2-Nitropropane            |      | 11.412 | 11.388 | 1.105  | 0m       | N.D.   | d     |     |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H402.D  
Acq On : 03 Nov 2016 10:46  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161103-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[A] 1026-07E/1024-07E  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 03 11:11:58 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 12.198 | 12.186 | 0.904  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 13.387 | 13.387 | 0.842  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.491 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.491 | 14.631 | 0.911  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.917 | 14.796 | 0.938  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 15.509 | 15.503 | 0.975  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 16.021 | 16.039 | 1.008  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 16.527 | 16.442 | 1.039  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H402.D  
Acq On : 03 Nov 2016 10:46  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161103-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[A] 1026-07E/1024-07E  
ALS Vial : 2 Sample Multiplier:1

## Continuing Calibration Summary

**Client SDG:** 409254  
**Instrument ID:** VOA4.I  
**Injection Date:** 03-NOV-16 12:14  
**Data File:** 110316V4\4H405.D  
**Init. Cal. Date(s)** 31-OCT-16 16:55 - 01-NOV-16 00:4  
**Lab Sample ID** W4VM161103-04  
**Method:** 103116V4\VOA4-8260-103116.M  
**Quant Type** ISTD  
**Method Update:** 01-NOV-16 08:22

| Compound                 | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|--------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| S1,2-Dichloroethane-d4   | 0.2717            | 0.24351   |                | .01    |         | -10.37541      | 60  |            | Averaged      |
| SToluene-d8              | 1.4259            | 1.32202   |                | .01    |         | -7.28522       | 60  |            | Averaged      |
| SBromofluorobenzene      | 1.0849            | 0.97792   |                | .01    |         | -9.86082       | 60  |            | Averaged      |
| Trichlorotrifluoroethane | 0.1188            | 0.12798   |                | .01    |         | 7.72727        | 60  |            | Averaged      |
| 1,4-Dioxane              | 2500              | 2611.38   | 2500           |        |         | 4.4552         | 60  |            | Linear        |

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H405.D  
Acq On : 03 Nov 2016 12:14  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161103-04|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[B] 1025-06E/0913-06F  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 03 13:37:17 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1076067  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 781464   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.905 | 1.000  | 413511   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1076067  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 781464   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 413511   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 262032  | 44.80 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1033113 | 46.36 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 404381  | 45.07 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.741  | 4.749  | 0.459  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 5.322  | 5.094  | 0.515  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 5.864  | 5.887  | 0.568  | 0m       | N.D. | d     |        |
| 6) Chloroethane               |      | 5.997  | 6.005  | 0.581  | 0m       | N.D. | d     |        |
| 7) Trichlorofluoromethane     |      | 6.371  | 6.370  | 0.617  | 0m       | N.D. | d     |        |
| 8) Ethyl ether                |      | 6.718  | 6.706  | 0.651  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 7.145  | 7.059  | 0.692  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 7.096  | 7.090  | 0.687  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 7.328  | 7.327  | 0.710  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 7.431  | 7.407  | 0.720  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 7.474  | 7.456  | 0.724  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 7.511  | 7.468  | 0.727  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 7.651  | 7.645  | 0.741  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 7.949  | 7.955  | 0.770  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 7.986  | 7.992  | 0.773  | 0m       | N.D. | d     |        |
| 18) Hexane                    |      | 8.285  | 8.285  | 0.802  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 8.456  | 8.413  | 0.819  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 8.462  | 8.461  | 0.819  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 9.047  | 9.028  | 0.876  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 9.083  | 9.095  | 0.880  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 9.400  | 9.400  | 0.910  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 9.717  | 9.790  | 0.941  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 9.839  | 9.839  | 0.953  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 9.888  | 9.882  | 0.957  | 0m       | N.D. | d     |        |
| 31) 1,2-Dichloroethane        |      | 10.041 | 10.046 | 0.972  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 10.071 | 10.077 | 0.975  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 10.205 | 10.199 | 0.988  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 10.412 | 10.400 | 1.008  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 10.711 | 10.717 | 1.037  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.790 | 10.778 | 1.045  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 10.925 | 10.973 | 1.058  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 11.083 | 11.083 | 1.073  | 0m       | N.D. | d     |        |
| 40) Bromodichloromethane      |      | 11.193 | 11.193 | 1.084  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 11.418 | 11.412 | 1.106  | 0m       | N.D. | d     |        |
| 42) cis-1,3-Dichloropropylene |      | 11.644 | 11.644 | 1.128  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H405.D  
Acq On : 03 Nov 2016 12:14  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161103-04|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[B] 1025-06E/0913-06F  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 03 13:37:17 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units  |     |
|------|---------------------------|------|--------|--------|--------|----------|---------|--------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 11.741 | 11.735 | 0.870  | 0m       | N.D.    | d      |     |
| 46)  | Toluene                   |      | 12.040 | 12.040 | 0.892  | 0m       | N.D.    | d      |     |
| 47)  | trans-1,3-Dichloroprop... |      | 12.180 | 12.180 | 0.903  | 0m       | N.D.    | d      |     |
| 48)  | 1,1,2-Trichloroethane     |      | 12.400 | 12.400 | 0.919  | 0m       | N.D.    | d      |     |
| 49)  | 2-Hexanone                |      | 12.583 | 12.583 | 0.933  | 0m       | N.D.    | d      |     |
| 50)  | 1,3-Dichloropropane       |      | 12.595 | 12.595 | 0.934  | 0m       | N.D.    | d      |     |
| 51)  | Tetrachloroethylene       |      | 12.638 | 12.637 | 0.937  | 0m       | N.D.    | d      |     |
| 52)  | Dibromochloromethane      |      | 12.857 | 12.863 | 0.953  | 0m       | N.D.    | d      |     |
| 53)  | 1,2-Dibromoethane         |      | 13.034 | 13.034 | 0.966  | 0m       | N.D.    | d      |     |
| 54)  | Chlorobenzene             |      | 13.522 | 13.521 | 1.002  | 0m       | N.D.    | d      |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 13.576 | 13.576 | 1.006  | 0m       | N.D.    | d      |     |
| 56)  | Ethylbenzene              |      | 13.583 | 13.588 | 1.007  | 0m       | N.D.    | d      |     |
| 57)  | m,p-Xylenes               |      | 13.692 | 13.698 | 1.015  | 0m       | N.D.    | d      |     |
| 58)  | o-Xylene                  |      | 14.125 | 14.131 | 1.047  | 0m       | N.D.    | d      |     |
| 59)  | Styrene                   |      | 14.131 | 14.131 | 1.047  | 0m       | N.D.    | d      |     |
| 61)  | Bromoform                 |      | 14.387 | 14.381 | 0.905  | 0m       | N.D.    | d      |     |
| 62)  | Isopropylbenzene          |      | 14.491 | 14.491 | 0.911  | 0m       | N.D.    | d      |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 14.753 | 14.747 | 0.928  | 0m       | N.D.    | d      |     |
| 65)  | 1,2,3-Trichloropropane    |      | 14.844 | 14.838 | 0.934  | 0m       | N.D.    | d      |     |
| 66)  | Bromobenzene              |      | 14.893 | 14.893 | 0.937  | 0m       | N.D.    | d      |     |
| 67)  | n-Propylbenzene           |      | 14.912 | 14.917 | 0.938  | 0m       | N.D.    | d      |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 15.064 | 15.070 | 0.947  | 0m       | N.D.    | d      |     |
| 69)  | 2-Chlorotoluene           |      | 15.058 | 15.064 | 0.947  | 0m       | N.D.    | d      |     |
| 70)  | 4-Chlorotoluene           |      | 15.162 | 15.161 | 0.954  | 0m       | N.D.    | d      |     |
| 71)  | tert-Butylbenzene         |      | 15.448 | 15.442 | 0.972  | 0m       | N.D.    | d      |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 15.479 | 15.478 | 0.974  | 0m       | N.D.    | d      |     |
| 73)  | sec-Butylbenzene          |      | 15.661 | 15.661 | 0.985  | 0m       | N.D.    | d      |     |
| 74)  | 4-Isopropyltoluene        |      | 15.783 | 15.783 | 0.993  | 0m       | N.D.    | d      |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.844 | 15.844 | 0.997  | 0m       | N.D.    | d      |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.930 | 15.929 | 1.002  | 0m       | N.D.    | d      |     |
| 77)  | n-Butylbenzene            |      | 16.228 | 16.228 | 1.021  | 0m       | N.D.    | d      |     |
| 78)  | 1,2-Dichlorobenzene       |      | 16.356 | 16.356 | 1.029  | 0m       | N.D.    | d      |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 17.216 | 17.228 | 1.083  | 0m       | N.D.    | d      |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 18.301 | 18.301 | 1.151  | 0m       | N.D.    | d      |     |
| 81)  | Hexachlorobutadiene       |      | 18.484 | 18.490 | 1.163  | 0m       | N.D.    | d      |     |
| 82)  | Naphthalene               |      | 18.691 | 18.685 | 1.176  | 0m       | N.D.    | d      |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 19.033 | 19.033 | 1.197  | 0m       | N.D.    | d      |     |
| 85)  | Acrolein                  | 56   | 6.895  | 6.895  | 0.668  | 261508   | 270.58  | ug/L   | 100 |
| 86)  | Trichlorotrifluoroethane  | 85   | 7.096  | 7.096  | 0.687  | 688561   | 269.20  | ug/L   | 99  |
| 87)  | Isopropyl Alcohol         | 45   | 7.139  | 7.139  | 0.691  | 1061907  | 2499.55 | ug/L   | 97  |
| 88)  | Allyl chloride            | 41   | 7.511  | 7.511  | 0.727  | 2861423  | 257.02  | ug/L   | 99  |
| 89)  | tert-Butyl Alcohol        | 59   | 7.639  | 7.639  | 0.740  | 1582050  | 2476.30 | ug/L # | 100 |
| 90)  | Acrylonitrile             | 53   | 7.882  | 7.882  | 0.763  | 485187   | 256.64  | ug/L   | 99  |
| 91)  | Isopropyl ether           | 45   | 8.456  | 8.455  | 0.819  | 1188831  | 50.27   | ug/L   | 98  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 8.571  | 8.577  | 0.830  | 550798   | 53.67   | ug/L   | 100 |
| 93)  | Ethyl tert-butyl ether    | 59   | 8.858  | 8.858  | 0.858  | 1009233  | 50.66   | ug/L   | 100 |
| 94)  | Ethyl acetate             | 43   | 9.047  | 9.047  | 0.876  | 1302200  | 262.68  | ug/L   | 100 |
| 95)  | Propionitrile             | 54   | 9.096  | 9.096  | 0.881  | 190119   | 249.17  | ug/L   | 100 |
| 96)  | Methacrylonitrile         | 41   | 9.278  | 9.278  | 0.898  | 829687   | 261.70  | ug/L   | 99  |
| 97)  | Tetrahydrofuran           | 42   | 9.419  | 9.419  | 0.912  | 434600   | 253.47  | ug/L   | 99  |
| 98)  | Isobutyl alcohol          | 41   | 9.717  | 9.717  | 0.941  | 519261   | 2528.97 | ug/L   | 99  |
| 99)  | Methyl tert-amyl ether    | 73   | 10.102 | 10.101 | 0.978  | 817202   | 50.14   | ug/L   | 99  |
| 100) | Methyl methacrylate       | 69   | 10.925 | 10.925 | 1.058  | 865501   | 267.13  | ug/L   | 99  |
| 101) | 1,4-Dioxane               | 88   | 11.034 | 11.034 | 1.068  | 135892   | 2611.38 | ug/L   | 99  |
| 102) | 2-Nitropropane            | 43   | 11.388 | 11.388 | 1.103  | 395499   | 258.48  | ug/L   | 98  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H405.D  
Acq On : 03 Nov 2016 12:14  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161103-04|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[B] 1025-06E/0913-06F  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 03 13:37:17 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

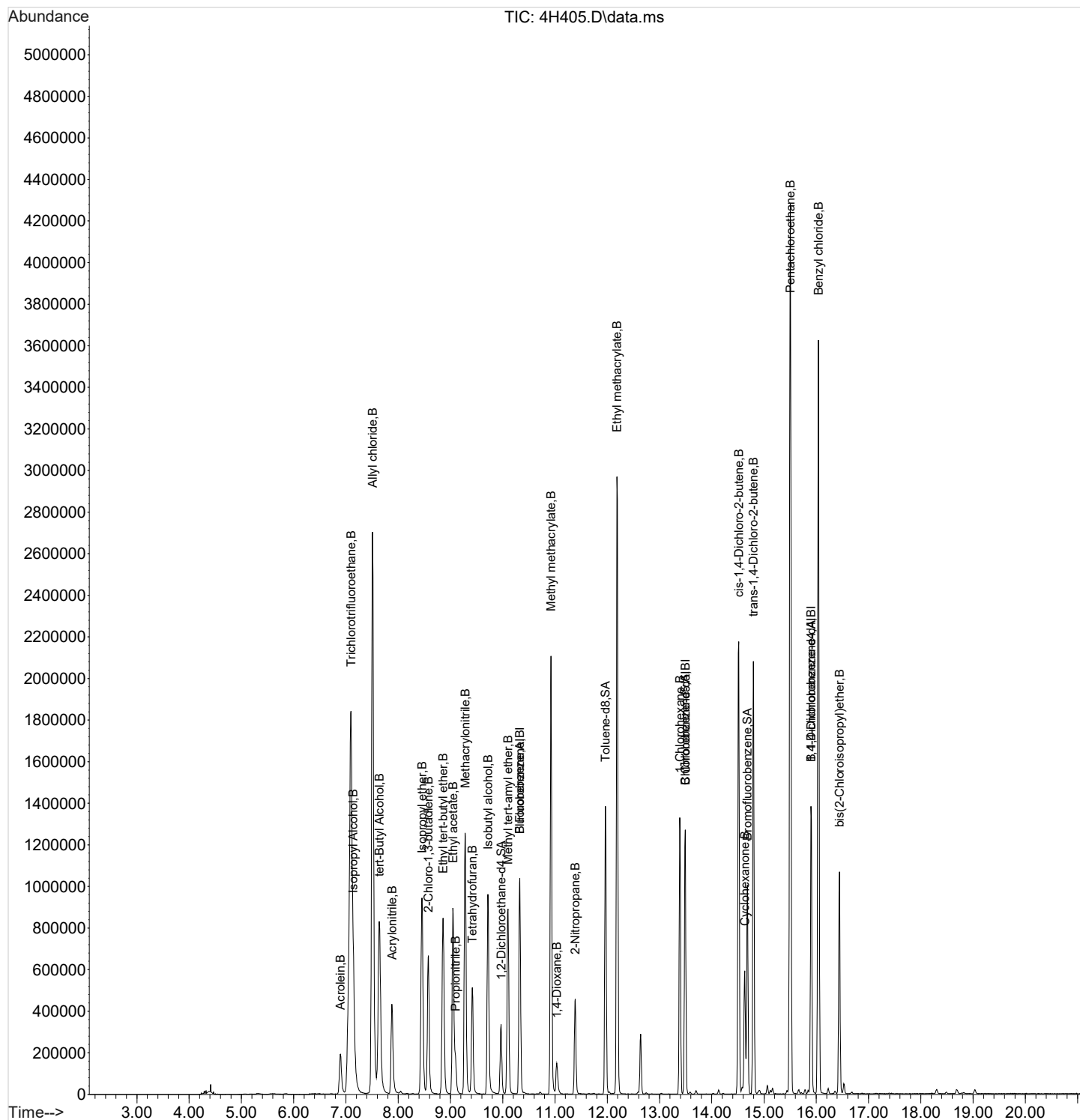
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 104) Ethyl methacrylate        | 69   | 12.186 | 12.186 | 0.903  | 1615253  | 271.81  | ug/L  | 100 |
| 106) 1-Chlorohexane            | 55   | 13.387 | 13.387 | 0.842  | 369923   | 53.69   | ug/L  | 100 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.515 | 14.509 | 0.913  | 564625   | 268.05  | ug/L  | 99  |
| 108) Cyclohexanone             | 42   | 14.631 | 14.631 | 0.920  | 204551   | 1224.89 | ug/L  | 99  |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.796 | 14.796 | 0.931  | 510827   | 266.92  | ug/L  | 100 |
| 110) Pentachloroethane         | 167  | 15.503 | 15.503 | 0.975  | 963085   | 284.07  | ug/L  | 99  |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.009  | 3052875  | 309.05  | ug/L  | 99  |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 860487   | 254.30  | ug/L  | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H405.D  
Acq On : 03 Nov 2016 12:14  
Operator : ACJ  
InstName : VOA4  
Sample : |W4VM161103-04|CCV|1|VOAF|1|VOA8260BL|  
Misc : GEL 5UL N/A MIX[B] 1025-06E/0913-06F  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 03 13:37:17 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE



## Calibration History Report VOA6

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M

Last Update : Fri Oct 14 08:57:39 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

Cal Lvl:8 Amt:0.00 Last Updated with: C:\msdchem\1\data\101316V6\6D402.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 13 Oct 2016 17:11 | A   | C:\msdchem\1\data\101316V6\6D402.D |

Cal Lvl:1 Amt:1.00 Last Updated with: C:\msdchem\1\data\101316V6\6D413.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 13 Oct 2016 17:39 | A   | C:\msdchem\1\data\101316V6\6D403.D |
| 13 Oct 2016 22:27 | B   | C:\msdchem\1\data\101316V6\6D413.D |

Cal Lvl:2 Amt:2.00 Last Updated with: C:\msdchem\1\data\101316V6\6D414.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 13 Oct 2016 18:08 | A   | C:\msdchem\1\data\101316V6\6D404.D |
| 13 Oct 2016 22:56 | B   | C:\msdchem\1\data\101316V6\6D414.D |

Cal Lvl:3 Amt:5.00 Last Updated with: C:\msdchem\1\data\101316V6\6D415.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 13 Oct 2016 18:37 | A   | C:\msdchem\1\data\101316V6\6D405.D |
| 13 Oct 2016 23:25 | B   | C:\msdchem\1\data\101316V6\6D415.D |

Cal Lvl:4 Amt:10.00 Last Updated with: C:\msdchem\1\data\101316V6\6D416.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 13 Oct 2016 19:06 | A   | C:\msdchem\1\data\101316V6\6D406.D |
| 13 Oct 2016 23:54 | B   | C:\msdchem\1\data\101316V6\6D416.D |

Cal Lvl:5 Amt:20.00 Last Updated with: C:\msdchem\1\data\101316V6\6D417.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 13 Oct 2016 19:35 | A   | C:\msdchem\1\data\101316V6\6D407.D |
| 14 Oct 2016 00:22 | B   | C:\msdchem\1\data\101316V6\6D417.D |

Cal Lvl:6 Amt:50.00 Last Updated with: C:\msdchem\1\data\101316V6\6D418.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 13 Oct 2016 20:03 | A   | C:\msdchem\1\data\101316V6\6D408.D |
| 14 Oct 2016 00:52 | B   | C:\msdchem\1\data\101316V6\6D418.D |

Cal Lvl:7 Amt:100.00 Last Updated with: C:\msdchem\1\data\101316V6\6D419.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 13 Oct 2016 21:01 | A   | C:\msdchem\1\data\101316V6\6D410.D |
| 14 Oct 2016 01:20 | B   | C:\msdchem\1\data\101316V6\6D419.D |

Cal Lvl:9 Amt:80.00 Last Updated with: C:\msdchem\1\data\101316V6\6D409.D

| Injection Date    | Mix | Calibration File                   |
|-------------------|-----|------------------------------------|
| 13 Oct 2016 20:32 | A   | C:\msdchem\1\data\101316V6\6D409.D |



Calibration History Report VOA6

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M

Last Update : Fri Oct 14 08:57:39 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+

VOA6-8260-101316.M Fri Nov 04 09:57:41 2016

## Response Factor Report VOA6

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M

Last Update : Fri Oct 14 08:57:39 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1          | m2   | 8<br>6    | 1<br>7    | 2<br>9    | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|--------|-------------------------|------|-----------|-----------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 2)MA   | Dichlorodifluoromethane |      |           | 13082     | 26466     | 65245     | 107335    | 202455    |        | 1/x   |     |         |
| 0.0040 | 0.3039                  | 0.00 | 508352    | 1010674   | 705402    |           |           |           |        | LINR  | #   | 0.9938  |
| 3)MPA  | Chloromethane           |      |           | 0.5358565 | 0.4656397 | 0.4461378 | 0.4052888 | 0.3951051 |        |       |     |         |
|        |                         |      | 0.4138055 | 0.4174179 | 0.3620156 |           |           |           | 0.4302 | AVRG  |     | 12.3034 |
| 4)MCA  | Vinyl chloride          |      |           | 0.4137142 | 0.3911286 | 0.3751250 | 0.3276834 | 0.3183051 |        |       |     |         |
|        |                         |      | 0.3315926 | 0.3366020 | 0.2889323 |           |           |           | 0.3479 | AVRG  |     | 11.9495 |
| 5)MA   | Bromomethane            |      |           | 0.2506540 | 0.2318959 | 0.2355171 | 0.2036281 | 0.2000819 |        |       |     |         |
|        |                         |      | 0.2147112 | 0.2226495 | 0.1977608 |           |           |           | 0.2196 | AVRG  |     | 8.6312  |
| 6)MA   | Chloroethane            |      |           | 0.2964935 | 0.2893687 | 0.2781434 | 0.2423725 | 0.2310803 |        |       |     |         |
|        |                         |      | 0.2413724 | 0.2488148 | 0.2186677 |           |           |           | 0.2558 | AVRG  |     | 11.1649 |
| 7)MA   | Trichlorofluoromethane  |      |           | 0.4873148 | 0.4769777 | 0.4931904 | 0.4085267 | 0.3809502 |        |       |     |         |
|        |                         |      | 0.4009537 | 0.4186019 | 0.3576334 |           |           |           | 0.4280 | AVRG  |     | 12.0209 |
| 8)MA   | Ethyl ether             |      |           | 0.3877867 | 0.3864305 | 0.3522558 | 0.3191047 | 0.3132877 |        |       |     |         |
|        |                         |      | 0.3298707 | 0.3239799 | 0.3077516 |           |           |           | 0.3401 | AVRG  |     | 9.3910  |
| 9)MA   | Acetone                 |      |           | 0.1778897 | 0.1614533 | 0.1296048 | 0.1302095 | 0.1247234 |        |       |     |         |
|        |                         |      | 0.1227586 | 0.1293387 | 0.1312009 |           |           |           | 0.1384 | AVRG  |     | 14.4536 |
| 10)MCA | 1,1-Dichloroethylene    |      |           | 0.5844947 | 0.5769052 | 0.5487484 | 0.5388939 | 0.5109013 |        |       |     |         |
|        |                         |      | 0.4481680 | 0.5414108 | 0.5213745 |           |           |           | 0.5339 | AVRG  |     | 7.9933  |
| 11)MA  | Iodomethane             |      |           | 0.5040101 | 0.5039257 | 0.4724054 | 0.4771550 | 0.4556286 |        |       |     |         |
|        |                         |      | 0.4006387 | 0.4500270 | 0.4360433 |           |           |           | 0.4625 | AVRG  |     | 7.5266  |
| 12)MA  | Acetonitrile            |      |           | 0.0510675 | 0.0527491 | 0.0471126 | 0.0493546 | 0.0473023 |        |       |     |         |
|        |                         |      | 0.0453102 | 0.0452310 | 0.0467970 |           |           |           | 0.0481 | AVRG  |     | 5.6272  |
| 13)MA  | Methyl acetate          |      |           | 0.2808663 | 0.2846268 | 0.2643487 | 0.2827072 | 0.2696886 |        |       |     |         |
|        |                         |      | 0.2537282 | 0.2673052 | 0.2702029 |           |           |           | 0.2717 | AVRG  |     | 3.8727  |
| 14)MA  | Carbon disulfide        |      |           | 0.9579280 | 0.9189486 | 0.8993602 | 0.8897633 | 0.8093356 |        |       |     |         |
|        |                         |      | 0.7156165 | 0.7687808 | 0.7605861 |           |           |           | 0.8400 | AVRG  |     | 10.4488 |
| 15)MA  | Methylene chloride      |      |           |           | 0.4082921 | 0.3563970 | 0.3538514 | 0.3398870 |        |       |     |         |
|        |                         |      | 0.3053059 | 0.3504237 | 0.3395149 |           |           |           | 0.3505 | AVRG  |     | 8.7636  |
| 16)MA  | tert-Butyl methyl ether |      |           | 1.0029698 | 1.0239250 | 0.9545785 | 0.9679483 | 0.9575309 |        |       |     |         |
|        |                         |      | 0.9309720 | 1.0473108 | 1.0106342 |           |           |           | 0.9870 | AVRG  |     | 4.0593  |

## Response Factor Report VOA6

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M

Last Update : Fri Oct 14 08:57:39 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1           | m2 | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|--------|--------------------------|----|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 17)MA  | trans-1,2-Dichloroethyle |    | 0.4737453 | 0.6243510<br>0.5532527 | 0.5835921<br>0.5352243 | 0.5416068 | 0.5502218 | 0.5387085 | 0.5501 | AVRG  |     | 7.8034  |
| 18)MA  | Hexane                   |    | 0.5581702 | 0.4860808              | 0.5659917              | 0.5904510 | 0.5736532 | 0.5799620 | 0.5591 | AVRG  |     | 6.6977  |
| 19)MA  | Vinyl acetate            |    | 0.7678005 | 0.7622236<br>0.6766252 | 0.8418410<br>0.6870994 | 0.8424123 | 0.7560694 | 0.7533413 | 0.7609 | AVRG  |     | 7.9899  |
| 20)MPA | 1,1-Dichloroethane       |    | 0.5721582 | 0.7197616<br>0.6611493 | 0.6931038<br>0.6358333 | 0.6706512 | 0.6774077 | 0.6555177 | 0.6607 | AVRG  |     | 6.6225  |
| 21)MA  | 2-Butanone               |    | 0.2045480 | 0.2305875<br>0.2176297 | 0.2438947<br>0.2217719 | 0.2059018 | 0.2081738 | 0.2091892 | 0.2177 | AVRG  |     | 6.3650  |
| 22)MA  | cis-1,2-Dichloroethylene |    | 0.5746580 | 0.7185393<br>0.6551529 | 0.7081688<br>0.6313049 | 0.6567338 | 0.6598783 | 0.6465022 | 0.6564 | AVRG  |     | 6.8048  |
| 23)MA  | 2,2-Dichloropropane      |    | 0.4152458 | 0.5245012<br>0.5081358 | 0.5091750<br>0.4772917 | 0.4880326 | 0.4835186 | 0.4732447 | 0.4849 | AVRG  |     | 6.8641  |
| 24)MA  | Bromochloromethane       |    | 0.1582861 | 0.1693330<br>0.1768066 | 0.1751434<br>0.1713619 | 0.1671389 | 0.1723021 | 0.1708701 | 0.1702 | AVRG  |     | 3.3419  |
| 25)MCA | Chloroform               |    | 0.5156149 | 0.6478016<br>0.5977279 | 0.6167761<br>0.5746014 | 0.5836256 | 0.5942187 | 0.5865520 | 0.5896 | AVRG  |     | 6.3966  |
| 26)MA  | 1,1,1-Trichloroethane    |    | 0.4354476 | 0.5901563<br>0.5311537 | 0.5285936<br>0.5039350 | 0.5152103 | 0.5079557 | 0.4924963 | 0.5131 | AVRG  |     | 8.4221  |
| 27)MA  | Cyclohexane              |    | 0.6282288 | 0.9191075<br>0.7654094 | 0.8438799<br>0.7315503 | 0.8011523 | 0.7761526 | 0.7291234 | 0.7743 | AVRG  |     | 11.1115 |
| 28)MA  | 1,1-Dichloropropene      |    | 0.3503220 | 0.4375186<br>0.4185601 | 0.4377176<br>0.4024825 | 0.4385995 | 0.4148859 | 0.4090840 | 0.4136 | AVRG  |     | 7.0501  |
| 29)MA  | Carbon tetrachloride     |    | 0.3781697 | 0.4721958<br>0.4736491 | 0.4529863<br>0.4516124 | 0.4467825 | 0.4402720 | 0.4265537 | 0.4428 | AVRG  |     | 6.8611  |
| 30)SA  | 1,2-Dichloroethane-d4    |    | 0.3282023 | 0.3333827<br>0.3355608 | 0.3323528<br>0.3361584 | 0.3252418 | 0.3185491 | 0.3212572 | 0.3288 | AVRG  |     | 2.0187  |
| 31)MA  | 1,2-Dichloroethane       |    | 0.5219639 | 0.5984235<br>0.5729170 | 0.5990174<br>0.5629862 | 0.5621698 | 0.5752359 | 0.5619771 | 0.5693 | AVRG  |     | 4.2842  |

## Response Factor Report VOA6

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M

Last Update : Fri Oct 14 08:57:39 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1            | m2 | 8<br>6                 | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|--------|---------------------------|----|------------------------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 32)MA  | Benzene                   |    | 1.0765860              | 1.4522297<br>1.2230800 | 1.3944448<br>1.1830372 | 1.2812374 | 1.2874218 | 1.2405827 | 1.2673 | AVRG  |     | 9.2936  |
| 33)MA  | Cyclohexene               |    | 0.5331780              | 0.6891698<br>0.6456554 | 0.7245024<br>0.6185984 | 0.6923859 | 0.6482194 | 0.6215675 | 0.6467 | AVRG  |     | 9.1030  |
| 34)MA  | n-Butyl alcohol           |    | 0.0111593<br>0.0128316 | 0.0110810<br>0.0140099 | 0.0132352<br>0.0141236 | 0.0122036 | 0.0131627 | 0.0137012 | 0.0128 | AVRG  |     | 8.8590  |
| 35)MA  | Trichloroethylene         |    | 0.2787721              | 0.3834118<br>0.3291970 | 0.3515240<br>0.3143539 | 0.3325421 | 0.3320027 | 0.3198491 | 0.3302 | AVRG  |     | 9.0845  |
| 36)MA  | 2-Pentanone               |    | 0.2851742              |                        | 0.2898573<br>0.2987582 | 0.2783839 | 0.2869634 | 0.2816295 | 0.2875 | AVRG  |     | 2.3400  |
| 37)MCA | 1,2-Dichloropropane       |    | 0.3421526              | 0.4207590<br>0.3804820 | 0.4461741<br>0.3691465 | 0.3754226 | 0.3864920 | 0.3875323 | 0.3885 | AVRG  |     | 8.2144  |
| 38)MA  | Methylcyclohexane         |    | 0.4741582              | 0.6670703<br>0.5654753 | 0.6265323<br>0.5463000 | 0.5960241 | 0.5798042 | 0.5510578 | 0.5758 | AVRG  |     | 10.0088 |
| 39)MA  | Dibromomethane            |    | 0.1841870              | 0.2030452<br>0.2035601 | 0.2080768<br>0.1990704 | 0.1913038 | 0.1953867 | 0.1929973 | 0.1972 | AVRG  |     | 3.9348  |
| 40)MA  | Bromodichloromethane      |    | 0.4357335              | 0.4464935<br>0.4970855 | 0.4553666<br>0.4789939 | 0.4312533 | 0.4591161 | 0.4655942 | 0.4587 | AVRG  |     | 4.7861  |
| 41)MA  | 2-Chloroethylvinyl ether  |    | 0.2225992              | 0.2158416<br>0.2207607 | 0.2359425<br>0.2159938 | 0.2998920 | 0.2306568 | 0.2267157 | 0.2336 | AVRG  |     | 11.8563 |
| 42)MA  | cis-1,3-Dichloropropylene |    | 0.5086489              | 0.5481447<br>0.5772520 | 0.5570012<br>0.5595172 | 0.5239946 | 0.5495881 | 0.5443172 | 0.5461 | AVRG  |     | 3.9033  |
| 44)MA  | 4-Methyl-2-pentanone      |    | 0.1915329              | 0.1995718<br>0.2045630 | 0.2138947<br>0.2032866 | 0.1929978 | 0.1985533 | 0.1984362 | 0.2004 | AVRG  |     | 3.5249  |
| 45)SA  | Toluene-d8                |    | 1.3359939              | 1.3367333<br>1.3483425 | 1.3276127<br>1.3292543 | 1.3258292 | 1.3375557 | 1.3254407 | 1.3333 | AVRG  |     | 0.5876  |
| 46)MCA | Toluene                   |    | 1.5142483              | 2.1493050<br>1.6937919 | 2.0156735<br>1.6410473 | 1.8249263 | 1.8362619 | 1.7369420 | 1.8015 | AVRG  |     | 11.3492 |
| 47)MA  | trans-1,3-Dichloropropyl  |    | 0.6338976              | 0.6053131<br>0.7090148 | 0.6592561<br>0.6807357 | 0.6143528 | 0.6410654 | 0.6599830 | 0.6505 | AVRG  |     | 5.2676  |

## Response Factor Report VOA6

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M

Last Update : Fri Oct 14 08:57:39 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1           | m2 | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|--------|--------------------------|----|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 48)MA  | 1,1,2-Trichloroethane    |    | 0.2880032 | 0.3315422<br>0.3126131 | 0.3206419<br>0.3045248 | 0.2980942 | 0.3090359 | 0.3088462 | 0.3092 | AVRG  |     | 4.2987  |
| 49)MA  | 2-Hexanone               |    | 0.4031609 | 0.4810926<br>0.3980806 | 0.4899531<br>0.4082850 | 0.4376585 | 0.4313102 | 0.4409518 | 0.4363 | AVRG  |     | 7.8813  |
| 50)MA  | 1,3-Dichloropropane      |    | 0.5806172 | 0.6620068<br>0.6089426 | 0.6636471<br>0.5961270 | 0.6347826 | 0.6507875 | 0.6299800 | 0.6284 | AVRG  |     | 4.8939  |
| 51)MA  | Tetrachloroethylene      |    | 0.2802140 | 0.4121898<br>0.3111033 | 0.4003939<br>0.3023705 | 0.3486527 | 0.3420399 | 0.3264037 | 0.3404 | AVRG  |     | 13.5740 |
| 52)MA  | Dibromochloromethane     |    | 0.4286127 | 0.3922558<br>0.4888901 | 0.3968607<br>0.4670122 | 0.3839251 | 0.4196583 | 0.4246515 | 0.4252 | AVRG  |     | 8.6357  |
| 53)MA  | 1,2-Dibromoethane        |    | 0.3633491 | 0.3499013<br>0.4044390 | 0.3901824<br>0.3905422 | 0.3629391 | 0.3693706 | 0.3749293 | 0.3757 | AVRG  |     | 4.8011  |
| 54)MPA | Chlorobenzene            |    | 1.0598467 | 1.3521533<br>1.1936471 | 1.3608083<br>1.1411522 | 1.2284637 | 1.2444648 | 1.2211793 | 1.2252 | AVRG  |     | 8.1797  |
| 55)MA  | 1,1,1,2-Tetrachloroethan |    | 0.4067559 | 0.4424430<br>0.4553897 | 0.4477141<br>0.4379135 | 0.4412962 | 0.4444224 | 0.4467762 | 0.4403 | AVRG  |     | 3.3000  |
| 56)MCA | Ethylbenzene             |    | 1.7358556 | 2.2146189<br>1.9384890 | 2.2739229<br>1.8852991 | 2.1234075 | 2.0953919 | 2.0326666 | 2.0375 | AVRG  |     | 8.7402  |
| 57)MA  | m,p-Xylenes              |    | 0.6790918 | 0.9064363<br>0.7521692 | 0.9067631<br>0.7352933 | 0.8528790 | 0.8210501 | 0.7999557 | 0.8067 | AVRG  |     | 10.1250 |
| 58)MA  | o-Xylene                 |    | 1.4890084 | 2.0354203<br>1.6402799 | 1.9263226<br>1.5914938 | 1.8089146 | 1.7976009 | 1.7379787 | 1.7534 | AVRG  |     | 10.1938 |
| 59)MA  | Styrene                  |    | 1.2102237 | 1.4666183<br>1.3147071 | 1.5018908<br>1.2852306 | 1.3743665 | 1.4124898 | 1.3876554 | 1.3691 | AVRG  |     | 7.0182  |
| 61)MPA | Bromoform                |    | 0.5089375 | 0.3847273<br>0.5912198 | 0.4574930<br>0.5662110 | 0.4284537 | 0.4583080 | 0.4908476 | 0.4858 | AVRG  |     | 14.1773 |
| 62)MA  | Isopropylbenzene         |    | 3.3995197 | 4.3136095<br>3.8759543 | 4.5819722<br>3.7519880 | 4.2695496 | 4.1751305 | 3.9900390 | 4.0447 | AVRG  |     | 9.1651  |
| 63)SA  | Bromofluorobenzene       |    | 1.0160600 | 0.9911670<br>1.0420157 | 1.0034765<br>1.0181052 | 1.0185805 | 1.0076368 | 0.9928157 | 1.0112 | AVRG  |     | 1.6236  |

## Response Factor Report VOA6

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M

Last Update : Fri Oct 14 08:57:39 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1           | m2 | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|--------|--------------------------|----|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 64)MPA | 1,1,2,2-Tetrachloroethan |    | 0.8772982 | 0.9463881<br>0.9619193 | 0.9580793<br>0.9428626 | 0.8649190 | 0.8999172 | 0.8854484 | 0.9171 | AVRG  |     | 4.2857  |
| 65)MA  | 1,2,3-Trichloropropane   |    | 0.2850006 | 0.2899361<br>0.3127450 | 0.3051739<br>0.3027009 | 0.2831785 | 0.2799797 | 0.2823207 | 0.2926 | AVRG  |     | 4.2535  |
| 66)MA  | Bromobenzene             |    | 0.9485231 | 1.1596683<br>1.0556839 | 1.1517312<br>1.0064977 | 1.0622240 | 1.0718763 | 1.0584376 | 1.0643 | AVRG  |     | 6.5148  |
| 67)MA  | n-Propylbenzene          |    | 3.9395856 | 5.2276894<br>4.3869745 | 5.0933509<br>4.2772576 | 4.9758814 | 4.8322407 | 4.5840174 | 4.6646 | AVRG  |     | 9.5363  |
| 68)MA  | 1,3,5-Trimethylbenzene   |    | 3.0505557 | 3.9173762<br>3.4071669 | 3.9836031<br>3.2935863 | 3.7904065 | 3.7579942 | 3.5676215 | 3.5960 | AVRG  |     | 9.0597  |
| 69)MA  | 2-Chlorotoluene          |    | 0.8319156 | 0.9926407<br>0.9141550 | 1.0613731<br>0.8902448 | 0.9832502 | 0.9931769 | 0.9613961 | 0.9535 | AVRG  |     | 7.5233  |
| 70)MA  | 4-Chlorotoluene          |    | 2.6522108 | 3.3413139<br>3.0106793 | 3.3850427<br>2.8828349 | 3.1897183 | 3.1215433 | 3.0511803 | 3.0793 | AVRG  |     | 7.7882  |
| 71)MA  | tert-Butylbenzene        |    | 0.6129699 | 0.7817227<br>0.7177301 | 0.8085923<br>0.6854294 | 0.7717650 | 0.7479688 | 0.7147821 | 0.7301 | AVRG  |     | 8.5037  |
| 72)MA  | 1,2,4-Trimethylbenzene   |    | 3.1868532 | 4.0939286<br>3.6083033 | 4.0022412<br>3.4625512 | 3.8743456 | 3.8488761 | 3.7441506 | 3.7277 | AVRG  |     | 8.0033  |
| 73)MA  | sec-Butylbenzene         |    | 3.8350811 | 4.9375247<br>4.3251087 | 5.0388146<br>4.1934923 | 4.7288161 | 4.6703796 | 4.4917406 | 4.5276 | AVRG  |     | 8.8494  |
| 74)MA  | 4-Isopropyltoluene       |    | 2.8856475 | 3.2457607<br>3.0237591 | 3.3838563<br>2.9198202 | 3.5017904 | 3.1733225 | 3.0467151 | 3.1476 | AVRG  |     | 6.9769  |
| 75)MA  | 1,3-Dichlorobenzene      |    | 1.7039857 | 2.1661772<br>1.9177377 | 2.1584149<br>1.8276200 | 2.0675900 | 2.0109040 | 1.9783909 | 1.9789 | AVRG  |     | 8.0673  |
| 76)MA  | 1,4-Dichlorobenzene      |    | 1.7071145 | 2.1801216<br>1.9182926 | 2.1707382<br>1.8358912 | 1.9970238 | 1.9756305 | 1.9500829 | 1.9669 | AVRG  |     | 8.0456  |
| 77)MA  | n-Butylbenzene           |    | 3.0986974 | 4.1448294<br>3.4804442 | 3.9808859<br>3.3643069 | 3.8308453 | 3.6770405 | 3.6018500 | 3.6474 | AVRG  |     | 9.2938  |
| 78)MA  | 1,2-Dichlorobenzene      |    | 1.7133632 | 2.1157337<br>1.8807285 | 2.0894886<br>1.8183958 | 1.9277675 | 1.9400868 | 1.9013797 | 1.9234 | AVRG  |     | 6.8729  |

## Response Factor Report VOA6

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M

Last Update : Fri Oct 14 08:57:39 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>m1           | m2 | 8<br>6    | 1<br>7                 | 2<br>9                 | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|-------|--------------------------|----|-----------|------------------------|------------------------|-----------|-----------|-----------|--------|-------|-----|---------|
| 79)MA | 1,2-Dibromo-3-chloroprop |    | 0.1932698 | 0.1688564<br>0.2321129 | 0.1923889<br>0.2171670 | 0.1604607 | 0.1685236 | 0.1776502 | 0.1888 | AVRG  |     | 13.3541 |
| 80)MA | 1,2,4-Trichlorobenzene   |    | 1.3299615 | 1.6870397<br>1.4633148 | 1.5338301<br>1.3851853 | 1.5088638 | 1.4768688 | 1.5028665 | 1.4860 | AVRG  |     | 7.1319  |
| 81)MA | Hexachlorobutadiene      |    | 0.7646873 | 0.9929455<br>0.8640798 | 0.9396327<br>0.8382221 | 0.8988694 | 0.8567306 | 0.8678331 | 0.8779 | AVRG  |     | 7.7758  |
| 82)MA | Naphthalene              |    | 2.9554928 | 2.9732741<br>3.2499209 | 3.1907402<br>3.1359409 | 2.9628496 | 3.0580603 | 3.1075776 | 3.0792 | AVRG  |     | 3.6021  |
| 83)MA | 1,2,3-Trichlorobenzene   |    | 1.2200380 | 1.4214109<br>1.3387066 | 1.3566731<br>1.2681790 | 1.3128839 | 1.3695121 | 1.3430159 | 1.3288 | AVRG  |     | 4.6798  |
| 85)B  | Acrolein                 |    | 0.0642217 | 0.0686259<br>0.0667161 | 0.0614101              | 0.0647701 | 0.0621244 | 0.0638195 | 0.0645 | AVRG  |     | 3.8864  |
| 86)B  | Trichlorotrifluoroethane |    | 0.1264742 | 0.1163105<br>0.1202498 | 0.0908626              | 0.1270479 | 0.1284515 | 0.1214642 | 0.1187 | AVRG  |     | 10.9627 |
| 87)B  | Isopropyl Alcohol        |    | 0.0291852 | 0.0279904<br>0.0305144 | 0.0217912              | 0.0309842 | 0.0297076 | 0.0295580 | 0.0285 | AVRG  |     | 10.9469 |
| 88)B  | Allyl chloride           |    | 0.6537767 | 0.7159789<br>0.5885335 | 0.5337962              | 0.6897360 | 0.6927614 | 0.6683948 | 0.6490 | AVRG  |     | 10.0229 |
| 89)B  | tert-Butyl Alcohol       |    | 0.0439858 | 0.0421463<br>0.0464448 | 0.0317433              | 0.0453217 | 0.0439156 | 0.0454076 | 0.0427 | AVRG  |     | 11.7737 |
| 90)B  | Acrylonitrile            |    | 0.1346188 | 0.1359018<br>0.1395748 | 0.1010268              | 0.1385309 | 0.1343657 | 0.1385164 | 0.1318 | AVRG  |     | 10.4094 |
| 91)B  | Isopropyl ether          |    | 1.5429890 | 1.4994848<br>1.5084372 | 1.1874701              | 1.5941843 | 1.5943738 | 1.5608552 | 1.4983 | AVRG  |     | 9.4804  |
| 92)B  | 2-Chloro-1,3-butadiene   |    | 0.6396648 | 0.5838132<br>0.6244305 | 0.4594044              | 0.6196207 | 0.6246339 | 0.6211929 | 0.5961 | AVRG  |     | 10.5063 |
| 93)B  | Ethyl tert-butyl ether   |    | 1.3735287 | 1.3780755<br>1.3965453 | 1.0124388              | 1.3888117 | 1.3903062 | 1.3899237 | 1.3328 | AVRG  |     | 10.6157 |
| 94)B  | Ethyl acetate            |    | 0.3515290 | 0.3905379<br>0.3507219 | 0.2693923              | 0.3811574 | 0.3576242 | 0.3670989 | 0.3526 | AVRG  |     | 11.2372 |

## Response Factor Report VOA6

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M

Last Update : Fri Oct 14 08:57:39 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>m1           | m2 | 8<br>6    | 1<br>7                 | 2<br>9    | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|-------|--------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 95)B  | Propionitrile            |    | 0.0543556 | 0.0567330<br>0.0578369 | 0.0393356 | 0.0566074 | 0.0543942 | 0.0571367 | 0.0538 | AVRG  |     | 12.0951 |
| 96)B  | Methacrylonitrile        |    | 0.2208707 | 0.2187188<br>0.2223375 | 0.1655105 | 0.2322637 | 0.2252739 | 0.2297865 | 0.2164 | AVRG  |     | 10.6052 |
| 97)B  | Tetrahydrofuran          |    | 0.1146474 | 0.1362974<br>0.1191156 | 0.0937550 | 0.1275090 | 0.1169537 | 0.1211534 | 0.1185 | AVRG  |     | 11.0837 |
| 98)B  | Isobutyl alcohol         |    | 0.0138193 | 0.0161998<br>0.0143659 | 0.0098640 | 0.0144706 | 0.0142358 | 0.0148843 | 0.0140 | AVRG  | \$  | 14.0587 |
| 99)B  | Methyl tert-amyl ether   |    | 0.9834338 | 0.9539122<br>1.0066111 | 0.7461670 | 0.9951972 | 0.9918191 | 0.9872633 | 0.9521 | AVRG  |     | 9.6873  |
| 100)B | Methyl methacrylate      |    | 0.2054668 | 0.2088855<br>0.2030907 | 0.1568644 | 0.2206018 | 0.2150451 | 0.2157331 | 0.2037 | AVRG  |     | 10.5746 |
| 101)B | 1,4-Dioxane              |    | 0.0034370 | 0.0036187<br>0.0035310 | 0.0028684 | 0.0036585 | 0.0036746 | 0.0033842 | 0.0035 | AVRG  | #   | 8.1189  |
| 102)B | 2-Nitropropane           |    |           | 15735                  | 20476     | 84265     | 170964    | 374020    |        |       |     |         |
|       | -0.0162   0.1297   0.00  |    | 931861    | 2014108                |           |           |           |           |        | LINR  | #   | 0.9992  |
| 104)B | Ethyl methacrylate       |    | 0.4979480 | 0.4953592<br>0.4753432 | 0.3906149 | 0.5476064 | 0.5448468 | 0.5456358 | 0.4996 | AVRG  |     | 11.2507 |
| 106)B | 1-Chlorohexane           |    | 0.9745311 | 0.8447575<br>0.9375970 | 0.7753202 | 1.0132994 | 0.9988537 | 0.9878271 | 0.9332 | AVRG  |     | 9.6034  |
| 107)B | cis-1,4-Dichloro-2-buten |    | 0.3947061 | 0.3510041<br>0.4033114 | 0.2699403 | 0.3989111 | 0.4011991 | 0.4136445 | 0.3761 | AVRG  |     | 13.5341 |
| 108)B | Cyclohexanone            |    | 0.0264765 | 0.0246749<br>0.0269477 | 0.0253607 | 0.0272329 | 0.0260316 | 0.0262847 | 0.0261 | AVRG  |     | 3.4019  |
| 109)B | trans-1,4-Dichloro-2-but |    | 0.3588879 | 0.3220469<br>0.3639228 | 0.2450846 | 0.3740966 | 0.3679051 | 0.3756421 | 0.3439 | AVRG  |     | 13.7213 |
| 110)B | Pentachloroethane        |    | 0.5333499 | 0.4863569<br>0.4934530 | 0.3744057 | 0.5392256 | 0.5832031 | 0.5639816 | 0.5106 | AVRG  |     | 13.5904 |
| 111)B | Benzyl chloride          |    |           | 99526                  | 152922    | 583947    | 1138069   | 2353307   |        |       |     |         |
|       | 0.2783   1.4589   0.00   |    | 5274087   | 9341659                |           |           |           |           |        | LINR  |     | 0.9939  |



# Response Factor Report VOA6

GEL Laboratories, LLC

Method File : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M

Last Update : Fri Oct 14 08:57:39 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$

| b     | Compound<br>m1           | m2 | 8<br>6    | 1<br>7    | 2<br>9    | 3         | 4         | 5         | Avg    | Curve | Exp | %RSD/r2 |
|-------|--------------------------|----|-----------|-----------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 112)B | bis(2-Chloroisopropyl)et |    |           | 0.5228153 | 0.3957204 | 0.5770809 | 0.5498058 | 0.5674303 |        |       |     |         |
|       |                          |    | 0.5361163 | 0.5562792 |           |           |           |           | 0.5293 | AVRG  |     | 11.6503 |

(#) = Out of Range (\$) = Individual RF Out of Range

AVRG = Average, LINR = Linear Regression,  $1/x$  = the inverse of concentration,  $1/x^2$  = the inverse square of concentration

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D402.D  
Acq On : 13 Oct 2016 17:11  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-01|ICAL005|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 14 08:48:44 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 1585850  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.635 | 1.000  | 1235448  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 650653   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.634 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 524861  | 41.14 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1616234 | 43.85 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 647955  | 48.26 | ug/L | 0.00 |

| Target Compounds              |      |        |        |        |          |           |        |        |
|-------------------------------|------|--------|--------|--------|----------|-----------|--------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units  | QValue |
| 2) Dichlorodifluoromethane    | 85   | 4.001  | 3.993  | 0.424  | 6937     | 0.50      | ug/L   | 88     |
| 3) Chloromethane              | 50   | 4.145  | 4.282  | 0.439  | 473      | N.D.      |        |        |
| 4) Vinyl chloride             | 62   | 4.474  | 4.506  | 0.474  | 7123     | 0.74      | ug/L # | 42     |
| 5) Bromomethane               | 94   | 5.004  | 5.020  | 0.530  | 3985     | 0.54      | ug/L   | 95     |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 4912     | 0.64      | ug/L   | 94     |
| 7) Trichlorofluoromethane     | 101  | 5.549  | 5.509  | 0.588  | 8348     | 0.48      | ug/L   | 99     |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.618  | 5910     | 0.61      | ug/L   | 99     |
| 9) Acetone                    | 43   | 6.203  | 6.197  | 0.657  | 15551    | 4.52      | ug/L   | 88     |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.656  | 9430     | 0.55      | ug/L   | 88     |
| 11) Iodomethane               | 142  | 6.428  | 6.429  | 0.681  | 42316    | 2.85      | ug/L   | 93     |
| 12) Acetonitrile              | 41   | 6.556  | 6.550  | 0.695  | 23673    | 20.40     | ug/L   | 77     |
| 13) Methyl acetate            | 43   | 6.581  | 6.575  | 0.697  | 24117    | 3.25      | ug/L   | 89     |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.694  | 80963    | 3.05      | ug/L   | 100    |
| 15) Methylene chloride        | 84   | 6.758  | 6.758  | 0.716  | 9652     | Below Cal |        | 86     |
| 16) tert-Butyl methyl ether   | 73   | 7.044  | 7.056  | 0.746  | 16486    | 0.49      | ug/L   | 81     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.081  | 7.087  | 0.750  | 9549     | 0.56      | ug/L   | 98     |
| 18) Hexane                    | 57   | 7.367  | 7.367  | 0.780  | 12941    | N.D.      |        |        |
| 19) Vinyl acetate             | 43   | 7.544  | 7.538  | 0.799  | 63504    | 3.34      | ug/L   | 93     |
| 20) 1,1-Dichloroethane        | 63   | 7.574  | 7.569  | 0.802  | 12176    | 0.60      | ug/L   | 99     |
| 21) 2-Butanone                | 43   | 8.172  | 8.160  | 0.866  | 17962    | 3.54      | ug/L   | 89     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.208  | 8.209  | 0.870  | 10571    | 0.53      | ug/L   | 94     |
| 23) 2,2-Dichloropropane       | 77   | 8.239  | 8.233  | 0.873  | 9581     | 0.52      | ug/L   | 70     |
| 24) Bromochloromethane        | 128  | 8.471  | 8.477  | 0.897  | 2713     | 0.55      | ug/L # | 69     |
| 25) Chloroform                | 83   | 8.525  | 8.520  | 0.903  | 10239    | 0.49      | ug/L   | 97     |
| 26) 1,1,1-Trichloroethane     | 97   | 8.794  | 8.788  | 0.932  | 9646     | 0.51      | ug/L   | 93     |
| 27) Cyclohexane               | 56   | 8.867  | 8.879  | 0.939  | 17318    | 0.89      | ug/L   | 81     |
| 28) 1,1-Dichloropropene       | 75   | 8.940  | 8.946  | 0.947  | 7632     | 0.54      | ug/L   | 81     |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 7569     | 0.48      | ug/L   | 96     |
| 31) 1,2-Dichloroethane        | 62   | 9.166  | 9.172  | 0.971  | 9891     | 0.52      | ug/L # | 42     |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 23771    | 0.62      | ug/L # | 75     |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.985  | 12796    | 0.65      | ug/L   | 84     |
| 34) n-Butyl alcohol           | 56   | 9.574  | 9.568  | 1.014  | 17697    | 86.06     | ug/L   | 92     |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 5186     | 0.50      | ug/L # | 70     |
| 36) 2-Pentanone               | 43   | 9.934  | 9.934  | 1.052  | 22940    | 3.22      | ug/L   | 95     |
| 37) 1,2-Dichloropropane       | 63   | 10.074 | 10.080 | 1.067  | 6909     | 0.65      | ug/L   | 96     |
| 38) Methylcyclohexane         | 83   | 10.074 | 10.074 | 1.067  | 11195    | 0.63      | ug/L   | 83     |
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.082  | 3641     | 0.58      | ug/L   | 89     |
| 40) Bromodichloromethane      | 83   | 10.342 | 10.336 | 1.096  | 7034     | 0.46      | ug/L   | 92     |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 16817    | 2.53      | ug/L   | 98     |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 8056     | 0.48      | ug/L   | 85     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D402.D  
Acq On : 13 Oct 2016 17:11  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-01|ICAL005|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 14 08:48:44 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|-----------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.897 | 10.891 | 0.863  | 12631    | 3.21 ug/L |       | 94  |
| 46)  | Toluene                   | 91   | 11.171 | 11.172 | 0.885  | 27200    | 0.59 ug/L |       | 88  |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.342 | 11.342 | 0.898  | 7099     | 0.40 ug/L |       | 79  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.561 | 11.556 | 0.916  | 4679     | 0.61 ug/L |       | 89  |
| 49)  | 2-Hexanone                | 43   | 11.750 | 11.751 | 0.930  | 30853    | 3.49 ug/L |       | 93  |
| 50)  | 1,3-Dichloropropane       | 76   | 11.750 | 11.751 | 0.930  | 8718     | 0.51 ug/L | #     | 63  |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 5001     | 0.53 ug/L |       | 91  |
| 52)  | Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 4721     | 0.45 ug/L |       | 97  |
| 53)  | 1,2-Dibromoethane         | 107  | 12.183 | 12.177 | 0.965  | 4508     | 0.50 ug/L |       | 98  |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.003  | 18204    | 0.60 ug/L | #     | 53  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.726 | 1.007  | 5528     | 0.47 ug/L | #     | 70  |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 31304    | 0.59 ug/L |       | 98  |
| 57)  | m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 21927    | 1.13 ug/L |       | 97  |
| 58)  | o-Xylene                  | 91   | 13.281 | 13.275 | 1.052  | 23613    | 0.52 ug/L |       | 89  |
| 59)  | Styrene                   | 104  | 13.287 | 13.281 | 1.052  | 17028    | 0.56 ug/L |       | 87  |
| 61)  | Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 2662     | 1.10 ug/L |       | 96  |
| 62)  | Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 31160    | 0.65 ug/L |       | 100 |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.921 | 13.927 | 0.925  | 5947     | 0.57 ug/L |       | 100 |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.018 | 14.012 | 0.931  | 2005     | 0.54 ug/L | #     | 82  |
| 66)  | Bromobenzene              | 156  | 14.037 | 14.043 | 0.932  | 7553     | 0.64 ug/L |       | 93  |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 36234    | 0.64 ug/L |       | 99  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.232 | 14.226 | 0.945  | 27841    | 0.64 ug/L |       | 98  |
| 69)  | 2-Chlorotoluene           | 126  | 14.213 | 14.214 | 0.944  | 7627     | 0.68 ug/L | #     | 82  |
| 70)  | 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 23711    | 0.63 ug/L |       | 99  |
| 71)  | tert-Butylbenzene         | 134  | 14.597 | 14.598 | 0.970  | 5713     | 0.69 ug/L |       | 91  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.640 | 14.640 | 0.972  | 28782    | 0.65 ug/L |       | 98  |
| 73)  | sec-Butylbenzene          | 105  | 14.817 | 14.823 | 0.984  | 35373    | 0.66 ug/L |       | 94  |
| 74)  | 4-Isopropyltoluene        | 119  | 14.591 | 14.598 | 0.969  | 25615    | 0.70 ug/L |       | 98  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 14.994 | 15.000 | 0.996  | 14268    | 0.60 ug/L |       | 96  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 15610    | 0.65 ug/L | #     | 55  |
| 77)  | n-Butylbenzene            | 91   | 15.372 | 15.378 | 1.021  | 28121    | 0.64 ug/L |       | 98  |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.494 | 15.494 | 1.029  | 14495    | 0.64 ug/L |       | 94  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.317 | 16.311 | 1.084  | 1368     | 1.33 ug/L |       | 78  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.286 | 1.148  | 12147    | 0.70 ug/L |       | 99  |
| 81)  | Hexachlorobutadiene       | 225  | 17.444 | 17.445 | 1.159  | 6909     | 0.59 ug/L |       | 95  |
| 82)  | Naphthalene               | 128  | 17.627 | 17.634 | 1.171  | 22386    | 0.69 ug/L |       | 98  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.944 | 17.945 | 1.192  | 9855     | 0.63 ug/L |       | 96  |
| 85)  | Acrolein                  |      | 6.038  | 6.032  | 0.640  | 0m       | N.D.      | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 6.136  | 6.184  | 0.650  | 0m       | N.D.      | d     |     |
| 87)  | Isopropyl Alcohol         |      | 6.282  | 6.288  | 0.665  | 0m       | N.D.      | d     |     |
| 88)  | Allyl chloride            |      | 6.751  | 6.611  | 0.715  | 0m       | N.D.      | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 6.788  | 6.776  | 0.719  | 0m       | N.D.      | d     |     |
| 90)  | Acrylonitrile             |      | 7.008  | 7.014  | 0.742  | 0m       | N.D.      | d     |     |
| 91)  | Isopropyl ether           |      | 7.544  | 7.556  | 0.799  | 0m       | N.D.      | d     |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.678  | 7.678  | 0.813  | 0m       | N.D.      | d     |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.      |       |     |
| 94)  | Ethyl acetate             |      | 8.172  | 8.178  | 0.866  | 0m       | N.D.      | d     |     |
| 95)  | Propionitrile             |      | 0.000  | 8.239  | 0.000  | 0        | N.D.      |       |     |
| 96)  | Methacrylonitrile         |      | 8.458  | 8.416  | 0.896  | 0m       | N.D.      | d     |     |
| 97)  | Tetrahydrofuran           |      | 8.532  | 8.525  | 0.904  | 0m       | N.D.      | d     |     |
| 98)  | Isobutyl alcohol          |      | 8.873  | 8.873  | 0.940  | 0m       | N.D.      | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 9.178  | 9.214  | 0.972  | 0m       | N.D.      | d     |     |
| 100) | Methyl methacrylate       |      | 10.068 | 10.068 | 1.067  | 0m       | N.D.      | d     |     |
| 101) | 1,4-Dioxane               |      | 0.000  | 10.178 | 0.000  | 0        | N.D.      |       |     |
| 102) | 2-Nitropropane            |      | 10.568 | 10.549 | 1.119  | 0m       | N.D.      | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D402.D  
Acq On : 13 Oct 2016 17:11  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-01|ICAL005|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 14 08:48:44 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

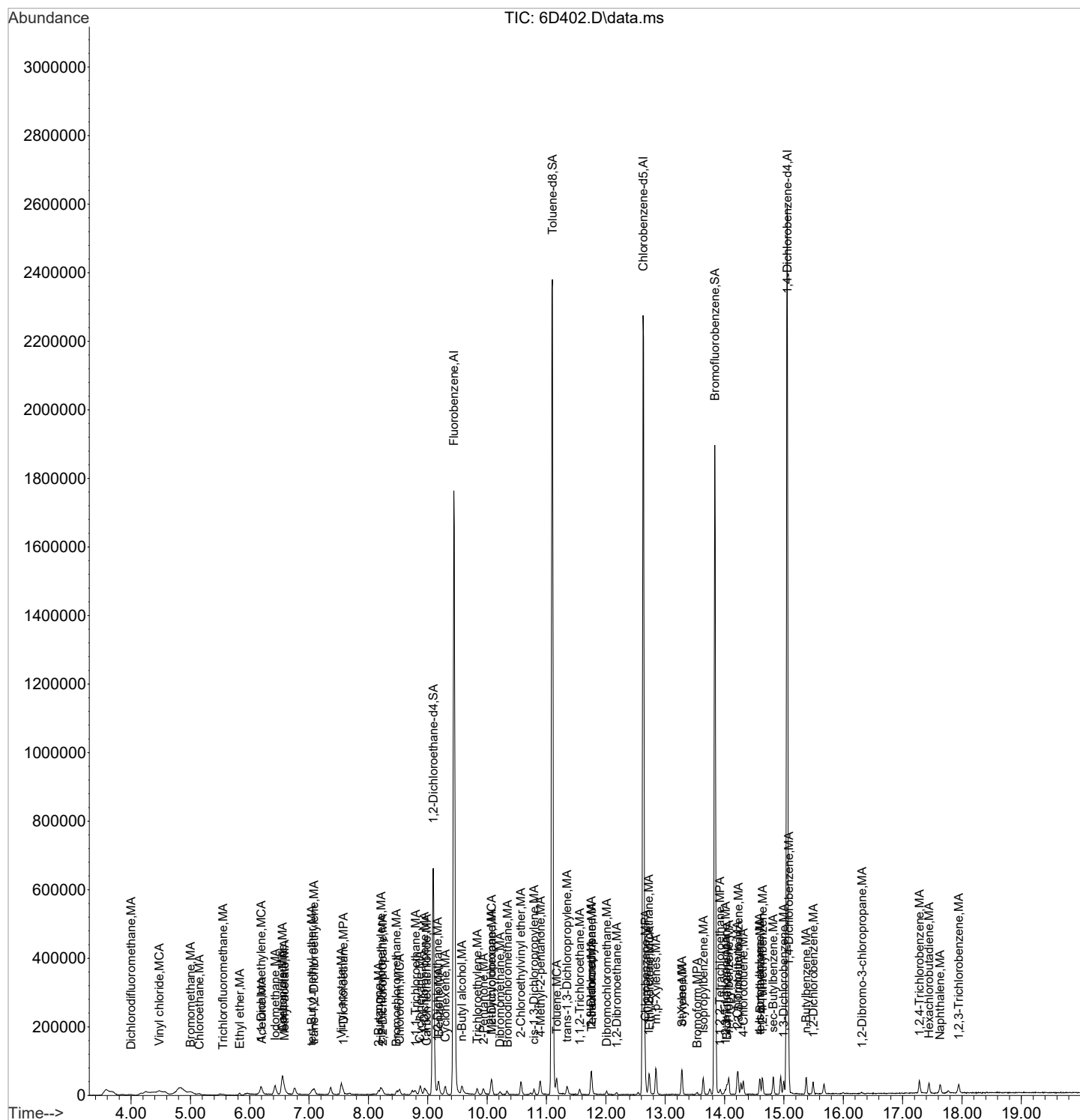
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 11.342 | 11.348 | 0.898  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 12.543 | 12.543 | 0.833  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.701 | 13.689 | 0.910  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.793 | 13.793 | 0.916  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 13.982 | 13.976 | 0.929  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 14.652 | 14.658 | 0.973  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 15.201 | 15.201 | 1.010  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.670 | 15.597 | 1.041  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D402.D  
Acq On : 13 Oct 2016 17:11  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-01|ICAL005|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 14 08:48:44 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D403.D  
Acq On : 13 Oct 2016 17:39  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-02|ICAL01|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 14 08:48:46 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 1554334  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.634 | 12.635 | 1.000  | 1206483  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 656179   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.634 | 12.634 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 518188  | 41.44 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 1612746 | 44.81 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 650383  | 48.03 | ug/L | 0.00 |

| Target Compounds              |      |        |        |        |          |        |       |        |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | QValue |
| 2) Dichlorodifluoromethane    | 85   | 3.985  | 3.993  | 0.422  | 13082    | 0.96   | ug/L  | 93     |
| 3) Chloromethane              | 50   | 4.257  | 4.282  | 0.451  | 16658    | 1.62   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 4.474  | 4.506  | 0.474  | 12861    | 1.36   | ug/L  | # 42   |
| 5) Bromomethane               | 94   | 5.004  | 5.020  | 0.530  | 7792     | 1.07   | ug/L  | 97     |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 9217     | 1.23   | ug/L  | 98     |
| 7) Trichlorofluoromethane     | 101  | 5.517  | 5.509  | 0.584  | 15149    | 0.88   | ug/L  | 99     |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.618  | 12055    | 1.26   | ug/L  | 99     |
| 9) Acetone                    | 43   | 6.203  | 6.197  | 0.657  | 27650    | 8.20   | ug/L  | 99     |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.656  | 18170    | 1.09   | ug/L  | 96     |
| 11) Iodomethane               | 142  | 6.428  | 6.429  | 0.681  | 78340    | 5.38   | ug/L  | 95     |
| 12) Acetonitrile              | 41   | 6.562  | 6.550  | 0.695  | 39688    | 34.90  | ug/L  | 96     |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 43656    | 6.00   | ug/L  | 94     |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.694  | 148894   | 5.71   | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 6.758  | 6.758  | 0.716  | 15486    | N.D.   |       |        |
| 16) tert-Butyl methyl ether   | 73   | 7.056  | 7.056  | 0.747  | 31179    | 0.95   | ug/L  | 81     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.087  | 7.087  | 0.751  | 19409    | 1.17   | ug/L  | 99     |
| 18) Hexane                    | 57   | 7.361  | 7.367  | 0.780  | 22347    | N.D.   |       |        |
| 19) Vinyl acetate             | 43   | 7.538  | 7.538  | 0.799  | 118475   | 6.36   | ug/L  | 94     |
| 20) 1,1-Dichloroethane        | 63   | 7.568  | 7.569  | 0.802  | 22375    | 1.12   | ug/L  | 98     |
| 21) 2-Butanone                | 43   | 8.166  | 8.160  | 0.865  | 35841    | 7.22   | ug/L  | 90     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.208  | 8.209  | 0.870  | 22337    | 1.13   | ug/L  | 99     |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 16305    | 0.90   | ug/L  | 78     |
| 24) Bromochloromethane        | 128  | 8.483  | 8.477  | 0.899  | 5264     | 1.09   | ug/L  | # 73   |
| 25) Chloroform                | 83   | 8.519  | 8.520  | 0.902  | 20138    | 0.99   | ug/L  | 96     |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.931  | 18346    | 0.99   | ug/L  | 96     |
| 27) Cyclohexane               | 56   | 8.867  | 8.879  | 0.939  | 28572    | 1.49   | ug/L  | 87     |
| 28) 1,1-Dichloropropene       | 75   | 8.946  | 8.946  | 0.948  | 13601    | 0.99   | ug/L  | 76     |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 14679    | 0.94   | ug/L  | 96     |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.972  | 18603    | 0.99   | ug/L  | # 42   |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 45145    | 1.21   | ug/L  | 97     |
| 33) Cyclohexene               | 67   | 9.300  | 9.294  | 0.985  | 21424    | 1.11   | ug/L  | 76     |
| 34) n-Butyl alcohol           | 56   | 9.574  | 9.568  | 1.014  | 34447    | 140.26 | ug/L  | 94     |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 11919    | 1.18   | ug/L  | 94     |
| 36) 2-Pentanone               | 43   | 9.934  | 9.934  | 1.052  | 43292    | 6.20   | ug/L  | 95     |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.068  | 13080    | 1.26   | ug/L  | 95     |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.074 | 1.067  | 20737    | 1.19   | ug/L  | 82     |
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.082  | 6312     | 1.02   | ug/L  | 95     |
| 40) Bromodichloromethane      | 83   | 10.336 | 10.336 | 1.095  | 13880    | 0.93   | ug/L  | 95     |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.574 | 10.568 | 1.120  | 33549    | 5.14   | ug/L  | 99     |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 17040    | 1.03   | ug/L  | 89     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D403.D  
Acq On : 13 Oct 2016 17:39  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-02|ICAL01|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 14 08:48:46 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|------|---------------------------|------|--------|--------|--------|----------|-----------|-------|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 24078    | 6.26 ug/L | 95    |
| 46)  | Toluene                   | 91   | 11.171 | 11.172 | 0.884  | 51862    | 1.16 ug/L | 100   |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.342 | 11.342 | 0.898  | 14606    | 0.84 ug/L | 85    |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.555 | 11.556 | 0.915  | 8000     | 1.07 ug/L | 97    |
| 49)  | 2-Hexanone                | 43   | 11.750 | 11.751 | 0.930  | 58043    | 6.73 ug/L | 97    |
| 50)  | 1,3-Dichloropropane       | 76   | 11.750 | 11.751 | 0.930  | 15974    | 0.96 ug/L | 81    |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 9946     | 1.08 ug/L | 94    |
| 52)  | Dibromochloromethane      | 129  | 12.019 | 12.013 | 0.951  | 9465     | 0.93 ug/L | 95    |
| 53)  | 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 8443     | 0.97 ug/L | 89    |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.002  | 32627    | 1.10 ug/L | 74    |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.726 | 12.726 | 1.007  | 10676    | 0.93 ug/L | 90    |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 53438    | 1.03 ug/L | 92    |
| 57)  | m,p-Xylenes               | 106  | 12.848 | 12.842 | 1.017  | 43744    | 2.30 ug/L | 96    |
| 58)  | o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 49114    | 1.12 ug/L | 96    |
| 59)  | Styrene                   | 104  | 13.281 | 13.281 | 1.051  | 35389    | 1.20 ug/L | 88    |
| 61)  | Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 5049     | 1.45 ug/L | 85    |
| 62)  | Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 56610    | 1.18 ug/L | 96    |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 12420    | 1.19 ug/L | 94    |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.012 | 14.012 | 0.931  | 3805     | 1.01 ug/L | # 86  |
| 66)  | Bromobenzene              | 156  | 14.043 | 14.043 | 0.933  | 15219    | 1.27 ug/L | 84    |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 68606    | 1.20 ug/L | 96    |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 51410    | 1.17 ug/L | 93    |
| 69)  | 2-Chlorotoluene           | 126  | 14.213 | 14.214 | 0.944  | 13027    | 1.16 ug/L | 97    |
| 70)  | 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 43850    | 1.16 ug/L | 97    |
| 71)  | tert-Butylbenzene         | 134  | 14.597 | 14.598 | 0.970  | 10259    | 1.22 ug/L | 94    |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.640 | 0.972  | 53727    | 1.20 ug/L | 99    |
| 73)  | sec-Butylbenzene          | 105  | 14.823 | 14.823 | 0.985  | 64798    | 1.20 ug/L | 98    |
| 74)  | 4-Isopropyltoluene        | 119  | 14.597 | 14.598 | 0.970  | 42596    | 1.15 ug/L | 99    |
| 75)  | 1,3-Dichlorobenzene       | 146  | 14.994 | 15.000 | 0.996  | 28428    | 1.19 ug/L | 99    |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.085 | 15.085 | 1.002  | 28611    | 1.19 ug/L | 76    |
| 77)  | n-Butylbenzene            | 91   | 15.378 | 15.378 | 1.021  | 54395    | 1.22 ug/L | 99    |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.494 | 15.494 | 1.029  | 27766    | 1.21 ug/L | 98    |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 2216     | 1.70 ug/L | 96    |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.286 | 17.286 | 1.148  | 22140    | 1.26 ug/L | 96    |
| 81)  | Hexachlorobutadiene       | 225  | 17.444 | 17.445 | 1.159  | 13031    | 1.10 ug/L | 94    |
| 82)  | Naphthalene               | 128  | 17.633 | 17.634 | 1.171  | 39020    | 1.19 ug/L | 99    |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.950 | 17.945 | 1.192  | 18654    | 1.18 ug/L | 94    |
| 85)  | Acrolein                  |      | 6.026  | 6.032  | 0.638  | 0m       | N.D.      | d     |
| 86)  | Trichlorotrifluoroethane  |      | 6.154  | 6.184  | 0.652  | 0m       | N.D.      | d     |
| 87)  | Isopropyl Alcohol         |      | 6.294  | 6.288  | 0.667  | 0m       | N.D.      | d     |
| 88)  | Allyl chloride            |      | 6.562  | 6.611  | 0.695  | 0m       | N.D.      | d     |
| 89)  | tert-Butyl Alcohol        |      | 6.788  | 6.776  | 0.719  | 0m       | N.D.      | d     |
| 90)  | Acrylonitrile             |      | 7.044  | 7.014  | 0.746  | 0m       | N.D.      | d     |
| 91)  | Isopropyl ether           |      | 7.538  | 7.556  | 0.799  | 0m       | N.D.      | d     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.654  | 7.678  | 0.811  | 0m       | N.D.      | d     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.      |       |
| 94)  | Ethyl acetate             |      | 8.166  | 8.178  | 0.865  | 0m       | N.D.      | d     |
| 95)  | Propionitrile             |      | 8.184  | 8.239  | 0.867  | 0m       | N.D.      | d     |
| 96)  | Methacrylonitrile         |      | 8.404  | 8.416  | 0.890  | 0m       | N.D.      | d     |
| 97)  | Tetrahydrofuran           |      | 8.532  | 8.525  | 0.904  | 0m       | N.D.      | d     |
| 98)  | Isobutyl alcohol          |      | 8.873  | 8.873  | 0.940  | 0m       | N.D.      | d     |
| 99)  | Methyl tert-amyl ether    |      | 9.178  | 9.214  | 0.972  | 0m       | N.D.      | d     |
| 100) | Methyl methacrylate       |      | 10.074 | 10.068 | 1.067  | 0m       | N.D.      | d     |
| 101) | 1,4-Dioxane               |      | 0.000  | 10.178 | 0.000  | 0        | N.D.      |       |
| 102) | 2-Nitropropane            |      | 10.574 | 10.549 | 1.120  | 0m       | N.D.      | d     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D403.D  
Acq On : 13 Oct 2016 17:39  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-02|ICAL01|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 14 08:48:46 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 11.366 | 11.348 | 0.900  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 12.543 | 12.543 | 0.833  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.640 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.781 | 13.793 | 0.915  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.061 | 13.976 | 0.934  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 0.000  | 14.658 | 0.000  | 0        | N.D. |       |
| 111) Benzyl chloride           |      | 15.201 | 15.201 | 1.010  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.609 | 15.597 | 1.037  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D404.D  
Acq On : 13 Oct 2016 18:08  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-03|ICAL02|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 14 08:48:48 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.446  | 9.446  | 1.000  | 1596406  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.635 | 1.000  | 1224107  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 653234   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.446  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.634 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 530570  | 41.32 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1625140 | 44.50 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 655505  | 48.63 | ug/L | 0.00 |

| Target Compounds              |      |        |        |        |          |        |       |        |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | QValue |
| 2) Dichlorodifluoromethane    | 85   | 3.993  | 3.993  | 0.423  | 26466    | 1.88   | ug/L  | 95     |
| 3) Chloromethane              | 50   | 4.258  | 4.282  | 0.451  | 29734    | 2.81   | ug/L  | 92     |
| 4) Vinyl chloride             | 62   | 4.482  | 4.506  | 0.474  | 24976    | 2.57   | ug/L  | 91     |
| 5) Bromomethane               | 94   | 5.004  | 5.020  | 0.530  | 14808    | 1.98   | ug/L  | 93     |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 18478    | 2.40   | ug/L  | 98     |
| 7) Trichlorofluoromethane     | 101  | 5.525  | 5.509  | 0.585  | 30458    | 1.73   | ug/L  | 100    |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.617  | 24676    | 2.51   | ug/L  | 83     |
| 9) Acetone                    | 43   | 6.197  | 6.197  | 0.656  | 51549    | 14.89  | ug/L  | 96     |
| 10) 1,1-Dichloroethylene      | 61   | 6.197  | 6.191  | 0.656  | 36839    | 2.15   | ug/L  | 98     |
| 11) Iodomethane               | 142  | 6.428  | 6.429  | 0.681  | 160894   | 10.75  | ug/L  | 93     |
| 12) Acetonitrile              | 41   | 6.563  | 6.550  | 0.695  | 84209    | 72.09  | ug/L  | 91     |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 90876    | 12.15  | ug/L  | 93     |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.693  | 293403   | 10.96  | ug/L  | 99     |
| 15) Methylene chloride        | 84   | 6.758  | 6.758  | 0.715  | 26072    | 1.43   | ug/L  | # 81   |
| 16) tert-Butyl methyl ether   | 73   | 7.056  | 7.056  | 0.747  | 65384    | 1.94   | ug/L  | 84     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.093  | 7.087  | 0.751  | 37266    | 2.19   | ug/L  | 97     |
| 18) Hexane                    | 57   | 7.367  | 7.367  | 0.780  | 41151    | 2.68   | ug/L  | 98     |
| 19) Vinyl acetate             | 43   | 7.538  | 7.538  | 0.798  | 268784   | 14.05  | ug/L  | 94     |
| 20) 1,1-Dichloroethane        | 63   | 7.568  | 7.569  | 0.801  | 44259    | 2.16   | ug/L  | 98     |
| 21) 2-Butanone                | 43   | 8.172  | 8.160  | 0.865  | 77871    | 15.27  | ug/L  | 89     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.202  | 8.209  | 0.868  | 45221    | 2.23   | ug/L  | 98     |
| 23) 2,2-Dichloropropane       | 77   | 8.227  | 8.233  | 0.871  | 32514    | 1.75   | ug/L  | 69     |
| 24) Bromochloromethane        | 128  | 8.483  | 8.477  | 0.898  | 11184    | 2.25   | ug/L  | # 84   |
| 25) Chloroform                | 83   | 8.519  | 8.520  | 0.902  | 39385    | 1.89   | ug/L  | 96     |
| 26) 1,1,1-Trichloroethane     | 97   | 8.794  | 8.788  | 0.931  | 33754    | 1.77   | ug/L  | 97     |
| 27) Cyclohexane               | 56   | 8.873  | 8.879  | 0.939  | 53887    | 2.74   | ug/L  | 84     |
| 28) 1,1-Dichloropropene       | 75   | 8.946  | 8.946  | 0.947  | 27951    | 1.98   | ug/L  | 80     |
| 29) Carbon tetrachloride      | 117  | 8.971  | 8.977  | 0.950  | 28926    | 1.81   | ug/L  | 99     |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.971  | 38251    | 1.98   | ug/L  | 98     |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.972  | 89044    | 2.32   | ug/L  | 97     |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.984  | 46264    | 2.33   | ug/L  | 82     |
| 34) n-Butyl alcohol           | 56   | 9.574  | 9.568  | 1.014  | 84515    | 291.88 | ug/L  | 90     |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 22447    | 2.17   | ug/L  | 96     |
| 36) 2-Pentanone               | 43   | 9.934  | 9.934  | 1.052  | 92546    | 12.91  | ug/L  | 95     |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.067  | 28491    | 2.68   | ug/L  | 98     |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.074 | 1.066  | 40008    | 2.23   | ug/L  | 86     |
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.081  | 13287    | 2.10   | ug/L  | 96     |
| 40) Bromodichloromethane      | 83   | 10.336 | 10.336 | 1.094  | 29078    | 1.91   | ug/L  | 97     |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 75332    | 11.25  | ug/L  | 98     |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.142  | 35568    | 2.09   | ug/L  | 93     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D404.D  
Acq On : 13 Oct 2016 18:08  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-03|ICAL02|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 14 08:48:48 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc       | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|------------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 52366    | 13.41 ug/L |       | 96  |
| 46)  | Toluene                   | 91   | 11.171 | 11.172 | 0.885  | 98696    | 2.17 ug/L  |       | 99  |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.336 | 11.342 | 0.898  | 32280    | 1.83 ug/L  |       | 88  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.562 | 11.556 | 0.916  | 15700    | 2.07 ug/L  |       | 94  |
| 49)  | 2-Hexanone                | 43   | 11.751 | 11.751 | 0.930  | 119951   | 13.70 ug/L |       | 98  |
| 50)  | 1,3-Dichloropropane       | 76   | 11.751 | 11.751 | 0.930  | 32495    | 1.92 ug/L  | #     | 74  |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 19605    | 2.11 ug/L  |       | 98  |
| 52)  | Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 19432    | 1.88 ug/L  |       | 98  |
| 53)  | 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 19105    | 2.15 ug/L  |       | 98  |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.003  | 66631    | 2.22 ug/L  |       | 91  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.726 | 1.007  | 21922    | 1.88 ug/L  |       | 91  |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 111341   | 2.12 ug/L  |       | 99  |
| 57)  | m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 88798    | 4.61 ug/L  |       | 87  |
| 58)  | o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 94321    | 2.11 ug/L  |       | 96  |
| 59)  | Styrene                   | 104  | 13.281 | 13.281 | 1.052  | 73539    | 2.46 ug/L  |       | 87  |
| 61)  | Bromoform                 | 173  | 13.531 | 13.537 | 0.899  | 11954    | 2.46 ug/L  |       | 99  |
| 62)  | Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 119724   | 2.50 ug/L  |       | 100 |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 25034    | 2.41 ug/L  |       | 98  |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.012 | 14.012 | 0.931  | 7974     | 2.13 ug/L  | #     | 90  |
| 66)  | Bromobenzene              | 156  | 14.037 | 14.043 | 0.932  | 30094    | 2.53 ug/L  |       | 89  |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 133086   | 2.34 ug/L  |       | 96  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 104089   | 2.39 ug/L  |       | 96  |
| 69)  | 2-Chlorotoluene           | 126  | 14.213 | 14.214 | 0.944  | 27733    | 2.48 ug/L  |       | 93  |
| 70)  | 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 88449    | 2.35 ug/L  |       | 98  |
| 71)  | tert-Butylbenzene         | 134  | 14.598 | 14.598 | 0.970  | 21128    | 2.53 ug/L  | #     | 89  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.640 | 0.972  | 104576   | 2.36 ug/L  |       | 95  |
| 73)  | sec-Butylbenzene          | 105  | 14.817 | 14.823 | 0.984  | 131661   | 2.45 ug/L  |       | 99  |
| 74)  | 4-Isopropyltoluene        | 119  | 14.591 | 14.598 | 0.969  | 88418    | 2.40 ug/L  |       | 93  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.000 | 15.000 | 0.996  | 56398    | 2.37 ug/L  |       | 97  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 56720    | 2.37 ug/L  |       | 88  |
| 77)  | n-Butylbenzene            | 91   | 15.378 | 15.378 | 1.021  | 104018   | 2.35 ug/L  |       | 99  |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 54597    | 2.38 ug/L  |       | 98  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.317 | 16.311 | 1.084  | 5027     | 2.94 ug/L  |       | 90  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.286 | 17.286 | 1.148  | 40078    | 2.30 ug/L  |       | 96  |
| 81)  | Hexachlorobutadiene       | 225  | 17.445 | 17.445 | 1.159  | 24552    | 2.09 ug/L  |       | 97  |
| 82)  | Naphthalene               | 128  | 17.634 | 17.634 | 1.171  | 83372    | 2.56 ug/L  |       | 99  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.944 | 17.945 | 1.192  | 35449    | 2.25 ug/L  |       | 99  |
| 85)  | Acrolein                  |      | 6.166  | 6.032  | 0.653  | 0m       | N.D.       | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 6.185  | 6.184  | 0.655  | 0m       | N.D.       | d     |     |
| 87)  | Isopropyl Alcohol         |      | 0.000  | 6.288  | 0.000  | 0        | N.D.       |       |     |
| 88)  | Allyl chloride            |      | 6.563  | 6.611  | 0.695  | 0m       | N.D.       | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 6.776  | 6.776  | 0.717  | 0m       | N.D.       | d     |     |
| 90)  | Acrylonitrile             |      | 7.038  | 7.014  | 0.745  | 0m       | N.D.       | d     |     |
| 91)  | Isopropyl ether           |      | 7.538  | 7.556  | 0.798  | 0m       | N.D.       | d     |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.684  | 7.678  | 0.813  | 0m       | N.D.       | d     |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.       |       |     |
| 94)  | Ethyl acetate             |      | 8.172  | 8.178  | 0.865  | 0m       | N.D.       | d     |     |
| 95)  | Propionitrile             |      | 0.000  | 8.239  | 0.000  | 0        | N.D.       |       |     |
| 96)  | Methacrylonitrile         |      | 8.379  | 8.416  | 0.887  | 0m       | N.D.       | d     |     |
| 97)  | Tetrahydrofuran           |      | 8.538  | 8.525  | 0.904  | 0m       | N.D.       | d     |     |
| 98)  | Isobutyl alcohol          |      | 8.873  | 8.873  | 0.939  | 0m       | N.D.       | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 9.178  | 9.214  | 0.972  | 0m       | N.D.       | d     |     |
| 100) | Methyl methacrylate       |      | 10.068 | 10.068 | 1.066  | 0m       | N.D.       | d     |     |
| 101) | 1,4-Dioxane               |      | 0.000  | 10.178 | 0.000  | 0        | N.D.       |       |     |
| 102) | 2-Nitropropane            |      | 10.568 | 10.549 | 1.119  | 0m       | N.D.       | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D404.D  
Acq On : 13 Oct 2016 18:08  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-03|ICAL02|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 14 08:48:48 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 0.000  | 11.348 | 0.000  | 0        | N.D. |       |
| 106) 1-Chlorohexane            |      | 12.543 | 12.543 | 0.833  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.640 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.781 | 13.793 | 0.915  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.061 | 13.976 | 0.934  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 14.665 | 14.658 | 0.974  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 15.183 | 15.201 | 1.009  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.670 | 15.597 | 1.041  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D405.D  
Acq On : 13 Oct 2016 18:37  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-04|ICAL05|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 14 08:48:50 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 1613089  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.635 | 1.000  | 1240346  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 656547   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.634 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 524644  | 40.43 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.092 | 11.098 | 0.878 | 1644487 | 44.44 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 668746  | 49.36 | ug/L | 0.00 |

| Target Compounds              |      |        |        |        |          |        |       |        |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | QValue |
| 2) Dichlorodifluoromethane    | 85   | 4.001  | 3.993  | 0.424  | 65245    | 4.60   | ug/L  | 98     |
| 3) Chloromethane              | 50   | 4.258  | 4.282  | 0.451  | 71966    | 6.72   | ug/L  | 96     |
| 4) Vinyl chloride             | 62   | 4.482  | 4.506  | 0.475  | 60511    | 6.15   | ug/L  | 94     |
| 5) Bromomethane               | 94   | 5.012  | 5.020  | 0.531  | 37991    | 5.02   | ug/L  | 98     |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 44867    | 5.78   | ug/L  | 98     |
| 7) Trichlorofluoromethane     | 101  | 5.509  | 5.509  | 0.584  | 79556    | 4.48   | ug/L  | 99     |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.618  | 56822    | 5.73   | ug/L  | 89     |
| 9) Acetone                    | 43   | 6.197  | 6.197  | 0.656  | 104532   | 29.88  | ug/L  | 93     |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.656  | 88518    | 5.10   | ug/L  | 96     |
| 11) Iodomethane               | 142  | 6.428  | 6.429  | 0.681  | 381016   | 25.19  | ug/L  | 94     |
| 12) Acetonitrile              | 41   | 6.556  | 6.550  | 0.695  | 189992   | 160.97 | ug/L  | 95     |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 213209   | 28.22  | ug/L  | 94     |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.694  | 725374   | 26.82  | ug/L  | 99     |
| 15) Methylene chloride        | 84   | 6.764  | 6.758  | 0.716  | 57490    | 4.39   | ug/L  | # 80   |
| 16) tert-Butyl methyl ether   | 73   | 7.050  | 7.056  | 0.747  | 153982   | 4.53   | ug/L  | 87     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.093  | 7.087  | 0.751  | 87366    | 5.08   | ug/L  | 99     |
| 18) Hexane                    | 57   | 7.361  | 7.367  | 0.780  | 95245    | 6.13   | ug/L  | 97     |
| 19) Vinyl acetate             | 43   | 7.538  | 7.538  | 0.799  | 679443   | 35.16  | ug/L  | 97     |
| 20) 1,1-Dichloroethane        | 63   | 7.568  | 7.569  | 0.802  | 108182   | 5.23   | ug/L  | 97     |
| 21) 2-Butanone                | 43   | 8.166  | 8.160  | 0.865  | 166069   | 32.22  | ug/L  | 92     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.209  | 8.209  | 0.870  | 105937   | 5.18   | ug/L  | 99     |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 78724    | 4.20   | ug/L  | 75     |
| 24) Bromochloromethane        | 128  | 8.483  | 8.477  | 0.899  | 26961    | 5.36   | ug/L  | # 87   |
| 25) Chloroform                | 83   | 8.520  | 8.520  | 0.902  | 94144    | 4.47   | ug/L  | 98     |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.931  | 83108    | 4.31   | ug/L  | 96     |
| 27) Cyclohexane               | 56   | 8.873  | 8.879  | 0.940  | 129233   | 6.51   | ug/L  | 86     |
| 28) 1,1-Dichloropropene       | 75   | 8.946  | 8.946  | 0.948  | 70750    | 4.96   | ug/L  | 89     |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 72070    | 4.46   | ug/L  | 99     |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.972  | 90683    | 4.65   | ug/L  | 96     |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 206675   | 5.33   | ug/L  | 96     |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.985  | 111688   | 5.57   | ug/L  | 86     |
| 34) n-Butyl alcohol           | 56   | 9.568  | 9.568  | 1.014  | 196855   | 632.24 | ug/L  | 98     |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 53642    | 5.13   | ug/L  | 94     |
| 36) 2-Pentanone               | 43   | 9.928  | 9.934  | 1.052  | 224529   | 31.01  | ug/L  | 95     |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.068  | 60559    | 5.63   | ug/L  | 91     |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.074 | 1.067  | 96144    | 5.30   | ug/L  | 86     |
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.082  | 30859    | 4.82   | ug/L  | 99     |
| 40) Bromodichloromethane      | 83   | 10.330 | 10.336 | 1.094  | 69565    | 4.51   | ug/L  | 98     |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 193501   | 28.59  | ug/L  | 98     |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 84525    | 4.93   | ug/L  | 94     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D405.D  
Acq On : 13 Oct 2016 18:37  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-04|ICAL05|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 14 08:48:50 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc        | Units |
|------|---------------------------|------|--------|--------|--------|----------|-------------|-------|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 119692   | 30.25 ug/L  | 97    |
| 46)  | Toluene                   | 91   | 11.171 | 11.172 | 0.885  | 226354   | 4.91 ug/L   | 100   |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.342 | 11.342 | 0.898  | 76201    | 4.25 ug/L   | 92    |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.556 | 11.556 | 0.915  | 36974    | 4.80 ug/L   | 94    |
| 49)  | 2-Hexanone                | 43   | 11.751 | 11.751 | 0.930  | 271424   | 30.60 ug/L  | 96    |
| 50)  | 1,3-Dichloropropane       | 76   | 11.745 | 11.751 | 0.930  | 78735    | 4.59 ug/L   | 82    |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 43245    | 4.59 ug/L   | 96    |
| 52)  | Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 47620    | 4.54 ug/L   | 99    |
| 53)  | 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 45017    | 5.01 ug/L   | 100   |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.003  | 152372   | 5.02 ug/L   | 98    |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.726 | 1.007  | 54736    | 4.64 ug/L   | 95    |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 263376   | 4.94 ug/L   | 96    |
| 57)  | m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 211573   | 10.84 ug/L  | 89    |
| 58)  | o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 224368   | 4.95 ug/L   | 93    |
| 59)  | Styrene                   | 104  | 13.281 | 13.281 | 1.052  | 170469   | 5.63 ug/L   | 91    |
| 61)  | Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 28130    | 4.81 ug/L   | 99    |
| 62)  | Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 280316   | 5.82 ug/L   | 97    |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 56786    | 5.43 ug/L   | 95    |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.006 | 14.012 | 0.930  | 18592    | 4.94 ug/L # | 90    |
| 66)  | Bromobenzene              | 156  | 14.037 | 14.043 | 0.932  | 69740    | 5.83 ug/L   | 92    |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 326690   | 5.72 ug/L   | 97    |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 248858   | 5.68 ug/L   | 96    |
| 69)  | 2-Chlorotoluene           | 126  | 14.214 | 14.214 | 0.944  | 64555    | 5.74 ug/L   | 95    |
| 70)  | 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 209420   | 5.53 ug/L   | 96    |
| 71)  | tert-Butylbenzene         | 134  | 14.592 | 14.598 | 0.969  | 50670    | 6.05 ug/L # | 88    |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.640 | 14.640 | 0.972  | 254369   | 5.70 ug/L   | 95    |
| 73)  | sec-Butylbenzene          | 105  | 14.817 | 14.823 | 0.984  | 310469   | 5.75 ug/L   | 100   |
| 74)  | 4-Isopropyltoluene        | 119  | 14.592 | 14.598 | 0.969  | 229909   | 6.20 ug/L   | 90    |
| 75)  | 1,3-Dichlorobenzene       | 146  | 14.994 | 15.000 | 0.996  | 135747   | 5.67 ug/L   | 95    |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 131114   | 5.44 ug/L   | 96    |
| 77)  | n-Butylbenzene            | 91   | 15.378 | 15.378 | 1.021  | 251513   | 5.65 ug/L   | 100   |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.494 | 15.494 | 1.029  | 126567   | 5.50 ug/L   | 98    |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 10535    | 5.34 ug/L   | 90    |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.286 | 17.286 | 1.148  | 99064    | 5.66 ug/L   | 100   |
| 81)  | Hexachlorobutadiene       | 225  | 17.445 | 17.445 | 1.159  | 59015    | 4.99 ug/L   | 96    |
| 82)  | Naphthalene               | 128  | 17.634 | 17.634 | 1.171  | 194525   | 5.95 ug/L   | 99    |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.945 | 17.945 | 1.192  | 86197    | 5.45 ug/L   | 99    |
| 85)  | Acrolein                  |      | 6.118  | 6.032  | 0.648  | 0m       | N.D. d      |       |
| 86)  | Trichlorotrifluoroethane  |      | 6.179  | 6.184  | 0.654  | 0m       | N.D. d      |       |
| 87)  | Isopropyl Alcohol         |      | 6.294  | 6.288  | 0.667  | 0m       | N.D. d      |       |
| 88)  | Allyl chloride            |      | 6.556  | 6.611  | 0.695  | 0m       | N.D. d      |       |
| 89)  | tert-Butyl Alcohol        |      | 6.776  | 6.776  | 0.718  | 0m       | N.D. d      |       |
| 90)  | Acrylonitrile             |      | 7.050  | 7.014  | 0.747  | 0m       | N.D. d      |       |
| 91)  | Isopropyl ether           |      | 7.538  | 7.556  | 0.799  | 0m       | N.D. d      |       |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.672  | 7.678  | 0.813  | 0m       | N.D. d      |       |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.        |       |
| 94)  | Ethyl acetate             |      | 8.166  | 8.178  | 0.865  | 0m       | N.D. d      |       |
| 95)  | Propionitrile             |      | 8.160  | 8.239  | 0.864  | 0m       | N.D. d      |       |
| 96)  | Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.        |       |
| 97)  | Tetrahydrofuran           |      | 8.526  | 8.525  | 0.903  | 0m       | N.D. d      |       |
| 98)  | Isobutyl alcohol          |      | 8.873  | 8.873  | 0.940  | 0m       | N.D. d      |       |
| 99)  | Methyl tert-amyl ether    |      | 9.184  | 9.214  | 0.973  | 0m       | N.D. d      |       |
| 100) | Methyl methacrylate       |      | 10.068 | 10.068 | 1.067  | 0m       | N.D. d      |       |
| 101) | 1,4-Dioxane               |      | 0.000  | 10.178 | 0.000  | 0        | N.D.        |       |
| 102) | 2-Nitropropane            |      | 10.568 | 10.549 | 1.119  | 0m       | N.D. d      |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D405.D  
Acq On : 13 Oct 2016 18:37  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-04|ICAL05|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 14 08:48:50 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 11.348 | 11.348 | 0.899  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 12.525 | 12.543 | 0.832  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.640 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.799 | 13.793 | 0.917  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 13.976 | 0.000  | 0        | N.D. |       |
| 110) Pentachloroethane         |      | 14.659 | 14.658 | 0.974  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 15.189 | 15.201 | 1.009  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.671 | 15.597 | 1.041  | 0m       | N.D. | d     |

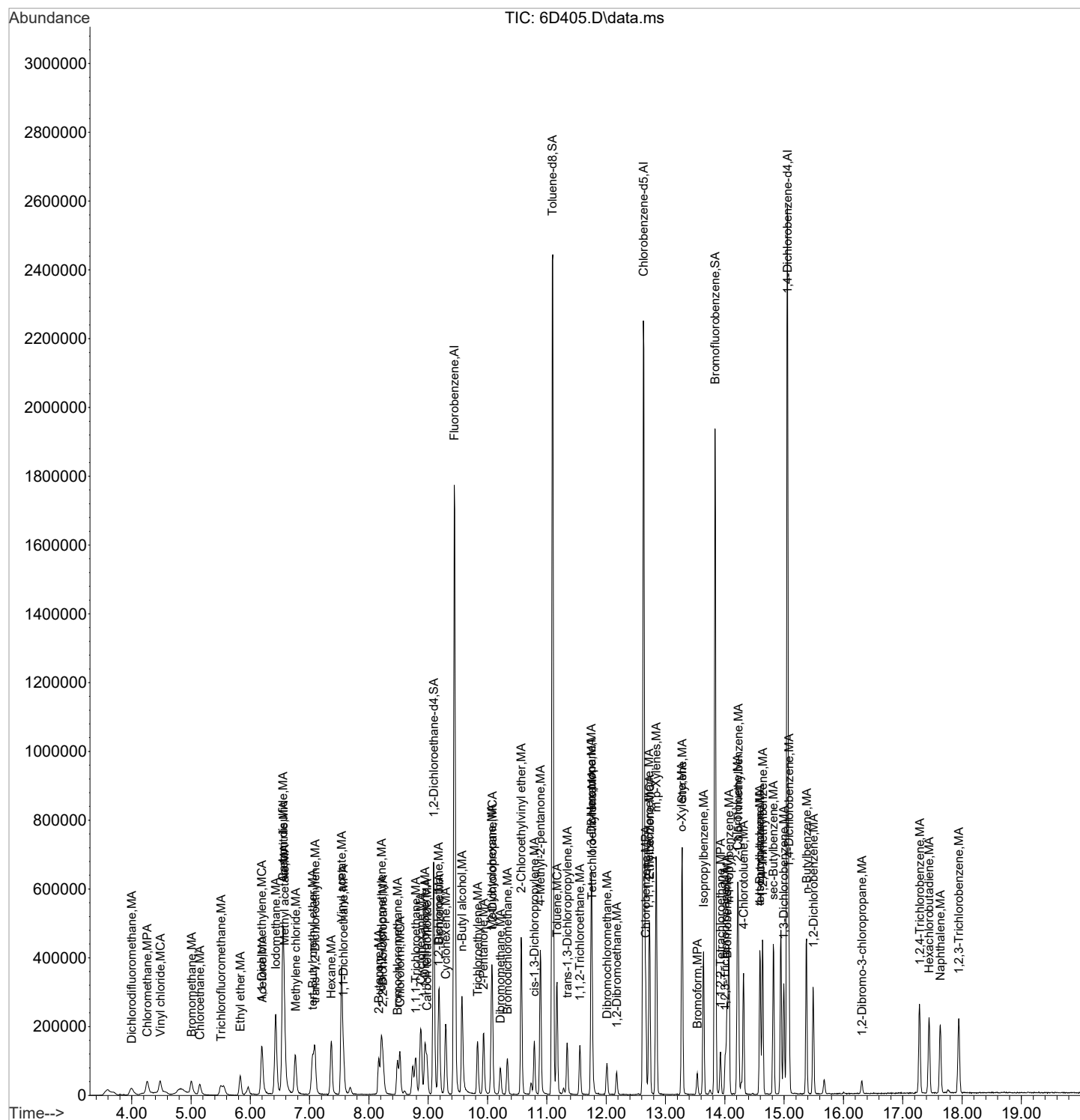
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D405.D  
Acq On : 13 Oct 2016 18:37  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-04|ICAL05|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 14 08:48:50 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D406.D  
Acq On : 13 Oct 2016 19:06  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-05|ICAL010|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 14 08:48:52 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 1585906  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.635 | 12.635 | 1.000  | 1231216  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 647654   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.635 | 12.634 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 505189  | 39.60 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 1646820 | 44.83 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 652600  | 48.83 | ug/L | 0.00 |

| Target Compounds              |      |        |        |        |          |         |       |        |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
| 2) Dichlorodifluoromethane    | 85   | 3.993  | 3.993  | 0.423  | 107335   | 7.69    | ug/L  | 100    |
| 3) Chloromethane              | 50   | 4.266  | 4.282  | 0.452  | 128550   | 12.22   | ug/L  | 99     |
| 4) Vinyl chloride             | 62   | 4.482  | 4.506  | 0.475  | 103935   | 10.75   | ug/L  | 99     |
| 5) Bromomethane               | 94   | 5.004  | 5.020  | 0.530  | 64587    | 8.67    | ug/L  | 98     |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 76876    | 10.07   | ug/L  | 99     |
| 7) Trichlorofluoromethane     | 101  | 5.509  | 5.509  | 0.584  | 129577   | 7.42    | ug/L  | 99     |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.618  | 101214   | 10.38   | ug/L  | 73     |
| 9) Acetone                    | 43   | 6.197  | 6.197  | 0.656  | 206500   | 60.03   | ug/L  | 92     |
| 10) 1,1-Dichloroethylene      | 61   | 6.197  | 6.191  | 0.656  | 170927   | 10.02   | ug/L  | 98     |
| 11) Iodomethane               | 142  | 6.429  | 6.429  | 0.681  | 756723   | 50.89   | ug/L  | 93     |
| 12) Acetonitrile              | 41   | 6.550  | 6.550  | 0.694  | 391359   | 337.26  | ug/L  | 96     |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 448347   | 60.35   | ug/L  | 92     |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.694  | 1411081  | 53.07   | ug/L  | 99     |
| 15) Methylene chloride        | 84   | 6.758  | 6.758  | 0.716  | 112235   | 9.78    | ug/L  | # 81   |
| 16) tert-Butyl methyl ether   | 73   | 7.050  | 7.056  | 0.747  | 307015   | 9.18    | ug/L  | 88     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.087  | 7.087  | 0.751  | 174520   | 10.31   | ug/L  | 99     |
| 18) Hexane                    | 57   | 7.367  | 7.367  | 0.780  | 181952   | 11.91   | ug/L  | 95     |
| 19) Vinyl acetate             | 43   | 7.538  | 7.538  | 0.799  | 1199055  | 63.11   | ug/L  | 97     |
| 20) 1,1-Dichloroethane        | 63   | 7.569  | 7.569  | 0.802  | 214861   | 10.56   | ug/L  | 97     |
| 21) 2-Butanone                | 43   | 8.166  | 8.160  | 0.865  | 330144   | 65.15   | ug/L  | 93     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.209  | 8.209  | 0.870  | 209301   | 10.40   | ug/L  | 98     |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 153363   | 8.33    | ug/L  | 79     |
| 24) Bromochloromethane        | 128  | 8.483  | 8.477  | 0.899  | 54651    | 11.06   | ug/L  | # 88   |
| 25) Chloroform                | 83   | 8.520  | 8.520  | 0.902  | 188475   | 9.09    | ug/L  | 97     |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.931  | 161114   | 8.50    | ug/L  | 97     |
| 27) Cyclohexane               | 56   | 8.873  | 8.879  | 0.940  | 246181   | 12.62   | ug/L  | 84     |
| 28) 1,1-Dichloropropene       | 75   | 8.946  | 8.946  | 0.948  | 131594   | 9.39    | ug/L  | 89     |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 139646   | 8.79    | ug/L  | 99     |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.972  | 182454   | 9.52    | ug/L  | 98     |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 408346   | 10.70   | ug/L  | 96     |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.985  | 205603   | 10.43   | ug/L  | 82     |
| 34) n-Butyl alcohol           | 56   | 9.568  | 9.568  | 1.014  | 417496   | 1327.88 | ug/L  | 98     |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 105305   | 10.23   | ug/L  | 95     |
| 36) 2-Pentanone               | 43   | 9.928  | 9.934  | 1.052  | 455097   | 63.92   | ug/L  | 94     |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.068  | 122588   | 11.59   | ug/L  | 97     |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.074 | 1.067  | 183903   | 10.31   | ug/L  | 85     |
| 39) Dibromomethane            | 93   | 10.220 | 10.214 | 1.083  | 61973    | 9.85    | ug/L  | 99     |
| 40) Bromodichloromethane      | 83   | 10.330 | 10.336 | 1.094  | 145623   | 9.61    | ug/L  | 99     |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 365800   | 54.97   | ug/L  | 97     |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 174319   | 10.33   | ug/L  | 96     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D406.D  
Acq On : 13 Oct 2016 19:06  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-05|ICAL010|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 14 08:48:52 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc       | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|------------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 244462   | 62.25 ug/L |       | 94  |
| 46)  | Toluene                   | 91   | 11.171 | 11.172 | 0.884  | 452167   | 9.88 ug/L  |       | 99  |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.342 | 11.342 | 0.898  | 157858   | 8.87 ug/L  |       | 91  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.556 | 11.556 | 0.915  | 76098    | 9.96 ug/L  |       | 98  |
| 49)  | 2-Hexanone                | 43   | 11.745 | 11.751 | 0.930  | 531036   | 60.32 ug/L |       | 97  |
| 50)  | 1,3-Dichloropropane       | 76   | 11.751 | 11.751 | 0.930  | 160252   | 9.42 ug/L  |       | 85  |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 84225    | 9.00 ug/L  |       | 96  |
| 52)  | Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 103338   | 9.93 ug/L  |       | 99  |
| 53)  | 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 90955    | 10.20 ug/L |       | 98  |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.002  | 306441   | 10.17 ug/L |       | 98  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.726 | 1.007  | 109436   | 9.35 ug/L  |       | 95  |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 515976   | 9.75 ug/L  |       | 96  |
| 57)  | m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.016  | 404356   | 20.87 ug/L |       | 92  |
| 58)  | o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 442647   | 9.85 ug/L  |       | 95  |
| 59)  | Styrene                   | 104  | 13.281 | 13.281 | 1.051  | 347816   | 11.58 ug/L |       | 88  |
| 61)  | Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 59365    | 9.49 ug/L  |       | 96  |
| 62)  | Isopropylbenzene          | 105  | 13.641 | 13.641 | 0.906  | 540808   | 11.38 ug/L |       | 97  |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 116567   | 11.30 ug/L |       | 97  |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.012 | 14.012 | 0.931  | 36266    | 9.77 ug/L  | #     | 85  |
| 66)  | Bromobenzene              | 156  | 14.043 | 14.043 | 0.933  | 138841   | 11.76 ug/L |       | 92  |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 625924   | 11.11 ug/L |       | 97  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 486776   | 11.26 ug/L |       | 96  |
| 69)  | 2-Chlorotoluene           | 126  | 14.214 | 14.214 | 0.944  | 128647   | 11.61 ug/L |       | 90  |
| 70)  | 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 404336   | 10.82 ug/L |       | 94  |
| 71)  | tert-Butylbenzene         | 134  | 14.592 | 14.598 | 0.969  | 96885    | 11.72 ug/L | #     | 92  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.640 | 14.640 | 0.972  | 498548   | 11.32 ug/L |       | 96  |
| 73)  | sec-Butylbenzene          | 105  | 14.817 | 14.823 | 0.984  | 604958   | 11.36 ug/L |       | 99  |
| 74)  | 4-Isopropyltoluene        | 119  | 14.592 | 14.598 | 0.969  | 411043   | 11.23 ug/L |       | 94  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 15.000 | 15.000 | 0.996  | 260474   | 11.02 ug/L |       | 99  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 255905   | 10.77 ug/L |       | 98  |
| 77)  | n-Butylbenzene            | 91   | 15.378 | 15.378 | 1.021  | 476290   | 10.85 ug/L |       | 99  |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 251301   | 11.07 ug/L |       | 98  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 21829    | 10.40 ug/L |       | 91  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.286 | 1.148  | 191300   | 11.07 ug/L |       | 100 |
| 81)  | Hexachlorobutadiene       | 225  | 17.445 | 17.445 | 1.159  | 110973   | 9.51 ug/L  |       | 98  |
| 82)  | Naphthalene               | 128  | 17.634 | 17.634 | 1.171  | 396113   | 12.28 ug/L |       | 98  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.945 | 17.945 | 1.192  | 177394   | 11.37 ug/L |       | 95  |
| 85)  | Acrolein                  |      | 6.057  | 6.032  | 0.642  | 0m       | N.D.       | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 0.000  | 6.184  | 0.000  | 0        | N.D.       |       |     |
| 87)  | Isopropyl Alcohol         |      | 6.282  | 6.288  | 0.665  | 0m       | N.D.       | d     |     |
| 88)  | Allyl chloride            |      | 6.550  | 6.611  | 0.694  | 0m       | N.D.       | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 6.782  | 6.776  | 0.718  | 0m       | N.D.       | d     |     |
| 90)  | Acrylonitrile             |      | 7.050  | 7.014  | 0.747  | 0m       | N.D.       | d     |     |
| 91)  | Isopropyl ether           |      | 7.538  | 7.556  | 0.799  | 0m       | N.D.       | d     |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.690  | 7.678  | 0.815  | 0m       | N.D.       | d     |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.       |       |     |
| 94)  | Ethyl acetate             |      | 8.166  | 8.178  | 0.865  | 0m       | N.D.       | d     |     |
| 95)  | Propionitrile             |      | 8.172  | 8.239  | 0.866  | 0m       | N.D.       | d     |     |
| 96)  | Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.       |       |     |
| 97)  | Tetrahydrofuran           |      | 8.501  | 8.525  | 0.901  | 0m       | N.D.       | d     |     |
| 98)  | Isobutyl alcohol          |      | 8.879  | 8.873  | 0.941  | 0m       | N.D.       | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 9.184  | 9.214  | 0.973  | 0m       | N.D.       | d     |     |
| 100) | Methyl methacrylate       |      | 10.068 | 10.068 | 1.067  | 0m       | N.D.       | d     |     |
| 101) | 1,4-Dioxane               |      | 10.214 | 10.178 | 1.082  | 0m       | N.D.       | d     |     |
| 102) | 2-Nitropropane            |      | 10.568 | 10.549 | 1.119  | 0m       | N.D.       | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D406.D  
Acq On : 13 Oct 2016 19:06  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-05|ICAL010|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 14 08:48:52 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 11.360 | 11.348 | 0.899  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 12.549 | 12.543 | 0.834  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.641 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.805 | 13.793 | 0.917  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 13.976 | 0.000  | 0        | N.D. |       |
| 110) Pentachloroethane         |      | 14.653 | 14.658 | 0.973  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 15.171 | 15.201 | 1.008  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.604 | 15.597 | 1.036  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D407.D  
Acq On : 13 Oct 2016 19:35  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-06|ICAL020|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 14 08:48:54 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 1577017  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.629 | 12.635 | 1.000  | 1220130  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 651139   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.629 | 12.634 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |           |
|-----------------------------|----|--------|--------|-------|---------|-------|------|-----------|
| System Monitoring Compounds |    |        |        |       |         |       |      | Dev (Min) |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 506628  | 39.94 | ug/L | 0.00      |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1617210 | 44.43 | ug/L | 0.00      |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 646461  | 48.11 | ug/L | 0.00      |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 3.993  | 3.993  | 0.423  | 202455   | 14.59   | ug/L  | 100    |
| 3) Chloromethane              | 50   | 4.266  | 4.282  | 0.452  | 249235   | 23.82   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 4.482  | 4.506  | 0.475  | 200789   | 20.88   | ug/L  | 95     |
| 5) Bromomethane               | 94   | 5.012  | 5.020  | 0.531  | 126213   | 17.04   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 145767   | 19.20   | ug/L  | 100    |
| 7) Trichlorofluoromethane     | 101  | 5.509  | 5.509  | 0.584  | 240306   | 13.83   | ug/L  | 100    |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.618  | 197624   | 20.38   | ug/L  | 85     |
| 9) Acetone                    | 43   | 6.197  | 6.197  | 0.656  | 393382   | 115.00  | ug/L  | 94     |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.656  | 322280   | 19.00   | ug/L  | 98     |
| 11) Iodomethane               | 142  | 6.429  | 6.429  | 0.681  | 1437068  | 97.19   | ug/L  | 93     |
| 12) Acetonitrile              | 41   | 6.550  | 6.550  | 0.694  | 745965   | 646.47  | ug/L  | 97     |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 850607   | 115.14  | ug/L  | 94     |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.694  | 2552672  | 96.55   | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 6.758  | 6.758  | 0.716  | 214403   | 19.78   | ug/L  | # 78   |
| 16) tert-Butyl methyl ether   | 73   | 7.050  | 7.056  | 0.747  | 604017   | 18.17   | ug/L  | 88     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.087  | 7.087  | 0.751  | 339821   | 20.20   | ug/L  | 100    |
| 18) Hexane                    | 57   | 7.367  | 7.367  | 0.780  | 365844   | 24.08   | ug/L  | 98     |
| 19) Vinyl acetate             | 43   | 7.538  | 7.538  | 0.799  | 2376064  | 125.77  | ug/L  | 97     |
| 20) 1,1-Dichloroethane        | 63   | 7.569  | 7.569  | 0.802  | 413505   | 20.44   | ug/L  | 95     |
| 21) 2-Butanone                | 43   | 8.160  | 8.160  | 0.864  | 659790   | 130.94  | ug/L  | 93     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.203  | 8.209  | 0.869  | 407818   | 20.38   | ug/L  | 98     |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 298526   | 16.30   | ug/L  | 82     |
| 24) Bromochloromethane        | 128  | 8.483  | 8.477  | 0.899  | 107786   | 21.93   | ug/L  | 89     |
| 25) Chloroform                | 83   | 8.520  | 8.520  | 0.902  | 370001   | 17.95   | ug/L  | 98     |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.931  | 310670   | 16.49   | ug/L  | 97     |
| 27) Cyclohexane               | 56   | 8.873  | 8.879  | 0.940  | 459936   | 23.71   | ug/L  | 84     |
| 28) 1,1-Dichloropropene       | 75   | 8.946  | 8.946  | 0.948  | 258053   | 18.52   | ug/L  | 90     |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 269073   | 17.03   | ug/L  | 98     |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.972  | 354499   | 18.60   | ug/L  | 98     |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 782568   | 20.63   | ug/L  | 96     |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.985  | 392089   | 20.00   | ug/L  | 81     |
| 34) n-Butyl alcohol           | 56   | 9.568  | 9.568  | 1.014  | 864278   | 2730.76 | ug/L  | 98     |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 201763   | 19.72   | ug/L  | 95     |
| 36) 2-Pentanone               | 43   | 9.928  | 9.934  | 1.052  | 888269   | 125.47  | ug/L  | 95     |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.068  | 244458   | 23.25   | ug/L  | 94     |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.074 | 1.067  | 347611   | 19.60   | ug/L  | 86     |
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.082  | 121744   | 19.46   | ug/L  | 98     |
| 40) Bromodichloromethane      | 83   | 10.336 | 10.336 | 1.095  | 293700   | 19.48   | ug/L  | 98     |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 715069   | 108.06  | ug/L  | 97     |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 343359   | 20.47   | ug/L  | 95     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D407.D  
Acq On : 13 Oct 2016 19:35  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-06|ICAL020|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 14 08:48:54 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 484236   | 124.43 | ug/L  | 94  |
| 46)  | Toluene                   | 91   | 11.172 | 11.172 | 0.885  | 847718   | 18.70  | ug/L  | 99  |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.342 | 11.342 | 0.898  | 322106   | 18.27  | ug/L  | 94  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.556 | 11.556 | 0.915  | 150733   | 19.90  | ug/L  | 98  |
| 49)  | 2-Hexanone                | 43   | 11.751 | 11.751 | 0.930  | 1076037  | 123.33 | ug/L  | 97  |
| 50)  | 1,3-Dichloropropane       | 76   | 11.751 | 11.751 | 0.930  | 307463   | 18.23  | ug/L  | 82  |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 159302   | 17.18  | ug/L  | 97  |
| 52)  | Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 207252   | 20.09  | ug/L  | 98  |
| 53)  | 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 182985   | 20.70  | ug/L  | 100 |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.003  | 595999   | 19.95  | ug/L  | 95  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.726 | 1.007  | 218050   | 18.81  | ug/L  | 96  |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 992047   | 18.92  | ug/L  | 96  |
| 57)  | m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 780840   | 40.66  | ug/L  | 90  |
| 58)  | o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 848224   | 19.04  | ug/L  | 94  |
| 59)  | Styrene                   | 104  | 13.281 | 13.281 | 1.052  | 677248   | 22.75  | ug/L  | 88  |
| 61)  | Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 127844   | 19.51  | ug/L  | 97  |
| 62)  | Isopropylbenzene          | 105  | 13.641 | 13.641 | 0.906  | 1039228  | 21.74  | ug/L  | 97  |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 230620   | 22.23  | ug/L  | 96  |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.012 | 14.012 | 0.931  | 73532    | 19.71  | ug/L  | 94  |
| 66)  | Bromobenzene              | 156  | 14.037 | 14.043 | 0.932  | 275676   | 23.22  | ug/L  | 89  |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 1193933  | 21.08  | ug/L  | 96  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 929207   | 21.38  | ug/L  | 95  |
| 69)  | 2-Chlorotoluene           | 126  | 14.214 | 14.214 | 0.944  | 250401   | 22.47  | ug/L  | 90  |
| 70)  | 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 794697   | 21.14  | ug/L  | 96  |
| 71)  | tert-Butylbenzene         | 134  | 14.598 | 14.598 | 0.970  | 186169   | 22.40  | ug/L  | 93  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.640 | 0.972  | 975185   | 22.03  | ug/L  | 95  |
| 73)  | sec-Butylbenzene          | 105  | 14.817 | 14.823 | 0.984  | 1169899  | 21.85  | ug/L  | 99  |
| 74)  | 4-Isopropyltoluene        | 119  | 14.592 | 14.598 | 0.969  | 793534   | 21.57  | ug/L  | 94  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 14.994 | 15.000 | 0.996  | 515283   | 21.69  | ug/L  | 98  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 507910   | 21.26  | ug/L  | 99  |
| 77)  | n-Butylbenzene            | 91   | 15.378 | 15.378 | 1.021  | 938122   | 21.25  | ug/L  | 100 |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 495225   | 21.70  | ug/L  | 99  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 46270    | 21.12  | ug/L  | 90  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.286 | 1.148  | 391430   | 22.53  | ug/L  | 100 |
| 81)  | Hexachlorobutadiene       | 225  | 17.445 | 17.445 | 1.159  | 226032   | 19.26  | ug/L  | 99  |
| 82)  | Naphthalene               | 128  | 17.634 | 17.634 | 1.171  | 809386   | 24.95  | ug/L  | 99  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.945 | 17.945 | 1.192  | 349796   | 22.29  | ug/L  | 98  |
| 85)  | Acrolein                  |      | 6.051  | 6.032  | 0.641  | 0m       | N.D.   | d     |     |
| 86)  | Trichlorotrifluoroethane  |      | 6.160  | 6.184  | 0.653  | 0m       | N.D.   | d     |     |
| 87)  | Isopropyl Alcohol         |      | 0.000  | 6.288  | 0.000  | 0        | N.D.   |       |     |
| 88)  | Allyl chloride            |      | 6.550  | 6.611  | 0.694  | 0m       | N.D.   | d     |     |
| 89)  | tert-Butyl Alcohol        |      | 6.770  | 6.776  | 0.717  | 0m       | N.D.   | d     |     |
| 90)  | Acrylonitrile             |      | 7.050  | 7.014  | 0.747  | 0m       | N.D.   | d     |     |
| 91)  | Isopropyl ether           |      | 7.532  | 7.556  | 0.798  | 0m       | N.D.   | d     |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.678  | 7.678  | 0.813  | 0m       | N.D.   | d     |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.   |       |     |
| 94)  | Ethyl acetate             |      | 8.160  | 8.178  | 0.864  | 0m       | N.D.   | d     |     |
| 95)  | Propionitrile             |      | 8.300  | 8.239  | 0.879  | 0m       | N.D.   | d     |     |
| 96)  | Methacrylonitrile         |      | 8.392  | 8.416  | 0.889  | 0m       | N.D.   | d     |     |
| 97)  | Tetrahydrofuran           |      | 8.526  | 8.525  | 0.903  | 0m       | N.D.   | d     |     |
| 98)  | Isobutyl alcohol          |      | 8.873  | 8.873  | 0.940  | 0m       | N.D.   | d     |     |
| 99)  | Methyl tert-amyl ether    |      | 9.184  | 9.214  | 0.973  | 0m       | N.D.   | d     |     |
| 100) | Methyl methacrylate       |      | 10.074 | 10.068 | 1.067  | 0m       | N.D.   | d     |     |
| 101) | 1,4-Dioxane               |      | 10.214 | 10.178 | 1.082  | 0m       | N.D.   | d     |     |
| 102) | 2-Nitropropane            |      | 10.568 | 10.549 | 1.119  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D407.D  
Acq On : 13 Oct 2016 19:35  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-06|ICAL020|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 14 08:48:54 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 11.306 | 11.348 | 0.895  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 12.543 | 12.543 | 0.833  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.641 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.805 | 13.793 | 0.917  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 13.976 | 0.000  | 0        | N.D. |       |
| 110) Pentachloroethane         |      | 14.659 | 14.658 | 0.974  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 15.244 | 15.201 | 1.013  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.616 | 15.597 | 1.037  | 0m       | N.D. | d     |

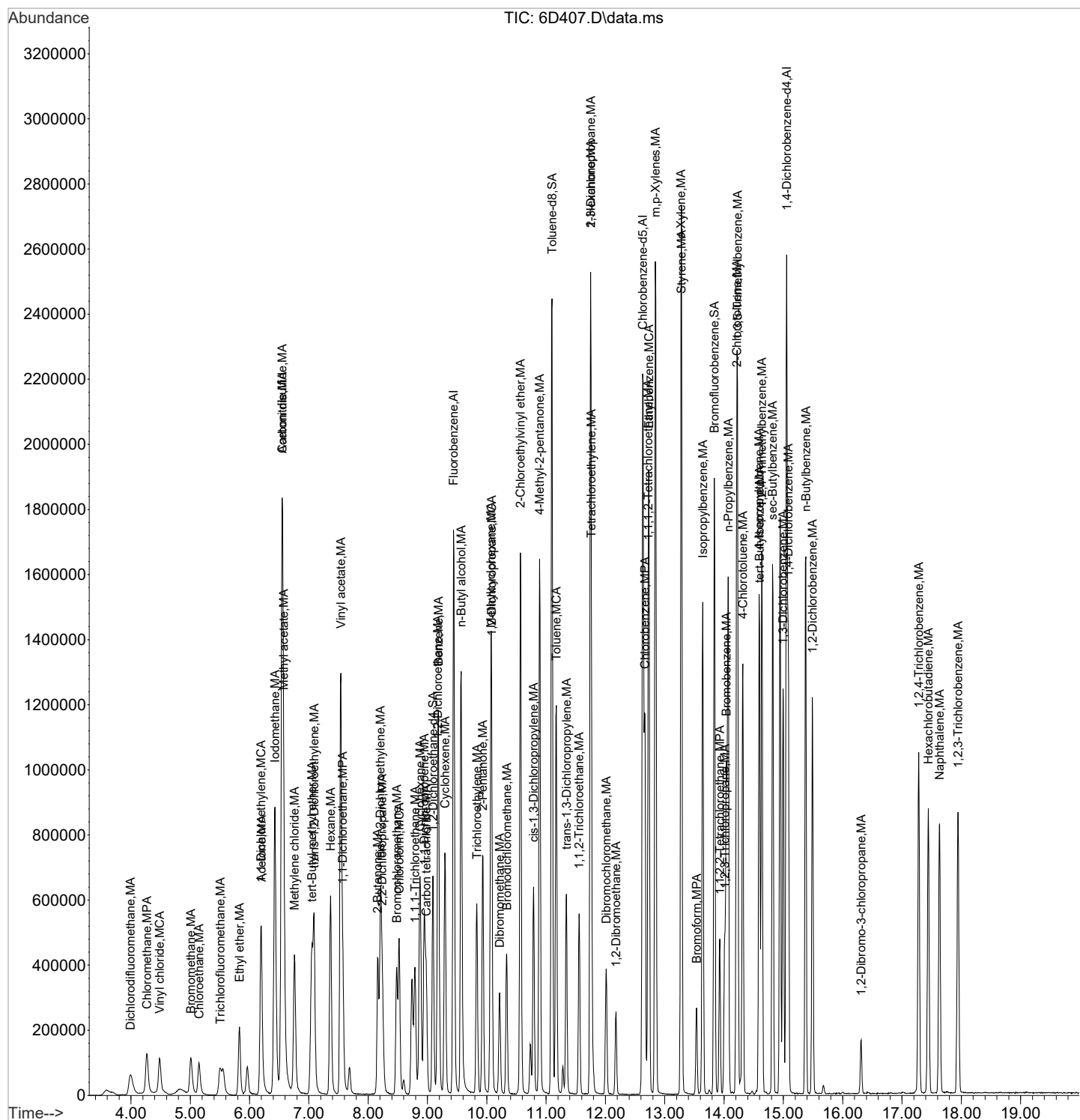
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D407.D  
Acq On : 13 Oct 2016 19:35  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-06|ICAL020|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 14 08:48:54 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D408.D  
Acq On : 13 Oct 2016 20:03  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-07|ICAL50|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 14 08:48:56 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 1591296  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.629 | 12.635 | 1.000  | 1225799  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 654546   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.629 | 12.634 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 522267  | 40.80 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1637660 | 44.78 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 665058  | 49.24 | ug/L | 0.00 |

| Target Compounds              |      |        |        |        |          |         |       |        |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
| 2) Dichlorodifluoromethane    | 85   | 4.001  | 3.993  | 0.424  | 508352   | 36.30   | ug/L  | 100    |
| 3) Chloromethane              | 50   | 4.282  | 4.282  | 0.454  | 658487   | 62.36   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 4.498  | 4.506  | 0.477  | 527662   | 54.39   | ug/L  | 96     |
| 5) Bromomethane               | 94   | 5.020  | 5.020  | 0.532  | 341669   | 45.73   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 5.156  | 5.156  | 0.546  | 384095   | 50.14   | ug/L  | 99     |
| 7) Trichlorofluoromethane     | 101  | 5.509  | 5.509  | 0.584  | 638036   | 36.39   | ug/L  | 100    |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.618  | 524922   | 53.64   | ug/L  | 93     |
| 9) Acetone                    | 43   | 6.197  | 6.197  | 0.656  | 976726   | 282.98  | ug/L  | 93     |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.656  | 713168   | 41.67   | ug/L  | 96     |
| 11) Iodomethane               | 142  | 6.429  | 6.429  | 0.681  | 3187674  | 213.65  | ug/L  | 94     |
| 12) Acetonitrile              | 41   | 6.550  | 6.550  | 0.694  | 1802548  | 1548.11 | ug/L  | 97     |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 2018783  | 270.82  | ug/L  | 94     |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.694  | 5693788  | 213.43  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 6.764  | 6.758  | 0.716  | 485832   | 45.74   | ug/L  | # 79   |
| 16) tert-Butyl methyl ether   | 73   | 7.050  | 7.056  | 0.747  | 1481452  | 44.15   | ug/L  | 88     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.093  | 7.087  | 0.751  | 753869   | 44.40   | ug/L  | 99     |
| 18) Hexane                    | 57   | 7.367  | 7.367  | 0.780  | 888214   | 57.93   | ug/L  | 97     |
| 19) Vinyl acetate             | 43   | 7.538  | 7.538  | 0.799  | 6108989  | 320.45  | ug/L  | 98     |
| 20) 1,1-Dichloroethane        | 63   | 7.575  | 7.569  | 0.802  | 910473   | 44.61   | ug/L  | 97     |
| 21) 2-Butanone                | 43   | 8.160  | 8.160  | 0.864  | 1627482  | 320.10  | ug/L  | 93     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.209  | 8.209  | 0.870  | 914451   | 45.29   | ug/L  | 98     |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 660779   | 35.75   | ug/L  | 82     |
| 24) Bromochloromethane        | 128  | 8.483  | 8.477  | 0.899  | 251880   | 50.78   | ug/L  | # 88   |
| 25) Chloroform                | 83   | 8.520  | 8.520  | 0.902  | 820496   | 39.46   | ug/L  | 95     |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.931  | 692926   | 36.45   | ug/L  | 98     |
| 27) Cyclohexane               | 56   | 8.873  | 8.879  | 0.940  | 999698   | 51.07   | ug/L  | 84     |
| 28) 1,1-Dichloropropene       | 75   | 8.946  | 8.946  | 0.948  | 557466   | 39.65   | ug/L  | 90     |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 601780   | 37.75   | ug/L  | 100    |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.972  | 830599   | 43.19   | ug/L  | 98     |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 1713167  | 44.76   | ug/L  | 96     |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.985  | 848444   | 42.90   | ug/L  | 82     |
| 34) n-Butyl alcohol           | 56   | 9.568  | 9.568  | 1.014  | 2041891  | 6351.94 | ug/L  | 98     |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 443609   | 42.97   | ug/L  | 96     |
| 36) 2-Pentanone               | 43   | 9.928  | 9.934  | 1.052  | 2268983  | 317.62  | ug/L  | 96     |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.068  | 544466   | 51.32   | ug/L  | 94     |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.074 | 1.067  | 754526   | 42.15   | ug/L  | 87     |
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.082  | 293096   | 46.42   | ug/L  | 99     |
| 40) Bromodichloromethane      | 83   | 10.330 | 10.336 | 1.094  | 693381   | 45.58   | ug/L  | 97     |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 1771106  | 265.24  | ug/L  | 98     |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 809411   | 47.81   | ug/L  | 96     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D408.D  
Acq On : 13 Oct 2016 20:03  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-07|ICAL50|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 14 08:48:56 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units  |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|--------|-----|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 1173904  | 300.24 | ug/L   | 92  |
| 46)  | Toluene                   | 91   | 11.172 | 11.172 | 0.885  | 1856164  | 40.75  | ug/L   | 100 |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.342 | 11.342 | 0.898  | 777031   | 43.88  | ug/L   | 93  |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.556 | 11.556 | 0.915  | 353034   | 46.39  | ug/L   | 96  |
| 49)  | 2-Hexanone                | 43   | 11.745 | 11.751 | 0.930  | 2470971  | 281.90 | ug/L   | 96  |
| 50)  | 1,3-Dichloropropane       | 76   | 11.751 | 11.751 | 0.930  | 711720   | 42.01  | ug/L   | 82  |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 343486   | 36.86  | ug/L   | 98  |
| 52)  | Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 525393   | 50.70  | ug/L   | 100 |
| 53)  | 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 445393   | 50.15  | ug/L   | 100 |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.003  | 1299159  | 43.29  | ug/L   | 96  |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.726 | 1.007  | 498601   | 42.81  | ug/L   | 96  |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 2127810  | 40.39  | ug/L   | 96  |
| 57)  | m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 1664860  | 86.30  | ug/L   | 90  |
| 58)  | o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 1825225  | 40.79  | ug/L   | 95  |
| 59)  | Styrene                   | 104  | 13.281 | 13.281 | 1.052  | 1483491  | 49.59  | ug/L   | 89  |
| 61)  | Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 333123   | 49.44  | ug/L   | 98  |
| 62)  | Isopropylbenzene          | 105  | 13.641 | 13.641 | 0.906  | 2225142  | 46.31  | ug/L   | 97  |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 574232   | 55.07  | ug/L   | 96  |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.012 | 14.012 | 0.931  | 186546   | 49.75  | ug/L # | 89  |
| 66)  | Bromobenzene              | 156  | 14.043 | 14.043 | 0.933  | 620852   | 52.02  | ug/L   | 90  |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 2578640  | 45.29  | ug/L   | 96  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 1996729  | 45.69  | ug/L   | 95  |
| 69)  | 2-Chlorotoluene           | 126  | 14.214 | 14.214 | 0.944  | 544527   | 48.61  | ug/L   | 88  |
| 70)  | 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 1735994  | 45.95  | ug/L   | 95  |
| 71)  | tert-Butylbenzene         | 134  | 14.592 | 14.598 | 0.969  | 401217   | 48.01  | ug/L # | 85  |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.640 | 0.972  | 2085942  | 46.88  | ug/L   | 94  |
| 73)  | sec-Butylbenzene          | 105  | 14.817 | 14.823 | 0.984  | 2510237  | 46.63  | ug/L   | 100 |
| 74)  | 4-Isopropyltoluene        | 119  | 14.592 | 14.598 | 0.969  | 1888789  | 51.07  | ug/L   | 88  |
| 75)  | 1,3-Dichlorobenzene       | 146  | 14.994 | 15.000 | 0.996  | 1115337  | 46.70  | ug/L   | 99  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.085 | 15.085 | 1.002  | 1117385  | 46.54  | ug/L   | 99  |
| 77)  | n-Butylbenzene            | 91   | 15.372 | 15.378 | 1.021  | 2028240  | 45.71  | ug/L   | 99  |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.494 | 15.494 | 1.029  | 1121475  | 48.88  | ug/L   | 99  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 126504   | 56.19  | ug/L   | 90  |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.286 | 1.148  | 870521   | 49.85  | ug/L   | 98  |
| 81)  | Hexachlorobutadiene       | 225  | 17.445 | 17.445 | 1.159  | 500523   | 42.43  | ug/L   | 99  |
| 82)  | Naphthalene               | 128  | 17.628 | 17.634 | 1.171  | 1934506  | 59.32  | ug/L   | 99  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.945 | 17.945 | 1.192  | 798571   | 50.63  | ug/L   | 97  |
| 85)  | Acrolein                  |      | 6.154  | 6.032  | 0.652  | 0m       | N.D.   | d      |     |
| 86)  | Trichlorotrifluoroethane  |      | 6.191  | 6.184  | 0.656  | 0m       | N.D.   | d      |     |
| 87)  | Isopropyl Alcohol         |      | 6.374  | 6.288  | 0.675  | 0m       | N.D.   | d      |     |
| 88)  | Allyl chloride            |      | 6.550  | 6.611  | 0.694  | 0m       | N.D.   | d      |     |
| 89)  | tert-Butyl Alcohol        |      | 6.849  | 6.776  | 0.726  | 0m       | N.D.   | d      |     |
| 90)  | Acrylonitrile             |      | 7.056  | 7.014  | 0.747  | 0m       | N.D.   | d      |     |
| 91)  | Isopropyl ether           |      | 7.538  | 7.556  | 0.799  | 0m       | N.D.   | d      |     |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.684  | 7.678  | 0.814  | 0m       | N.D.   | d      |     |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.   |        |     |
| 94)  | Ethyl acetate             |      | 8.160  | 8.178  | 0.864  | 0m       | N.D.   | d      |     |
| 95)  | Propionitrile             |      | 8.154  | 8.239  | 0.864  | 0m       | N.D.   | d      |     |
| 96)  | Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.   |        |     |
| 97)  | Tetrahydrofuran           |      | 8.526  | 8.525  | 0.903  | 0m       | N.D.   | d      |     |
| 98)  | Isobutyl alcohol          |      | 8.873  | 8.873  | 0.940  | 0m       | N.D.   | d      |     |
| 99)  | Methyl tert-amyl ether    |      | 9.184  | 9.214  | 0.973  | 0m       | N.D.   | d      |     |
| 100) | Methyl methacrylate       |      | 10.074 | 10.068 | 1.067  | 0m       | N.D.   | d      |     |
| 101) | 1,4-Dioxane               |      | 10.214 | 10.178 | 1.082  | 0m       | N.D.   | d      |     |
| 102) | 2-Nitropropane            |      | 10.568 | 10.549 | 1.119  | 0m       | N.D.   | d      |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D408.D  
Acq On : 13 Oct 2016 20:03  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-07|ICAL50|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 14 08:48:56 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 11.360 | 11.348 | 0.900  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 12.513 | 12.543 | 0.831  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.641 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.787 | 13.793 | 0.916  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.000 | 13.976 | 0.930  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 14.659 | 14.658 | 0.974  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 0.000  | 15.201 | 0.000  | 0        | N.D. |       |
| 112) bis(2-Chloroisopropyl)... |      | 15.677 | 15.597 | 1.041  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D409.D  
Acq On : 13 Oct 2016 20:32  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-08|ICAL080|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 14 08:48:58 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units |           |
|-------------------------------|------|--------|--------|--------|----------|----------|-------|-----------|
| Internal Standards            |      |        |        |        |          |          |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 1603503  | 50.00    | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.635 | 12.635 | 1.000  | 1254717  | 50.00    | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 663677   | 50.00    | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00    | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.635 | 12.634 | 1.000  | 0m       | 50.00    | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00    | ug/L  | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |          |       | Dev (Min) |
| 30) 1,2-Dichloroethane-d4     | 65   | 9.093  | 9.093  | 0.963  | 539031   | 41.79    | ug/L  | 0.00      |
| 45) Toluene-d8                | 98   | 11.098 | 11.098 | 0.878  | 1667838  | 44.55    | ug/L  | 0.00      |
| 63) Bromofluorobenzene        | 95   | 13.836 | 13.836 | 0.919  | 675693   | 49.34    | ug/L  | 0.00      |
| Target Compounds              |      |        |        |        |          |          |       | QValue    |
| 2) Dichlorodifluoromethane    | 85   | 3.993  | 3.993  | 0.423  | 705402   | 49.99    | ug/L  | 100       |
| 3) Chloromethane              | 50   | 4.282  | 4.282  | 0.454  | 928789   | 87.29    | ug/L  | 100       |
| 4) Vinyl chloride             | 62   | 4.498  | 4.506  | 0.477  | 741286   | 75.83    | ug/L  | 96        |
| 5) Bromomethane               | 94   | 5.020  | 5.020  | 0.532  | 507376   | 67.39    | ug/L  | 99        |
| 6) Chloroethane               | 64   | 5.156  | 5.156  | 0.546  | 561015   | 72.68    | ug/L  | 99        |
| 7) Trichlorofluoromethane     | 101  | 5.557  | 5.509  | 0.589  | 917546   | 51.94    | ug/L  | 100       |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.618  | 789569   | 80.06    | ug/L  | 89        |
| 9) Acetone                    | 43   | 6.197  | 6.197  | 0.656  | 1683048  | 483.91   | ug/L  | 92        |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.656  | 1337641  | 77.55    | ug/L  | 97        |
| 11) Iodomethane               | 142  | 6.428  | 6.429  | 0.681  | 5593574  | 372.06   | ug/L  | 95        |
| 12) Acetonitrile              | 41   | 6.544  | 6.550  | 0.693  | 3001567  | 2558.25  | ug/L  | 97 A      |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 3466169  | 461.45   | ug/L  | 95        |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.694  | 9756817  | 362.94   | ug/L  | 99        |
| 15) Methylene chloride        | 84   | 6.758  | 6.758  | 0.716  | 871061   | 82.23    | ug/L  | 82        |
| 16) tert-Butyl methyl ether   | 73   | 7.050  | 7.056  | 0.747  | 2592888  | 76.69    | ug/L  | 89        |
| 17) trans-1,2-Dichloroethy... | 61   | 7.087  | 7.087  | 0.751  | 1373174  | 80.26    | ug/L  | 100       |
| 18) Hexane                    | 57   | 7.367  | 7.367  | 0.780  | 1452111  | 93.99    | ug/L  | 97        |
| 19) Vinyl acetate             | 43   | 7.538  | 7.538  | 0.799  | 8814127  | 458.83   | ug/L  | 99        |
| 20) 1,1-Dichloroethane        | 63   | 7.568  | 7.569  | 0.802  | 1631297  | 79.31    | ug/L  | 97        |
| 21) 2-Butanone                | 43   | 8.160  | 8.160  | 0.864  | 2844895  | 555.28   | ug/L  | 94 A      |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.209  | 8.209  | 0.870  | 1619679  | 79.61    | ug/L  | 98        |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 1224542  | 65.75    | ug/L  | 84        |
| 24) Bromochloromethane        | 128  | 8.483  | 8.477  | 0.899  | 439647   | 87.97    | ug/L  | 89        |
| 25) Chloroform                | 83   | 8.519  | 8.520  | 0.902  | 1474200  | 70.35    | ug/L  | 96        |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.931  | 1292898  | 67.49    | ug/L  | 98        |
| 27) Cyclohexane               | 56   | 8.873  | 8.879  | 0.940  | 1876869  | 95.14    | ug/L  | 84        |
| 28) 1,1-Dichloropropene       | 75   | 8.946  | 8.946  | 0.948  | 1032611  | 72.88    | ug/L  | 89        |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 1158659  | 72.14    | ug/L  | 99        |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.972  | 1444400  | 74.54    | ug/L  | 97        |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 3035206  | 78.69    | ug/L  | 96        |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.985  | 1587079  | 79.63    | ug/L  | 82        |
| 34) n-Butyl alcohol           | 56   | 9.568  | 9.568  | 1.014  | 3623562  | 11162.75 | ug/L  | 98 A      |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 806508   | 77.53    | ug/L  | 96        |
| 36) 2-Pentanone               | 43   | 9.928  | 9.934  | 1.052  | 3832478  | 532.40   | ug/L  | 96 A      |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.068  | 947084   | 88.59    | ug/L  | 94        |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.074 | 1.067  | 1401590  | 77.71    | ug/L  | 87        |
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.082  | 510736   | 80.28    | ug/L  | 99        |
| 40) Bromodichloromethane      | 83   | 10.330 | 10.336 | 1.094  | 1228909  | 80.17    | ug/L  | 97        |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 2770774  | 411.79   | ug/L  | 98        |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 1435500  | 84.15    | ug/L  | 95        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D409.D  
Acq On : 13 Oct 2016 20:32  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-08|ICAL080|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 14 08:48:58 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units  |      |
|------|---------------------------|------|--------|--------|--------|----------|--------|--------|------|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 2040537  | 509.87 | ug/L   | 89 A |
| 46)  | Toluene                   | 91   | 11.171 | 11.172 | 0.884  | 3294480  | 70.66  | ug/L   | 99   |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.336 | 11.342 | 0.897  | 1366609  | 75.39  | ug/L   | 93   |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.555 | 11.556 | 0.915  | 611348   | 78.49  | ug/L   | 96   |
| 49)  | 2-Hexanone                | 43   | 11.744 | 11.751 | 0.930  | 4098257  | 456.77 | ug/L   | 96   |
| 50)  | 1,3-Dichloropropane       | 76   | 11.751 | 11.751 | 0.930  | 1196753  | 69.00  | ug/L   | 81   |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 607023   | 63.65  | ug/L   | 96   |
| 52)  | Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 937549   | 88.38  | ug/L   | 100  |
| 53)  | 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 784032   | 86.24  | ug/L   | 99   |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.002  | 2290917  | 74.57  | ug/L   | 96   |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.726 | 1.007  | 879132   | 73.74  | ug/L   | 96   |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 3784827  | 70.19  | ug/L   | 95   |
| 57)  | m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.016  | 2952272  | 149.50 | ug/L   | 88   |
| 58)  | o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 3194999  | 69.75  | ug/L   | 95   |
| 59)  | Styrene                   | 104  | 13.281 | 13.281 | 1.051  | 2580161  | 84.27  | ug/L   | 89   |
| 61)  | Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 601250   | 87.46  | ug/L   | 96   |
| 62)  | Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 3984173  | 81.78  | ug/L   | 96   |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 1001210  | 94.70  | ug/L   | 96   |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.006 | 14.012 | 0.930  | 321433   | 84.54  | ug/L # | 90   |
| 66)  | Bromobenzene              | 156  | 14.043 | 14.043 | 0.933  | 1068783  | 88.33  | ug/L   | 91   |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 4541948  | 78.67  | ug/L   | 95   |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 3497404  | 78.94  | ug/L   | 95   |
| 69)  | 2-Chlorotoluene           | 126  | 14.213 | 14.214 | 0.944  | 945336   | 83.22  | ug/L   | 90   |
| 70)  | 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 3061234  | 79.91  | ug/L   | 95   |
| 71)  | tert-Butylbenzene         | 134  | 14.598 | 14.598 | 0.970  | 727846   | 85.90  | ug/L   | 94   |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.640 | 0.972  | 3676825  | 81.50  | ug/L   | 95   |
| 73)  | sec-Butylbenzene          | 105  | 14.817 | 14.823 | 0.984  | 4452999  | 81.58  | ug/L   | 100  |
| 74)  | 4-Isopropyltoluene        | 119  | 14.591 | 14.598 | 0.969  | 3100508  | 82.69  | ug/L   | 96   |
| 75)  | 1,3-Dichlorobenzene       | 146  | 14.994 | 15.000 | 0.996  | 1940719  | 80.14  | ug/L   | 100  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 1949502  | 80.08  | ug/L   | 99   |
| 77)  | n-Butylbenzene            | 91   | 15.378 | 15.378 | 1.021  | 3572501  | 79.41  | ug/L   | 98   |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 1930924  | 83.00  | ug/L   | 100  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 230606   | 100.44 | ug/L   | 90 A |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.286 | 1.148  | 1470905  | 83.07  | ug/L   | 99   |
| 81)  | Hexachlorobutadiene       | 225  | 17.445 | 17.445 | 1.159  | 890094   | 74.42  | ug/L   | 99   |
| 82)  | Naphthalene               | 128  | 17.634 | 17.634 | 1.171  | 3330003  | 100.71 | ug/L   | 99 A |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.944 | 17.945 | 1.192  | 1346658  | 84.20  | ug/L   | 98   |
| 85)  | Acrolein                  |      | 6.105  | 6.032  | 0.647  | 0m       | N.D.   | d      |      |
| 86)  | Trichlorotrifluoroethane  |      | 6.185  | 6.184  | 0.655  | 0m       | N.D.   | d      |      |
| 87)  | Isopropyl Alcohol         |      | 6.428  | 6.288  | 0.681  | 0m       | N.D.   | d      |      |
| 88)  | Allyl chloride            |      | 6.544  | 6.611  | 0.693  | 0m       | N.D.   | d      |      |
| 89)  | tert-Butyl Alcohol        |      | 6.873  | 6.776  | 0.728  | 0m       | N.D.   | d      |      |
| 90)  | Acrylonitrile             |      | 7.050  | 7.014  | 0.747  | 0m       | N.D.   | d      |      |
| 91)  | Isopropyl ether           |      | 7.532  | 7.556  | 0.798  | 0m       | N.D.   | d      |      |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.684  | 7.678  | 0.814  | 0m       | N.D.   | d      |      |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.   |        |      |
| 94)  | Ethyl acetate             |      | 8.160  | 8.178  | 0.864  | 0m       | N.D.   | d      |      |
| 95)  | Propionitrile             |      | 8.245  | 8.239  | 0.873  | 0m       | N.D.   | d      |      |
| 96)  | Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.   |        |      |
| 97)  | Tetrahydrofuran           |      | 8.513  | 8.525  | 0.902  | 0m       | N.D.   | d      |      |
| 98)  | Isobutyl alcohol          |      | 8.873  | 8.873  | 0.940  | 0m       | N.D.   | d      |      |
| 99)  | Methyl tert-amyl ether    |      | 9.190  | 9.214  | 0.974  | 0m       | N.D.   | d      |      |
| 100) | Methyl methacrylate       |      | 10.068 | 10.068 | 1.067  | 0m       | N.D.   | d      |      |
| 101) | 1,4-Dioxane               |      | 10.184 | 10.178 | 1.079  | 0m       | N.D.   | d      |      |
| 102) | 2-Nitropropane            |      | 10.568 | 10.549 | 1.119  | 0m       | N.D.   | d      |      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D409.D  
Acq On : 13 Oct 2016 20:32  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-08|ICAL080|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 14 08:48:58 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 11.360 | 11.348 | 0.899  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D. |       |
| 107) cis-1,4-Dichloro-2-butene |      | 13.708 | 13.689 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.805 | 13.793 | 0.917  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 13.988 | 13.976 | 0.929  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 14.665 | 14.658 | 0.974  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 15.201 | 15.201 | 1.010  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.677 | 15.597 | 1.041  | 0m       | N.D. | d     |

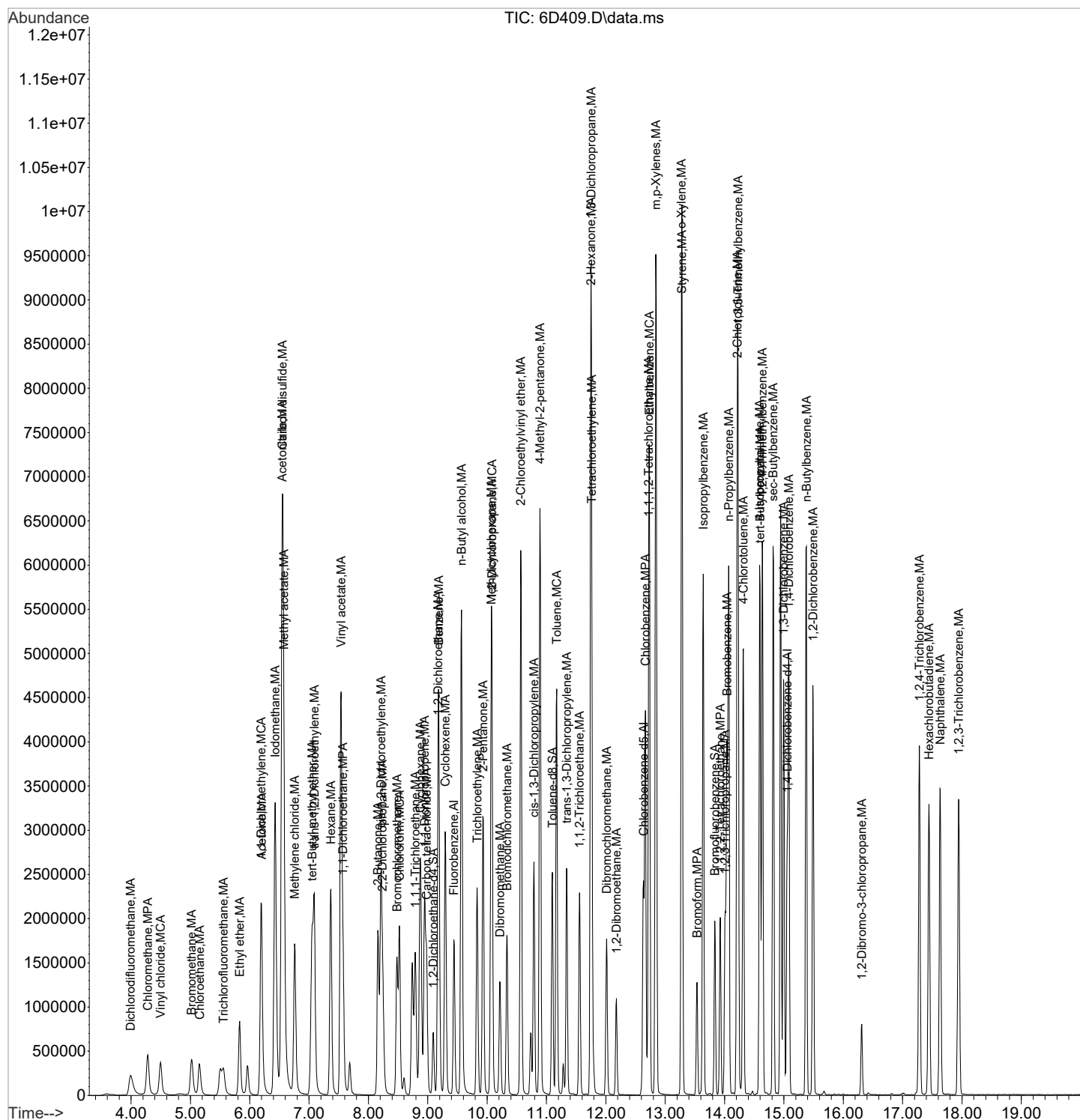
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D409.D  
Acq On : 13 Oct 2016 20:32  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-08|ICAL080|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 14 08:48:58 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D410.D  
Acq On : 13 Oct 2016 21:01  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-09|ICAL100|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 14 08:49:00 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc     | Units |           |
|-------------------------------|------|--------|--------|--------|----------|----------|-------|-----------|
| Internal Standards            |      |        |        |        |          |          |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 1578465  | 50.00    | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.634 | 12.635 | 1.000  | 1229267  | 50.00    | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 654255   | 50.00    | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00    | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.634 | 12.634 | 1.000  | 0m       | 50.00    | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00    | ug/L  | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |          |       | Dev (Min) |
| 30) 1,2-Dichloroethane-d4     | 65   | 9.092  | 9.093  | 0.963  | 529671   | 41.71    | ug/L  | 0.00      |
| 45) Toluene-d8                | 98   | 11.098 | 11.098 | 0.878  | 1657473  | 45.19    | ug/L  | 0.00      |
| 63) Bromofluorobenzene        | 95   | 13.835 | 13.836 | 0.919  | 681744   | 50.50    | ug/L  | 0.00      |
| Target Compounds              |      |        |        |        |          |          |       | QValue    |
| 2) Dichlorodifluoromethane    | 85   | 3.993  | 3.993  | 0.423  | 1010674  | 72.76    | ug/L  | 99        |
| 3) Chloromethane              | 50   | 4.282  | 4.282  | 0.454  | 1317759  | 125.82   | ug/L  | 100 A     |
| 4) Vinyl chloride             | 62   | 4.506  | 4.506  | 0.477  | 1062629  | 110.42   | ug/L  | 96 A      |
| 5) Bromomethane               | 94   | 5.020  | 5.020  | 0.532  | 702889   | 94.83    | ug/L  | 98        |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 785491   | 103.38   | ug/L  | 99 A      |
| 7) Trichlorofluoromethane     | 101  | 5.557  | 5.509  | 0.589  | 1321497  | 75.99    | ug/L  | 100       |
| 8) Ethyl ether                | 59   | 5.822  | 5.830  | 0.617  | 1022782  | 105.36   | ug/L  | 87 A      |
| 9) Acetone                    | 43   | 6.191  | 6.197  | 0.656  | 2041566  | 596.30   | ug/L  | 92 A      |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.656  | 1709196  | 100.67   | ug/L  | 97 A      |
| 11) Iodomethane               | 142  | 6.422  | 6.429  | 0.680  | 7103519  | 479.98   | ug/L  | 95        |
| 12) Acetonitrile              | 41   | 6.544  | 6.550  | 0.693  | 3569775  | 3090.80  | ug/L  | 98 A      |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 4219319  | 570.63   | ug/L  | 95 A      |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.694  | 12134936 | 458.57   | ug/L  | 98        |
| 15) Methylene chloride        | 84   | 6.758  | 6.758  | 0.716  | 1106263  | 106.40   | ug/L  | # 82 A    |
| 16) tert-Butyl methyl ether   | 73   | 7.050  | 7.056  | 0.747  | 3306287  | 99.34    | ug/L  | 89        |
| 17) trans-1,2-Dichloroethy... | 61   | 7.087  | 7.087  | 0.751  | 1746580  | 103.70   | ug/L  | 99 A      |
| 18) Hexane                    | 57   | 7.361  | 7.367  | 0.780  | 1534523  | 100.90   | ug/L  | 97 A      |
| 19) Vinyl acetate             | 43   | 7.532  | 7.538  | 0.798  | 10680292 | 564.79   | ug/L  | 100 A     |
| 20) 1,1-Dichloroethane        | 63   | 7.568  | 7.569  | 0.802  | 2087202  | 103.09   | ug/L  | 97 A      |
| 21) 2-Butanone                | 43   | 8.160  | 8.160  | 0.864  | 3435208  | 681.14   | ug/L  | 94 A      |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.202  | 8.209  | 0.869  | 2068272  | 103.27   | ug/L  | 98 A      |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 1604149  | 87.50    | ug/L  | 86        |
| 24) Bromochloromethane        | 128  | 8.483  | 8.477  | 0.899  | 558166   | 113.45   | ug/L  | 89 A      |
| 25) Chloroform                | 83   | 8.519  | 8.520  | 0.902  | 1886985  | 91.48    | ug/L  | 97        |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.931  | 1676815  | 88.92    | ug/L  | 98        |
| 27) Cyclohexane               | 56   | 8.873  | 8.879  | 0.940  | 2416344  | 124.43   | ug/L  | 85 A      |
| 28) 1,1-Dichloropropene       | 75   | 8.940  | 8.946  | 0.947  | 1321365  | 94.74    | ug/L  | 90        |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 1495277  | 94.57    | ug/L  | 100       |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.972  | 1808659  | 94.81    | ug/L  | 98        |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 3861178  | 101.69   | ug/L  | 96 A      |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.985  | 2038289  | 103.89   | ug/L  | 83 A      |
| 34) n-Butyl alcohol           | 56   | 9.568  | 9.568  | 1.014  | 4422824  | 13833.62 | ug/L  | 98 A      |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 1039252  | 101.48   | ug/L  | 96 A      |
| 36) 2-Pentanone               | 43   | 9.928  | 9.934  | 1.052  | 4601105  | 649.31   | ug/L  | 96 A      |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.068  | 1201155  | 114.14   | ug/L  | 95 A      |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.074 | 1.067  | 1785166  | 100.54   | ug/L  | 87 A      |
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.082  | 642625   | 102.61   | ug/L  | 98 A      |
| 40) Bromodichloromethane      | 83   | 10.330 | 10.336 | 1.094  | 1569264  | 103.99   | ug/L  | 97 A      |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 3484631  | 526.09   | ug/L  | 98 A      |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 1822344  | 108.53   | ug/L  | 96 A      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D410.D  
Acq On : 13 Oct 2016 21:01  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-09|ICAL100|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 14 08:49:00 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |        |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|--------|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 2514626  | 641.34 | ug/L  | 88 A   |
| 46)  | Toluene                   | 91   | 11.171 | 11.172 | 0.884  | 4164245  | 91.16  | ug/L  | 98     |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.336 | 11.342 | 0.897  | 1743137  | 98.16  | ug/L  | 94     |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.555 | 11.556 | 0.915  | 768570   | 100.71 | ug/L  | 95 A   |
| 49)  | 2-Hexanone                | 43   | 11.744 | 11.751 | 0.930  | 4893474  | 556.69 | ug/L  | 96 A   |
| 50)  | 1,3-Dichloropropane       | 76   | 11.750 | 11.751 | 0.930  | 1497106  | 88.11  | ug/L  | 84     |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 764858   | 81.85  | ug/L  | 96     |
| 52)  | Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 1201953  | 115.65 | ug/L  | 100 A  |
| 53)  | 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 994327   | 111.63 | ug/L  | 99 A   |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.002  | 2934622  | 97.51  | ug/L  | 96     |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.726 | 1.007  | 1119591  | 95.85  | ug/L  | 96     |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 4765841  | 90.22  | ug/L  | 95     |
| 57)  | m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.016  | 3698467  | 191.17 | ug/L  | 86     |
| 58)  | o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 4032684  | 89.86  | ug/L  | 95     |
| 59)  | Styrene                   | 104  | 13.281 | 13.281 | 1.051  | 3232252  | 107.75 | ug/L  | 91 A   |
| 61)  | Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 773617   | 113.93 | ug/L  | 97 A   |
| 62)  | Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 5071725  | 105.61 | ug/L  | 95 A   |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 1258681  | 120.76 | ug/L  | 95 A   |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.012 | 14.012 | 0.931  | 409230   | 109.18 | ug/L  | # 91 A |
| 66)  | Bromobenzene              | 156  | 14.043 | 14.043 | 0.933  | 1381373  | 115.80 | ug/L  | 90 A   |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 5740400  | 100.86 | ug/L  | 94 A   |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 4458312  | 102.07 | ug/L  | 95 A   |
| 69)  | 2-Chlorotoluene           | 126  | 14.213 | 14.214 | 0.944  | 1196181  | 106.82 | ug/L  | 90 A   |
| 70)  | 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 3939504  | 104.32 | ug/L  | 95 A   |
| 71)  | tert-Butylbenzene         | 134  | 14.591 | 14.598 | 0.969  | 939157   | 112.44 | ug/L  | 93 A   |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.640 | 14.640 | 0.972  | 4721501  | 106.16 | ug/L  | 95 A   |
| 73)  | sec-Butylbenzene          | 105  | 14.817 | 14.823 | 0.984  | 5659448  | 105.18 | ug/L  | 100 A  |
| 74)  | 4-Isopropyltoluene        | 119  | 14.591 | 14.598 | 0.969  | 3956619  | 107.04 | ug/L  | 96 A   |
| 75)  | 1,3-Dichlorobenzene       | 146  | 14.994 | 15.000 | 0.996  | 2509379  | 105.12 | ug/L  | 100 A  |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 2510105  | 104.59 | ug/L  | 99 A   |
| 77)  | n-Butylbenzene            | 91   | 15.372 | 15.378 | 1.021  | 4554196  | 102.69 | ug/L  | 98 A   |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 2460952  | 107.31 | ug/L  | 100 A  |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 303722   | 133.95 | ug/L  | 90 A   |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.286 | 1.148  | 1914762  | 109.69 | ug/L  | 99 A   |
| 81)  | Hexachlorobutadiene       | 225  | 17.445 | 17.445 | 1.159  | 1130657  | 95.89  | ug/L  | 99     |
| 82)  | Naphthalene               | 128  | 17.633 | 17.634 | 1.171  | 4252554  | 130.46 | ug/L  | 99 A   |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.944 | 17.945 | 1.192  | 1751711  | 111.11 | ug/L  | 98 A   |
| 85)  | Acrolein                  |      | 6.075  | 6.032  | 0.644  | 0m       | N.D.   | d     |        |
| 86)  | Trichlorotrifluoroethane  |      | 6.172  | 6.184  | 0.654  | 0m       | N.D.   | d     |        |
| 87)  | Isopropyl Alcohol         |      | 6.392  | 6.288  | 0.677  | 0m       | N.D.   | d     |        |
| 88)  | Allyl chloride            |      | 6.544  | 6.611  | 0.693  | 0m       | N.D.   | d     |        |
| 89)  | tert-Butyl Alcohol        |      | 6.910  | 6.776  | 0.732  | 0m       | N.D.   | d     |        |
| 90)  | Acrylonitrile             |      | 7.044  | 7.014  | 0.746  | 0m       | N.D.   | d     |        |
| 91)  | Isopropyl ether           |      | 7.532  | 7.556  | 0.798  | 0m       | N.D.   | d     |        |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.684  | 7.678  | 0.814  | 0m       | N.D.   | d     |        |
| 93)  | Ethyl tert-butyl ether    |      | 7.977  | 7.965  | 0.845  | 0m       | N.D.   | d     |        |
| 94)  | Ethyl acetate             |      | 8.160  | 8.178  | 0.864  | 0m       | N.D.   | d     |        |
| 95)  | Propionitrile             |      | 8.288  | 8.239  | 0.878  | 0m       | N.D.   | d     |        |
| 96)  | Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.   |       |        |
| 97)  | Tetrahydrofuran           |      | 8.519  | 8.525  | 0.902  | 0m       | N.D.   | d     |        |
| 98)  | Isobutyl alcohol          |      | 8.873  | 8.873  | 0.940  | 0m       | N.D.   | d     |        |
| 99)  | Methyl tert-amyl ether    |      | 9.184  | 9.214  | 0.973  | 0m       | N.D.   | d     |        |
| 100) | Methyl methacrylate       |      | 10.068 | 10.068 | 1.067  | 0m       | N.D.   | d     |        |
| 101) | 1,4-Dioxane               |      | 10.214 | 10.178 | 1.082  | 0m       | N.D.   | d     |        |
| 102) | 2-Nitropropane            |      | 10.568 | 10.549 | 1.119  | 0m       | N.D.   | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D410.D  
Acq On : 13 Oct 2016 21:01  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-09|ICAL100|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 14 08:49:00 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
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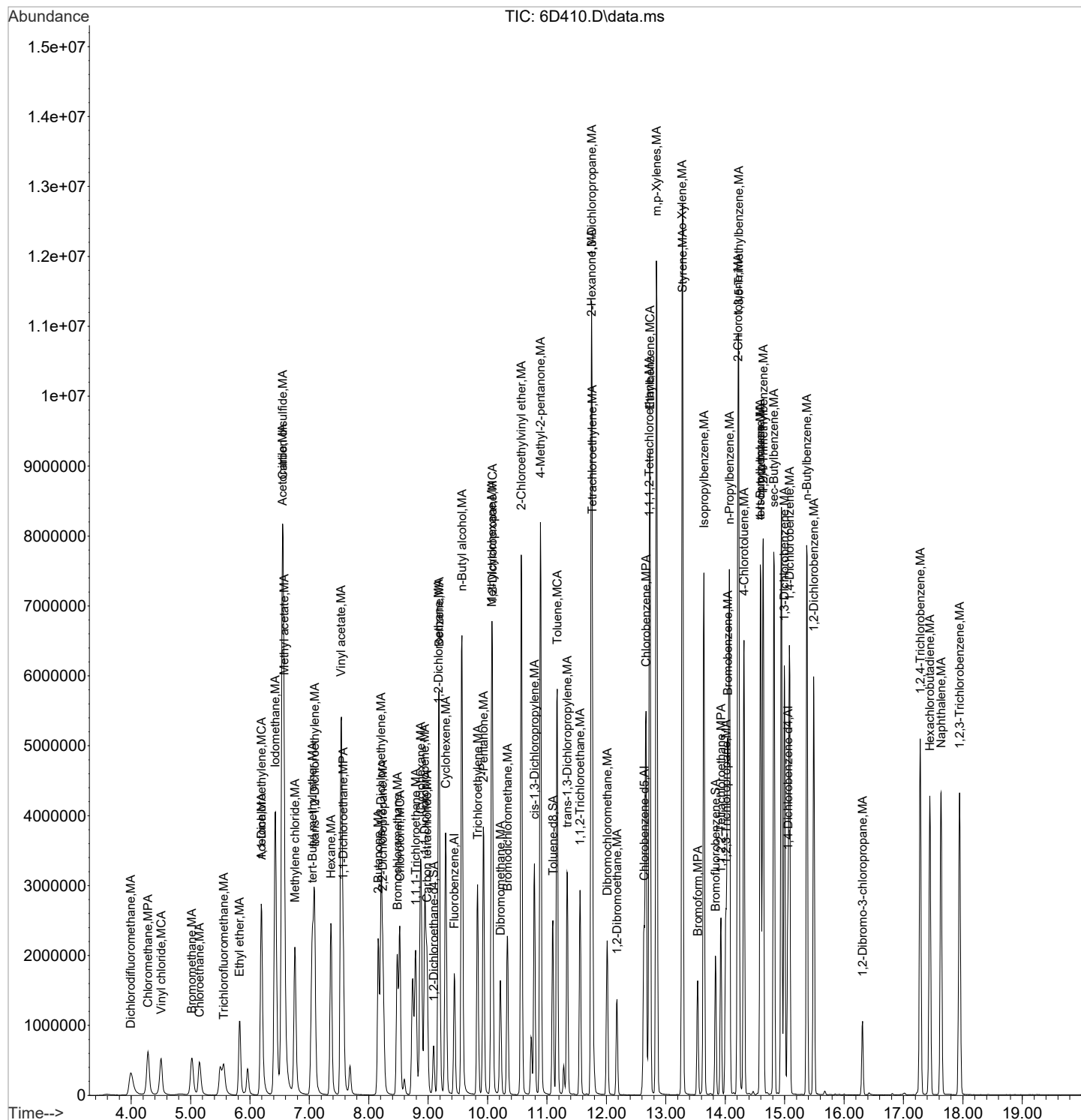
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 11.403 | 11.348 | 0.903  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D. |       |
| 107) cis-1,4-Dichloro-2-butene |      | 13.640 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.872 | 13.793 | 0.921  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 0.000  | 13.976 | 0.000  | 0        | N.D. |       |
| 110) Pentachloroethane         |      | 14.658 | 14.658 | 0.974  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 15.256 | 15.201 | 1.013  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.670 | 15.597 | 1.041  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D410.D  
Acq On : 13 Oct 2016 21:01  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-09|ICAL100|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 14 08:49:00 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D413.D  
Acq On : 13 Oct 2016 22:27  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-12|ICAL005|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 14 08:49:06 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.446  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.635 | 12.635 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.446  | 9.446  | 1.000  | 1592547  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.635 | 12.634 | 1.000  | 1245803  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 667884   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      | Dev (Min) |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 0d | 0.00 | ug/L |           |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 3.985  | 3.993  | 0.422  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 4.234  | 4.282  | 0.448  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 4.466  | 4.506  | 0.473  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 5.012  | 5.020  | 0.531  | 0m       | N.D. | d     |        |
| 6) Chloroethane               |      | 5.148  | 5.156  | 0.545  | 0m       | N.D. | d     |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 5.830  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 6.197  | 6.197  | 0.656  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 6.191  | 6.191  | 0.655  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 6.429  | 6.429  | 0.681  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 6.496  | 6.550  | 0.688  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 6.587  | 6.575  | 0.697  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 6.544  | 6.550  | 0.693  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 6.758  | 6.758  | 0.715  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.056  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 7.093  | 7.087  | 0.751  | 0m       | N.D. | d     |        |
| 18) Hexane                    |      | 7.367  | 7.367  | 0.780  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 7.556  | 7.538  | 0.800  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 7.581  | 7.569  | 0.803  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 8.184  | 8.160  | 0.866  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 8.190  | 8.209  | 0.867  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 8.245  | 8.233  | 0.873  | 0m       | N.D. | d     |        |
| 24) Bromochloromethane        |      | 8.483  | 8.477  | 0.898  | 0m       | N.D. | d     |        |
| 25) Chloroform                |      | 8.513  | 8.520  | 0.901  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 8.788  | 8.788  | 0.930  | 0m       | N.D. | d     |        |
| 27) Cyclohexane               |      | 8.873  | 8.879  | 0.939  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 8.952  | 8.946  | 0.948  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 8.965  | 8.977  | 0.949  | 0m       | N.D. | d     |        |
| 31) 1,2-Dichloroethane        |      | 9.172  | 9.172  | 0.971  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 9.184  | 9.184  | 0.972  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 9.300  | 9.294  | 0.985  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 9.586  | 9.568  | 1.015  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 9.836  | 9.830  | 1.041  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 9.940  | 9.934  | 1.052  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 10.080 | 10.080 | 1.067  | 0m       | N.D. | d     |        |
| 38) Methylcyclohexane         |      | 10.074 | 10.074 | 1.066  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 10.220 | 10.214 | 1.082  | 0m       | N.D. | d     |        |
| 40) Bromodichloromethane      |      | 10.336 | 10.336 | 1.094  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 10.580 | 10.568 | 1.120  | 0m       | N.D. | d     |        |
| 42) cis-1,3-Dichloropropylene |      | 10.787 | 10.787 | 1.142  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D413.D  
Acq On : 13 Oct 2016 22:27  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-12|ICAL005|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 14 08:49:06 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc       | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|------------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 10.891 | 10.891 | 0.862  | 0m       | N.D.       | d     |     |
| 46)  | Toluene                   |      | 11.165 | 11.172 | 0.884  | 0m       | N.D.       | d     |     |
| 47)  | trans-1,3-Dichloroprop... |      | 11.354 | 11.342 | 0.899  | 0m       | N.D.       | d     |     |
| 48)  | 1,1,2-Trichloroethane     |      | 11.562 | 11.556 | 0.915  | 0m       | N.D.       | d     |     |
| 49)  | 2-Hexanone                |      | 11.751 | 11.751 | 0.930  | 0m       | N.D.       | d     |     |
| 50)  | 1,3-Dichloropropane       |      | 11.757 | 11.751 | 0.931  | 0m       | N.D.       | d     |     |
| 51)  | Tetrachloroethylene       |      | 11.763 | 11.763 | 0.931  | 0m       | N.D.       | d     |     |
| 52)  | Dibromochloromethane      |      | 12.019 | 12.013 | 0.951  | 0m       | N.D.       | d     |     |
| 53)  | 1,2-Dibromoethane         |      | 12.177 | 12.177 | 0.964  | 0m       | N.D.       | d     |     |
| 54)  | Chlorobenzene             |      | 12.665 | 12.665 | 1.002  | 0m       | N.D.       | d     |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 12.720 | 12.726 | 1.007  | 0m       | N.D.       | d     |     |
| 56)  | Ethylbenzene              |      | 12.732 | 12.732 | 1.008  | 0m       | N.D.       | d     |     |
| 57)  | m,p-Xylenes               |      | 12.842 | 12.842 | 1.016  | 0m       | N.D.       | d     |     |
| 58)  | o-Xylene                  |      | 13.275 | 13.275 | 1.051  | 0m       | N.D.       | d     |     |
| 59)  | Styrene                   |      | 13.281 | 13.281 | 1.051  | 0m       | N.D.       | d     |     |
| 61)  | Bromoform                 |      | 13.531 | 13.537 | 0.899  | 0m       | N.D.       | d     |     |
| 62)  | Isopropylbenzene          |      | 13.641 | 13.641 | 0.906  | 0m       | N.D.       | d     |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 13.939 | 13.927 | 0.926  | 0m       | N.D.       | d     |     |
| 65)  | 1,2,3-Trichloropropane    |      | 14.012 | 14.012 | 0.931  | 0m       | N.D.       | d     |     |
| 66)  | Bromobenzene              |      | 14.037 | 14.043 | 0.932  | 0m       | N.D.       | d     |     |
| 67)  | n-Propylbenzene           |      | 14.073 | 14.067 | 0.935  | 0m       | N.D.       | d     |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 14.226 | 14.226 | 0.945  | 0m       | N.D.       | d     |     |
| 69)  | 2-Chlorotoluene           |      | 14.214 | 14.214 | 0.944  | 0m       | N.D.       | d     |     |
| 70)  | 4-Chlorotoluene           |      | 14.317 | 14.317 | 0.951  | 0m       | N.D.       | d     |     |
| 71)  | tert-Butylbenzene         |      | 14.592 | 14.598 | 0.969  | 0m       | N.D.       | d     |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 14.640 | 14.640 | 0.972  | 0m       | N.D.       | d     |     |
| 73)  | sec-Butylbenzene          |      | 14.817 | 14.823 | 0.984  | 0m       | N.D.       | d     |     |
| 74)  | 4-Isopropyltoluene        |      | 14.592 | 14.598 | 0.969  | 0m       | N.D.       | d     |     |
| 75)  | 1,3-Dichlorobenzene       |      | 14.994 | 15.000 | 0.996  | 0m       | N.D.       | d     |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.085 | 15.085 | 1.002  | 0m       | N.D.       | d     |     |
| 77)  | n-Butylbenzene            |      | 15.378 | 15.378 | 1.021  | 0m       | N.D.       | d     |     |
| 78)  | 1,2-Dichlorobenzene       |      | 15.488 | 15.494 | 1.029  | 0m       | N.D.       | d     |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 16.317 | 16.311 | 1.084  | 0m       | N.D.       | d     |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 17.280 | 17.286 | 1.148  | 0m       | N.D.       | d     |     |
| 81)  | Hexachlorobutadiene       |      | 17.439 | 17.445 | 1.158  | 0m       | N.D.       | d     |     |
| 82)  | Naphthalene               |      | 17.634 | 17.634 | 1.171  | 0m       | N.D.       | d     |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 17.945 | 17.945 | 1.192  | 0m       | N.D.       | d     |     |
| 85)  | Acrolein                  | 56   | 6.038  | 6.032  | 0.639  | 10929    | 7.03 ug/L  |       | 98  |
| 86)  | Trichlorotrifluoroethane  | 85   | 6.185  | 6.184  | 0.655  | 18523    | 4.02 ug/L  | #     | 82  |
| 87)  | Isopropyl Alcohol         | 45   | 6.288  | 6.288  | 0.666  | 44576    | 65.79 ug/L | #     | 56  |
| 88)  | Allyl chloride            | 41   | 6.611  | 6.611  | 0.700  | 114023   | 6.59 ug/L  | #     | 67  |
| 89)  | tert-Butyl Alcohol        | 59   | 6.776  | 6.776  | 0.717  | 67120    | 53.89 ug/L |       | 92  |
| 90)  | Acrylonitrile             | 53   | 7.020  | 7.014  | 0.743  | 21643    | 6.55 ug/L  |       | 100 |
| 91)  | Isopropyl ether           | 45   | 7.556  | 7.556  | 0.800  | 47760    | 1.25 ug/L  |       | 82  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 7.678  | 7.678  | 0.813  | 18595    | 1.02 ug/L  |       | 98  |
| 93)  | Ethyl tert-butyl ether    | 59   | 7.959  | 7.965  | 0.843  | 43893    | 1.12 ug/L  |       | 93  |
| 94)  | Ethyl acetate             | 43   | 8.184  | 8.178  | 0.866  | 62195    | 6.80 ug/L  |       | 98  |
| 95)  | Propionitrile             | 54   | 8.251  | 8.239  | 0.874  | 9035     | 7.06 ug/L  |       | 100 |
| 96)  | Methacrylonitrile         | 41   | 8.422  | 8.416  | 0.892  | 34832    | 6.31 ug/L  |       | 98  |
| 97)  | Tetrahydrofuran           | 42   | 8.526  | 8.525  | 0.903  | 21706    | 7.83 ug/L  |       | 85  |
| 98)  | Isobutyl alcohol          | 41   | 8.879  | 8.873  | 0.940  | 25799    | 74.86 ug/L |       | 83  |
| 99)  | Methyl tert-amyl ether    | 73   | 9.215  | 9.214  | 0.975  | 30383    | 0.94 ug/L  |       | 80  |
| 100) | Methyl methacrylate       | 69   | 10.074 | 10.068 | 1.066  | 33266    | 5.46 ug/L  | #     | 75  |
| 101) | 1,4-Dioxane               | 88   | 10.184 | 10.178 | 1.078  | 5763     | 62.45 ug/L |       | 87  |
| 102) | 2-Nitropropane            | 43   | 10.550 | 10.549 | 1.117  | 15735    | 5.20 ug/L  |       | 90  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D413.D  
Acq On : 13 Oct 2016 22:27  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-12|ICAL005|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 14 08:49:06 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |    |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|----|
| 104) Ethyl methacrylate        | 69   | 11.354 | 11.348 | 0.899  | 61712    | 4.76  | ug/L   | 91 |
| 106) 1-Chlorohexane            | 55   | 12.537 | 12.543 | 0.833  | 11284    | 0.97  | ug/L   | 92 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.689 | 13.689 | 0.909  | 23443    | 5.17  | ug/L # | 67 |
| 108) Cyclohexanone             | 42   | 13.799 | 13.793 | 0.917  | 8240     | 32.34 | ug/L   | 90 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.982 | 13.976 | 0.929  | 21509    | 5.02  | ug/L   | 82 |
| 110) Pentachloroethane         | 167  | 14.659 | 14.658 | 0.974  | 32483    | 3.86  | ug/L   | 81 |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 99526    | 4.05  | ug/L   | 98 |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.597 | 15.597 | 1.036  | 34918    | 7.52  | ug/L   | 88 |

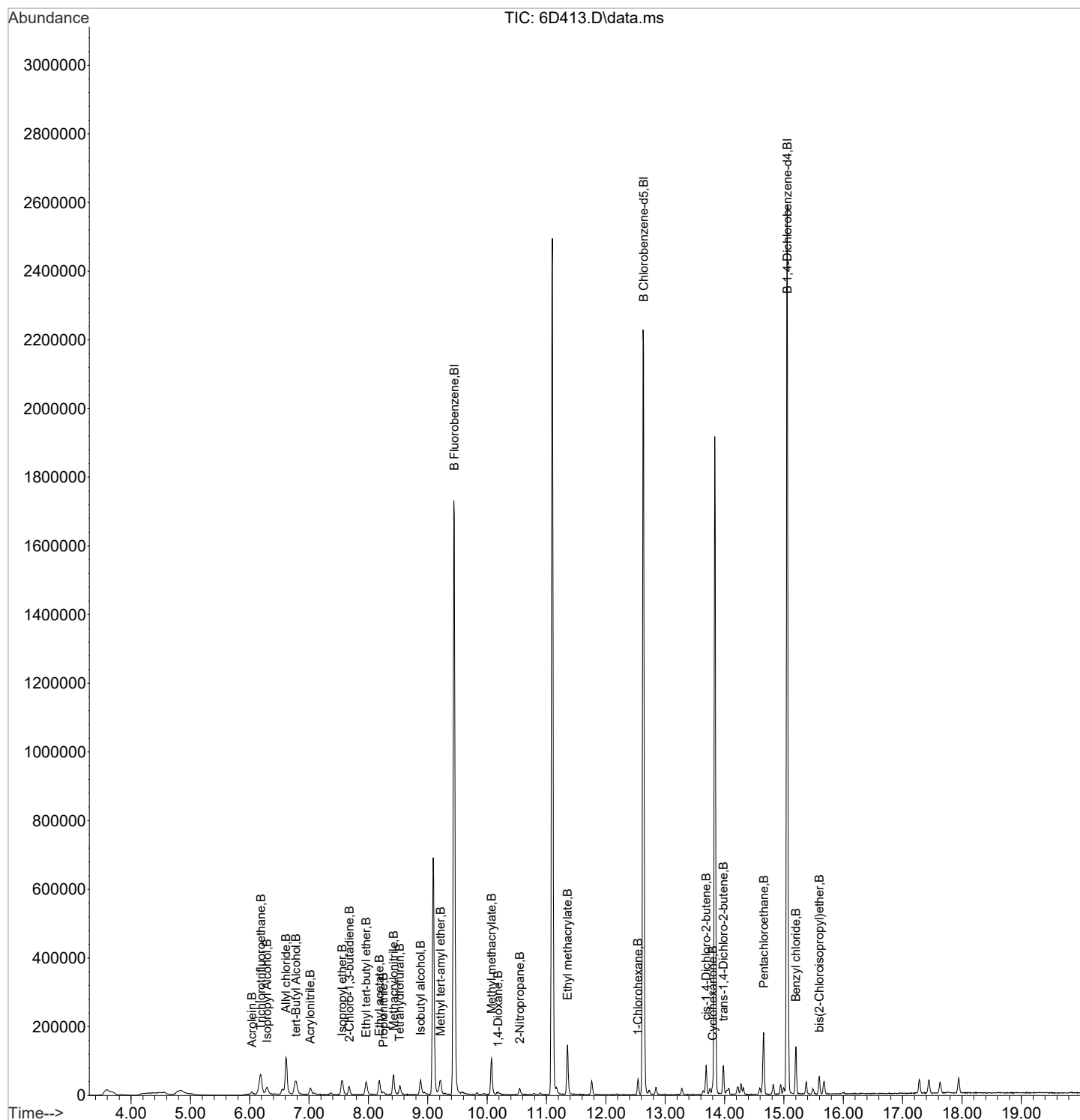
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D413.D  
Acq On : 13 Oct 2016 22:27  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-12|ICAL005|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 14 08:49:06 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D414.D  
Acq On : 13 Oct 2016 22:56  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-13|ICAL010|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 14 08:49:08 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.634 | 12.635 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 1600714  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.634 | 12.634 | 1.000  | 1246381  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 659405   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      | Dev (Min) |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 0d | 0.00 | ug/L |           |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 3.993  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 4.249  | 4.282  | 0.450  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 4.506  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.020  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 5.156  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 5.830  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 0.000  | 6.197  | 0.000  | 0        | N.D. |       |        |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 6.191  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 0.000  | 6.429  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 6.599  | 6.575  | 0.699  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 6.617  | 6.550  | 0.701  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 6.770  | 6.758  | 0.717  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.056  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 7.093  | 7.087  | 0.751  | 0m       | N.D. | d     |        |
| 18) Hexane                    |      | 7.324  | 7.367  | 0.776  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 7.556  | 7.538  | 0.800  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 7.672  | 7.569  | 0.813  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 8.184  | 8.160  | 0.867  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 8.184  | 8.209  | 0.867  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 8.233  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 8.477  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 8.519  | 8.520  | 0.902  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 8.788  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 8.873  | 8.879  | 0.940  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 8.934  | 8.946  | 0.946  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 0.000  | 8.977  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 9.184  | 9.172  | 0.973  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 9.178  | 9.184  | 0.972  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 9.342  | 9.294  | 0.990  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 9.586  | 9.568  | 1.015  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 9.830  | 9.830  | 1.041  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.086 | 9.934  | 1.068  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 10.098 | 10.080 | 1.070  | 0m       | N.D. | d     |        |
| 38) Methylcyclohexane         |      | 10.074 | 10.074 | 1.067  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 10.336 | 10.336 | 1.095  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 10.793 | 10.787 | 1.143  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D414.D  
Acq On : 13 Oct 2016 22:56  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-13|ICAL010|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 14 08:49:08 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units  |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|--------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 10.897 | 10.891 | 0.862  | 0m       | N.D.   | d      |     |
| 46)  | Toluene                   |      | 11.165 | 11.172 | 0.884  | 0m       | N.D.   | d      |     |
| 47)  | trans-1,3-Dichloroprop... |      | 11.342 | 11.342 | 0.898  | 0m       | N.D.   | d      |     |
| 48)  | 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D.   |        |     |
| 49)  | 2-Hexanone                |      | 11.757 | 11.751 | 0.931  | 0m       | N.D.   | d      |     |
| 50)  | 1,3-Dichloropropane       |      | 11.750 | 11.751 | 0.930  | 0m       | N.D.   | d      |     |
| 51)  | Tetrachloroethylene       |      | 11.763 | 11.763 | 0.931  | 0m       | N.D.   | d      |     |
| 52)  | Dibromochloromethane      |      | 12.007 | 12.013 | 0.950  | 0m       | N.D.   | d      |     |
| 53)  | 1,2-Dibromoethane         |      | 12.183 | 12.177 | 0.964  | 0m       | N.D.   | d      |     |
| 54)  | Chlorobenzene             |      | 12.665 | 12.665 | 1.002  | 0m       | N.D.   | d      |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.726 | 0.000  | 0        | N.D.   |        |     |
| 56)  | Ethylbenzene              |      | 12.738 | 12.732 | 1.008  | 0m       | N.D.   | d      |     |
| 57)  | m,p-Xylenes               |      | 12.848 | 12.842 | 1.017  | 0m       | N.D.   | d      |     |
| 58)  | o-Xylene                  |      | 13.275 | 13.275 | 1.051  | 0m       | N.D.   | d      |     |
| 59)  | Styrene                   |      | 13.293 | 13.281 | 1.052  | 0m       | N.D.   | d      |     |
| 61)  | Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.   |        |     |
| 62)  | Isopropylbenzene          |      | 13.634 | 13.641 | 0.906  | 0m       | N.D.   | d      |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 13.970 | 13.927 | 0.928  | 0m       | N.D.   | d      |     |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.   |        |     |
| 66)  | Bromobenzene              |      | 14.049 | 14.043 | 0.933  | 0m       | N.D.   | d      |     |
| 67)  | n-Propylbenzene           |      | 14.073 | 14.067 | 0.935  | 0m       | N.D.   | d      |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 14.232 | 14.226 | 0.945  | 0m       | N.D.   | d      |     |
| 69)  | 2-Chlorotoluene           |      | 14.207 | 14.214 | 0.944  | 0m       | N.D.   | d      |     |
| 70)  | 4-Chlorotoluene           |      | 14.323 | 14.317 | 0.951  | 0m       | N.D.   | d      |     |
| 71)  | tert-Butylbenzene         |      | 14.597 | 14.598 | 0.970  | 0m       | N.D.   | d      |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 14.640 | 14.640 | 0.972  | 0m       | N.D.   | d      |     |
| 73)  | sec-Butylbenzene          |      | 14.817 | 14.823 | 0.984  | 0m       | N.D.   | d      |     |
| 74)  | 4-Isopropyltoluene        |      | 14.591 | 14.598 | 0.969  | 0m       | N.D.   | d      |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.000 | 15.000 | 0.996  | 0m       | N.D.   | d      |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.079 | 15.085 | 1.002  | 0m       | N.D.   | d      |     |
| 77)  | n-Butylbenzene            |      | 15.372 | 15.378 | 1.021  | 0m       | N.D.   | d      |     |
| 78)  | 1,2-Dichlorobenzene       |      | 15.488 | 15.494 | 1.029  | 0m       | N.D.   | d      |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.   |        |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 17.286 | 17.286 | 1.148  | 0m       | N.D.   | d      |     |
| 81)  | Hexachlorobutadiene       |      | 17.444 | 17.445 | 1.159  | 0m       | N.D.   | d      |     |
| 82)  | Naphthalene               |      | 17.633 | 17.634 | 1.171  | 0m       | N.D.   | d      |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 17.950 | 17.945 | 1.192  | 0m       | N.D.   | d      |     |
| 85)  | Acrolein                  | 56   | 6.026  | 6.032  | 0.638  | 19660    | 12.58  | ug/L   | 91  |
| 86)  | Trichlorotrifluoroethane  | 85   | 6.178  | 6.184  | 0.654  | 29089    | 6.28   | ug/L # | 83  |
| 87)  | Isopropyl Alcohol         | 45   | 6.294  | 6.288  | 0.667  | 69763    | 102.43 | ug/L # | 56  |
| 88)  | Allyl chloride            | 41   | 6.611  | 6.611  | 0.700  | 170891   | 9.82   | ug/L   | 82  |
| 89)  | tert-Butyl Alcohol        | 59   | 6.770  | 6.776  | 0.717  | 101624   | 81.18  | ug/L # | 56  |
| 90)  | Acrylonitrile             | 53   | 7.020  | 7.014  | 0.744  | 32343    | 9.73   | ug/L   | 96  |
| 91)  | Isopropyl ether           | 45   | 7.550  | 7.556  | 0.800  | 76032    | 1.98   | ug/L   | 94  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 7.672  | 7.678  | 0.813  | 29415    | 1.61   | ug/L   | 95  |
| 93)  | Ethyl tert-butyl ether    | 59   | 7.965  | 7.965  | 0.844  | 64825    | 1.65   | ug/L   | 94  |
| 94)  | Ethyl acetate             | 43   | 8.184  | 8.178  | 0.867  | 86244    | 9.39   | ug/L   | 98  |
| 95)  | Propionitrile             | 54   | 8.251  | 8.239  | 0.874  | 12593    | 9.79   | ug/L   | 100 |
| 96)  | Methacrylonitrile         | 41   | 8.422  | 8.416  | 0.892  | 52987    | 9.55   | ug/L   | 92  |
| 97)  | Tetrahydrofuran           | 42   | 8.525  | 8.525  | 0.903  | 30015    | 10.77  | ug/L   | 86  |
| 98)  | Isobutyl alcohol          | 41   | 8.873  | 8.873  | 0.940  | 31579    | 91.16  | ug/L   | 88  |
| 99)  | Methyl tert-amyl ether    | 73   | 9.214  | 9.214  | 0.976  | 47776    | 1.46   | ug/L   | 86  |
| 100) | Methyl methacrylate       | 69   | 10.074 | 10.068 | 1.067  | 50219    | 8.20   | ug/L   | 85  |
| 101) | 1,4-Dioxane               | 88   | 10.178 | 10.178 | 1.078  | 9183     | 99.01  | ug/L   | 89  |
| 102) | 2-Nitropropane            | 43   | 10.549 | 10.549 | 1.118  | 20476    | 6.73   | ug/L   | 85  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D414.D  
Acq On : 13 Oct 2016 22:56  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-13|ICAL010|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 14 08:49:08 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

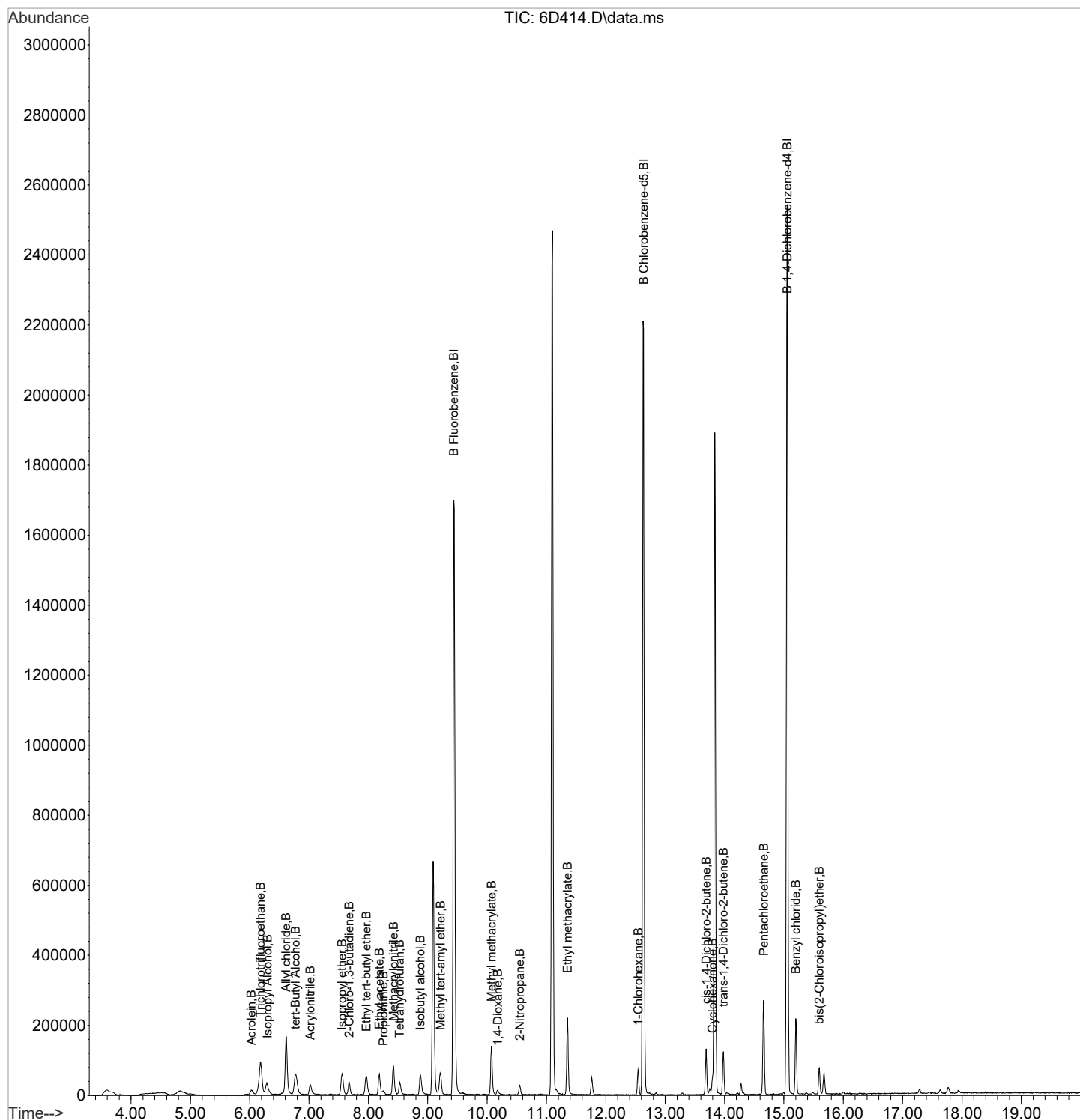
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |    |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|----|
| 104) Ethyl methacrylate        | 69   | 11.354 | 11.348 | 0.899  | 97371    | 7.50  | ug/L   | 89 |
| 106) 1-Chlorohexane            | 55   | 12.543 | 12.543 | 0.833  | 20450    | 1.77  | ug/L   | 90 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.689 | 13.689 | 0.909  | 35600    | 7.95  | ug/L # | 71 |
| 108) Cyclohexanone             | 42   | 13.793 | 13.793 | 0.916  | 16723    | 66.47 | ug/L   | 86 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.982 | 13.976 | 0.929  | 32322    | 7.65  | ug/L   | 83 |
| 110) Pentachloroethane         | 167  | 14.658 | 14.658 | 0.974  | 49377    | 5.94  | ug/L   | 83 |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 152922   | 6.30  | ug/L   | 99 |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.591 | 15.597 | 1.036  | 52188    | 11.38 | ug/L   | 89 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D414.D  
Acq On : 13 Oct 2016 22:56  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-13|ICAL010|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 14 08:49:08 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D415.D  
Acq On : 13 Oct 2016 23:25  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-14|ICAL025|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Oct 14 08:49:10 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.446  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.635 | 12.635 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.446  | 9.446  | 1.000  | 1587213  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.635 | 12.634 | 1.000  | 1245705  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 653489   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      | Dev (Min) |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 0d | 0.00 | ug/L |           |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 3.993  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 4.250  | 4.282  | 0.450  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 4.506  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.020  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 5.156  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 5.830  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 6.203  | 6.197  | 0.657  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 6.191  | 6.191  | 0.655  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 0.000  | 6.429  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 6.575  | 6.575  | 0.696  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 6.617  | 6.550  | 0.701  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 6.758  | 6.758  | 0.715  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 7.038  | 7.056  | 0.745  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 7.099  | 7.087  | 0.752  | 0m       | N.D. | d     |        |
| 18) Hexane                    |      | 7.349  | 7.367  | 0.778  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 7.556  | 7.538  | 0.800  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 7.678  | 7.569  | 0.813  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 8.178  | 8.160  | 0.866  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 8.184  | 8.209  | 0.866  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 8.233  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 8.477  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 8.513  | 8.520  | 0.901  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 8.788  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 8.879  | 8.879  | 0.940  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 8.879  | 8.946  | 0.940  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 0.000  | 8.977  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 9.160  | 9.172  | 0.970  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 9.184  | 9.184  | 0.972  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 9.330  | 9.294  | 0.988  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 9.684  | 9.568  | 1.025  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 9.836  | 9.830  | 1.041  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.074 | 9.934  | 1.066  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.080 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 10.062 | 10.074 | 1.065  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 10.330 | 10.336 | 1.094  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 10.775 | 10.787 | 1.141  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D415.D  
Acq On : 13 Oct 2016 23:25  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-14|ICAL025|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Oct 14 08:49:10 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 10.897 | 10.891 | 0.862  | 0m       | N.D.   | d     |     |
| 46)  | Toluene                   |      | 11.165 | 11.172 | 0.884  | 0m       | N.D.   | d     |     |
| 47)  | trans-1,3-Dichloroprop... |      | 11.342 | 11.342 | 0.898  | 0m       | N.D.   | d     |     |
| 48)  | 1,1,2-Trichloroethane     |      | 11.549 | 11.556 | 0.914  | 0m       | N.D.   | d     |     |
| 49)  | 2-Hexanone                |      | 11.763 | 11.751 | 0.931  | 0m       | N.D.   | d     |     |
| 50)  | 1,3-Dichloropropane       |      | 11.738 | 11.751 | 0.929  | 0m       | N.D.   | d     |     |
| 51)  | Tetrachloroethylene       |      | 11.763 | 11.763 | 0.931  | 0m       | N.D.   | d     |     |
| 52)  | Dibromochloromethane      |      | 12.013 | 12.013 | 0.951  | 0m       | N.D.   | d     |     |
| 53)  | 1,2-Dibromoethane         |      | 12.190 | 12.177 | 0.965  | 0m       | N.D.   | d     |     |
| 54)  | Chlorobenzene             |      | 12.659 | 12.665 | 1.002  | 0m       | N.D.   | d     |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.726 | 0.000  | 0        | N.D.   |       |     |
| 56)  | Ethylbenzene              |      | 12.732 | 12.732 | 1.008  | 0m       | N.D.   | d     |     |
| 57)  | m,p-Xylenes               |      | 12.854 | 12.842 | 1.017  | 0m       | N.D.   | d     |     |
| 58)  | o-Xylene                  |      | 13.281 | 13.275 | 1.051  | 0m       | N.D.   | d     |     |
| 59)  | Styrene                   |      | 13.293 | 13.281 | 1.052  | 0m       | N.D.   | d     |     |
| 61)  | Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.   |       |     |
| 62)  | Isopropylbenzene          |      | 13.640 | 13.641 | 0.906  | 0m       | N.D.   | d     |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 13.994 | 13.927 | 0.930  | 0m       | N.D.   | d     |     |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.   |       |     |
| 66)  | Bromobenzene              |      | 14.037 | 14.043 | 0.932  | 0m       | N.D.   | d     |     |
| 67)  | n-Propylbenzene           |      | 14.067 | 14.067 | 0.934  | 0m       | N.D.   | d     |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 14.226 | 14.226 | 0.945  | 0m       | N.D.   | d     |     |
| 69)  | 2-Chlorotoluene           |      | 14.214 | 14.214 | 0.944  | 0m       | N.D.   | d     |     |
| 70)  | 4-Chlorotoluene           |      | 14.317 | 14.317 | 0.951  | 0m       | N.D.   | d     |     |
| 71)  | tert-Butylbenzene         |      | 14.659 | 14.598 | 0.974  | 0m       | N.D.   | d     |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 14.634 | 14.640 | 0.972  | 0m       | N.D.   | d     |     |
| 73)  | sec-Butylbenzene          |      | 14.817 | 14.823 | 0.984  | 0m       | N.D.   | d     |     |
| 74)  | 4-Isopropyltoluene        |      | 14.579 | 14.598 | 0.968  | 0m       | N.D.   | d     |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.000 | 15.000 | 0.996  | 0m       | N.D.   | d     |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.091 | 15.085 | 1.002  | 0m       | N.D.   | d     |     |
| 77)  | n-Butylbenzene            |      | 15.378 | 15.378 | 1.021  | 0m       | N.D.   | d     |     |
| 78)  | 1,2-Dichlorobenzene       |      | 15.488 | 15.494 | 1.029  | 0m       | N.D.   | d     |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.   |       |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 17.280 | 17.286 | 1.148  | 0m       | N.D.   | d     |     |
| 81)  | Hexachlorobutadiene       |      | 17.445 | 17.445 | 1.159  | 0m       | N.D.   | d     |     |
| 82)  | Naphthalene               |      | 17.634 | 17.634 | 1.171  | 0m       | N.D.   | d     |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 17.938 | 17.945 | 1.192  | 0m       | N.D.   | d     |     |
| 85)  | Acrolein                  | 56   | 6.026  | 6.032  | 0.638  | 51402    | 33.17  | ug/L  | 99  |
| 86)  | Trichlorotrifluoroethane  | 85   | 6.185  | 6.184  | 0.655  | 100826   | 21.95  | ug/L  | 87  |
| 87)  | Isopropyl Alcohol         | 45   | 6.288  | 6.288  | 0.666  | 245893   | 364.11 | ug/L  | 99  |
| 88)  | Allyl chloride            | 41   | 6.611  | 6.611  | 0.700  | 547379   | 31.73  | ug/L  | 86  |
| 89)  | tert-Butyl Alcohol        | 59   | 6.782  | 6.776  | 0.718  | 359676   | 289.77 | ug/L  | 92  |
| 90)  | Acrylonitrile             | 53   | 7.020  | 7.014  | 0.743  | 109939   | 33.37  | ug/L  | 98  |
| 91)  | Isopropyl ether           | 45   | 7.556  | 7.556  | 0.800  | 253031   | 6.66   | ug/L  | 95  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 7.672  | 7.678  | 0.812  | 98347    | 5.43   | ug/L  | 98  |
| 93)  | Ethyl tert-butyl ether    | 59   | 7.965  | 7.965  | 0.843  | 220434   | 5.67   | ug/L  | 95  |
| 94)  | Ethyl acetate             | 43   | 8.178  | 8.178  | 0.866  | 302489   | 33.20  | ug/L  | 97  |
| 95)  | Propionitrile             | 54   | 8.245  | 8.239  | 0.873  | 44924    | 35.22  | ug/L  | 100 |
| 96)  | Methacrylonitrile         | 41   | 8.422  | 8.416  | 0.892  | 184326   | 33.50  | ug/L  | 95  |
| 97)  | Tetrahydrofuran           | 42   | 8.532  | 8.525  | 0.903  | 101192   | 36.62  | ug/L  | 86  |
| 98)  | Isobutyl alcohol          | 41   | 8.873  | 8.873  | 0.939  | 114840   | 334.34 | ug/L  | 90  |
| 99)  | Methyl tert-amyl ether    | 73   | 9.208  | 9.214  | 0.975  | 157959   | 4.88   | ug/L  | 91  |
| 100) | Methyl methacrylate       | 69   | 10.074 | 10.068 | 1.066  | 175071   | 28.83  | ug/L  | 80  |
| 101) | 1,4-Dioxane               | 88   | 10.178 | 10.178 | 1.077  | 29034    | 315.70 | ug/L  | 77  |
| 102) | 2-Nitropropane            | 43   | 10.550 | 10.549 | 1.117  | 84265    | 27.94  | ug/L  | 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D415.D  
Acq On : 13 Oct 2016 23:25  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-14|ICAL025|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Oct 14 08:49:10 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units  |    |
|--------------------------------|------|--------|--------|--------|----------|--------|--------|----|
| 104) Ethyl methacrylate        | 69   | 11.348 | 11.348 | 0.898  | 341078   | 26.30  | ug/L   | 85 |
| 106) 1-Chlorohexane            | 55   | 12.543 | 12.543 | 0.833  | 66218    | 5.80   | ug/L   | 92 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.689 | 13.689 | 0.909  | 130342   | 29.36  | ug/L # | 74 |
| 108) Cyclohexanone             | 42   | 13.793 | 13.793 | 0.916  | 44491    | 178.44 | ug/L   | 93 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.976 | 13.976 | 0.928  | 122234   | 29.18  | ug/L   | 85 |
| 110) Pentachloroethane         | 167  | 14.659 | 14.658 | 0.974  | 176189   | 21.39  | ug/L   | 93 |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 583947   | 24.28  | ug/L   | 97 |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.591 | 15.597 | 1.036  | 188558   | 41.49  | ug/L   | 88 |

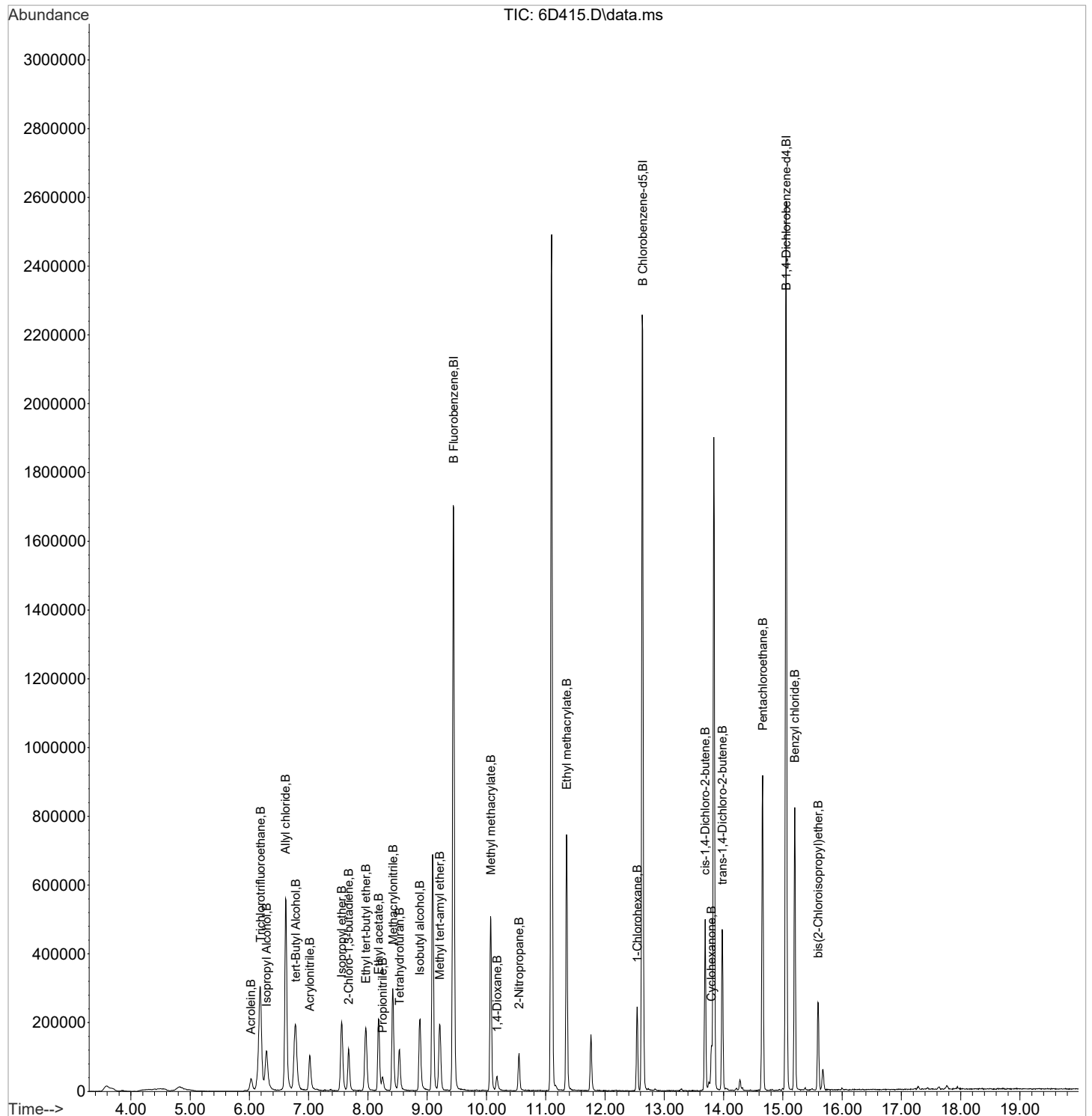
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D415.D  
Acq On : 13 Oct 2016 23:25  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-14|ICAL025|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Oct 14 08:49:10 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D416.D  
Acq On : 13 Oct 2016 23:54  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-15|ICAL050|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 14 08:49:12 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.634 | 12.635 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 1539686  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.634 | 12.634 | 1.000  | 1198157  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 639453   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      | Dev (Min) |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 0d | 0.00 | ug/L |           |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 3.993  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 4.249  | 4.282  | 0.450  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 4.506  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.020  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 5.156  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 5.830  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 6.288  | 6.197  | 0.666  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 6.172  | 6.191  | 0.654  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 6.422  | 6.429  | 0.680  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 6.593  | 6.575  | 0.698  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 6.758  | 6.758  | 0.716  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.056  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 7.093  | 7.087  | 0.751  | 0m       | N.D. | d     |        |
| 18) Hexane                    |      | 7.361  | 7.367  | 0.780  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 7.556  | 7.538  | 0.800  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 7.581  | 7.569  | 0.803  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 8.178  | 8.160  | 0.866  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 8.178  | 8.209  | 0.866  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 8.233  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 8.477  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 8.519  | 8.520  | 0.902  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 8.788  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 8.873  | 8.879  | 0.940  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 8.861  | 8.946  | 0.939  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 0.000  | 8.977  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 9.178  | 9.172  | 0.972  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 9.196  | 9.184  | 0.974  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 9.287  | 9.294  | 0.984  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 9.562  | 9.568  | 1.013  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 9.830  | 9.830  | 1.041  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.068 | 9.934  | 1.067  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.080 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 10.068 | 10.074 | 1.067  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 10.336 | 10.336 | 1.095  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 10.793 | 10.787 | 1.143  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D416.D  
Acq On : 13 Oct 2016 23:54  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-15|ICAL050|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 14 08:49:12 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 0.000  | 10.891 | 0.000  | 0        | N.D.   |       |     |
| 46)  | Toluene                   |      | 11.171 | 11.172 | 0.884  | 0m       | N.D.   | d     |     |
| 47)  | trans-1,3-Dichloroprop... |      | 11.348 | 11.342 | 0.898  | 0m       | N.D.   | d     |     |
| 48)  | 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D.   |       |     |
| 49)  | 2-Hexanone                |      | 11.757 | 11.751 | 0.931  | 0m       | N.D.   | d     |     |
| 50)  | 1,3-Dichloropropane       |      | 11.744 | 11.751 | 0.930  | 0m       | N.D.   | d     |     |
| 51)  | Tetrachloroethylene       |      | 11.763 | 11.763 | 0.931  | 0m       | N.D.   | d     |     |
| 52)  | Dibromochloromethane      |      | 12.019 | 12.013 | 0.951  | 0m       | N.D.   | d     |     |
| 53)  | 1,2-Dibromoethane         |      | 12.183 | 12.177 | 0.964  | 0m       | N.D.   | d     |     |
| 54)  | Chlorobenzene             |      | 12.659 | 12.665 | 1.002  | 0m       | N.D.   | d     |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 12.714 | 12.726 | 1.006  | 0m       | N.D.   | d     |     |
| 56)  | Ethylbenzene              |      | 12.744 | 12.732 | 1.009  | 0m       | N.D.   | d     |     |
| 57)  | m,p-Xylenes               |      | 12.842 | 12.842 | 1.016  | 0m       | N.D.   | d     |     |
| 58)  | o-Xylene                  |      | 13.275 | 13.275 | 1.051  | 0m       | N.D.   | d     |     |
| 59)  | Styrene                   |      | 13.287 | 13.281 | 1.052  | 0m       | N.D.   | d     |     |
| 61)  | Bromoform                 |      | 13.537 | 13.537 | 0.899  | 0m       | N.D.   | d     |     |
| 62)  | Isopropylbenzene          |      | 13.628 | 13.641 | 0.905  | 0m       | N.D.   | d     |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 13.933 | 13.927 | 0.925  | 0m       | N.D.   | d     |     |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.   |       |     |
| 66)  | Bromobenzene              |      | 14.043 | 14.043 | 0.933  | 0m       | N.D.   | d     |     |
| 67)  | n-Propylbenzene           |      | 14.061 | 14.067 | 0.934  | 0m       | N.D.   | d     |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 14.232 | 14.226 | 0.945  | 0m       | N.D.   | d     |     |
| 69)  | 2-Chlorotoluene           |      | 14.207 | 14.214 | 0.944  | 0m       | N.D.   | d     |     |
| 70)  | 4-Chlorotoluene           |      | 14.317 | 14.317 | 0.951  | 0m       | N.D.   | d     |     |
| 71)  | tert-Butylbenzene         |      | 14.658 | 14.598 | 0.974  | 0m       | N.D.   | d     |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 14.640 | 14.640 | 0.972  | 0m       | N.D.   | d     |     |
| 73)  | sec-Butylbenzene          |      | 14.829 | 14.823 | 0.985  | 0m       | N.D.   | d     |     |
| 74)  | 4-Isopropyltoluene        |      | 14.604 | 14.598 | 0.970  | 0m       | N.D.   | d     |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.000 | 15.000 | 0.996  | 0m       | N.D.   | d     |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.079 | 15.085 | 1.002  | 0m       | N.D.   | d     |     |
| 77)  | n-Butylbenzene            |      | 0.000  | 15.378 | 0.000  | 0        | N.D.   |       |     |
| 78)  | 1,2-Dichlorobenzene       |      | 15.494 | 15.494 | 1.029  | 0m       | N.D.   | d     |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.   |       |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 17.286 | 17.286 | 1.148  | 0m       | N.D.   | d     |     |
| 81)  | Hexachlorobutadiene       |      | 17.438 | 17.445 | 1.158  | 0m       | N.D.   | d     |     |
| 82)  | Naphthalene               |      | 17.633 | 17.634 | 1.171  | 0m       | N.D.   | d     |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 17.950 | 17.945 | 1.192  | 0m       | N.D.   | d     |     |
| 85)  | Acrolein                  | 56   | 6.026  | 6.032  | 0.638  | 95652    | 63.62  | ug/L  | 92  |
| 86)  | Trichlorotrifluoroethane  | 85   | 6.178  | 6.184  | 0.654  | 197775   | 44.39  | ug/L  | 89  |
| 87)  | Isopropyl Alcohol         | 45   | 6.288  | 6.288  | 0.666  | 457403   | 698.21 | ug/L  | 96  |
| 88)  | Allyl chloride            | 41   | 6.611  | 6.611  | 0.700  | 1066635  | 63.75  | ug/L  | 86  |
| 89)  | tert-Butyl Alcohol        | 59   | 6.770  | 6.776  | 0.717  | 676163   | 561.57 | ug/L  | 91  |
| 90)  | Acrylonitrile             | 53   | 7.020  | 7.014  | 0.744  | 206881   | 64.74  | ug/L  | 99  |
| 91)  | Isopropyl ether           | 45   | 7.556  | 7.556  | 0.800  | 490967   | 13.32  | ug/L  | 95  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 7.672  | 7.678  | 0.813  | 192348   | 10.95  | ug/L  | 98  |
| 93)  | Ethyl tert-butyl ether    | 59   | 7.965  | 7.965  | 0.844  | 428127   | 11.34  | ug/L  | 95  |
| 94)  | Ethyl acetate             | 43   | 8.178  | 8.178  | 0.866  | 550629   | 62.31  | ug/L  | 97  |
| 95)  | Propionitrile             | 54   | 8.239  | 8.239  | 0.873  | 83750    | 67.69  | ug/L  | 100 |
| 96)  | Methacrylonitrile         | 41   | 8.416  | 8.416  | 0.892  | 346851   | 64.98  | ug/L  | 96  |
| 97)  | Tetrahydrofuran           | 42   | 8.525  | 8.525  | 0.903  | 180072   | 67.17  | ug/L  | 87  |
| 98)  | Isobutyl alcohol          | 41   | 8.873  | 8.873  | 0.940  | 219186   | 657.83 | ug/L  | 88  |
| 99)  | Methyl tert-amyl ether    | 73   | 9.214  | 9.214  | 0.976  | 305418   | 9.73   | ug/L  | 90  |
| 100) | Methyl methacrylate       | 69   | 10.068 | 10.068 | 1.067  | 331102   | 56.20  | ug/L  | 82  |
| 101) | 1,4-Dioxane               | 88   | 10.171 | 10.178 | 1.077  | 56577    | 634.18 | ug/L  | 86  |
| 102) | 2-Nitropropane            | 43   | 10.549 | 10.549 | 1.118  | 170964   | 58.44  | ug/L  | 99  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D416.D  
Acq On : 13 Oct 2016 23:54  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-15|ICAL050|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 14 08:49:12 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

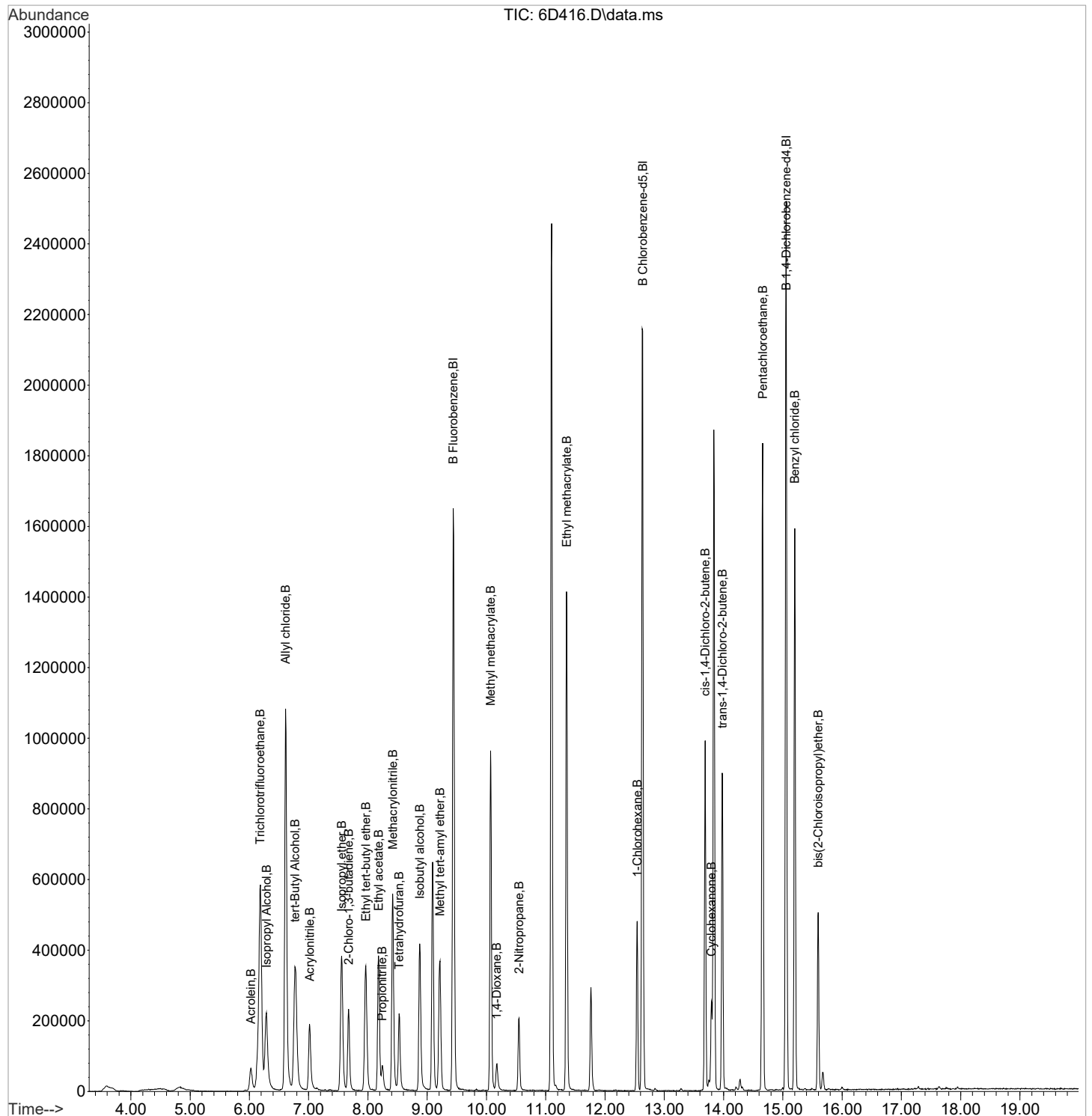
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |    |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|----|
| 104) Ethyl methacrylate        | 69   | 11.348 | 11.348 | 0.898  | 652812   | 52.34  | ug/L  | 87 |
| 106) 1-Chlorohexane            | 55   | 12.543 | 12.543 | 0.833  | 127744   | 11.42  | ug/L  | 94 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.689 | 13.689 | 0.909  | 256548   | 59.07  | ug/L  | 78 |
| 108) Cyclohexanone             | 42   | 13.793 | 13.793 | 0.916  | 83230    | 341.15 | ug/L  | 95 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.976 | 13.976 | 0.928  | 235258   | 57.39  | ug/L  | 87 |
| 110) Pentachloroethane         | 167  | 14.658 | 14.658 | 0.974  | 372931   | 46.26  | ug/L  | 98 |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 1138069  | 48.37  | ug/L  | 98 |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.597 | 15.597 | 1.036  | 351575   | 79.06  | ug/L  | 88 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D416.D  
Acq On : 13 Oct 2016 23:54  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-15|ICAL050|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Oct 14 08:49:12 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D417.D  
Acq On : 14 Oct 2016 00:22  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-16|ICAL100|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Oct 14 08:49:14 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.635 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 1579799  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.634 | 1.000  | 1207024  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 654735   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      | Dev (Min) |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 0d | 0.00 | ug/L |           |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 3.993  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 4.241  | 4.282  | 0.449  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 4.474  | 4.506  | 0.474  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 0.000  | 5.020  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 5.156  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 5.830  | 5.830  | 0.618  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 6.191  | 6.197  | 0.656  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 6.148  | 6.191  | 0.651  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 0.000  | 6.429  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 0.000  | 6.575  | 0.000  | 0        | N.D. |       |        |
| 14) Carbon disulfide          |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 6.764  | 6.758  | 0.716  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 7.050  | 7.056  | 0.747  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.087  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    |      | 7.367  | 7.367  | 0.780  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 7.556  | 7.538  | 0.800  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 7.672  | 7.569  | 0.813  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 8.178  | 8.160  | 0.866  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 8.178  | 8.209  | 0.866  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 8.233  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 8.477  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 8.513  | 8.520  | 0.902  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 8.788  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               |      | 8.873  | 8.879  | 0.940  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 8.940  | 8.946  | 0.947  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 0.000  | 8.977  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 9.178  | 9.172  | 0.972  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 9.184  | 9.184  | 0.973  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 0.000  | 9.294  | 0.000  | 0        | N.D. |       |        |
| 34) n-Butyl alcohol           |      | 9.580  | 9.568  | 1.015  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 9.830  | 9.830  | 1.041  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.068 | 9.934  | 1.067  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.080 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 10.068 | 10.074 | 1.067  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 0.000  | 10.336 | 0.000  | 0        | N.D. |       |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 10.787 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D417.D  
Acq On : 14 Oct 2016 00:22  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-16|ICAL100|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Oct 14 08:49:14 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |      |
|------|---------------------------|------|--------|--------|--------|----------|---------|-------|------|
| 44)  | 4-Methyl-2-pentanone      |      | 10.903 | 10.891 | 0.863  | 0m       | N.D.    | d     |      |
| 46)  | Toluene                   |      | 11.165 | 11.172 | 0.884  | 0m       | N.D.    | d     |      |
| 47)  | trans-1,3-Dichloroprop... |      | 11.342 | 11.342 | 0.898  | 0m       | N.D.    | d     |      |
| 48)  | 1,1,2-Trichloroethane     |      | 11.555 | 11.556 | 0.915  | 0m       | N.D.    | d     |      |
| 49)  | 2-Hexanone                |      | 11.757 | 11.751 | 0.931  | 0m       | N.D.    | d     |      |
| 50)  | 1,3-Dichloropropane       |      | 11.750 | 11.751 | 0.930  | 0m       | N.D.    | d     |      |
| 51)  | Tetrachloroethylene       |      | 11.763 | 11.763 | 0.931  | 0m       | N.D.    | d     |      |
| 52)  | Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D.    |       |      |
| 53)  | 1,2-Dibromoethane         |      | 12.171 | 12.177 | 0.964  | 0m       | N.D.    | d     |      |
| 54)  | Chlorobenzene             |      | 12.665 | 12.665 | 1.003  | 0m       | N.D.    | d     |      |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 12.732 | 12.726 | 1.008  | 0m       | N.D.    | d     |      |
| 56)  | Ethylbenzene              |      | 12.738 | 12.732 | 1.009  | 0m       | N.D.    | d     |      |
| 57)  | m,p-Xylenes               |      | 12.848 | 12.842 | 1.017  | 0m       | N.D.    | d     |      |
| 58)  | o-Xylene                  |      | 13.281 | 13.275 | 1.052  | 0m       | N.D.    | d     |      |
| 59)  | Styrene                   |      | 13.287 | 13.281 | 1.052  | 0m       | N.D.    | d     |      |
| 61)  | Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.    |       |      |
| 62)  | Isopropylbenzene          |      | 13.640 | 13.641 | 0.906  | 0m       | N.D.    | d     |      |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 13.927 | 13.927 | 0.925  | 0m       | N.D.    | d     |      |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.    |       |      |
| 66)  | Bromobenzene              |      | 14.043 | 14.043 | 0.933  | 0m       | N.D.    | d     |      |
| 67)  | n-Propylbenzene           |      | 14.073 | 14.067 | 0.935  | 0m       | N.D.    | d     |      |
| 68)  | 1,3,5-Trimethylbenzene    |      | 14.238 | 14.226 | 0.946  | 0m       | N.D.    | d     |      |
| 69)  | 2-Chlorotoluene           |      | 14.207 | 14.214 | 0.944  | 0m       | N.D.    | d     |      |
| 70)  | 4-Chlorotoluene           |      | 14.317 | 14.317 | 0.951  | 0m       | N.D.    | d     |      |
| 71)  | tert-Butylbenzene         |      | 14.597 | 14.598 | 0.970  | 0m       | N.D.    | d     |      |
| 72)  | 1,2,4-Trimethylbenzene    |      | 14.634 | 14.640 | 0.972  | 0m       | N.D.    | d     |      |
| 73)  | sec-Butylbenzene          |      | 14.823 | 14.823 | 0.985  | 0m       | N.D.    | d     |      |
| 74)  | 4-Isopropyltoluene        |      | 14.597 | 14.598 | 0.970  | 0m       | N.D.    | d     |      |
| 75)  | 1,3-Dichlorobenzene       |      | 14.994 | 15.000 | 0.996  | 0m       | N.D.    | d     |      |
| 76)  | 1,4-Dichlorobenzene       |      | 15.085 | 15.085 | 1.002  | 0m       | N.D.    | d     |      |
| 77)  | n-Butylbenzene            |      | 0.000  | 15.378 | 0.000  | 0        | N.D.    |       |      |
| 78)  | 1,2-Dichlorobenzene       |      | 15.488 | 15.494 | 1.029  | 0m       | N.D.    | d     |      |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.    |       |      |
| 80)  | 1,2,4-Trichlorobenzene    |      | 17.280 | 17.286 | 1.148  | 0m       | N.D.    | d     |      |
| 81)  | Hexachlorobutadiene       |      | 17.432 | 17.445 | 1.158  | 0m       | N.D.    | d     |      |
| 82)  | Naphthalene               |      | 17.633 | 17.634 | 1.171  | 0m       | N.D.    | d     |      |
| 83)  | 1,2,3-Trichlorobenzene    |      | 17.938 | 17.945 | 1.192  | 0m       | N.D.    | d     |      |
| 85)  | Acrolein                  | 56   | 6.026  | 6.032  | 0.638  | 201644   | 130.72  | ug/L  | 99   |
| 86)  | Trichlorotrifluoroethane  | 85   | 6.184  | 6.184  | 0.655  | 383778   | 83.94   | ug/L  | 87   |
| 87)  | Isopropyl Alcohol         | 45   | 6.288  | 6.288  | 0.666  | 933914   | 1389.39 | ug/L  | 96   |
| 88)  | Allyl chloride            | 41   | 6.611  | 6.611  | 0.700  | 2111859  | 123.01  | ug/L  | 87   |
| 89)  | tert-Butyl Alcohol        | 59   | 6.776  | 6.776  | 0.718  | 1434698  | 1161.30 | ug/L  | # 56 |
| 90)  | Acrylonitrile             | 53   | 7.020  | 7.014  | 0.744  | 437656   | 133.47  | ug/L  | 99   |
| 91)  | Isopropyl ether           | 45   | 7.556  | 7.556  | 0.800  | 986335   | 26.08   | ug/L  | 95   |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 7.672  | 7.678  | 0.813  | 392544   | 21.78   | ug/L  | 98   |
| 93)  | Ethyl tert-butyl ether    | 59   | 7.965  | 7.965  | 0.844  | 878320   | 22.68   | ug/L  | 95   |
| 94)  | Ethyl acetate             | 43   | 8.178  | 8.178  | 0.866  | 1159885  | 127.92  | ug/L  | 98   |
| 95)  | Propionitrile             | 54   | 8.245  | 8.239  | 0.873  | 180529   | 142.20  | ug/L  | 100  |
| 96)  | Methacrylonitrile         | 41   | 8.416  | 8.416  | 0.892  | 726033   | 132.57  | ug/L  | 96   |
| 97)  | Tetrahydrofuran           | 42   | 8.525  | 8.525  | 0.903  | 382796   | 139.17  | ug/L  | 87   |
| 98)  | Isobutyl alcohol          | 41   | 8.873  | 8.873  | 0.940  | 470285   | 1375.60 | ug/L  | 93   |
| 99)  | Methyl tert-amyl ether    | 73   | 9.214  | 9.214  | 0.976  | 623871   | 19.37   | ug/L  | 90   |
| 100) | Methyl methacrylate       | 69   | 10.068 | 10.068 | 1.067  | 681630   | 112.76  | ug/L  | 81   |
| 101) | 1,4-Dioxane               | 88   | 10.171 | 10.178 | 1.077  | 106926   | 1168.12 | ug/L  | 84   |
| 102) | 2-Nitropropane            | 43   | 10.549 | 10.549 | 1.118  | 374020   | 124.60  | ug/L  | 100  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D417.D  
Acq On : 14 Oct 2016 00:22  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-16|ICAL100|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Oct 14 08:49:14 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |    |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|----|
| 104) Ethyl methacrylate        | 69   | 11.348 | 11.348 | 0.899  | 1317191  | 104.82 | ug/L  | 87 |
| 106) 1-Chlorohexane            | 55   | 12.537 | 12.543 | 0.833  | 258706   | 22.60  | ug/L  | 93 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.689 | 13.689 | 0.909  | 541655   | 121.80 | ug/L  | 80 |
| 108) Cyclohexanone             | 42   | 13.793 | 13.793 | 0.916  | 172095   | 688.93 | ug/L  | 96 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.976 | 13.976 | 0.928  | 491892   | 117.19 | ug/L  | 89 |
| 110) Pentachloroethane         | 167  | 14.658 | 14.658 | 0.974  | 738517   | 89.47  | ug/L  | 99 |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 2353307  | 97.68  | ug/L  | 98 |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.591 | 15.597 | 1.036  | 743033   | 163.19 | ug/L  | 88 |

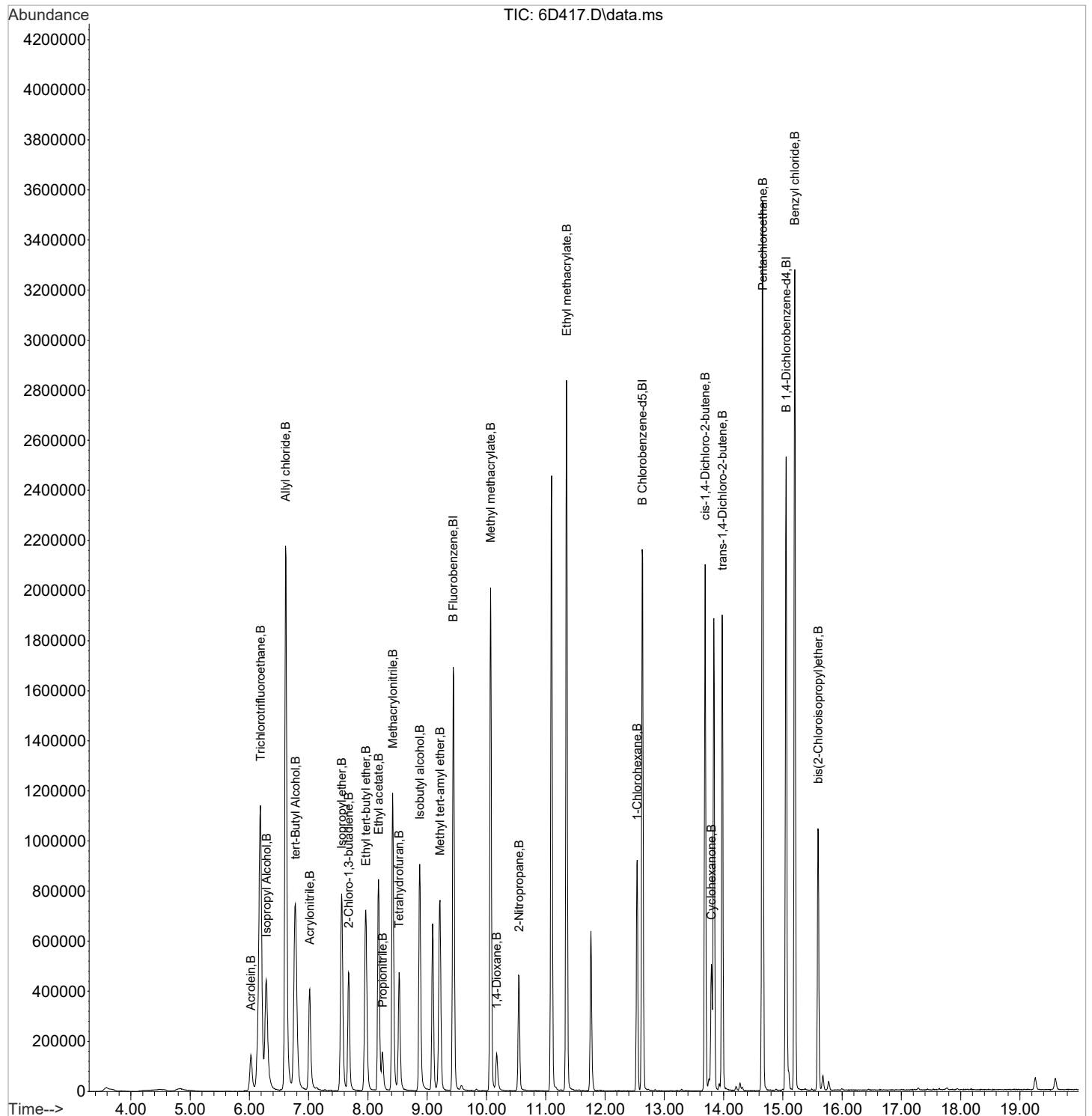
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D417.D  
Acq On : 14 Oct 2016 00:22  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-16|ICAL100|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Oct 14 08:49:14 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D418.D  
Acq On : 14 Oct 2016 00:52  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-17|ICAL250|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Oct 14 08:49:16 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.635 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 1535534  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.634 | 1.000  | 1196986  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 636698   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      | Dev (Min) |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 0d | 0.00 | ug/L |           |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 3.993  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 4.394  | 4.282  | 0.465  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 4.506  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.020  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 5.156  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 5.830  | 5.830  | 0.618  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 6.197  | 6.197  | 0.656  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 6.185  | 6.191  | 0.655  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 0.000  | 6.429  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 6.581  | 6.575  | 0.697  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 6.745  | 6.758  | 0.715  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 7.056  | 7.056  | 0.747  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.087  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    |      | 7.343  | 7.367  | 0.778  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 7.556  | 7.538  | 0.800  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 7.672  | 7.569  | 0.813  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 8.178  | 8.160  | 0.866  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 8.178  | 8.209  | 0.866  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 8.233  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 8.477  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 8.519  | 8.520  | 0.902  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 8.904  | 8.788  | 0.943  | 0m       | N.D. | d     |        |
| 27) Cyclohexane               |      | 8.867  | 8.879  | 0.939  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 8.873  | 8.946  | 0.940  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 0.000  | 8.977  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 9.178  | 9.172  | 0.972  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 9.190  | 9.184  | 0.974  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 9.318  | 9.294  | 0.987  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 9.720  | 9.568  | 1.030  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 9.830  | 9.830  | 1.041  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.068 | 9.934  | 1.067  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.080 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 10.074 | 10.074 | 1.067  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 0.000  | 10.336 | 0.000  | 0        | N.D. |       |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 10.793 | 10.787 | 1.143  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D418.D  
Acq On : 14 Oct 2016 00:52  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-17|ICAL250|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Oct 14 08:49:16 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 10.891 | 10.891 | 0.862  | 0m       | N.D.    | d     |     |
| 46)  | Toluene                   |      | 11.165 | 11.172 | 0.884  | 0m       | N.D.    | d     |     |
| 47)  | trans-1,3-Dichloroprop... |      | 11.336 | 11.342 | 0.898  | 0m       | N.D.    | d     |     |
| 48)  | 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D.    |       |     |
| 49)  | 2-Hexanone                |      | 0.000  | 11.751 | 0.000  | 0        | N.D.    |       |     |
| 50)  | 1,3-Dichloropropane       |      | 11.757 | 11.751 | 0.931  | 0m       | N.D.    | d     |     |
| 51)  | Tetrachloroethylene       |      | 11.763 | 11.763 | 0.931  | 0m       | N.D.    | d     |     |
| 52)  | Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D.    |       |     |
| 53)  | 1,2-Dibromoethane         |      | 12.177 | 12.177 | 0.964  | 0m       | N.D.    | d     |     |
| 54)  | Chlorobenzene             |      | 12.665 | 12.665 | 1.003  | 0m       | N.D.    | d     |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 12.720 | 12.726 | 1.007  | 0m       | N.D.    | d     |     |
| 56)  | Ethylbenzene              |      | 12.738 | 12.732 | 1.009  | 0m       | N.D.    | d     |     |
| 57)  | m,p-Xylenes               |      | 12.848 | 12.842 | 1.017  | 0m       | N.D.    | d     |     |
| 58)  | o-Xylene                  |      | 13.281 | 13.275 | 1.052  | 0m       | N.D.    | d     |     |
| 59)  | Styrene                   |      | 13.287 | 13.281 | 1.052  | 0m       | N.D.    | d     |     |
| 61)  | Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.    |       |     |
| 62)  | Isopropylbenzene          |      | 13.634 | 13.641 | 0.906  | 0m       | N.D.    | d     |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 13.933 | 13.927 | 0.925  | 0m       | N.D.    | d     |     |
| 65)  | 1,2,3-Trichloropropane    |      | 13.964 | 14.012 | 0.928  | 0m       | N.D.    | d     |     |
| 66)  | Bromobenzene              |      | 14.037 | 14.043 | 0.932  | 0m       | N.D.    | d     |     |
| 67)  | n-Propylbenzene           |      | 14.079 | 14.067 | 0.935  | 0m       | N.D.    | d     |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 14.226 | 14.226 | 0.945  | 0m       | N.D.    | d     |     |
| 69)  | 2-Chlorotoluene           |      | 14.213 | 14.214 | 0.944  | 0m       | N.D.    | d     |     |
| 70)  | 4-Chlorotoluene           |      | 14.317 | 14.317 | 0.951  | 0m       | N.D.    | d     |     |
| 71)  | tert-Butylbenzene         |      | 14.604 | 14.598 | 0.970  | 0m       | N.D.    | d     |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 14.634 | 14.640 | 0.972  | 0m       | N.D.    | d     |     |
| 73)  | sec-Butylbenzene          |      | 14.823 | 14.823 | 0.985  | 0m       | N.D.    | d     |     |
| 74)  | 4-Isopropyltoluene        |      | 14.658 | 14.598 | 0.974  | 0m       | N.D.    | d     |     |
| 75)  | 1,3-Dichlorobenzene       |      | 15.000 | 15.000 | 0.996  | 0m       | N.D.    | d     |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.085 | 15.085 | 1.002  | 0m       | N.D.    | d     |     |
| 77)  | n-Butylbenzene            |      | 0.000  | 15.378 | 0.000  | 0        | N.D.    |       |     |
| 78)  | 1,2-Dichlorobenzene       |      | 15.488 | 15.494 | 1.029  | 0m       | N.D.    | d     |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.    |       |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 17.292 | 17.286 | 1.149  | 0m       | N.D.    | d     |     |
| 81)  | Hexachlorobutadiene       |      | 17.445 | 17.445 | 1.159  | 0m       | N.D.    | d     |     |
| 82)  | Naphthalene               |      | 17.634 | 17.634 | 1.171  | 0m       | N.D.    | d     |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 17.938 | 17.945 | 1.192  | 0m       | N.D.    | d     |     |
| 85)  | Acrolein                  | 56   | 6.026  | 6.032  | 0.638  | 493073   | 328.85  | ug/L  | 99  |
| 86)  | Trichlorotrifluoroethane  | 85   | 6.185  | 6.184  | 0.655  | 971027   | 218.52  | ug/L  | 89  |
| 87)  | Isopropyl Alcohol         | 45   | 6.282  | 6.288  | 0.665  | 2240745  | 3429.68 | ug/L  | 96  |
| 88)  | Allyl chloride            | 41   | 6.611  | 6.611  | 0.700  | 5019482  | 300.80  | ug/L  | 87  |
| 89)  | tert-Butyl Alcohol        | 59   | 6.770  | 6.776  | 0.717  | 3377084  | 2812.33 | ug/L  | 95  |
| 90)  | Acrylonitrile             | 53   | 7.014  | 7.014  | 0.743  | 1033559  | 324.29  | ug/L  | 99  |
| 91)  | Isopropyl ether           | 45   | 7.556  | 7.556  | 0.800  | 2369312  | 64.46   | ug/L  | 94  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 7.672  | 7.678  | 0.813  | 982227   | 56.07   | ug/L  | 98  |
| 93)  | Ethyl tert-butyl ether    | 59   | 7.965  | 7.965  | 0.844  | 2109100  | 56.04   | ug/L  | 96  |
| 94)  | Ethyl acetate             | 43   | 8.178  | 8.178  | 0.866  | 2698924  | 306.24  | ug/L  | 98  |
| 95)  | Propionitrile             | 54   | 8.245  | 8.239  | 0.873  | 417324   | 338.18  | ug/L  | 100 |
| 96)  | Methacrylonitrile         | 41   | 8.416  | 8.416  | 0.892  | 1695772  | 318.56  | ug/L  | 95  |
| 97)  | Tetrahydrofuran           | 42   | 8.526  | 8.525  | 0.903  | 880225   | 329.24  | ug/L  | 88  |
| 98)  | Isobutyl alcohol          | 41   | 8.873  | 8.873  | 0.940  | 1060997  | 3192.91 | ug/L  | 90  |
| 99)  | Methyl tert-amyl ether    | 73   | 9.214  | 9.214  | 0.976  | 1510096  | 48.24   | ug/L  | 93  |
| 100) | Methyl methacrylate       | 69   | 10.068 | 10.068 | 1.067  | 1577506  | 268.47  | ug/L  | 82  |
| 101) | 1,4-Dioxane               | 88   | 10.172 | 10.178 | 1.077  | 263879   | 2965.86 | ug/L  | 86  |
| 102) | 2-Nitropropane            | 43   | 10.543 | 10.549 | 1.117  | 931861   | 319.39  | ug/L  | 99  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D418.D  
Acq On : 14 Oct 2016 00:52  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-17|ICAL250|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Oct 14 08:49:16 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

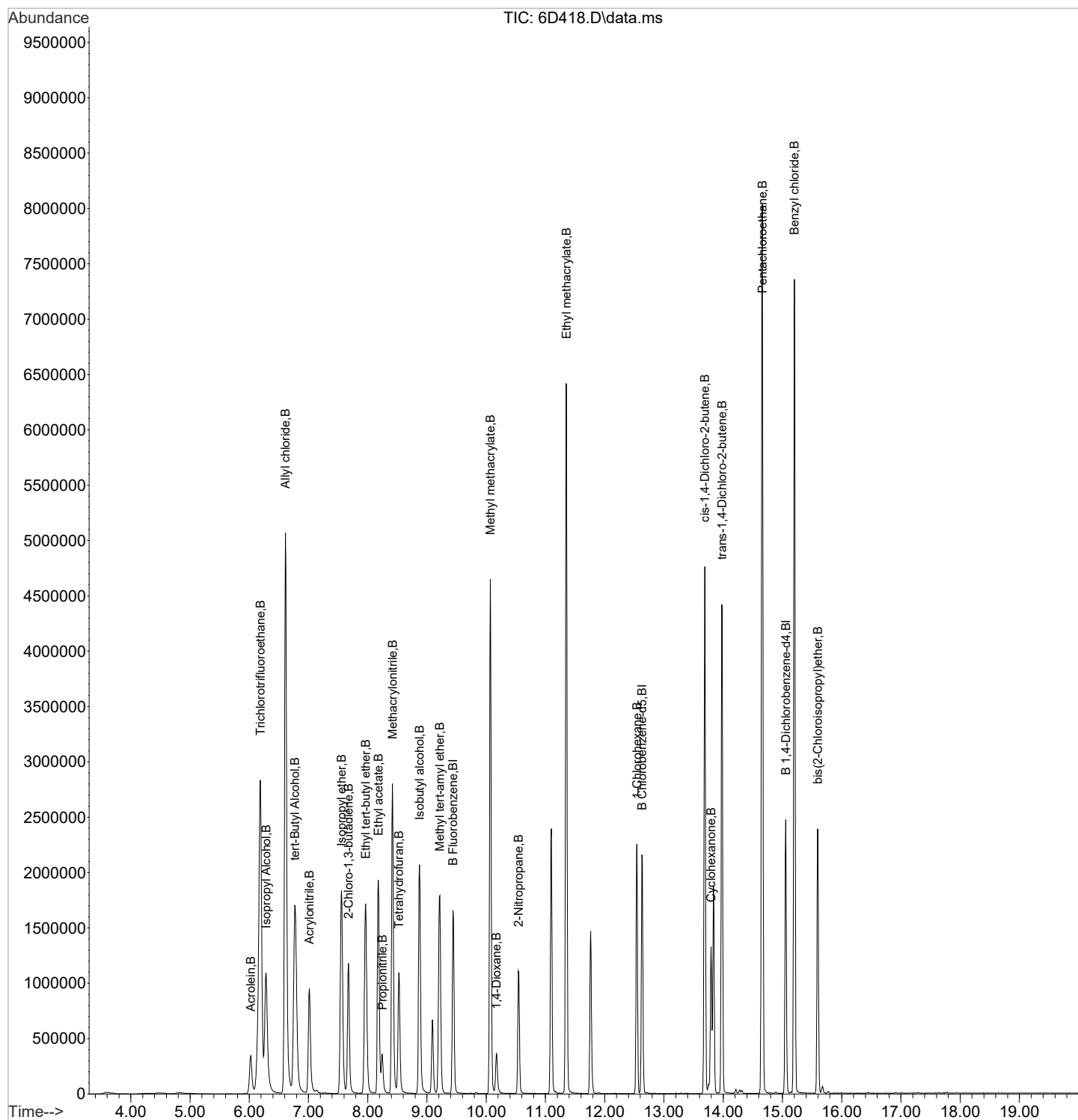
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |    |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|----|
| 104) Ethyl methacrylate        | 69   | 11.348 | 11.348 | 0.899  | 2980184  | 239.15  | ug/L  | 87 |
| 106) 1-Chlorohexane            | 55   | 12.543 | 12.543 | 0.833  | 620482   | 55.73   | ug/L  | 94 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.689 | 13.689 | 0.909  | 1256543  | 290.55  | ug/L  | 83 |
| 108) Cyclohexanone             | 42   | 13.793 | 13.793 | 0.916  | 421439   | 1734.88 | ug/L  | 95 |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.976 | 13.976 | 0.928  | 1142516  | 279.91  | ug/L  | 90 |
| 110) Pentachloroethane         | 167  | 14.658 | 14.658 | 0.974  | 1697914  | 211.53  | ug/L  | 99 |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 5274087  | 225.12  | ug/L  | 98 |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.591 | 15.597 | 1.036  | 1706721  | 385.46  | ug/L  | 89 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D418.D  
Acq On : 14 Oct 2016 00:52  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-17|ICAL250|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Oct 14 08:49:16 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D419.D  
Acq On : 14 Oct 2016 01:20  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-18|ICAL500|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 14 08:49:18 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.440  | 9.446  | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.635 | 12.635 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 0m       | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.446  | 1.000  | 1555197  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.635 | 12.634 | 1.000  | 1212223  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 646804   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |    |      |      |           |
|-----------------------------|----|--------|--------|-------|----|------|------|-----------|
| System Monitoring Compounds |    |        |        |       |    |      |      | Dev (Min) |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 0d | 0.00 | ug/L |           |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 0d | 0.00 | ug/L |           |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 0d | 0.00 | ug/L |           |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 3.993  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 4.161  | 4.282  | 0.441  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 0.000  | 4.506  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.020  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 5.156  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 5.830  | 5.830  | 0.618  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 6.179  | 6.197  | 0.655  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 6.179  | 6.191  | 0.655  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 0.000  | 6.429  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 6.575  | 6.575  | 0.696  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 6.758  | 6.758  | 0.716  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 7.050  | 7.056  | 0.747  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.087  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    |      | 7.361  | 7.367  | 0.780  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 7.556  | 7.538  | 0.800  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 7.678  | 7.569  | 0.813  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 8.178  | 8.160  | 0.866  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 8.178  | 8.209  | 0.866  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 8.233  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 8.477  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 8.520  | 8.520  | 0.902  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 8.788  | 8.788  | 0.931  | 0m       | N.D. | d     |        |
| 27) Cyclohexane               |      | 8.873  | 8.879  | 0.940  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 8.873  | 8.946  | 0.940  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 0.000  | 8.977  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 9.172  | 9.172  | 0.972  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 9.184  | 9.184  | 0.973  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 9.355  | 9.294  | 0.991  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 9.568  | 9.568  | 1.014  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 9.836  | 9.830  | 1.042  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.068 | 9.934  | 1.067  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 10.080 | 10.080 | 1.068  | 0m       | N.D. | d     |        |
| 38) Methylcyclohexane         |      | 10.068 | 10.074 | 1.067  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 10.330 | 10.336 | 1.094  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D. |       |        |
| 42) cis-1,3-Dichloropropylene |      | 10.781 | 10.787 | 1.142  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D419.D  
Acq On : 14 Oct 2016 01:20  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-18|ICAL500|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 14 08:49:18 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |        |
|------|---------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 44)  | 4-Methyl-2-pentanone      |      | 10.903 | 10.891 | 0.863  | 0m       | N.D.    | d     |        |
| 46)  | Toluene                   |      | 11.178 | 11.172 | 0.885  | 0m       | N.D.    | d     |        |
| 47)  | trans-1,3-Dichloroprop... |      | 11.342 | 11.342 | 0.898  | 0m       | N.D.    | d     |        |
| 48)  | 1,1,2-Trichloroethane     |      | 11.562 | 11.556 | 0.915  | 0m       | N.D.    | d     |        |
| 49)  | 2-Hexanone                |      | 11.757 | 11.751 | 0.931  | 0m       | N.D.    | d     |        |
| 50)  | 1,3-Dichloropropane       |      | 11.745 | 11.751 | 0.930  | 0m       | N.D.    | d     |        |
| 51)  | Tetrachloroethylene       |      | 11.763 | 11.763 | 0.931  | 0m       | N.D.    | d     |        |
| 52)  | Dibromochloromethane      |      | 11.982 | 12.013 | 0.948  | 0m       | N.D.    | d     |        |
| 53)  | 1,2-Dibromoethane         |      | 12.177 | 12.177 | 0.964  | 0m       | N.D.    | d     |        |
| 54)  | Chlorobenzene             |      | 12.653 | 12.665 | 1.001  | 0m       | N.D.    | d     |        |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 12.720 | 12.726 | 1.007  | 0m       | N.D.    | d     |        |
| 56)  | Ethylbenzene              |      | 0.000  | 12.732 | 0.000  | 0        | N.D.    |       |        |
| 57)  | m,p-Xylenes               |      | 12.854 | 12.842 | 1.017  | 0m       | N.D.    | d     |        |
| 58)  | o-Xylene                  |      | 13.275 | 13.275 | 1.051  | 0m       | N.D.    | d     |        |
| 59)  | Styrene                   |      | 13.281 | 13.281 | 1.051  | 0m       | N.D.    | d     |        |
| 61)  | Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.    |       |        |
| 62)  | Isopropylbenzene          |      | 13.647 | 13.641 | 0.906  | 0m       | N.D.    | d     |        |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 13.927 | 13.927 | 0.925  | 0m       | N.D.    | d     |        |
| 65)  | 1,2,3-Trichloropropane    |      | 14.000 | 14.012 | 0.930  | 0m       | N.D.    | d     |        |
| 66)  | Bromobenzene              |      | 14.037 | 14.043 | 0.932  | 0m       | N.D.    | d     |        |
| 67)  | n-Propylbenzene           |      | 0.000  | 14.067 | 0.000  | 0        | N.D.    |       |        |
| 68)  | 1,3,5-Trimethylbenzene    |      | 14.226 | 14.226 | 0.945  | 0m       | N.D.    | d     |        |
| 69)  | 2-Chlorotoluene           |      | 14.214 | 14.214 | 0.944  | 0m       | N.D.    | d     |        |
| 70)  | 4-Chlorotoluene           |      | 14.317 | 14.317 | 0.951  | 0m       | N.D.    | d     |        |
| 71)  | tert-Butylbenzene         |      | 14.659 | 14.598 | 0.974  | 0m       | N.D.    | d     |        |
| 72)  | 1,2,4-Trimethylbenzene    |      | 14.646 | 14.640 | 0.973  | 0m       | N.D.    | d     |        |
| 73)  | sec-Butylbenzene          |      | 14.817 | 14.823 | 0.984  | 0m       | N.D.    | d     |        |
| 74)  | 4-Isopropyltoluene        |      | 14.659 | 14.598 | 0.974  | 0m       | N.D.    | d     |        |
| 75)  | 1,3-Dichlorobenzene       |      | 15.006 | 15.000 | 0.997  | 0m       | N.D.    | d     |        |
| 76)  | 1,4-Dichlorobenzene       |      | 15.085 | 15.085 | 1.002  | 0m       | N.D.    | d     |        |
| 77)  | n-Butylbenzene            |      | 0.000  | 15.378 | 0.000  | 0        | N.D.    |       |        |
| 78)  | 1,2-Dichlorobenzene       |      | 15.488 | 15.494 | 1.029  | 0m       | N.D.    | d     |        |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.    |       |        |
| 80)  | 1,2,4-Trichlorobenzene    |      | 17.280 | 17.286 | 1.148  | 0m       | N.D.    | d     |        |
| 81)  | Hexachlorobutadiene       |      | 17.445 | 17.445 | 1.159  | 0m       | N.D.    | d     |        |
| 82)  | Naphthalene               |      | 17.634 | 17.634 | 1.171  | 0m       | N.D.    | d     |        |
| 83)  | 1,2,3-Trichlorobenzene    |      | 17.951 | 17.945 | 1.192  | 0m       | N.D.    | d     |        |
| 85)  | Acrolein                  | 56   | 6.026  | 6.032  | 0.638  | 1037567  | 683.24  | ug/L  | 100 A  |
| 86)  | Trichlorotrifluoroethane  | 85   | 6.185  | 6.184  | 0.655  | 1870122  | 415.53  | ug/L  | 91     |
| 87)  | Isopropyl Alcohol         | 45   | 6.282  | 6.288  | 0.665  | 4745590  | 7171.74 | ug/L  | 96 A   |
| 88)  | Allyl chloride            | 41   | 6.611  | 6.611  | 0.700  | 9152856  | 541.57  | ug/L  | 91 A   |
| 89)  | tert-Butyl Alcohol        | 59   | 6.776  | 6.776  | 0.718  | 7223084  | 5939.12 | ug/L  | # 56 A |
| 90)  | Acrylonitrile             | 53   | 7.014  | 7.014  | 0.743  | 2170663  | 672.47  | ug/L  | 99 A   |
| 91)  | Isopropyl ether           | 45   | 7.556  | 7.556  | 0.800  | 4691834  | 126.03  | ug/L  | 95 A   |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 7.672  | 7.678  | 0.813  | 1942225  | 109.47  | ug/L  | 98 A   |
| 93)  | Ethyl tert-butyl ether    | 59   | 7.965  | 7.965  | 0.844  | 4343806  | 113.96  | ug/L  | 96 A   |
| 94)  | Ethyl acetate             | 43   | 8.178  | 8.178  | 0.866  | 5454417  | 611.07  | ug/L  | 99 A   |
| 95)  | Propionitrile             | 54   | 8.239  | 8.239  | 0.873  | 899477   | 719.69  | ug/L  | 100 A  |
| 96)  | Methacrylonitrile         | 41   | 8.416  | 8.416  | 0.892  | 3457786  | 641.35  | ug/L  | 96 A   |
| 97)  | Tetrahydrofuran           | 42   | 8.526  | 8.525  | 0.903  | 1852483  | 684.13  | ug/L  | 89 A   |
| 98)  | Isobutyl alcohol          | 41   | 8.873  | 8.873  | 0.940  | 2234185  | 6638.43 | ug/L  | 91 A   |
| 99)  | Methyl tert-amyl ether    | 73   | 9.215  | 9.214  | 0.976  | 3130957  | 98.76   | ug/L  | 93     |
| 100) | Methyl methacrylate       | 69   | 10.068 | 10.068 | 1.067  | 3158460  | 530.74  | ug/L  | 85 A   |
| 101) | 1,4-Dioxane               | 88   | 10.172 | 10.178 | 1.077  | 549140   | 6094.00 | ug/L  | 87 A   |
| 102) | 2-Nitropropane            | 43   | 10.544 | 10.549 | 1.117  | 2014108  | 681.60  | ug/L  | 99 A   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D419.D  
Acq On : 14 Oct 2016 01:20  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-18|ICAL500|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 14 08:49:18 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |      |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|------|
| 104) Ethyl methacrylate        | 69   | 11.348 | 11.348 | 0.898  | 5762219  | 456.59  | ug/L  | 88   |
| 106) 1-Chlorohexane            | 55   | 12.543 | 12.543 | 0.833  | 1212883  | 107.24  | ug/L  | 93 A |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.689 | 13.689 | 0.909  | 2608634  | 593.77  | ug/L  | 84 A |
| 108) Cyclohexanone             | 42   | 13.793 | 13.793 | 0.916  | 871494   | 3531.52 | ug/L  | 95 A |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.976 | 13.976 | 0.928  | 2353867  | 567.68  | ug/L  | 89 A |
| 110) Pentachloroethane         | 167  | 14.659 | 14.658 | 0.974  | 3191674  | 391.42  | ug/L  | 98   |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 9341659  | 392.51  | ug/L  | 94   |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.591 | 15.597 | 1.036  | 3598036  | 799.91  | ug/L  | 90 A |

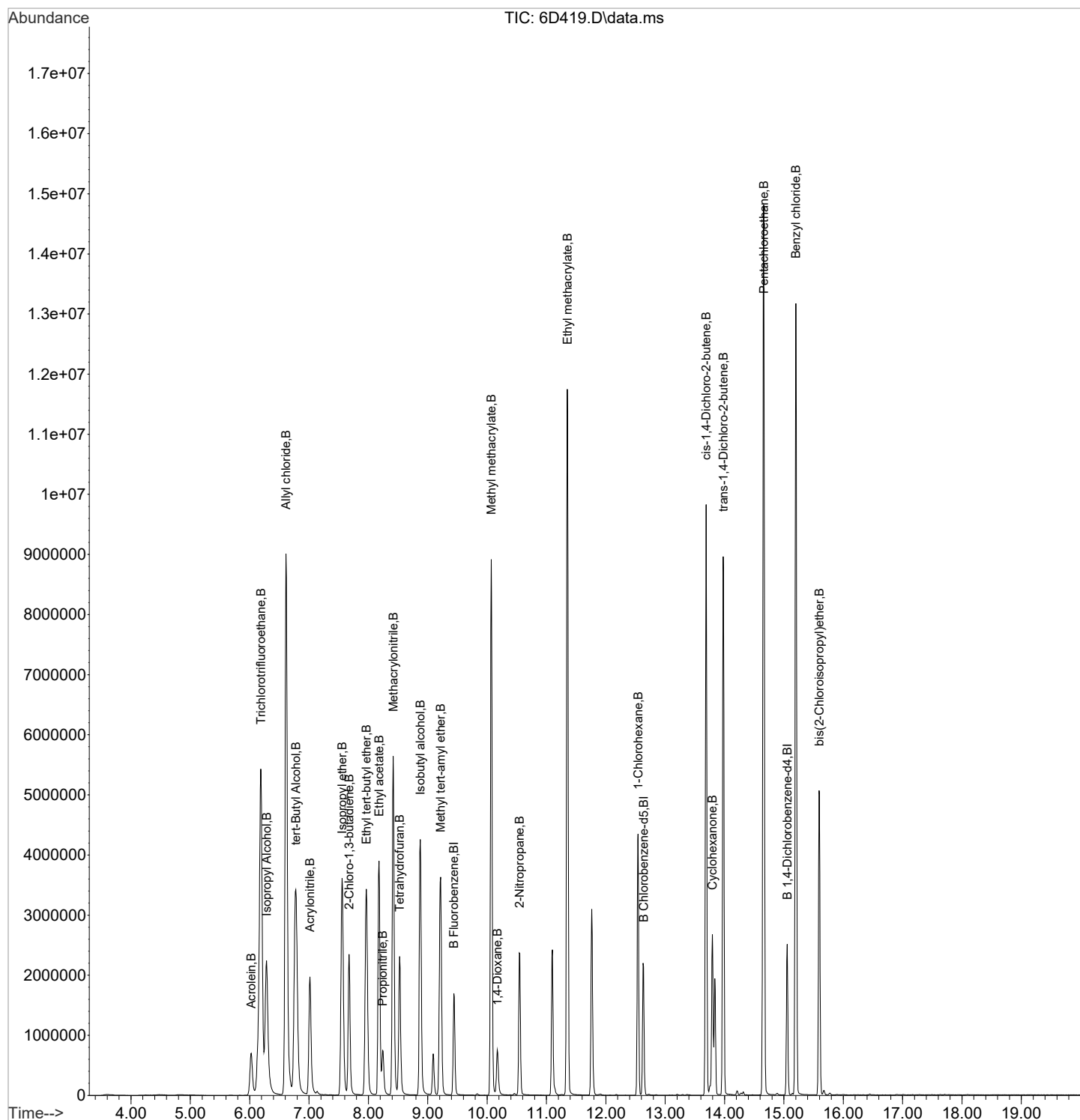
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D419.D  
Acq On : 14 Oct 2016 01:20  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-18|ICAL500|1|VOAF|1|VOA8260BL|  
Misc : ICAL 5ML - MIX[B]  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Oct 14 08:49:18 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Sep 13 12:44:43 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Instrument ID:** VOA6.I  
**Data File:** 101316V6\6D421.D  
**Lab Sample ID:** W6VM161013-19  
**Quant Type:** ISTD

**Client SDG:** 409254  
**Injection Date:** 14-OCT-16 02:18  
**Init. Cal. Date(s):** 13-OCT-16 17:11 - 14-OCT-16 01:2  
**Method:** 101316V6\VOA6-8260-101316.M  
**Method Update:** 14-OCT-16 08:57

| Compound                 | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|--------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| S1,2-Dichloroethane-d4   | 0.3288            | 0.3265    |                | .01    |         | -0.69951       | 60  |            | Averaged      |
| SToluene-d8              | 1.3333            | 1.33784   |                | .01    |         | 0.34051        | 60  |            | Averaged      |
| SBromofluorobenzene      | 1.0112            | 1.01522   |                | .01    |         | 0.39755        | 60  |            | Averaged      |
| Trichlorotrifluoroethane | 0.1187            | 0.10618   |                | .01    |         | -10.5476       | 60  |            | Averaged      |
| 1,4-Dioxane              | 0.0035            | 0.00329   |                | .01    |         | -6             | 60  |            | Averaged      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D421.D  
Acq On : 14 Oct 2016 02:18  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-19|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5ML - MIX[B]  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Oct 14 11:34:35 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1525507  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.635 | 12.629 | 1.000  | 1175915  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 624287   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1525507  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.635 | 12.628 | 1.000  | 1175915  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 624287   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |           |
|-----------------------------|----|--------|--------|-------|---------|-------|------|-----------|
| System Monitoring Compounds |    |        |        |       |         |       |      | Dev (Min) |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 498073  | 49.64 | ug/L | 0.00      |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.878 | 1573191 | 50.17 | ug/L | 0.00      |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 633786  | 50.20 | ug/L | 0.00      |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 3.993  | 4.001  | 0.423  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 4.242  | 4.282  | 0.449  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 4.482  | 4.498  | 0.475  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 5.012  | 5.020  | 0.531  | 0m       | N.D. | d     |        |
| 6) Chloroethane               |      | 5.148  | 5.156  | 0.545  | 0m       | N.D. | d     |        |
| 7) Trichlorofluoromethane     |      | 5.509  | 5.509  | 0.584  | 0m       | N.D. | d     |        |
| 8) Ethyl ether                |      | 5.830  | 5.830  | 0.618  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 6.276  | 6.197  | 0.665  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 6.191  | 6.191  | 0.656  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 6.416  | 6.429  | 0.680  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 6.575  | 6.575  | 0.696  | 0m       | N.D. | d     |        |
| 14) Carbon disulfide          |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 6.770  | 6.764  | 0.717  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 7.056  | 7.050  | 0.747  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 7.099  | 7.093  | 0.752  | 0m       | N.D. | d     |        |
| 18) Hexane                    |      | 7.367  | 7.367  | 0.780  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 7.556  | 7.538  | 0.800  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 7.562  | 7.575  | 0.801  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 8.178  | 8.160  | 0.866  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 8.178  | 8.209  | 0.866  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 8.215  | 8.233  | 0.870  | 0m       | N.D. | d     |        |
| 24) Bromochloromethane        |      | 8.465  | 8.483  | 0.897  | 0m       | N.D. | d     |        |
| 25) Chloroform                |      | 8.532  | 8.520  | 0.904  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 8.788  | 8.788  | 0.931  | 0m       | N.D. | d     |        |
| 27) Cyclohexane               |      | 8.873  | 8.873  | 0.940  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 8.867  | 8.946  | 0.939  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 8.977  | 8.977  | 0.951  | 0m       | N.D. | d     |        |
| 31) 1,2-Dichloroethane        |      | 9.215  | 9.172  | 0.976  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 9.190  | 9.184  | 0.974  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 9.336  | 9.294  | 0.989  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 9.593  | 9.568  | 1.016  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 9.830  | 9.830  | 1.041  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 9.940  | 9.928  | 1.053  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 10.074 | 10.080 | 1.067  | 0m       | N.D. | d     |        |
| 38) Methylcyclohexane         |      | 10.074 | 10.068 | 1.067  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D. |       |        |
| 40) Bromodichloromethane      |      | 10.342 | 10.330 | 1.096  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 10.574 | 10.568 | 1.120  | 0m       | N.D. | d     |        |
| 42) cis-1,3-Dichloropropylene |      | 10.787 | 10.787 | 1.143  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D421.D  
Acq On : 14 Oct 2016 02:18  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-19|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5ML - MIX[B]  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Oct 14 11:34:35 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 10.891 | 10.891 | 0.862  | 0m       | N.D.    | d     |     |
| 46)  | Toluene                   |      | 11.165 | 11.172 | 0.884  | 0m       | N.D.    | d     |     |
| 47)  | trans-1,3-Dichloroprop... |      | 11.348 | 11.342 | 0.898  | 0m       | N.D.    | d     |     |
| 48)  | 1,1,2-Trichloroethane     |      | 11.562 | 11.556 | 0.915  | 0m       | N.D.    | d     |     |
| 49)  | 2-Hexanone                |      | 11.757 | 11.745 | 0.931  | 0m       | N.D.    | d     |     |
| 50)  | 1,3-Dichloropropane       |      | 11.745 | 11.751 | 0.930  | 0m       | N.D.    | d     |     |
| 51)  | Tetrachloroethylene       |      | 11.763 | 11.763 | 0.931  | 0m       | N.D.    | d     |     |
| 52)  | Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D.    |       |     |
| 53)  | 1,2-Dibromoethane         |      | 12.177 | 12.177 | 0.964  | 0m       | N.D.    | d     |     |
| 54)  | Chlorobenzene             |      | 12.659 | 12.665 | 1.002  | 0m       | N.D.    | d     |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 12.720 | 12.720 | 1.007  | 0m       | N.D.    | d     |     |
| 56)  | Ethylbenzene              |      | 12.732 | 12.732 | 1.008  | 0m       | N.D.    | d     |     |
| 57)  | m,p-Xylenes               |      | 12.848 | 12.842 | 1.017  | 0m       | N.D.    | d     |     |
| 58)  | o-Xylene                  |      | 13.281 | 13.275 | 1.051  | 0m       | N.D.    | d     |     |
| 59)  | Styrene                   |      | 13.281 | 13.281 | 1.051  | 0m       | N.D.    | d     |     |
| 61)  | Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D.    |       |     |
| 62)  | Isopropylbenzene          |      | 13.641 | 13.641 | 0.906  | 0m       | N.D.    | d     |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 13.909 | 13.927 | 0.924  | 0m       | N.D.    | d     |     |
| 65)  | 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D.    |       |     |
| 66)  | Bromobenzene              |      | 14.031 | 14.043 | 0.932  | 0m       | N.D.    | d     |     |
| 67)  | n-Propylbenzene           |      | 14.067 | 14.067 | 0.934  | 0m       | N.D.    | d     |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 14.226 | 14.226 | 0.945  | 0m       | N.D.    | d     |     |
| 69)  | 2-Chlorotoluene           |      | 14.208 | 14.214 | 0.944  | 0m       | N.D.    | d     |     |
| 70)  | 4-Chlorotoluene           |      | 14.317 | 14.317 | 0.951  | 0m       | N.D.    | d     |     |
| 71)  | tert-Butylbenzene         |      | 14.659 | 14.592 | 0.974  | 0m       | N.D.    | d     |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 14.634 | 14.634 | 0.972  | 0m       | N.D.    | d     |     |
| 73)  | sec-Butylbenzene          |      | 14.823 | 14.817 | 0.985  | 0m       | N.D.    | d     |     |
| 74)  | 4-Isopropyltoluene        |      | 14.585 | 14.592 | 0.969  | 0m       | N.D.    | d     |     |
| 75)  | 1,3-Dichlorobenzene       |      | 14.988 | 14.994 | 0.996  | 0m       | N.D.    | d     |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.085 | 15.085 | 1.002  | 0m       | N.D.    | d     |     |
| 77)  | n-Butylbenzene            |      | 0.000  | 15.372 | 0.000  | 0        | N.D.    |       |     |
| 78)  | 1,2-Dichlorobenzene       |      | 15.494 | 15.494 | 1.029  | 0m       | N.D.    | d     |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D.    |       |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 17.286 | 17.280 | 1.148  | 0m       | N.D.    | d     |     |
| 81)  | Hexachlorobutadiene       |      | 17.445 | 17.445 | 1.159  | 0m       | N.D.    | d     |     |
| 82)  | Naphthalene               |      | 17.634 | 17.628 | 1.171  | 0m       | N.D.    | d     |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 17.951 | 17.945 | 1.192  | 0m       | N.D.    | d     |     |
| 85)  | Acrolein                  | 56   | 6.026  | 6.026  | 0.638  | 467534   | 237.48  | ug/L  | 99  |
| 86)  | Trichlorotrifluoroethane  | 85   | 6.185  | 6.185  | 0.655  | 809854   | 223.63  | ug/L  | 98  |
| 87)  | Isopropyl Alcohol         | 45   | 6.282  | 6.282  | 0.665  | 2001353  | 2298.96 | ug/L  | 100 |
| 88)  | Allyl chloride            | 41   | 6.611  | 6.611  | 0.700  | 3974585  | 200.73  | ug/L  | 100 |
| 89)  | tert-Butyl Alcohol        | 59   | 6.770  | 6.770  | 0.717  | 2991896  | 2296.04 | ug/L  | 99  |
| 90)  | Acrylonitrile             | 53   | 7.014  | 7.014  | 0.743  | 928523   | 230.92  | ug/L  | 100 |
| 91)  | Isopropyl ether           | 45   | 7.556  | 7.556  | 0.800  | 1787634  | 39.11   | ug/L  | 99  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 7.672  | 7.672  | 0.813  | 889594   | 48.91   | ug/L  | 99  |
| 93)  | Ethyl tert-butyl ether    | 59   | 7.965  | 7.965  | 0.844  | 1666178  | 40.97   | ug/L  | 99  |
| 94)  | Ethyl acetate             | 43   | 8.178  | 8.178  | 0.866  | 2397741  | 222.89  | ug/L  | 100 |
| 95)  | Propionitrile             | 54   | 8.245  | 8.245  | 0.873  | 370485   | 225.83  | ug/L  | 100 |
| 96)  | Methacrylonitrile         | 41   | 8.416  | 8.416  | 0.892  | 1475928  | 223.55  | ug/L  | 100 |
| 97)  | Tetrahydrofuran           | 42   | 8.526  | 8.526  | 0.903  | 790172   | 218.57  | ug/L  | 99  |
| 98)  | Isobutyl alcohol          | 41   | 8.873  | 8.873  | 0.940  | 986868   | 2314.18 | ug/L  | 98  |
| 99)  | Methyl tert-amyl ether    | 73   | 9.208  | 9.214  | 0.975  | 1230369  | 42.36   | ug/L  | 99  |
| 100) | Methyl methacrylate       | 69   | 10.068 | 10.068 | 1.067  | 1362932  | 219.33  | ug/L  | 99  |
| 101) | 1,4-Dioxane               | 88   | 10.172 | 10.172 | 1.077  | 250851   | 2380.95 | ug/L  | 99  |
| 102) | 2-Nitropropane            | 43   | 10.544 | 10.543 | 1.117  | 815938   | 212.39  | ug/L  | 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D421.D  
Acq On : 14 Oct 2016 02:18  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-19|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5ML - MIX[B]  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Oct 14 11:34:35 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

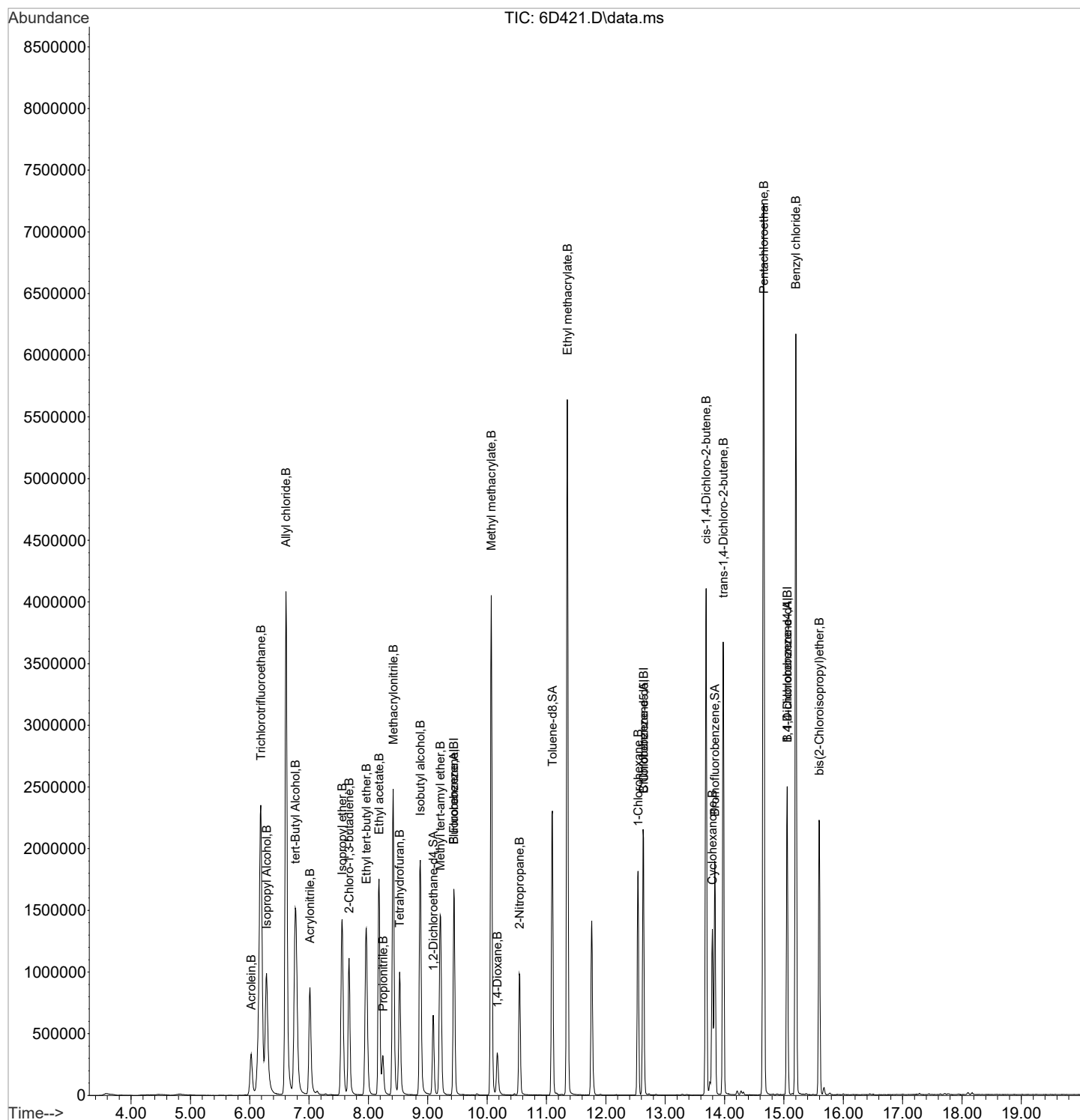
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 104) Ethyl methacrylate        | 69   | 11.348 | 11.348 | 0.898  | 2622747  | 223.21  | ug/L  | 99  |
| 106) 1-Chlorohexane            | 55   | 12.543 | 12.543 | 0.833  | 501606   | 43.05   | ug/L  | 100 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.689 | 13.689 | 0.909  | 1101688  | 234.61  | ug/L  | 99  |
| 108) Cyclohexanone             | 42   | 13.793 | 13.793 | 0.916  | 429159   | 1314.71 | ug/L  | 98  |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.976 | 13.976 | 0.928  | 934157   | 217.53  | ug/L  | 99  |
| 110) Pentachloroethane         | 167  | 14.659 | 14.658 | 0.974  | 1507139  | 236.42  | ug/L  | 100 |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 4402086  | 232.14  | ug/L  | 100 |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.591 | 15.591 | 1.036  | 1565320  | 236.85  | ug/L  | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D421.D  
Acq On : 14 Oct 2016 02:18  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161013-19|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5ML - MIX[B]  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Oct 14 11:34:35 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Client SDG:** 409254  
**Instrument ID:** VOA6.I  
**Injection Date:** 14-OCT-16 09:59  
**Data File:** 101416V6\6D502.D  
**Init. Cal. Date(s)** 13-OCT-16 17:11 - 14-OCT-16 01:2  
**Lab Sample ID** W6VM161014-01  
**Method:** 101316V6\VOA6-8260-101316.M  
**Quant Type** ISTD  
**Method Update:** 14-OCT-16 08:57

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| S 1,2-Dichloroethane-d4     | 0.3288         | 0.33872 |             | .01    |      | 3.01703     | 60  |         | Averaged   |      |
| S Toluene-d8                | 1.3333         | 1.31924 |             | .01    |      | -1.05453    | 60  |         | Averaged   |      |
| S Bromofluorobenzene        | 1.0112         | 1.01427 |             | .01    |      | 0.3036      | 60  |         | Averaged   |      |
| Dichlorodifluoromethane     | 50             | 68.11   | 50          |        |      | 36.22       | 60  |         | Linear     |      |
| Chloromethane               | 0.4302         | 0.47093 |             | .1     |      | 9.46769     | 60  |         | Averaged   | SPCC |
| Vinyl chloride              | 0.3479         | 0.394   |             | .01    |      | 13.25093    | 20  |         | Averaged   | CCC  |
| Bromomethane                | 0.2196         | 0.20994 |             | .01    |      | -4.39891    | 60  |         | Averaged   |      |
| Chloroethane                | 0.2558         | 0.26628 |             | .01    |      | 4.09695     | 60  |         | Averaged   |      |
| Trichlorofluoromethane      | 0.428          | 0.48878 |             | .01    |      | 14.20093    | 60  |         | Averaged   |      |
| 1,1-Dichloroethylene        | 0.5339         | 0.49128 |             | .01    |      | -7.98277    | 20  |         | Averaged   | CCC  |
| Acetone                     | 0.1384         | 0.13414 |             | .01    |      | -3.07803    | 60  |         | Averaged   |      |
| Carbon disulfide            | 0.84           | 0.82601 |             | .01    |      | -1.66548    | 60  |         | Averaged   |      |
| Methyl acetate              | 0.2717         | 0.26903 |             | .01    |      | -0.9827     | 60  |         | Averaged   |      |
| Methylene chloride          | 0.3505         | 0.31905 |             | .01    |      | -8.9729     | 60  |         | Averaged   |      |
| tert-Butyl methyl ether     | 0.987          | 0.9986  |             | .01    |      | 1.17528     | 60  |         | Averaged   |      |
| trans-1,2-Dichloroethylene  | 0.5501         | 0.5159  |             | .01    |      | -6.21705    | 60  |         | Averaged   |      |
| 1,1-Dichloroethane          | 0.6607         | 0.62449 |             | .1     |      | -5.48055    | 60  |         | Averaged   | SPCC |
| 2-Butanone                  | 0.2177         | 0.24156 |             | .01    |      | 10.96004    | 60  |         | Averaged   |      |
| cis-1,2-Dichloroethylene    | 0.6564         | 0.63768 |             | .01    |      | -2.85192    | 60  |         | Averaged   |      |
| Bromochloromethane          | 0.1702         | 0.16349 |             | .01    |      | -3.94242    | 60  |         | Averaged   |      |
| Chloroform                  | 0.5896         | 0.57092 |             | .01    |      | -3.16825    | 20  |         | Averaged   | CCC  |
| 1,1,1-Trichloroethane       | 0.5131         | 0.52918 |             | .01    |      | 3.13389     | 60  |         | Averaged   |      |
| Cyclohexane                 | 0.7743         | 0.78458 |             | .01    |      | 1.32765     | 60  |         | Averaged   |      |
| Carbon tetrachloride        | 0.4428         | 0.47389 |             | .01    |      | 7.02123     | 60  |         | Averaged   |      |
| 1,2-Dichloroethane          | 0.5693         | 0.55179 |             | .01    |      | -3.07571    | 60  |         | Averaged   |      |
| Benzene                     | 1.2673         | 1.20666 |             | .01    |      | -4.78498    | 60  |         | Averaged   |      |
| Trichloroethylene           | 0.3302         | 0.33021 |             | .01    |      | 0.00303     | 60  |         | Averaged   |      |
| Methylcyclohexane           | 0.5758         | 0.59136 |             | .01    |      | 2.70233     | 60  |         | Averaged   |      |
| 1,2-Dichloropropane         | 0.3885         | 0.37881 |             | .01    |      | -2.49421    | 20  |         | Averaged   | CCC  |
| Bromodichloromethane        | 0.4587         | 0.47017 |             | .01    |      | 2.50055     | 60  |         | Averaged   |      |
| cis-1,3-Dichloropropylene   | 0.5461         | 0.56643 |             | .01    |      | 3.72276     | 60  |         | Averaged   |      |
| 4-Methyl-2-pentanone        | 0.2004         | 0.21443 |             | .01    |      | 7.001       | 60  |         | Averaged   |      |
| Toluene                     | 1.8015         | 1.71125 |             | .01    |      | -5.00971    | 20  |         | Averaged   | CCC  |
| trans-1,3-Dichloropropylene | 0.6505         | 0.69023 |             | .01    |      | 6.10761     | 60  |         | Averaged   |      |
| 1,1,2-Trichloroethane       | 0.3092         | 0.3     |             | .01    |      | -2.97542    | 60  |         | Averaged   |      |
| 2-Hexanone                  | 0.4363         | 0.5186  |             | .01    |      | 18.86317    | 60  |         | Averaged   |      |
| Tetrachloroethylene         | 0.3404         | 0.33907 |             | .01    |      | -0.39072    | 60  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: VOA6.I

Injection Date: 14-OCT-16 09:59

Data File: 101416V6\6D502.D

Init. Cal. Date(s) 13-OCT-16 17:11 14-OCT-16 01:2

Lab Sample ID W6VM161014-01

Method: 101316V6\VOA6-8260-101316.M

Quant Type ISTD

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| Dibromochloromethane        | 0.4252         | 0.46112 |             | .01    |      | 8.44779     | 60  |         | Averaged   |
| 1,2-Dibromoethane           | 0.3757         | 0.38168 |             | .01    |      | 1.5917      | 60  |         | Averaged   |
| Chlorobenzene               | 1.2252         | 1.19745 |             | .3     |      | -2.26494    | 60  |         | Averaged   |
| Ethylbenzene                | 2.0375         | 2.0418  |             | .01    |      | 0.21104     | 20  |         | Averaged   |
| m,p-Xylenes                 | 0.8067         | 0.78279 |             | .01    |      | -2.96393    | 60  |         | Averaged   |
| Styrene                     | 1.3691         | 1.33913 |             | .01    |      | -2.18903    | 60  |         | Averaged   |
| o-Xylene                    | 1.7534         | 1.68716 |             | .01    |      | -3.7778     | 60  |         | Averaged   |
| Bromoform                   | 0.4858         | 0.55043 |             | .1     |      | 13.30383    | 60  |         | Averaged   |
| Isopropylbenzene            | 4.0447         | 4.0695  |             | .01    |      | 0.61315     | 60  |         | Averaged   |
| 1,1,2,2-Tetrachloroethane   | 0.9171         | 0.9409  |             | .3     |      | 2.59514     | 60  |         | Averaged   |
| 1,3-Dichlorobenzene         | 1.9789         | 1.93068 |             | .01    |      | -2.43671    | 60  |         | Averaged   |
| 1,4-Dichlorobenzene         | 1.9669         | 1.92966 |             | .01    |      | -1.89333    | 60  |         | Averaged   |
| 1,2-Dichlorobenzene         | 1.9234         | 1.88376 |             | .01    |      | -2.06093    | 60  |         | Averaged   |
| 1,2-Dibromo-3-chloropropane | 0.1888         | 0.2259  |             | .01    |      | 19.65042    | 60  |         | Averaged   |
| 1,2,4-Trichlorobenzene      | 1.486          | 1.52591 |             | .01    |      | 2.68573     | 60  |         | Averaged   |
| 1,2,3-Trichlorobenzene      | 1.3288         | 1.35976 |             | .01    |      | 2.32992     | 60  |         | Averaged   |

SPCC

CCC

SPCC

SPCC



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101416V6\  
Data File : 6D502.D  
Acq On : 14 Oct 2016 09:59  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161014-01|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5ML - MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 14 10:21:15 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |           |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|-----------|
| Internal Standards            |      |        |        |        |          |         |       | Dev (Min) |
| 1) Fluorobenzene              | 96   | 9.446  | 9.440  | 1.000  | 1559765  | 50.00   | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.634 | 12.629 | 1.000  | 1223939  | 50.00   | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 650180   | 50.00   | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.446  | 9.440  | 1.000  | 1559765  | 50.00   | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.634 | 12.628 | 1.000  | 1223939  | 50.00   | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 650180   | 50.00   | ug/L  | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |         |       | Dev (Min) |
| 30) 1,2-Dichloroethane-d4     | 65   | 9.092  | 9.093  | 0.963  | 528323   | 51.50   | ug/L  | 0.00      |
| 45) Toluene-d8                | 98   | 11.098 | 11.098 | 0.878  | 1614666  | 49.47   | ug/L  | 0.00      |
| 63) Bromofluorobenzene        | 95   | 13.835 | 13.836 | 0.919  | 659460   | 50.15   | ug/L  | 0.00      |
| Target Compounds              |      |        |        |        |          |         |       | QValue    |
| 2) Dichlorodifluoromethane    | 85   | 3.993  | 4.001  | 0.423  | 651995   | 68.11   | ug/L  | 100       |
| 3) Chloromethane              | 50   | 4.273  | 4.282  | 0.452  | 734536   | 54.74   | ug/L  | 100       |
| 4) Vinyl chloride             | 62   | 4.498  | 4.498  | 0.476  | 614541   | 56.63   | ug/L  | 99        |
| 5) Bromomethane               | 94   | 5.020  | 5.020  | 0.531  | 327460   | 47.80   | ug/L  | 99        |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 415336   | 52.05   | ug/L  | 99        |
| 7) Trichlorofluoromethane     | 101  | 5.501  | 5.509  | 0.582  | 762382   | 57.10   | ug/L  | 100       |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.617  | 496655   | 46.82   | ug/L  | 92        |
| 9) Acetone                    | 43   | 6.197  | 6.197  | 0.656  | 1046173  | 242.32  | ug/L  | 100       |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.655  | 766280   | 46.01   | ug/L  | 99        |
| 11) Iodomethane               | 142  | 6.428  | 6.429  | 0.681  | 3435401  | 238.12  | ug/L  | 100       |
| 12) Acetonitrile              | 41   | 6.544  | 6.550  | 0.693  | 1813781  | 1208.40 | ug/L  | 99        |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 2098131  | 247.56  | ug/L  | 100       |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.693  | 6441934  | 245.83  | ug/L  | 100       |
| 15) Methylene chloride        | 84   | 6.758  | 6.764  | 0.715  | 497640   | 45.51   | ug/L  | 98        |
| 16) tert-Butyl methyl ether   | 73   | 7.050  | 7.050  | 0.746  | 1557582  | 50.59   | ug/L  | 100       |
| 17) trans-1,2-Dichloroethy... | 61   | 7.087  | 7.093  | 0.750  | 804685   | 46.89   | ug/L  | 99        |
| 18) Hexane                    | 57   | 7.361  | 7.367  | 0.779  | 964292   | 55.29   | ug/L  | 100       |
| 19) Vinyl acetate             | 43   | 7.538  | 7.538  | 0.798  | 6498563  | 273.77  | ug/L  | 99        |
| 20) 1,1-Dichloroethane        | 63   | 7.568  | 7.575  | 0.801  | 974050   | 47.26   | ug/L  | 100       |
| 21) 2-Butanone                | 43   | 8.160  | 8.160  | 0.864  | 1883870  | 277.38  | ug/L  | 100       |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.208  | 8.209  | 0.869  | 994629   | 48.58   | ug/L  | 98        |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 831744   | 54.99   | ug/L  | 98        |
| 24) Bromochloromethane        | 128  | 8.483  | 8.483  | 0.898  | 255010   | 48.04   | ug/L  | 99        |
| 25) Chloroform                | 83   | 8.519  | 8.520  | 0.902  | 890505   | 48.41   | ug/L  | 100       |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.930  | 825397   | 51.57   | ug/L  | 99        |
| 27) Cyclohexane               | 56   | 8.873  | 8.873  | 0.939  | 1223753  | 50.66   | ug/L  | 100       |
| 28) 1,1-Dichloropropene       | 75   | 8.946  | 8.946  | 0.947  | 652008   | 50.53   | ug/L  | 99        |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.950  | 739155   | 53.51   | ug/L  | 99        |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.971  | 860664   | 48.46   | ug/L  | 100       |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.972  | 1882105  | 47.61   | ug/L  | 100       |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.984  | 1018044  | 50.47   | ug/L  | 99        |
| 34) n-Butyl alcohol           | 56   | 9.568  | 9.568  | 1.013  | 2281139  | 5697.61 | ug/L  | 99        |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 515055   | 50.00   | ug/L  | 98        |
| 36) 2-Pentanone               | 43   | 9.928  | 9.928  | 1.051  | 2693937  | 300.41  | ug/L  | 100       |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.067  | 590849   | 48.75   | ug/L  | 99        |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.068 | 1.066  | 922378   | 51.35   | ug/L  | 98        |
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.081  | 304853   | 49.55   | ug/L  | 99        |
| 40) Bromodichloromethane      | 83   | 10.336 | 10.330 | 1.094  | 733356   | 51.25   | ug/L  | 100       |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 1648313  | 226.24  | ug/L  | 100       |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.142  | 883496   | 51.87   | ug/L  | 100       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101416V6\  
Data File : 6D502.D  
Acq On : 14 Oct 2016 09:59  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161014-01|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5ML - MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 14 10:21:15 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-----------|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 1312223  | 267.56 | ug/L 100  |
| 46)  | Toluene                   | 91   | 11.171 | 11.172 | 0.884  | 2094462  | 47.49  | ug/L 99   |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.342 | 11.342 | 0.898  | 844802   | 53.06  | ug/L 99   |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.555 | 11.556 | 0.915  | 367181   | 48.52  | ug/L 98   |
| 49)  | 2-Hexanone                | 43   | 11.750 | 11.745 | 0.930  | 3173664  | 297.15 | ug/L 100  |
| 50)  | 1,3-Dichloropropane       | 76   | 11.750 | 11.751 | 0.930  | 753358   | 48.98  | ug/L 89   |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 415007   | 49.80  | ug/L 100  |
| 52)  | Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 564384   | 54.22  | ug/L 100  |
| 53)  | 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 467157   | 50.80  | ug/L 100  |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.002  | 1465607  | 48.87  | ug/L 99   |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.720 | 1.007  | 552595   | 51.27  | ug/L 100  |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 2499038  | 50.11  | ug/L 100  |
| 57)  | m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.016  | 1916184  | 97.04  | ug/L 100  |
| 58)  | o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 2064983  | 48.11  | ug/L 100  |
| 59)  | Styrene                   | 104  | 13.281 | 13.281 | 1.051  | 1639009  | 48.90  | ug/L 100  |
| 61)  | Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 357880   | 56.66  | ug/L 100  |
| 62)  | Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 2645909  | 50.31  | ug/L 99   |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 611757   | 51.30  | ug/L 99   |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.012 | 14.012 | 0.931  | 197971   | 52.03  | ug/L 97   |
| 66)  | Bromobenzene              | 156  | 14.043 | 14.043 | 0.933  | 682536   | 49.32  | ug/L 99   |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 3002513  | 49.50  | ug/L 100  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 2298774  | 49.16  | ug/L 100  |
| 69)  | 2-Chlorotoluene           | 126  | 14.213 | 14.214 | 0.944  | 622224   | 50.18  | ug/L 100  |
| 70)  | 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 1982812  | 49.52  | ug/L 100  |
| 71)  | tert-Butylbenzene         | 134  | 14.597 | 14.592 | 0.970  | 482117   | 50.78  | ug/L # 88 |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.640 | 14.634 | 0.972  | 2389069  | 49.29  | ug/L 100  |
| 73)  | sec-Butylbenzene          | 105  | 14.817 | 14.817 | 0.984  | 2980691  | 50.63  | ug/L 99   |
| 74)  | 4-Isopropyltoluene        | 119  | 14.591 | 14.592 | 0.969  | 2030470  | 49.61  | ug/L 92   |
| 75)  | 1,3-Dichlorobenzene       | 146  | 14.994 | 14.994 | 0.996  | 1255290  | 48.78  | ug/L 99   |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 1254625  | 49.05  | ug/L 99   |
| 77)  | n-Butylbenzene            | 91   | 15.378 | 15.372 | 1.021  | 2444642  | 51.54  | ug/L 100  |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 1224782  | 48.97  | ug/L 99   |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 146874   | 59.82  | ug/L 97   |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.280 | 1.148  | 992117   | 51.34  | ug/L 98   |
| 81)  | Hexachlorobutadiene       | 225  | 17.444 | 17.445 | 1.159  | 598271   | 52.41  | ug/L 99   |
| 82)  | Naphthalene               | 128  | 17.633 | 17.628 | 1.171  | 2104769  | 52.57  | ug/L 100  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.944 | 17.945 | 1.192  | 884092   | 51.17  | ug/L 99   |
| 85)  | Acrolein                  |      | 5.953  | 6.026  | 0.630  | 0m       | N.D.   | d         |
| 86)  | Trichlorotrifluoroethane  |      | 6.178  | 6.185  | 0.654  | 0m       | N.D.   | d         |
| 87)  | Isopropyl Alcohol         |      | 0.000  | 6.282  | 0.000  | 0        | N.D.   |           |
| 88)  | Allyl chloride            |      | 6.544  | 6.611  | 0.693  | 0m       | N.D.   | d         |
| 89)  | tert-Butyl Alcohol        |      | 0.000  | 6.770  | 0.000  | 0        | N.D.   |           |
| 90)  | Acrylonitrile             |      | 7.056  | 7.014  | 0.747  | 0m       | N.D.   | d         |
| 91)  | Isopropyl ether           |      | 7.538  | 7.556  | 0.798  | 0m       | N.D.   | d         |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.690  | 7.672  | 0.814  | 0m       | N.D.   | d         |
| 93)  | Ethyl tert-butyl ether    |      | 7.971  | 7.965  | 0.844  | 0m       | N.D.   | d         |
| 94)  | Ethyl acetate             |      | 8.160  | 8.178  | 0.864  | 0m       | N.D.   | d         |
| 95)  | Propionitrile             |      | 8.239  | 8.245  | 0.872  | 0m       | N.D.   | d         |
| 96)  | Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.   |           |
| 97)  | Tetrahydrofuran           |      | 8.519  | 8.526  | 0.902  | 0m       | N.D.   | d         |
| 98)  | Isobutyl alcohol          |      | 8.873  | 8.873  | 0.939  | 0m       | N.D.   | d         |
| 99)  | Methyl tert-amyl ether    |      | 9.184  | 9.214  | 0.972  | 0m       | N.D.   | d         |
| 100) | Methyl methacrylate       |      | 10.074 | 10.068 | 1.066  | 0m       | N.D.   | d         |
| 101) | 1,4-Dioxane               |      | 10.178 | 10.172 | 1.077  | 0m       | N.D.   | d         |
| 102) | 2-Nitropropane            |      | 10.568 | 10.543 | 1.119  | 0m       | N.D.   | d         |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101416V6\  
Data File : 6D502.D  
Acq On : 14 Oct 2016 09:59  
Operator : VXY1  
InstName : VOA6  
Sample : |W6VM161014-01|ICV|1|VOAF|1|VOA8260BL|  
Misc : ICV 5ML - MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

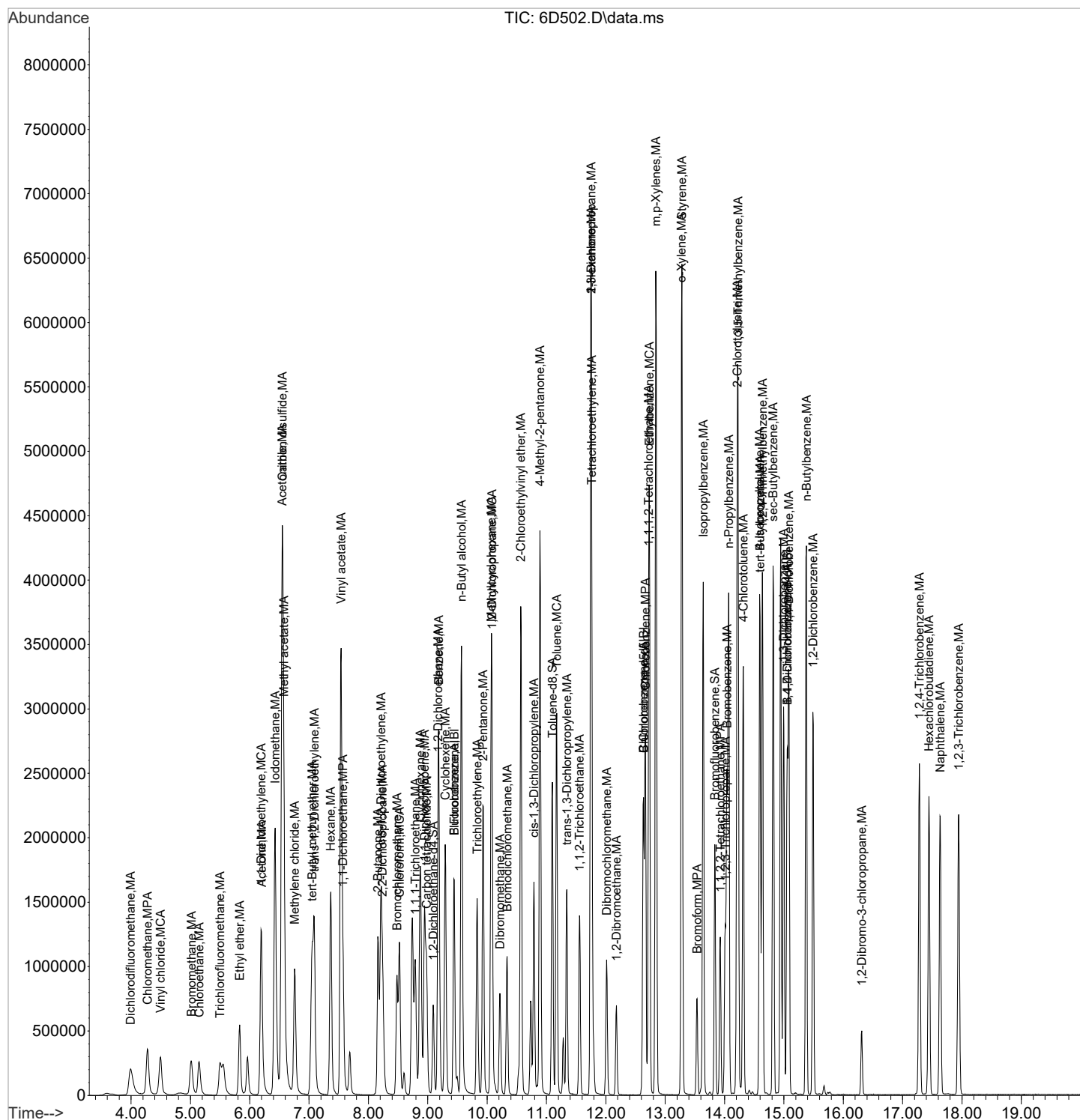
Quant Time: Oct 14 10:21:15 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 11.348 | 11.348 | 0.898  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 12.537 | 12.543 | 0.833  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.640 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.793 | 13.793 | 0.916  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 13.982 | 13.976 | 0.929  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 14.658 | 14.658 | 0.974  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 15.201 | 15.201 | 1.010  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.597 | 15.591 | 1.036  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path : C:\msdchem\1\data\101416V6\  
Data File : 6D502.D  
Acq On    : 14 Oct 2016   09:59  
Operator  : VXY1  
InstName  : VOA6  
Sample    : |W6VM161014-01|ICV|1|VOAF|1|VOA8260BL|  
Misc      : ICV 5ML - MIX[A]  
ALS Vial  : 2      Sample Multiplier: 1
```

Quant Time: Oct 14 10:21:15 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Instrument ID:** VOA6.I  
**Data File:** 110116V6\6G202.D  
**Lab Sample ID** W6VM161101-01  
**Quant Type** ISTD

**Client SDG:** 409254  
**Injection Date:** 01-NOV-16 09:37  
**Init. Cal. Date(s)** 13-OCT-16 17:11 - 14-OCT-16 01:2  
**Method:** 101316V6\VOA6-8260-101316.M  
**Method Update:** 14-OCT-16 08:57

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |      |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|------|
| S 1,2-Dichloroethane-d4     | 0.3288         | 0.33859 |             | .01    |      | 2.97749     | 60  |         | Averaged   |      |
| S Toluene-d8                | 1.3333         | 1.37853 |             | .01    |      | 3.39233     | 60  |         | Averaged   |      |
| S Bromofluorobenzene        | 1.0112         | 1.04844 |             | .01    |      | 3.68275     | 60  |         | Averaged   |      |
| Dichlorodifluoromethane     | 50             | 63.3    | 50          |        |      | 26.6        | 60  |         | Linear     |      |
| Chloromethane               | 0.4302         | 0.4513  |             | .1     |      | 4.9047      | 60  |         | Averaged   | SPCC |
| Vinyl chloride              | 0.3479         | 0.39562 |             | .01    |      | 13.71659    | 20  |         | Averaged   | CCC  |
| Bromomethane                | 0.2196         | 0.27475 |             | .01    |      | 25.11384    | 60  |         | Averaged   |      |
| Chloroethane                | 0.2558         | 0.30205 |             | .01    |      | 18.08053    | 60  |         | Averaged   |      |
| Trichlorofluoromethane      | 0.428          | 0.52707 |             | .01    |      | 23.1472     | 60  |         | Averaged   |      |
| 1,1-Dichloroethylene        | 0.5339         | 0.5562  |             | .01    |      | 4.17681     | 20  |         | Averaged   | CCC  |
| Acetone                     | 0.1384         | 0.11836 |             | .01    |      | -14.47977   | 60  |         | Averaged   |      |
| Carbon disulfide            | 0.84           | 0.88898 |             | .01    |      | 5.83095     | 60  |         | Averaged   |      |
| Methyl acetate              | 0.2717         | 0.23094 |             | .01    |      | -15.00184   | 60  |         | Averaged   |      |
| Methylene chloride          | 0.3505         | 0.34576 |             | .01    |      | -1.35235    | 60  |         | Averaged   |      |
| tert-Butyl methyl ether     | 0.987          | 0.90256 |             | .01    |      | -8.55522    | 60  |         | Averaged   |      |
| trans-1,2-Dichloroethylene  | 0.5501         | 0.54047 |             | .01    |      | -1.75059    | 60  |         | Averaged   |      |
| 1,1-Dichloroethane          | 0.6607         | 0.63136 |             | .1     |      | -4.44074    | 60  |         | Averaged   | SPCC |
| 2-Butanone                  | 0.2177         | 0.20578 |             | .01    |      | -5.47542    | 60  |         | Averaged   |      |
| cis-1,2-Dichloroethylene    | 0.6564         | 0.61582 |             | .01    |      | -6.18221    | 60  |         | Averaged   |      |
| Bromochloromethane          | 0.1702         | 0.15542 |             | .01    |      | -8.6839     | 60  |         | Averaged   |      |
| Chloroform                  | 0.5896         | 0.54522 |             | .01    |      | -7.52714    | 20  |         | Averaged   | CCC  |
| 1,1,1-Trichloroethane       | 0.5131         | 0.52069 |             | .01    |      | 1.47924     | 60  |         | Averaged   |      |
| Cyclohexane                 | 0.7743         | 0.77175 |             | .01    |      | -0.32933    | 60  |         | Averaged   |      |
| Carbon tetrachloride        | 0.4428         | 0.46276 |             | .01    |      | 4.50768     | 60  |         | Averaged   |      |
| 1,2-Dichloroethane          | 0.5693         | 0.48733 |             | .01    |      | -14.39838   | 60  |         | Averaged   |      |
| Benzene                     | 1.2673         | 1.18235 |             | .01    |      | -6.70323    | 60  |         | Averaged   |      |
| Trichloroethylene           | 0.3302         | 0.31752 |             | .01    |      | -3.8401     | 60  |         | Averaged   |      |
| Methylcyclohexane           | 0.5758         | 0.58105 |             | .01    |      | 0.91177     | 60  |         | Averaged   |      |
| 1,2-Dichloropropane         | 0.3885         | 0.34499 |             | .01    |      | -11.19949   | 20  |         | Averaged   | CCC  |
| Bromodichloromethane        | 0.4587         | 0.41677 |             | .01    |      | -9.14105    | 60  |         | Averaged   |      |
| cis-1,3-Dichloropropylene   | 0.5461         | 0.49801 |             | .01    |      | -8.80608    | 60  |         | Averaged   |      |
| 4-Methyl-2-pentanone        | 0.2004         | 0.1913  |             | .01    |      | -4.54092    | 60  |         | Averaged   |      |
| Toluene                     | 1.8015         | 1.66885 |             | .01    |      | -7.36331    | 20  |         | Averaged   | CCC  |
| trans-1,3-Dichloropropylene | 0.6505         | 0.59954 |             | .01    |      | -7.83397    | 60  |         | Averaged   |      |
| 1,1,2-Trichloroethane       | 0.3092         | 0.26998 |             | .01    |      | -12.68435   | 60  |         | Averaged   |      |
| 2-Hexanone                  | 0.4363         | 0.45637 |             | .01    |      | 4.60005     | 60  |         | Averaged   |      |
| Tetrachloroethylene         | 0.3404         | 0.33113 |             | .01    |      | -2.72327    | 60  |         | Averaged   |      |

## Continuing Calibration Summary

Instrument ID: VOA6.I

Injection Date: 01-NOV-16 09:37

Data File: 110116V6\6G202.D

Init. Cal. Date(s) 13-OCT-16 17:11 14-OCT-16 01:2

Lab Sample ID W6VM161101-01

Method: 101316V6\VOA6-8260-101316.M

Quant Type ISTD

| Compound                    | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|-----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| Dibromochloromethane        | 0.4252         | 0.39309 |             | .01    |      | -7.55174    | 60  |         | Averaged   |
| 1,2-Dibromoethane           | 0.3757         | 0.34345 |             | .01    |      | -8.58398    | 60  |         | Averaged   |
| Chlorobenzene               | 1.2252         | 1.12744 |             | .3     |      | -7.97911    | 60  |         | Averaged   |
| Ethylbenzene                | 2.0375         | 1.94108 |             | .01    |      | -4.73227    | 20  |         | Averaged   |
| m,p-Xylenes                 | 0.8067         | 0.75941 |             | .01    |      | -5.86215    | 60  |         | Averaged   |
| Styrene                     | 1.3691         | 1.24085 |             | .01    |      | -9.36747    | 60  |         | Averaged   |
| o-Xylene                    | 1.7534         | 1.61046 |             | .01    |      | -8.15216    | 60  |         | Averaged   |
| Bromoform                   | 0.4858         | 0.45109 |             | .1     |      | -7.14492    | 60  |         | Averaged   |
| Isopropylbenzene            | 4.0447         | 3.9225  |             | .01    |      | -3.02124    | 60  |         | Averaged   |
| 1,1,2,2-Tetrachloroethane   | 0.9171         | 0.82146 |             | .3     |      | -10.42852   | 60  |         | Averaged   |
| 1,3-Dichlorobenzene         | 1.9789         | 1.81755 |             | .01    |      | -8.15352    | 60  |         | Averaged   |
| 1,4-Dichlorobenzene         | 1.9669         | 1.80349 |             | .01    |      | -8.308      | 60  |         | Averaged   |
| 1,2-Dichlorobenzene         | 1.9234         | 1.7183  |             | .01    |      | -10.66341   | 60  |         | Averaged   |
| 1,2-Dibromo-3-chloropropane | 0.1888         | 0.16844 |             | .01    |      | -10.7839    | 60  |         | Averaged   |
| 1,2,4-Trichlorobenzene      | 1.486          | 1.38683 |             | .01    |      | -6.67362    | 60  |         | Averaged   |
| 1,2,3-Trichlorobenzene      | 1.3288         | 1.21337 |             | .01    |      | -8.68679    | 60  |         | Averaged   |

SPCC

CCC

SPCC

SPCC

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G202.D  
Acq On : 01 Nov 2016 09:37  
Operator : ACJ  
InstName : VOA6  
Sample : |W6VM161101-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : CCV 5ML - MIX[A] 0621-06G/1024-07E  
ALS Vial : 2 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 01 10:00:58 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|-----------|
| Internal Standards            |      |        |        |        |          |         |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1822715  | 50.00   | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.629 | 1.000  | 1412183  | 50.00   | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 745710   | 50.00   | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1822715  | 50.00   | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.628 | 1.000  | 1412183  | 50.00   | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 745710   | 50.00   | ug/L  | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |         |       |           |
| 30) 1,2-Dichloroethane-d4     | 65   | 9.093  | 9.093  | 0.963  | 617157   | 51.48   | ug/L  | 0.00      |
| 45) Toluene-d8                | 98   | 11.098 | 11.098 | 0.879  | 1946733  | 51.69   | ug/L  | 0.00      |
| 63) Bromofluorobenzene        | 95   | 13.835 | 13.836 | 0.919  | 781835   | 51.84   | ug/L  | 0.00      |
| Target Compounds              |      |        |        |        |          |         |       |           |
| 2) Dichlorodifluoromethane    | 85   | 4.001  | 4.001  | 0.424  | 708597   | 63.30   | ug/L  | 100       |
| 3) Chloromethane              | 50   | 4.282  | 4.282  | 0.454  | 822595   | 52.46   | ug/L  | 100       |
| 4) Vinyl chloride             | 62   | 4.506  | 4.498  | 0.477  | 721102   | 56.86   | ug/L  | 100       |
| 5) Bromomethane               | 94   | 5.020  | 5.020  | 0.532  | 500799   | 62.55   | ug/L  | 100       |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 550548   | 59.04   | ug/L  | 100       |
| 7) Trichlorofluoromethane     | 101  | 5.501  | 5.509  | 0.583  | 960694   | 61.57   | ug/L  | 99        |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.618  | 583572   | 47.08   | ug/L  | 99        |
| 9) Acetone                    | 43   | 6.197  | 6.197  | 0.656  | 1078647  | 213.80  | ug/L  | 97        |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.656  | 1013794  | 52.09   | ug/L  | 99        |
| 11) Iodomethane               | 142  | 6.422  | 6.429  | 0.680  | 4157593  | 246.60  | ug/L  | 99        |
| 12) Acetonitrile              | 41   | 6.544  | 6.550  | 0.693  | 1789650  | 1020.31 | ug/L  | 99        |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 2104717  | 212.51  | ug/L  | 98        |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.694  | 8101785  | 264.56  | ug/L  | 100       |
| 15) Methylene chloride        | 84   | 6.758  | 6.764  | 0.716  | 630225   | 49.32   | ug/L  | 93        |
| 16) tert-Butyl methyl ether   | 73   | 7.050  | 7.050  | 0.747  | 1645101  | 45.72   | ug/L  | 99        |
| 17) trans-1,2-Dichloroethy... | 61   | 7.087  | 7.093  | 0.751  | 985129   | 49.13   | ug/L  | 99        |
| 18) Hexane                    | 57   | 7.361  | 7.367  | 0.780  | 3104     | N.D.    |       |           |
| 19) Vinyl acetate             | 43   | 7.532  | 7.538  | 0.798  | 6698627  | 241.49  | ug/L  | 97        |
| 20) 1,1-Dichloroethane        | 63   | 7.568  | 7.575  | 0.802  | 1150784  | 47.78   | ug/L  | 100       |
| 21) 2-Butanone                | 43   | 8.160  | 8.160  | 0.864  | 1875419  | 236.30  | ug/L  | 97        |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.209  | 8.209  | 0.870  | 1122467  | 46.91   | ug/L  | 100       |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 931685   | 52.71   | ug/L  | 95        |
| 24) Bromochloromethane        | 128  | 8.477  | 8.483  | 0.898  | 283288   | 45.67   | ug/L  | 95        |
| 25) Chloroform                | 83   | 8.519  | 8.520  | 0.902  | 993774   | 46.23   | ug/L  | 97        |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.931  | 949067   | 50.74   | ug/L  | 99        |
| 27) Cyclohexane               | 56   | 8.873  | 8.873  | 0.940  | 1406684  | 49.83   | ug/L  | 97        |
| 28) 1,1-Dichloropropene       | 75   | 8.946  | 8.946  | 0.948  | 765279   | 50.75   | ug/L  | 95        |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 843485   | 52.26   | ug/L  | 98        |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.972  | 888267   | 42.80   | ug/L  | 99        |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 2155096  | 46.65   | ug/L  | 99        |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.985  | 1195743  | 50.72   | ug/L  | 97        |
| 34) n-Butyl alcohol           | 56   | 9.568  | 9.568  | 1.014  | 2083758  | 4453.78 | ug/L  | 98        |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 578744   | 48.08   | ug/L  | 99        |
| 36) 2-Pentanone               | 43   | 10.068 | 9.928  | 1.067  | 77472    | 7.39    | ug/L  | 68        |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.068  | 628813   | 44.40   | ug/L  | 100       |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.068 | 1.067  | 1059081  | 50.46   | ug/L  | 97        |
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.082  | 322260   | 44.83   | ug/L  | 99        |
| 40) Bromodichloromethane      | 83   | 10.330 | 10.330 | 1.094  | 759659   | 45.43   | ug/L  | 99        |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 2014029  | 236.56  | ug/L  | 99        |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 907736   | 45.60   | ug/L  | 97        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G202.D  
Acq On : 01 Nov 2016 09:37  
Operator : ACJ  
InstName : VOA6  
Sample : |W6VM161101-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : CCV 5ML - MIX[A] 0621-06G/1024-07E  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 01 10:00:58 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units     |
|------|---------------------------|------|--------|--------|--------|----------|--------|-----------|
| 44)  | 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 1350724  | 238.70 | ug/L 96   |
| 46)  | Toluene                   | 91   | 11.171 | 11.172 | 0.885  | 2356721  | 46.32  | ug/L 100  |
| 47)  | trans-1,3-Dichloroprop... | 75   | 11.342 | 11.342 | 0.898  | 846663   | 46.09  | ug/L 96   |
| 48)  | 1,1,2-Trichloroethane     | 83   | 11.555 | 11.556 | 0.915  | 381255   | 43.66  | ug/L 98   |
| 49)  | 2-Hexanone                | 43   | 11.744 | 11.745 | 0.930  | 3222411  | 261.49 | ug/L 98   |
| 50)  | 1,3-Dichloropropane       | 76   | 11.751 | 11.751 | 0.930  | 767232   | 43.23  | ug/L 94   |
| 51)  | Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 467616   | 48.64  | ug/L 99   |
| 52)  | Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 555117   | 46.22  | ug/L 99   |
| 53)  | 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 485017   | 45.71  | ug/L 98   |
| 54)  | Chlorobenzene             | 112  | 12.665 | 12.665 | 1.003  | 1592147  | 46.01  | ug/L 98   |
| 55)  | 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.720 | 1.007  | 584723   | 47.02  | ug/L 99   |
| 56)  | Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 2741164  | 47.63  | ug/L 100  |
| 57)  | m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 2144862  | 94.14  | ug/L 98   |
| 58)  | o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 2274265  | 45.92  | ug/L 99   |
| 59)  | Styrene                   | 104  | 13.281 | 13.281 | 1.052  | 1752310  | 45.31  | ug/L 99   |
| 61)  | Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 336383   | 46.43  | ug/L 100  |
| 62)  | Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 2925046  | 48.49  | ug/L 99   |
| 64)  | 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 612572   | 44.79  | ug/L 99   |
| 65)  | 1,2,3-Trichloropropane    | 110  | 14.012 | 14.012 | 0.931  | 199936   | 45.81  | ug/L # 90 |
| 66)  | Bromobenzene              | 156  | 14.037 | 14.043 | 0.932  | 729875   | 45.98  | ug/L 97   |
| 67)  | n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 3359815  | 48.29  | ug/L 100  |
| 68)  | 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 2533374  | 47.24  | ug/L 100  |
| 69)  | 2-Chlorotoluene           | 126  | 14.213 | 14.214 | 0.944  | 677414   | 47.63  | ug/L 99   |
| 70)  | 4-Chlorotoluene           | 91   | 14.311 | 14.317 | 0.951  | 2132410  | 46.43  | ug/L 100  |
| 71)  | tert-Butylbenzene         | 134  | 14.591 | 14.592 | 0.969  | 525431   | 48.25  | ug/L # 87 |
| 72)  | 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.634 | 0.972  | 2593928  | 46.66  | ug/L 99   |
| 73)  | sec-Butylbenzene          | 105  | 14.817 | 14.817 | 0.984  | 3268643  | 48.41  | ug/L 100  |
| 74)  | 4-Isopropyltoluene        | 119  | 14.591 | 14.592 | 0.969  | 2210929  | 47.10  | ug/L 93   |
| 75)  | 1,3-Dichlorobenzene       | 146  | 14.994 | 14.994 | 0.996  | 1355365  | 45.92  | ug/L 99   |
| 76)  | 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 1344883  | 45.85  | ug/L 99   |
| 77)  | n-Butylbenzene            | 91   | 15.378 | 15.372 | 1.021  | 2601948  | 47.83  | ug/L 99   |
| 78)  | 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 1281353  | 44.67  | ug/L 99   |
| 79)  | 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 125605   | 44.61  | ug/L 98   |
| 80)  | 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.280 | 1.148  | 1034172  | 46.66  | ug/L 98   |
| 81)  | Hexachlorobutadiene       | 225  | 17.445 | 17.445 | 1.159  | 644081   | 49.19  | ug/L 100  |
| 82)  | Naphthalene               | 128  | 17.627 | 17.628 | 1.171  | 2092035  | 45.55  | ug/L 100  |
| 83)  | 1,2,3-Trichlorobenzene    | 180  | 17.944 | 17.945 | 1.192  | 904825   | 45.66  | ug/L 99   |
| 85)  | Acrolein                  |      | 6.026  | 6.026  | 0.638  | 0m       | N.D.   | d         |
| 86)  | Trichlorotrifluoroethane  |      | 6.185  | 6.185  | 0.655  | 0m       | N.D.   | d         |
| 87)  | Isopropyl Alcohol         |      | 6.276  | 6.282  | 0.665  | 0m       | N.D.   | d         |
| 88)  | Allyl chloride            |      | 6.544  | 6.611  | 0.693  | 0m       | N.D.   | d         |
| 89)  | tert-Butyl Alcohol        |      | 6.886  | 6.770  | 0.729  | 0m       | N.D.   | d         |
| 90)  | Acrylonitrile             |      | 7.050  | 7.014  | 0.747  | 0m       | N.D.   | d         |
| 91)  | Isopropyl ether           |      | 7.532  | 7.556  | 0.798  | 0m       | N.D.   | d         |
| 92)  | 2-Chloro-1,3-butadiene    |      | 7.690  | 7.672  | 0.815  | 0m       | N.D.   | d         |
| 93)  | Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.   |           |
| 94)  | Ethyl acetate             |      | 8.160  | 8.178  | 0.864  | 0m       | N.D.   | d         |
| 95)  | Propionitrile             |      | 8.257  | 8.245  | 0.875  | 0m       | N.D.   | d         |
| 96)  | Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.   |           |
| 97)  | Tetrahydrofuran           |      | 8.519  | 8.526  | 0.902  | 0m       | N.D.   | d         |
| 98)  | Isobutyl alcohol          |      | 8.873  | 8.873  | 0.940  | 0m       | N.D.   | d         |
| 99)  | Methyl tert-amyl ether    |      | 9.184  | 9.214  | 0.973  | 0m       | N.D.   | d         |
| 100) | Methyl methacrylate       |      | 10.068 | 10.068 | 1.067  | 0m       | N.D.   | d         |
| 101) | 1,4-Dioxane               |      | 10.208 | 10.172 | 1.081  | 0m       | N.D.   | d         |
| 102) | 2-Nitropropane            |      | 10.568 | 10.543 | 1.119  | 0m       | N.D.   | d         |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G202.D  
Acq On : 01 Nov 2016 09:37  
Operator : ACJ  
InstName : VOA6  
Sample : |W6VM161101-01|CCV|1|VOAF|1|VOA8260BL|  
Misc : CCV 5ML - MIX[A] 0621-06G/1024-07E  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 01 10:00:58 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 104) Ethyl methacrylate        |      | 11.360 | 11.348 | 0.900  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 12.537 | 12.543 | 0.833  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.634 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.775 | 13.793 | 0.915  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 13.994 | 13.976 | 0.930  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 14.659 | 14.658 | 0.974  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 15.201 | 15.201 | 1.010  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.579 | 15.591 | 1.035  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



## Continuing Calibration Summary

**Instrument ID:** VOA6.I  
**Data File:** 110116V6\6G206.D  
**Lab Sample ID:** W6VM161101-05  
**Quant Type:** ISTD

**Client SDG:** 409254  
**Injection Date:** 01-NOV-16 11:33  
**Init. Cal. Date(s):** 13-OCT-16 17:11 - 14-OCT-16 01:2  
**Method:** 101316V6\VOA6-8260-101316.M  
**Method Update:** 14-OCT-16 08:57

| Compound                 | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|--------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| S1,2-Dichloroethane-d4   | 0.3288            | 0.32452   |                | .01    |         | -1.3017        | 60  |            | Averaged      |
| SToluene-d8              | 1.3333            | 1.3312    |                | .01    |         | -0.1575        | 60  |            | Averaged      |
| SBromofluorobenzene      | 1.0112            | 1.00808   |                | .01    |         | -0.30854       | 60  |            | Averaged      |
| Trichlorotrifluoroethane | 0.1187            | 0.13645   |                | .01    |         | 14.95366       | 60  |            | Averaged      |
| 1,4-Dioxane              | 0.0035            | 0.00412   |                | .01    |         | 17.71429       | 60  |            | Averaged      |

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G206.D  
Acq On : 01 Nov 2016 11:33  
Operator : ACJ  
InstName : VOA6  
Sample : |W6VM161101-05|CCV|1|VOAF|1|VOA8260BL|  
Misc : CCV 5ML - MIX[B] 0913-06F/1025-08A  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 01 12:24:13 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1851832  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.629 | 12.629 | 1.000  | 1431352  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 773270   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1851832  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.629 | 12.628 | 1.000  | 1431352  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 773270   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 600957  | 49.34 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.092 | 11.098 | 0.878 | 1905421 | 49.92 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.836 | 13.836 | 0.919 | 779518  | 49.84 | ug/L | 0.00 |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 4.001  | 4.001  | 0.424  | 0m       | N.D. | d     |        |
| 3) Chloromethane              |      | 4.250  | 4.282  | 0.450  | 0m       | N.D. | d     |        |
| 4) Vinyl chloride             |      | 4.466  | 4.498  | 0.473  | 0m       | N.D. | d     |        |
| 5) Bromomethane               |      | 5.020  | 5.020  | 0.532  | 0m       | N.D. | d     |        |
| 6) Chloroethane               |      | 5.148  | 5.156  | 0.545  | 0m       | N.D. | d     |        |
| 7) Trichlorofluoromethane     |      | 5.493  | 5.509  | 0.582  | 0m       | N.D. | d     |        |
| 8) Ethyl ether                |      | 5.822  | 5.830  | 0.617  | 0m       | N.D. | d     |        |
| 9) Acetone                    |      | 6.185  | 6.197  | 0.655  | 0m       | N.D. | d     |        |
| 10) 1,1-Dichloroethylene      |      | 6.191  | 6.191  | 0.656  | 0m       | N.D. | d     |        |
| 11) Iodomethane               |      | 6.428  | 6.429  | 0.681  | 0m       | N.D. | d     |        |
| 12) Acetonitrile              |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 13) Methyl acetate            |      | 0.000  | 6.575  | 0.000  | 0        | N.D. |       |        |
| 14) Carbon disulfide          |      | 6.611  | 6.550  | 0.700  | 0m       | N.D. | d     |        |
| 15) Methylene chloride        |      | 6.764  | 6.764  | 0.716  | 0m       | N.D. | d     |        |
| 16) tert-Butyl methyl ether   |      | 7.063  | 7.050  | 0.748  | 0m       | N.D. | d     |        |
| 17) trans-1,2-Dichloroethy... |      | 7.087  | 7.093  | 0.751  | 0m       | N.D. | d     |        |
| 18) Hexane                    |      | 7.367  | 7.367  | 0.780  | 0m       | N.D. | d     |        |
| 19) Vinyl acetate             |      | 7.550  | 7.538  | 0.800  | 0m       | N.D. | d     |        |
| 20) 1,1-Dichloroethane        |      | 7.562  | 7.575  | 0.801  | 0m       | N.D. | d     |        |
| 21) 2-Butanone                |      | 8.178  | 8.160  | 0.866  | 0m       | N.D. | d     |        |
| 22) cis-1,2-Dichloroethylene  |      | 8.178  | 8.209  | 0.866  | 0m       | N.D. | d     |        |
| 23) 2,2-Dichloropropane       |      | 8.215  | 8.233  | 0.870  | 0m       | N.D. | d     |        |
| 24) Bromochloromethane        |      | 8.471  | 8.483  | 0.897  | 0m       | N.D. | d     |        |
| 25) Chloroform                |      | 8.513  | 8.520  | 0.902  | 0m       | N.D. | d     |        |
| 26) 1,1,1-Trichloroethane     |      | 8.782  | 8.788  | 0.930  | 0m       | N.D. | d     |        |
| 27) Cyclohexane               |      | 8.873  | 8.873  | 0.940  | 0m       | N.D. | d     |        |
| 28) 1,1-Dichloropropene       |      | 8.940  | 8.946  | 0.947  | 0m       | N.D. | d     |        |
| 29) Carbon tetrachloride      |      | 8.965  | 8.977  | 0.950  | 0m       | N.D. | d     |        |
| 31) 1,2-Dichloroethane        |      | 9.166  | 9.172  | 0.971  | 0m       | N.D. | d     |        |
| 32) Benzene                   |      | 9.184  | 9.184  | 0.973  | 0m       | N.D. | d     |        |
| 33) Cyclohexene               |      | 9.300  | 9.294  | 0.985  | 0m       | N.D. | d     |        |
| 34) n-Butyl alcohol           |      | 9.586  | 9.568  | 1.015  | 0m       | N.D. | d     |        |
| 35) Trichloroethylene         |      | 9.836  | 9.830  | 1.042  | 0m       | N.D. | d     |        |
| 36) 2-Pentanone               |      | 10.068 | 9.928  | 1.067  | 0m       | N.D. | d     |        |
| 37) 1,2-Dichloropropane       |      | 10.080 | 10.080 | 1.068  | 0m       | N.D. | d     |        |
| 38) Methylcyclohexane         |      | 10.068 | 10.068 | 1.067  | 0m       | N.D. | d     |        |
| 39) Dibromomethane            |      | 10.214 | 10.214 | 1.082  | 0m       | N.D. | d     |        |
| 40) Bromodichloromethane      |      | 10.348 | 10.330 | 1.096  | 0m       | N.D. | d     |        |
| 41) 2-Chloroethylvinyl ether  |      | 10.568 | 10.568 | 1.119  | 0m       | N.D. | d     |        |
| 42) cis-1,3-Dichloropropylene |      | 10.787 | 10.787 | 1.143  | 0m       | N.D. | d     |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G206.D  
Acq On : 01 Nov 2016 11:33  
Operator : ACJ  
InstName : VOA6  
Sample : |W6VM161101-05|CCV|1|VOAF|1|VOA8260BL|  
Misc : CCV 5ML - MIX[B] 0913-06F/1025-08A  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 01 12:24:13 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|------|---------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 44)  | 4-Methyl-2-pentanone      |      | 10.891 | 10.891 | 0.862  | 0m       | N.D.    | d     |     |
| 46)  | Toluene                   |      | 11.165 | 11.172 | 0.884  | 0m       | N.D.    | d     |     |
| 47)  | trans-1,3-Dichloroprop... |      | 11.342 | 11.342 | 0.898  | 0m       | N.D.    | d     |     |
| 48)  | 1,1,2-Trichloroethane     |      | 11.556 | 11.556 | 0.915  | 0m       | N.D.    | d     |     |
| 49)  | 2-Hexanone                |      | 11.751 | 11.745 | 0.930  | 0m       | N.D.    | d     |     |
| 50)  | 1,3-Dichloropropane       |      | 11.745 | 11.751 | 0.930  | 0m       | N.D.    | d     |     |
| 51)  | Tetrachloroethylene       |      | 11.763 | 11.763 | 0.931  | 0m       | N.D.    | d     |     |
| 52)  | Dibromochloromethane      |      | 12.013 | 12.013 | 0.951  | 0m       | N.D.    | d     |     |
| 53)  | 1,2-Dibromoethane         |      | 12.177 | 12.177 | 0.964  | 0m       | N.D.    | d     |     |
| 54)  | Chlorobenzene             |      | 12.665 | 12.665 | 1.003  | 0m       | N.D.    | d     |     |
| 55)  | 1,1,1,2-Tetrachloroethane |      | 12.720 | 12.720 | 1.007  | 0m       | N.D.    | d     |     |
| 56)  | Ethylbenzene              |      | 12.738 | 12.732 | 1.009  | 0m       | N.D.    | d     |     |
| 57)  | m,p-Xylenes               |      | 12.848 | 12.842 | 1.017  | 0m       | N.D.    | d     |     |
| 58)  | o-Xylene                  |      | 13.275 | 13.275 | 1.051  | 0m       | N.D.    | d     |     |
| 59)  | Styrene                   |      | 13.281 | 13.281 | 1.052  | 0m       | N.D.    | d     |     |
| 61)  | Bromoform                 |      | 13.531 | 13.537 | 0.899  | 0m       | N.D.    | d     |     |
| 62)  | Isopropylbenzene          |      | 13.647 | 13.641 | 0.906  | 0m       | N.D.    | d     |     |
| 64)  | 1,1,2,2-Tetrachloroethane |      | 13.921 | 13.927 | 0.925  | 0m       | N.D.    | d     |     |
| 65)  | 1,2,3-Trichloropropane    |      | 13.994 | 14.012 | 0.930  | 0m       | N.D.    | d     |     |
| 66)  | Bromobenzene              |      | 14.037 | 14.043 | 0.932  | 0m       | N.D.    | d     |     |
| 67)  | n-Propylbenzene           |      | 14.067 | 14.067 | 0.934  | 0m       | N.D.    | d     |     |
| 68)  | 1,3,5-Trimethylbenzene    |      | 14.226 | 14.226 | 0.945  | 0m       | N.D.    | d     |     |
| 69)  | 2-Chlorotoluene           |      | 14.214 | 14.214 | 0.944  | 0m       | N.D.    | d     |     |
| 70)  | 4-Chlorotoluene           |      | 14.317 | 14.317 | 0.951  | 0m       | N.D.    | d     |     |
| 71)  | tert-Butylbenzene         |      | 14.598 | 14.592 | 0.970  | 0m       | N.D.    | d     |     |
| 72)  | 1,2,4-Trimethylbenzene    |      | 14.634 | 14.634 | 0.972  | 0m       | N.D.    | d     |     |
| 73)  | sec-Butylbenzene          |      | 14.823 | 14.817 | 0.985  | 0m       | N.D.    | d     |     |
| 74)  | 4-Isopropyltoluene        |      | 14.592 | 14.592 | 0.969  | 0m       | N.D.    | d     |     |
| 75)  | 1,3-Dichlorobenzene       |      | 14.994 | 14.994 | 0.996  | 0m       | N.D.    | d     |     |
| 76)  | 1,4-Dichlorobenzene       |      | 15.085 | 15.085 | 1.002  | 0m       | N.D.    | d     |     |
| 77)  | n-Butylbenzene            |      | 15.378 | 15.372 | 1.021  | 0m       | N.D.    | d     |     |
| 78)  | 1,2-Dichlorobenzene       |      | 15.494 | 15.494 | 1.029  | 0m       | N.D.    | d     |     |
| 79)  | 1,2-Dibromo-3-chloropr... |      | 16.317 | 16.311 | 1.084  | 0m       | N.D.    | d     |     |
| 80)  | 1,2,4-Trichlorobenzene    |      | 17.286 | 17.280 | 1.148  | 0m       | N.D.    | d     |     |
| 81)  | Hexachlorobutadiene       |      | 17.445 | 17.445 | 1.159  | 0m       | N.D.    | d     |     |
| 82)  | Naphthalene               |      | 17.628 | 17.628 | 1.171  | 0m       | N.D.    | d     |     |
| 83)  | 1,2,3-Trichlorobenzene    |      | 17.945 | 17.945 | 1.192  | 0m       | N.D.    | d     |     |
| 85)  | Acrolein                  | 56   | 6.026  | 6.026  | 0.638  | 583406   | 244.12  | ug/L  | 98  |
| 86)  | Trichlorotrifluoroethane  | 85   | 6.179  | 6.185  | 0.654  | 1263454  | 287.41  | ug/L  | 99  |
| 87)  | Isopropyl Alcohol         | 45   | 6.282  | 6.282  | 0.665  | 3044605  | 2881.06 | ug/L  | 100 |
| 88)  | Allyl chloride            | 41   | 6.611  | 6.611  | 0.700  | 5800530  | 241.32  | ug/L  | 98  |
| 89)  | tert-Butyl Alcohol        | 59   | 6.776  | 6.770  | 0.718  | 4766884  | 3013.56 | ug/L  | 97  |
| 90)  | Acrylonitrile             | 53   | 7.014  | 7.014  | 0.743  | 1312493  | 268.89  | ug/L  | 99  |
| 91)  | Isopropyl ether           | 45   | 7.556  | 7.556  | 0.800  | 2645269  | 47.67   | ug/L  | 98  |
| 92)  | 2-Chloro-1,3-butadiene    | 53   | 7.672  | 7.672  | 0.813  | 1181498  | 53.52   | ug/L  | 98  |
| 93)  | Ethyl tert-butyl ether    | 59   | 7.959  | 7.965  | 0.843  | 2487978  | 50.40   | ug/L  | 99  |
| 94)  | Ethyl acetate             | 43   | 8.178  | 8.178  | 0.866  | 3361455  | 257.42  | ug/L  | 98  |
| 95)  | Propionitrile             | 54   | 8.239  | 8.245  | 0.873  | 544255   | 273.29  | ug/L  | 100 |
| 96)  | Methacrylonitrile         | 41   | 8.416  | 8.416  | 0.892  | 2077385  | 259.20  | ug/L  | 99  |
| 97)  | Tetrahydrofuran           | 42   | 8.526  | 8.526  | 0.903  | 1135301  | 258.70  | ug/L  | 97  |
| 98)  | Isobutyl alcohol          | 41   | 8.873  | 8.873  | 0.940  | 1434867  | 2771.80 | ug/L  | 100 |
| 99)  | Methyl tert-amyl ether    | 73   | 9.208  | 9.214  | 0.975  | 1829146  | 51.87   | ug/L  | 98  |
| 100) | Methyl methacrylate       | 69   | 10.068 | 10.068 | 1.067  | 2002288  | 265.44  | ug/L  | 95  |
| 101) | 1,4-Dioxane               | 88   | 10.172 | 10.172 | 1.077  | 381150   | 2980.19 | ug/L  | 96  |
| 102) | 2-Nitropropane            | 43   | 10.544 | 10.543 | 1.117  | 1167113  | 249.15  | ug/L  | 98  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G206.D  
Acq On : 01 Nov 2016 11:33  
Operator : ACJ  
InstName : VOA6  
Sample : |W6VM161101-05|CCV|1|VOAF|1|VOA8260BL|  
Misc : CCV 5ML - MIX[B] 0913-06F/1025-08A  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 01 12:24:13 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

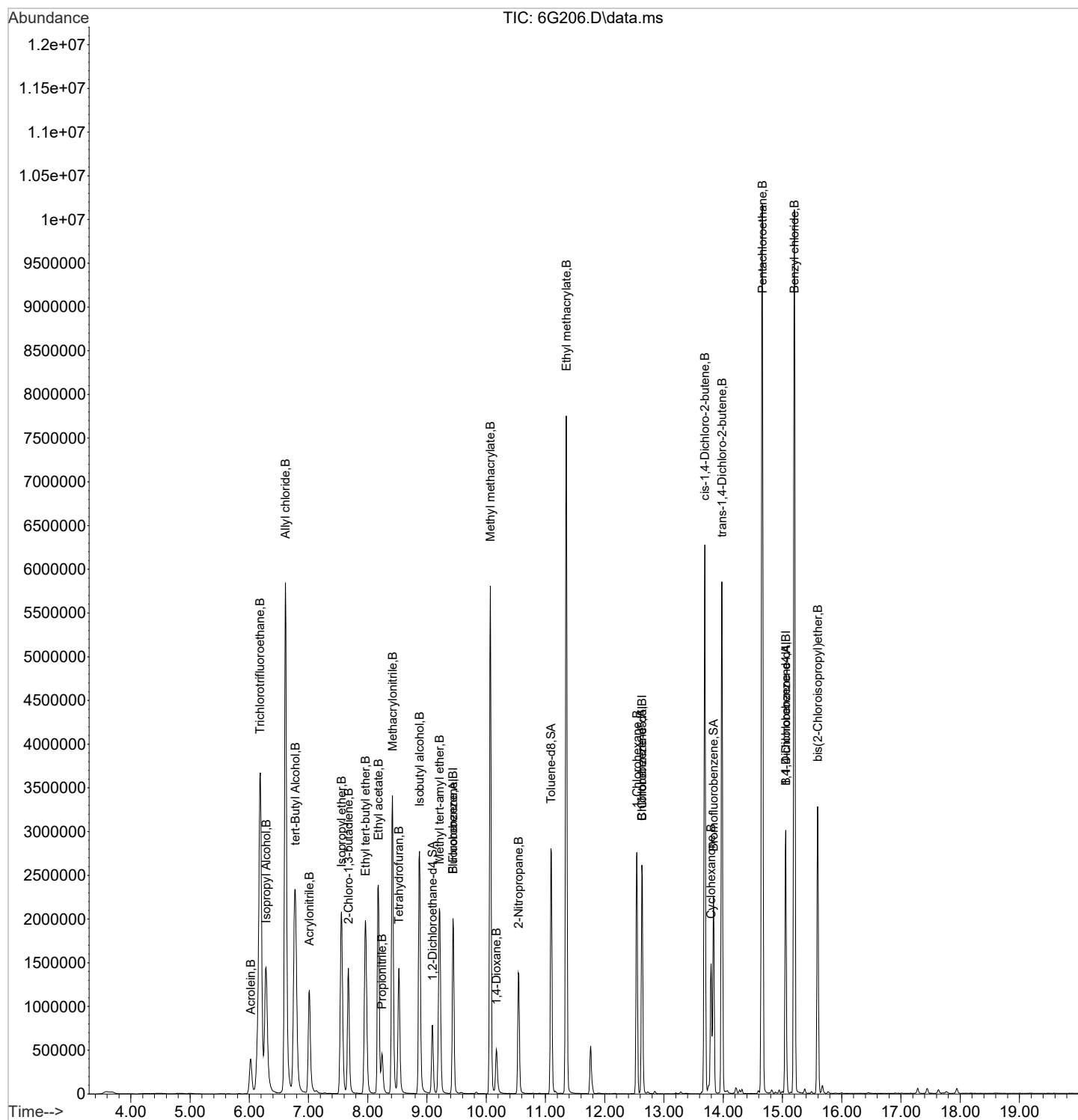
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units |     |
|--------------------------------|------|--------|--------|--------|----------|---------|-------|-----|
| 104) Ethyl methacrylate        | 69   | 11.348 | 11.348 | 0.899  | 3723746  | 260.35  | ug/L  | 96  |
| 106) 1-Chlorohexane            | 55   | 12.543 | 12.543 | 0.833  | 767910   | 53.21   | ug/L  | 98  |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.689 | 13.689 | 0.909  | 1611416  | 277.04  | ug/L  | 99  |
| 108) Cyclohexanone             | 42   | 13.793 | 13.793 | 0.916  | 476958   | 1179.63 | ug/L  | 96  |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.976 | 13.976 | 0.928  | 1476838  | 277.64  | ug/L  | 98  |
| 110) Pentachloroethane         | 167  | 14.659 | 14.658 | 0.974  | 2245588  | 284.39  | ug/L  | 100 |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 7439805  | 320.21  | ug/L  | 99  |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.591 | 15.591 | 1.036  | 2265967  | 276.80  | ug/L  | 99  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G206.D  
Acq On : 01 Nov 2016 11:33  
Operator : ACJ  
InstName : VOA6  
Sample : |W6VM161101-05|CCV|1|VOAF|1|VOA8260BL|  
Misc : CCV 5ML - MIX[B] 0913-06F/1025-08A  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 01 12:24:13 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE



# Quality Control Data

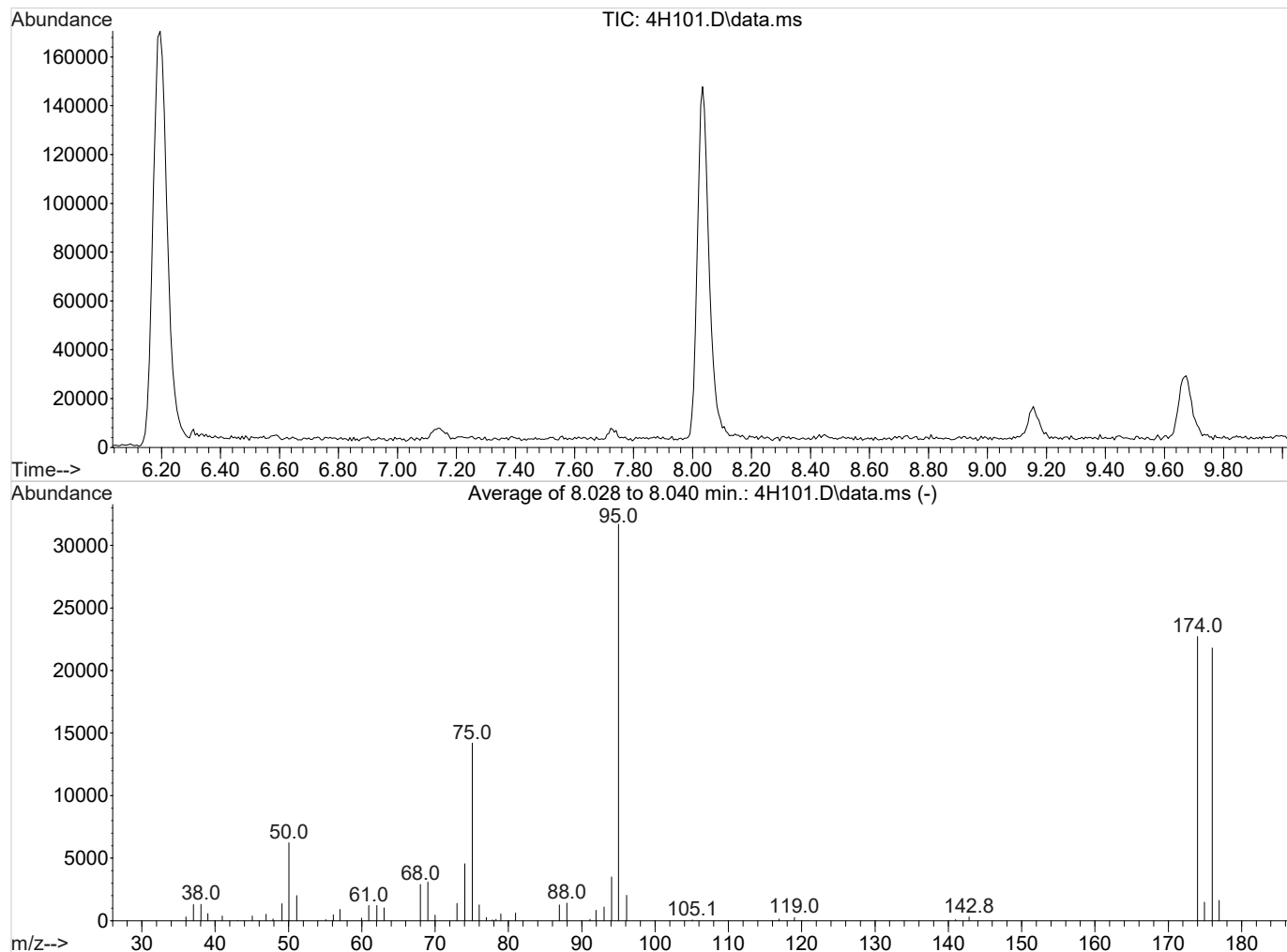


Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\103116V4\  
Data File : 4H101.D  
Acq On : 31 Oct 2016 16:24  
Operator : ACJ  
Sample : |IVM161026-01|BFB2|1|VOAF|1|VOA8260BL|  
Misc : GEL 1UL N/A  
ALS Vial : 1 Sample Multiplier: 1

Integration File:

Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Title : Volatile Organics 8260B SubList :  
Last Update : Tue Nov 01 08:22:19 2016



Spectrum Information: Average of 8.028 to 8.040 min.

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 19.6      | 6224    | PASS             |
| 75          | 95           | 30           | 60           | 44.8      | 14196   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 31701   | PASS             |
| 96          | 95           | 5            | 9            | 6.4       | 2018    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 174         | 95           | 50           | 100          | 71.6      | 22709   | PASS             |
| 175         | 174          | 5            | 9            | 6.5       | 1485    | PASS             |
| 176         | 174          | 95           | 101          | 96.0      | 21792   | PASS             |
| 177         | 176          | 5            | 9            | 7.5       | 1628    | PASS             |

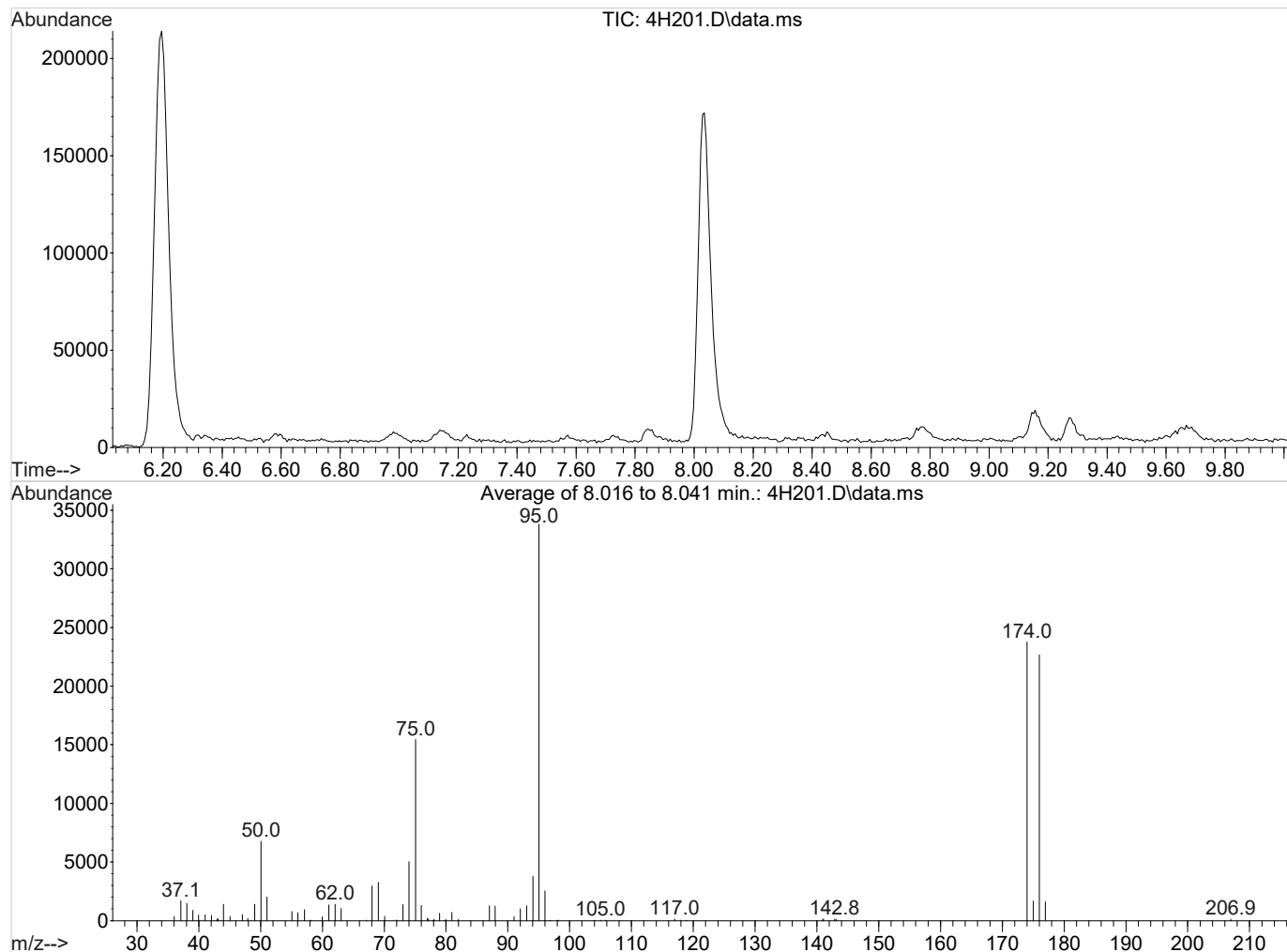
This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

Data Path : C:\msdchem\1\data\110116V4\  
Data File : 4H201.D  
Acq On : 01 Nov 2016 08:50  
Operator : ACJ  
Sample : |IVM161026-01|BFB|1|VOAF|1|VOA8260BL|  
Misc : GEL 1UL N/A  
ALS Vial : 1 Sample Multiplier: 1

*ell*  
11/08/2016

Integration File:

Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Title : Volatile Organics 8260B SubList :  
Last Update : Tue Nov 01 08:22:19 2016



Spectrum Information: Average of 8.016 to 8.041 min.

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 20.0      | 6765    | PASS             |
| 75          | 95           | 30           | 60           | 45.7      | 15453   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 33808   | PASS             |
| 96          | 95           | 5            | 9            | 7.5       | 2549    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 174         | 95           | 50           | 100          | 70.3      | 23777   | PASS             |
| 175         | 174          | 5            | 9            | 7.1       | 1683    | PASS             |
| 176         | 174          | 95           | 101          | 95.3      | 22658   | PASS             |
| 177         | 176          | 5            | 9            | 7.0       | 1589    | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

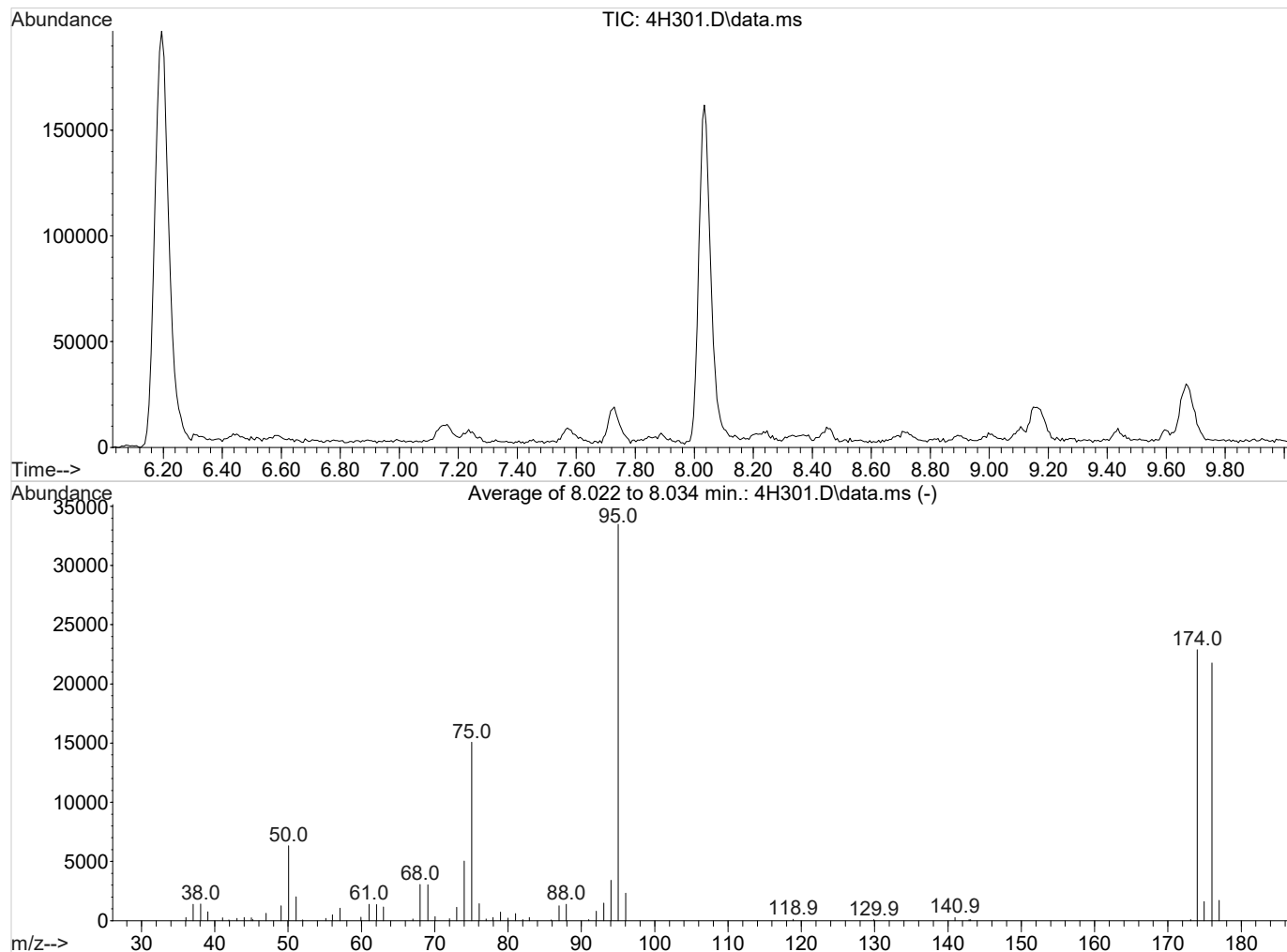
Agf  
11/02/2016

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H301.D  
Acq On : 02 Nov 2016 09:58  
Operator : ACJ  
Sample : |IVM161026-01|BFB|1|VOAF|1|VOA8260BL|  
Misc : GEL 1UL N/A  
ALS Vial : 1 Sample Multiplier: 1

Cell  
11/03/2016

Integration File:

Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Title : Volatile Organics 8260B SubList :  
Last Update : Tue Nov 01 08:22:19 2016



AutoFind: Scans 871, 872, 873; Background Corrected with Scan 862

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 18.9      | 6337    | PASS             |
| 75          | 95           | 30           | 60           | 45.0      | 15084   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 33491   | PASS             |
| 96          | 95           | 5            | 9            | 6.9       | 2319    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.4       | 102     | PASS             |
| 174         | 95           | 50           | 100          | 68.4      | 22893   | PASS             |
| 175         | 174          | 5            | 9            | 7.1       | 1622    | PASS             |
| 176         | 174          | 95           | 101          | 95.1      | 21771   | PASS             |
| 177         | 176          | 5            | 9            | 7.9       | 1715    | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

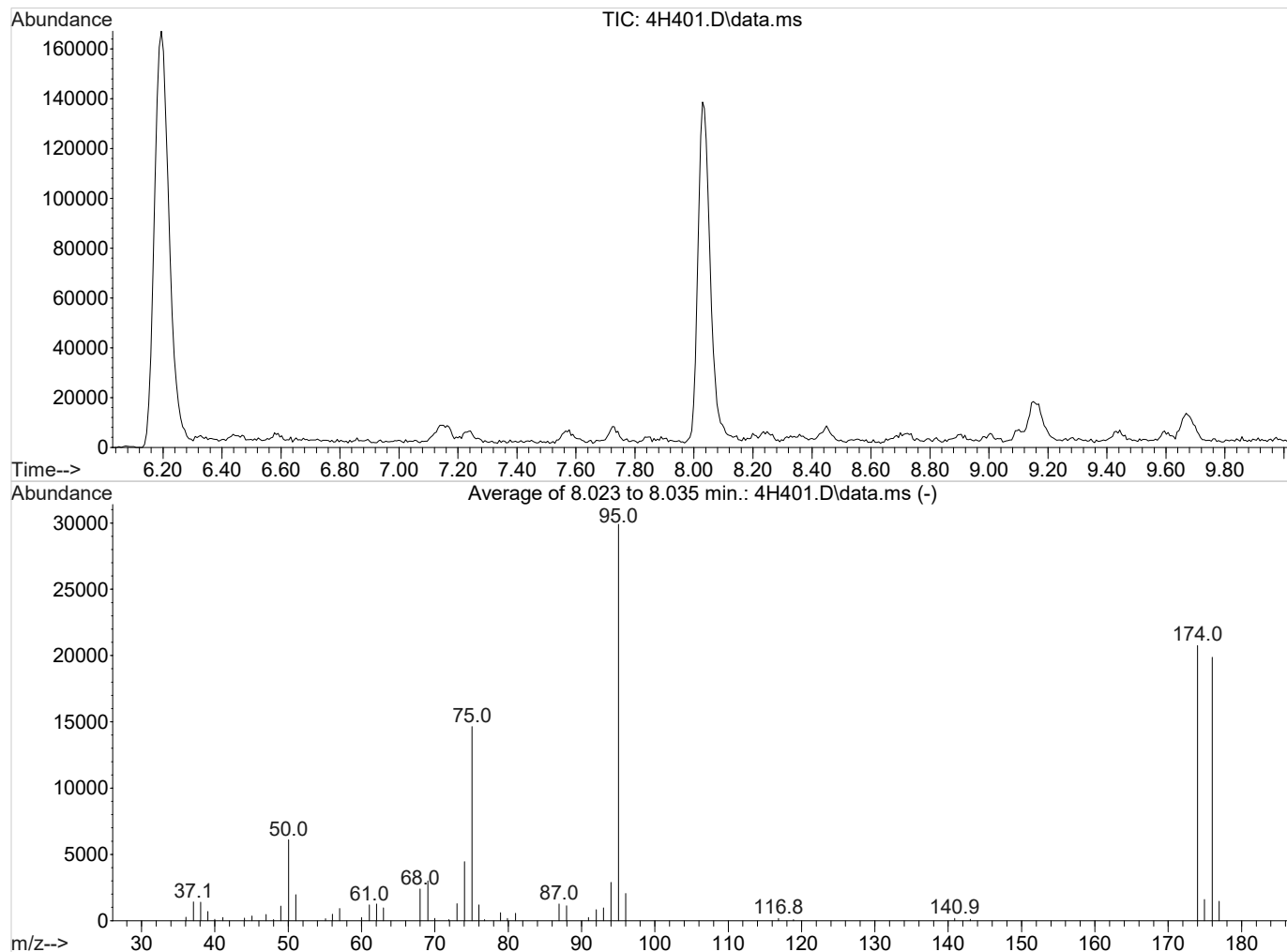
11/09/2016

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H401.D  
Acq On : 03 Nov 2016 10:17  
Operator : ACJ  
Sample : |IVM161026-01|BFB|1|VOAF|1|VOA8260BL|  
Misc : GEL 1UL N/A  
ALS Vial : 1 Sample Multiplier: 1

11/09/2016

Integration File:

Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Title : Volatile Organics 8260B SubList :  
Last Update : Tue Nov 01 08:22:19 2016



AutoFind: Scans 871, 872, 873; Background Corrected with Scan 862

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 20.4      | 6108    | PASS             |
| 75          | 95           | 30           | 60           | 48.9      | 14636   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 29909   | PASS             |
| 96          | 95           | 5            | 9            | 6.8       | 2046    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 174         | 95           | 50           | 100          | 69.4      | 20763   | PASS             |
| 175         | 174          | 5            | 9            | 7.7       | 1599    | PASS             |
| 176         | 174          | 95           | 101          | 95.7      | 19869   | PASS             |
| 177         | 176          | 5            | 9            | 7.4       | 1469    | PASS             |

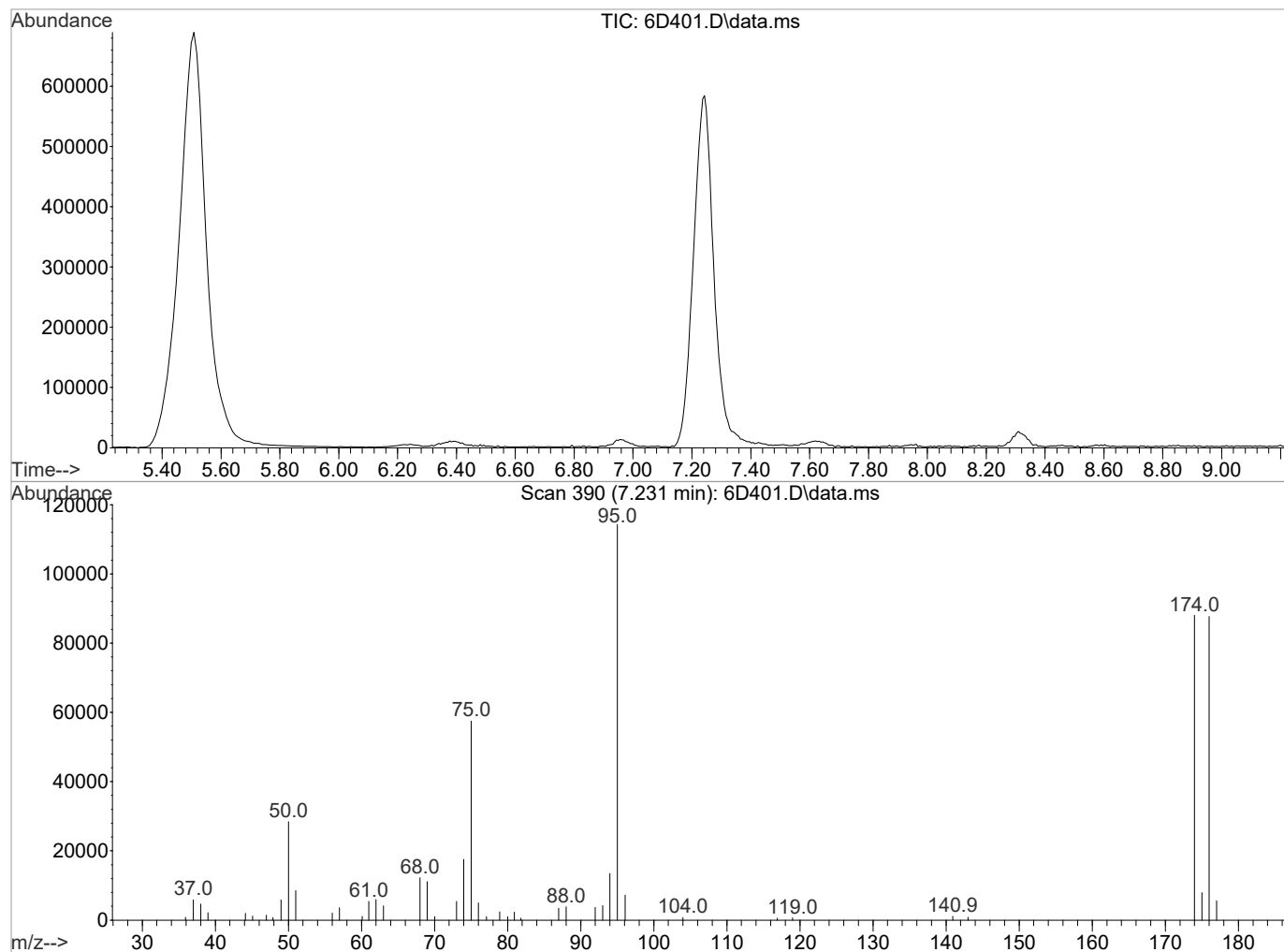
This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\101316V6\  
Data File : 6D401.D  
Acq On : 13 Oct 2016 16:42  
Operator : VXY1  
Sample : |IVM161013-03|BFB|1|VOAF|1|VOA8260BL|  
Misc : BFB 1uL N/A  
ALS Vial : 1 Sample Multiplier: 1

Integration File:

Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Title : Volatile Organics 8260B SubList :  
Last Update : Fri Oct 14 08:57:39 2016



Spectrum Information: Scan 390

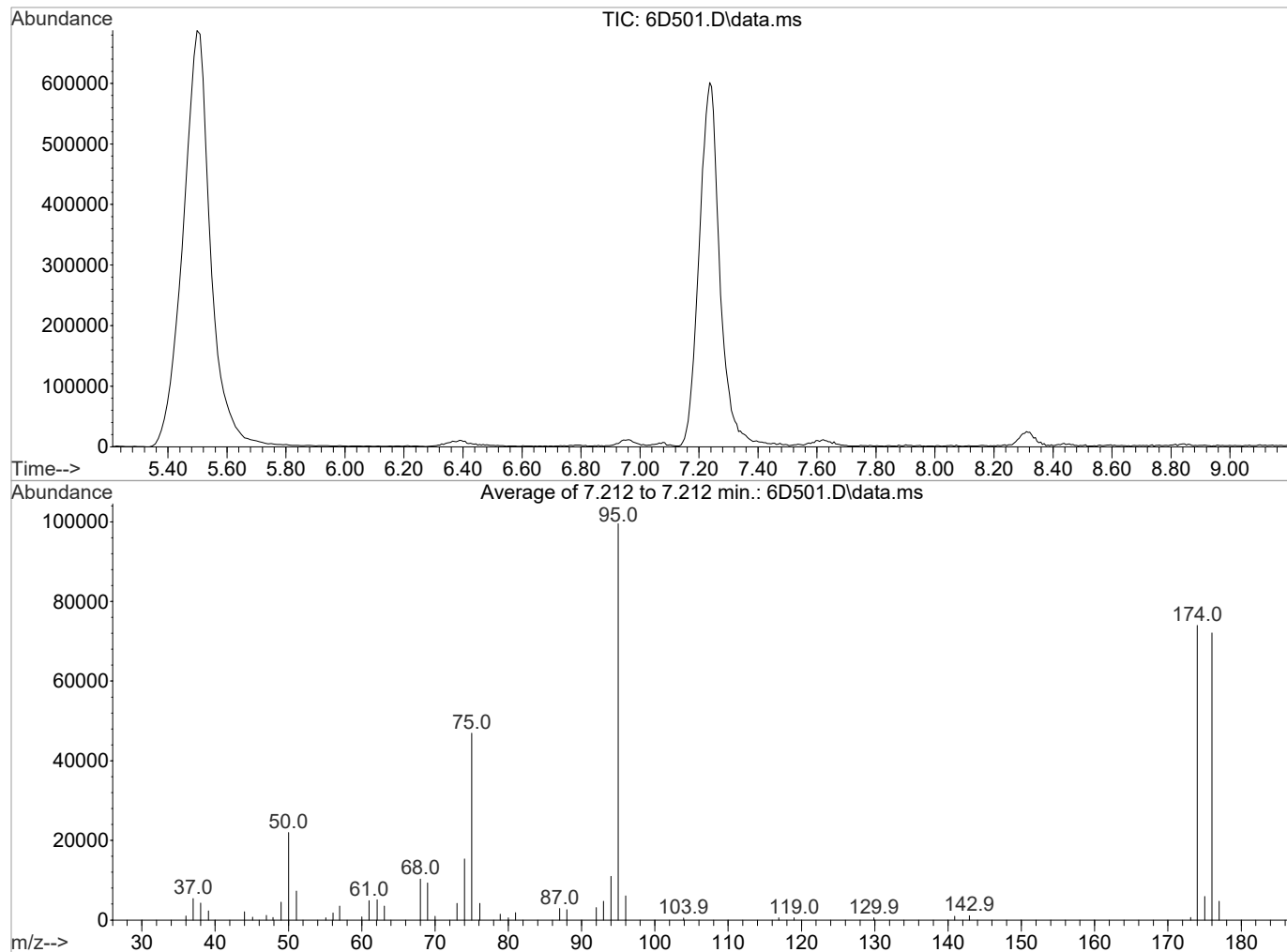
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 24.9      | 28440   | PASS             |
| 75          | 95           | 30           | 60           | 50.3      | 57520   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 114304  | PASS             |
| 96          | 95           | 5            | 9            | 6.3       | 7248    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 174         | 95           | 50           | 100          | 77.0      | 88048   | PASS             |
| 175         | 174          | 5            | 9            | 9.0       | 7881    | PASS             |
| 176         | 174          | 95           | 101          | 99.6      | 87720   | PASS             |
| 177         | 176          | 5            | 9            | 6.3       | 5560    | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

Data Path : C:\msdchem\1\data\101416V6\  
Data File : 6D501.D  
Acq On : 14 Oct 2016 09:30  
Operator : VXY1  
Sample : |IVM161013-03|BFB|1|VOAF|1|VOA8260BL|  
Misc : BFB 1uL N/A  
ALS Vial : 1 Sample Multiplier: 1

Integration File:

Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Title : Volatile Organics 8260B SubList :  
Last Update : Fri Oct 14 08:57:39 2016



Spectrum Information: Average of 7.212 to 7.212 min.

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 22.0      | 21936   | PASS             |
| 75          | 95           | 30           | 60           | 47.2      | 46952   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 99560   | PASS             |
| 96          | 95           | 5            | 9            | 6.1       | 6093    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.9       | 648     | PASS             |
| 174         | 95           | 50           | 100          | 74.3      | 73960   | PASS             |
| 175         | 174          | 5            | 9            | 8.0       | 5915    | PASS             |
| 176         | 174          | 95           | 101          | 97.5      | 72088   | PASS             |
| 177         | 176          | 5            | 9            | 6.5       | 4689    | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

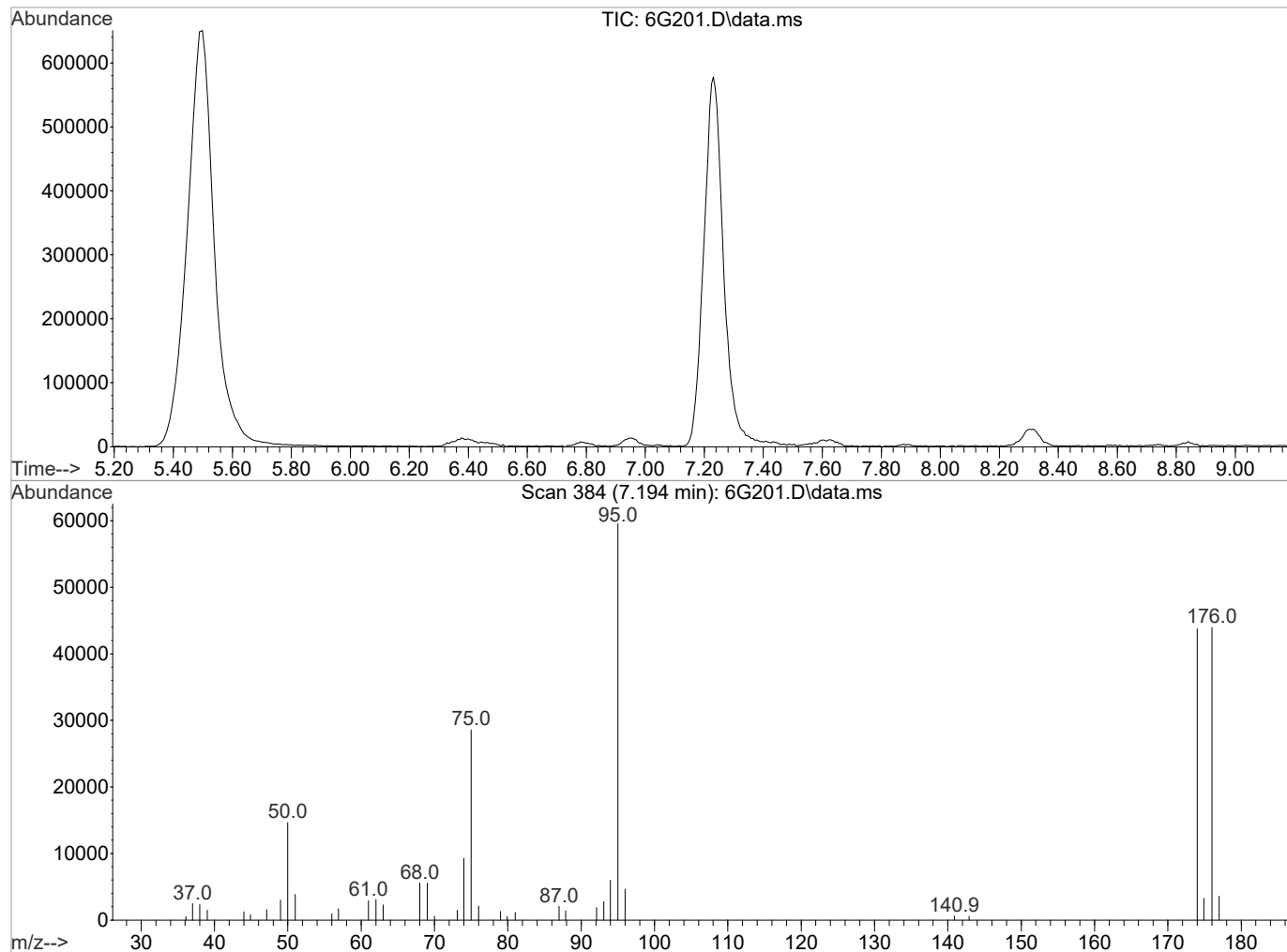
11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G201.D  
Acq On : 01 Nov 2016 09:08  
Operator : ACJ  
Sample : |IVM161026-01|BFB|1|VOAF|1|VOA8260BL|  
Misc : BFB 1uL N/A  
ALS Vial : 1 Sample Multiplier: 1

11/09/2016

Integration File:

Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Title : Volatile Organics 8260B SubList :  
Last Update : Fri Oct 14 08:57:39 2016



Spectrum Information: Scan 384

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 50          | 95           | 15           | 40           | 24.6      | 14632   | PASS             |
| 75          | 95           | 30           | 60           | 48.0      | 28568   | PASS             |
| 95          | 95           | 100          | 100          | 100.0     | 59568   | PASS             |
| 96          | 95           | 5            | 9            | 7.7       | 4613    | PASS             |
| 173         | 174          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 174         | 95           | 50           | 100          | 73.4      | 43752   | PASS             |
| 175         | 174          | 5            | 9            | 7.5       | 3271    | PASS             |
| 176         | 174          | 95           | 101          | 100.5     | 43960   | PASS             |
| 177         | 176          | 5            | 9            | 8.2       | 3592    | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

|  |                            |                      |             |
|--|----------------------------|----------------------|-------------|
| <b>SDG Number:</b> 409254                  |                            | <b>Matrix:</b>       | SOIL        |
| <b>Lab Sample ID:</b> 1203666128           |                            |                      |             |
| <b>Client Sample:</b> QC for batch 1612389 | <b>Client:</b> HAAL002     | <b>Project:</b>      | QC          |
| <b>Client ID:</b> MB for batch 1612389     | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>      | GL-OA-E-038 |
| <b>Batch ID:</b> 1612391                   | <b>Inst:</b> VOA4.I        | <b>Dilution:</b>     | 1           |
| <b>Run Date:</b> 11/02/2016 13:22          | <b>Analyst:</b> ACJ        | <b>Purge Vol:</b>    | 5 mL        |
| <b>Prep Date:</b> 11/02/2016 08:30         | <b>Aliquot:</b> 5 g        | <b>Final Volume:</b> | 5 mL        |
| <b>Data File:</b> 110216V4\4H308BH.D       | <b>Column:</b> DB-624      |                      |             |

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.00   | ug/kg | 0.500   | 1.00    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 123-91-1 | 1,4-Dioxane                 | U         | 50.0   | ug/kg | 16.7    | 50.0    |
| 78-93-3  | 2-Butanone                  | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 591-78-6 | 2-Hexanone                  | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 67-64-1  | Acetone                     | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 71-43-2  | Benzene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-97-5  | Bromochloromethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-27-4  | Bromodichloromethane        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-25-2  | Bromoform                   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-83-9  | Bromomethane                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-15-0  | Carbon disulfide            | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 108-90-7 | Chlorobenzene               | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-00-3  | Chloroethane                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 67-66-3  | Chloroform                  | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-87-3  | Chloromethane               | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 110-82-7 | Cyclohexane                 | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 124-48-1 | Dibromochloromethane        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 100-41-4 | Ethylbenzene                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 98-82-8  | Isopropylbenzene            | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-20-9  | Methyl acetate              | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 108-87-2 | Methylcyclohexane           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-09-2  | Methylene chloride          | U         | 5.00   | ug/kg | 1.67    | 5.00    |



**Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

|                       |                             |                      |                    |
|-----------------------|-----------------------------|----------------------|--------------------|
| <b>SDG Number:</b>    | <b>409254</b>               | <b>Matrix:</b>       | <b>SOIL</b>        |
| <b>Lab Sample ID:</b> | <b>1203666128</b>           |                      |                    |
| <b>Client Sample:</b> | <b>QC for batch 1612389</b> | <b>Client:</b>       | <b>HAAL002</b>     |
| <b>Client ID:</b>     | <b>MB for batch 1612389</b> | <b>Method:</b>       | <b>SW846 8260B</b> |
| <b>Batch ID:</b>      | <b>1612391</b>              | <b>Inst:</b>         | <b>VOA4.I</b>      |
| <b>Run Date:</b>      | <b>11/02/2016 13:22</b>     | <b>Analyst:</b>      | <b>ACJ</b>         |
| <b>Prep Date:</b>     | <b>11/02/2016 08:30</b>     | <b>Aliquot:</b>      | <b>5 g</b>         |
| <b>Data File:</b>     | <b>110216V4\4H308BH.D</b>   | <b>Column:</b>       | <b>DB-624</b>      |
|                       |                             | <b>Project:</b>      | <b>QC</b>          |
|                       |                             | <b>SOP Ref:</b>      | <b>GL-OA-E-038</b> |
|                       |                             | <b>Dilution:</b>     | <b>1</b>           |
|                       |                             | <b>Purge Vol:</b>    | <b>5 mL</b>        |
|                       |                             | <b>Final Volume:</b> | <b>5 mL</b>        |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 108-88-3    | Toluene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-01-6     | Trichloroethylene           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 75-01-4     | Vinyl chloride              | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.00   | ug/kg | 0.667   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.00   | ug/kg | 0.333   | 1.00    |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H308BH.D  
Acq On : 02 Nov 2016 13:22  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666128|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A SOIL  
ALS Vial : 8 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 02 13:50:09 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1143362  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 823292   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.905 | 1.000  | 423115   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1143362  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 823292   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 423115   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 280895  | 45.20 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1093242 | 46.56 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 428060  | 46.63 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 90%      |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 93%      |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 93%      |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 0.000  | 5.094  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.370  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.706  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    | 43   | 7.066  | 7.059  | 0.684  | 3178     | N.D. |       |        |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.090  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               | 142  | 7.315  | 7.327  | 0.708  | 201      | N.D. |       |        |
| 12) Acetonitrile              | 41   | 7.407  | 7.407  | 0.717  | 3227     | N.D. |       |        |
| 13) Methyl acetate            | 43   | 7.456  | 7.456  | 0.722  | 1314     | N.D. |       |        |
| 14) Carbon disulfide          | 76   | 7.462  | 7.468  | 0.723  | 5348     | N.D. |       |        |
| 15) Methylene chloride        | 84   | 7.651  | 7.645  | 0.741  | 2618     | N.D. |       |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.955  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 180      | N.D. |       |        |
| 18) Hexane                    | 57   | 8.285  | 8.285  | 0.802  | 559      | N.D. |       |        |
| 19) Vinyl acetate             | 43   | 8.419  | 8.413  | 0.815  | 3162     | N.D. |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000  | 8.461  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                | 43   | 9.004  | 9.028  | 0.872  | 173      | N.D. |       |        |
| 22) cis-1,2-Dichloroethylene  |      | 0.000  | 9.095  | 0.000  | 0        | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 0.000  | 9.400  | 0.000  | 0        | N.D. |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               | 56   | 9.791  | 9.790  | 0.948  | 308      | N.D. |       |        |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.839  | 0.953  | 106      | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 0.000  | 10.046 | 0.000  | 0        | N.D. |       |        |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 1566     | N.D. |       |        |
| 33) Cyclohexene               | 67   | 10.193 | 10.199 | 0.987  | 166      | N.D. |       |        |
| 34) n-Butyl alcohol           | 56   | 10.406 | 10.400 | 1.008  | 924      | N.D. |       |        |
| 35) Trichloroethylene         |      | 0.000  | 10.717 | 0.000  | 0        | N.D. |       |        |
| 36) 2-Pentanone               | 43   | 10.790 | 10.778 | 1.045  | 278      | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         | 83   | 10.979 | 10.973 | 1.063  | 196      | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H308BH.D  
Acq On : 02 Nov 2016 13:22  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666128|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A SOIL  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 02 13:50:09 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D.      |       |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.193 | 1.084  | 107      | N.D.      |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.412 | 0.000  | 0        | N.D.      |       |
| 42) cis-1,3-Dichloropropylene | 75   | 11.638 | 11.644 | 1.127  | 491      | N.D.      |       |
| 44) 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 194      | N.D.      |       |
| 46) Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 3675     | N.D.      |       |
| 47) trans-1,3-Dichloroprop... | 75   | 12.174 | 12.180 | 0.902  | 944      | N.D.      |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.      |       |
| 49) 2-Hexanone                | 43   | 12.589 | 12.583 | 0.933  | 2810     | N.D.      |       |
| 50) 1,3-Dichloropropane       |      | 0.000  | 12.595 | 0.000  | 0        | N.D.      |       |
| 51) Tetrachloroethylene       | 164  | 12.632 | 12.637 | 0.936  | 1034     | N.D.      |       |
| 52) Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.      |       |
| 53) 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 123      | N.D.      |       |
| 54) Chlorobenzene             | 112  | 13.528 | 13.521 | 1.003  | 1878     | N.D.      |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 13.576 | 0.000  | 0        | N.D.      |       |
| 56) Ethylbenzene              | 91   | 13.595 | 13.588 | 1.008  | 2166     | N.D.      |       |
| 57) m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 1411     | N.D.      |       |
| 58) o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 1843     | N.D.      |       |
| 59) Styrene                   | 104  | 14.137 | 14.131 | 1.048  | 2630     | N.D.      |       |
| 61) Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.      |       |
| 62) Isopropylbenzene          | 105  | 14.485 | 14.491 | 0.911  | 1452     | N.D.      |       |
| 64) 1,1,2,2-Tetrachloroethane |      | 0.000  | 14.747 | 0.000  | 0        | N.D.      |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.      |       |
| 66) Bromobenzene              | 156  | 14.893 | 14.893 | 0.937  | 982      | N.D.      |       |
| 67) n-Propylbenzene           | 91   | 14.918 | 14.917 | 0.938  | 3062     | N.D.      |       |
| 68) 1,3,5-Trimethylbenzene    | 105  | 15.070 | 15.070 | 0.948  | 1785     | N.D.      |       |
| 69) 2-Chlorotoluene           | 126  | 15.070 | 15.064 | 0.948  | 478      | N.D.      |       |
| 70) 4-Chlorotoluene           | 91   | 15.162 | 15.161 | 0.954  | 4620     | N.D.      |       |
| 71) tert-Butylbenzene         | 134  | 15.448 | 15.442 | 0.972  | 184      | N.D.      |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 15.485 | 15.478 | 0.974  | 2424     | N.D.      |       |
| 73) sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 2196     | N.D.      |       |
| 74) 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.993  | 2140     | N.D.      |       |
| 75) 1,3-Dichlorobenzene       | 146  | 15.850 | 15.844 | 0.997  | 2501     | N.D.      |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.930 | 15.929 | 1.002  | 3935     | N.D.      |       |
| 77) n-Butylbenzene            | 91   | 16.234 | 16.228 | 1.021  | 3398     | N.D.      |       |
| 78) 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.029  | 1896     | N.D.      |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.      |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 2106     | N.D.      |       |
| 81) Hexachlorobutadiene       |      | 0.000  | 18.490 | 0.000  | 0        | N.D.      |       |
| 82) Naphthalene               | 128  | 18.685 | 18.685 | 1.175  | 7195     | 0.33 ug/L | 90    |
| 83) 1,2,3-Trichlorobenzene    | 180  | 19.027 | 19.033 | 1.197  | 1595     | N.D.      |       |
| 85) Acrolein                  | 56   | 6.895  | 6.895  | 0.668  | 278      | N.D.      |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.096  | 0.000  | 0        | N.D.      |       |
| 87) Isopropyl Alcohol         | 45   | 7.157  | 7.139  | 0.693  | 1185     | Below Cal | # 58  |
| 88) Allyl chloride            | 41   | 7.407  | 7.511  | 0.717  | 3227     | N.D.      |       |
| 89) tert-Butyl Alcohol        | 59   | 7.632  | 7.639  | 0.739  | 189      | Below Cal | # 100 |
| 90) Acrylonitrile             | 53   | 7.913  | 7.882  | 0.766  | 1662     | Below Cal | 98    |
| 91) Isopropyl ether           |      | 0.000  | 8.455  | 0.000  | 0        | N.D.      |       |
| 92) 2-Chloro-1,3-butadiene    | 53   | 8.571  | 8.577  | 0.830  | 191      | N.D.      |       |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.      |       |
| 94) Ethyl acetate             | 43   | 9.053  | 9.047  | 0.877  | 3662     | Below Cal | # 77  |
| 95) Propionitrile             | 54   | 9.089  | 9.096  | 0.880  | 503      | Below Cal | # 60  |
| 96) Methacrylonitrile         | 41   | 9.278  | 9.278  | 0.898  | 2785     | Below Cal | 80    |
| 97) Tetrahydrofuran           | 42   | 9.425  | 9.419  | 0.913  | 1487     | Below Cal | 57    |
| 98) Isobutyl alcohol          | 41   | 9.724  | 9.717  | 0.942  | 1478     | Below Cal | 81    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H308BH.D  
Acq On : 02 Nov 2016 13:22  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666128|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A SOIL  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 02 13:50:09 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

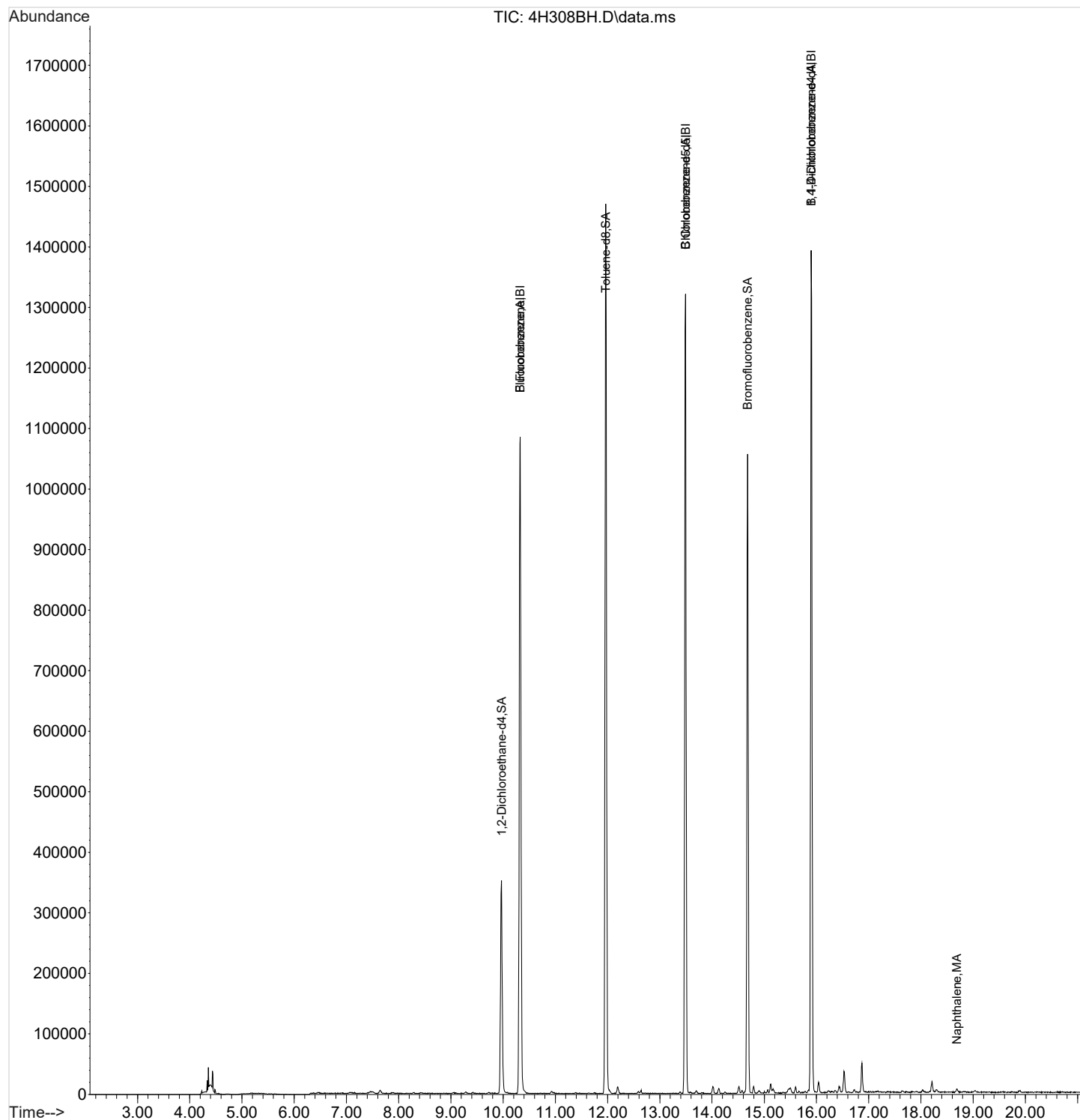
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |    |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|----|
| 99) Methyl tert-amyl ether     |      | 0.000  | 10.101 | 0.000  | 0        | N.D.      |       |    |
| 100) Methyl methacrylate       | 69   | 10.925 | 10.925 | 1.058  | 1873     | Below Cal | #     | 62 |
| 101) 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.      |       |    |
| 102) 2-Nitropropane            | 43   | 11.382 | 11.388 | 1.102  | 1278     | Below Cal | #     | 55 |
| 104) Ethyl methacrylate        | 69   | 12.199 | 12.186 | 0.904  | 3113     | Below Cal |       | 91 |
| 106) 1-Chlorohexane            | 55   | 13.387 | 13.387 | 0.842  | 628      | Below Cal |       | 85 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.515 | 14.509 | 0.913  | 2607     | Below Cal | #     | 71 |
| 108) Cyclohexanone             | 42   | 14.625 | 14.631 | 0.920  | 1151     | N.D.      |       |    |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.802 | 14.796 | 0.931  | 2907     | Below Cal |       | 83 |
| 110) Pentachloroethane         | 167  | 15.509 | 15.503 | 0.975  | 1746     | Below Cal |       | 91 |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.009  | 15969    | Below Cal |       | 96 |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 4027     | Below Cal |       | 96 |

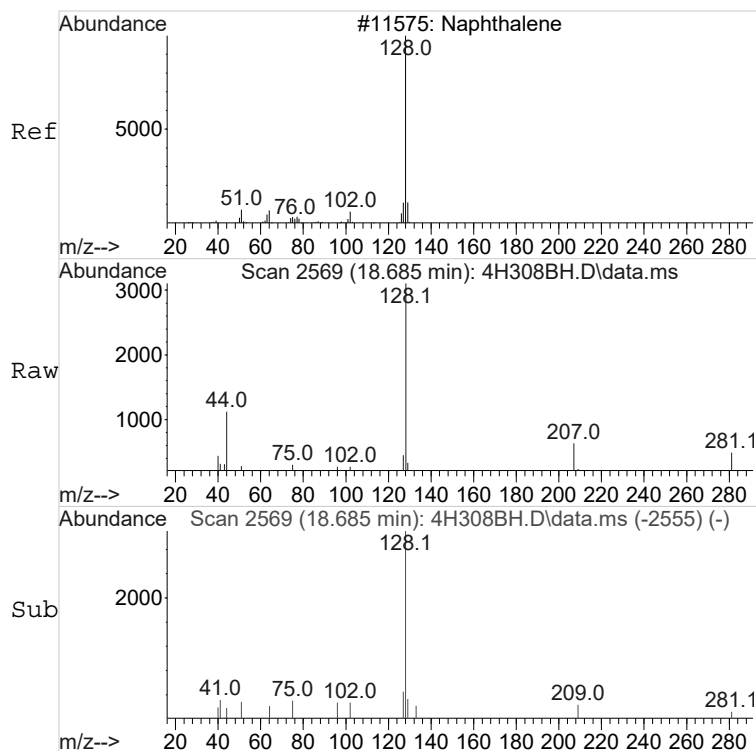
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H308BH.D  
Acq On : 02 Nov 2016 13:22  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666128|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A SOIL  
ALS Vial : 8 Sample Multiplier: 1

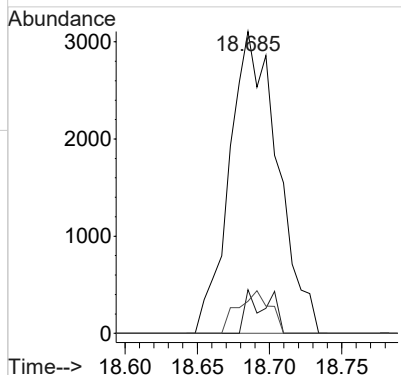
Quant Time: Nov 02 13:50:09 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE





#82  
Naphthalene  
Concen: 0.33 ug/L  
RT: 18.685 min Scan# 2569  
Delta R.T. 0.000 min  
Lab File: 4H308BH.D  
Acq: 02 Nov 2016 13:22

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 128     | 100   |       |       |
| 127     | 6.9   | 0.0   | 42.5  |
| 129     | 9.4   | 0.0   | 41.0  |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

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|  |                            |                      |             |
|--|----------------------------|----------------------|-------------|
| <b>SDG Number:</b> 409254                  |                            | <b>Matrix:</b>       | SOIL        |
| <b>Lab Sample ID:</b> 1203666129           |                            |                      |             |
| <b>Client Sample:</b> QC for batch 1612389 | <b>Client:</b> HAAL002     | <b>Project:</b>      | QC          |
| <b>Client ID:</b> MB for batch 1612389     | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>      | GL-OA-E-038 |
| <b>Batch ID:</b> 1612391                   | <b>Inst:</b> VOA4.I        | <b>Dilution:</b>     | 1           |
| <b>Run Date:</b> 11/03/2016 13:13          | <b>Analyst:</b> ACJ        | <b>Purge Vol:</b>    | 5 mL        |
| <b>Prep Date:</b> 11/03/2016 08:30         | <b>Aliquot:</b> 5 g        | <b>Final Volume:</b> | 5 mL        |
| <b>Data File:</b> 110316V4\4H407BH.D       | <b>Column:</b> DB-624      |                      |             |

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.00   | ug/kg | 0.500   | 1.00    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 123-91-1 | 1,4-Dioxane                 | U         | 50.0   | ug/kg | 16.7    | 50.0    |
| 78-93-3  | 2-Butanone                  | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 591-78-6 | 2-Hexanone                  | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 67-64-1  | Acetone                     | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 71-43-2  | Benzene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-97-5  | Bromochloromethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-27-4  | Bromodichloromethane        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-25-2  | Bromoform                   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-83-9  | Bromomethane                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-15-0  | Carbon disulfide            | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 108-90-7 | Chlorobenzene               | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-00-3  | Chloroethane                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 67-66-3  | Chloroform                  | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-87-3  | Chloromethane               | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 110-82-7 | Cyclohexane                 | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 124-48-1 | Dibromochloromethane        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 100-41-4 | Ethylbenzene                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 98-82-8  | Isopropylbenzene            | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-20-9  | Methyl acetate              | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 108-87-2 | Methylcyclohexane           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-09-2  | Methylene chloride          | U         | 5.00   | ug/kg | 1.67    | 5.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

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|  |                            |                             |
|--|----------------------------|-----------------------------|
| <b>SDG Number:</b> 409254                  |                            | <b>Matrix:</b> SOIL         |
| <b>Lab Sample ID:</b> 1203666129           |                            |                             |
| <b>Client Sample:</b> QC for batch 1612389 | <b>Client:</b> HAAL002     | <b>Project:</b> QC          |
| <b>Client ID:</b> MB for batch 1612389     | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1612391                   | <b>Inst:</b> VOA4.I        | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/03/2016 13:13          | <b>Analyst:</b> ACJ        | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 11/03/2016 08:30         | <b>Aliquot:</b> 5 g        | <b>Final Volume:</b> 5 mL   |
| <b>Data File:</b> 110316V4\4H407BH.D       | <b>Column:</b> DB-624      |                             |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 108-88-3    | Toluene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-01-6     | Trichloroethylene           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 75-01-4     | Vinyl chloride              | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.00   | ug/kg | 0.667   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.00   | ug/kg | 0.333   | 1.00    |



Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H407BH.D  
Acq On : 03 Nov 2016 13:13  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666129|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A SOIL  
ALS Vial : 7 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 03 13:37:45 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1162222  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 844132   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.905 | 1.000  | 437477   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1162222  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 844132   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 437477   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 284961  | 45.11 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1100568 | 45.72 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 434248  | 45.75 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 90%      |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 91%      |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 92%      |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    |      | 0.000  | 4.749  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 0.000  | 5.094  | 0.000  | 0        | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000  | 5.322  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000  | 5.887  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000  | 6.005  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     |      | 0.000  | 6.370  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000  | 6.706  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    | 43   | 7.065  | 7.059  | 0.684  | 3959     | N.D. |       |        |
| 10) 1,1-Dichloroethylene      |      | 0.000  | 7.090  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 0.000  | 7.327  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              | 41   | 7.425  | 7.407  | 0.719  | 2257     | N.D. |       |        |
| 13) Methyl acetate            | 43   | 7.456  | 7.456  | 0.722  | 603      | N.D. |       |        |
| 14) Carbon disulfide          | 76   | 7.474  | 7.468  | 0.724  | 4233     | N.D. |       |        |
| 15) Methylene chloride        | 84   | 7.645  | 7.645  | 0.740  | 2053     | N.D. |       |        |
| 16) tert-Butyl methyl ether   |      | 0.000  | 7.955  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000  | 7.992  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    | 57   | 8.279  | 8.285  | 0.802  | 398      | N.D. |       |        |
| 19) Vinyl acetate             | 43   | 8.425  | 8.413  | 0.816  | 2431     | N.D. |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000  | 8.461  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                | 43   | 9.053  | 9.028  | 0.877  | 3881     | N.D. |       |        |
| 22) cis-1,2-Dichloroethylene  |      | 0.000  | 9.095  | 0.000  | 0        | N.D. |       |        |
| 23) 2,2-Dichloropropane       |      | 0.000  | 9.132  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000  | 9.364  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 0.000  | 9.400  | 0.000  | 0        | N.D. |       |        |
| 26) 1,1,1-Trichloroethane     |      | 0.000  | 9.687  | 0.000  | 0        | N.D. |       |        |
| 27) Cyclohexane               | 56   | 9.967  | 9.790  | 0.965  | 105      | N.D. |       |        |
| 28) 1,1-Dichloropropene       |      | 0.000  | 9.839  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000  | 9.882  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        | 62   | 10.040 | 10.046 | 0.972  | 182      | N.D. |       |        |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 1469     | N.D. |       |        |
| 33) Cyclohexene               | 67   | 10.333 | 10.199 | 1.001  | 117      | N.D. |       |        |
| 34) n-Butyl alcohol           | 56   | 10.406 | 10.400 | 1.008  | 385      | N.D. |       |        |
| 35) Trichloroethylene         | 95   | 10.711 | 10.717 | 1.037  | 237      | N.D. |       |        |
| 36) 2-Pentanone               | 43   | 10.839 | 10.778 | 1.050  | 108      | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000  | 10.955 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 0.000  | 10.973 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H407BH.D  
Acq On : 03 Nov 2016 13:13  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666129|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A SOIL  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 03 13:37:45 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|-------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 39) Dibromomethane            |      | 0.000  | 11.083 | 0.000  | 0        | N.D.      |       |
| 40) Bromodichloromethane      |      | 0.000  | 11.193 | 0.000  | 0        | N.D.      |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 11.412 | 0.000  | 0        | N.D.      |       |
| 42) cis-1,3-Dichloropropylene | 75   | 11.650 | 11.644 | 1.128  | 269      | N.D.      |       |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 11.735 | 0.000  | 0        | N.D.      |       |
| 46) Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 3262     | N.D.      |       |
| 47) trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 450      | N.D.      |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 12.400 | 0.000  | 0        | N.D.      |       |
| 49) 2-Hexanone                | 43   | 12.595 | 12.583 | 0.934  | 2174     | N.D.      |       |
| 50) 1,3-Dichloropropane       |      | 0.000  | 12.595 | 0.000  | 0        | N.D.      |       |
| 51) Tetrachloroethylene       | 164  | 12.637 | 12.637 | 0.937  | 1158     | N.D.      |       |
| 52) Dibromochloromethane      |      | 0.000  | 12.863 | 0.000  | 0        | N.D.      |       |
| 53) 1,2-Dibromoethane         | 107  | 13.028 | 13.034 | 0.966  | 159      | N.D.      |       |
| 54) Chlorobenzene             | 112  | 13.521 | 13.521 | 1.002  | 1548     | N.D.      |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 13.576 | 0.000  | 0        | N.D.      |       |
| 56) Ethylbenzene              | 91   | 13.595 | 13.588 | 1.008  | 1817     | N.D.      |       |
| 57) m,p-Xylenes               | 106  | 13.692 | 13.698 | 1.015  | 1362     | N.D.      |       |
| 58) o-Xylene                  | 91   | 14.137 | 14.131 | 1.048  | 1494     | N.D.      |       |
| 59) Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 1651     | N.D.      |       |
| 61) Bromoform                 |      | 0.000  | 14.381 | 0.000  | 0        | N.D.      |       |
| 62) Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 1155     | N.D.      |       |
| 64) 1,1,2,2-Tetrachloroethane |      | 0.000  | 14.747 | 0.000  | 0        | N.D.      |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.838 | 0.000  | 0        | N.D.      |       |
| 66) Bromobenzene              | 156  | 14.893 | 14.893 | 0.937  | 912      | N.D.      |       |
| 67) n-Propylbenzene           | 91   | 14.911 | 14.917 | 0.938  | 2177     | N.D.      |       |
| 68) 1,3,5-Trimethylbenzene    | 105  | 15.058 | 15.070 | 0.947  | 1104     | N.D.      |       |
| 69) 2-Chlorotoluene           | 126  | 15.058 | 15.064 | 0.947  | 310      | N.D.      |       |
| 70) 4-Chlorotoluene           | 91   | 15.161 | 15.161 | 0.954  | 2938     | N.D.      |       |
| 71) tert-Butylbenzene         | 134  | 15.503 | 15.442 | 0.975  | 101      | N.D.      |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 15.472 | 15.478 | 0.973  | 1628     | N.D.      |       |
| 73) sec-Butylbenzene          | 105  | 15.667 | 15.661 | 0.985  | 1384     | N.D.      |       |
| 74) 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.993  | 1535     | N.D.      |       |
| 75) 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.997  | 2313     | N.D.      |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.936 | 15.929 | 1.002  | 2857     | N.D.      |       |
| 77) n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.021  | 2238     | N.D.      |       |
| 78) 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.029  | 1884     | N.D.      |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 17.228 | 0.000  | 0        | N.D.      |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 18.313 | 18.301 | 1.152  | 2122     | N.D.      |       |
| 81) Hexachlorobutadiene       | 225  | 18.502 | 18.490 | 1.164  | 151      | N.D.      |       |
| 82) Naphthalene               | 128  | 18.685 | 18.685 | 1.175  | 5864     | N.D.      |       |
| 83) 1,2,3-Trichlorobenzene    | 180  | 19.039 | 19.033 | 1.197  | 1447     | N.D.      |       |
| 85) Acrolein                  | 56   | 6.907  | 6.895  | 0.669  | 415      | N.D.      |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 7.096  | 0.000  | 0        | N.D.      |       |
| 87) Isopropyl Alcohol         | 45   | 7.120  | 7.139  | 0.689  | 138      | Below Cal | # 58  |
| 88) Allyl chloride            | 41   | 7.425  | 7.511  | 0.719  | 2257     | N.D.      |       |
| 89) tert-Butyl Alcohol        | 59   | 7.638  | 7.639  | 0.740  | 532      | Below Cal | # 100 |
| 90) Acrylonitrile             | 53   | 7.901  | 7.882  | 0.765  | 1675     | Below Cal | 78    |
| 91) Isopropyl ether           |      | 0.000  | 8.455  | 0.000  | 0        | N.D.      |       |
| 92) 2-Chloro-1,3-butadiene    | 53   | 8.571  | 8.577  | 0.830  | 497      | N.D.      |       |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.      |       |
| 94) Ethyl acetate             | 43   | 9.053  | 9.047  | 0.877  | 3881     | Below Cal | # 69  |
| 95) Propionitrile             | 54   | 9.108  | 9.096  | 0.882  | 555      | Below Cal | # 60  |
| 96) Methacrylonitrile         | 41   | 9.278  | 9.278  | 0.898  | 2896     | Below Cal | 92    |
| 97) Tetrahydrofuran           | 42   | 9.425  | 9.419  | 0.913  | 1416     | Below Cal | # 50  |
| 98) Isobutyl alcohol          | 41   | 9.711  | 9.717  | 0.940  | 787      | Below Cal | 93    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H407BH.D  
Acq On : 03 Nov 2016 13:13  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666129|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A SOIL  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 03 13:37:45 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

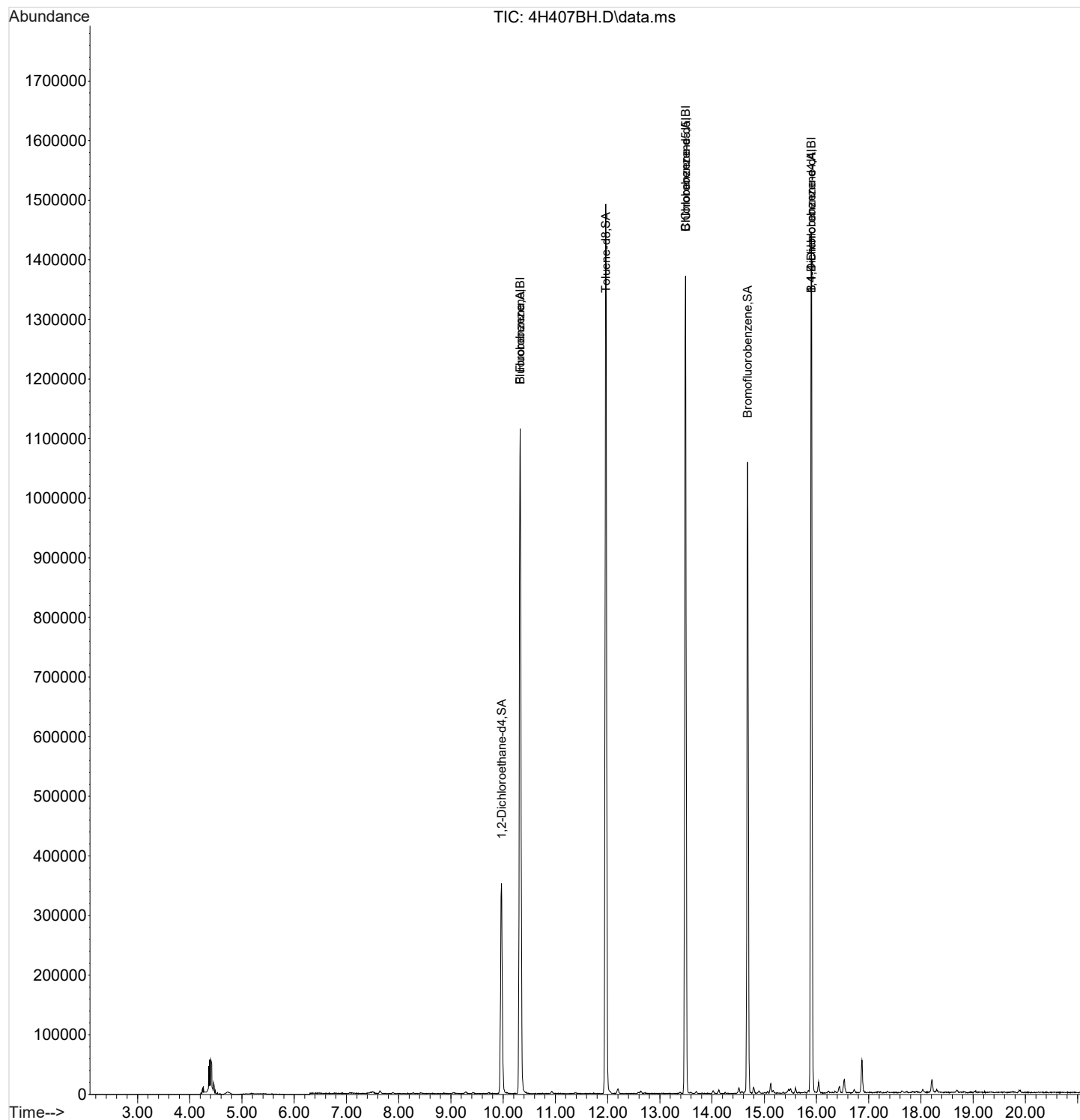
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |    |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|----|
| 99) Methyl tert-amyl ether     |      | 0.000  | 10.101 | 0.000  | 0        | N.D.      |       |    |
| 100) Methyl methacrylate       | 69   | 10.924 | 10.925 | 1.058  | 1475     | Below Cal | #     | 16 |
| 101) 1,4-Dioxane               |      | 0.000  | 11.034 | 0.000  | 0        | N.D.      |       |    |
| 102) 2-Nitropropane            | 43   | 11.388 | 11.388 | 1.103  | 1230     | Below Cal |       | 79 |
| 104) Ethyl methacrylate        | 69   | 12.192 | 12.186 | 0.904  | 2575     | Below Cal |       | 70 |
| 106) 1-Chlorohexane            | 55   | 13.387 | 13.387 | 0.842  | 762      | Below Cal | #     | 72 |
| 107) cis-1,4-Dichloro-2-butene | 53   | 14.515 | 14.509 | 0.913  | 2281     | Below Cal |       | 81 |
| 108) Cyclohexanone             | 42   | 14.631 | 14.631 | 0.920  | 1318     | N.D.      |       |    |
| 109) trans-1,4-Dichloro-2-b... | 53   | 14.796 | 14.796 | 0.931  | 2269     | Below Cal |       | 92 |
| 110) Pentachloroethane         | 167  | 15.503 | 15.503 | 0.975  | 1360     | Below Cal |       | 77 |
| 111) Benzyl chloride           | 91   | 16.039 | 16.039 | 1.009  | 15908    | Below Cal |       | 96 |
| 112) bis(2-Chloroisopropyl)... | 45   | 16.442 | 16.442 | 1.034  | 4315     | Below Cal |       | 93 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H407BH.D  
Acq On : 03 Nov 2016 13:13  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666129|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A SOIL  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 03 13:37:45 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 2

|  |                            |                      |             |
|--|----------------------------|----------------------|-------------|
| <b>SDG Number:</b> 409254                  |                            | <b>Matrix:</b>       | SOIL        |
| <b>Lab Sample ID:</b> 1203660807           |                            |                      |             |
| <b>Client Sample:</b> QC for batch 1612389 | <b>Client:</b> HAAL002     | <b>Project:</b>      | QC          |
| <b>Client ID:</b> MB for batch 1612389     | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>      | GL-OA-E-038 |
| <b>Batch ID:</b> 1612391                   | <b>Inst:</b> VOA6.I        | <b>Dilution:</b>     | 1           |
| <b>Run Date:</b> 11/01/2016 13:00          | <b>Analyst:</b> ACJ        | <b>Purge Vol:</b>    | 5 mL        |
| <b>Prep Date:</b> 11/01/2016 08:30         | <b>Aliquot:</b> 5 g        | <b>Final Volume:</b> | 5 mL        |
| <b>Data File:</b> 110116V6\6G209B.D        | <b>Column:</b> DB-624      |                      |             |

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-00-5  | 1,1,2-Trichloroethane       | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-34-3  | 1,1-Dichloroethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-35-4  | 1,1-Dichloroethylene        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 87-61-6  | 1,2,3-Trichlorobenzene      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 120-82-1 | 1,2,4-Trichlorobenzene      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane | U         | 1.00   | ug/kg | 0.500   | 1.00    |
| 106-93-4 | 1,2-Dibromoethane           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 95-50-1  | 1,2-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 107-06-2 | 1,2-Dichloroethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 78-87-5  | 1,2-Dichloropropane         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 541-73-1 | 1,3-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 106-46-7 | 1,4-Dichlorobenzene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 123-91-1 | 1,4-Dioxane                 | U         | 50.0   | ug/kg | 16.7    | 50.0    |
| 78-93-3  | 2-Butanone                  | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 591-78-6 | 2-Hexanone                  | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 108-10-1 | 4-Methyl-2-pentanone        | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 67-64-1  | Acetone                     | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 71-43-2  | Benzene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-97-5  | Bromochloromethane          | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-27-4  | Bromodichloromethane        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-25-2  | Bromoform                   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-83-9  | Bromomethane                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-15-0  | Carbon disulfide            | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 56-23-5  | Carbon tetrachloride        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 108-90-7 | Chlorobenzene               | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-00-3  | Chloroethane                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 67-66-3  | Chloroform                  | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 74-87-3  | Chloromethane               | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 110-82-7 | Cyclohexane                 | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 124-48-1 | Dibromochloromethane        | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-71-8  | Dichlorodifluoromethane     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 100-41-4 | Ethylbenzene                | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 98-82-8  | Isopropylbenzene            | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-20-9  | Methyl acetate              | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 108-87-2 | Methylcyclohexane           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-09-2  | Methylene chloride          | J         | 2.14   | ug/kg | 1.67    | 5.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

|                       |                             |                      |                    |
|-----------------------|-----------------------------|----------------------|--------------------|
| <b>SDG Number:</b>    | <b>409254</b>               | <b>Matrix:</b>       | <b>SOIL</b>        |
| <b>Lab Sample ID:</b> | <b>1203660807</b>           |                      |                    |
| <b>Client Sample:</b> | <b>QC for batch 1612389</b> | <b>Client:</b>       | <b>HAAL002</b>     |
| <b>Client ID:</b>     | <b>MB for batch 1612389</b> | <b>Method:</b>       | <b>SW846 8260B</b> |
| <b>Batch ID:</b>      | <b>1612391</b>              | <b>Inst:</b>         | <b>VOA6.I</b>      |
| <b>Run Date:</b>      | <b>11/01/2016 13:00</b>     | <b>Analyst:</b>      | <b>ACJ</b>         |
| <b>Prep Date:</b>     | <b>11/01/2016 08:30</b>     | <b>Aliquot:</b>      | <b>5 g</b>         |
| <b>Data File:</b>     | <b>110116V6\6G209B.D</b>    | <b>Column:</b>       | <b>DB-624</b>      |
|                       |                             | <b>Project:</b>      | <b>QC</b>          |
|                       |                             | <b>SOP Ref:</b>      | <b>GL-OA-E-038</b> |
|                       |                             | <b>Dilution:</b>     | <b>1</b>           |
|                       |                             | <b>Purge Vol:</b>    | <b>5 mL</b>        |
|                       |                             | <b>Final Volume:</b> | <b>5 mL</b>        |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 127-18-4    | Tetrachloroethylene         | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 108-88-3    | Toluene                     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 79-01-6     | Trichloroethylene           | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 75-69-4     | Trichlorofluoromethane      | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 75-01-4     | Vinyl chloride              | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 156-59-2    | cis-1,2-Dichloroethylene    | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 10061-01-5  | cis-1,3-Dichloropropylene   | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 | U         | 2.00   | ug/kg | 0.667   | 2.00    |
| 95-47-6     | o-Xylene                    | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 1634-04-4   | tert-Butyl methyl ether     | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 156-60-5    | trans-1,2-Dichloroethylene  | U         | 1.00   | ug/kg | 0.333   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene | U         | 1.00   | ug/kg | 0.333   | 1.00    |

Agf

11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G209B.D  
Acq On : 01 Nov 2016 13:00  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660807|1612391|1|VOAF|1|VOA8260BS|  
Misc : BLANK 5G N/A SOIL  
ALS Vial : 9 Sample Multiplier: 1

Cell

11/09/2016

Quant Time: Nov 01 14:37:20 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1796311  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.629 | 1.000  | 1361879  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 704101   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1796311  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.628 | 1.000  | 1361879  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 704101   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 580778  | 49.16 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1833595 | 50.49 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 712597  | 50.04 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 98%      |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 101%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 100%     |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|------|-------|--------|
| 2) Dichlorodifluoromethane    | 50   | 0.000 | 4.001  | 0.000  | 0        | N.D. |       |        |
| 3) Chloromethane              |      | 4.241 | 4.282  | 0.449  | 270      | N.D. |       |        |
| 4) Vinyl chloride             |      | 0.000 | 4.498  | 0.000  | 0        | N.D. |       |        |
| 5) Bromomethane               |      | 0.000 | 5.020  | 0.000  | 0        | N.D. |       |        |
| 6) Chloroethane               |      | 0.000 | 5.156  | 0.000  | 0        | N.D. |       |        |
| 7) Trichlorofluoromethane     | 43   | 0.000 | 5.509  | 0.000  | 0        | N.D. |       |        |
| 8) Ethyl ether                |      | 0.000 | 5.830  | 0.000  | 0        | N.D. |       |        |
| 9) Acetone                    |      | 6.203 | 6.197  | 0.657  | 2176     | N.D. |       |        |
| 10) 1,1-Dichloroethylene      |      | 0.000 | 6.191  | 0.000  | 0        | N.D. |       |        |
| 11) Iodomethane               |      | 0.000 | 6.429  | 0.000  | 0        | N.D. |       |        |
| 12) Acetonitrile              | 41   | 6.556 | 6.550  | 0.695  | 879      | N.D. |       |        |
| 13) Methyl acetate            | 43   | 6.581 | 6.575  | 0.697  | 636      | N.D. |       |        |
| 14) Carbon disulfide          | 76   | 6.556 | 6.550  | 0.695  | 2996     | N.D. |       |        |
| 15) Methylene chloride        | 84   | 6.758 | 6.764  | 0.716  | 26891    | 2.14 | ug/L  | 93     |
| 16) tert-Butyl methyl ether   | 57   | 0.000 | 7.050  | 0.000  | 0        | N.D. |       |        |
| 17) trans-1,2-Dichloroethy... |      | 0.000 | 7.093  | 0.000  | 0        | N.D. |       |        |
| 18) Hexane                    |      | 7.355 | 7.367  | 0.779  | 1114     | N.D. |       |        |
| 19) Vinyl acetate             |      | 7.556 | 7.538  | 0.800  | 1875     | N.D. |       |        |
| 20) 1,1-Dichloroethane        |      | 0.000 | 7.575  | 0.000  | 0        | N.D. |       |        |
| 21) 2-Butanone                | 43   | 8.178 | 8.160  | 0.866  | 2515     | N.D. |       |        |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.202 | 8.209  | 0.869  | 500      | N.D. |       |        |
| 23) 2,2-Dichloropropane       | 97   | 0.000 | 8.233  | 0.000  | 0        | N.D. |       |        |
| 24) Bromochloromethane        |      | 0.000 | 8.483  | 0.000  | 0        | N.D. |       |        |
| 25) Chloroform                |      | 0.000 | 8.520  | 0.000  | 0        | N.D. |       |        |
| 26) 1,1,1-Trichloroethane     |      | 8.800 | 8.788  | 0.932  | 200      | N.D. |       |        |
| 27) Cyclohexane               |      | 8.861 | 8.873  | 0.939  | 106      | N.D. |       |        |
| 28) 1,1-Dichloropropene       | 56   | 0.000 | 8.946  | 0.000  | 0        | N.D. |       |        |
| 29) Carbon tetrachloride      |      | 0.000 | 8.977  | 0.000  | 0        | N.D. |       |        |
| 31) 1,2-Dichloroethane        |      | 9.184 | 9.172  | 0.973  | 400      | N.D. |       |        |
| 32) Benzene                   |      | 9.190 | 9.184  | 0.974  | 1377     | N.D. |       |        |
| 33) Cyclohexene               |      | 0.000 | 9.294  | 0.000  | 0        | N.D. |       |        |
| 34) n-Butyl alcohol           | 56   | 9.580 | 9.568  | 1.015  | 137      | N.D. |       |        |
| 35) Trichloroethylene         | 95   | 9.842 | 9.830  | 1.043  | 247      | N.D. |       |        |
| 36) 2-Pentanone               | 95   | 0.000 | 9.928  | 0.000  | 0        | N.D. |       |        |
| 37) 1,2-Dichloropropane       |      | 0.000 | 10.080 | 0.000  | 0        | N.D. |       |        |
| 38) Methylcyclohexane         |      | 0.000 | 10.068 | 0.000  | 0        | N.D. |       |        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G209B.D  
Acq On : 01 Nov 2016 13:00  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660807|1612391|1|VOAF|1|VOA8260BS|  
Misc : BLANK 5G N/A SOIL  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 01 14:37:20 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|-------------------------------|------|--------|--------|--------|----------|------|-------|
| 39) Dibromomethane            |      | 0.000  | 10.214 | 0.000  | 0        | N.D. |       |
| 40) Bromodichloromethane      |      | 0.000  | 10.330 | 0.000  | 0        | N.D. |       |
| 41) 2-Chloroethylvinyl ether  |      | 0.000  | 10.568 | 0.000  | 0        | N.D. |       |
| 42) cis-1,3-Dichloropropylene |      | 0.000  | 10.787 | 0.000  | 0        | N.D. |       |
| 44) 4-Methyl-2-pentanone      |      | 0.000  | 10.891 | 0.000  | 0        | N.D. |       |
| 46) Toluene                   | 91   | 11.165 | 11.172 | 0.884  | 5783     | N.D. |       |
| 47) trans-1,3-Dichloroprop... | 75   | 11.348 | 11.342 | 0.899  | 513      | N.D. |       |
| 48) 1,1,2-Trichloroethane     |      | 0.000  | 11.556 | 0.000  | 0        | N.D. |       |
| 49) 2-Hexanone                | 43   | 11.757 | 11.745 | 0.931  | 1283     | N.D. |       |
| 50) 1,3-Dichloropropane       | 76   | 11.750 | 11.751 | 0.930  | 271      | N.D. |       |
| 51) Tetrachloroethylene       |      | 0.000  | 11.763 | 0.000  | 0        | N.D. |       |
| 52) Dibromochloromethane      |      | 0.000  | 12.013 | 0.000  | 0        | N.D. |       |
| 53) 1,2-Dibromoethane         |      | 0.000  | 12.177 | 0.000  | 0        | N.D. |       |
| 54) Chlorobenzene             | 112  | 12.671 | 12.665 | 1.003  | 1623     | N.D. |       |
| 55) 1,1,1,2-Tetrachloroethane |      | 0.000  | 12.720 | 0.000  | 0        | N.D. |       |
| 56) Ethylbenzene              | 91   | 12.738 | 12.732 | 1.009  | 1513     | N.D. |       |
| 57) m,p-Xylenes               | 106  | 12.848 | 12.842 | 1.017  | 1169     | N.D. |       |
| 58) o-Xylene                  | 91   | 13.281 | 13.275 | 1.052  | 713      | N.D. |       |
| 59) Styrene                   | 104  | 13.293 | 13.281 | 1.053  | 1333     | N.D. |       |
| 61) Bromoform                 |      | 0.000  | 13.537 | 0.000  | 0        | N.D. |       |
| 62) Isopropylbenzene          | 105  | 13.646 | 13.641 | 0.906  | 777      | N.D. |       |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 13.835 | 13.927 | 0.919  | 196      | N.D. |       |
| 65) 1,2,3-Trichloropropane    |      | 0.000  | 14.012 | 0.000  | 0        | N.D. |       |
| 66) Bromobenzene              | 156  | 14.037 | 14.043 | 0.932  | 768      | N.D. |       |
| 67) n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 1051     | N.D. |       |
| 68) 1,3,5-Trimethylbenzene    | 105  | 14.219 | 14.226 | 0.945  | 944      | N.D. |       |
| 69) 2-Chlorotoluene           |      | 0.000  | 14.214 | 0.000  | 0        | N.D. |       |
| 70) 4-Chlorotoluene           | 91   | 14.317 | 14.317 | 0.951  | 2130     | N.D. |       |
| 71) tert-Butylbenzene         |      | 0.000  | 14.592 | 0.000  | 0        | N.D. |       |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.640 | 14.634 | 0.972  | 1175     | N.D. |       |
| 73) sec-Butylbenzene          | 105  | 14.817 | 14.817 | 0.984  | 457      | N.D. |       |
| 74) 4-Isopropyltoluene        | 119  | 14.585 | 14.592 | 0.969  | 367      | N.D. |       |
| 75) 1,3-Dichlorobenzene       | 146  | 14.994 | 14.994 | 0.996  | 1831     | N.D. |       |
| 76) 1,4-Dichlorobenzene       | 146  | 15.085 | 15.085 | 1.002  | 3556     | N.D. |       |
| 77) n-Butylbenzene            | 91   | 15.372 | 15.372 | 1.021  | 1084     | N.D. |       |
| 78) 1,2-Dichlorobenzene       | 146  | 15.494 | 15.494 | 1.029  | 1312     | N.D. |       |
| 79) 1,2-Dibromo-3-chloropr... |      | 0.000  | 16.311 | 0.000  | 0        | N.D. |       |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.286 | 17.280 | 1.148  | 2249     | N.D. |       |
| 81) Hexachlorobutadiene       |      | 0.000  | 17.445 | 0.000  | 0        | N.D. |       |
| 82) Naphthalene               | 128  | 17.633 | 17.628 | 1.171  | 5034     | N.D. |       |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.938 | 17.945 | 1.192  | 1351     | N.D. |       |
| 85) Acrolein                  | 56   | 6.056  | 6.026  | 0.642  | 102      | N.D. |       |
| 86) Trichlorotrifluoroethane  |      | 0.000  | 6.185  | 0.000  | 0        | N.D. |       |
| 87) Isopropyl Alcohol         | 45   | 6.276  | 6.282  | 0.665  | 342      | N.D. |       |
| 88) Allyl chloride            | 41   | 6.556  | 6.611  | 0.695  | 879      | N.D. |       |
| 89) tert-Butyl Alcohol        |      | 0.000  | 6.770  | 0.000  | 0        | N.D. |       |
| 90) Acrylonitrile             | 53   | 7.014  | 7.014  | 0.743  | 448      | N.D. |       |
| 91) Isopropyl ether           |      | 0.000  | 7.556  | 0.000  | 0        | N.D. |       |
| 92) 2-Chloro-1,3-butadiene    | 53   | 7.672  | 7.672  | 0.813  | 136      | N.D. |       |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D. |       |
| 94) Ethyl acetate             | 43   | 8.178  | 8.178  | 0.866  | 2515     | N.D. |       |
| 95) Propionitrile             | 54   | 8.282  | 8.245  | 0.877  | 141      | N.D. |       |
| 96) Methacrylonitrile         | 41   | 8.434  | 8.416  | 0.893  | 1283     | N.D. |       |
| 97) Tetrahydrofuran           | 42   | 8.525  | 8.526  | 0.903  | 3951     | N.D. |       |
| 98) Isobutyl alcohol          | 41   | 8.836  | 8.873  | 0.936  | 144      | N.D. |       |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G209B.D  
Acq On : 01 Nov 2016 13:00  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660807|1612391|1|VOAF|1|VOA8260BS|  
Misc : BLANK 5G N/A SOIL  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 01 14:37:20 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

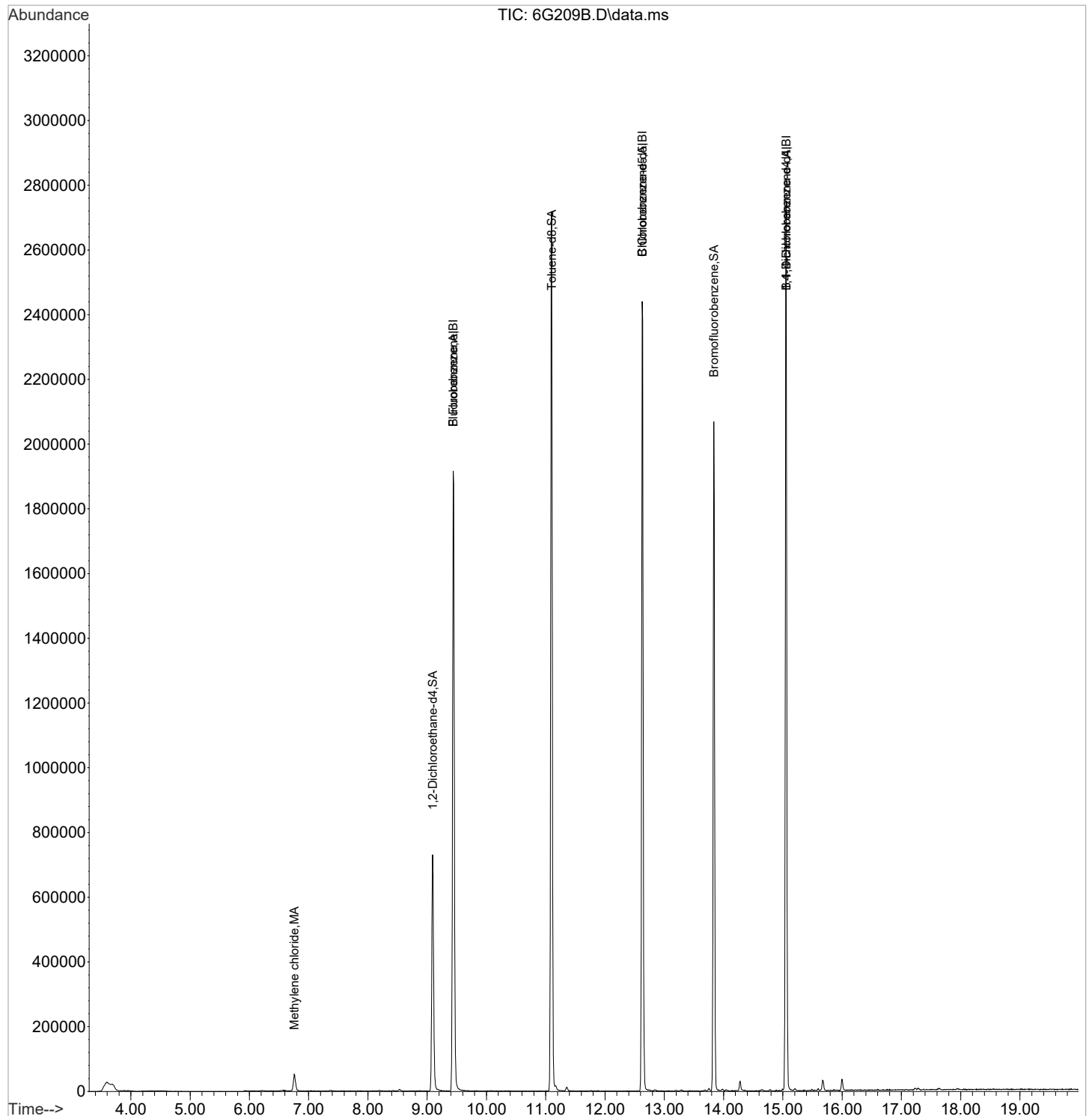
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc      | Units |
|--------------------------------|------|--------|--------|--------|----------|-----------|-------|
| 99) Methyl tert-amyl ether     |      | 0.000  | 9.214  | 0.000  | 0        | N.D.      |       |
| 100) Methyl methacrylate       | 69   | 10.080 | 10.068 | 1.068  | 492      | N.D.      |       |
| 101) 1,4-Dioxane               |      | 0.000  | 10.172 | 0.000  | 0        | N.D.      |       |
| 102) 2-Nitropropane            |      | 0.000  | 10.543 | 0.000  | 0        | N.D.      |       |
| 104) Ethyl methacrylate        | 69   | 11.366 | 11.348 | 0.900  | 862      | N.D.      |       |
| 106) 1-Chlorohexane            |      | 0.000  | 12.543 | 0.000  | 0        | N.D.      |       |
| 107) cis-1,4-Dichloro-2-butene | 53   | 13.689 | 13.689 | 0.909  | 979      | N.D.      |       |
| 108) Cyclohexanone             | 42   | 13.781 | 13.793 | 0.915  | 166      | N.D.      |       |
| 109) trans-1,4-Dichloro-2-b... | 53   | 13.982 | 13.976 | 0.929  | 1268     | N.D.      |       |
| 110) Pentachloroethane         |      | 0.000  | 14.658 | 0.000  | 0        | N.D.      |       |
| 111) Benzyl chloride           | 91   | 15.201 | 15.201 | 1.010  | 3969     | Below Cal | 97    |
| 112) bis(2-Chloroisopropyl)... | 45   | 15.597 | 15.591 | 1.036  | 1029     | N.D.      |       |

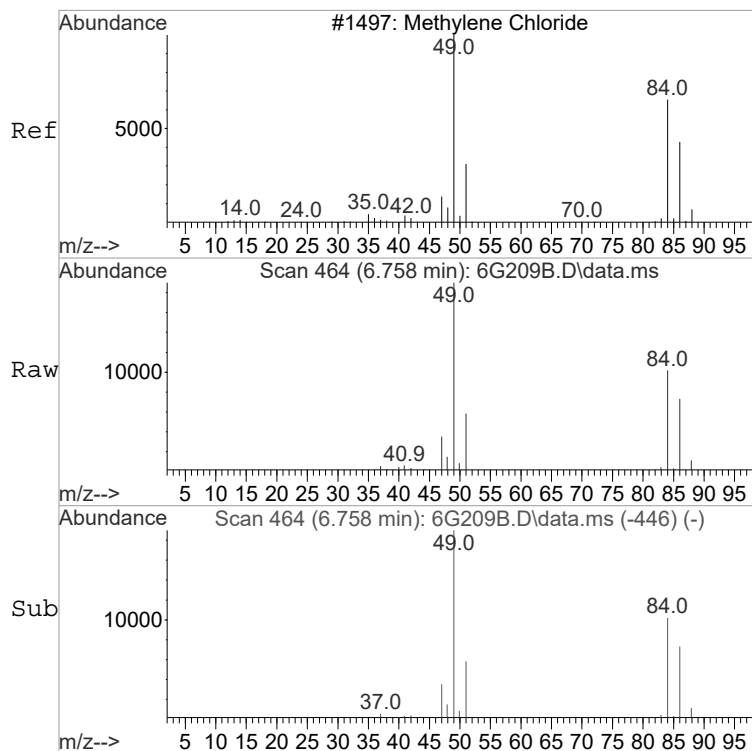
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G209B.D  
Acq On : 01 Nov 2016 13:00  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660807|1612391|1|VOAF|1|VOA8260BS|  
Misc : BLANK 5G N/A SOIL  
ALS Vial : 9 Sample Multiplier: 1

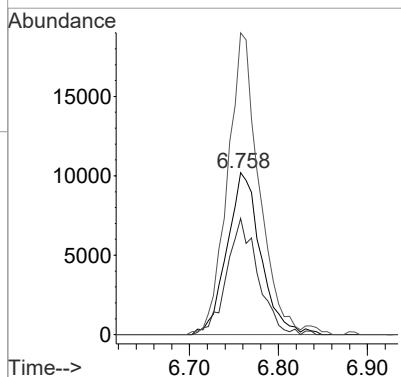
Quant Time: Nov 01 14:37:20 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE





#15  
Methylene chloride  
Concen: 2.14 ug/L  
RT: 6.758 min Scan# 464  
Delta R.T. -0.006 min  
Lab File: 6G209B.D  
Acq: 01 Nov 2016 13:00

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 84      | 100   |       |       |
| 86      | 66.2  | 34.0  | 94.0  |
| 49      | 172.8 | 155.6 | 215.6 |



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 2

|  |                            |                      |             |
|--|----------------------------|----------------------|-------------|
| <b>SDG Number:</b> 409254                  |                            | <b>Matrix:</b>       | SOIL        |
| <b>Lab Sample ID:</b> 1203666130           |                            |                      |             |
| <b>Client Sample:</b> QC for batch 1612389 | <b>Client:</b> HAAL002     | <b>Project:</b>      | QC          |
| <b>Client ID:</b> LCS for batch 1612389    | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>      | GL-OA-E-038 |
| <b>Batch ID:</b> 1612391                   | <b>Inst:</b> VOA4.I        | <b>Dilution:</b>     | 1           |
| <b>Run Date:</b> 11/02/2016 11:25          | <b>Analyst:</b> ACJ        | <b>Purge Vol:</b>    | 5 mL        |
| <b>Prep Date:</b> 11/02/2016 08:00         | <b>Aliquot:</b> 5 g        | <b>Final Volume:</b> | 5 mL        |
| <b>Data File:</b> 110216V4\4H304LH.D       | <b>Column:</b> DB-624      |                      |             |

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       |           | 44.3   | ug/kg | 0.333   | 1.00    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   |           | 45.6   | ug/kg | 0.333   | 1.00    |
| 79-00-5  | 1,1,2-Trichloroethane       |           | 46.3   | ug/kg | 0.333   | 1.00    |
| 75-34-3  | 1,1-Dichloroethane          |           | 45.9   | ug/kg | 0.333   | 1.00    |
| 75-35-4  | 1,1-Dichloroethylene        |           | 42.1   | ug/kg | 0.333   | 1.00    |
| 87-61-6  | 1,2,3-Trichlorobenzene      |           | 46.3   | ug/kg | 0.333   | 1.00    |
| 120-82-1 | 1,2,4-Trichlorobenzene      |           | 45.0   | ug/kg | 0.333   | 1.00    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane |           | 48.0   | ug/kg | 0.500   | 1.00    |
| 106-93-4 | 1,2-Dibromoethane           |           | 48.4   | ug/kg | 0.333   | 1.00    |
| 95-50-1  | 1,2-Dichlorobenzene         |           | 44.8   | ug/kg | 0.333   | 1.00    |
| 107-06-2 | 1,2-Dichloroethane          |           | 46.8   | ug/kg | 0.333   | 1.00    |
| 78-87-5  | 1,2-Dichloropropane         |           | 47.2   | ug/kg | 0.333   | 1.00    |
| 541-73-1 | 1,3-Dichlorobenzene         |           | 44.0   | ug/kg | 0.333   | 1.00    |
| 106-46-7 | 1,4-Dichlorobenzene         |           | 44.1   | ug/kg | 0.333   | 1.00    |
| 123-91-1 | 1,4-Dioxane                 | U         | 50.0   | ug/kg | 16.7    | 50.0    |
| 78-93-3  | 2-Butanone                  |           | 240    | ug/kg | 1.67    | 5.00    |
| 591-78-6 | 2-Hexanone                  |           | 244    | ug/kg | 1.67    | 5.00    |
| 108-10-1 | 4-Methyl-2-pentanone        |           | 222    | ug/kg | 1.67    | 5.00    |
| 67-64-1  | Acetone                     |           | 236    | ug/kg | 1.67    | 5.00    |
| 71-43-2  | Benzene                     |           | 44.7   | ug/kg | 0.333   | 1.00    |
| 74-97-5  | Bromochloromethane          |           | 47.9   | ug/kg | 0.333   | 1.00    |
| 75-27-4  | Bromodichloromethane        |           | 48.7   | ug/kg | 0.333   | 1.00    |
| 75-25-2  | Bromoform                   |           | 50.9   | ug/kg | 0.333   | 1.00    |
| 74-83-9  | Bromomethane                |           | 48.0   | ug/kg | 0.333   | 1.00    |
| 75-15-0  | Carbon disulfide            |           | 212    | ug/kg | 1.67    | 5.00    |
| 56-23-5  | Carbon tetrachloride        |           | 46.0   | ug/kg | 0.333   | 1.00    |
| 108-90-7 | Chlorobenzene               |           | 44.8   | ug/kg | 0.333   | 1.00    |
| 75-00-3  | Chloroethane                |           | 47.1   | ug/kg | 0.333   | 1.00    |
| 67-66-3  | Chloroform                  |           | 46.3   | ug/kg | 0.333   | 1.00    |
| 74-87-3  | Chloromethane               |           | 41.9   | ug/kg | 0.333   | 1.00    |
| 110-82-7 | Cyclohexane                 |           | 44.9   | ug/kg | 0.333   | 1.00    |
| 124-48-1 | Dibromochloromethane        |           | 50.1   | ug/kg | 0.333   | 1.00    |
| 75-71-8  | Dichlorodifluoromethane     |           | 45.6   | ug/kg | 0.333   | 1.00    |
| 100-41-4 | Ethylbenzene                |           | 43.6   | ug/kg | 0.333   | 1.00    |
| 98-82-8  | Isopropylbenzene            |           | 44.2   | ug/kg | 0.333   | 1.00    |
| 79-20-9  | Methyl acetate              |           | 221    | ug/kg | 1.67    | 5.00    |
| 108-87-2 | Methylcyclohexane           |           | 44.5   | ug/kg | 0.333   | 1.00    |
| 75-09-2  | Methylene chloride          |           | 41.7   | ug/kg | 1.67    | 5.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 1203666130  
**Client Sample:** QC for batch 1612389  
**Client ID:** LCS for batch 1612389  
**Batch ID:** 1612391  
**Run Date:** 11/02/2016 11:25  
**Prep Date:** 11/02/2016 08:00  
**Data File:** 110216V4\4H304LH.D

**Client:** HAAL002  
**Method:** SW846 8260B  
**Inst:** VOA4.I  
**Analyst:** ACJ  
**Aliquot:** 5 g  
**Column:** DB-624

**Matrix:** SOIL  
**Project:** QC  
**SOP Ref:** GL-OA-E-038  
**Dilution:** 1  
**Purge Vol:** 5 mL  
**Final Volume:** 5 mL

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     | U         | 44.8   | ug/kg | 0.333   | 1.00    |
| 127-18-4    | Tetrachloroethylene         |           | 43.8   | ug/kg | 0.333   | 1.00    |
| 108-88-3    | Toluene                     |           | 44.6   | ug/kg | 0.333   | 1.00    |
| 79-01-6     | Trichloroethylene           |           | 45.9   | ug/kg | 0.333   | 1.00    |
| 75-69-4     | Trichlorofluoromethane      |           | 47.6   | ug/kg | 0.333   | 1.00    |
| 76-13-1     | Trichlorotrifluoroethane    |           | 5.00   | ug/kg | 1.67    | 5.00    |
| 75-01-4     | Vinyl chloride              |           | 48.8   | ug/kg | 0.333   | 1.00    |
| 156-59-2    | cis-1,2-Dichloroethylene    |           | 47.0   | ug/kg | 0.333   | 1.00    |
| 10061-01-5  | cis-1,3-Dichloropropylene   |           | 47.1   | ug/kg | 0.333   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 |           | 87.9   | ug/kg | 0.667   | 2.00    |
| 95-47-6     | o-Xylene                    |           | 42.7   | ug/kg | 0.333   | 1.00    |
| 1634-04-4   | tert-Butyl methyl ether     |           | 47.3   | ug/kg | 0.333   | 1.00    |
| 156-60-5    | trans-1,2-Dichloroethylene  |           | 45.3   | ug/kg | 0.333   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene |           | 49.4   | ug/kg | 0.333   | 1.00    |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H304LH.D  
Acq On : 02 Nov 2016 11:25  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666130|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A MIX[A] SOIL 1023-01A/0926-01B/1102-01  
ALS Vial : 4 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 02 11:47:20 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1165495  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 851584   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.905 | 1.000  | 448758   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1165495  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 851584   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 448758   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 315139  | 49.75 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1195684 | 49.23 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 485356  | 49.85 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 100%     |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 98%      |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 100%     |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.749  | 4.749  | 0.460  | 319851   | 45.56   | ug/L  | 100    |
| 3) Chloromethane              | 50   | 5.102  | 5.094  | 0.494  | 325170   | 41.94   | ug/L  | 99     |
| 4) Vinyl chloride             | 62   | 5.330  | 5.322  | 0.516  | 305381   | 48.77   | ug/L  | 99     |
| 5) Bromomethane               | 94   | 5.887  | 5.887  | 0.570  | 308639   | 48.01   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 6.005  | 6.005  | 0.581  | 294628   | 47.13   | ug/L  | 100    |
| 7) Trichlorofluoromethane     | 101  | 6.370  | 6.370  | 0.617  | 498229   | 47.60   | ug/L  | 99     |
| 8) Ethyl ether                | 59   | 6.712  | 6.706  | 0.650  | 288897   | 48.93   | ug/L  | 99     |
| 9) Acetone                    | 43   | 7.065  | 7.059  | 0.684  | 879841   | 236.33  | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      | 61   | 7.090  | 7.090  | 0.687  | 497025   | 42.12   | ug/L  | 99     |
| 11) Iodomethane               | 142  | 7.334  | 7.327  | 0.710  | 2529038  | 220.48  | ug/L  | 100    |
| 12) Acetonitrile              | 41   | 7.407  | 7.407  | 0.717  | 927583   | 1111.33 | ug/L  | 100    |
| 13) Methyl acetate            | 43   | 7.456  | 7.456  | 0.722  | 1023768  | 221.41  | ug/L  | 100    |
| 14) Carbon disulfide          | 76   | 7.474  | 7.468  | 0.724  | 4916467  | 211.79  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 7.644  | 7.645  | 0.740  | 337616   | 41.72   | ug/L  | 99     |
| 16) tert-Butyl methyl ether   | 73   | 7.955  | 7.955  | 0.770  | 883832   | 47.25   | ug/L  | 100    |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 504737   | 45.31   | ug/L  | 99     |
| 18) Hexane                    | 57   | 8.279  | 8.285  | 0.802  | 1288     | N.D.    |       |        |
| 19) Vinyl acetate             | 43   | 8.413  | 8.413  | 0.815  | 3159820  | 245.86  | ug/L  | 100    |
| 20) 1,1-Dichloroethane        | 63   | 8.461  | 8.461  | 0.819  | 618893   | 45.93   | ug/L  | 100    |
| 21) 2-Butanone                | 43   | 9.028  | 9.028  | 0.874  | 1120882  | 240.11  | ug/L  | 100    |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.089  | 9.095  | 0.880  | 365782   | 46.95   | ug/L  | 99     |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 537667   | 46.43   | ug/L  | 100    |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 155704   | 47.93   | ug/L  | 98     |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 569511   | 46.28   | ug/L  | 100    |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 523556   | 44.32   | ug/L  | 99     |
| 27) Cyclohexane               | 56   | 9.790  | 9.790  | 0.948  | 717547   | 44.92   | ug/L  | 99     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.839  | 0.953  | 444503   | 44.34   | ug/L  | 98     |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 464505   | 45.96   | ug/L  | 100    |
| 31) 1,2-Dichloroethane        | 62   | 10.046 | 10.046 | 0.973  | 414263   | 46.76   | ug/L  | 99     |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 1294471  | 44.69   | ug/L  | 100    |
| 33) Cyclohexene               | 67   | 10.199 | 10.199 | 0.988  | 696955   | 49.11   | ug/L  | 100    |
| 34) n-Butyl alcohol           | 56   | 10.400 | 10.400 | 1.007  | 968008   | 4950.07 | ug/L  | 99     |
| 35) Trichloroethylene         | 95   | 10.711 | 10.717 | 1.037  | 344816   | 45.91   | ug/L  | 99     |
| 36) 2-Pentanone               | 43   | 10.894 | 10.778 | 1.055  | 582      | N.D.    |       |        |
| 37) 1,2-Dichloropropane       | 63   | 10.955 | 10.955 | 1.061  | 359440   | 47.22   | ug/L  | 99     |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.973 | 1.063  | 634821   | 44.47   | ug/L  | 99     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H304LH.D  
Acq On : 02 Nov 2016 11:25  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666130|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A MIX[A] SOIL 1023-01A/0926-01B/1102-01  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 02 11:47:20 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 181489   | 46.59  | ug/L  | 99  |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.193 | 1.084  | 446699   | 48.73  | ug/L  | 100 |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.412 | 11.412 | 1.105  | 736372   | 212.61 | ug/L  | 100 |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 533633   | 47.10  | ug/L  | 100 |
| 44) 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 594058   | 221.83 | ug/L  | 99  |
| 46) Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 1360270  | 44.59  | ug/L  | 100 |
| 47) trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 474965   | 49.36  | ug/L  | 99  |
| 48) 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 222704   | 46.29  | ug/L  | 99  |
| 49) 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 1622470  | 243.65 | ug/L  | 99  |
| 50) 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 430464   | 45.86  | ug/L  | 95  |
| 51) Tetrachloroethylene       | 164  | 12.637 | 12.637 | 0.937  | 261469   | 43.75  | ug/L  | 99  |
| 52) Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 314609   | 50.09  | ug/L  | 99  |
| 53) 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 268085   | 48.43  | ug/L  | 99  |
| 54) Chlorobenzene             | 112  | 13.521 | 13.521 | 1.002  | 889005   | 44.84  | ug/L  | 100 |
| 55) 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.576 | 1.006  | 328815   | 46.76  | ug/L  | 99  |
| 56) Ethylbenzene              | 91   | 13.588 | 13.588 | 1.007  | 1543851  | 43.57  | ug/L  | 100 |
| 57) m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 1192347  | 87.87  | ug/L  | 99  |
| 58) o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 1236999  | 42.67  | ug/L  | 99  |
| 59) Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 974688   | 44.76  | ug/L  | 100 |
| 61) Bromoform                 | 173  | 14.381 | 14.381 | 0.905  | 188964   | 50.85  | ug/L  | 99  |
| 62) Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 1611546  | 44.22  | ug/L  | 100 |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.928  | 360653   | 45.58  | ug/L  | 99  |
| 65) 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 95563    | 45.56  | ug/L  | 98  |
| 66) Bromobenzene              | 156  | 14.893 | 14.893 | 0.937  | 376606   | 45.46  | ug/L  | 99  |
| 67) n-Propylbenzene           | 91   | 14.911 | 14.917 | 0.938  | 1846604  | 42.05  | ug/L  | 99  |
| 68) 1,3,5-Trimethylbenzene    | 105  | 15.064 | 15.070 | 0.947  | 1332227  | 43.67  | ug/L  | 99  |
| 69) 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 365627   | 44.25  | ug/L  | 99  |
| 70) 4-Chlorotoluene           | 91   | 15.161 | 15.161 | 0.954  | 1181245  | 43.51  | ug/L  | 100 |
| 71) tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 293178   | 45.63  | ug/L  | 98  |
| 72) 1,2,4-Trimethylbenzene    | 105  | 15.478 | 15.478 | 0.974  | 1368066  | 43.68  | ug/L  | 86  |
| 73) sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 1799214  | 44.36  | ug/L  | 100 |
| 74) 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.993  | 1461341  | 43.39  | ug/L  | 99  |
| 75) 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.997  | 762259   | 43.97  | ug/L  | 99  |
| 76) 1,4-Dichlorobenzene       | 146  | 15.929 | 15.929 | 1.002  | 748417   | 44.07  | ug/L  | 100 |
| 77) n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.021  | 1469841  | 43.01  | ug/L  | 100 |
| 78) 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.029  | 720758   | 44.78  | ug/L  | 99  |
| 79) 1,2-Dibromo-3-chloropr... | 157  | 17.222 | 17.228 | 1.083  | 67922    | 47.96  | ug/L  | 97  |
| 80) 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 473580   | 44.97  | ug/L  | 99  |
| 81) Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 269050   | 44.30  | ug/L  | 100 |
| 82) Naphthalene               | 128  | 18.685 | 18.685 | 1.175  | 1057830  | 46.21  | ug/L  | 100 |
| 83) 1,2,3-Trichlorobenzene    | 180  | 19.033 | 19.033 | 1.197  | 420766   | 46.32  | ug/L  | 99  |
| 85) Acrolein                  |      | 6.889  | 6.895  | 0.667  | 0m       | N.D.   | d     |     |
| 86) Trichlorotrifluoroethane  |      | 7.102  | 7.096  | 0.688  | 0m       | N.D.   | d     |     |
| 87) Isopropyl Alcohol         |      | 7.132  | 7.139  | 0.691  | 0m       | N.D.   | d     |     |
| 88) Allyl chloride            |      | 7.407  | 7.511  | 0.717  | 0m       | N.D.   | d     |     |
| 89) tert-Butyl Alcohol        |      | 0.000  | 7.639  | 0.000  | 0        | N.D.   |       |     |
| 90) Acrylonitrile             |      | 7.949  | 7.882  | 0.770  | 0m       | N.D.   | d     |     |
| 91) Isopropyl ether           |      | 8.419  | 8.455  | 0.815  | 0m       | N.D.   | d     |     |
| 92) 2-Chloro-1,3-butadiene    |      | 8.583  | 8.577  | 0.831  | 0m       | N.D.   | d     |     |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.   |       |     |
| 94) Ethyl acetate             |      | 9.028  | 9.047  | 0.874  | 0m       | N.D.   | d     |     |
| 95) Propionitrile             |      | 9.041  | 9.096  | 0.875  | 0m       | N.D.   | d     |     |
| 96) Methacrylonitrile         |      | 0.000  | 9.278  | 0.000  | 0        | N.D.   |       |     |
| 97) Tetrahydrofuran           |      | 9.419  | 9.419  | 0.912  | 0m       | N.D.   | d     |     |
| 98) Isobutyl alcohol          |      | 9.790  | 9.717  | 0.948  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H304LH.D  
Acq On : 02 Nov 2016 11:25  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666130|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A MIX[A] SOIL 1023-01A/0926-01B/1102-01  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 02 11:47:20 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 99) Methyl tert-amyl ether     |      | 10.077 | 10.101 | 0.976  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 11.083 | 11.034 | 1.073  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 11.412 | 11.388 | 1.105  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 12.180 | 12.186 | 0.903  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 13.387 | 13.387 | 0.842  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.485 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.625 | 14.631 | 0.920  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.796 | 14.796 | 0.931  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 15.509 | 15.503 | 0.975  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 16.039 | 16.039 | 1.009  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 16.448 | 16.442 | 1.035  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Data Path : C:\msdchem\1\data\110216V4\  
Data File : 4H304LH.D  
Acq On : 02 Nov 2016 11:25  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666130|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A MIX[A] SOIL 1023-01A/0926-01B/1102-01  
ALS Vial : 4 Sample Multiplier: 1

**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 2

|  |                            |                      |             |
|--|----------------------------|----------------------|-------------|
| <b>SDG Number:</b> 409254                  |                            | <b>Matrix:</b>       | SOIL        |
| <b>Lab Sample ID:</b> 1203666131           |                            |                      |             |
| <b>Client Sample:</b> QC for batch 1612389 | <b>Client:</b> HAAL002     | <b>Project:</b>      | QC          |
| <b>Client ID:</b> LCS for batch 1612389    | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>      | GL-OA-E-038 |
| <b>Batch ID:</b> 1612391                   | <b>Inst:</b> VOA4.I        | <b>Dilution:</b>     | 1           |
| <b>Run Date:</b> 11/03/2016 11:45          | <b>Analyst:</b> ACJ        | <b>Purge Vol:</b>    | 5 mL        |
| <b>Prep Date:</b> 11/03/2016 08:00         | <b>Aliquot:</b> 5 g        | <b>Final Volume:</b> | 5 mL        |
| <b>Data File:</b> 110316V4\4H404LH.D       | <b>Column:</b> DB-624      |                      |             |

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       |           | 44.0   | ug/kg | 0.333   | 1.00    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   |           | 43.8   | ug/kg | 0.333   | 1.00    |
| 79-00-5  | 1,1,2-Trichloroethane       |           | 45.2   | ug/kg | 0.333   | 1.00    |
| 75-34-3  | 1,1-Dichloroethane          |           | 45.3   | ug/kg | 0.333   | 1.00    |
| 75-35-4  | 1,1-Dichloroethylene        |           | 42.0   | ug/kg | 0.333   | 1.00    |
| 87-61-6  | 1,2,3-Trichlorobenzene      |           | 43.3   | ug/kg | 0.333   | 1.00    |
| 120-82-1 | 1,2,4-Trichlorobenzene      |           | 42.0   | ug/kg | 0.333   | 1.00    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane |           | 45.4   | ug/kg | 0.500   | 1.00    |
| 106-93-4 | 1,2-Dibromoethane           |           | 46.5   | ug/kg | 0.333   | 1.00    |
| 95-50-1  | 1,2-Dichlorobenzene         |           | 43.2   | ug/kg | 0.333   | 1.00    |
| 107-06-2 | 1,2-Dichloroethane          |           | 44.4   | ug/kg | 0.333   | 1.00    |
| 78-87-5  | 1,2-Dichloropropane         |           | 46.5   | ug/kg | 0.333   | 1.00    |
| 541-73-1 | 1,3-Dichlorobenzene         |           | 43.2   | ug/kg | 0.333   | 1.00    |
| 106-46-7 | 1,4-Dichlorobenzene         |           | 43.4   | ug/kg | 0.333   | 1.00    |
| 123-91-1 | 1,4-Dioxane                 | U         | 50.0   | ug/kg | 16.7    | 50.0    |
| 78-93-3  | 2-Butanone                  |           | 221    | ug/kg | 1.67    | 5.00    |
| 591-78-6 | 2-Hexanone                  |           | 235    | ug/kg | 1.67    | 5.00    |
| 108-10-1 | 4-Methyl-2-pentanone        |           | 215    | ug/kg | 1.67    | 5.00    |
| 67-64-1  | Acetone                     |           | 215    | ug/kg | 1.67    | 5.00    |
| 71-43-2  | Benzene                     |           | 44.0   | ug/kg | 0.333   | 1.00    |
| 74-97-5  | Bromochloromethane          |           | 45.3   | ug/kg | 0.333   | 1.00    |
| 75-27-4  | Bromodichloromethane        |           | 46.9   | ug/kg | 0.333   | 1.00    |
| 75-25-2  | Bromoform                   |           | 47.5   | ug/kg | 0.333   | 1.00    |
| 74-83-9  | Bromomethane                |           | 47.8   | ug/kg | 0.333   | 1.00    |
| 75-15-0  | Carbon disulfide            |           | 211    | ug/kg | 1.67    | 5.00    |
| 56-23-5  | Carbon tetrachloride        |           | 45.5   | ug/kg | 0.333   | 1.00    |
| 108-90-7 | Chlorobenzene               |           | 44.3   | ug/kg | 0.333   | 1.00    |
| 75-00-3  | Chloroethane                |           | 47.2   | ug/kg | 0.333   | 1.00    |
| 67-66-3  | Chloroform                  |           | 45.6   | ug/kg | 0.333   | 1.00    |
| 74-87-3  | Chloromethane               |           | 42.9   | ug/kg | 0.333   | 1.00    |
| 110-82-7 | Cyclohexane                 |           | 44.3   | ug/kg | 0.333   | 1.00    |
| 124-48-1 | Dibromochloromethane        |           | 48.2   | ug/kg | 0.333   | 1.00    |
| 75-71-8  | Dichlorodifluoromethane     |           | 41.9   | ug/kg | 0.333   | 1.00    |
| 100-41-4 | Ethylbenzene                |           | 44.5   | ug/kg | 0.333   | 1.00    |
| 98-82-8  | Isopropylbenzene            |           | 44.0   | ug/kg | 0.333   | 1.00    |
| 79-20-9  | Methyl acetate              |           | 209    | ug/kg | 1.67    | 5.00    |
| 108-87-2 | Methylcyclohexane           |           | 44.1   | ug/kg | 0.333   | 1.00    |
| 75-09-2  | Methylene chloride          |           | 40.5   | ug/kg | 1.67    | 5.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

|  |                            |                             |
|--|----------------------------|-----------------------------|
| <b>SDG Number:</b> 409254                  |                            | <b>Matrix:</b> SOIL         |
| <b>Lab Sample ID:</b> 1203666131           |                            |                             |
| <b>Client Sample:</b> QC for batch 1612389 | <b>Client:</b> HAAL002     | <b>Project:</b> QC          |
| <b>Client ID:</b> LCS for batch 1612389    | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1612391                   | <b>Inst:</b> VOA4.I        | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/03/2016 11:45          | <b>Analyst:</b> ACJ        | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 11/03/2016 08:00         | <b>Aliquot:</b> 5 g        | <b>Final Volume:</b> 5 mL   |
| <b>Data File:</b> 110316V4\4H404LH.D       | <b>Column:</b> DB-624      |                             |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     |           | 44.4   | ug/kg | 0.333   | 1.00    |
| 127-18-4    | Tetrachloroethylene         |           | 44.3   | ug/kg | 0.333   | 1.00    |
| 108-88-3    | Toluene                     |           | 45.2   | ug/kg | 0.333   | 1.00    |
| 79-01-6     | Trichloroethylene           |           | 45.5   | ug/kg | 0.333   | 1.00    |
| 75-69-4     | Trichlorofluoromethane      |           | 47.8   | ug/kg | 0.333   | 1.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 75-01-4     | Vinyl chloride              |           | 48.5   | ug/kg | 0.333   | 1.00    |
| 156-59-2    | cis-1,2-Dichloroethylene    |           | 46.0   | ug/kg | 0.333   | 1.00    |
| 10061-01-5  | cis-1,3-Dichloropropylene   |           | 45.6   | ug/kg | 0.333   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 |           | 88.0   | ug/kg | 0.667   | 2.00    |
| 95-47-6     | o-Xylene                    |           | 43.0   | ug/kg | 0.333   | 1.00    |
| 1634-04-4   | tert-Butyl methyl ether     |           | 45.2   | ug/kg | 0.333   | 1.00    |
| 156-60-5    | trans-1,2-Dichloroethylene  |           | 45.2   | ug/kg | 0.333   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene |           | 47.9   | ug/kg | 0.333   | 1.00    |

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H404LH.D  
Acq On : 03 Nov 2016 11:45  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666131|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A MIX[A] SOIL 1023-01A/0926-01B/1102-01  
ALS Vial : 4 Sample Multiplier: 1

Agf  
11/09/2016Cell  
11/09/2016

Quant Time: Nov 03 13:36:54 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 10.327 | 10.327 | 1.000  | 1125183  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 13.491 | 13.491 | 1.000  | 805821   | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.899 | 15.905 | 1.000  | 427840   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 10.327 | 10.327 | 1.000  | 1125183  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 13.491 | 13.491 | 1.000  | 805821   | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.899 | 15.899 | 1.000  | 427840   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.967  | 9.967  | 0.965 | 278496  | 45.54 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.967 | 11.967 | 0.887 | 1085303 | 47.23 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 14.680 | 14.680 | 0.923 | 424343  | 45.71 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 91%      |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 94%      |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 91%      |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.756  | 4.749  | 0.461  | 284123   | 41.92   | ug/L  | 100    |
| 3) Chloromethane              | 50   | 5.094  | 5.094  | 0.493  | 320748   | 42.85   | ug/L  | 99     |
| 4) Vinyl chloride             | 62   | 5.322  | 5.322  | 0.515  | 293109   | 48.49   | ug/L  | 100    |
| 5) Bromomethane               | 94   | 5.887  | 5.887  | 0.570  | 296693   | 47.81   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 6.005  | 6.005  | 0.581  | 284798   | 47.19   | ug/L  | 100    |
| 7) Trichlorofluoromethane     | 101  | 6.370  | 6.370  | 0.617  | 482861   | 47.78   | ug/L  | 99     |
| 8) Ethyl ether                | 59   | 6.712  | 6.706  | 0.650  | 261330   | 45.84   | ug/L  | 97     |
| 9) Acetone                    | 43   | 7.059  | 7.059  | 0.684  | 774411   | 215.46  | ug/L  | 98     |
| 10) 1,1-Dichloroethylene      | 61   | 7.090  | 7.090  | 0.687  | 478244   | 41.99   | ug/L  | 100    |
| 11) Iodomethane               | 142  | 7.334  | 7.327  | 0.710  | 2394273  | 216.21  | ug/L  | 100    |
| 12) Acetonitrile              | 41   | 7.407  | 7.407  | 0.717  | 811142   | 1006.64 | ug/L  | 100    |
| 13) Methyl acetate            | 43   | 7.455  | 7.456  | 0.722  | 932507   | 208.90  | ug/L  | 100    |
| 14) Carbon disulfide          | 76   | 7.468  | 7.468  | 0.723  | 4725782  | 210.87  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 7.644  | 7.645  | 0.740  | 316160   | 40.47   | ug/L  | 99     |
| 16) tert-Butyl methyl ether   | 73   | 7.955  | 7.955  | 0.770  | 816329   | 45.20   | ug/L  | 99     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.992  | 7.992  | 0.774  | 486536   | 45.24   | ug/L  | 100    |
| 18) Hexane                    | 57   | 8.279  | 8.285  | 0.802  | 1067     | N.D.    |       |        |
| 19) Vinyl acetate             | 43   | 8.413  | 8.413  | 0.815  | 2958819  | 238.47  | ug/L  | 100    |
| 20) 1,1-Dichloroethane        | 63   | 8.461  | 8.461  | 0.819  | 589829   | 45.34   | ug/L  | 99     |
| 21) 2-Butanone                | 43   | 9.034  | 9.028  | 0.875  | 994393   | 220.65  | ug/L  | 99     |
| 22) cis-1,2-Dichloroethylene  | 96   | 9.095  | 9.095  | 0.881  | 346250   | 46.04   | ug/L  | 99     |
| 23) 2,2-Dichloropropane       | 77   | 9.132  | 9.132  | 0.884  | 511947   | 45.79   | ug/L  | 100    |
| 24) Bromochloromethane        | 128  | 9.364  | 9.364  | 0.907  | 142220   | 45.34   | ug/L  | 100    |
| 25) Chloroform                | 83   | 9.400  | 9.400  | 0.910  | 541493   | 45.58   | ug/L  | 99     |
| 26) 1,1,1-Trichloroethane     | 97   | 9.687  | 9.687  | 0.938  | 501408   | 43.97   | ug/L  | 100    |
| 27) Cyclohexane               | 56   | 9.790  | 9.790  | 0.948  | 683596   | 44.33   | ug/L  | 99     |
| 28) 1,1-Dichloropropene       | 75   | 9.839  | 9.839  | 0.953  | 429693   | 44.40   | ug/L  | 99     |
| 29) Carbon tetrachloride      | 117  | 9.882  | 9.882  | 0.957  | 443852   | 45.49   | ug/L  | 99     |
| 31) 1,2-Dichloroethane        | 62   | 10.046 | 10.046 | 0.973  | 379620   | 44.38   | ug/L  | 100    |
| 32) Benzene                   | 78   | 10.077 | 10.077 | 0.976  | 1230919  | 44.01   | ug/L  | 100    |
| 33) Cyclohexene               | 67   | 10.199 | 10.199 | 0.988  | 668673   | 48.80   | ug/L  | 99     |
| 34) n-Butyl alcohol           | 56   | 10.400 | 10.400 | 1.007  | 805661   | 4267.48 | ug/L  | 99     |
| 35) Trichloroethylene         | 95   | 10.711 | 10.717 | 1.037  | 330084   | 45.52   | ug/L  | 100    |
| 36) 2-Pentanone               |      | 0.000  | 10.778 | 0.000  | 0        | N.D.    |       |        |
| 37) 1,2-Dichloropropane       | 63   | 10.949 | 10.955 | 1.060  | 341595   | 46.48   | ug/L  | 99     |
| 38) Methylcyclohexane         | 83   | 10.973 | 10.973 | 1.063  | 608004   | 44.12   | ug/L  | 99     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H404LH.D  
Acq On : 03 Nov 2016 11:45  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666131|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A MIX[A] SOIL 1023-01A/0926-01B/1102-01  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 03 13:36:54 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 39) Dibromomethane            | 93   | 11.083 | 11.083 | 1.073  | 166892   | 44.38  | ug/L  | 99  |
| 40) Bromodichloromethane      | 83   | 11.193 | 11.193 | 1.084  | 414928   | 46.88  | ug/L  | 100 |
| 41) 2-Chloroethylvinyl ether  | 63   | 11.418 | 11.412 | 1.106  | 771675   | 230.78 | ug/L  | 100 |
| 42) cis-1,3-Dichloropropylene | 75   | 11.644 | 11.644 | 1.128  | 499157   | 45.64  | ug/L  | 99  |
| 44) 4-Methyl-2-pentanone      | 58   | 11.735 | 11.735 | 0.870  | 545152   | 215.13 | ug/L  | 100 |
| 46) Toluene                   | 91   | 12.040 | 12.040 | 0.892  | 1305478  | 45.23  | ug/L  | 100 |
| 47) trans-1,3-Dichloroprop... | 75   | 12.180 | 12.180 | 0.903  | 436246   | 47.91  | ug/L  | 99  |
| 48) 1,1,2-Trichloroethane     | 83   | 12.400 | 12.400 | 0.919  | 205667   | 45.18  | ug/L  | 100 |
| 49) 2-Hexanone                | 43   | 12.583 | 12.583 | 0.933  | 1482466  | 235.27 | ug/L  | 100 |
| 50) 1,3-Dichloropropane       | 76   | 12.595 | 12.595 | 0.934  | 400355   | 45.08  | ug/L  | 96  |
| 51) Tetrachloroethylene       | 164  | 12.637 | 12.637 | 0.937  | 250252   | 44.25  | ug/L  | 100 |
| 52) Dibromochloromethane      | 129  | 12.863 | 12.863 | 0.953  | 286659   | 48.23  | ug/L  | 100 |
| 53) 1,2-Dibromoethane         | 107  | 13.034 | 13.034 | 0.966  | 243719   | 46.53  | ug/L  | 100 |
| 54) Chlorobenzene             | 112  | 13.521 | 13.521 | 1.002  | 830328   | 44.26  | ug/L  | 99  |
| 55) 1,1,1,2-Tetrachloroethane | 131  | 13.576 | 13.576 | 1.006  | 306901   | 46.12  | ug/L  | 99  |
| 56) Ethylbenzene              | 91   | 13.588 | 13.588 | 1.007  | 1491526  | 44.48  | ug/L  | 100 |
| 57) m,p-Xylenes               | 106  | 13.698 | 13.698 | 1.015  | 1129506  | 87.96  | ug/L  | 100 |
| 58) o-Xylene                  | 91   | 14.131 | 14.131 | 1.047  | 1178459  | 42.96  | ug/L  | 100 |
| 59) Styrene                   | 104  | 14.131 | 14.131 | 1.047  | 915545   | 44.43  | ug/L  | 100 |
| 61) Bromoform                 | 173  | 14.381 | 14.381 | 0.905  | 168159   | 47.46  | ug/L  | 99  |
| 62) Isopropylbenzene          | 105  | 14.491 | 14.491 | 0.911  | 1527845  | 43.97  | ug/L  | 100 |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 14.747 | 14.747 | 0.928  | 330471   | 43.81  | ug/L  | 100 |
| 65) 1,2,3-Trichloropropane    | 110  | 14.838 | 14.838 | 0.933  | 86096    | 43.06  | ug/L  | 97  |
| 66) Bromobenzene              | 156  | 14.893 | 14.893 | 0.937  | 349627   | 44.27  | ug/L  | 99  |
| 67) n-Propylbenzene           | 91   | 14.917 | 14.917 | 0.938  | 1764131  | 42.14  | ug/L  | 100 |
| 68) 1,3,5-Trimethylbenzene    | 105  | 15.064 | 15.070 | 0.947  | 1257866  | 43.25  | ug/L  | 100 |
| 69) 2-Chlorotoluene           | 126  | 15.064 | 15.064 | 0.947  | 342699   | 43.50  | ug/L  | 97  |
| 70) 4-Chlorotoluene           | 91   | 15.161 | 15.161 | 0.954  | 1115812  | 43.11  | ug/L  | 99  |
| 71) tert-Butylbenzene         | 134  | 15.442 | 15.442 | 0.971  | 274027   | 44.74  | ug/L  | 99  |
| 72) 1,2,4-Trimethylbenzene    | 105  | 15.478 | 15.478 | 0.974  | 1299274  | 43.51  | ug/L  | 88  |
| 73) sec-Butylbenzene          | 105  | 15.661 | 15.661 | 0.985  | 1707105  | 44.15  | ug/L  | 100 |
| 74) 4-Isopropyltoluene        | 119  | 15.783 | 15.783 | 0.993  | 1376482  | 42.87  | ug/L  | 100 |
| 75) 1,3-Dichlorobenzene       | 146  | 15.844 | 15.844 | 0.997  | 713811   | 43.19  | ug/L  | 100 |
| 76) 1,4-Dichlorobenzene       | 146  | 15.929 | 15.929 | 1.002  | 702486   | 43.38  | ug/L  | 99  |
| 77) n-Butylbenzene            | 91   | 16.228 | 16.228 | 1.021  | 1391942  | 42.72  | ug/L  | 100 |
| 78) 1,2-Dichlorobenzene       | 146  | 16.356 | 16.356 | 1.029  | 663538   | 43.24  | ug/L  | 99  |
| 79) 1,2-Dibromo-3-chloropr... | 157  | 17.222 | 17.228 | 1.083  | 61251    | 45.36  | ug/L  | 99  |
| 80) 1,2,4-Trichlorobenzene    | 180  | 18.301 | 18.301 | 1.151  | 421424   | 41.98  | ug/L  | 100 |
| 81) Hexachlorobutadiene       | 225  | 18.490 | 18.490 | 1.163  | 243071   | 41.98  | ug/L  | 98  |
| 82) Naphthalene               | 128  | 18.685 | 18.685 | 1.175  | 940271   | 43.08  | ug/L  | 100 |
| 83) 1,2,3-Trichlorobenzene    | 180  | 19.033 | 19.033 | 1.197  | 374691   | 43.27  | ug/L  | 99  |
| 85) Acrolein                  |      | 6.852  | 6.895  | 0.664  | 0m       | N.D.   | d     |     |
| 86) Trichlorotrifluoroethane  |      | 7.071  | 7.096  | 0.685  | 0m       | N.D.   | d     |     |
| 87) Isopropyl Alcohol         |      | 7.059  | 7.139  | 0.684  | 0m       | N.D.   | d     |     |
| 88) Allyl chloride            |      | 7.407  | 7.511  | 0.717  | 0m       | N.D.   | d     |     |
| 89) tert-Butyl Alcohol        |      | 7.626  | 7.639  | 0.738  | 0m       | N.D.   | d     |     |
| 90) Acrylonitrile             |      | 7.949  | 7.882  | 0.770  | 0m       | N.D.   | d     |     |
| 91) Isopropyl ether           |      | 8.413  | 8.455  | 0.815  | 0m       | N.D.   | d     |     |
| 92) 2-Chloro-1,3-butadiene    |      | 8.583  | 8.577  | 0.831  | 0m       | N.D.   | d     |     |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 8.858  | 0.000  | 0        | N.D.   |       |     |
| 94) Ethyl acetate             |      | 9.034  | 9.047  | 0.875  | 0m       | N.D.   | d     |     |
| 95) Propionitrile             |      | 9.034  | 9.096  | 0.875  | 0m       | N.D.   | d     |     |
| 96) Methacrylonitrile         |      | 0.000  | 9.278  | 0.000  | 0        | N.D.   |       |     |
| 97) Tetrahydrofuran           |      | 9.406  | 9.419  | 0.911  | 0m       | N.D.   | d     |     |
| 98) Isobutyl alcohol          |      | 9.790  | 9.717  | 0.948  | 0m       | N.D.   | d     |     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H404LH.D  
Acq On : 03 Nov 2016 11:45  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666131|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A MIX[A] SOIL 1023-01A/0926-01B/1102-01  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 03 13:36:54 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE

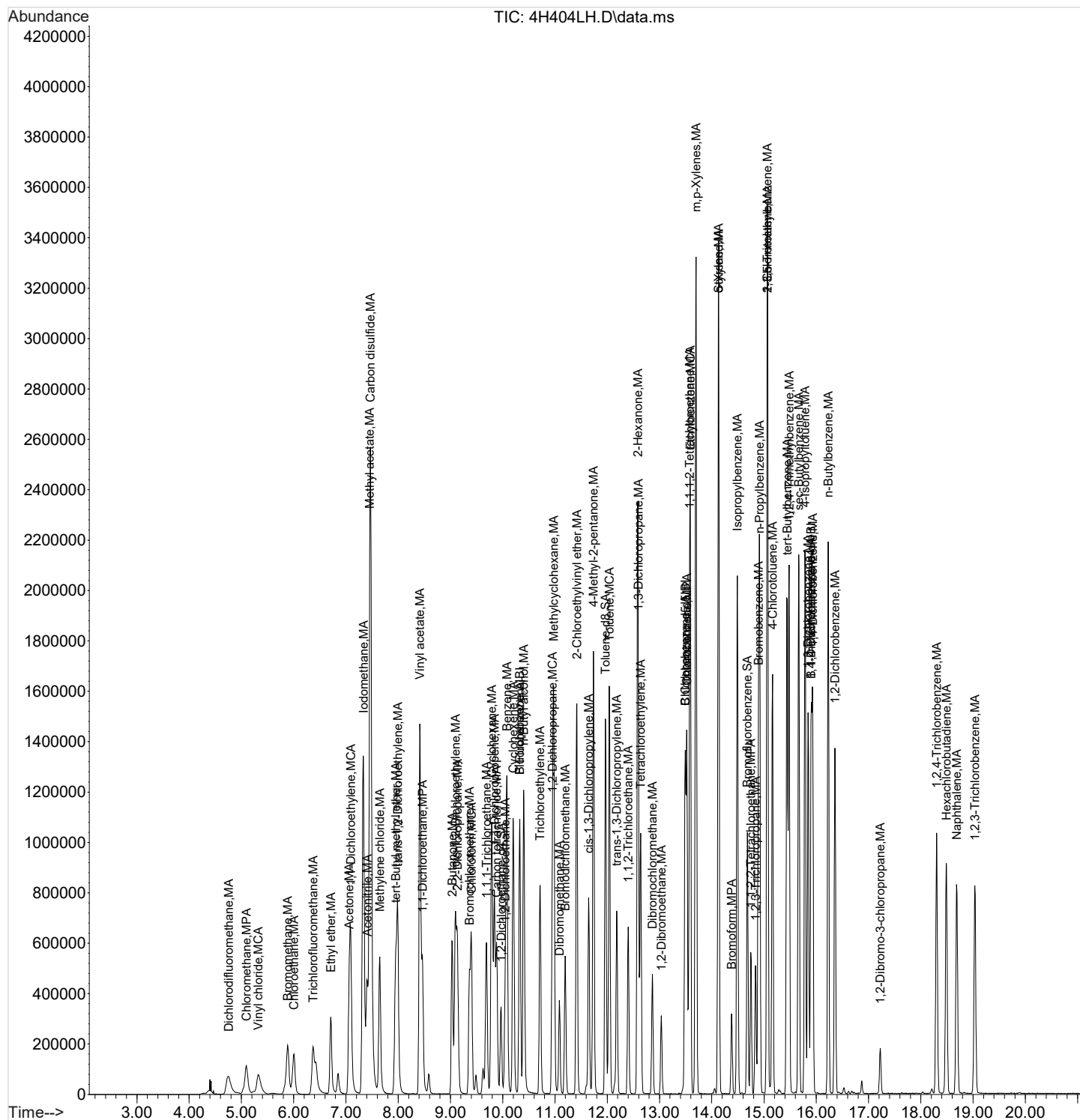
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 99) Methyl tert-amyl ether     |      | 10.071 | 10.101 | 0.975  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 10.973 | 10.925 | 1.063  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 11.089 | 11.034 | 1.074  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 11.412 | 11.388 | 1.105  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 12.192 | 12.186 | 0.904  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 13.381 | 13.387 | 0.842  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 14.485 | 14.509 | 0.911  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 14.485 | 14.631 | 0.911  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 14.917 | 14.796 | 0.938  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 15.503 | 15.503 | 0.975  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 16.033 | 16.039 | 1.008  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 16.435 | 16.442 | 1.034  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110316V4\  
Data File : 4H404LH.D  
Acq On : 03 Nov 2016 11:45  
Operator : ACJ  
InstName : VOA4  
Sample : |1203666131|1612391|1|VOAF|1|VOA8260BS|  
Misc : GEL 5G N/A MIX[A] SOIL 1023-01A/0926-01B/1102-01  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 03 13:36:54 2016  
Quant Method : C:\msdchem\1\data\103116V4\VOA4-8260-103116.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Tue Nov 01 08:22:19 2016  
Response via : Initial Calibration  
Integrator: RTE



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

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|  |                            |                             |  |
|--|----------------------------|-----------------------------|--|
| <b>SDG Number:</b> 409254                  |                            | <b>Matrix:</b> SOIL         |  |
| <b>Lab Sample ID:</b> 1203660808           |                            |                             |  |
| <b>Client Sample:</b> QC for batch 1612389 | <b>Client:</b> HAAL002     | <b>Project:</b> QC          |  |
| <b>Client ID:</b> LCS for batch 1612389    | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b> GL-OA-E-038 |  |
| <b>Batch ID:</b> 1612391                   | <b>Inst:</b> VOA6.I        | <b>Dilution:</b> 1          |  |
| <b>Run Date:</b> 11/01/2016 10:35          | <b>Analyst:</b> ACJ        | <b>Purge Vol:</b> 5 mL      |  |
| <b>Prep Date:</b> 11/01/2016 08:00         | <b>Aliquot:</b> 5 g        | <b>Final Volume:</b> 5 mL   |  |
| <b>Data File:</b> 110116V6\6G204L.D        | <b>Column:</b> DB-624      |                             |  |

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       |           | 50.7   | ug/kg | 0.333   | 1.00    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   |           | 47.9   | ug/kg | 0.333   | 1.00    |
| 79-00-5  | 1,1,2-Trichloroethane       |           | 45.8   | ug/kg | 0.333   | 1.00    |
| 75-34-3  | 1,1-Dichloroethane          |           | 47.1   | ug/kg | 0.333   | 1.00    |
| 75-35-4  | 1,1-Dichloroethylene        |           | 48.0   | ug/kg | 0.333   | 1.00    |
| 87-61-6  | 1,2,3-Trichlorobenzene      |           | 48.9   | ug/kg | 0.333   | 1.00    |
| 120-82-1 | 1,2,4-Trichlorobenzene      |           | 48.7   | ug/kg | 0.333   | 1.00    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane |           | 48.8   | ug/kg | 0.500   | 1.00    |
| 106-93-4 | 1,2-Dibromoethane           |           | 48.4   | ug/kg | 0.333   | 1.00    |
| 95-50-1  | 1,2-Dichlorobenzene         |           | 46.8   | ug/kg | 0.333   | 1.00    |
| 107-06-2 | 1,2-Dichloroethane          |           | 44.8   | ug/kg | 0.333   | 1.00    |
| 78-87-5  | 1,2-Dichloropropane         |           | 46.8   | ug/kg | 0.333   | 1.00    |
| 541-73-1 | 1,3-Dichlorobenzene         |           | 47.7   | ug/kg | 0.333   | 1.00    |
| 106-46-7 | 1,4-Dichlorobenzene         |           | 47.0   | ug/kg | 0.333   | 1.00    |
| 123-91-1 | 1,4-Dioxane                 | U         | 50.0   | ug/kg | 16.7    | 50.0    |
| 78-93-3  | 2-Butanone                  |           | 226    | ug/kg | 1.67    | 5.00    |
| 591-78-6 | 2-Hexanone                  |           | 238    | ug/kg | 1.67    | 5.00    |
| 108-10-1 | 4-Methyl-2-pentanone        |           | 226    | ug/kg | 1.67    | 5.00    |
| 67-64-1  | Acetone                     |           | 206    | ug/kg | 1.67    | 5.00    |
| 71-43-2  | Benzene                     |           | 47.2   | ug/kg | 0.333   | 1.00    |
| 74-97-5  | Bromochloromethane          |           | 47.0   | ug/kg | 0.333   | 1.00    |
| 75-27-4  | Bromodichloromethane        |           | 47.5   | ug/kg | 0.333   | 1.00    |
| 75-25-2  | Bromoform                   |           | 50.5   | ug/kg | 0.333   | 1.00    |
| 74-83-9  | Bromomethane                |           | 55.9   | ug/kg | 0.333   | 1.00    |
| 75-15-0  | Carbon disulfide            |           | 267    | ug/kg | 1.67    | 5.00    |
| 56-23-5  | Carbon tetrachloride        |           | 51.6   | ug/kg | 0.333   | 1.00    |
| 108-90-7 | Chlorobenzene               |           | 47.1   | ug/kg | 0.333   | 1.00    |
| 75-00-3  | Chloroethane                |           | 55.2   | ug/kg | 0.333   | 1.00    |
| 67-66-3  | Chloroform                  |           | 47.3   | ug/kg | 0.333   | 1.00    |
| 74-87-3  | Chloromethane               |           | 52.3   | ug/kg | 0.333   | 1.00    |
| 110-82-7 | Cyclohexane                 |           | 51.0   | ug/kg | 0.333   | 1.00    |
| 124-48-1 | Dibromochloromethane        |           | 48.3   | ug/kg | 0.333   | 1.00    |
| 75-71-8  | Dichlorodifluoromethane     |           | 60.4   | ug/kg | 0.333   | 1.00    |
| 100-41-4 | Ethylbenzene                |           | 48.7   | ug/kg | 0.333   | 1.00    |
| 98-82-8  | Isopropylbenzene            |           | 50.2   | ug/kg | 0.333   | 1.00    |
| 79-20-9  | Methyl acetate              |           | 223    | ug/kg | 1.67    | 5.00    |
| 108-87-2 | Methylcyclohexane           |           | 52.0   | ug/kg | 0.333   | 1.00    |
| 75-09-2  | Methylene chloride          | B         | 48.3   | ug/kg | 1.67    | 5.00    |



Volatile  
Certificate of Analysis  
Sample Summary

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|                |                       |               |             |
|----------------|-----------------------|---------------|-------------|
| SDG Number:    | 409254                | Matrix:       | SOIL        |
| Lab Sample ID: | 1203660808            |               |             |
| Client Sample: | QC for batch 1612389  | Client:       | HAAL002     |
| Client ID:     | LCS for batch 1612389 | Method:       | SW846 8260B |
| Batch ID:      | 1612391               | Inst:         | VOA6.I      |
| Run Date:      | 11/01/2016 10:35      | Analyst:      | ACJ         |
| Prep Date:     | 11/01/2016 08:00      | Aliquot:      | 5 g         |
| Data File:     | 110116V6\6G204L.D     | Column:       | DB-624      |
|                |                       | Project:      | QC          |
|                |                       | SOP Ref:      | GL-OA-E-038 |
|                |                       | Dilution:     | 1           |
|                |                       | Purge Vol:    | 5 mL        |
|                |                       | Final Volume: | 5 mL        |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     |           | 46.5   | ug/kg | 0.333   | 1.00    |
| 127-18-4    | Tetrachloroethylene         |           | 49.1   | ug/kg | 0.333   | 1.00    |
| 108-88-3    | Toluene                     |           | 47.1   | ug/kg | 0.333   | 1.00    |
| 79-01-6     | Trichloroethylene           |           | 48.3   | ug/kg | 0.333   | 1.00    |
| 75-69-4     | Trichlorofluoromethane      |           | 57.5   | ug/kg | 0.333   | 1.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 75-01-4     | Vinyl chloride              |           | 54.8   | ug/kg | 0.333   | 1.00    |
| 156-59-2    | cis-1,2-Dichloroethylene    |           | 47.3   | ug/kg | 0.333   | 1.00    |
| 10061-01-5  | cis-1,3-Dichloropropylene   |           | 48.9   | ug/kg | 0.333   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 |           | 95.0   | ug/kg | 0.667   | 2.00    |
| 95-47-6     | o-Xylene                    |           | 46.6   | ug/kg | 0.333   | 1.00    |
| 1634-04-4   | tert-Butyl methyl ether     |           | 48.1   | ug/kg | 0.333   | 1.00    |
| 156-60-5    | trans-1,2-Dichloroethylene  |           | 48.0   | ug/kg | 0.333   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene |           | 49.1   | ug/kg | 0.333   | 1.00    |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G204L.D  
Acq On : 01 Nov 2016 10:35  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660808|1612391|1|VOAF|1|VOA8260BS|  
Misc : LCS 5G - MIX[A] SOIL 1023-01A/0926-01B/1025-03  
ALS Vial : 4 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 01 11:22:28 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1820995  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.629 | 1.000  | 1415124  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 732505   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1820995  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.628 | 1.000  | 1415124  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 732505   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.093  | 9.093  | 0.963 | 586792  | 49.00 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1901283 | 50.38 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 763493  | 51.54 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 98%      |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 101%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 103%     |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 3.993  | 4.001  | 0.423  | 675576   | 60.38   | ug/L  | 100    |
| 3) Chloromethane              | 50   | 4.282  | 4.282  | 0.454  | 819070   | 52.28   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 4.506  | 4.498  | 0.477  | 694418   | 54.81   | ug/L  | 99     |
| 5) Bromomethane               | 94   | 5.020  | 5.020  | 0.532  | 447206   | 55.91   | ug/L  | 98     |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 514461   | 55.22   | ug/L  | 100    |
| 7) Trichlorofluoromethane     | 101  | 5.501  | 5.509  | 0.583  | 896324   | 57.50   | ug/L  | 100    |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.618  | 569748   | 46.00   | ug/L  | 90     |
| 9) Acetone                    | 43   | 6.191  | 6.197  | 0.656  | 1036099  | 205.56  | ug/L  | 96     |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.656  | 933485   | 48.01   | ug/L  | 99     |
| 11) Iodomethane               | 142  | 6.428  | 6.429  | 0.681  | 4244588  | 252.00  | ug/L  | 99     |
| 12) Acetonitrile              | 41   | 6.544  | 6.550  | 0.693  | 1893304  | 1080.43 | ug/L  | 100    |
| 13) Methyl acetate            | 43   | 6.575  | 6.575  | 0.696  | 2209453  | 223.30  | ug/L  | 98     |
| 14) Carbon disulfide          | 76   | 6.550  | 6.550  | 0.694  | 8168642  | 267.00  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 6.758  | 6.764  | 0.716  | 616086   | 48.26   | ug/L  | 94     |
| 16) tert-Butyl methyl ether   | 73   | 7.050  | 7.050  | 0.747  | 1728965  | 48.10   | ug/L  | 99     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.087  | 7.093  | 0.751  | 961083   | 47.97   | ug/L  | 98     |
| 18) Hexane                    | 57   | 7.361  | 7.367  | 0.780  | 2569     | N.D.    |       |        |
| 19) Vinyl acetate             | 43   | 7.532  | 7.538  | 0.798  | 7002800  | 252.69  | ug/L  | 98     |
| 20) 1,1-Dichloroethane        | 63   | 7.568  | 7.575  | 0.802  | 1133627  | 47.11   | ug/L  | 100    |
| 21) 2-Butanone                | 43   | 8.160  | 8.160  | 0.864  | 1789579  | 225.70  | ug/L  | 97     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.202  | 8.209  | 0.869  | 1129425  | 47.25   | ug/L  | 99     |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 944145   | 53.46   | ug/L  | 95     |
| 24) Bromochloromethane        | 128  | 8.483  | 8.483  | 0.899  | 291527   | 47.04   | ug/L  | 95     |
| 25) Chloroform                | 83   | 8.519  | 8.520  | 0.902  | 1016342  | 47.33   | ug/L  | 96     |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.931  | 947570   | 50.71   | ug/L  | 99     |
| 27) Cyclohexane               | 56   | 8.873  | 8.873  | 0.940  | 1437872  | 50.99   | ug/L  | 97     |
| 28) 1,1-Dichloropropene       | 75   | 8.940  | 8.946  | 0.947  | 749726   | 49.77   | ug/L  | 96     |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 832800   | 51.64   | ug/L  | 100    |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.972  | 928233   | 44.77   | ug/L  | 99     |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 2176952  | 47.17   | ug/L  | 98     |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.985  | 1193952  | 50.70   | ug/L  | 98     |
| 34) n-Butyl alcohol           | 56   | 9.568  | 9.568  | 1.014  | 2268994  | 4854.28 | ug/L  | 98     |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 580655   | 48.28   | ug/L  | 98     |
| 36) 2-Pentanone               | 43   | 10.068 | 9.928  | 1.067  | 77678    | 7.42    | ug/L  | 70     |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.068  | 661531   | 46.75   | ug/L  | 100    |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.068 | 1.067  | 1090411  | 52.00   | ug/L  | 97     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G204L.D  
Acq On : 01 Nov 2016 10:35  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660808|1612391|1|VOAF|1|VOA8260BS|  
Misc : LCS 5G - MIX[A] SOIL 1023-01A/0926-01B/1025-03  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 01 11:22:28 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc         | Units |
|-------------------------------|------|--------|--------|--------|----------|--------------|-------|
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.082  | 339222   | 47.23 ug/L   | 98    |
| 40) Bromodichloromethane      | 83   | 10.330 | 10.330 | 1.094  | 793663   | 47.51 ug/L   | 100   |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 1600209  | 188.13 ug/L  | 99    |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 973220   | 48.94 ug/L   | 97    |
| 44) 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 1280251  | 225.77 ug/L  | 96    |
| 46) Toluene                   | 91   | 11.171 | 11.172 | 0.885  | 2400146  | 47.07 ug/L   | 99    |
| 47) trans-1,3-Dichloroprop... | 75   | 11.336 | 11.342 | 0.898  | 903407   | 49.07 ug/L   | 96    |
| 48) 1,1,2-Trichloroethane     | 83   | 11.555 | 11.556 | 0.915  | 400742   | 45.80 ug/L   | 98    |
| 49) 2-Hexanone                | 43   | 11.744 | 11.745 | 0.930  | 2935415  | 237.71 ug/L  | 98    |
| 50) 1,3-Dichloropropane       | 76   | 11.744 | 11.751 | 0.930  | 822580   | 46.25 ug/L   | 98    |
| 51) Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 472968   | 49.09 ug/L   | 99    |
| 52) Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 580910   | 48.27 ug/L   | 100   |
| 53) 1,2-Dibromoethane         | 107  | 12.177 | 12.177 | 0.964  | 514183   | 48.36 ug/L   | 100   |
| 54) Chlorobenzene             | 112  | 12.665 | 12.665 | 1.003  | 1634260  | 47.13 ug/L   | 99    |
| 55) 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.720 | 1.007  | 606778   | 48.69 ug/L   | 100   |
| 56) Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 2807502  | 48.69 ug/L   | 100   |
| 57) m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 2167952  | 94.95 ug/L   | 98    |
| 58) o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 2314583  | 46.64 ug/L   | 100   |
| 59) Styrene                   | 104  | 13.281 | 13.281 | 1.052  | 1801025  | 46.48 ug/L   | 99    |
| 61) Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 359026   | 50.45 ug/L   | 100   |
| 62) Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 2973814  | 50.19 ug/L   | 99    |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 643414   | 47.89 ug/L   | 99    |
| 65) 1,2,3-Trichloropropane    | 110  | 14.012 | 14.012 | 0.931  | 210468   | 49.09 ug/L # | 93    |
| 66) Bromobenzene              | 156  | 14.043 | 14.043 | 0.933  | 749236   | 48.05 ug/L   | 98    |
| 67) n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 3348263  | 49.00 ug/L   | 99    |
| 68) 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 2558118  | 48.56 ug/L   | 100   |
| 69) 2-Chlorotoluene           | 126  | 14.213 | 14.214 | 0.944  | 687527   | 49.22 ug/L   | 100   |
| 70) 4-Chlorotoluene           | 91   | 14.311 | 14.317 | 0.951  | 2154597  | 47.76 ug/L   | 100   |
| 71) tert-Butylbenzene         | 134  | 14.591 | 14.592 | 0.969  | 543752   | 50.84 ug/L   | 95    |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.634 | 0.972  | 2626400  | 48.09 ug/L   | 100   |
| 73) sec-Butylbenzene          | 105  | 14.817 | 14.817 | 0.984  | 3357494  | 50.62 ug/L   | 100   |
| 74) 4-Isopropyltoluene        | 119  | 14.591 | 14.592 | 0.969  | 2488703  | 53.97 ug/L   | 99    |
| 75) 1,3-Dichlorobenzene       | 146  | 14.994 | 14.994 | 0.996  | 1381708  | 47.66 ug/L   | 99    |
| 76) 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 1355011  | 47.02 ug/L   | 99    |
| 77) n-Butylbenzene            | 91   | 15.378 | 15.372 | 1.021  | 2671916  | 50.00 ug/L   | 100   |
| 78) 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 1318422  | 46.79 ug/L   | 99    |
| 79) 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 135067   | 48.83 ug/L   | 99    |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.280 | 1.148  | 1060745  | 48.73 ug/L   | 98    |
| 81) Hexachlorobutadiene       | 225  | 17.445 | 17.445 | 1.159  | 677883   | 52.71 ug/L   | 99    |
| 82) Naphthalene               | 128  | 17.627 | 17.628 | 1.171  | 2194802  | 48.65 ug/L   | 100   |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.944 | 17.945 | 1.192  | 951102   | 48.86 ug/L   | 99    |
| 85) Acrolein                  |      | 6.044  | 6.026  | 0.640  | 0m       | N.D. d       |       |
| 86) Trichlorotrifluoroethane  |      | 6.166  | 6.185  | 0.653  | 0m       | N.D. d       |       |
| 87) Isopropyl Alcohol         |      | 6.191  | 6.282  | 0.656  | 0m       | N.D. d       |       |
| 88) Allyl chloride            |      | 6.544  | 6.611  | 0.693  | 0m       | N.D. d       |       |
| 89) tert-Butyl Alcohol        |      | 0.000  | 6.770  | 0.000  | 0        | N.D.         |       |
| 90) Acrylonitrile             |      | 7.050  | 7.014  | 0.747  | 0m       | N.D. d       |       |
| 91) Isopropyl ether           |      | 7.532  | 7.556  | 0.798  | 0m       | N.D. d       |       |
| 92) 2-Chloro-1,3-butadiene    |      | 7.684  | 7.672  | 0.814  | 0m       | N.D. d       |       |
| 93) Ethyl tert-butyl ether    |      | 7.940  | 7.965  | 0.841  | 0m       | N.D. d       |       |
| 94) Ethyl acetate             |      | 8.160  | 8.178  | 0.864  | 0m       | N.D. d       |       |
| 95) Propionitrile             |      | 8.239  | 8.245  | 0.873  | 0m       | N.D. d       |       |
| 96) Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.         |       |
| 97) Tetrahydrofuran           |      | 8.526  | 8.526  | 0.903  | 0m       | N.D. d       |       |
| 98) Isobutyl alcohol          |      | 8.873  | 8.873  | 0.940  | 0m       | N.D. d       |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G204L.D  
Acq On : 01 Nov 2016 10:35  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660808|1612391|1|VOAF|1|VOA8260BS|  
Misc : LCS 5G - MIX[A] SOIL 1023-01A/0926-01B/1025-03  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 01 11:22:28 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| -----                          |      |        |        |        |          |      |       |
| 99) Methyl tert-amyl ether     |      | 9.184  | 9.214  | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 10.068 | 10.068 | 1.067  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 10.178 | 10.172 | 1.078  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 10.568 | 10.543 | 1.119  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 11.348 | 11.348 | 0.899  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 12.543 | 12.543 | 0.833  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.640 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.793 | 13.793 | 0.916  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 13.970 | 13.976 | 0.928  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 14.659 | 14.658 | 0.974  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 15.195 | 15.201 | 1.009  | 0m       | N.D. | d     |
| 112) bis(2-Chloroisopropyl)... |      | 15.603 | 15.591 | 1.036  | 0m       | N.D. | d     |
| -----                          |      |        |        |        |          |      |       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



**Volatile**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 2

|  |                            |                      |             |
|--|----------------------------|----------------------|-------------|
| <b>SDG Number:</b> 409254                  |                            | <b>Matrix:</b>       | SOIL        |
| <b>Lab Sample ID:</b> 1203660809           |                            |                      |             |
| <b>Client Sample:</b> QC for batch 1612389 | <b>Client:</b> HAAL002     | <b>Project:</b>      | QC          |
| <b>Client ID:</b> LCSD for batch 1612389   | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b>      | GL-OA-E-038 |
| <b>Batch ID:</b> 1612391                   | <b>Inst:</b> VOA6.I        | <b>Dilution:</b>     | 1           |
| <b>Run Date:</b> 11/01/2016 11:04          | <b>Analyst:</b> ACJ        | <b>Purge Vol:</b>    | 5 mL        |
| <b>Prep Date:</b> 11/01/2016 08:15         | <b>Aliquot:</b> 5 g        | <b>Final Volume:</b> | 5 mL        |
| <b>Data File:</b> 110116V6\6G205D.D        | <b>Column:</b> DB-624      |                      |             |

| CAS No.  | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|-----------------------------|-----------|--------|-------|---------|---------|
| 71-55-6  | 1,1,1-Trichloroethane       |           | 48.6   | ug/kg | 0.333   | 1.00    |
| 79-34-5  | 1,1,2,2-Tetrachloroethane   |           | 46.6   | ug/kg | 0.333   | 1.00    |
| 79-00-5  | 1,1,2-Trichloroethane       |           | 45.7   | ug/kg | 0.333   | 1.00    |
| 75-34-3  | 1,1-Dichloroethane          |           | 46.0   | ug/kg | 0.333   | 1.00    |
| 75-35-4  | 1,1-Dichloroethylene        |           | 46.1   | ug/kg | 0.333   | 1.00    |
| 87-61-6  | 1,2,3-Trichlorobenzene      |           | 45.9   | ug/kg | 0.333   | 1.00    |
| 120-82-1 | 1,2,4-Trichlorobenzene      |           | 45.1   | ug/kg | 0.333   | 1.00    |
| 96-12-8  | 1,2-Dibromo-3-chloropropane |           | 47.9   | ug/kg | 0.500   | 1.00    |
| 106-93-4 | 1,2-Dibromoethane           |           | 47.8   | ug/kg | 0.333   | 1.00    |
| 95-50-1  | 1,2-Dichlorobenzene         |           | 44.9   | ug/kg | 0.333   | 1.00    |
| 107-06-2 | 1,2-Dichloroethane          |           | 44.1   | ug/kg | 0.333   | 1.00    |
| 78-87-5  | 1,2-Dichloropropane         |           | 45.4   | ug/kg | 0.333   | 1.00    |
| 541-73-1 | 1,3-Dichlorobenzene         |           | 44.8   | ug/kg | 0.333   | 1.00    |
| 106-46-7 | 1,4-Dichlorobenzene         |           | 44.6   | ug/kg | 0.333   | 1.00    |
| 123-91-1 | 1,4-Dioxane                 | U         | 50.0   | ug/kg | 16.7    | 50.0    |
| 78-93-3  | 2-Butanone                  |           | 225    | ug/kg | 1.67    | 5.00    |
| 591-78-6 | 2-Hexanone                  |           | 240    | ug/kg | 1.67    | 5.00    |
| 108-10-1 | 4-Methyl-2-pentanone        |           | 228    | ug/kg | 1.67    | 5.00    |
| 67-64-1  | Acetone                     |           | 204    | ug/kg | 1.67    | 5.00    |
| 71-43-2  | Benzene                     |           | 45.4   | ug/kg | 0.333   | 1.00    |
| 74-97-5  | Bromochloromethane          |           | 46.4   | ug/kg | 0.333   | 1.00    |
| 75-27-4  | Bromodichloromethane        |           | 46.1   | ug/kg | 0.333   | 1.00    |
| 75-25-2  | Bromoform                   |           | 49.2   | ug/kg | 0.333   | 1.00    |
| 74-83-9  | Bromomethane                |           | 53.7   | ug/kg | 0.333   | 1.00    |
| 75-15-0  | Carbon disulfide            |           | 258    | ug/kg | 1.67    | 5.00    |
| 56-23-5  | Carbon tetrachloride        |           | 49.4   | ug/kg | 0.333   | 1.00    |
| 108-90-7 | Chlorobenzene               |           | 45.8   | ug/kg | 0.333   | 1.00    |
| 75-00-3  | Chloroethane                |           | 52.5   | ug/kg | 0.333   | 1.00    |
| 67-66-3  | Chloroform                  |           | 45.3   | ug/kg | 0.333   | 1.00    |
| 74-87-3  | Chloromethane               |           | 50.5   | ug/kg | 0.333   | 1.00    |
| 110-82-7 | Cyclohexane                 |           | 48.6   | ug/kg | 0.333   | 1.00    |
| 124-48-1 | Dibromochloromethane        |           | 47.2   | ug/kg | 0.333   | 1.00    |
| 75-71-8  | Dichlorodifluoromethane     |           | 56.0   | ug/kg | 0.333   | 1.00    |
| 100-41-4 | Ethylbenzene                |           | 47.0   | ug/kg | 0.333   | 1.00    |
| 98-82-8  | Isopropylbenzene            |           | 47.1   | ug/kg | 0.333   | 1.00    |
| 79-20-9  | Methyl acetate              |           | 223    | ug/kg | 1.67    | 5.00    |
| 108-87-2 | Methylcyclohexane           |           | 49.2   | ug/kg | 0.333   | 1.00    |
| 75-09-2  | Methylene chloride          | B         | 47.5   | ug/kg | 1.67    | 5.00    |

**Volatile  
Certificate of Analysis  
Sample Summary**

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|  |                            |                             |
|--|----------------------------|-----------------------------|
| <b>SDG Number:</b> 409254                  |                            | <b>Matrix:</b> SOIL         |
| <b>Lab Sample ID:</b> 1203660809           |                            |                             |
| <b>Client Sample:</b> QC for batch 1612389 | <b>Client:</b> HAAL002     | <b>Project:</b> QC          |
| <b>Client ID:</b> LCSD for batch 1612389   | <b>Method:</b> SW846 8260B | <b>SOP Ref:</b> GL-OA-E-038 |
| <b>Batch ID:</b> 1612391                   | <b>Inst:</b> VOA6.I        | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/01/2016 11:04          | <b>Analyst:</b> ACJ        | <b>Purge Vol:</b> 5 mL      |
| <b>Prep Date:</b> 11/01/2016 08:15         | <b>Aliquot:</b> 5 g        | <b>Final Volume:</b> 5 mL   |
| <b>Data File:</b> 110116V6\6G205D.D        | <b>Column:</b> DB-624      |                             |

| CAS No.     | Parmname                    | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-------------|-----------------------------|-----------|--------|-------|---------|---------|
| 100-42-5    | Styrene                     |           | 46.1   | ug/kg | 0.333   | 1.00    |
| 127-18-4    | Tetrachloroethylene         |           | 47.3   | ug/kg | 0.333   | 1.00    |
| 108-88-3    | Toluene                     |           | 45.5   | ug/kg | 0.333   | 1.00    |
| 79-01-6     | Trichloroethylene           |           | 47.1   | ug/kg | 0.333   | 1.00    |
| 75-69-4     | Trichlorofluoromethane      |           | 53.9   | ug/kg | 0.333   | 1.00    |
| 76-13-1     | Trichlorotrifluoroethane    | U         | 5.00   | ug/kg | 1.67    | 5.00    |
| 75-01-4     | Vinyl chloride              |           | 52.4   | ug/kg | 0.333   | 1.00    |
| 156-59-2    | cis-1,2-Dichloroethylene    |           | 45.7   | ug/kg | 0.333   | 1.00    |
| 10061-01-5  | cis-1,3-Dichloropropylene   |           | 47.2   | ug/kg | 0.333   | 1.00    |
| 179601-23-1 | m,p-Xylenes                 |           | 92.2   | ug/kg | 0.667   | 2.00    |
| 95-47-6     | o-Xylene                    |           | 45.4   | ug/kg | 0.333   | 1.00    |
| 1634-04-4   | tert-Butyl methyl ether     |           | 47.3   | ug/kg | 0.333   | 1.00    |
| 156-60-5    | trans-1,2-Dichloroethylene  |           | 46.0   | ug/kg | 0.333   | 1.00    |
| 10061-02-6  | trans-1,3-Dichloropropylene |           | 48.2   | ug/kg | 0.333   | 1.00    |

Agf  
11/09/2016

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G205D.D  
Acq On : 01 Nov 2016 11:04  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660809|1612391|1|VOAF|1|VOA8260BS|  
Misc : LCSD 5G - MIX[A] SOIL 1023-01A/0926-01B/1025-03  
ALS Vial : 5 Sample Multiplier: 1

Cell  
11/09/2016

Quant Time: Nov 01 11:41:35 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) Fluorobenzene              | 96   | 9.440  | 9.440  | 1.000  | 1800284  | 50.00 | ug/L  | 0.00      |
| 43) Chlorobenzene-d5          | 117  | 12.628 | 12.629 | 1.000  | 1390236  | 50.00 | ug/L  | 0.00      |
| 60) 1,4-Dichlorobenzene-d4    | 152  | 15.055 | 15.055 | 1.000  | 747102   | 50.00 | ug/L  | 0.00      |
| 84) B Fluorobenzene           | 96   | 9.440  | 9.440  | 1.000  | 1800284  | 50.00 | ug/L  | 0.00      |
| 103) B Chlorobenzene-d5       | 117  | 12.628 | 12.628 | 1.000  | 1390236  | 50.00 | ug/L  | 0.00      |
| 105) B 1,4-Dichlorobenzene-d4 | 152  | 15.055 | 15.055 | 1.000  | 747102   | 50.00 | ug/L  | 0.00      |

|                             |    |        |        |       |         |       |      |      |
|-----------------------------|----|--------|--------|-------|---------|-------|------|------|
| System Monitoring Compounds |    |        |        |       |         |       |      |      |
| 30) 1,2-Dichloroethane-d4   | 65 | 9.092  | 9.093  | 0.963 | 586179  | 49.51 | ug/L | 0.00 |
| 45) Toluene-d8              | 98 | 11.098 | 11.098 | 0.879 | 1851843 | 49.95 | ug/L | 0.00 |
| 63) Bromofluorobenzene      | 95 | 13.835 | 13.836 | 0.919 | 750255  | 49.65 | ug/L | 0.00 |

| Compound                  | Amount | Range    | Recovery |
|---------------------------|--------|----------|----------|
| 30) 1,2-Dichloroethane-d4 | 50.000 | 81 - 124 | 99%      |
| 45) Toluene-d8            | 50.000 | 81 - 120 | 100%     |
| 63) Bromofluorobenzene    | 50.000 | 70 - 130 | 99%      |

| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc    | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|---------|-------|--------|
| 2) Dichlorodifluoromethane    | 85   | 4.001  | 4.001  | 0.424  | 619700   | 55.97   | ug/L  | 99     |
| 3) Chloromethane              | 50   | 4.282  | 4.282  | 0.454  | 781520   | 50.46   | ug/L  | 100    |
| 4) Vinyl chloride             | 62   | 4.506  | 4.498  | 0.477  | 656283   | 52.39   | ug/L  | 100    |
| 5) Bromomethane               | 94   | 5.020  | 5.020  | 0.532  | 424570   | 53.69   | ug/L  | 100    |
| 6) Chloroethane               | 64   | 5.148  | 5.156  | 0.545  | 483783   | 52.53   | ug/L  | 99     |
| 7) Trichlorofluoromethane     | 101  | 5.501  | 5.509  | 0.583  | 831097   | 53.93   | ug/L  | 100    |
| 8) Ethyl ether                | 59   | 5.830  | 5.830  | 0.618  | 542883   | 44.34   | ug/L  | 98     |
| 9) Acetone                    | 43   | 6.197  | 6.197  | 0.656  | 1017500  | 204.19  | ug/L  | 97     |
| 10) 1,1-Dichloroethylene      | 61   | 6.191  | 6.191  | 0.656  | 886752   | 46.13   | ug/L  | 99     |
| 11) Iodomethane               | 142  | 6.428  | 6.429  | 0.681  | 4072721  | 244.58  | ug/L  | 99     |
| 12) Acetonitrile              | 41   | 6.544  | 6.550  | 0.693  | 1895651  | 1094.21 | ug/L  | 100    |
| 13) Methyl acetate            | 43   | 6.569  | 6.575  | 0.696  | 2178406  | 222.69  | ug/L  | 98     |
| 14) Carbon disulfide          | 76   | 6.544  | 6.550  | 0.693  | 7811100  | 258.25  | ug/L  | 100    |
| 15) Methylene chloride        | 84   | 6.758  | 6.764  | 0.716  | 599741   | 47.52   | ug/L  | 94     |
| 16) tert-Butyl methyl ether   | 73   | 7.050  | 7.050  | 0.747  | 1679790  | 47.27   | ug/L  | 98     |
| 17) trans-1,2-Dichloroethy... | 61   | 7.087  | 7.093  | 0.751  | 910433   | 45.97   | ug/L  | 98     |
| 18) Hexane                    | 57   | 7.379  | 7.367  | 0.782  | 2771     | N.D.    |       |        |
| 19) Vinyl acetate             | 43   | 7.532  | 7.538  | 0.798  | 6706085  | 244.77  | ug/L  | 98     |
| 20) 1,1-Dichloroethane        | 63   | 7.568  | 7.575  | 0.802  | 1095301  | 46.04   | ug/L  | 99     |
| 21) 2-Butanone                | 43   | 8.160  | 8.160  | 0.864  | 1766603  | 225.36  | ug/L  | 98     |
| 22) cis-1,2-Dichloroethylene  | 61   | 8.209  | 8.209  | 0.870  | 1080707  | 45.73   | ug/L  | 100    |
| 23) 2,2-Dichloropropane       | 77   | 8.233  | 8.233  | 0.872  | 895010   | 51.26   | ug/L  | 96     |
| 24) Bromochloromethane        | 128  | 8.477  | 8.483  | 0.898  | 284536   | 46.44   | ug/L  | 94     |
| 25) Chloroform                | 83   | 8.519  | 8.520  | 0.902  | 961199   | 45.28   | ug/L  | 98     |
| 26) 1,1,1-Trichloroethane     | 97   | 8.788  | 8.788  | 0.931  | 897142   | 48.56   | ug/L  | 99     |
| 27) Cyclohexane               | 56   | 8.873  | 8.873  | 0.940  | 1355388  | 48.61   | ug/L  | 97     |
| 28) 1,1-Dichloropropene       | 75   | 8.940  | 8.946  | 0.947  | 717826   | 48.20   | ug/L  | 96     |
| 29) Carbon tetrachloride      | 117  | 8.977  | 8.977  | 0.951  | 786910   | 49.36   | ug/L  | 99     |
| 31) 1,2-Dichloroethane        | 62   | 9.172  | 9.172  | 0.972  | 903226   | 44.06   | ug/L  | 99     |
| 32) Benzene                   | 78   | 9.184  | 9.184  | 0.973  | 2072206  | 45.41   | ug/L  | 98     |
| 33) Cyclohexene               | 67   | 9.294  | 9.294  | 0.985  | 1147055  | 49.26   | ug/L  | 97     |
| 34) n-Butyl alcohol           | 56   | 9.568  | 9.568  | 1.014  | 2249768  | 4868.52 | ug/L  | 97     |
| 35) Trichloroethylene         | 95   | 9.830  | 9.830  | 1.041  | 560358   | 47.13   | ug/L  | 99     |
| 36) 2-Pentanone               | 43   | 10.068 | 9.928  | 1.067  | 74303    | 7.18    | ug/L  | 69     |
| 37) 1,2-Dichloropropane       | 63   | 10.080 | 10.080 | 1.068  | 635658   | 45.44   | ug/L  | 99     |
| 38) Methylcyclohexane         | 83   | 10.068 | 10.068 | 1.067  | 1020191  | 49.21   | ug/L  | 98     |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G205D.D  
Acq On : 01 Nov 2016 11:04  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660809|1612391|1|VOAF|1|VOA8260BS|  
Misc : LCSD 5G - MIX[A] SOIL 1023-01A/0926-01B/1025-03  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 01 11:41:35 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc        | Units |
|-------------------------------|------|--------|--------|--------|----------|-------------|-------|
| 39) Dibromomethane            | 93   | 10.214 | 10.214 | 1.082  | 322693   | 45.45 ug/L  | 99    |
| 40) Bromodichloromethane      | 83   | 10.330 | 10.330 | 1.094  | 761797   | 46.12 ug/L  | 99    |
| 41) 2-Chloroethylvinyl ether  | 63   | 10.568 | 10.568 | 1.119  | 1665256  | 198.03 ug/L | 99    |
| 42) cis-1,3-Dichloropropylene | 75   | 10.787 | 10.787 | 1.143  | 927671   | 47.18 ug/L  | 96    |
| 44) 4-Methyl-2-pentanone      | 58   | 10.891 | 10.891 | 0.862  | 1270026  | 227.98 ug/L | 96    |
| 46) Toluene                   | 91   | 11.171 | 11.172 | 0.885  | 2278637  | 45.49 ug/L  | 99    |
| 47) trans-1,3-Dichloroprop... | 75   | 11.336 | 11.342 | 0.898  | 871766   | 48.20 ug/L  | 96    |
| 48) 1,1,2-Trichloroethane     | 83   | 11.555 | 11.556 | 0.915  | 393053   | 45.72 ug/L  | 99    |
| 49) 2-Hexanone                | 43   | 11.744 | 11.745 | 0.930  | 2910706  | 239.93 ug/L | 98    |
| 50) 1,3-Dichloropropane       | 76   | 11.744 | 11.751 | 0.930  | 800723   | 45.83 ug/L  | 99    |
| 51) Tetrachloroethylene       | 164  | 11.763 | 11.763 | 0.931  | 447518   | 47.28 ug/L  | 98    |
| 52) Dibromochloromethane      | 129  | 12.013 | 12.013 | 0.951  | 557629   | 47.16 ug/L  | 99    |
| 53) 1,2-Dibromoethane         | 107  | 12.171 | 12.177 | 0.964  | 499611   | 47.83 ug/L  | 99    |
| 54) Chlorobenzene             | 112  | 12.665 | 12.665 | 1.003  | 1558816  | 45.76 ug/L  | 99    |
| 55) 1,1,1,2-Tetrachloroethane | 131  | 12.720 | 12.720 | 1.007  | 582302   | 47.56 ug/L  | 99    |
| 56) Ethylbenzene              | 91   | 12.732 | 12.732 | 1.008  | 2659747  | 46.95 ug/L  | 99    |
| 57) m,p-Xylenes               | 106  | 12.842 | 12.842 | 1.017  | 2068451  | 92.22 ug/L  | 99    |
| 58) o-Xylene                  | 91   | 13.275 | 13.275 | 1.051  | 2215391  | 45.44 ug/L  | 100   |
| 59) Styrene                   | 104  | 13.281 | 13.281 | 1.052  | 1755218  | 46.11 ug/L  | 99    |
| 61) Bromoform                 | 173  | 13.537 | 13.537 | 0.899  | 357240   | 49.22 ug/L  | 99    |
| 62) Isopropylbenzene          | 105  | 13.640 | 13.641 | 0.906  | 2844064  | 47.06 ug/L  | 99    |
| 64) 1,1,2,2-Tetrachloroethane | 83   | 13.927 | 13.927 | 0.925  | 638951   | 46.63 ug/L  | 99    |
| 65) 1,2,3-Trichloropropane    | 110  | 14.006 | 14.012 | 0.930  | 206000   | 47.11 ug/L  | 94    |
| 66) Bromobenzene              | 156  | 14.037 | 14.043 | 0.932  | 723713   | 45.51 ug/L  | 99    |
| 67) n-Propylbenzene           | 91   | 14.067 | 14.067 | 0.934  | 3199116  | 45.90 ug/L  | 100   |
| 68) 1,3,5-Trimethylbenzene    | 105  | 14.226 | 14.226 | 0.945  | 2424365  | 45.12 ug/L  | 100   |
| 69) 2-Chlorotoluene           | 126  | 14.213 | 14.214 | 0.944  | 660052   | 46.33 ug/L  | 100   |
| 70) 4-Chlorotoluene           | 91   | 14.311 | 14.317 | 0.951  | 2088041  | 45.38 ug/L  | 100   |
| 71) tert-Butylbenzene         | 134  | 14.591 | 14.592 | 0.969  | 515313   | 47.24 ug/L  | 97    |
| 72) 1,2,4-Trimethylbenzene    | 105  | 14.634 | 14.634 | 0.972  | 2516585  | 45.18 ug/L  | 99    |
| 73) sec-Butylbenzene          | 105  | 14.817 | 14.817 | 0.984  | 3158208  | 46.68 ug/L  | 99    |
| 74) 4-Isopropyltoluene        | 119  | 14.591 | 14.592 | 0.969  | 2381247  | 50.63 ug/L  | 100   |
| 75) 1,3-Dichlorobenzene       | 146  | 14.994 | 14.994 | 0.996  | 1324489  | 44.79 ug/L  | 100   |
| 76) 1,4-Dichlorobenzene       | 146  | 15.079 | 15.085 | 1.002  | 1310108  | 44.58 ug/L  | 100   |
| 77) n-Butylbenzene            | 91   | 15.372 | 15.372 | 1.021  | 2518182  | 46.21 ug/L  | 99    |
| 78) 1,2-Dichlorobenzene       | 146  | 15.488 | 15.494 | 1.029  | 1290871  | 44.92 ug/L  | 99    |
| 79) 1,2-Dibromo-3-chloropr... | 157  | 16.311 | 16.311 | 1.083  | 135014   | 47.86 ug/L  | 99    |
| 80) 1,2,4-Trichlorobenzene    | 180  | 17.280 | 17.280 | 1.148  | 1002033  | 45.13 ug/L  | 98    |
| 81) Hexachlorobutadiene       | 225  | 17.445 | 17.445 | 1.159  | 626267   | 47.74 ug/L  | 100   |
| 82) Naphthalene               | 128  | 17.627 | 17.628 | 1.171  | 2155319  | 46.84 ug/L  | 100   |
| 83) 1,2,3-Trichlorobenzene    | 180  | 17.944 | 17.945 | 1.192  | 910466   | 45.86 ug/L  | 99    |
| 85) Acrolein                  |      | 6.038  | 6.026  | 0.640  | 0m       | N.D. d      |       |
| 86) Trichlorotrifluoroethane  |      | 6.148  | 6.185  | 0.651  | 0m       | N.D. d      |       |
| 87) Isopropyl Alcohol         |      | 6.276  | 6.282  | 0.665  | 0m       | N.D. d      |       |
| 88) Allyl chloride            |      | 6.544  | 6.611  | 0.693  | 0m       | N.D. d      |       |
| 89) tert-Butyl Alcohol        |      | 6.880  | 6.770  | 0.729  | 0m       | N.D. d      |       |
| 90) Acrylonitrile             |      | 7.050  | 7.014  | 0.747  | 0m       | N.D. d      |       |
| 91) Isopropyl ether           |      | 7.538  | 7.556  | 0.799  | 0m       | N.D. d      |       |
| 92) 2-Chloro-1,3-butadiene    |      | 7.684  | 7.672  | 0.814  | 0m       | N.D. d      |       |
| 93) Ethyl tert-butyl ether    |      | 0.000  | 7.965  | 0.000  | 0        | N.D.        |       |
| 94) Ethyl acetate             |      | 8.160  | 8.178  | 0.864  | 0m       | N.D. d      |       |
| 95) Propionitrile             |      | 8.245  | 8.245  | 0.873  | 0m       | N.D. d      |       |
| 96) Methacrylonitrile         |      | 0.000  | 8.416  | 0.000  | 0        | N.D.        |       |
| 97) Tetrahydrofuran           |      | 8.513  | 8.526  | 0.902  | 0m       | N.D. d      |       |
| 98) Isobutyl alcohol          |      | 8.873  | 8.873  | 0.940  | 0m       | N.D. d      |       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G205D.D  
Acq On : 01 Nov 2016 11:04  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660809|1612391|1|VOAF|1|VOA8260BS|  
Misc : LCSD 5G - MIX[A] SOIL 1023-01A/0926-01B/1025-03  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 01 11:41:35 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE

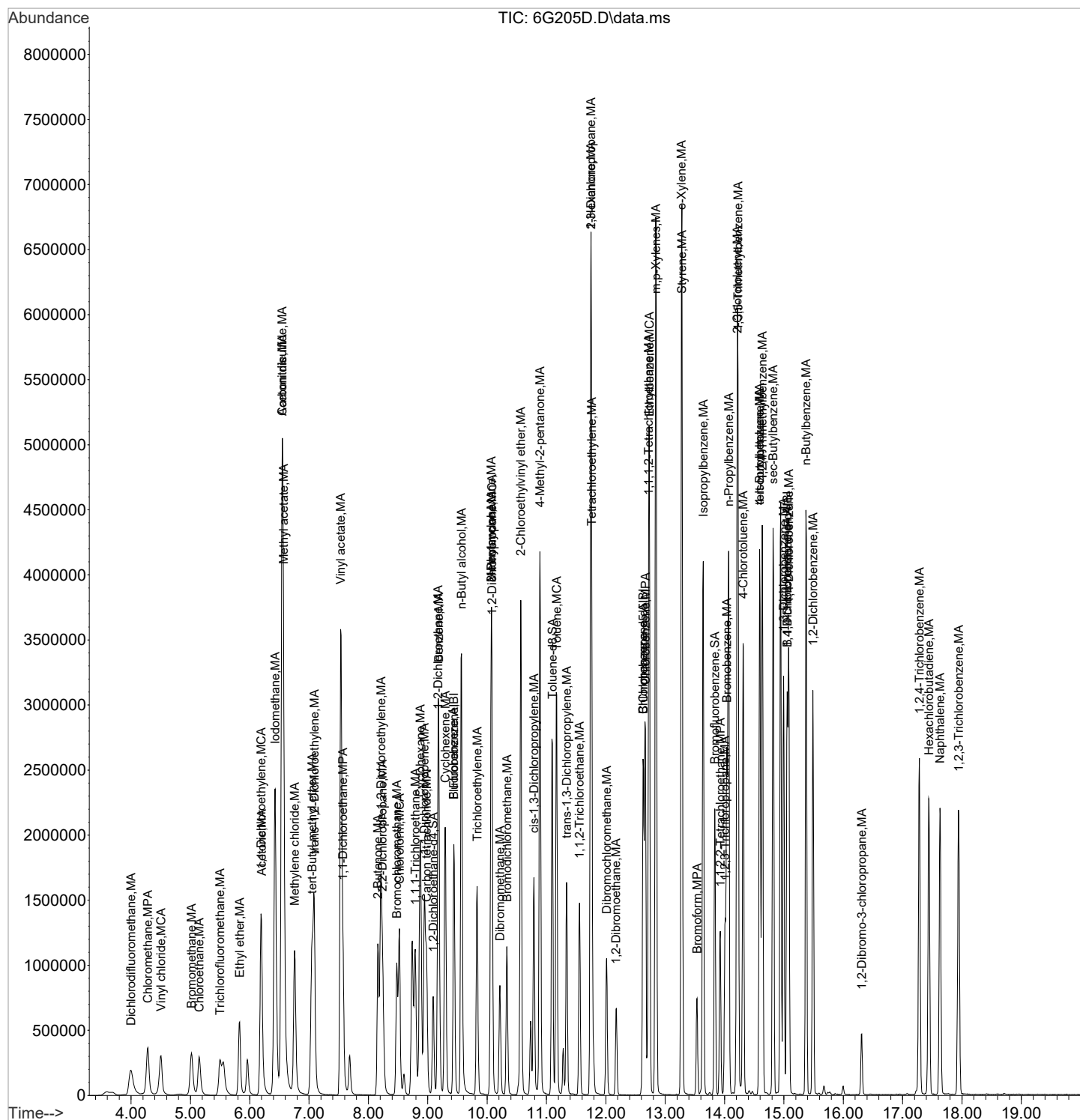
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |
|--------------------------------|------|--------|--------|--------|----------|------|-------|
| 99) Methyl tert-amyl ether     |      | 9.184  | 9.214  | 0.973  | 0m       | N.D. | d     |
| 100) Methyl methacrylate       |      | 10.068 | 10.068 | 1.067  | 0m       | N.D. | d     |
| 101) 1,4-Dioxane               |      | 10.172 | 10.172 | 1.077  | 0m       | N.D. | d     |
| 102) 2-Nitropropane            |      | 10.568 | 10.543 | 1.119  | 0m       | N.D. | d     |
| 104) Ethyl methacrylate        |      | 11.354 | 11.348 | 0.899  | 0m       | N.D. | d     |
| 106) 1-Chlorohexane            |      | 12.543 | 12.543 | 0.833  | 0m       | N.D. | d     |
| 107) cis-1,4-Dichloro-2-butene |      | 13.640 | 13.689 | 0.906  | 0m       | N.D. | d     |
| 108) Cyclohexanone             |      | 13.787 | 13.793 | 0.916  | 0m       | N.D. | d     |
| 109) trans-1,4-Dichloro-2-b... |      | 13.970 | 13.976 | 0.928  | 0m       | N.D. | d     |
| 110) Pentachloroethane         |      | 14.665 | 14.658 | 0.974  | 0m       | N.D. | d     |
| 111) Benzyl chloride           |      | 0.000  | 15.201 | 0.000  | 0        | N.D. |       |
| 112) bis(2-Chloroisopropyl)... |      | 15.597 | 15.591 | 1.036  | 0m       | N.D. | d     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\110116V6\  
Data File : 6G205D.D  
Acq On : 01 Nov 2016 11:04  
Operator : ACJ  
InstName : VOA6  
Sample : |1203660809|1612391|1|VOAF|1|VOA8260BS|  
Misc : LCSD 5G - MIX[A] SOIL 1023-01A/0926-01B/1025-03  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 01 11:41:35 2016  
Quant Method : C:\msdchem\1\data\101316V6\VOA6-8260-101316.M  
Quant Title : Volatile Organics 8260B SubList :  
QLast Update : Fri Oct 14 08:57:39 2016  
Response via : Initial Calibration  
Integrator: RTE



# Miscellaneous

# Prep Logbook

## Closed-System Purge-and-Trap Collection and Extraction: Volatile Organics in Soil and Waste Samples

Batch ID: 1612389

Analyst: Amy Jamison

Method: SW846 5035A

Lab SOP: GL-OA-E-039 REV# 11

Instrument: OH AUS Balance  
Volatiles Manual Instrument

| Type | Sample Id | Description | Serial Number | Spike Amount | Spike Units |
|------|-----------|-------------|---------------|--------------|-------------|
|------|-----------|-------------|---------------|--------------|-------------|

| Sample ID       | Prep Date            | Matrix | Initial Weight (g) | Final Volume (mL) | Prep Factor (mL/g) |
|-----------------|----------------------|--------|--------------------|-------------------|--------------------|
| 408699001 - 2   | 19-OCT-2016 09:00:00 | Soil   | 7.2                | 10                | 1.38889            |
| 408829005 - 2   | 19-OCT-2016 12:05:00 | Soil   | 7.3                | 10                | 1.36986            |
| 1203660808 LCS  | 01-NOV-2016 08:00:00 | Soil   | 5                  | 5                 | 1                  |
| 1203660809 LCSD | 01-NOV-2016 08:15:00 | Soil   | 5                  | 5                 | 1                  |
| 1203660807 MB   | 01-NOV-2016 08:30:00 | Soil   | 5                  | 5                 | 1                  |
| 1203666130 LCS  | 02-NOV-2016 08:00:00 | Soil   | 5                  | 5                 | 1                  |
| 1203666128 MB   | 02-NOV-2016 08:30:00 | Soil   | 5                  | 5                 | 1                  |
| 1203666131 LCS  | 03-NOV-2016 08:00:00 | Soil   | 5                  | 5                 | 1                  |
| 1203666129 MB   | 03-NOV-2016 08:30:00 | Soil   | 5                  | 5                 | 1                  |
| 408699001       | 19-OCT-2016 09:00:00 | Soil   | 7.1                | 5                 | 0.70423            |
| 408829005       | 19-OCT-2016 12:05:00 | Soil   | 7.2                | 5                 | 0.69444            |
| 408829006       | 19-OCT-2016 16:40:00 | Soil   | 7.1                | 5                 | 0.70423            |
| 409254011       | 24-OCT-2016 10:04:00 | Soil   | 5.6                | 5                 | 0.89286            |
| 409254012       | 24-OCT-2016 10:54:00 | Soil   | 6.7                | 5                 | 0.74627            |
| 409254013       | 24-OCT-2016 11:43:00 | Soil   | 4.8                | 5                 | 1.04167            |
| 409254014       | 24-OCT-2016 11:58:00 | Soil   | 4.7                | 5                 | 1.06383            |
| 409254015       | 24-OCT-2016 12:35:00 | Soil   | 5.5                | 5                 | 0.90909            |
| 409254016       | 24-OCT-2016 12:35:00 | Soil   | 4.6                | 5                 | 1.08696            |
| 409254029       | 25-OCT-2016 13:25:00 | Soil   | 6.6                | 5                 | 0.75758            |
| 409254032       | 25-OCT-2016 14:00:00 | Soil   | 7.1                | 5                 | 0.70423            |
| 409254034       | 26-OCT-2016 09:46:00 | Soil   | 6.4                | 5                 | 0.78125            |
| 409254036       | 26-OCT-2016 09:53:00 | Soil   | 4.8                | 5                 | 1.04167            |
| 409254038       | 26-OCT-2016 10:54:00 | Soil   | 5.3                | 5                 | 0.9434             |
| 409254044       | 26-OCT-2016 12:40:00 | Soil   | 5                  | 5                 | 1                  |

| Reagent/Solvent Lot ID | Description | Amount | Comments: |
|------------------------|-------------|--------|-----------|
|------------------------|-------------|--------|-----------|

ORGANIC RUN LOG - INSTRUMENT ID#VOA4

Date: 10/31/2016

Method 8260B/624 Operator: ACJ

HARDWARE CONFIGURATION &amp; METHOD CONDITIONS SUMMARY No# 37

Daily Instrument Readings:

Multiplier Voltage: 1547

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 10/31/2016

Daily Standard

Volume Added for Purge (ul)

Purge Amount

Solution ID#

Blk/  
Smp

CCV

MS/  
LCS

BFB

CCV

IS UVM160801-01

[illegible]

1

1

SS UVM160801-02

|  |  |
|--|--|
|  |  |
|--|--|

1

1

LCS/MS

BFB IVM1601026-01

|  |  |
|--|--|
|  |  |
|--|--|

|  |  |
|--|--|
|  |  |
|--|--|

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|  |   |
|--|---|
|  | 1 |
|--|---|

SHORT CCV

## SHORT LCS

Sequence Number: 103116V4

5ML Water Purge Vol:

|     |                |
|-----|----------------|
| N/A | Soil Purge Wt. |
|-----|----------------|

|     |                  |
|-----|------------------|
| N/A | Mid level ext. M |
|-----|------------------|

|     |    |
|-----|----|
| N/A | ul |
|-----|----|

|     |                |
|-----|----------------|
| N/A | Methanol Lot # |
|-----|----------------|

|   |              |
|---|--------------|
| x | Heated Purge |
|---|--------------|

[illegible]

[illegible]

AG  
11/15/2016KJD  
11/15/2016

Date: 11/2/2016

Method 8260B/624 Operator: ACJ

HARDWARE CONFIGURATION &amp; METHOD CONDITIONS SUMMARY No# 37

Daily Instrument Readings:

Multiplier Voltage: 1482

## CALIBRATION &amp; CC INFORMATION:

Initial Calibration Date: 10/31/2016

Daily Standard

Volume Added for Purge (ul)

Purge Amount

| Solution ID#               | Blk/<br>Smpl | CCV    | MS/<br>LCS | BFB |
|----------------------------|--------------|--------|------------|-----|
|                            |              |        |            |     |
| CCV W4VM161102-01          |              | 5UL EA |            |     |
| IS UVM160801-01            | 1            | 1      | 1          |     |
| SS UVM160801-02            | 1            | 1      | 1          |     |
| LCS/MS W4VM161102-02/03/04 |              |        | 5UL EA     |     |
| BFB IVM161026-01           |              |        |            | 1   |
| SHORT CCV W4VM161102-05    |              | 5UL EA |            |     |
| SHORT LCS W4VM161102-06    |              |        | 5UL EA     |     |

NaHSO4 lot # N/A

Cl test lot # 6021

Sequence Number: 110216V4

|     |                          |
|-----|--------------------------|
| 5ML | Water Purge Vol:         |
| N/A | Soil Purge Wt.           |
| N/A | Mid level ext. MeOH Vol: |
| N/A | ul                       |
| N/A | Methanol Lot #           |
| x   | Heated Purge             |

| Analysis         |      | Data File | Lab Sample ID | Client | Batch # | Wt.(g) or  | Dil.   | pH   | AS     | Matrix<br>w or s | Analyst | Cl test<br>(Y/N) | Acceptable<br>(O/X) | Comments   |
|------------------|------|-----------|---------------|--------|---------|------------|--------|------|--------|------------------|---------|------------------|---------------------|--|
| Date             | Time |           |               |        |         | Vol(ml/ul) | Factor |      | Slot # |                  |         |                  |                     |  |
| 2 Nov 2016 09:58 |      | 4H301.D   | IVM161026-01  | GEL    | BFB     | 1UL        | 1      | N/A  | 1      | W                | ACJ     | N/A              | O                   |  |
| 2 Nov 2016 10:27 |      | 4H302.D   | W4VM161102-01 | GEL    | CCV     | 5ML        | 1      | N/A  | 2      | W                | ACJ     | N/A              | O                   | MIX[A] UVM161026-07E/UVM161024-07E                   |
| 2 Nov 2016 10:56 |      | 4H303.D   | W4VM161102-02 | GEL    | LCS     | 5ML        | 1      | N/A  | 3      | W                | ACJ     | N/A              | O                   | MIX[A] UVM161023-01A/UVM160926-01B/IVM161102-01      |
| 2 Nov 2016 11:25 |      | 4H304.D   | W4VM161102-03 | GEL    | LCS     | 5G         | 1      | N/A  | 4      | S                | ACJ     | N/A              | O                   | MIX[A] SOIL UVM161023-01A/UVM160926-01B/IVM161102-01 |
| 2 Nov 2016 11:55 |      | 4H305.D   | W4VM161102-04 | GEL    | LCS     | 5G         | 1      | N/A  | 5      | S                | ACJ     | N/A              | O                   | MIX[A] SOIL UVM161023-01A/UVM160926-01B/IVM161102-01 |
| 2 Nov 2016 12:24 |      | 4H306.D   | W4VM161102-05 | GEL    | CCV     | 5ML        | 1      | N/A  | 6      | W                | ACJ     | N/A              | O                   | MIX[B] UVM161025-06E/UVM160913-06F                   |
| 2 Nov 2016 12:53 |      | 4H307.D   | W4VM161102-06 | GEL    | LCS     | 5ML        | 1      | N/A  | 7      | W                | ACJ     | N/A              | O                   | MIX[B] UVM161025-08A/UVM160913-08C                   |
| 2 Nov 2016 13:22 |      | 4H308.D   | 12036----     | GEL    | BLANK   | 5G         | 1      | N/A  | 8      | S                | ACJ     | N/A              | O                   | SOIL   |
| 2 Nov 2016 13:52 |      | 4H309.D   | 12036----     | GEL    | BLANK   | 5ML        | 1      | N/A  | 9      | W                | ACJ     | N/A              | O                   |  |
| 2 Nov 2016 14:20 |      | 4H310.D   | 408890001     | GEEL   | 1612854 | 7.5G       | 1      | N/A  | 10     | S                | ACJ     | N/A              | O                   | SOIL   |
| 2 Nov 2016 14:50 |      | 4H311.D   | 408890002     | GEEL   | 1612854 | 5.4G       | 1      | N/A  | 11     | S                | ACJ     | N/A              | O                   | SOIL   |
| 2 Nov 2016 15:19 |      | 4H312.D   | 409251001     | NREI   | 1612408 | 1ML        | 5      | PH<2 | 12     | W                | ACJ     | N                | O                   |  |
| 2 Nov 2016 15:48 |      | 4H313.D   | 409254029     | HAAL   | 1612391 | 6.6G       | 1      | N/A  | 13     | S                | ACJ     | N/A              | O                   | SOIL   |
| 2 Nov 2016 16:18 |      | 4H314.D   | 409254036     | HAAL   | 1612391 | 5.3G       | 1      | N/A  | 14     | S                | ACJ     | N/A              | X                   | SOIL; SEE 4H415                                      |
| 2 Nov 2016 16:46 |      | 4H315.D   | 409254038     | HAAL   | 1612391 | 5.3G       | 1      | N/A  | 15     | S                | ACJ     | N/A              | O                   | SOIL   |
| 2 Nov 2016 17:15 |      | 4H316.D   | 409254044     | HAAL   | 1612391 | 5.0G       | 1      | N/A  | 16     | S                | ACJ     | N/A              | O                   | SOIL TB NO SOIL ADDED                                |
| 2 Nov 2016 17:44 |      | 4H317.D   | 1203653245    | GEL    | 1612897 | 500UL      | 10     | N/A  | 17     | W                | ACJ     | N/A              | O                   | TB   |
| 2 Nov 2016 18:14 |      | 4H318.D   | 1203654039    | GEL    | 1612897 | 500UL      | 10     | N/A  | 18     | W                | ACJ     | N/A              | O                   | TB   |
| 2 Nov 2016 18:42 |      | 4H319.D   | 408733002     | FBWP   | 1612897 | 500UL      | 10     | N/A  | 19     | W                | ACJ     | N/A              | O                   |  |
| 2 Nov 2016 19:11 |      | 4H320.D   | 408733004     | FBWP   | 1612897 | 500UL      | 10     | N/A  | 20     | W                | ACJ     | N/A              | O                   |  |
| 2 Nov 2016 19:41 |      | 4H321.D   | 408733007     | FBWP   | 1612897 | 500UL      | 10     | N/A  | 21     | W                | ACJ     | N/A              | O                   |  |
| 2 Nov 2016 20:10 |      | 4H322.D   | 408813002     | ATKG   | 1612897 | 500UL      | 10     | N/A  | 22     | W                | ACJ     | N/A              | O                   |  |
| 2 Nov 2016 20:39 |      | 4H323.D   | 408819001     | ATKG   | 1612897 | 500UL      | 10     | N/A  | 23     | W                | ACJ     | N/A              | O                   |  |
| 2 Nov 2016 21:08 |      | 4H324.D   | 1203662031    | FBWP   | 1612897 | 500UL      | 10     | N/A  | 24     | W                | ACJ     | N/A              | O                   | MIX[A] MS 408733002                                  |
| 2 Nov 2016 21:37 |      | 4H325.D   | 1203662032    | FBWP   | 1612897 | 500UL      | 10     | N/A  | 25     | W                | ACJ     | N/A              | O                   | MIX[A] MSD 408733002                                 |



Date: 11/3/2016

Method 8260B/624 Operator: ACJ

HARDWARE CONFIGURATION &amp; METHOD CONDITIONS SUMMARY No# 37

Daily Instrument Readings:

Multiplier Voltage: 1482

## CALIBRATION &amp; CC INFORMATION:

Initial Calibration Date: 10/31/2016

Daily Standard

Volume Added for Purge (ul)

Purge Amount

| Solution ID#            | Blk/<br>Smpl | CCV    | MS/<br>LCS | BFB |
|-------------------------|--------------|--------|------------|-----|
|                         |              |        |            |     |
| CCV W4VM161103-01       |              | 5UL EA |            |     |
| IS UVM160801-01         | 1            | 1      | 1          |     |
| SS UVM160801-02         | 1            | 1      | 1          |     |
| LCS/MS W4VM161103-02/03 |              |        | 5UL EA     |     |
| BFB IVM161026-01        |              |        |            | 1   |
| SHORT CCV W4VM161103-04 |              | 5UL EA |            |     |
| SHORT LCS W4VM161103-05 |              |        | 5UL EA     |     |

NaHSO4 lot # N/A

Cl test lot # 6021

Sequence Number: 110316v4

|        |                          |
|--------|--------------------------|
| 5ML    | Water Purge Vol:         |
| VAIRED | Soil Purge Wt.           |
| N/A    | Mid level ext. MeOH Vol: |
| N/A    | ul                       |
| N/A    | Methanol Lot #           |
| x      | Heated Purge             |

| Analysis   |       | Data File | Lab Sample ID | Client | Batch # | Wt.(g) or<br>Vol(ml/ul) | Dil.<br>Factor | pH   | AS<br>Slot # | Matrix<br>w or s | Analyst | Cl test<br>(Y/N) | Acceptable<br>(O/X) | Comments   |
|------------|-------|-----------|---------------|--------|---------|-------------------------|----------------|------|--------------|------------------|---------|------------------|---------------------|--|
| Date       | Time  |           |               |        |         |                         |                |      |              |                  |         |                  |                     |  |
| 3 Nov 2016 | 10:17 | 4H401.D   | IVM161026-01  | GEL    | BFB     | 1UL                     | 1              | N/A  | 1            | W                | ACJ     | N/A              | O                   |  |
| 3 Nov 2016 | 10:46 | 4H402.D   | W4VM161103-01 | GEL    | CCV     | 5ML                     | 1              | N/A  | 2            | W                | ACJ     | N/A              | O                   | MIX[A] UVM161026-07E/UVM161024-07E                   |
| 3 Nov 2016 | 11:16 | 4H403.D   | W4VM161103-02 | GEL    | LCS     | 5ML                     | 1              | N/A  | 3            | W                | ACJ     | N/A              | O                   | MIX[A] UVM161023-01A/UVM160926-01B/IVM161102-01      |
| 3 Nov 2016 | 11:45 | 4H404.D   | W4VM161103-03 | GEL    | LCS     | 5G                      | 1              | N/A  | 4            | S                | ACJ     | N/A              | O                   | MIX[A] SOIL UVM161023-01A/UVM160926-01B/IVM161102-01 |
| 3 Nov 2016 | 12:14 | 4H405.D   | W4VM161103-04 | GEL    | CCV     | 5ML                     | 1              | N/A  | 5            | W                | ACJ     | N/A              | O                   | MIX[B] UVM161025-06E/UVM160913-06F                   |
| 3 Nov 2016 | 12:43 | 4H406.D   | W4VM161103-05 | GEL    | LCS     | 5ML                     | 1              | N/A  | 6            | W                | ACJ     | N/A              | O                   | MIX[B] UVM161025-08A/UVM160913-08C                   |
| 3 Nov 2016 | 13:13 | 4H407.D   | 12036----     | GEL    | BLANK   | 5G                      | 1              | N/A  | 7            | S                | ACJ     | N/A              | O                   | SOIL   |
| 3 Nov 2016 | 13:41 | 4H408.D   | 12036----     | GEL    | BLANK   | 5ML                     | 1              | N/A  | 8            | W                | ACJ     | N/A              | O                   |  |
| 3 Nov 2016 | 14:11 | 4H409.D   | 409070009     | LBNL   | 1613194 | 5ML                     | 1              | PH7  | 9            | W                | ACJ     | N/A              | O                   |  |
| 3 Nov 2016 | 14:40 | 4H410.D   | 409671001     | KEIK   | 1613194 | 200UL                   | 25             | PH<2 | 10           | W                | ACJ     | N/A              | O                   |  |
| 3 Nov 2016 | 15:09 | 4H411.D   | 409671004     | KEIK   | 1613194 | 200UL                   | 25             | PH7  | 11           | W                | ACJ     | N/A              | X                   | SEE 4H414; TIC C/O CONFIRMS SS LOW                   |
| 3 Nov 2016 | 15:39 | 4H412.D   | 409070004     | LBNL   | 1613194 | 2UL                     | 2500000        | N/A  | 12           | W                | ACJ     | N/A              | O                   | FROM 1000X   |
| 3 Nov 2016 | 16:08 | 4H413.D   | 409070008     | LBNL   | 1613194 | 2UL                     | 2500000        | N/A  | 13           | W                | ACJ     | N/A              | O                   | FROM 1000X   |
| 3 Nov 2016 | 16:37 | 4H414.D   | 409671004     | KEIK   | 1613194 | 200UL                   | 25             | PH7  | 14           | W                | ACJ     | N/A              | O                   |  |
| 3 Nov 2016 | 17:06 | 4H415.D   | 409254036     | HAAL   | 1612391 | 4.8G                    | 1              | N/A  | 15           | S                | ACJ     | N/A              | O                   | SOIL   |
| 3 Nov 2016 | 17:35 | 4H416.D   | 409076001     | SNLS   | 1613347 | 5ML                     | 1              | PH<2 | 16           | W                | ACJ     | N                | O                   |  |
| 3 Nov 2016 | 18:04 | 4H417.D   | 409076002     | SNLS   | 1613347 | 5ML                     | 1              | PH<2 | 17           | W                | ACJ     | N                | O                   |  |
| 3 Nov 2016 | 18:33 | 4H418.D   | 409076007     | SNLS   | 1613347 | 5ML                     | 1              | PH<2 | 18           | W                | ACJ     | N                | O                   |  |
| 3 Nov 2016 | 19:02 | 4H419.D   | 409076008     | SNLS   | 1613347 | 5ML                     | 1              | PH<2 | 19           | W                | ACJ     | N                | O                   |  |
| 3 Nov 2016 | 19:31 | 4H420.D   | 409076009     | SNLS   | 1613347 | 5ML                     | 1              | PH<2 | 20           | W                | ACJ     | N                | O                   |  |
| 3 Nov 2016 | 20:01 | 4H421.D   | 409076014     | SNLS   | 1613347 | 5ML                     | 1              | PH<2 | 21           | W                | ACJ     | N                | O                   |  |
| 3 Nov 2016 | 20:30 | 4H422.D   | 1203662784    | LBNL   | 1613194 | 2UL                     | 2500000        | N/A  | 22           | W                | ACJ     | N                | O                   | MIX[A] MS 409070004                                  |
| 3 Nov 2016 | 20:58 | 4H423.D   | 1203662785    | LBNL   | 1613194 | 2UL                     | 2500000        | N/A  | 23           | W                | ACJ     | N                | O                   | MIX[A] MSD 409070004                                 |

GEL Laboratories, LLC  
Revision:11/22/04

Date: 10/13/2016

ORGANIC RUN LOG - INSTRUMENT ID#VOA6

Method 8260B/624 Operator: \_\_\_\_\_

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 4

Daily Instrument Readings:

Multiplier Voltage: 1694

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 10/13/2016 & 10/14/2016

Daily Standard

Volume Added for Purge (ul)

Purge Amount

CI test lot # N/A  
Sequence Number: 101316V6

| Solution ID# |              | Blk/<br>Smpl | CCV     | MS/<br>LCS | BFB |
|--------------|--------------|--------------|---------|------------|-----|
|              |              |              | 5uL ea. |            |     |
| CCV          |              |              |         |            |     |
| IS           | UVM160921-01 | 1            | 1       | 1          |     |
| SS           | UVM160801-02 | 1            | 1       | 1          |     |
| LCS/MS       |              |              |         | 5uL ea.    |     |
| BFB          | IVM161013-03 |              |         |            | 1   |
| SHORT        |              |              | 5uL ea. |            |     |
| SHORT        |              |              |         | 5uL ea.    |     |

5ML Water Purge Vol:ML  
N/A Soil Purge Wt.:G  
N/A Mid level ext. MeOH Vol:  
N/A ul  
N/A Methanol Lot #  
x Heated Purge

| Analysis   |       | Data File | Lab Sample ID | Client | Batch # | Wt.(g) or  | Dil.   | pH  | AS     | Matrix | Analyst | CI test | Acceptable | Comments   |
|------------|-------|-----------|---------------|--------|---------|------------|--------|-----|--------|--------|---------|---------|------------|--|
| Date       | Time  |           |               |        |         | Vol(ml/ul) | Factor |     | Slot # | w or s |         | (Y/N)   | (O/X)      |  |
| 10/13/2016 | 16:42 | 6D401.D   | IVM161013-03  | GEL    | BFB     | 5mL        | 1      | N/A | 1      | W      | VXY1    | N/A     | O          |  |
| 10/13/2016 | 17:11 | 6D402.D   | W6VM161013-01 | ICAL   | ICAL005 | 5ML        | 1      | N/A | 2      | W      | VXY1    | N/A     | O          | MIX[A] UVM160915-01/ UVM161003-01B/ UVM160701-01C                                      |
| 10/13/2016 | 17:39 | 6D403.D   | W6VM161013-02 | ICAL   | ICAL01  | 5ML        | 1      | N/A | 3      | W      | VXY1    | N/A     | O          | MIX[A] UVM160915-02/ UVM161003-02B/ UVM160701-02C                                      |
| 10/13/2016 | 18:08 | 6D404.D   | W6VM161013-03 | ICAL   | ICAL02  | 5ML        | 1      | N/A | 4      | W      | VXY1    | N/A     | O          | MIX[A] UVM160915-03/ UVM161003-03B/ UVM160701-03C                                      |
| 10/13/2016 | 18:37 | 6D405.D   | W6VM161013-04 | ICAL   | ICAL05  | 5ML        | 1      | N/A | 5      | W      | VXY1    | N/A     | O          | MIX[A] UVM160915-04/ UVM161003-04B/ UVM160701-04C                                      |
| 10/13/2016 | 19:06 | 6D406.D   | W6VM161013-05 | ICAL   | ICAL010 | 5ML        | 1      | N/A | 6      | W      | VXY1    | N/A     | O          | MIX[A] UVM160915-05/ UVM161003-05B/ UVM160701-05C                                      |
| 10/13/2016 | 19:35 | 6D407.D   | W6VM161013-06 | ICAL   | ICAL020 | 5ML        | 1      | N/A | 7      | W      | VXY1    | N/A     | O          | MIX[A] UVM160915-06/ UVM161003-06B/ UVM160701-06C                                      |
| 10/13/2016 | 20:03 | 6D408.D   | W6VM161013-07 | ICAL   | ICAL50  | 5ML        | 1      | N/A | 8      | W      | VXY1    | N/A     | O          | MIX[A] UVM160915-07/ UVM161003-07B/ UVM160701-07C                                      |
| 10/13/2016 | 20:32 | 6D409.D   | W6VM161013-08 | ICAL   | ICAL080 | 5ML        | 1      | N/A | 9      | W      | VXY1    | N/A     | O          | MIX[A] UVM160915-08/ UVM161003-08B/ UVM160701-08C                                      |
| 10/13/2016 | 21:01 | 6D410.D   | W6VM161013-09 | ICAL   | ICAL100 | 5ML        | 1      | N/A | 10     | W      | VXY1    | N/A     | O          | MIX[A] UVM160915-08/ UVM161003-08B/ UVM160701-08C                                      |
| 10/13/2016 | 21:30 | 6D411.D   | 120362-----   | GEL    | RINSE   | 5mL        | 1      | N/A | 11     | W      | VXY1    | N/A     | O          |  |
| 10/13/2016 | 21:58 | 6D412.D   | W6VM161013-10 | ICV    | ICV     | 5ML        | 1      | N/A | 12     | W      | VXY1    | N/A     | X          | MIX[A] UVM160729-01D/ UVM160830-01F/ UVM160701-09D/ IVM161011-01 HEXANE LOW. SEE 6D502 |
| 10/13/2016 | 22:27 | 6D413.D   | W6VM161013-12 | ICAL   | ICAL005 | 5ML        | 1      | N/A | 13     | W      | VXY1    | N/A     | O          | MIX[B] UVM160913-01/ UVM160916-01  |
| 10/13/2016 | 22:56 | 6D414.D   | W6VM161013-13 | ICAL   | ICAL010 | 5ML        | 1      | N/A | 14     | W      | VXY1    | N/A     | O          | MIX[B] UVM160913-02/ UVM160916-02  |
| 10/13/2016 | 23:25 | 6D415.D   | W6VM161013-14 | ICAL   | ICAL025 | 5ML        | 1      | N/A | 15     | W      | VXY1    | N/A     | O          | MIX[B] UVM160913-03/ UVM160916-03  |
| 10/13/2016 | 23:54 | 6D416.D   | W6VM161013-15 | ICAL   | ICAL050 | 5ML        | 1      | N/A | 16     | W      | VXY1    | N/A     | O          | MIX[B] UVM160913-04/ UVM160916-04  |
| 10/14/2016 | 0:22  | 6D417.D   | W6VM161013-16 | ICAL   | ICAL100 | 5ML        | 1      | N/A | 17     | W      | VXY1    | N/A     | O          | MIX[B] UVM160913-05/ UVM160916-05  |
| 10/14/2016 | 0:52  | 6D418.D   | W6VM161013-17 | ICAL   | ICAL250 | 5ML        | 1      | N/A | 18     | W      | VXY1    | N/A     | O          | MIX[B] UVM160913-06/ UVM160916-06  |
| 10/14/2016 | 1:20  | 6D419.D   | W6VM161013-18 | ICAL   | ICAL500 | 5ML        | 1      | N/A | 19     | W      | VXY1    | N/A     | O          | MIX[B] UVM160913-07/ UVM160916-07  |
| 10/14/2016 | 1:49  | 6D420.D   | 120362-----   | GEL    | RINSE   | 5mL        | 1      | N/A | 20     | W      | VXY1    | N/A     | O          |  |
| 10/14/2016 | 2:18  | 6D421.D   | W6VM161013-19 | ICV    | ICV     | 5ML        | 1      | N/A | 21     | W      | VXY1    | N/A     | O          | MIX[B] UVM160913-08A/ UVM160916-08A  |
| 10/14/2016 | 8:56  | 6D422.D   | 120362-----   | GEL    | RINSE   | 5mL        | 1      | N/A | 20     | W      | VXY1    | N/A     | X          |  |

GEL Laboratories, LLC  
Revision:11/22/04  
Date: 10/14/2016

ORGANIC RUN LOG - INSTRUMENT ID#VOA6

Method 8260B/624 Operator:

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 4

Daily Instrument Readings:  
Multiplier Voltage: 1694

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 10/13/2016 & 10/14/2016  
  
CI test lot # N/A  
Sequence Number: 101416V6AM

| Solution ID#     | Volume Added for Purge (ul) |         |         |     |
|------------------|-----------------------------|---------|---------|-----|
|                  | Blk/ Smpl                   | CCV     | MS/ LCS | BFB |
| CCV              |                             | 5uL ea. |         |     |
| IS UVM160921-01  | 1                           | 1       | 1       |     |
| SS UVM160801-02  | 1                           | 1       | 1       |     |
| LCS/MS           |                             |         | 5uL ea. |     |
| BFB IVM161013-03 |                             |         |         | 1   |
| SHORT            |                             | 5uL ea. |         |     |
| SHORT            |                             |         | 5uL ea. |     |

Purge Amount  
5ML Water Purge Vol:ML  
N/A Soil Purge Wt.:G  
N/A Mid level ext. MeOH Vol:  
N/A ul  
N/A Methanol Lot #  
x Heated Purge

| Analysis   |      | Data File | Lab Sample ID | Client | Batch # | Wt.(g) or  | Dil.   | AS  | Matrix | Analyst | Ci test | Acceptable |       | Comments   |
|------------|------|-----------|---------------|--------|---------|------------|--------|-----|--------|---------|---------|------------|-------|--|
| Date       | Time |           |               |        |         | Vol(ml/ul) | Factor |     |        |         |         | (Y/N)      | (O/X) |  |
| 10/14/2016 | 9:30 | 6D501.D   | IVM161013-03  | GEL    | BFB     | 5mL        | 1      | N/A | 1      | W       | VXY1    | N/A        | O     |  |
| 10/14/2016 | 9:59 | 6D502.D   | W6VM161014-01 | GEL    | ICV     | 5ML        | 1      | N/A | 2      | W       | VXY1    | N/A        | O     | MIX[A] UVM160729-01D/ UVM160830-01F/ UVM160701-09E/ IVM161011-01 |

GEL Laboratories, LLC

Revision: 11/22/04

Date: 11/1/2016

ORGANIC RUN LOG - INSTRUMENT ID#VOA6

Method 8260B/624

Operator: ACJ

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY No# 4

Daily Instrument Readings:

Multiplier Voltage: 1776

11/10/2016

11/16/2016

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 10/13/2016 & 10/14/2016

Daily Standard

Volume Added for Purge (ul)

Purge Amount

CI test lot # 6021  
Sequence Number: 110116V6

| Solution ID#               | Blk/<br>Smpl | CCV     | MS/<br>LCS | BFB |
|----------------------------|--------------|---------|------------|-----|
| CCV W6VM161101-01          |              | 5uL ea. |            |     |
| IS UVM161010-01            | 1            | 1       | 1          |     |
| SS UVM160801-02            | 1            | 1       | 1          |     |
| LCS/MS W6VM161101-02/03/04 |              |         | 5uL ea.    |     |
| BFB IVM161026-01           |              |         |            | 1   |
| SHORT W6VM161101-05        |              | 5uL ea. |            |     |
| SHORT W6VM161101-06        |              |         | 5uL ea.    |     |

|        |                          |
|--------|--------------------------|
| 5ML    | Water Purge Vol:ML       |
| VARIED | Soil Purge Wt.:G         |
| N/A    | Mid level ext. MeOH Vol: |
| 100    | ul                       |
| N/A    | Methanol Lot #           |
| x      | Heated Purge             |

| Analysis         |      | Data File | Lab Sample ID | Client | Batch # | Wt.(g) or  | Dil.   | AS  | Matrix | Analyst | CI test |       | Acceptable | Comments   |
|------------------|------|-----------|---------------|--------|---------|------------|--------|-----|--------|---------|---------|-------|------------|--|
| Date             | Time |           |               |        |         | Vol(ml/ul) | Factor |     |        |         | (Y/N)   | (O/X) |            |  |
| 1 Nov 2016 09:08 |      | 6G201.D   | IVM161026-01  | GEL    | BFB     | 5mL        | 1      | N/A | 1      | W       | ACJ     | N/A   | O          |  |
| 1 Nov 2016 09:37 |      | 6G202.D   | W6VM161101-01 | GEL    | CCV     | 5mL        | 1      | N/A | 2      | W       | ACJ     | N/A   | O          | MIX[A] UVM160621-06G/UVM161024-07E                   |
| 1 Nov 2016 10:06 |      | 6G203.D   | W6VM161101-02 | GEL    | LCS     | 5mL        | 1      | N/A | 3      | W       | ACJ     | N/A   | O          | MIX[A] UVM161023-01A/UVM160926-01B/IVM161025-03      |
| 1 Nov 2016 10:35 |      | 6G204.D   | W6VM161101-03 | GEL    | LCS     | 5G         | 1      | N/A | 4      | w       | ACJ     | N/A   | O          | MIX[A] SOIL UVM161023-01A/UVM160926-01B/IVM161025-03 |
| 1 Nov 2016 11:04 |      | 6G205.D   | W6VM161101-04 | GEL    | LCSD    | 5G         | 1      | N/A | 5      | w       | ACJ     | N/A   | O          | MIX[A] SOIL UVM161023-01A/UVM160926-01B/IVM161025-03 |
| 1 Nov 2016 11:33 |      | 6G206.D   | W6VM161101-05 | GEL    | CCV     | 5mL        | 1      | N/A | 6      | w       | ACJ     | N/A   | O          | MIX[B] UVM160913-06F/UVM161025-08A                   |
| 1 Nov 2016 12:02 |      | 6G207.D   | W6VM161101-06 | GEL    | LCS     | 5mL        | 1      | N/A | 7      | w       | ACJ     | N/A   | O          | MIX[B] UVM160913-08C/UVM161025-08A                   |
| 1 Nov 2016 12:31 |      | 6G208.D   | 120365----    | BLANK  | BLANK   | 5ML        | 1      | N/A | 8      | w       | ACJ     | N/A   | O          |  |
| 1 Nov 2016 13:00 |      | 6G209.D   | 120365----    | BLANK  | BLANK   | 5G         | 1      | N/A | 9      | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 13:28 |      | 6G210.D   | 408699001     | NREI   | 1612391 | 100UL      | 50     | N/A | 10     | w       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 13:57 |      | 6G211.D   | 408829005     | NREI   | 1612391 | 100UL      | 50     | N/A | 11     | w       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 14:26 |      | 6G212.D   | 408699001     | NREI   | 1612391 | 7.1G       | 1      | N/A | 12     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 14:55 |      | 6G213.D   | 408829005     | NREI   | 1612391 | 7.2G       | 1      | N/A | 13     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 15:24 |      | 6G214.D   | 408829006     | NREI   | 1612391 | 7.1G       | 1      | N/A | 14     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 16:22 |      | 6G215.D   | 409254011     | HAAL   | 1612391 | 5.6G       | 1      | N/A | 15     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 16:24 |      | 6G216.D   | 409254012     | HAAL   | 1612391 | 6.7G       | 1      | N/A | 16     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 16:52 |      | 6G217.D   | 409254013     | HAAL   | 1612391 | 4.8G       | 1      | N/A | 17     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 17:21 |      | 6G218.D   | 409254014     | HAAL   | 1612391 | 4.7G       | 1      | N/A | 18     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 17:50 |      | 6G219.D   | 409254015     | HAAL   | 1612391 | 5.5G       | 1      | N/A | 19     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 18:19 |      | 6G220.D   | 409254016     | HAAL   | 1612391 | 4.6G       | 1      | N/A | 20     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 18:48 |      | 6G221.D   | 409254029     | HAAL   | 1612391 | 6.2G       | 1      | N/A | 21     | s       | ACJ     | N/A   | X          | SOIL; SS/IS LOW SEE 4H313                            |
| 1 Nov 2016 19:17 |      | 6G222.D   | 409254032     | HAAL   | 1612391 | 7.1G       | 1      | N/A | 22     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 19:46 |      | 6G223.D   | 409254034     | HAAL   | 1612391 | 6.4G       | 1      | N/A | 23     | s       | ACJ     | N/A   | O          | SOIL   |
| 1 Nov 2016 20:15 |      | 6G224.D   | 1203659665    | UCOR   | 1611986 | 5ML        | 1      | PH7 | 24     | w       | ACJ     | N     | O          | MIX[A] MS 409250001                                  |
| 1 Nov 2016 20:44 |      | 6G225.D   | 1203659666    | UCOR   | 1611986 | 5ML        | 1      | PH7 | 25     | w       | ACJ     | N     | O          | MIX[A] MSD 409250001                                 |

# **Semi-Volatile Analysis**

# Case Narrative

**GC/MS Semivolatile  
Technical Case Narrative  
Haley & Aldrich, Inc. (HAAL)  
SDG #: 409254**

**Product:** Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry

**Analytical Method:** SW846 3541/8270D SIM PAH

**Analytical Procedure:** GL-OA-E-009 REV# 38

**Analytical Batch:** 1612777

**Preparation Method:** SW846 3541

**Preparation Procedure:** GL-OA-E-066 REV# 7

**Preparation Batch:** 1612776

The following samples were analyzed using the above methods and analytical procedure(s).

| <b><u>GEL Sample ID#</u></b> | <b><u>Client Sample Identification</u></b>       |
|------------------------------|--|
| 409254013                    | SD140300   |
| 409254014                    | SD140200   |
| 409254015                    | SD140100   |
| 409254016                    | SD140100DUP                                      |
| 409254017                    | DP100113   |
| 409254018                    | DP100212   |
| 409254019                    | DP100310   |
| 409254026                    | DP050113   |
| 409254027                    | DP050213   |
| 409254028                    | SS050100   |
| 1203661742                   | Method Blank (MB)                                |
| 1203661743                   | Laboratory Control Sample (LCS)                  |
| 1203661744                   | 409254013(SD140300) Matrix Spike (MS)            |
| 1203661745                   | 409254013(SD140300) Matrix Spike Duplicate (MSD) |

The samples in this SDG were analyzed on a "dry weight" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Quality Control (QC) Information**

**Surrogate Recoveries**

Sample (See Below) did not meet surrogate recovery acceptance criteria. The sample was analyzed at a dilution. As a result, one or more surrogates were diluted out of the acceptance limits.

| Sample               | Analyte            | Value         |
|----------------------|--------------------|---------------|
| 409254028 (SS050100) | 5-alpha-Androstane | 0* (30%-118%) |

**Technical Information**

**Sample Dilutions**

Sample 409254028 (SS050100) was diluted due to the presence of non-target analytes. The data from the dilution are reported.

**Miscellaneous Information****Manual Integrations**

Samples 409254016 (SD140100DUP) and 409254027 (DP050213) required manual integration to correctly position the baseline as set in the calibration standard injections.

**Product:** Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry

**Analytical Method:** SW846 3541/8270D

**Analytical Procedure:** GL-OA-E-009 REV# 38

**Analytical Batch:** 1614270

**Preparation Method:** SW846 3541

**Preparation Procedure:** GL-OA-E-066 REV# 7

**Preparation Batch:** 1614269

The following samples were analyzed using the above methods and analytical procedure(s).

| <b><u>GEL Sample ID#</u></b> | <b><u>Client Sample Identification</u></b>     |
|------------------------------|--|
| 409254029                    | DP020312                                       |
| 409254032                    | DP020413                                       |
| 409254034                    | DP020207                                       |
| 409254036                    | DP020209                                       |
| 409254038                    | DP020114                                       |
| 1203665318                   | Method Blank (MB)                              |
| 1203665319                   | Laboratory Control Sample (LCS)                |
| 1203665320                   | 409286001(NonSDG) Matrix Spike (MS)            |
| 1203665321                   | 409286001(NonSDG) Matrix Spike Duplicate (MSD) |

The samples in this SDG were analyzed on a "dry weight" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Quality Control (QC) Information****Surrogate Recoveries**

Sample (See Below) did not meet surrogate recovery acceptance criteria. Since the parent sample and associated MS/MSD pair displayed similar recoveries, the failures were attributed to matrix interference and the data results are reported.

| Sample                           | Analyte              | Value          |
|----------------------------------|----------------------|----------------|
| 1203665320 (Non SDG 409286001MS) | 2,4,6-Tribromophenol | 32* (39%-115%) |

**Spike Recovery Statement**



The MS or MSD (See Below) recovered spiked analytes outside of the established acceptance limits. As similar recoveries were displayed in the MS and MSD, the failures were attributed to sample matrix interference and the data were reported.

| Sample                            | Analyte | Value                 |
|-----------------------------------|---------|-----------------------|
| 1203665320 (Non SDG 409286001MS)  | Several | See applicable report |
| 1203665321 (Non SDG 409286001MSD) | Several | See applicable report |

#### **MS/MSD Relative Percent Difference (RPD) Statement**

The relative percent differences (RPD) for the MS and MSD, (See Below), were not within the acceptance limits. The failures were attributed to matrix interference. The data were reported.

| Sample   | Analyte                    | Value         |
|--|----------------------------|---------------|
| 1203665320MS and 1203665321MSD (Non SDG 409286001) | 2,3,4,6-Tetrachlorophenol  | 74* (0%-30%)  |
|  | 2,4,5-Trichlorophenol      | 56* (0%-30%)  |
|  | 2,4,6-Trichlorophenol      | 62* (0%-30%)  |
|  | 2-Methyl-4,6-dinitrophenol | 200* (0%-30%) |
|  | Hexachlorocyclopentadiene  | 36* (0%-30%)  |
|  | Pentachlorophenol          | 79* (0%-30%)  |

#### **Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Qualifier Definition Report for

HAAL002 Haley & Aldrich, Inc.

Client SDG: 409254 GEL Work Order: 409254

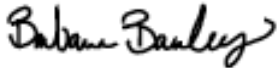
#### The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

#### Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Barbara Bailey

Date: 16 NOV 2016

Title: Data Validator

# Sample Data Summary

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254013  
  
**Client ID:** SD140300  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 10:54  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0707.D

**Date Collected:** 10/24/2016 11:43  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.007 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 36.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 83-32-9  | Acenaphthene           | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 208-96-8 | Acenaphthylene         | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 120-12-7 | Anthracene             | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 56-55-3  | Benzo(a)anthracene     | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 50-32-8  | Benzo(a)pyrene         | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 205-99-2 | Benzo(b)fluoranthene   | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 218-01-9 | Chrysene               | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 206-44-0 | Fluoranthene           | J         | 3.15   | ug/kg | 2.63    | 5.26    |
| 86-73-7  | Fluorene               | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 91-20-3  | Naphthalene            | U         | 5.26   | ug/kg | 1.58    | 5.26    |
| 85-01-8  | Phenanthrene           | J         | 3.68   | ug/kg | 2.63    | 5.26    |
| 129-00-0 | Pyrene                 | J         | 2.63   | ug/kg | 2.63    | 5.26    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254014  
  
**Client ID:** SD140200  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 11:51  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0709.D

**Date Collected:** 10/24/2016 11:58  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.102 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 44.5  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 83-32-9  | Acenaphthene           | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 208-96-8 | Acenaphthylene         | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 120-12-7 | Anthracene             | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 56-55-3  | Benzo(a)anthracene     | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 50-32-8  | Benzo(a)pyrene         | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 4.79   | ug/kg | 2.99    | 5.98    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 207-08-9 | Benzo(k)fluoranthene   | J         | 3.59   | ug/kg | 2.99    | 5.98    |
| 218-01-9 | Chrysene               | J         | 3.59   | ug/kg | 2.99    | 5.98    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 206-44-0 | Fluoranthene           |           | 5.98   | ug/kg | 2.99    | 5.98    |
| 86-73-7  | Fluorene               | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 91-20-3  | Naphthalene            | U         | 5.98   | ug/kg | 1.80    | 5.98    |
| 85-01-8  | Phenanthrene           | J         | 4.19   | ug/kg | 2.99    | 5.98    |
| 129-00-0 | Pyrene                 | J         | 4.19   | ug/kg | 2.99    | 5.98    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254015  
  
**Client ID:** SD140100  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 12:19  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0710.D

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.049 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 37.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 83-32-9  | Acenaphthene           | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 208-96-8 | Acenaphthylene         | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 120-12-7 | Anthracene             | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 56-55-3  | Benzo(a)anthracene     | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 50-32-8  | Benzo(a)pyrene         | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 3.20   | ug/kg | 2.67    | 5.34    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 218-01-9 | Chrysene               | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 206-44-0 | Fluoranthene           | J         | 3.74   | ug/kg | 2.67    | 5.34    |
| 86-73-7  | Fluorene               | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 91-20-3  | Naphthalene            | U         | 5.34   | ug/kg | 1.60    | 5.34    |
| 85-01-8  | Phenanthrene           | J         | 3.74   | ug/kg | 2.67    | 5.34    |
| 129-00-0 | Pyrene                 | J         | 3.20   | ug/kg | 2.67    | 5.34    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254016  
  
**Client ID:** SD140100DUP  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 12:47  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0711.D

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.078 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 36.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 83-32-9  | Acenaphthene           | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 208-96-8 | Acenaphthylene         | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 120-12-7 | Anthracene             | J         | 4.20   | ug/kg | 2.62    | 5.25    |
| 56-55-3  | Benzo(a)anthracene     | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 50-32-8  | Benzo(a)pyrene         | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 3.67   | ug/kg | 2.62    | 5.25    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 218-01-9 | Chrysene               | J         | 2.62   | ug/kg | 2.62    | 5.25    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 206-44-0 | Fluoranthene           |           | 6.30   | ug/kg | 2.62    | 5.25    |
| 86-73-7  | Fluorene               | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 91-20-3  | Naphthalene            | U         | 5.25   | ug/kg | 1.57    | 5.25    |
| 85-01-8  | Phenanthrene           | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 129-00-0 | Pyrene                 | J         | 4.20   | ug/kg | 2.62    | 5.25    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254017  
  
**Client ID:** DP100113  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 13:16  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0712.D

**Date Collected:** 10/24/2016 14:30  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.038 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 27.4  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 83-32-9  | Acenaphthene           | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 208-96-8 | Acenaphthylene         | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 120-12-7 | Anthracene             | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 56-55-3  | Benzo(a)anthracene     | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 50-32-8  | Benzo(a)pyrene         | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 205-99-2 | Benzo(b)fluoranthene   | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 218-01-9 | Chrysene               | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 206-44-0 | Fluoranthene           | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 86-73-7  | Fluorene               | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 91-20-3  | Naphthalene            | U         | 4.58   | ug/kg | 1.38    | 4.58    |
| 85-01-8  | Phenanthrene           | J         | 2.29   | ug/kg | 2.29    | 4.58    |
| 129-00-0 | Pyrene                 | U         | 4.58   | ug/kg | 2.29    | 4.58    |



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254018

**Date Collected:** 10/25/2016 09:42  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.015 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 24.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 83-32-9  | Acenaphthene           | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 208-96-8 | Acenaphthylene         | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 120-12-7 | Anthracene             | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 56-55-3  | Benzo(a)anthracene     | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 50-32-8  | Benzo(a)pyrene         | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 205-99-2 | Benzo(b)fluoranthene   | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 218-01-9 | Chrysene               | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 206-44-0 | Fluoranthene           | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 86-73-7  | Fluorene               | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 91-20-3  | Naphthalene            | U         | 4.42   | ug/kg | 1.33    | 4.42    |
| 85-01-8  | Phenanthrene           | J         | 3.10   | ug/kg | 2.21    | 4.42    |
| 129-00-0 | Pyrene                 | U         | 4.42   | ug/kg | 2.21    | 4.42    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254019  
  
**Client ID:** DP100310  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 14:12  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0714.D

**Date Collected:** 10/25/2016 10:04  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.055 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 25.2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 83-32-9  | Acenaphthene           | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 208-96-8 | Acenaphthylene         | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 120-12-7 | Anthracene             | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 56-55-3  | Benzo(a)anthracene     | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 50-32-8  | Benzo(a)pyrene         | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 3.56   | ug/kg | 2.22    | 4.45    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 218-01-9 | Chrysene               | J         | 2.22   | ug/kg | 2.22    | 4.45    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 206-44-0 | Fluoranthene           | J         | 3.56   | ug/kg | 2.22    | 4.45    |
| 86-73-7  | Fluorene               | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 91-20-3  | Naphthalene            | U         | 4.45   | ug/kg | 1.33    | 4.45    |
| 85-01-8  | Phenanthrene           | J         | 3.11   | ug/kg | 2.22    | 4.45    |
| 129-00-0 | Pyrene                 | J         | 3.11   | ug/kg | 2.22    | 4.45    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254026  
  
**Client ID:** DP050113  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 14:41  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0715.D

**Date Collected:** 10/25/2016 12:14  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.057 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 19  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 83-32-9  | Acenaphthene           | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 208-96-8 | Acenaphthylene         | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 120-12-7 | Anthracene             | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 56-55-3  | Benzo(a)anthracene     | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 50-32-8  | Benzo(a)pyrene         | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 3.29   | ug/kg | 2.05    | 4.11    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 218-01-9 | Chrysene               | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 206-44-0 | Fluoranthene           | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 86-73-7  | Fluorene               | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 91-20-3  | Naphthalene            | U         | 4.11   | ug/kg | 1.23    | 4.11    |
| 85-01-8  | Phenanthrene           | J         | 2.47   | ug/kg | 2.05    | 4.11    |
| 129-00-0 | Pyrene                 | U         | 4.11   | ug/kg | 2.05    | 4.11    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254027

**Client ID:** DP050213  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 15:09  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0716.D

**Date Collected:** 10/25/2016 12:34  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.005 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 27.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 83-32-9  | Acenaphthene           | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 208-96-8 | Acenaphthylene         | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 120-12-7 | Anthracene             | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 56-55-3  | Benzo(a)anthracene     | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 50-32-8  | Benzo(a)pyrene         | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 3.22   | ug/kg | 2.30    | 4.60    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 218-01-9 | Chrysene               | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 206-44-0 | Fluoranthene           | J         | 3.22   | ug/kg | 2.30    | 4.60    |
| 86-73-7  | Fluorene               | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 91-20-3  | Naphthalene            |           | 5.52   | ug/kg | 1.38    | 4.60    |
| 85-01-8  | Phenanthrene           |           | 5.52   | ug/kg | 2.30    | 4.60    |
| 129-00-0 | Pyrene                 | J         | 2.76   | ug/kg | 2.30    | 4.60    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254028

**Date Collected:** 10/25/2016 12:48  
**Date Received:** 10/27/2016 09:00

**Matrix:** SOIL

**%Moisture:** 10.9

**Client:** HAAL002

**Project:** HAAL00201

**Method:** SW846 3541/8270D SIM P.

**SOP Ref:** GL-OA-E-009

**Inst:** MSD4.I

**Dilution:** 200

**Analyst:** JMB3

**Inj. Vol:** 1 uL

**Prep Date:** 11/04/2016 08:33

**Aliquot:** 30.055 g

**Final Volume:** 1.4 mL

**Data File:** s110716.B\4k0717.D

**Column:** DB-5ms

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 1050   | ug/kg | 523     | 1050    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 1050   | ug/kg | 523     | 1050    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 1050   | ug/kg | 523     | 1050    |
| 83-32-9  | Acenaphthene           | U         | 1050   | ug/kg | 523     | 1050    |
| 208-96-8 | Acenaphthylene         | U         | 1050   | ug/kg | 523     | 1050    |
| 120-12-7 | Anthracene             | U         | 1050   | ug/kg | 523     | 1050    |
| 56-55-3  | Benzo(a)anthracene     | U         | 1050   | ug/kg | 523     | 1050    |
| 50-32-8  | Benzo(a)pyrene         | U         | 1050   | ug/kg | 523     | 1050    |
| 205-99-2 | Benzo(b)fluoranthene   | U         | 1050   | ug/kg | 523     | 1050    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 1050   | ug/kg | 523     | 1050    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 1050   | ug/kg | 523     | 1050    |
| 218-01-9 | Chrysene               | U         | 1050   | ug/kg | 523     | 1050    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 1050   | ug/kg | 523     | 1050    |
| 206-44-0 | Fluoranthene           | U         | 1050   | ug/kg | 523     | 1050    |
| 86-73-7  | Fluorene               | U         | 1050   | ug/kg | 523     | 1050    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 1050   | ug/kg | 523     | 1050    |
| 91-20-3  | Naphthalene            | U         | 1050   | ug/kg | 314     | 1050    |
| 85-01-8  | Phenanthrene           | U         | 1050   | ug/kg | 523     | 1050    |
| 129-00-0 | Pyrene                 | U         | 1050   | ug/kg | 523     | 1050    |

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**SDG Number:** 409254  
**Lab Sample ID:** 409254029

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.046 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 26.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** DP020312  
**Batch ID:** 1614270  
**Run Date:** 11/11/2016 14:51  
**Prep Date:** 11/08/2016 12:02  
**Data File:** s111116.B\1k1109.D

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 450    | ug/kg | 135     | 450     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 450    | ug/kg | 135     | 450     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 450    | ug/kg | 135     | 450     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 450    | ug/kg | 135     | 450     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 450    | ug/kg | 135     | 450     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 450    | ug/kg | 135     | 450     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 450    | ug/kg | 135     | 450     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 901    | ug/kg | 135     | 901     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 450    | ug/kg | 135     | 450     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 450    | ug/kg | 135     | 450     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 95-57-8   | 2-Chlorophenol             | U         | 450    | ug/kg | 135     | 450     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 450    | ug/kg | 135     | 450     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 88-75-5   | 2-Nitrophenol              | U         | 450    | ug/kg | 135     | 450     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 450    | ug/kg | 135     | 450     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 450    | ug/kg | 135     | 450     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 450    | ug/kg | 180     | 450     |
| 106-47-8  | 4-Chloroaniline            | U         | 450    | ug/kg | 135     | 450     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 450    | ug/kg | 135     | 450     |
| 100-02-7  | 4-Nitrophenol              | U         | 450    | ug/kg | 135     | 450     |
| 83-32-9   | Acenaphthene               | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 208-96-8  | Acenaphthylene             | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 98-86-2   | Acetophenone               | U         | 450    | ug/kg | 135     | 450     |
| 120-12-7  | Anthracene                 | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 1912-24-9 | Atrazine                   | U         | 450    | ug/kg | 180     | 450     |
| 100-52-7  | Benzaldehyde               | U         | 450    | ug/kg | 135     | 450     |
| 56-55-3   | Benzo(a)anthracene         | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 50-32-8   | Benzo(a)pyrene             | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 85-68-7   | Butylbenzylphthalate       | U         | 450    | ug/kg | 135     | 450     |
| 105-60-2  | Caprolactam                | U         | 450    | ug/kg | 135     | 450     |
| 86-74-8   | Carbazole                  | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 218-01-9  | Chrysene                   | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 84-74-2   | Di-n-butylphthalate        | U         | 450    | ug/kg | 135     | 450     |
| 117-84-0  | Di-n-octylphthalate        | U         | 450    | ug/kg | 135     | 450     |

**Semi-Volatile  
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**SDG Number:** 409254  
**Lab Sample ID:** 409254029

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.046 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 26.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 132-64-9   | Dibenzofuran                     | U         | 450    | ug/kg | 135     | 450     |
| 84-66-2    | Diethylphthalate                 | U         | 450    | ug/kg | 135     | 450     |
| 131-11-3   | Dimethylphthalate                | U         | 450    | ug/kg | 135     | 450     |
| 122-39-4   | Diphenylamine                    | U         | 450    | ug/kg | 135     | 450     |
| 206-44-0   | Fluoranthene                     | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 86-73-7    | Fluorene                         | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 118-74-1   | Hexachlorobenzene                | U         | 450    | ug/kg | 135     | 450     |
| 87-68-3    | Hexachlorobutadiene              | U         | 450    | ug/kg | 135     | 450     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 450    | ug/kg | 135     | 450     |
| 67-72-1    | Hexachloroethane                 | U         | 450    | ug/kg | 135     | 450     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 78-59-1    | Isophorone                       | U         | 450    | ug/kg | 135     | 450     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 450    | ug/kg | 135     | 450     |
| 91-20-3    | Naphthalene                      | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 98-95-3    | Nitrobenzene                     | U         | 450    | ug/kg | 135     | 450     |
| 87-86-5    | Pentachlorophenol                | U         | 450    | ug/kg | 135     | 450     |
| 85-01-8    | Phenanthrene                     | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 108-95-2   | Phenol                           | U         | 450    | ug/kg | 135     | 450     |
| 129-00-0   | Pyrene                           | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 450    | ug/kg | 135     | 450     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 450    | ug/kg | 135     | 450     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 450    | ug/kg | 135     | 450     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 450    | ug/kg | 135     | 450     |
| 65794-96-9 | m,p-Cresols                      | U         | 450    | ug/kg | 135     | 450     |
| 99-09-2    | m-Nitroaniline                   | U         | 450    | ug/kg | 135     | 450     |
| 95-48-7    | o-Cresol                         | U         | 450    | ug/kg | 135     | 450     |
| 88-74-4    | o-Nitroaniline                   | U         | 450    | ug/kg | 149     | 450     |
| 100-01-6   | p-Nitroaniline                   | U         | 450    | ug/kg | 135     | 450     |

**Semi-Volatile  
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Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254032

**Date Collected:** 10/25/2016 14:00  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.104 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 17.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 403    | ug/kg | 121     | 403     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 403    | ug/kg | 121     | 403     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 403    | ug/kg | 121     | 403     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 403    | ug/kg | 121     | 403     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 403    | ug/kg | 121     | 403     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 403    | ug/kg | 121     | 403     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 403    | ug/kg | 121     | 403     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 807    | ug/kg | 121     | 807     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 403    | ug/kg | 121     | 403     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 403    | ug/kg | 121     | 403     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 95-57-8   | 2-Chlorophenol             | U         | 403    | ug/kg | 121     | 403     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 403    | ug/kg | 121     | 403     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 88-75-5   | 2-Nitrophenol              | U         | 403    | ug/kg | 121     | 403     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 403    | ug/kg | 121     | 403     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 403    | ug/kg | 121     | 403     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 403    | ug/kg | 161     | 403     |
| 106-47-8  | 4-Chloroaniline            | U         | 403    | ug/kg | 121     | 403     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 403    | ug/kg | 121     | 403     |
| 100-02-7  | 4-Nitrophenol              | U         | 403    | ug/kg | 121     | 403     |
| 83-32-9   | Acenaphthene               | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 208-96-8  | Acenaphthylene             | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 98-86-2   | Acetophenone               | U         | 403    | ug/kg | 121     | 403     |
| 120-12-7  | Anthracene                 | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 1912-24-9 | Atrazine                   | U         | 403    | ug/kg | 161     | 403     |
| 100-52-7  | Benzaldehyde               | U         | 403    | ug/kg | 121     | 403     |
| 56-55-3   | Benzo(a)anthracene         | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 50-32-8   | Benzo(a)pyrene             | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 85-68-7   | Butylbenzylphthalate       | U         | 403    | ug/kg | 121     | 403     |
| 105-60-2  | Caprolactam                | U         | 403    | ug/kg | 121     | 403     |
| 86-74-8   | Carbazole                  | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 218-01-9  | Chrysene                   | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 84-74-2   | Di-n-butylphthalate        | U         | 403    | ug/kg | 121     | 403     |
| 117-84-0  | Di-n-octylphthalate        | U         | 403    | ug/kg | 121     | 403     |



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254032

**Date Collected:** 10/25/2016 14:00  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.104 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 17.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 132-64-9   | Dibenzofuran                     | U         | 403    | ug/kg | 121     | 403     |
| 84-66-2    | Diethylphthalate                 | U         | 403    | ug/kg | 121     | 403     |
| 131-11-3   | Dimethylphthalate                | U         | 403    | ug/kg | 121     | 403     |
| 122-39-4   | Diphenylamine                    | U         | 403    | ug/kg | 121     | 403     |
| 206-44-0   | Fluoranthene                     | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 86-73-7    | Fluorene                         | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 118-74-1   | Hexachlorobenzene                | U         | 403    | ug/kg | 121     | 403     |
| 87-68-3    | Hexachlorobutadiene              | U         | 403    | ug/kg | 121     | 403     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 403    | ug/kg | 121     | 403     |
| 67-72-1    | Hexachloroethane                 | U         | 403    | ug/kg | 121     | 403     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 78-59-1    | Isophorone                       | U         | 403    | ug/kg | 121     | 403     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 403    | ug/kg | 121     | 403     |
| 91-20-3    | Naphthalene                      | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 98-95-3    | Nitrobenzene                     | U         | 403    | ug/kg | 121     | 403     |
| 87-86-5    | Pentachlorophenol                | U         | 403    | ug/kg | 121     | 403     |
| 85-01-8    | Phenanthrene                     | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 108-95-2   | Phenol                           | U         | 403    | ug/kg | 121     | 403     |
| 129-00-0   | Pyrene                           | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 403    | ug/kg | 121     | 403     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 403    | ug/kg | 121     | 403     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 403    | ug/kg | 121     | 403     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 403    | ug/kg | 121     | 403     |
| 65794-96-9 | m,p-Cresols                      | U         | 403    | ug/kg | 121     | 403     |
| 99-09-2    | m-Nitroaniline                   | U         | 403    | ug/kg | 121     | 403     |
| 95-48-7    | o-Cresol                         | U         | 403    | ug/kg | 121     | 403     |
| 88-74-4    | o-Nitroaniline                   | U         | 403    | ug/kg | 133     | 403     |
| 100-01-6   | p-Nitroaniline                   | U         | 403    | ug/kg | 121     | 403     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254034

**Date Collected:** 10/26/2016 09:46  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.015 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 20.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** DP020207  
**Batch ID:** 1614270  
**Run Date:** 11/11/2016 15:51  
**Prep Date:** 11/08/2016 12:02  
**Data File:** s111116.B\slk1111.D

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 417    | ug/kg | 125     | 417     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 417    | ug/kg | 125     | 417     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 417    | ug/kg | 125     | 417     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 417    | ug/kg | 125     | 417     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 417    | ug/kg | 125     | 417     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 417    | ug/kg | 125     | 417     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 417    | ug/kg | 125     | 417     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 834    | ug/kg | 125     | 834     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 417    | ug/kg | 125     | 417     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 417    | ug/kg | 125     | 417     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 95-57-8   | 2-Chlorophenol             | U         | 417    | ug/kg | 125     | 417     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 417    | ug/kg | 125     | 417     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 88-75-5   | 2-Nitrophenol              | U         | 417    | ug/kg | 125     | 417     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 417    | ug/kg | 125     | 417     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 417    | ug/kg | 125     | 417     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 417    | ug/kg | 167     | 417     |
| 106-47-8  | 4-Chloroaniline            | U         | 417    | ug/kg | 125     | 417     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 417    | ug/kg | 125     | 417     |
| 100-02-7  | 4-Nitrophenol              | U         | 417    | ug/kg | 125     | 417     |
| 83-32-9   | Acenaphthene               | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 208-96-8  | Acenaphthylene             | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 98-86-2   | Acetophenone               | U         | 417    | ug/kg | 125     | 417     |
| 120-12-7  | Anthracene                 | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 1912-24-9 | Atrazine                   | U         | 417    | ug/kg | 167     | 417     |
| 100-52-7  | Benzaldehyde               | U         | 417    | ug/kg | 125     | 417     |
| 56-55-3   | Benzo(a)anthracene         | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 50-32-8   | Benzo(a)pyrene             | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 85-68-7   | Butylbenzylphthalate       | U         | 417    | ug/kg | 125     | 417     |
| 105-60-2  | Caprolactam                | U         | 417    | ug/kg | 125     | 417     |
| 86-74-8   | Carbazole                  | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 218-01-9  | Chrysene                   | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 84-74-2   | Di-n-butylphthalate        | U         | 417    | ug/kg | 125     | 417     |
| 117-84-0  | Di-n-octylphthalate        | U         | 417    | ug/kg | 125     | 417     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254034

**Date Collected:** 10/26/2016 09:46  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.015 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 20.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 132-64-9   | Dibenzofuran                     | U         | 417    | ug/kg | 125     | 417     |
| 84-66-2    | Diethylphthalate                 | U         | 417    | ug/kg | 125     | 417     |
| 131-11-3   | Dimethylphthalate                | U         | 417    | ug/kg | 125     | 417     |
| 122-39-4   | Diphenylamine                    | U         | 417    | ug/kg | 125     | 417     |
| 206-44-0   | Fluoranthene                     | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 86-73-7    | Fluorene                         | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 118-74-1   | Hexachlorobenzene                | U         | 417    | ug/kg | 125     | 417     |
| 87-68-3    | Hexachlorobutadiene              | U         | 417    | ug/kg | 125     | 417     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 417    | ug/kg | 125     | 417     |
| 67-72-1    | Hexachloroethane                 | U         | 417    | ug/kg | 125     | 417     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 78-59-1    | Isophorone                       | U         | 417    | ug/kg | 125     | 417     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 417    | ug/kg | 125     | 417     |
| 91-20-3    | Naphthalene                      | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 98-95-3    | Nitrobenzene                     | U         | 417    | ug/kg | 125     | 417     |
| 87-86-5    | Pentachlorophenol                | U         | 417    | ug/kg | 125     | 417     |
| 85-01-8    | Phenanthrene                     | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 108-95-2   | Phenol                           | U         | 417    | ug/kg | 125     | 417     |
| 129-00-0   | Pyrene                           | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 417    | ug/kg | 125     | 417     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 417    | ug/kg | 125     | 417     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 417    | ug/kg | 125     | 417     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 417    | ug/kg | 125     | 417     |
| 65794-96-9 | m,p-Cresols                      | U         | 417    | ug/kg | 125     | 417     |
| 99-09-2    | m-Nitroaniline                   | U         | 417    | ug/kg | 125     | 417     |
| 95-48-7    | o-Cresol                         | U         | 417    | ug/kg | 125     | 417     |
| 88-74-4    | o-Nitroaniline                   | U         | 417    | ug/kg | 138     | 417     |
| 100-01-6   | p-Nitroaniline                   | U         | 417    | ug/kg | 125     | 417     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254036

**Date Collected:** 10/26/2016 09:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.032 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 374    | ug/kg | 112     | 374     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 374    | ug/kg | 112     | 374     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 374    | ug/kg | 112     | 374     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 374    | ug/kg | 112     | 374     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 374    | ug/kg | 112     | 374     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 374    | ug/kg | 112     | 374     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 374    | ug/kg | 112     | 374     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 747    | ug/kg | 112     | 747     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 374    | ug/kg | 112     | 374     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 374    | ug/kg | 112     | 374     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 95-57-8   | 2-Chlorophenol             | U         | 374    | ug/kg | 112     | 374     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 374    | ug/kg | 112     | 374     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 88-75-5   | 2-Nitrophenol              | U         | 374    | ug/kg | 112     | 374     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 374    | ug/kg | 112     | 374     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 374    | ug/kg | 112     | 374     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 374    | ug/kg | 149     | 374     |
| 106-47-8  | 4-Chloroaniline            | U         | 374    | ug/kg | 112     | 374     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 374    | ug/kg | 112     | 374     |
| 100-02-7  | 4-Nitrophenol              | U         | 374    | ug/kg | 112     | 374     |
| 83-32-9   | Acenaphthene               | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 208-96-8  | Acenaphthylene             | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 98-86-2   | Acetophenone               | U         | 374    | ug/kg | 112     | 374     |
| 120-12-7  | Anthracene                 | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 1912-24-9 | Atrazine                   | U         | 374    | ug/kg | 149     | 374     |
| 100-52-7  | Benzaldehyde               | U         | 374    | ug/kg | 112     | 374     |
| 56-55-3   | Benzo(a)anthracene         | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 50-32-8   | Benzo(a)pyrene             | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 85-68-7   | Butylbenzylphthalate       | U         | 374    | ug/kg | 112     | 374     |
| 105-60-2  | Caprolactam                | U         | 374    | ug/kg | 112     | 374     |
| 86-74-8   | Carbazole                  | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 218-01-9  | Chrysene                   | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 84-74-2   | Di-n-butylphthalate        | U         | 374    | ug/kg | 112     | 374     |
| 117-84-0  | Di-n-octylphthalate        | U         | 374    | ug/kg | 112     | 374     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254036

**Date Collected:** 10/26/2016 09:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.032 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** DP020209  
**Batch ID:** 1614270  
**Run Date:** 11/11/2016 16:21  
**Prep Date:** 11/08/2016 12:02  
**Data File:** s111116.B\1k1112.D

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 132-64-9   | Dibenzofuran                     | U         | 374    | ug/kg | 112     | 374     |
| 84-66-2    | Diethylphthalate                 | U         | 374    | ug/kg | 112     | 374     |
| 131-11-3   | Dimethylphthalate                | U         | 374    | ug/kg | 112     | 374     |
| 122-39-4   | Diphenylamine                    | U         | 374    | ug/kg | 112     | 374     |
| 206-44-0   | Fluoranthene                     | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 86-73-7    | Fluorene                         | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 118-74-1   | Hexachlorobenzene                | U         | 374    | ug/kg | 112     | 374     |
| 87-68-3    | Hexachlorobutadiene              | U         | 374    | ug/kg | 112     | 374     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 374    | ug/kg | 112     | 374     |
| 67-72-1    | Hexachloroethane                 | U         | 374    | ug/kg | 112     | 374     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 78-59-1    | Isophorone                       | U         | 374    | ug/kg | 112     | 374     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 374    | ug/kg | 112     | 374     |
| 91-20-3    | Naphthalene                      | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 98-95-3    | Nitrobenzene                     | U         | 374    | ug/kg | 112     | 374     |
| 87-86-5    | Pentachlorophenol                | U         | 374    | ug/kg | 112     | 374     |
| 85-01-8    | Phenanthrene                     | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 108-95-2   | Phenol                           | U         | 374    | ug/kg | 112     | 374     |
| 129-00-0   | Pyrene                           | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 374    | ug/kg | 112     | 374     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 374    | ug/kg | 112     | 374     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 374    | ug/kg | 112     | 374     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 374    | ug/kg | 112     | 374     |
| 65794-96-9 | m,p-Cresols                      | U         | 374    | ug/kg | 112     | 374     |
| 99-09-2    | m-Nitroaniline                   | U         | 374    | ug/kg | 112     | 374     |
| 95-48-7    | o-Cresol                         | U         | 374    | ug/kg | 112     | 374     |
| 88-74-4    | o-Nitroaniline                   | U         | 374    | ug/kg | 123     | 374     |
| 100-01-6   | p-Nitroaniline                   | U         | 374    | ug/kg | 112     | 374     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254038

**Date Collected:** 10/26/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.041 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 340    | ug/kg | 102     | 340     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 340    | ug/kg | 102     | 340     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 340    | ug/kg | 102     | 340     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 340    | ug/kg | 102     | 340     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 340    | ug/kg | 102     | 340     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 340    | ug/kg | 102     | 340     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 340    | ug/kg | 102     | 340     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 679    | ug/kg | 102     | 679     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 340    | ug/kg | 102     | 340     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 340    | ug/kg | 102     | 340     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 95-57-8   | 2-Chlorophenol             | U         | 340    | ug/kg | 102     | 340     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 340    | ug/kg | 102     | 340     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 88-75-5   | 2-Nitrophenol              | U         | 340    | ug/kg | 102     | 340     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 340    | ug/kg | 102     | 340     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 340    | ug/kg | 102     | 340     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 340    | ug/kg | 136     | 340     |
| 106-47-8  | 4-Chloroaniline            | U         | 340    | ug/kg | 102     | 340     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 340    | ug/kg | 102     | 340     |
| 100-02-7  | 4-Nitrophenol              | U         | 340    | ug/kg | 102     | 340     |
| 83-32-9   | Acenaphthene               | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 208-96-8  | Acenaphthylene             | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 98-86-2   | Acetophenone               | U         | 340    | ug/kg | 102     | 340     |
| 120-12-7  | Anthracene                 | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 1912-24-9 | Atrazine                   | U         | 340    | ug/kg | 136     | 340     |
| 100-52-7  | Benzaldehyde               | U         | 340    | ug/kg | 102     | 340     |
| 56-55-3   | Benzo(a)anthracene         | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 50-32-8   | Benzo(a)pyrene             | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 85-68-7   | Butylbenzylphthalate       | U         | 340    | ug/kg | 102     | 340     |
| 105-60-2  | Caprolactam                | U         | 340    | ug/kg | 102     | 340     |
| 86-74-8   | Carbazole                  | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 218-01-9  | Chrysene                   | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 84-74-2   | Di-n-butylphthalate        | U         | 340    | ug/kg | 102     | 340     |
| 117-84-0  | Di-n-octylphthalate        | U         | 340    | ug/kg | 102     | 340     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254038

**Date Collected:** 10/26/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.041 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** DP020114  
**Batch ID:** 1614270  
**Run Date:** 11/11/2016 16:51  
**Prep Date:** 11/08/2016 12:02  
**Data File:** s111116.B\s1k1113.D

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 132-64-9   | Dibenzofuran                     | U         | 340    | ug/kg | 102     | 340     |
| 84-66-2    | Diethylphthalate                 | U         | 340    | ug/kg | 102     | 340     |
| 131-11-3   | Dimethylphthalate                | U         | 340    | ug/kg | 102     | 340     |
| 122-39-4   | Diphenylamine                    | U         | 340    | ug/kg | 102     | 340     |
| 206-44-0   | Fluoranthene                     | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 86-73-7    | Fluorene                         | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 118-74-1   | Hexachlorobenzene                | U         | 340    | ug/kg | 102     | 340     |
| 87-68-3    | Hexachlorobutadiene              | U         | 340    | ug/kg | 102     | 340     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 340    | ug/kg | 102     | 340     |
| 67-72-1    | Hexachloroethane                 | U         | 340    | ug/kg | 102     | 340     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 78-59-1    | Isophorone                       | U         | 340    | ug/kg | 102     | 340     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 340    | ug/kg | 102     | 340     |
| 91-20-3    | Naphthalene                      | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 98-95-3    | Nitrobenzene                     | U         | 340    | ug/kg | 102     | 340     |
| 87-86-5    | Pentachlorophenol                | U         | 340    | ug/kg | 102     | 340     |
| 85-01-8    | Phenanthrene                     | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 108-95-2   | Phenol                           | U         | 340    | ug/kg | 102     | 340     |
| 129-00-0   | Pyrene                           | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 340    | ug/kg | 102     | 340     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 340    | ug/kg | 102     | 340     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 340    | ug/kg | 102     | 340     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 340    | ug/kg | 102     | 340     |
| 65794-96-9 | m,p-Cresols                      | U         | 340    | ug/kg | 102     | 340     |
| 99-09-2    | m-Nitroaniline                   | U         | 340    | ug/kg | 102     | 340     |
| 95-48-7    | o-Cresol                         | U         | 340    | ug/kg | 102     | 340     |
| 88-74-4    | o-Nitroaniline                   | U         | 340    | ug/kg | 112     | 340     |
| 100-01-6   | p-Nitroaniline                   | U         | 340    | ug/kg | 102     | 340     |

# **Quality Control Summary**



Semi-Volatile  
Surrogate Recovery Report

Page 1 of 2

SDG Number: 409254

Matrix Type: SOLID

| Sample ID  | Client ID             | 5-alpha<br>%REC |
|------------|-----------------------|-----------------|
| 1203661742 | MB for batch 1612776  | 103             |
| 1203661743 | LCS for batch 1612776 | 97              |
| 1203661744 | SD140300MS            | 88              |
| 409254013  | SD140300              | 99              |
| 1203661745 | SD140300MSD           | 82              |
| 409254014  | SD140200              | 81              |
| 409254015  | SD140100              | 80              |
| 409254016  | SD140100DUP           | 78              |
| 409254017  | DP100113              | 91              |
| 409254018  | DP100212              | 85              |
| 409254019  | DP100310              | 86              |
| 409254026  | DP050113              | 79              |
| 409254027  | DP050213              | 99              |
| 409254028  | SS050100              | 0 * D           |

## Surrogate

## Acceptance Limits

5-alpha- = 5-alpha-Androstane

(30%-118%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

Semi-Volatile  
Surrogate Recovery Report

Page 2 of 2

SDG Number: 409254

Matrix Type: SOLID

| Sample ID  | Client ID             | 2FP<br>%REC | PHL<br>%REC | NBZ<br>%REC | FBP<br>%REC | TBP<br>%REC | TPH<br>%REC |
|------------|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1203665318 | MB for batch 1614269  | 55          | 62          | 80          | 83          | 66          | 74          |
| 1203665319 | LCS for batch 1614269 | 69          | 75          | 85          | 82          | 82          | 80          |
| 409254029  | DP020312              | 51          | 58          | 73          | 74          | 63          | 72          |
| 409254032  | DP020413              | 54          | 62          | 77          | 82          | 70          | 83          |
| 409254034  | DP020207              | 53          | 64          | 82          | 83          | 64          | 80          |
| 409254036  | DP020209              | 57          | 66          | 87          | 87          | 68          | 86          |
| 409254038  | DP020114              | 52          | 61          | 81          | 80          | 62          | 74          |

## Surrogate

## Acceptance Limits

|     |                        |            |
|-----|------------------------|------------|
| 2FP | = 2-Fluorophenol       | (36%-104%) |
| PHL | = Phenol-d5            | (39%-106%) |
| NBZ | = Nitrobenzene-d5      | (34%-109%) |
| FBP | = 2-Fluorobiphenyl     | (35%-107%) |
| TBP | = 2,4,6-Tribromophenol | (39%-115%) |
| TPH | = p-Terphenyl-d14      | (45%-119%) |

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 1

SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1612776

Matrix: SOIL

Lab Sample ID 1203661743

Instrument: MSD4.I

Analysis Date: 11/07/2016 09:29

Dilution: 1

Analyst: JMB3

Prep Batch ID: 1612776

Inj. Vol: 1 uL

Batch ID: 1612777

| CAS No   | Parmname                   | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|----------|----------------------------|-----------------------|-----------------------|----------------------|---------------|----------------------|
| 91-57-6  | LCS 2-Methylnaphthalene    | 333                   | 0.0                   | 287                  | 86            | 53-102               |
| 91-20-3  | LCS Naphthalene            | 333                   | 0.0                   | 277                  | 83            | 57-98                |
| 90-12-0  | LCS 1-Methylnaphthalene    | 333                   | 0.0                   | 318                  | 95            | 55-116               |
| 91-58-7  | LCS 2-Chloronaphthalene    | 333                   | 0.0                   | 241                  | 72            | 50-108               |
| 208-96-8 | LCS Acenaphthylene         | 333                   | 0.0                   | 272                  | 82            | 48-107               |
| 83-32-9  | LCS Acenaphthene           | 333                   | 0.0                   | 293                  | 88            | 55-99                |
| 86-73-7  | LCS Fluorene               | 333                   | 0.0                   | 295                  | 89            | 47-106               |
| 85-01-8  | LCS Phenanthrene           | 333                   | 0.0                   | 273                  | 82            | 53-97                |
| 120-12-7 | LCS Anthracene             | 333                   | 0.0                   | 280                  | 84            | 52-102               |
| 206-44-0 | LCS Fluoranthene           | 333                   | 0.0                   | 331                  | 99            | 39-108               |
| 129-00-0 | LCS Pyrene                 | 333                   | 0.0                   | 284                  | 85            | 41-114               |
| 56-55-3  | LCS Benzo(a)anthracene     | 333                   | 0.0                   | 316                  | 95            | 51-108               |
| 218-01-9 | LCS Chrysene               | 333                   | 0.0                   | 312                  | 94            | 54-103               |
| 205-99-2 | LCS Benzo(b)fluoranthene   | 333                   | 0.0                   | 343                  | 103           | 36-120               |
| 207-08-9 | LCS Benzo(k)fluoranthene   | 333                   | 0.0                   | 348                  | 105           | 26-121               |
| 50-32-8  | LCS Benzo(a)pyrene         | 333                   | 0.0                   | 333                  | 100           | 35-121               |
| 193-39-5 | LCS Indeno(1,2,3-cd)pyrene | 333                   | 0.0                   | 250                  | 75            | 41-130               |
| 53-70-3  | LCS Dibenzo(a,h)anthracene | 333                   | 0.0                   | 266                  | 80            | 35-142               |
| 191-24-2 | LCS Benzo(ghi)perylene     | 333                   | 0.0                   | 230                  | 69            | 39-119               |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 409254

Client ID: SD140300MS

Lab Sample ID 1203661744

Instrument: MSD4.I

Analyst: JMB3

Inj. Vol: 1 uL

Sample Type: Matrix Spike

Matrix: SOIL

%Moisture: 36.6

Analysis Date: 11/07/2016 10:26

Dilution: 1

Prep Batch ID: 1612776

Batch ID: 1612777

| CAS No   |    | Parmname               | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg |   | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|----------|----|------------------------|--------------------------|--------------------------|---|-------------------------|---------------|----------------------|
| 85-01-8  | MS | Phenanthrene           | 525                      | 3.68                     | J | 459                     | 87            | 35-119               |
| 206-44-0 | MS | Fluoranthene           | 525                      | 3.15                     | J | 486                     | 92            | 28-116               |
| 129-00-0 | MS | Pyrene                 | 525                      | 2.63                     | J | 445                     | 84            | 30-131               |
| 91-57-6  | MS | 2-Methylnaphthalene    | 525                      | 0.00                     | U | 471                     | 90            | 31-119               |
| 91-20-3  | MS | Naphthalene            | 525                      | 0.00                     | U | 454                     | 86            | 33-117               |
| 90-12-0  | MS | 1-Methylnaphthalene    | 525                      | 0.00                     | U | 524                     | 100           | 40-127               |
| 91-58-7  | MS | 2-Chloronaphthalene    | 525                      | 0.00                     | U | 407                     | 78            | 42-115               |
| 208-96-8 | MS | Acenaphthylene         | 525                      | 0.00                     | U | 448                     | 85            | 39-116               |
| 83-32-9  | MS | Acenaphthene           | 525                      | 0.00                     | U | 487                     | 93            | 38-117               |
| 86-73-7  | MS | Fluorene               | 525                      | 0.00                     | U | 489                     | 93            | 33-123               |
| 120-12-7 | MS | Anthracene             | 525                      | 0.00                     | U | 470                     | 89            | 36-120               |
| 56-55-3  | MS | Benzo(a)anthracene     | 525                      | 0.00                     | U | 507                     | 96            | 41-118               |
| 218-01-9 | MS | Chrysene               | 525                      | 0.00                     | U | 499                     | 95            | 42-113               |
| 205-99-2 | MS | Benzo(b)fluoranthene   | 525                      | 0.00                     | U | 534                     | 102           | 28-126               |
| 207-08-9 | MS | Benzo(k)fluoranthene   | 525                      | 0.00                     | U | 552                     | 105           | 24-122               |
| 50-32-8  | MS | Benzo(a)pyrene         | 525                      | 0.00                     | U | 535                     | 102           | 27-126               |
| 193-39-5 | MS | Indeno(1,2,3-cd)pyrene | 525                      | 0.00                     | U | 390                     | 74            | 17-133               |
| 53-70-3  | MS | Dibenzo(a,h)anthracene | 525                      | 0.00                     | U | 435                     | 83            | 18-146               |
| 191-24-2 | MS | Benzo(ghi)perylene     | 525                      | 0.00                     | U | 360                     | 69            | 17-118               |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 409254

Sample Type: Matrix Spike Duplicate

Client ID: SD140300MSD

Matrix: SOIL

Lab Sample ID 1203661745

%Moisture: 36.6

Instrument: MSD4.I

Analysis Date: 11/07/2016 11:22

Dilution: 1

Analyst: JMB3

Prep Batch ID: 1612776

Inj. Vol: 1 uL

Batch ID: 1612777

| CAS No   | Parmname                   | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | J | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance Limits | RPD<br>% | Acceptance Limits |
|----------|----------------------------|-----------------------|-----------------------|---|----------------------|---------------|-------------------|----------|-------------------|
| 85-01-8  | MSD Phenanthrene           | 525                   | 3.68                  | J | 435                  | 82            | 35-119            | 5        | 0-30              |
| 206-44-0 | MSD Fluoranthene           | 525                   | 3.15                  | J | 462                  | 87            | 28-116            | 5        | 0-30              |
| 129-00-0 | MSD Pyrene                 | 525                   | 2.63                  | J | 513                  | 97            | 30-131            | 14       | 0-30              |
| 91-57-6  | MSD 2-Methylnaphthalene    | 525                   | 0.00                  | U | 458                  | 87            | 31-119            | 3        | 0-30              |
| 91-20-3  | MSD Naphthalene            | 525                   | 0.00                  | U | 434                  | 83            | 33-117            | 4        | 0-30              |
| 90-12-0  | MSD 1-Methylnaphthalene    | 525                   | 0.00                  | U | 508                  | 97            | 40-127            | 3        | 0-30              |
| 91-58-7  | MSD 2-Chloronaphthalene    | 525                   | 0.00                  | U | 387                  | 74            | 42-115            | 5        | 0-30              |
| 208-96-8 | MSD Acenaphthylene         | 525                   | 0.00                  | U | 435                  | 83            | 39-116            | 3        | 0-30              |
| 83-32-9  | MSD Acenaphthene           | 525                   | 0.00                  | U | 468                  | 89            | 38-117            | 4        | 0-30              |
| 86-73-7  | MSD Fluorene               | 525                   | 0.00                  | U | 474                  | 90            | 33-123            | 3        | 0-30              |
| 120-12-7 | MSD Anthracene             | 525                   | 0.00                  | U | 451                  | 86            | 36-120            | 4        | 0-30              |
| 56-55-3  | MSD Benzo(a)anthracene     | 525                   | 0.00                  | U | 507                  | 97            | 41-118            | 0        | 0-30              |
| 218-01-9 | MSD Chrysene               | 525                   | 0.00                  | U | 497                  | 95            | 42-113            | 0        | 0-30              |
| 205-99-2 | MSD Benzo(b)fluoranthene   | 525                   | 0.00                  | U | 554                  | 106           | 28-126            | 4        | 0-30              |
| 207-08-9 | MSD Benzo(k)fluoranthene   | 525                   | 0.00                  | U | 533                  | 102           | 24-122            | 3        | 0-30              |
| 50-32-8  | MSD Benzo(a)pyrene         | 525                   | 0.00                  | U | 532                  | 101           | 27-126            | 1        | 0-30              |
| 193-39-5 | MSD Indeno(1,2,3-cd)pyrene | 525                   | 0.00                  | U | 412                  | 78            | 17-133            | 6        | 0-30              |
| 53-70-3  | MSD Dibenzo(a,h)anthracene | 525                   | 0.00                  | U | 459                  | 87            | 18-146            | 5        | 0-30              |
| 191-24-2 | MSD Benzo(ghi)perylene     | 525                   | 0.00                  | U | 381                  | 72            | 17-118            | 6        | 0-30              |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1614269

Matrix: SOIL

Lab Sample ID 1203665319

Instrument: MSD1.I

Analysis Date: 11/10/2016 18:32

Dilution: 1

Analyst: JMB3

Prep Batch ID: 1614269

Inj. Vol: 1 uL

Batch ID: 1614270

| CAS No     | Parmname                          | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance Limits |
|------------|-----------------------------------|-----------------------|-----------------------|----------------------|---------------|-------------------|
| 108-95-2   | LCS Phenol                        | 1670                  | 0.0                   | 1350                 | 81            | 54-106            |
| 111-44-4   | LCS bis(2-Chloroethyl) ether      | 1670                  | 0.0                   | 1450                 | 87            | 50-111            |
| 95-57-8    | LCS 2-Chlorophenol                | 1670                  | 0.0                   | 1440                 | 87            | 54-106            |
| 108-60-1   | LCS bis(2-Chloro-1-methylethyl)et | 1670                  | 0.0                   | 1650                 | 99            | 44-128            |
| 95-48-7    | LCS o-Cresol                      | 1670                  | 0.0                   | 1450                 | 87            | 54-108            |
| 65794-96-9 | LCS m,p-Cresols                   | 1670                  | 0.0                   | 1440                 | 87            | 56-122            |
| 621-64-7   | LCS N-Nitrosodipropylamine        | 1670                  | 0.0                   | 1460                 | 88            | 51-111            |
| 67-72-1    | LCS Hexachloroethane              | 1670                  | 0.0                   | 1420                 | 85            | 51-105            |
| 98-95-3    | LCS Nitrobenzene                  | 1670                  | 0.0                   | 1590                 | 95            | 55-111            |
| 78-59-1    | LCS Isophorone                    | 1670                  | 0.0                   | 1520                 | 91            | 41-134            |
| 88-75-5    | LCS 2-Nitrophenol                 | 1670                  | 0.0                   | 1470                 | 88            | 53-109            |
| 105-67-9   | LCS 2,4-Dimethylphenol            | 1670                  | 0.0                   | 1390                 | 84            | 53-103            |
| 111-91-1   | LCS bis(2-Chloroethoxy)methane    | 1670                  | 0.0                   | 1490                 | 90            | 52-110            |
| 120-83-2   | LCS 2,4-Dichlorophenol            | 1670                  | 0.0                   | 1530                 | 92            | 55-105            |
| 106-47-8   | LCS 4-Chloroaniline               | 1670                  | 0.0                   | 1180                 | 71            | 38-99             |
| 87-68-3    | LCS Hexachlorobutadiene           | 1670                  | 0.0                   | 1420                 | 85            | 52-112            |
| 59-50-7    | LCS 4-Chloro-3-methylphenol       | 1670                  | 0.0                   | 1450                 | 87            | 56-111            |
| 91-57-6    | LCS 2-Methylnaphthalene           | 1670                  | 0.0                   | 1380                 | 83            | 50-105            |
| 91-20-3    | LCS Naphthalene                   | 1670                  | 0.0                   | 1430                 | 86            | 54-106            |
| 77-47-4    | LCS Hexachlorocyclopentadiene     | 1670                  | 0.0                   | 1090                 | 66            | 38-83             |
| 88-06-2    | LCS 2,4,6-Trichlorophenol         | 1670                  | 0.0                   | 1420                 | 85            | 54-112            |
| 95-95-4    | LCS 2,4,5-Trichlorophenol         | 1670                  | 0.0                   | 1550                 | 93            | 58-108            |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1614269

Matrix: SOIL

Lab Sample ID 1203665319

Instrument: MSD1.I

Analysis Date: 11/10/2016 18:32

Dilution: 1

Analyst: JMB3

Prep Batch ID: 1614269

Inj. Vol: 1 uL

Batch ID: 1614270

| CAS No    | Parmname                       | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|-----------|--------------------------------|-----------------------|-----------------------|----------------------|---------------|----------------------|
| 91-58-7   | LCS 2-Chloronaphthalene        | 1670                  | 0.0                   | 1280                 | 77            | 55-102               |
| 88-74-4   | LCS o-Nitroaniline             | 1670                  | 0.0                   | 1640                 | 99            | 53-110               |
| 99-09-2   | LCS m-Nitroaniline             | 1670                  | 0.0                   | 1510                 | 91            | 42-112               |
| 131-11-3  | LCS Dimethylphthalate          | 1670                  | 0.0                   | 1510                 | 91            | 59-109               |
| 606-20-2  | LCS 2,6-Dinitrotoluene         | 1670                  | 0.0                   | 1660                 | 100           | 59-109               |
| 121-14-2  | LCS 2,4-Dinitrotoluene         | 1670                  | 0.0                   | 1590                 | 96            | 57-114               |
| 208-96-8  | LCS Acenaphthylene             | 1670                  | 0.0                   | 1550                 | 93            | 55-107               |
| 83-32-9   | LCS Acenaphthene               | 1670                  | 0.0                   | 1560                 | 94            | 57-104               |
| 51-28-5   | LCS 2,4-Dinitrophenol          | 1670                  | 0.0                   | 871                  | 52            | 26-113               |
| 132-64-9  | LCS Dibenzofuran               | 1670                  | 0.0                   | 1500                 | 90            | 55-105               |
| 58-90-2   | LCS 2,3,4,6-Tetrachlorophenol  | 1670                  | 0.0                   | 1550                 | 93            | 57-116               |
| 84-66-2   | LCS Diethylphthalate           | 1670                  | 0.0                   | 1470                 | 88            | 59-111               |
| 100-02-7  | LCS 4-Nitrophenol              | 1670                  | 0.0                   | 1370                 | 82            | 42-116               |
| 86-73-7   | LCS Fluorene                   | 1670                  | 0.0                   | 1530                 | 92            | 54-108               |
| 7005-72-3 | LCS 4-Chlorophenylphenylether  | 1670                  | 0.0                   | 1510                 | 91            | 53-119               |
| 100-01-6  | LCS p-Nitroaniline             | 1670                  | 0.0                   | 1720                 | 103           | 41-126               |
| 534-52-1  | LCS 2-Methyl-4,6-dinitrophenol | 1670                  | 0.0                   | 906                  | 54            | 35-110               |
| 122-39-4  | LCS Diphenylamine              | 1670                  | 0.0                   | 1440                 | 87            | 56-102               |
| 101-55-3  | LCS 4-Bromophenylphenylether   | 1670                  | 0.0                   | 1390                 | 84            | 56-110               |
| 118-74-1  | LCS Hexachlorobenzene          | 1670                  | 0.0                   | 1340                 | 80            | 56-103               |
| 87-86-5   | LCS Pentachlorophenol          | 1670                  | 0.0                   | 1120                 | 67            | 44-111               |
| 85-01-8   | LCS Phenanthrene               | 1670                  | 0.0                   | 1470                 | 89            | 58-101               |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1614269

Matrix: SOIL

Lab Sample ID 1203665319

Instrument: MSD1.I

Analysis Date: 11/10/2016 18:32

Dilution: 1

Analyst: JMB3

Prep Batch ID: 1614269

Inj. Vol: 1 uL

Batch ID: 1614270

| CAS No    | Parmname                       | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|-----------|--------------------------------|-----------------------|-----------------------|----------------------|---------------|----------------------|
| 120-12-7  | LCS Anthracene                 | 1670                  | 0.0                   | 1490                 | 89            | 58-102               |
| 86-74-8   | LCS Carbazole                  | 1670                  | 0.0                   | 1580                 | 95            | 58-113               |
| 84-74-2   | LCS Di-n-butylphthalate        | 1670                  | 0.0                   | 1410                 | 85            | 58-127               |
| 206-44-0  | LCS Fluoranthene               | 1670                  | 0.0                   | 1430                 | 86            | 56-114               |
| 129-00-0  | LCS Pyrene                     | 1670                  | 0.0                   | 1310                 | 79            | 50-109               |
| 85-68-7   | LCS Butylbenzylphthalate       | 1670                  | 0.0                   | 1480                 | 89            | 57-117               |
| 117-81-7  | LCS bis(2-Ethylhexyl)phthalate | 1670                  | 0.0                   | 1490                 | 89            | 58-122               |
| 56-55-3   | LCS Benzo(a)anthracene         | 1670                  | 0.0                   | 1540                 | 93            | 60-106               |
| 218-01-9  | LCS Chrysene                   | 1670                  | 0.0                   | 1590                 | 96            | 62-111               |
| 117-84-0  | LCS Di-n-octylphthalate        | 1670                  | 0.0                   | 1500                 | 90            | 53-128               |
| 205-99-2  | LCS Benzo(b)fluoranthene       | 1670                  | 0.0                   | 1410                 | 85            | 40-115               |
| 207-08-9  | LCS Benzo(k)fluoranthene       | 1670                  | 0.0                   | 1400                 | 84            | 41-117               |
| 50-32-8   | LCS Benzo(a)pyrene             | 1670                  | 0.0                   | 1490                 | 90            | 41-115               |
| 193-39-5  | LCS Indeno(1,2,3-cd)pyrene     | 1670                  | 0.0                   | 1340                 | 80            | 36-123               |
| 53-70-3   | LCS Dibenzo(a,h)anthracene     | 1670                  | 0.0                   | 1570                 | 95            | 39-129               |
| 191-24-2  | LCS Benzo(ghi)perylene         | 1670                  | 0.0                   | 1510                 | 91            | 35-126               |
| 100-52-7  | LCS Benzaldehyde               | 1670                  | 0.0                   | 433                  | 26            | 25-79                |
| 98-86-2   | LCS Acetophenone               | 1670                  | 0.0                   | 1600                 | 96            | 53-112               |
| 105-60-2  | LCS Caprolactam                | 1670                  | 0.0                   | 1720                 | 103           | 53-121               |
| 95-94-3   | LCS 1,2,4,5-Tetrachlorobenzene | 1670                  | 0.0                   | 1460                 | 87            | 52-109               |
| 92-52-4   | LCS 1,1'-Biphenyl              | 1670                  | 0.0                   | 1870                 | 112           | 54-113               |
| 1912-24-9 | LCS Atrazine                   | 1670                  | 0.0                   | 1500                 | 90            | 53-130               |



Semi-Volatile

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**Quality Control Summary  
Spike Recovery Report****SDG Number:** 409254**Sample Type:** Laboratory Control Sample**Client ID:** LCS for batch 1614269**Matrix:** SOIL**Lab Sample ID** 1203665319**Instrument:** MSD1.I**Analysis Date:** 11/10/2016 18:32**Dilution:** 1**Analyst:** JMB3**Prep Batch ID:** 1614269**Inj. Vol:** 1 uL**Batch ID:** 1614270

| CAS No  | Parmname                   | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|---------|----------------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|
| 91-94-1 | LCS 3,3'-Dichlorobenzidine | 1670                     | 0.0                      | 1390                    | 83            | 36-111               |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

Page 1 of 8

SDG Number: 409254

Client ID: WST03-17-127184MS

Lab Sample ID 1203665320

Instrument: MSD1.I

Analyst: JMB3

Inj. Vol: 1 uL

Sample Type: Matrix Spike

Matrix: SO

%Moisture: 84.5

Analysis Date: 11/10/2016 19:41

Dilution: 1

Prep Batch ID:1614269

Batch ID: 1614270

| CAS No     | Parmname                         | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery % | Acceptance Limits |
|------------|----------------------------------|-----------------------|-----------------------|----------------------|------------|-------------------|
| 108-95-2   | MS Phenol                        | 10700                 | 0.00 U                | 7090                 | 66         | 34-109            |
| 111-44-4   | MS bis(2-Chloroethyl) ether      | 10700                 | 0.00 U                | 7650                 | 71         | 35-108            |
| 95-57-8    | MS 2-Chlorophenol                | 10700                 | 0.00 U                | 5910                 | 55         | 36-107            |
| 108-60-1   | MS bis(2-Chloro-1-methylethyl)et | 10700                 | 0.00 U                | 8560                 | 80         | 30-121            |
| 95-48-7    | MS o-Cresol                      | 10700                 | 0.00 U                | 7720                 | 72         | 35-111            |
| 65794-96-9 | MS m,p-Cresols                   | 10700                 | 0.00 U                | 7730                 | 72         | 40-123            |
| 621-64-7   | MS N-Nitrosodipropylamine        | 10700                 | 0.00 U                | 7720                 | 72         | 36-108            |
| 67-72-1    | MS Hexachloroethane              | 10700                 | 0.00 U                | 6410                 | 60         | 29-101            |
| 98-95-3    | MS Nitrobenzene                  | 10700                 | 0.00 U                | 8230                 | 77         | 36-111            |
| 78-59-1    | MS Isophorone                    | 10700                 | 0.00 U                | 8000                 | 75         | 20-130            |
| 88-75-5    | MS 2-Nitrophenol                 | 10700                 | 0.00 U                | 1530                 | 14 *       | 36-108            |
| 105-67-9   | MS 2,4-Dimethylphenol            | 10700                 | 0.00 U                | 8060                 | 75         | 37-103            |
| 111-91-1   | MS bis(2-Chloroethoxy)methane    | 10700                 | 0.00 U                | 7940                 | 74         | 38-107            |
| 120-83-2   | MS 2,4-Dichlorophenol            | 10700                 | 0.00 U                | 5300                 | 49         | 38-107            |
| 106-47-8   | MS 4-Chloroaniline               | 10700                 | 0.00 U                | 9110                 | 85         | 30-94             |
| 87-68-3    | MS Hexachlorobutadiene           | 10700                 | 0.00 U                | 6750                 | 63         | 34-108            |
| 59-50-7    | MS 4-Chloro-3-methylphenol       | 10700                 | 0.00 U                | 7680                 | 72         | 44-114            |
| 91-57-6    | MS 2-Methylnaphthalene           | 10700                 | 0.00 U                | 7720                 | 72         | 34-107            |
| 91-20-3    | MS Naphthalene                   | 10700                 | 0.00 U                | 7450                 | 69         | 34-108            |
| 77-47-4    | MS Hexachlorocyclopentadiene     | 10700                 | 0.00 U                | 3020                 | 28         | 24-80             |
| 88-06-2    | MS 2,4,6-Trichlorophenol         | 10700                 | 0.00 U                | 2730                 | 25 *       | 38-116            |
| 95-95-4    | MS 2,4,5-Trichlorophenol         | 10700                 | 0.00 U                | 3750                 | 35 *       | 44-113            |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 409254

Sample Type: Matrix Spike

Client ID: WST03-17-127184MS

Matrix: SO

Lab Sample ID 1203665320

%Moisture: 84.5

Instrument: MSD1.I

Analysis Date: 11/10/2016 19:41

Dilution: 1

Analyst: JMB3

Prep Batch ID: 1614269

Inj. Vol: 1 uL

Batch ID: 1614270

| CAS No    | Parmname                      | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery % | Acceptance Limits |
|-----------|-------------------------------|-----------------------|-----------------------|----------------------|------------|-------------------|
| 91-58-7   | MS 2-Chloronaphthalene        | 10700                 | 0.00 U                | 6920                 | 65         | 36-106            |
| 88-74-4   | MS o-Nitroaniline             | 10700                 | 0.00 U                | 9500                 | 89         | 39-114            |
| 99-09-2   | MS m-Nitroaniline             | 10700                 | 0.00 U                | 10300                | 96         | 33-113            |
| 131-11-3  | MS Dimethylphthalate          | 10700                 | 0.00 U                | 8900                 | 83         | 42-114            |
| 606-20-2  | MS 2,6-Dinitrotoluene         | 10700                 | 0.00 U                | 9750                 | 91         | 44-113            |
| 121-14-2  | MS 2,4-Dinitrotoluene         | 10700                 | 0.00 U                | 9610                 | 90         | 46-116            |
| 208-96-8  | MS Acenaphthylene             | 10700                 | 0.00 U                | 8450                 | 79         | 41-108            |
| 83-32-9   | MS Acenaphthene               | 10700                 | 0.00 U                | 8490                 | 79         | 35-113            |
| 51-28-5   | MS 2,4-Dinitrophenol          | 10700                 | 0.00 U                | 0.00                 | 0 *        | 13-121            |
| 132-64-9  | MS Dibenzofuran               | 10700                 | 0.00 U                | 8630                 | 80         | 38-111            |
| 58-90-2   | MS 2,3,4,6-Tetrachlorophenol  | 10700                 | 0.00 U                | 3210                 | 30 *       | 42-122            |
| 84-66-2   | MS Diethylphthalate           | 10700                 | 137 U                 | 8720                 | 80         | 46-114            |
| 100-02-7  | MS 4-Nitrophenol              | 10700                 | 0.00 U                | 0.00                 | 0 *        | 27-123            |
| 86-73-7   | MS Fluorene                   | 10700                 | 0.00 U                | 8760                 | 82         | 38-114            |
| 7005-72-3 | MS 4-Chlorophenylphenylether  | 10700                 | 0.00 U                | 8320                 | 78         | 41-121            |
| 100-01-6  | MS p-Nitroaniline             | 10700                 | 0.00 U                | 9480                 | 88         | 28-126            |
| 534-52-1  | MS 2-Methyl-4,6-dinitrophenol | 10700                 | 0.00 U                | 0.00                 | 0 *        | 25-117            |
| 122-39-4  | MS Diphenylamine              | 10700                 | 0.00 U                | 8080                 | 75         | 43-109            |
| 101-55-3  | MS 4-Bromophenylphenylether   | 10700                 | 0.00 U                | 8020                 | 75         | 42-116            |
| 118-74-1  | MS Hexachlorobenzene          | 10700                 | 0.00 U                | 7840                 | 73         | 44-106            |
| 87-86-5   | MS Pentachlorophenol          | 10700                 | 0.00 U                | 1550                 | 14 *       | 34-116            |
| 85-01-8   | MS Phenanthrene               | 10700                 | 0.00 U                | 8670                 | 81         | 36-116            |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 409254

Sample Type: Matrix Spike

Client ID: WST03-17-127184MS

Matrix: SO

Lab Sample ID 1203665320

%Moisture: 84.5

Instrument: MSD1.I

Analysis Date: 11/10/2016 19:41

Dilution: 1

Analyst: JMB3

Prep Batch ID: 1614269

Inj. Vol: 1 uL

Batch ID: 1614270

| CAS No    | Parmname                      | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|-----------|-------------------------------|-----------------------|-----------------------|----------------------|---------------|----------------------|
| 120-12-7  | MS Anthracene                 | 10700                 | 0.00 U                | 8670                 | 81            | 41-111               |
| 86-74-8   | MS Carbazole                  | 10700                 | 0.00 U                | 9300                 | 87            | 43-116               |
| 84-74-2   | MS Di-n-butylphthalate        | 10700                 | 0.00 U                | 8310                 | 77            | 45-119               |
| 206-44-0  | MS Fluoranthene               | 10700                 | 0.00 U                | 8550                 | 80            | 41-115               |
| 129-00-0  | MS Pyrene                     | 10700                 | 0.00 U                | 7700                 | 72            | 36-125               |
| 85-68-7   | MS Butylbenzylphthalate       | 10700                 | 0.00 U                | 8720                 | 81            | 43-130               |
| 117-81-7  | MS bis(2-Ethylhexyl)phthalate | 10700                 | 133 U                 | 8850                 | 81            | 41-132               |
| 56-55-3   | MS Benzo(a)anthracene         | 10700                 | 0.00 U                | 8870                 | 83            | 42-115               |
| 218-01-9  | MS Chrysene                   | 10700                 | 0.00 U                | 9240                 | 86            | 42-121               |
| 117-84-0  | MS Di-n-octylphthalate        | 10700                 | 0.00 U                | 8840                 | 82            | 41-129               |
| 205-99-2  | MS Benzo(b)fluoranthene       | 10700                 | 0.00 U                | 7600                 | 71            | 30-124               |
| 207-08-9  | MS Benzo(k)fluoranthene       | 10700                 | 0.00 U                | 8040                 | 75            | 30-128               |
| 50-32-8   | MS Benzo(a)pyrene             | 10700                 | 0.00 U                | 8160                 | 76            | 32-119               |
| 193-39-5  | MS Indeno(1,2,3-cd)pyrene     | 10700                 | 0.00 U                | 6740                 | 63            | 15-126               |
| 53-70-3   | MS Dibenzo(a,h)anthracene     | 10700                 | 0.00 U                | 7960                 | 74            | 20-129               |
| 191-24-2  | MS Benzo(ghi)perylene         | 10700                 | 0.00 U                | 7530                 | 70            | 13-126               |
| 100-52-7  | MS Benzaldehyde               | 10700                 | 0.00 U                | 1060                 | 10 *          | 19-93                |
| 98-86-2   | MS Acetophenone               | 10700                 | 0.00 U                | 8440                 | 79            | 37-109               |
| 105-60-2  | MS Caprolactam                | 10700                 | 0.00 U                | 10000                | 93            | 39-125               |
| 95-94-3   | MS 1,2,4,5-Tetrachlorobenzene | 10700                 | 0.00 U                | 7920                 | 74            | 36-109               |
| 92-52-4   | MS 1,1'-Biphenyl              | 10700                 | 0.00 U                | 10100                | 94            | 35-115               |
| 1912-24-9 | MS Atrazine                   | 10700                 | 0.00 U                | 8880                 | 83            | 49-126               |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

SDG Number: 409254

Client ID: WST03-17-127184MS

Lab Sample ID 1203665320

Instrument: MSD1.I

Analvst: JMB3

Inj. Vol: 1 uL

Sample Type: Matrix Spike

Matrix: SO

%Moisture: 84.5

Analysis Date: 11/10/2016 19:41

Prep Batch ID:1614269

Batch ID: 1614270

Dilution: 1

| CAS No  | Parmname                  | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|---------|---------------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|
| 91-94-1 | MS 3,3'-Dichlorobenzidine | 10700                    | 0.00 U                   | 8160                    | 76            | 25-108               |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 409254

Sample Type: Matrix Spike Duplicate

Client ID: WST03-17-127184MSD

Matrix: SO

Lab Sample ID 1203665321

%Moisture: 84.5

Instrument: MSD1.I

Analysis Date: 11/10/2016 20:15

Dilution: 1

Analyst: JMB3

Prep Batch ID:1614269

Inj. Vol: 1 uL

Batch ID: 1614270

| CAS No     | Parmname                          | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance Limits | RPD<br>% | Acceptance Limits |
|------------|-----------------------------------|-----------------------|-----------------------|----------------------|---------------|-------------------|----------|-------------------|
| 108-95-2   | MSD Phenol                        | 10700                 | 0.00 U                | 7290                 | 68            | 34-109            | 3        | 0-30              |
| 111-44-4   | MSD bis(2-Chloroethyl) ether      | 10700                 | 0.00 U                | 7510                 | 70            | 35-108            | 2        | 0-30              |
| 95-57-8    | MSD 2-Chlorophenol                | 10700                 | 0.00 U                | 6790                 | 63            | 36-107            | 14       | 0-30              |
| 108-60-1   | MSD bis(2-Chloro-1-methylethyl)et | 10700                 | 0.00 U                | 8600                 | 80            | 30-121            | 1        | 0-30              |
| 95-48-7    | MSD o-Cresol                      | 10700                 | 0.00 U                | 8120                 | 76            | 35-111            | 5        | 0-30              |
| 65794-96-9 | MSD m,p-Cresols                   | 10700                 | 0.00 U                | 8020                 | 75            | 40-123            | 4        | 0-30              |
| 621-64-7   | MSD N-Nitrosodipropylamine        | 10700                 | 0.00 U                | 7790                 | 73            | 36-108            | 1        | 0-30              |
| 67-72-1    | MSD Hexachloroethane              | 10700                 | 0.00 U                | 6140                 | 57            | 29-101            | 4        | 0-30              |
| 98-95-3    | MSD Nitrobenzene                  | 10700                 | 0.00 U                | 8300                 | 77            | 36-111            | 1        | 0-30              |
| 78-59-1    | MSD Isophorone                    | 10700                 | 0.00 U                | 8450                 | 79            | 20-130            | 5        | 0-30              |
| 88-75-5    | MSD 2-Nitrophenol                 | 10700                 | 0.00 U                | 1910                 | 18 *          | 36-108            | 22       | 0-30              |
| 105-67-9   | MSD 2,4-Dimethylphenol            | 10700                 | 0.00 U                | 8270                 | 77            | 37-103            | 3        | 0-30              |
| 111-91-1   | MSD bis(2-Chloroethoxy)methane    | 10700                 | 0.00 U                | 8320                 | 78            | 38-107            | 5        | 0-30              |
| 120-83-2   | MSD 2,4-Dichlorophenol            | 10700                 | 0.00 U                | 6960                 | 65            | 38-107            | 27       | 0-30              |
| 106-47-8   | MSD 4-Chloroaniline               | 10700                 | 0.00 U                | 8570                 | 80            | 30-94             | 6        | 0-30              |
| 87-68-3    | MSD Hexachlorobutadiene           | 10700                 | 0.00 U                | 7130                 | 66            | 34-108            | 5        | 0-30              |
| 59-50-7    | MSD 4-Chloro-3-methylphenol       | 10700                 | 0.00 U                | 8790                 | 82            | 44-114            | 13       | 0-30              |
| 91-57-6    | MSD 2-Methylnaphthalene           | 10700                 | 0.00 U                | 7830                 | 73            | 34-107            | 1        | 0-30              |
| 91-20-3    | MSD Naphthalene                   | 10700                 | 0.00 U                | 7610                 | 71            | 34-108            | 2        | 0-30              |
| 77-47-4    | MSD Hexachlorocyclopentadiene     | 10700                 | 0.00 U                | 2090                 | 20 *          | 24-80             | 36 *     | 0-30              |
| 88-06-2    | MSD 2,4,6-Trichlorophenol         | 10700                 | 0.00 U                | 5150                 | 48            | 38-116            | 62 *     | 0-30              |
| 95-95-4    | MSD 2,4,5-Trichlorophenol         | 10700                 | 0.00 U                | 6650                 | 62            | 44-113            | 56 *     | 0-30              |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

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SDG Number: 409254

Sample Type: Matrix Spike Duplicate

Client ID: WST03-17-127184MSD

Matrix: SO

Lab Sample ID 1203665321

%Moisture: 84.5

Instrument: MSD1.I

Analysis Date: 11/10/2016 20:15

Dilution: 1

Analyst: JMB3

Prep Batch ID:1614269

Inj. Vol: 1 uL

Batch ID: 1614270

| CAS No    | Parmname                       | Amount Added<br>ug/kg | Sample Conc.<br>ug/kg | Spike Conc.<br>ug/kg | Recovery<br>% | Acceptance Limits | RPD<br>% | Acceptance Limits |
|-----------|--------------------------------|-----------------------|-----------------------|----------------------|---------------|-------------------|----------|-------------------|
| 91-58-7   | MSD 2-Chloronaphthalene        | 10700                 | 0.00 U                | 7320                 | 68            | 36-106            | 6        | 0-30              |
| 88-74-4   | MSD o-Nitroaniline             | 10700                 | 0.00 U                | 9870                 | 92            | 39-114            | 4        | 0-30              |
| 99-09-2   | MSD m-Nitroaniline             | 10700                 | 0.00 U                | 10700                | 99            | 33-113            | 4        | 0-30              |
| 131-11-3  | MSD Dimethylphthalate          | 10700                 | 0.00 U                | 9710                 | 91            | 42-114            | 9        | 0-30              |
| 606-20-2  | MSD 2,6-Dinitrotoluene         | 10700                 | 0.00 U                | 10200                | 95            | 44-113            | 4        | 0-30              |
| 121-14-2  | MSD 2,4-Dinitrotoluene         | 10700                 | 0.00 U                | 10300                | 96            | 46-116            | 7        | 0-30              |
| 208-96-8  | MSD Acenaphthylene             | 10700                 | 0.00 U                | 9040                 | 84            | 41-108            | 7        | 0-30              |
| 83-32-9   | MSD Acenaphthene               | 10700                 | 0.00 U                | 9230                 | 86            | 35-113            | 8        | 0-30              |
| 51-28-5   | MSD 2,4-Dinitrophenol          | 10700                 | 0.00 U                | 0.00                 | 0 *           | 13-121            | 0        | 0-30              |
| 132-64-9  | MSD Dibenzofuran               | 10700                 | 0.00 U                | 9160                 | 85            | 38-111            | 6        | 0-30              |
| 58-90-2   | MSD 2,3,4,6-Tetrachlorophenol  | 10700                 | 0.00 U                | 6980                 | 65            | 42-122            | 74 *     | 0-30              |
| 84-66-2   | MSD Diethylphthalate           | 10700                 | 137 U                 | 9500                 | 87            | 46-114            | 9        | 0-30              |
| 100-02-7  | MSD 4-Nitrophenol              | 10700                 | 0.00 U                | 0.00                 | 0 *           | 27-123            | 0        | 0-30              |
| 86-73-7   | MSD Fluorene                   | 10700                 | 0.00 U                | 9380                 | 87            | 38-114            | 7        | 0-30              |
| 7005-72-3 | MSD 4-Chlorophenylphenylether  | 10700                 | 0.00 U                | 9070                 | 85            | 41-121            | 9        | 0-30              |
| 100-01-6  | MSD p-Nitroaniline             | 10700                 | 0.00 U                | 9840                 | 92            | 28-126            | 4        | 0-30              |
| 534-52-1  | MSD 2-Methyl-4,6-dinitrophenol | 10700                 | 0.00 U                | 2980                 | 28            | 25-117            | 200 *    | 0-30              |
| 122-39-4  | MSD Diphenylamine              | 10700                 | 0.00 U                | 8880                 | 83            | 43-109            | 9        | 0-30              |
| 101-55-3  | MSD 4-Bromophenylphenylether   | 10700                 | 0.00 U                | 8710                 | 81            | 42-116            | 8        | 0-30              |
| 118-74-1  | MSD Hexachlorobenzene          | 10700                 | 0.00 U                | 8710                 | 81            | 44-106            | 10       | 0-30              |
| 87-86-5   | MSD Pentachlorophenol          | 10700                 | 0.00 U                | 3570                 | 33 *          | 34-116            | 79 *     | 0-30              |
| 85-01-8   | MSD Phenanthrene               | 10700                 | 0.00 U                | 9500                 | 89            | 36-116            | 9        | 0-30              |

Semi-Volatile  
Quality Control Summary  
Spike Recovery Report

Page 7 of 8

SDG Number: 409254

Sample Type: Matrix Spike Duplicate

Client ID: WST03-17-127184MSD

Matrix: SO

Lab Sample ID 1203665321

%Moisture: 84.5

Instrument: MSD1.I

Analysis Date: 11/10/2016 20:15

Dilution: 1

Analyst: JMB3

Prep Batch ID: 1614269

Inj. Vol: 1 uL

Batch ID: 1614270

| CAS No    | Parmname                       | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg |   | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits | Acceptance<br>RPD<br>% | Acceptance<br>Limits |
|-----------|--------------------------------|--------------------------|--------------------------|---|-------------------------|---------------|----------------------|------------------------|----------------------|
| 120-12-7  | MSD Anthracene                 | 10700                    | 0.00                     | U | 9500                    | 89            | 41-111               | 9                      | 0-30                 |
| 86-74-8   | MSD Carbazole                  | 10700                    | 0.00                     | U | 9890                    | 92            | 43-116               | 6                      | 0-30                 |
| 84-74-2   | MSD Di-n-butylphthalate        | 10700                    | 0.00                     | U | 9220                    | 86            | 45-119               | 10                     | 0-30                 |
| 206-44-0  | MSD Fluoranthene               | 10700                    | 0.00                     | U | 9290                    | 87            | 41-115               | 8                      | 0-30                 |
| 129-00-0  | MSD Pyrene                     | 10700                    | 0.00                     | U | 9020                    | 84            | 36-125               | 16                     | 0-30                 |
| 85-68-7   | MSD Butylbenzylphthalate       | 10700                    | 0.00                     | U | 10200                   | 95            | 43-130               | 15                     | 0-30                 |
| 117-81-7  | MSD bis(2-Ethylhexyl)phthalate | 10700                    | 133                      | U | 10500                   | 96            | 41-132               | 17                     | 0-30                 |
| 56-55-3   | MSD Benzo(a)anthracene         | 10700                    | 0.00                     | U | 10100                   | 95            | 42-115               | 13                     | 0-30                 |
| 218-01-9  | MSD Chrysene                   | 10700                    | 0.00                     | U | 10400                   | 97            | 42-121               | 12                     | 0-30                 |
| 117-84-0  | MSD Di-n-octylphthalate        | 10700                    | 0.00                     | U | 9760                    | 91            | 41-129               | 10                     | 0-30                 |
| 205-99-2  | MSD Benzo(b)fluoranthene       | 10700                    | 0.00                     | U | 9230                    | 86            | 30-124               | 19                     | 0-30                 |
| 207-08-9  | MSD Benzo(k)fluoranthene       | 10700                    | 0.00                     | U | 9280                    | 86            | 30-128               | 14                     | 0-30                 |
| 50-32-8   | MSD Benzo(a)pyrene             | 10700                    | 0.00                     | U | 9460                    | 88            | 32-119               | 15                     | 0-30                 |
| 193-39-5  | MSD Indeno(1,2,3-cd)pyrene     | 10700                    | 0.00                     | U | 7970                    | 74            | 15-126               | 17                     | 0-30                 |
| 53-70-3   | MSD Dibenzo(a,h)anthracene     | 10700                    | 0.00                     | U | 9260                    | 86            | 20-129               | 15                     | 0-30                 |
| 191-24-2  | MSD Benzo(ghi)perylene         | 10700                    | 0.00                     | U | 8770                    | 82            | 13-126               | 15                     | 0-30                 |
| 100-52-7  | MSD Benzaldehyde               | 10700                    | 0.00                     | U | 1290                    | 12 *          | 19-93                | 20                     | 0-30                 |
| 98-86-2   | MSD Acetophenone               | 10700                    | 0.00                     | U | 8510                    | 79            | 37-109               | 1                      | 0-30                 |
| 105-60-2  | MSD Caprolactam                | 10700                    | 0.00                     | U | 10900                   | 102           | 39-125               | 9                      | 0-30                 |
| 95-94-3   | MSD 1,2,4,5-Tetrachlorobenzene | 10700                    | 0.00                     | U | 8250                    | 77            | 36-109               | 4                      | 0-30                 |
| 92-52-4   | MSD 1,1'-Biphenyl              | 10700                    | 0.00                     | U | 10700                   | 99            | 35-115               | 5                      | 0-30                 |
| 1912-24-9 | MSD Atrazine                   | 10700                    | 0.00                     | U | 9840                    | 92            | 49-126               | 10                     | 0-30                 |



Semi-Volatile

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Quality Control Summary  
Spike Recovery Report

SDG Number: 409254

Sample Type: Matrix Spike Duplicate

Client ID: WST03-17-127184MSD

Matrix: SO

Lab Sample ID 1203665321

%Moisture: 84.5

Instrument: MSD1.I

Analysis Date: 11/10/2016 20:15

Dilution: 1

Analyst: JMB3

Prep Batch ID:1614269

Inj. Vol: 1 uL

Batch ID: 1614270

| CAS No  | Parmname                   | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits | RPD<br>% | Acceptance<br>Limits |
|---------|----------------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|----------|----------------------|
| 91-94-1 | MSD 3,3'-Dichlorobenzidine | 10700                    | 0.00 U                   | 8810                    | 82            | 25-108               | 8        | 0-30                 |

## Method Blank Summary

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|                |                      |                |                  |            |                     |
|----------------|----------------------|----------------|------------------|------------|---------------------|
| SDG Number:    | 409254               | Client:        | HAAL002          | Matrix:    | SOIL                |
| Client ID:     | MB for batch 1612776 | Instrument ID: | MSD4.I           | Data File: | s110716.B\s4k0703.D |
| Lab Sample ID: | 1203661742           | Prep Date:     | 11/04/2016 08:33 | Analyzed:  | 11/07/16 09:01      |
| Column:        | DB-5ms               |                |                  |            |                     |

This method blank applies to the following samples and quality control samples:

| Client Sample ID         | Lab Sample ID | File ID             | Date Analyzed | Time Analyzed |
|--------------------------|---------------|---------------------|---------------|---------------|
| 01 LCS for batch 1612776 | 1203661743    | s110716.B\s4k0704.D | 11/07/16      | 0929          |
| 02 SD140300MS            | 1203661744    | s110716.B\s4k0706.D | 11/07/16      | 1026          |
| 03 SD140300              | 409254013     | s110716.B\s4k0707.D | 11/07/16      | 1054          |
| 04 SD140300MSD           | 1203661745    | s110716.B\s4k0708.D | 11/07/16      | 1122          |
| 05 SD140200              | 409254014     | s110716.B\s4k0709.D | 11/07/16      | 1151          |
| 06 SD140100              | 409254015     | s110716.B\s4k0710.D | 11/07/16      | 1219          |
| 07 SD140100DUP           | 409254016     | s110716.B\s4k0711.D | 11/07/16      | 1247          |
| 08 DP100113              | 409254017     | s110716.B\s4k0712.D | 11/07/16      | 1316          |
| 09 DP100212              | 409254018     | s110716.B\s4k0713.D | 11/07/16      | 1344          |
| 10 DP100310              | 409254019     | s110716.B\s4k0714.D | 11/07/16      | 1412          |
| 11 DP050113              | 409254026     | s110716.B\s4k0715.D | 11/07/16      | 1441          |
| 12 DP050213              | 409254027     | s110716.B\s4k0716.D | 11/07/16      | 1509          |
| 13 SS050100              | 409254028     | s110716.B\s4k0717.D | 11/07/16      | 1538          |

## Method Blank Summary

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|                |                      |                |                  |            |                     |
|----------------|----------------------|----------------|------------------|------------|---------------------|
| SDG Number:    | 409254               | Client:        | HAAL002          | Matrix:    | SOIL                |
| Client ID:     | MB for batch 1614269 | Instrument ID: | MSD1.I           | Data File: | s111016.B\s1k1016.D |
| Lab Sample ID: | 1203665318           | Prep Date:     | 11/08/2016 12:02 | Analyzed:  | 11/10/16 17:58      |
| Column:        | 25x.20x.33           |                |                  |            |                     |

This method blank applies to the following samples and quality control samples:

| Client Sample ID         | Lab Sample ID | File ID             | Date Analyzed | Time Analyzed |
|--------------------------|---------------|---------------------|---------------|---------------|
| 01 LCS for batch 1614269 | 1203665319    | s111016.B\s1k1017.D | 11/10/16      | 1832          |
| 04 DP020312              | 409254029     | s111116.B\s1k1109.D | 11/11/16      | 1451          |
| 05 DP020413              | 409254032     | s111116.B\s1k1110.D | 11/11/16      | 1521          |
| 06 DP020207              | 409254034     | s111116.B\s1k1111.D | 11/11/16      | 1551          |
| 07 DP020209              | 409254036     | s111116.B\s1k1112.D | 11/11/16      | 1621          |
| 08 DP020114              | 409254038     | s111116.B\s1k1113.D | 11/11/16      | 1651          |

## Instrument Performance Check

## DFTPP

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: MSD1.I

Injection Date/Time: 29-SEP-16 09:17

Column Description: 25x.20x.33

Lab File ID s092916.B\si2901.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 51  | 10 - 80% of mass 198               | 50.2                 |
| 68  | Less than 2% of mass 69            | 1.7                  |
| 69  | Mass 69 Relative Abundance         | 41.9                 |
| 70  | Less than 2% of mass 69            | 0.3                  |
| 127 | 10 - 80% of mass 198               | 47.8                 |
| 197 | Less than 2% of mass 198           | 0.7                  |
| 198 | Base Peak, 100% Relative Abundance | 100                  |
| 199 | 5 - 9% of mass 198                 | 7.3                  |
| 275 | 10 - 60% of mass 198               | 27.7                 |
| 365 | Greater than 1% of mass 198        | 3.1                  |
| 441 | Less than 24% of mass 442          | 16                   |
| 442 | Greater than 50% of mass 198       | 83.4                 |
| 443 | 15 - 24% of mass 442               | 21                   |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID  | Lab File ID        | Time Analyzed   |
|------------------|----------------|--------------------|-----------------|
| ICALMIX[A]       | WBN160920-08   | s092916.B\si2903.D | 29-SEP-16 10:05 |
| ICALMIX[A]       | WBN160920-07   | s092916.B\si2904.D | 29-SEP-16 10:35 |
| ICALMIX[A]       | WBN160920-06   | s092916.B\si2905.D | 29-SEP-16 11:09 |
| ICALMIX[A]       | WBN160920-04   | s092916.B\si2907.D | 29-SEP-16 12:18 |
| ICALMIX[A]       | WBN160920-03   | s092916.B\si2908.D | 29-SEP-16 12:52 |
| ICALMIX[A]       | WBN160920-02   | s092916.B\si2909.D | 29-SEP-16 13:26 |
| ICALMIX[A]       | WBN160920-01   | s092916.B\si2910.D | 29-SEP-16 14:01 |
| ICALMIX[A]       | WBN160920-05.1 | s092916.B\si2913.D | 29-SEP-16 15:44 |
| ICVMIX[A]01      | WBN160920-09.1 | s092916.B\si2914.D | 29-SEP-16 16:19 |

## Instrument Performance Check

## DFTPP

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: MSD1.I

Injection Date/Time: 29-SEP-16 16:52

Column Description: 25x.20x.33

Lab File ID s092916.B\si2915.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 51  | 10 - 80% of mass 198               | 47.8                 |
| 68  | Less than 2% of mass 69            | 1.7                  |
| 69  | Mass 69 Relative Abundance         | 41.5                 |
| 70  | Less than 2% of mass 69            | 0.5                  |
| 127 | 10 - 80% of mass 198               | 47.2                 |
| 197 | Less than 2% of mass 198           | 0.7                  |
| 198 | Base Peak, 100% Relative Abundance | 100                  |
| 199 | 5 - 9% of mass 198                 | 7.2                  |
| 275 | 10 - 60% of mass 198               | 26.8                 |
| 365 | Greater than 1% of mass 198        | 2.9                  |
| 441 | Less than 24% of mass 442          | 16.2                 |
| 442 | Greater than 50% of mass 198       | 86                   |
| 443 | 15 - 24% of mass 442               | 19.8                 |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID  | Lab File ID        | Time Analyzed   |
|------------------|----------------|--------------------|-----------------|
| ICALMIX[B]       | WBN160921-17   | s092916.B\si2917.D | 29-SEP-16 17:40 |
| ICALMIX[B]       | WBN160921-16   | s092916.B\si2918.D | 29-SEP-16 18:09 |
| ICALMIX[B]       | WBN160921-15.1 | s092916.B\si2919.D | 29-SEP-16 18:39 |
| ICALMIX[B]       | WBN160921-14   | s092916.B\si2920.D | 29-SEP-16 19:09 |
| ICALMIX[B]       | WBN160921-13   | s092916.B\si2921.D | 29-SEP-16 19:38 |
| ICALMIX[B]       | WBN160921-12.1 | s092916.B\si2922.D | 29-SEP-16 20:08 |
| ICALMIX[B]       | WBN160921-11   | s092916.B\si2923.D | 29-SEP-16 20:38 |

## Instrument Performance Check

## DFTPP

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: MSD1.I

Injection Date/Time: 30-SEP-16 01:35

Column Description: 25x.20x.33

Lab File ID s092916.B\si2933.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 51  | 10 - 80% of mass 198               | 45.8                 |
| 68  | Less than 2% of mass 69            | 1.5                  |
| 69  | Mass 69 Relative Abundance         | 41.1                 |
| 70  | Less than 2% of mass 69            | 0.6                  |
| 127 | 10 - 80% of mass 198               | 47.7                 |
| 197 | Less than 2% of mass 198           | 0.6                  |
| 198 | Base Peak, 100% Relative Abundance | 100                  |
| 199 | 5 - 9% of mass 198                 | 7.1                  |
| 275 | 10 - 60% of mass 198               | 27.9                 |
| 365 | Greater than 1% of mass 198        | 3.1                  |
| 441 | Less than 24% of mass 442          | 15.9                 |
| 442 | Greater than 50% of mass 198       | 86.8                 |
| 443 | 15 - 24% of mass 442               | 21.2                 |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID  | Lab File ID        | Time Analyzed   |
|------------------|----------------|--------------------|-----------------|
| ICALMIX[J]       | WBN160801-43   | s092916.B\si2941.D | 30-SEP-16 05:21 |
| ICALMIX[J]       | WBN160801-44   | s092916.B\si2942.D | 30-SEP-16 05:51 |
| ICALMIX[J]       | WBN160801-45.1 | s092916.B\si2943.D | 30-SEP-16 06:20 |
| ICALMIX[J]       | WBN160801-46   | s092916.B\si2944.D | 30-SEP-16 06:50 |
| ICALMIX[J]       | WBN160801-48   | s092916.B\si2945.D | 30-SEP-16 07:20 |
| ICALMIX[J]       | WBN160801-49   | s092916.B\si2946.D | 30-SEP-16 07:50 |
| ICVMIX[B,J]02    | WBN160922-18.2 | s092916.B\si2948.D | 30-SEP-16 09:49 |

## Instrument Performance Check

## DFTPP

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: MSD1.I

Injection Date/Time: 10-NOV-16 11:17

Column Description: 25x.20x.33

Lab File ID s111016.B\s1k1003.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 51  | 10 - 80% of mass 198               | 47.9                 |
| 68  | Less than 2% of mass 69            | 1.6                  |
| 69  | Mass 69 Relative Abundance         | 41.4                 |
| 70  | Less than 2% of mass 69            | 0.3                  |
| 127 | 10 - 80% of mass 198               | 48.1                 |
| 197 | Less than 2% of mass 198           | 0.6                  |
| 198 | Base Peak, 100% Relative Abundance | 100                  |
| 199 | 5 - 9% of mass 198                 | 7.3                  |
| 275 | 10 - 60% of mass 198               | 28.4                 |
| 365 | Greater than 1% of mass 198        | 3.1                  |
| 441 | Less than 24% of mass 442          | 16.5                 |
| 442 | Greater than 50% of mass 198       | 92.1                 |
| 443 | 15 - 24% of mass 442               | 19.9                 |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID  | Lab File ID         | Time Analyzed   |
|------------------|----------------|---------------------|-----------------|
| CCVMIX[B]01      | WBN161004-18.4 | s111016.B\s1k1005.D | 10-NOV-16 12:09 |
| CCVMIX[A]02      | WBN161025-05.4 | s111016.B\s1k1006.D | 10-NOV-16 12:40 |
| CCVMIX[J]03      | WBN160801-45.2 | s111016.B\s1k1009.D | 10-NOV-16 14:07 |
| BLK02            | 1203665318     | s111016.B\s1k1016.D | 10-NOV-16 17:58 |
| BLK02LCS         | 1203665319     | s111016.B\s1k1017.D | 10-NOV-16 18:32 |

## Instrument Performance Check

## DFTPP

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: MSD1.I

Injection Date/Time: 11-NOV-16 10:33

Column Description: 25x.20x.33

Lab File ID s111116.B\s1k1101.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 51  | 10 - 80% of mass 198               | 49.1                 |
| 68  | Less than 2% of mass 69            | 1.8                  |
| 69  | Mass 69 Relative Abundance         | 42.6                 |
| 70  | Less than 2% of mass 69            | 0.3                  |
| 127 | 10 - 80% of mass 198               | 49.8                 |
| 197 | Less than 2% of mass 198           | 0.5                  |
| 198 | Base Peak, 100% Relative Abundance | 100                  |
| 199 | 5 - 9% of mass 198                 | 7.1                  |
| 275 | 10 - 60% of mass 198               | 28.5                 |
| 365 | Greater than 1% of mass 198        | 3.1                  |
| 441 | Less than 24% of mass 442          | 16.2                 |
| 442 | Greater than 50% of mass 198       | 87.2                 |
| 443 | 15 - 24% of mass 442               | 21.1                 |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID  | Lab File ID         | Time Analyzed   |
|------------------|----------------|---------------------|-----------------|
| CCVMIX[B]04      | WBN161004-18.4 | s111116.B\s1k1103.D | 11-NOV-16 11:27 |
| CCVMIX[J]05      | WBN160801-45.2 | s111116.B\s1k1106.D | 11-NOV-16 12:50 |
| CCVMIX[A]06      | WBN161025-05.4 | s111116.B\s1k1107.D | 11-NOV-16 13:48 |
| DP020312         | 409254029      | s111116.B\s1k1109.D | 11-NOV-16 14:51 |
| DP020413         | 409254032      | s111116.B\s1k1110.D | 11-NOV-16 15:21 |
| DP020207         | 409254034      | s111116.B\s1k1111.D | 11-NOV-16 15:51 |
| DP020209         | 409254036      | s111116.B\s1k1112.D | 11-NOV-16 16:21 |
| DP020114         | 409254038      | s111116.B\s1k1113.D | 11-NOV-16 16:51 |



## Instrument Performance Check

## DFTPP

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: MSD4.I

Injection Date/Time: 13-OCT-16 10:14

Column Description: DB-5ms

Lab File ID s101316.B\s4j1301.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 51  | 10 - 80% of mass 198               | 39.8                 |
| 68  | Less than 2% of mass 69            | 1.6                  |
| 69  | Mass 69 Relative Abundance         | 39.9                 |
| 70  | Less than 2% of mass 69            | 0.5                  |
| 127 | 10 - 80% of mass 198               | 51.8                 |
| 197 | Less than 2% of mass 198           | 0                    |
| 198 | Base Peak, 100% Relative Abundance | 100                  |
| 199 | 5 - 9% of mass 198                 | 6.9                  |
| 275 | 10 - 60% of mass 198               | 25.1                 |
| 365 | Greater than 1% of mass 198        | 3.1                  |
| 441 | Less than 24% of mass 442          | 15.8                 |
| 442 | Greater than 50% of mass 198       | 74.8                 |
| 443 | 15 - 24% of mass 442               | 20.5                 |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID  | Lab File ID         | Time Analyzed   |
|------------------|----------------|---------------------|-----------------|
| ICALMIX[A,B]     | WBN160804-83.1 | s101316.B\s4j1302.D | 13-OCT-16 10:29 |
| ICALMIX[A,B]     | WBN160804-88   | s101316.B\s4j1303.D | 13-OCT-16 11:06 |
| ICALMIX[A,B]     | WBN160804-87   | s101316.B\s4j1304.D | 13-OCT-16 11:34 |
| ICALMIX[A,B]     | WBN160804-86   | s101316.B\s4j1305.D | 13-OCT-16 12:02 |
| ICALMIX[A,B]     | WBN160804-85   | s101316.B\s4j1306.D | 13-OCT-16 12:31 |
| ICALMIX[A,B]     | WBN160804-84   | s101316.B\s4j1307.D | 13-OCT-16 12:59 |
| ICALMIX[A,B]     | WBN160804-82   | s101316.B\s4j1308.D | 13-OCT-16 13:27 |
| ICALMIX[A,B]     | WBN160804-81   | s101316.B\s4j1309.D | 13-OCT-16 13:56 |
| ICVMIX[A,B]01    | WBN160804-89.1 | s101316.B\s4j1310.D | 13-OCT-16 14:24 |

## Instrument Performance Check

## DFTPP

Lab Name GEL Laboratories LLC

Client SDG: 409254

Instrument ID: MSD4.I

Injection Date/Time: 07-NOV-16 08:14

Column Description: DB-5ms

Lab File ID s110716.B\s4k0701.D

| m/e | Ion Abundance Criteria             | % Relative Abundance |
|-----|------------------------------------|----------------------|
| 51  | 10 - 80% of mass 198               | 31.9                 |
| 68  | Less than 2% of mass 69            | 1.5                  |
| 69  | Mass 69 Relative Abundance         | 33.6                 |
| 70  | Less than 2% of mass 69            | 0.5                  |
| 127 | 10 - 80% of mass 198               | 47.6                 |
| 197 | Less than 2% of mass 198           | 0                    |
| 198 | Base Peak, 100% Relative Abundance | 100                  |
| 199 | 5 - 9% of mass 198                 | 6.8                  |
| 275 | 10 - 60% of mass 198               | 25.2                 |
| 365 | Greater than 1% of mass 198        | 3.1                  |
| 441 | Less than 24% of mass 442          | 14.9                 |
| 442 | Greater than 50% of mass 198       | 78.5                 |
| 443 | 15 - 24% of mass 442               | 21.3                 |

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

| Client Sample ID | Lab Sample ID  | Lab File ID         | Time Analyzed   |
|------------------|----------------|---------------------|-----------------|
| CCVMIX[A,B]01    | WBN160804-83.4 | s110716.B\s4k0702.D | 07-NOV-16 08:29 |
| BLK01            | 1203661742     | s110716.B\s4k0703.D | 07-NOV-16 09:01 |
| BLK01LCS         | 1203661743     | s110716.B\s4k0704.D | 07-NOV-16 09:29 |
| SD140300MS       | 1203661744     | s110716.B\s4k0706.D | 07-NOV-16 10:26 |
| SD140300         | 409254013      | s110716.B\s4k0707.D | 07-NOV-16 10:54 |
| SD140300MSD      | 1203661745     | s110716.B\s4k0708.D | 07-NOV-16 11:22 |
| SD140200         | 409254014      | s110716.B\s4k0709.D | 07-NOV-16 11:51 |
| SD140100         | 409254015      | s110716.B\s4k0710.D | 07-NOV-16 12:19 |
| SD140100DUP      | 409254016      | s110716.B\s4k0711.D | 07-NOV-16 12:47 |
| DP100113         | 409254017      | s110716.B\s4k0712.D | 07-NOV-16 13:16 |
| DP100212         | 409254018      | s110716.B\s4k0713.D | 07-NOV-16 13:44 |
| DP100310         | 409254019      | s110716.B\s4k0714.D | 07-NOV-16 14:12 |
| DP050113         | 409254026      | s110716.B\s4k0715.D | 07-NOV-16 14:41 |
| DP050213         | 409254027      | s110716.B\s4k0716.D | 07-NOV-16 15:09 |
| SS050100         | 409254028      | s110716.B\s4k0717.D | 07-NOV-16 15:38 |

Internal Standard  
Area and RT Summary

Lab Name : GEL Laboratories LLC  
Instrument: MSD1.I  
GC Column: 25x.20x.33

Client SDG: 409254  
STD Analysis Time: 10-NOV-16 12:40  
Data File: s111016.B\sk1006.D

|             | 1,4-Dichlorobenzene-d4 |        | Naphthalene-d8 |        | Acenaphthene-d10 |        | Phenanthrene-d10 |        | Chrysene-d12 |        | Perylene-d12 |        |
|-------------|------------------------|--------|----------------|--------|------------------|--------|------------------|--------|--------------|--------|--------------|--------|
|             | Area                   | # RT # | Area           | # RT # | Area             | # RT # | Area             | # RT # | Area         | # RT # | Area         | # RT # |
| 12 Hour STD | 192132                 | 5.32   | 631767         | 7.11   | 354895           | 9.42   | 689318           | 11.3   | 564283       | 14.7   | 586549       | 17.7   |
| Upper Limit | 384264                 | 5.82   | 1263534        | 7.61   | 709790           | 9.92   | 1378636          | 11.8   | 1128566      | 15.2   | 1173098      | 18.2   |
| Lower Limit | 96066                  | 4.82   | 315884         | 6.61   | 177448           | 8.92   | 344659           | 10.8   | 282142       | 14.2   | 293275       | 17.2   |
| Sample ID   |                        |        |                |        |                  |        |                  |        |              |        |              |        |
| BLK02       | 225235                 | 5.32   | 798475         | 7.1    | 444209           | 9.41   | 844651           | 11.3   | 784241       | 14.7   | 728585       | 17.7   |
| BLK02LCS    | 219792                 | 5.32   | 754302         | 7.11   | 423808           | 9.41   | 880518           | 11.3   | 795464       | 14.7   | 820502       | 17.7   |

Area Upper Limit = +100% of internal standard area  
Area Lower Limit = - 50% of internal standard area  
RT Upper Limit = + 0.50 minutes of internal standard RT  
RT Lower Limit = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk  
\* Value outside of QC Limits

Internal Standard

Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 409254

Instrument: MSD1.I

STD Analysis Time: 11-NOV-16 13:48

GC Column: 25x.20x.33

Data File: s111116.B\slk1107.D

|             | 1,4-Dichlorobenzene-d4 |        | Naphthalene-d8 |        | Acenaphthene-d10 |        | Phenanthrene-d10 |        | Chrysene-d12 |        | Perylene-d12 |        |
|-------------|------------------------|--------|----------------|--------|------------------|--------|------------------|--------|--------------|--------|--------------|--------|
|             | Area                   | # RT # | Area           | # RT # | Area             | # RT # | Area             | # RT # | Area         | # RT # | Area         | # RT # |
| 12 Hour STD | 241123                 | 5.38   | 790182         | 7.15   | 442603           | 9.46   | 785711           | 11.3   | 593459       | 14.7   | 511459       | 17.8   |
| Upper Limit | 482246                 | 5.88   | 1580364        | 7.65   | 885206           | 9.96   | 1571422          | 11.8   | 1186918      | 15.2   | 1022918      | 18.3   |
| Lower Limit | 120562                 | 4.88   | 395091         | 6.65   | 221302           | 8.96   | 392856           | 10.8   | 296730       | 14.2   | 255730       | 17.3   |
| Sample ID   |                        |        |                |        |                  |        |                  |        |              |        |              |        |
| DP020312    | 288006                 | 5.38   | 1007676        | 7.15   | 555636           | 9.46   | 978579           | 11.3   | 832098       | 14.7   | 710168       | 17.8   |
| DP020413    | 232854                 | 5.38   | 805696         | 7.15   | 444378           | 9.45   | 736487           | 11.3   | 543483       | 14.7   | 477362       | 17.8   |
| DP020207    | 244855                 | 5.37   | 879606         | 7.15   | 488958           | 9.45   | 836453           | 11.3   | 649473       | 14.7   | 571706       | 17.8   |
| DP020209    | 276085                 | 5.38   | 957993         | 7.15   | 529806           | 9.45   | 916581           | 11.3   | 662486       | 14.7   | 571878       | 17.8   |
| DP020114    | 308067                 | 5.38   | 1066527        | 7.15   | 599493           | 9.46   | 1058081          | 11.3   | 886340       | 14.7   | 740803       | 17.8   |

Area Upper Limit = +100% of internal standard area  
Area Lower Limit = - 50% of internal standard area  
RT Upper Limit = + 0.50 minutes of internal standard RT  
RT Lower Limit = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk  
\* Value outside of QC Limits

Internal Standard

Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: 409254

Instrument: MSD4.I

STD Analysis Time: 07-NOV-16 08:29

GC Column: DB-5ms

Data File: s110716.B\s4k0702.D

|             | 1,4-Dichlorobenzene-d4 |        | Naphthalene-d8 |        | Acenaphthene-d10 |        | Phenanthrene-d10 |        | Chrysene-d12 |        | Perylene-d12 |        |
|-------------|------------------------|--------|----------------|--------|------------------|--------|------------------|--------|--------------|--------|--------------|--------|
|             | Area                   | # RT # | Area           | # RT # | Area             | # RT # | Area             | # RT # | Area         | # RT # | Area         | # RT # |
| 12 Hour STD | 421327                 | 5.45   | 1325711        | 7.24   | 584621           | 9.57   | 1033083          | 11.5   | 468782       | 15.0   | 239758       | 18.2   |
| Upper Limit | 842654                 | 5.95   | 2651422        | 7.74   | 1169242          | 10.1   | 2066166          | 12.0   | 937564       | 15.5   | 479516       | 18.7   |
| Lower Limit | 210664                 | 4.95   | 662856         | 6.74   | 292311           | 9.07   | 516542           | 11.0   | 234391       | 14.5   | 119879       | 17.7   |
| Sample ID   |                        |        |                |        |                  |        |                  |        |              |        |              |        |
| BLK01       | 342443                 | 5.45   | 1122428        | 7.24   | 441282           | 9.57   | 805342           | 11.5   | 434627       | 15.0   | 205839       | 18.2   |
| BLK01LCS    | 319246                 | 5.45   | 1050794        | 7.24   | 415224           | 9.57   | 807359           | 11.5   | 468698       | 15.0   | 277767       | 18.2   |
| SD140300MS  | 330993                 | 5.45   | 1117152        | 7.24   | 432811           | 9.57   | 840484           | 11.5   | 442660       | 15.0   | 273119       | 18.2   |
| SD140300    | 344923                 | 5.45   | 1150449        | 7.24   | 442849           | 9.57   | 776072           | 11.5   | 326618       | 15.0   | 184150       | 18.2   |
| SD140300MSD | 344975                 | 5.45   | 1162413        | 7.24   | 460210           | 9.57   | 905432           | 11.5   | 385937       | 15.0   | 222718       | 18.2   |
| SD140200    | 318606                 | 5.45   | 1077102        | 7.24   | 416993           | 9.57   | 788172           | 11.5   | 425874       | 15.0   | 245512       | 18.2   |
| SD140100    | 337259                 | 5.45   | 1158515        | 7.24   | 458474           | 9.57   | 870314           | 11.5   | 368853       | 15.0   | 211102       | 18.2   |
| SD140100DUP | 311265                 | 5.43   | 1097833        | 7.24   | 444139           | 9.57   | 843386           | 11.5   | 443480       | 15.0   | 268016       | 18.2   |
| DP100113    | 339001                 | 5.45   | 1154778        | 7.24   | 456802           | 9.57   | 880630           | 11.5   | 410605       | 15.0   | 207120       | 18.2   |
| DP100212    | 315527                 | 5.45   | 1091693        | 7.24   | 440278           | 9.57   | 846866           | 11.5   | 370447       | 15.0   | 214311       | 18.2   |
| DP100310    | 328366                 | 5.45   | 1129880        | 7.24   | 451930           | 9.57   | 872333           | 11.5   | 382814       | 15.0   | 192292       | 18.2   |
| DP050113    | 322201                 | 5.45   | 1113162        | 7.24   | 445963           | 9.57   | 873618           | 11.5   | 488764       | 15.0   | 286649       | 18.2   |
| DP050213    | 320383                 | 5.45   | 1099939        | 7.24   | 439619           | 9.57   | 839406           | 11.5   | 423036       | 15.0   | 225794       | 18.2   |
| SS050100    | 341266                 | 5.45   | 1144747        | 7.24   | 465014           | 9.58   | 621005           | 11.5   | 402920       | 15.0   | 251495       | 18.2   |

Area Upper Limit = +100% of internal standard area

Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT

RT Lower Limit = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk

\* Value outside of QC Limits

# Sample Data

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

**SDG Number:** 409254  
**Lab Sample ID:** 409254029

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.046 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 26.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** DP020312  
**Batch ID:** 1614270  
**Run Date:** 11/11/2016 14:51  
**Prep Date:** 11/08/2016 12:02  
**Data File:** s111116.B\1k1109.D

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 450    | ug/kg | 135     | 450     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 450    | ug/kg | 135     | 450     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 450    | ug/kg | 135     | 450     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 450    | ug/kg | 135     | 450     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 450    | ug/kg | 135     | 450     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 450    | ug/kg | 135     | 450     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 450    | ug/kg | 135     | 450     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 901    | ug/kg | 135     | 901     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 450    | ug/kg | 135     | 450     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 450    | ug/kg | 135     | 450     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 95-57-8   | 2-Chlorophenol             | U         | 450    | ug/kg | 135     | 450     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 450    | ug/kg | 135     | 450     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 88-75-5   | 2-Nitrophenol              | U         | 450    | ug/kg | 135     | 450     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 450    | ug/kg | 135     | 450     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 450    | ug/kg | 135     | 450     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 450    | ug/kg | 180     | 450     |
| 106-47-8  | 4-Chloroaniline            | U         | 450    | ug/kg | 135     | 450     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 450    | ug/kg | 135     | 450     |
| 100-02-7  | 4-Nitrophenol              | U         | 450    | ug/kg | 135     | 450     |
| 83-32-9   | Acenaphthene               | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 208-96-8  | Acenaphthylene             | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 98-86-2   | Acetophenone               | U         | 450    | ug/kg | 135     | 450     |
| 120-12-7  | Anthracene                 | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 1912-24-9 | Atrazine                   | U         | 450    | ug/kg | 180     | 450     |
| 100-52-7  | Benzaldehyde               | U         | 450    | ug/kg | 135     | 450     |
| 56-55-3   | Benzo(a)anthracene         | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 50-32-8   | Benzo(a)pyrene             | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 85-68-7   | Butylbenzylphthalate       | U         | 450    | ug/kg | 135     | 450     |
| 105-60-2  | Caprolactam                | U         | 450    | ug/kg | 135     | 450     |
| 86-74-8   | Carbazole                  | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 218-01-9  | Chrysene                   | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 84-74-2   | Di-n-butylphthalate        | U         | 450    | ug/kg | 135     | 450     |
| 117-84-0  | Di-n-octylphthalate        | U         | 450    | ug/kg | 135     | 450     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254029

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.046 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 26.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 132-64-9   | Dibenzofuran                     | U         | 450    | ug/kg | 135     | 450     |
| 84-66-2    | Diethylphthalate                 | U         | 450    | ug/kg | 135     | 450     |
| 131-11-3   | Dimethylphthalate                | U         | 450    | ug/kg | 135     | 450     |
| 122-39-4   | Diphenylamine                    | U         | 450    | ug/kg | 135     | 450     |
| 206-44-0   | Fluoranthene                     | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 86-73-7    | Fluorene                         | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 118-74-1   | Hexachlorobenzene                | U         | 450    | ug/kg | 135     | 450     |
| 87-68-3    | Hexachlorobutadiene              | U         | 450    | ug/kg | 135     | 450     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 450    | ug/kg | 135     | 450     |
| 67-72-1    | Hexachloroethane                 | U         | 450    | ug/kg | 135     | 450     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 78-59-1    | Isophorone                       | U         | 450    | ug/kg | 135     | 450     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 450    | ug/kg | 135     | 450     |
| 91-20-3    | Naphthalene                      | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 98-95-3    | Nitrobenzene                     | U         | 450    | ug/kg | 135     | 450     |
| 87-86-5    | Pentachlorophenol                | U         | 450    | ug/kg | 135     | 450     |
| 85-01-8    | Phenanthrene                     | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 108-95-2   | Phenol                           | U         | 450    | ug/kg | 135     | 450     |
| 129-00-0   | Pyrene                           | U         | 45.0   | ug/kg | 13.5    | 45.0    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 450    | ug/kg | 135     | 450     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 450    | ug/kg | 135     | 450     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 450    | ug/kg | 135     | 450     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 450    | ug/kg | 135     | 450     |
| 65794-96-9 | m,p-Cresols                      | U         | 450    | ug/kg | 135     | 450     |
| 99-09-2    | m-Nitroaniline                   | U         | 450    | ug/kg | 135     | 450     |
| 95-48-7    | o-Cresol                         | U         | 450    | ug/kg | 135     | 450     |
| 88-74-4    | o-Nitroaniline                   | U         | 450    | ug/kg | 149     | 450     |
| 100-01-6   | p-Nitroaniline                   | U         | 450    | ug/kg | 135     | 450     |



Quantitation Report  
GEL Laboratories, LLC

JMB  
11/11/2016

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1109.D  
Acq On : 11 Nov 2016 14:51  
Operator : JMB3  
InstName : MSD1  
Sample : |409254029|1614270|1|SVM|1|HAAL  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 8 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 15:30:43 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

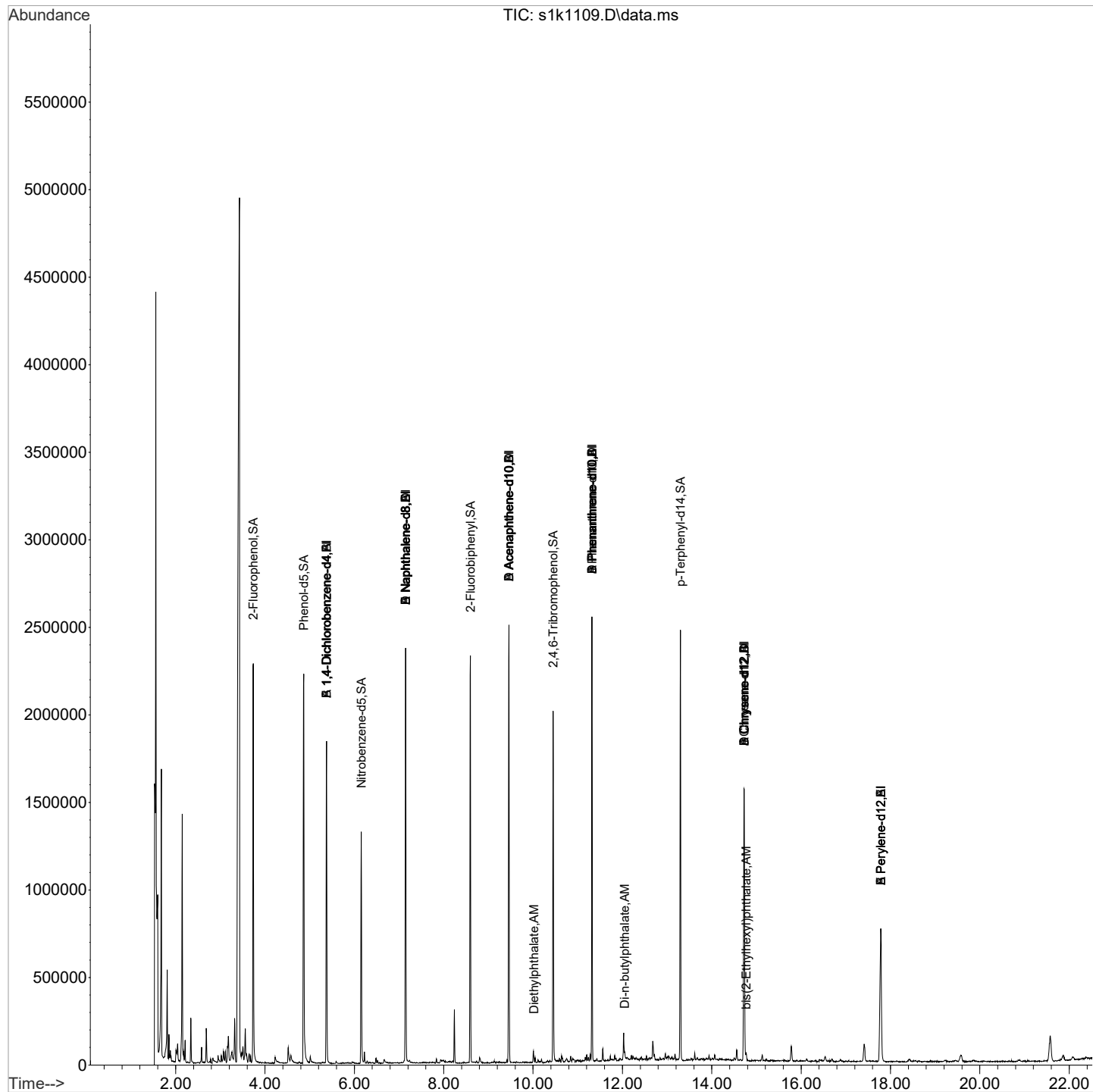
| Compound                    |                           | QIon    | R.T.   | Exp RT   | Rel RT   | Response | Conc  | Units |           |
|-----------------------------|---------------------------|---------|--------|----------|----------|----------|-------|-------|-----------|
| Internal Standards          |                           |         |        |          |          |          |       |       | Dev (Min) |
| 1)                          | A 1,4-Dichlorobenzene-d4  | 152     | 5.377  | 5.372    | 1.000    | 288006   | 40.00 | ng/uL | 0.00      |
| 24)                         | A Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000    | 1007676  | 40.00 | ng/uL | 0.00      |
| 42)                         | A Acenaphthene-d10        | 164     | 9.458  | 9.458    | 1.000    | 555636   | 40.00 | ng/uL | 0.00      |
| 67)                         | A Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000    | 978579   | 40.00 | ng/uL | 0.00      |
| 81)                         | A Chrysene-d12            | 240     | 14.727 | 14.732   | 1.000    | 832098   | 40.00 | ng/uL | 0.00      |
| 91)                         | A Perylene-d12            | 264     | 17.781 | 17.786   | 1.000    | 710168   | 40.00 | ng/uL | 0.00      |
| 99)                         | B 1,4-Dichlorobenzene-d4  | 152     | 5.377  | 5.372    | 1.000    | 287187   | 40.00 | ng/uL | 0.00      |
| 115)                        | B Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000    | 1007676  | 40.00 | ng/uL | 0.00      |
| 123)                        | B Acenaphthene-d10        | 164     | 9.458  | 9.458    | 1.000    | 555636   | 40.00 | ng/uL | 0.00      |
| 132)                        | B Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000    | 978579   | 40.00 | ng/uL | 0.00      |
| 145)                        | B Chrysene-d12            | 240     | 14.727 | 14.732   | 1.000    | 832098   | 40.00 | ng/uL | 0.00      |
| 152)                        | B Perylene-d12            | 264     | 17.781 | 17.786   | 1.000    | 710168   | 40.00 | ng/uL | 0.00      |
| 155)                        | D Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000    | 1007676  | 40.00 | ng/uL | 0.00      |
| 157)                        | D Acenaphthene-d10        | 164     | 9.458  | 9.458    | 1.000    | 555636   | 40.00 | ng/uL | 0.00      |
| 160)                        | D Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000    | 978579   | 40.00 | ng/uL | 0.00      |
| 167)                        | D Chrysene-d12            | 240     | 14.727 | 14.732   | 1.000    | 832098   | 40.00 | ng/uL | 0.00      |
| 169)                        | E Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000    | 1007676  | 40.00 | ng/uL | 0.00      |
| 171)                        | E Perylene-d12            | 264     | 17.781 | 17.786   | 1.000    | 710168   | 40.00 | ng/uL | 0.00      |
| 173)                        | F 1,4-Dichlorobenzene-d4  | 152     | 5.377  | 5.372    | 1.000    | 287187   | 40.00 | ng/uL | 0.00      |
| 175)                        | J Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000    | 978579   | 40.00 | ng/uL | 0.00      |
| 177)                        | J Chrysene-d12            | 240     | 14.727 | 14.732   | 1.000    | 832098   | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds |                           |         |        |          |          |          |       |       | Dev (Min) |
| 5)                          | 2-Fluorophenol            | 112     | 3.741  | 3.714    | 0.696    | 543612   | 50.85 | ng/uL | 0.03      |
| 8)                          | Phenol-d5                 | 99      | 4.869  | 4.864    | 0.906    | 759038   | 57.99 | ng/uL | 0.00      |
| 25)                         | Nitrobenzene-d5           | 82      | 6.153  | 6.158    | 0.861    | 433534   | 36.75 | ng/uL | 0.00      |
| 47)                         | 2-Fluorobiphenyl          | 172     | 8.597  | 8.597    | 0.909    | 729030   | 37.23 | ng/uL | 0.00      |
| 66)                         | 2,4,6-Tribromophenol      | 330     | 10.448 | 10.453   | 1.105    | 228177   | 62.96 | ng/uL | 0.00      |
| 83)                         | p-Terphenyl-d14           | 244     | 13.299 | 13.298   | 0.903    | 798877   | 35.96 | ng/uL | 0.00      |
| Compound                    |                           | Amount  |        | Range    | Recovery |          |       |       |           |
| 5)                          | 2-Fluorophenol            | 100.000 |        | 36 - 104 | 51%      |          |       |       |           |
| 8)                          | Phenol-d5                 | 100.000 |        | 39 - 106 | 58%      |          |       |       |           |
| 25)                         | Nitrobenzene-d5           | 50.000  |        | 34 - 109 | 74%      |          |       |       |           |
| 47)                         | 2-Fluorobiphenyl          | 50.000  |        | 35 - 107 | 74%      |          |       |       |           |
| 66)                         | 2,4,6-Tribromophenol      | 100.000 |        | 39 - 115 | 63%      |          |       |       |           |
| 83)                         | p-Terphenyl-d14           | 50.000  |        | 45 - 119 | 72%      |          |       |       |           |
| Target Compounds            |                           | QIon    | R.T.   | Exp RT   | Rel RT   | Response | Conc  | Units | QValue    |
| 61)                         | Diethylphthalate          | 149     | 10.020 | 10.025   | 1.059    | 8042     | 0.34  | ng/uL | 100       |
| 79)                         | Di-n-butylphthalate       | 149     | 12.052 | 12.057   | 1.065    | 12167    | 0.34  | ng/uL | 93        |
| 85)                         | bis(2-Ethylhexyl)phtha... | 149     | 14.769 | 14.775   | 1.003    | 18036    | 1.00  | ng/uL | 82        |

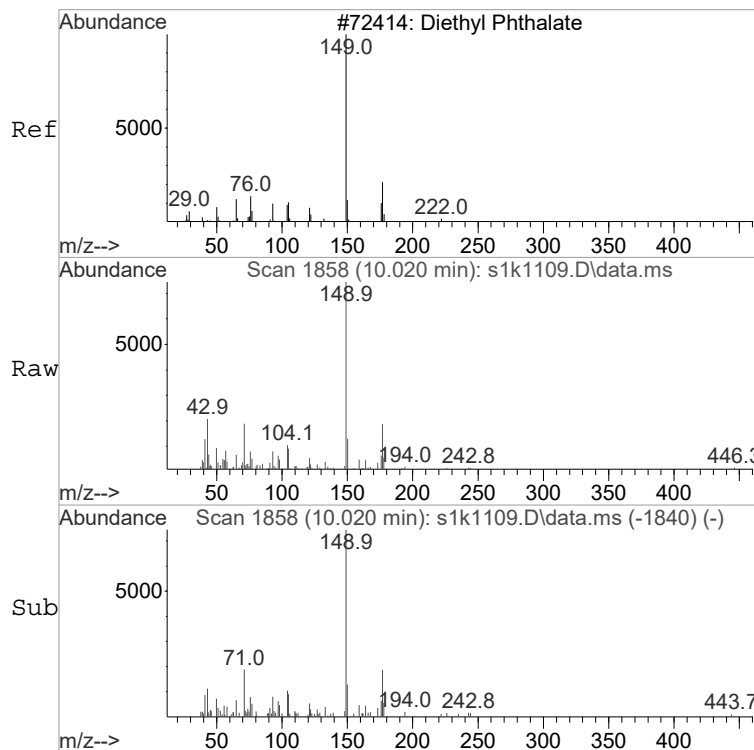
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1109.D  
Acq On : 11 Nov 2016 14:51  
Operator : JMB3  
InstName : MSD1  
Sample : |409254029|1614270|1|SVM|1|HAAL  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 8 Sample Multiplier: 1

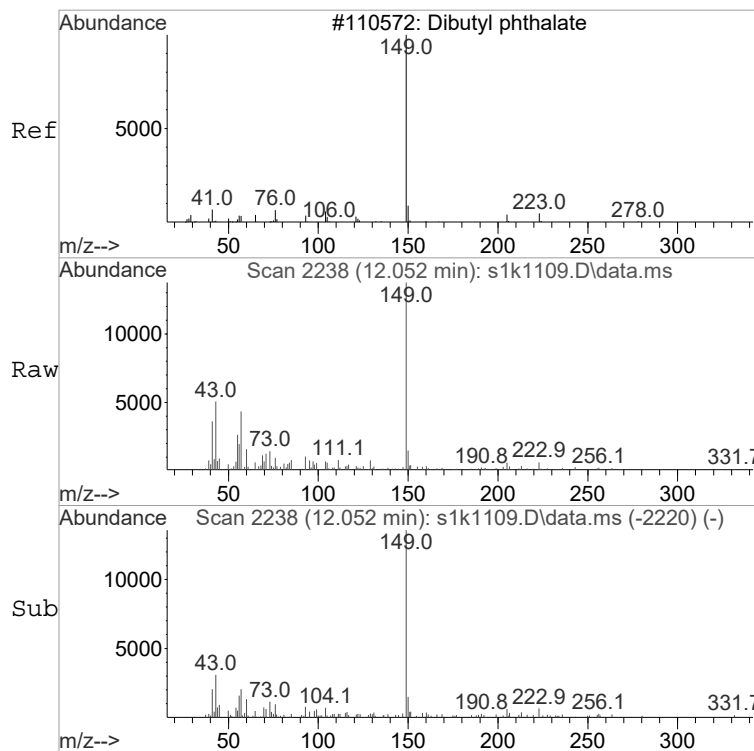
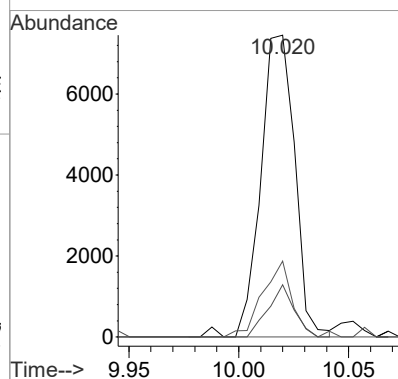
Quant Time: Nov 11 15:30:43 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE





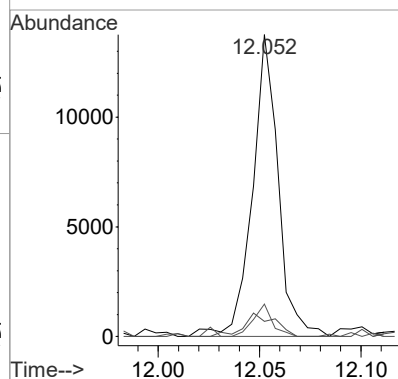
#61  
Diethylphthalate  
Concen: 0.34 ng/uL  
RT: 10.020 min Scan# 1858  
Delta R.T. -0.005 min  
Lab File: s1k1109.D  
Acq: 11 Nov 2016 14:51

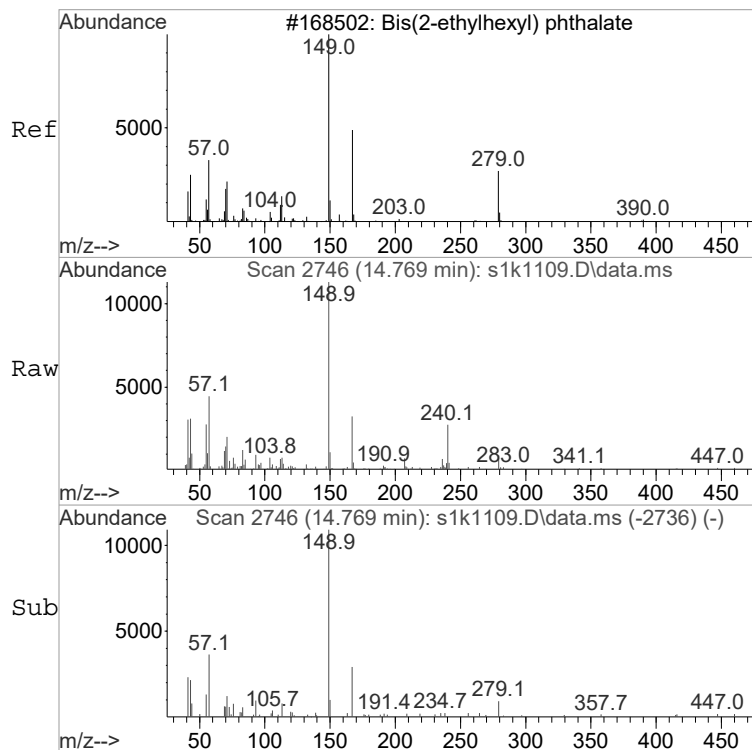
| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 149     | 100   | 8042 |       |       |
| 177     | 22.2  | 0.0  | 52.0  |       |
| 150     | 13.3  | 0.0  | 43.4  |       |



#79  
Di-n-butylphthalate  
Concen: 0.34 ng/uL  
RT: 12.052 min Scan# 2238  
Delta R.T. -0.005 min  
Lab File: s1k1109.D  
Acq: 11 Nov 2016 14:51

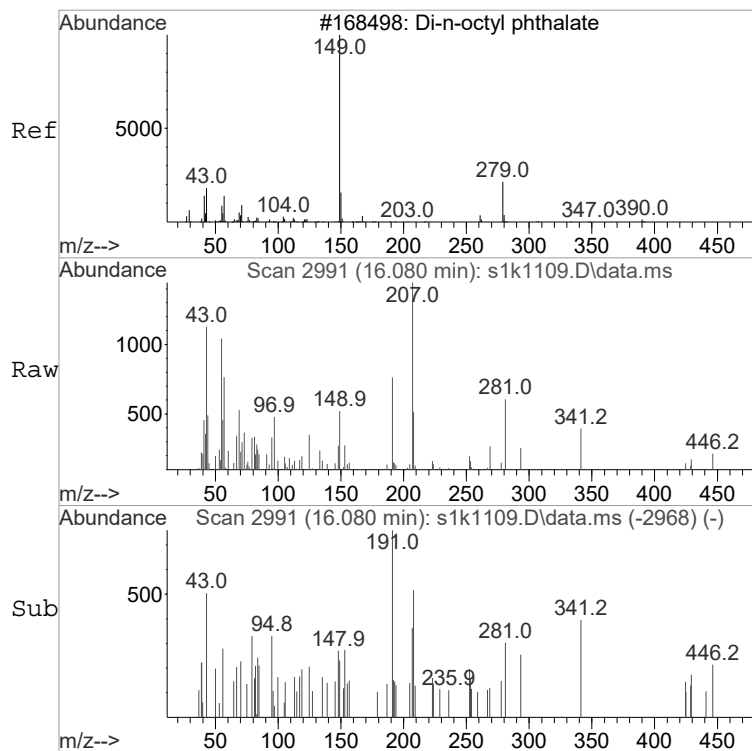
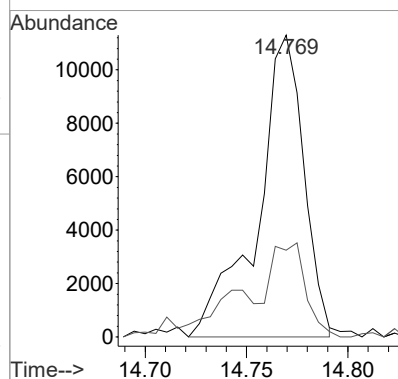
| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 149     | 100   | 12167 |       |       |
| 150     | 8.0   | 0.0   | 40.5  |       |
| 104     | 9.3   | 0.0   | 36.6  |       |





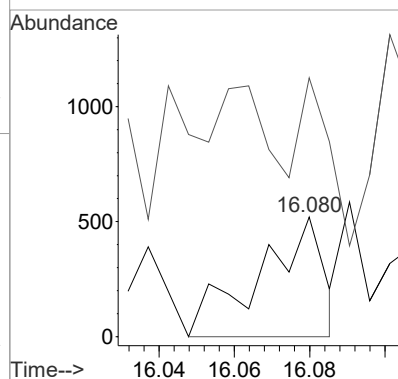
#85  
bis(2-Ethylhexyl)phthalate  
Concen: 1.00 ng/uL  
RT: 14.769 min Scan# 2746  
Delta R.T. -0.005 min  
Lab File: s1k1109.D  
Acq: 11 Nov 2016 14:51

Tgt Ion:149 Resp: 18036  
Ion Ratio Lower Upper  
149 100  
167 21.6 1.8 61.8



#90 BEFORE analyst DELETION  
Di-n-octylphthalate  
Concen: 0.49 ng/uL  
RT: 16.080 min Scan# 2991  
Delta R.T. 0.043 min  
Lab File: s1k1109.D  
Acq: 11 Nov 2016 14:51

Tgt Ion:149 Resp: 622  
Ion Ratio Lower Upper  
149 100  
43 150.6 0.0 43.5#



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

**SDG Number:** 409254  
**Lab Sample ID:** 409254032

**Date Collected:** 10/25/2016 14:00  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.104 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 17.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** DP020413  
**Batch ID:** 1614270  
**Run Date:** 11/11/2016 15:21  
**Prep Date:** 11/08/2016 12:02  
**Data File:** s111116.B\1k1110.D

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 403    | ug/kg | 121     | 403     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 403    | ug/kg | 121     | 403     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 403    | ug/kg | 121     | 403     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 403    | ug/kg | 121     | 403     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 403    | ug/kg | 121     | 403     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 403    | ug/kg | 121     | 403     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 403    | ug/kg | 121     | 403     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 807    | ug/kg | 121     | 807     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 403    | ug/kg | 121     | 403     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 403    | ug/kg | 121     | 403     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 95-57-8   | 2-Chlorophenol             | U         | 403    | ug/kg | 121     | 403     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 403    | ug/kg | 121     | 403     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 88-75-5   | 2-Nitrophenol              | U         | 403    | ug/kg | 121     | 403     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 403    | ug/kg | 121     | 403     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 403    | ug/kg | 121     | 403     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 403    | ug/kg | 161     | 403     |
| 106-47-8  | 4-Chloroaniline            | U         | 403    | ug/kg | 121     | 403     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 403    | ug/kg | 121     | 403     |
| 100-02-7  | 4-Nitrophenol              | U         | 403    | ug/kg | 121     | 403     |
| 83-32-9   | Acenaphthene               | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 208-96-8  | Acenaphthylene             | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 98-86-2   | Acetophenone               | U         | 403    | ug/kg | 121     | 403     |
| 120-12-7  | Anthracene                 | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 1912-24-9 | Atrazine                   | U         | 403    | ug/kg | 161     | 403     |
| 100-52-7  | Benzaldehyde               | U         | 403    | ug/kg | 121     | 403     |
| 56-55-3   | Benzo(a)anthracene         | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 50-32-8   | Benzo(a)pyrene             | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 85-68-7   | Butylbenzylphthalate       | U         | 403    | ug/kg | 121     | 403     |
| 105-60-2  | Caprolactam                | U         | 403    | ug/kg | 121     | 403     |
| 86-74-8   | Carbazole                  | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 218-01-9  | Chrysene                   | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 84-74-2   | Di-n-butylphthalate        | U         | 403    | ug/kg | 121     | 403     |
| 117-84-0  | Di-n-octylphthalate        | U         | 403    | ug/kg | 121     | 403     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254032

**Date Collected:** 10/25/2016 14:00  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.104 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 17.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 132-64-9   | Dibenzofuran                     | U         | 403    | ug/kg | 121     | 403     |
| 84-66-2    | Diethylphthalate                 | U         | 403    | ug/kg | 121     | 403     |
| 131-11-3   | Dimethylphthalate                | U         | 403    | ug/kg | 121     | 403     |
| 122-39-4   | Diphenylamine                    | U         | 403    | ug/kg | 121     | 403     |
| 206-44-0   | Fluoranthene                     | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 86-73-7    | Fluorene                         | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 118-74-1   | Hexachlorobenzene                | U         | 403    | ug/kg | 121     | 403     |
| 87-68-3    | Hexachlorobutadiene              | U         | 403    | ug/kg | 121     | 403     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 403    | ug/kg | 121     | 403     |
| 67-72-1    | Hexachloroethane                 | U         | 403    | ug/kg | 121     | 403     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 78-59-1    | Isophorone                       | U         | 403    | ug/kg | 121     | 403     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 403    | ug/kg | 121     | 403     |
| 91-20-3    | Naphthalene                      | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 98-95-3    | Nitrobenzene                     | U         | 403    | ug/kg | 121     | 403     |
| 87-86-5    | Pentachlorophenol                | U         | 403    | ug/kg | 121     | 403     |
| 85-01-8    | Phenanthrene                     | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 108-95-2   | Phenol                           | U         | 403    | ug/kg | 121     | 403     |
| 129-00-0   | Pyrene                           | U         | 40.3   | ug/kg | 12.1    | 40.3    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 403    | ug/kg | 121     | 403     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 403    | ug/kg | 121     | 403     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 403    | ug/kg | 121     | 403     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 403    | ug/kg | 121     | 403     |
| 65794-96-9 | m,p-Cresols                      | U         | 403    | ug/kg | 121     | 403     |
| 99-09-2    | m-Nitroaniline                   | U         | 403    | ug/kg | 121     | 403     |
| 95-48-7    | o-Cresol                         | U         | 403    | ug/kg | 121     | 403     |
| 88-74-4    | o-Nitroaniline                   | U         | 403    | ug/kg | 133     | 403     |
| 100-01-6   | p-Nitroaniline                   | U         | 403    | ug/kg | 121     | 403     |

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/11/2016

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1110.D  
Acq On : 11 Nov 2016 15:21  
Operator : JMB3  
InstName : MSD1  
Sample : |409254032|1614270|1|SVM|1|HAAL  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 9 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 16:14:14 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

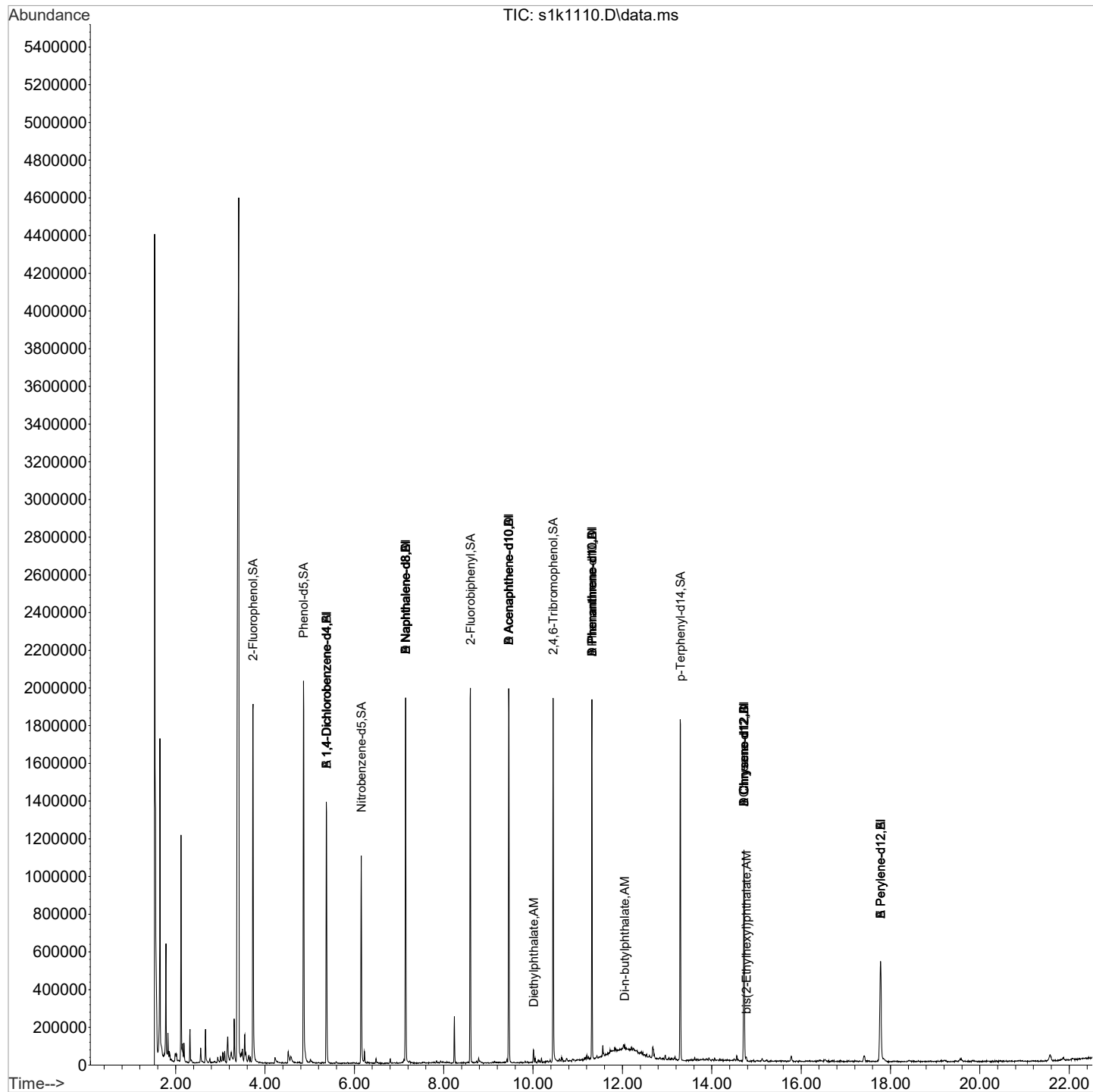
| Compound                    |                           | QIon    | R.T.   | Exp RT   | Rel RT | Response | Conc  | Units |           |
|-----------------------------|---------------------------|---------|--------|----------|--------|----------|-------|-------|-----------|
| Internal Standards          |                           |         |        |          |        |          |       |       | Dev (Min) |
| 1)                          | A 1,4-Dichlorobenzene-d4  | 152     | 5.377  | 5.372    | 1.000  | 232854   | 40.00 | ng/uL | 0.00      |
| 24)                         | A Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000  | 805696   | 40.00 | ng/uL | 0.00      |
| 42)                         | A Acenaphthene-d10        | 164     | 9.453  | 9.458    | 1.000  | 444378   | 40.00 | ng/uL | 0.00      |
| 67)                         | A Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000  | 736487   | 40.00 | ng/uL | 0.00      |
| 81)                         | A Chrysene-d12            | 240     | 14.721 | 14.732   | 1.000  | 543483   | 40.00 | ng/uL | -0.01     |
| 91)                         | A Perylene-d12            | 264     | 17.775 | 17.786   | 1.000  | 477362   | 40.00 | ng/uL | -0.01     |
| 99)                         | B 1,4-Dichlorobenzene-d4  | 152     | 5.377  | 5.372    | 1.000  | 231780   | 40.00 | ng/uL | 0.00      |
| 115)                        | B Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000  | 805696   | 40.00 | ng/uL | 0.00      |
| 123)                        | B Acenaphthene-d10        | 164     | 9.453  | 9.458    | 1.000  | 444378   | 40.00 | ng/uL | 0.00      |
| 132)                        | B Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000  | 736487   | 40.00 | ng/uL | 0.00      |
| 145)                        | B Chrysene-d12            | 240     | 14.721 | 14.732   | 1.000  | 543483   | 40.00 | ng/uL | -0.01     |
| 152)                        | B Perylene-d12            | 264     | 17.775 | 17.786   | 1.000  | 477362   | 40.00 | ng/uL | -0.01     |
| 155)                        | D Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000  | 805696   | 40.00 | ng/uL | 0.00      |
| 157)                        | D Acenaphthene-d10        | 164     | 9.453  | 9.458    | 1.000  | 444378   | 40.00 | ng/uL | 0.00      |
| 160)                        | D Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000  | 736487   | 40.00 | ng/uL | 0.00      |
| 167)                        | D Chrysene-d12            | 240     | 14.721 | 14.732   | 1.000  | 543304   | 40.00 | ng/uL | -0.01     |
| 169)                        | E Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000  | 805696   | 40.00 | ng/uL | 0.00      |
| 171)                        | E Perylene-d12            | 264     | 17.775 | 17.786   | 1.000  | 477362   | 40.00 | ng/uL | -0.01     |
| 173)                        | F 1,4-Dichlorobenzene-d4  | 152     | 5.377  | 5.372    | 1.000  | 231780   | 40.00 | ng/uL | 0.00      |
| 175)                        | J Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000  | 736487   | 40.00 | ng/uL | 0.00      |
| 177)                        | J Chrysene-d12            | 240     | 14.721 | 14.732   | 1.000  | 543483   | 40.00 | ng/uL | -0.01     |
| System Monitoring Compounds |                           |         |        |          |        |          |       |       | Dev (Min) |
| 5)                          | 2-Fluorophenol            | 112     | 3.735  | 3.714    | 0.695  | 465812   | 53.90 | ng/uL | 0.02      |
| 8)                          | Phenol-d5                 | 99      | 4.864  | 4.864    | 0.905  | 655280   | 61.93 | ng/uL | 0.00      |
| 25)                         | Nitrobenzene-d5           | 82      | 6.153  | 6.158    | 0.861  | 363869   | 38.58 | ng/uL | 0.00      |
| 47)                         | 2-Fluorobiphenyl          | 172     | 8.597  | 8.597    | 0.909  | 638713   | 40.78 | ng/uL | 0.00      |
| 66)                         | 2,4,6-Tribromophenol      | 330     | 10.448 | 10.453   | 1.105  | 201508   | 69.52 | ng/uL | 0.00      |
| 83)                         | p-Terphenyl-d14           | 244     | 13.299 | 13.298   | 0.903  | 604028   | 41.63 | ng/uL | 0.00      |
| Compound                    |                           | Amount  |        | Range    |        | Recovery |       |       |           |
| 5)                          | 2-Fluorophenol            | 100.000 |        | 36 - 104 |        | 54%      |       |       |           |
| 8)                          | Phenol-d5                 | 100.000 |        | 39 - 106 |        | 62%      |       |       |           |
| 25)                         | Nitrobenzene-d5           | 50.000  |        | 34 - 109 |        | 77%      |       |       |           |
| 47)                         | 2-Fluorobiphenyl          | 50.000  |        | 35 - 107 |        | 82%      |       |       |           |
| 66)                         | 2,4,6-Tribromophenol      | 100.000 |        | 39 - 115 |        | 70%      |       |       |           |
| 83)                         | p-Terphenyl-d14           | 50.000  |        | 45 - 119 |        | 83%      |       |       |           |
| Target Compounds            |                           | QIon    | R.T.   | Exp RT   | Rel RT | Response | Conc  | Units | QValue    |
| 61)                         | Diethylphthalate          | 149     | 10.014 | 10.025   | 1.059  | 12904    | 0.67  | ng/uL | 99        |
| 79)                         | Di-n-butylphthalate       | 149     | 12.052 | 12.057   | 1.065  | 9058     | 0.33  | ng/uL | 94        |
| 85)                         | bis(2-Ethylhexyl)phtha... | 149     | 14.775 | 14.775   | 1.004  | 7160     | 0.61  | ng/uL | 96        |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

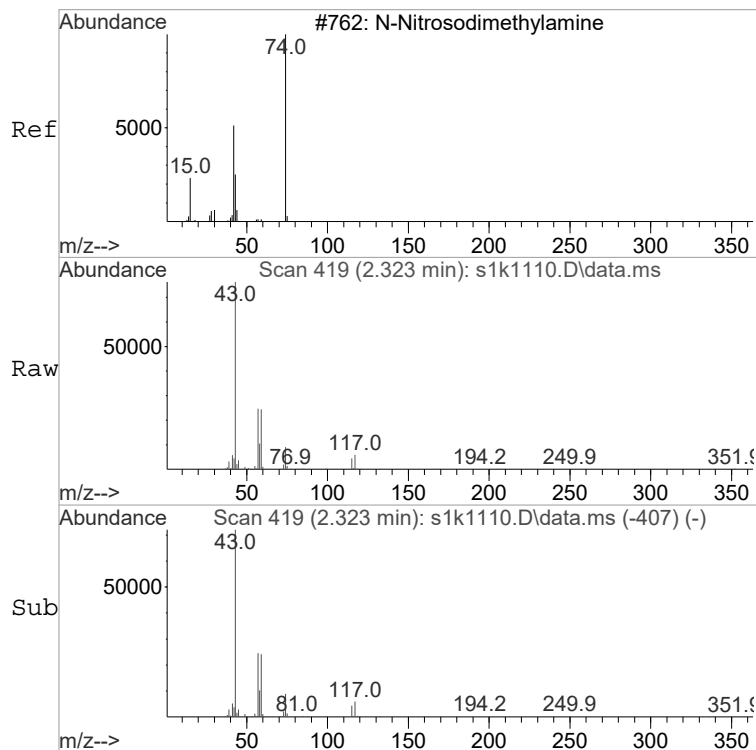
Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1110.D  
Acq On : 11 Nov 2016 15:21  
Operator : JMB3  
InstName : MSD1  
Sample : |409254032|1614270|1|SVM|1|HAAL  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 11 16:14:14 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

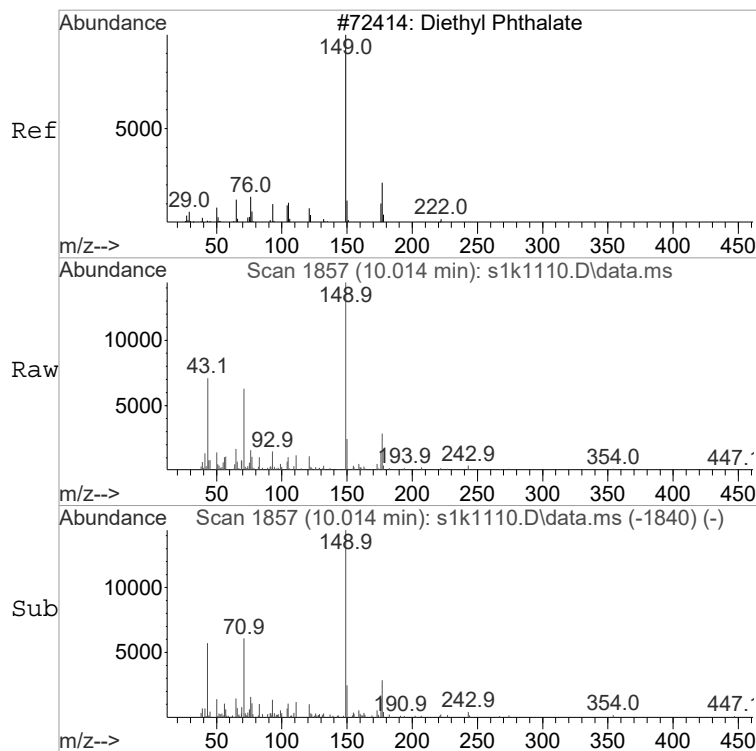
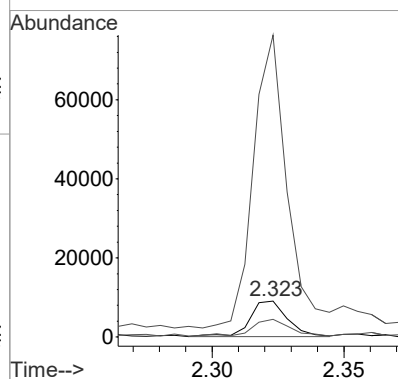






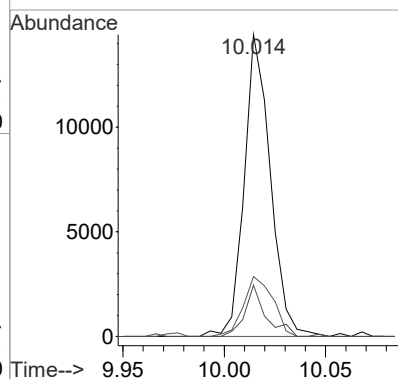
#3 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 1.62 ng/uL  
RT: 2.323 min Scan# 419  
Delta R.T. -0.069 min  
Lab File: s1k1110.D  
Acq: 11 Nov 2016 15:21

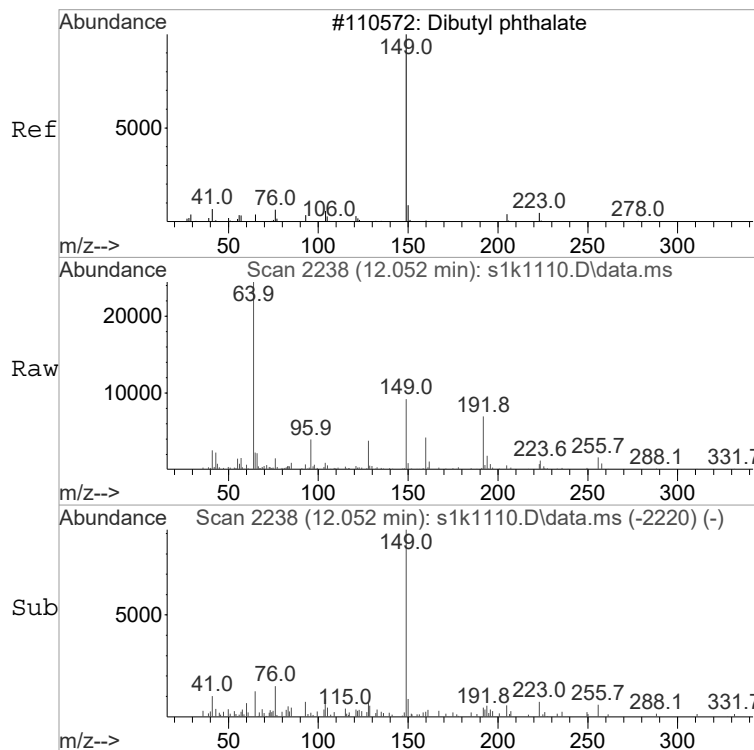
| Tgt Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 74      | 100   |       |        |
| 42      | 47.5  | 94.0  | 154.0# |
| 43      | 748.4 | 22.3  | 82.3#  |



#61  
Diethylphthalate  
Concen: 0.67 ng/uL  
RT: 10.014 min Scan# 1857  
Delta R.T. -0.011 min  
Lab File: s1k1110.D  
Acq: 11 Nov 2016 15:21

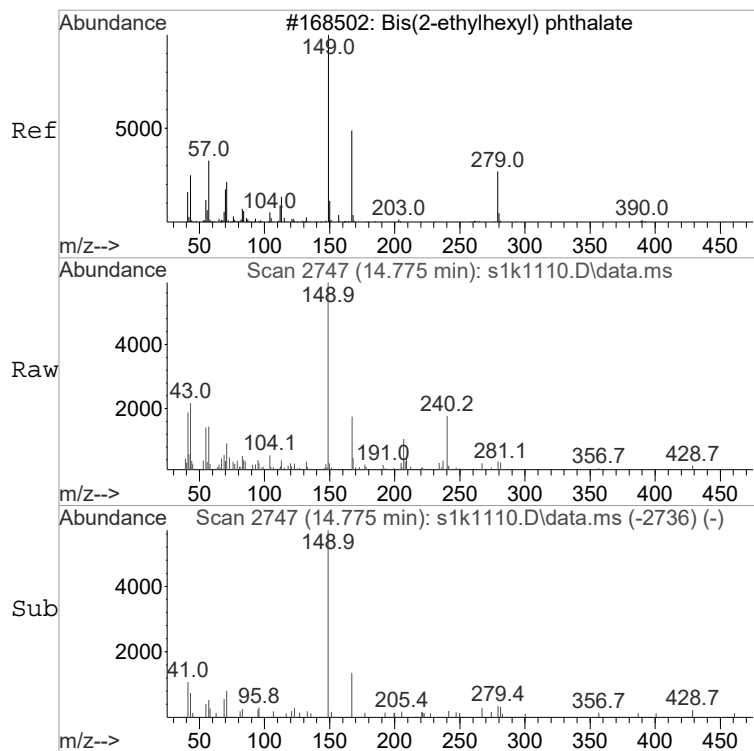
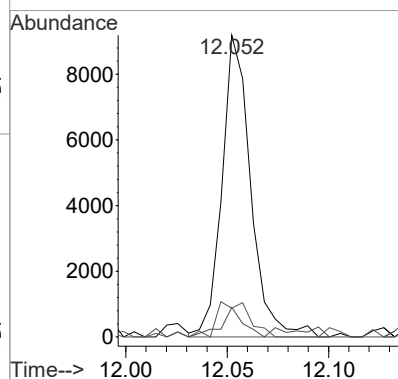
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 149     | 100   |       |       |
| 177     | 22.3  | 0.0   | 52.0  |
| 150     | 13.7  | 0.0   | 43.4  |





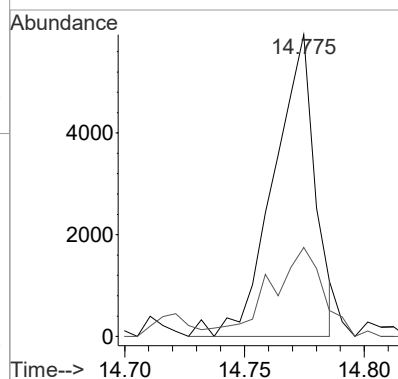
#79  
Di-n-butylphthalate  
Concen: 0.33 ng/uL  
RT: 12.052 min Scan# 2238  
Delta R.T. -0.005 min  
Lab File: s1k1110.D  
Acq: 11 Nov 2016 15:21

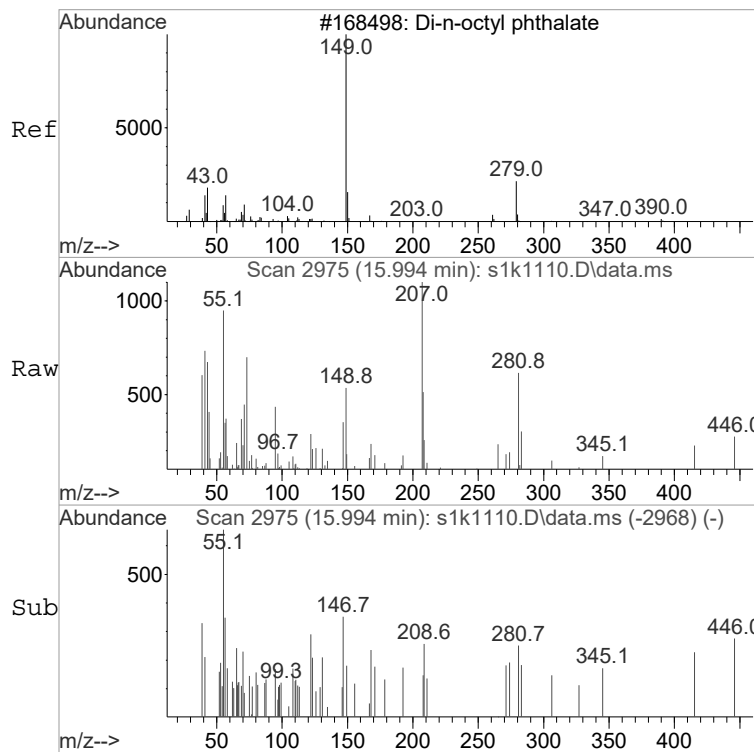
| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 149     | 100   | 9058 |       |       |
| 150     | 13.3  | 0.0  | 40.5  |       |
| 104     | 7.5   | 0.0  | 36.6  |       |



#85  
bis(2-Ethylhexyl)phthalate  
Concen: 0.61 ng/uL  
RT: 14.775 min Scan# 2747  
Delta R.T. 0.000 min  
Lab File: s1k1110.D  
Acq: 11 Nov 2016 15:21

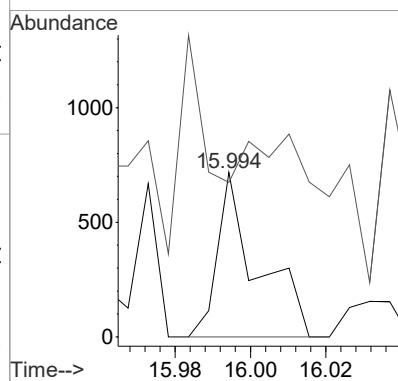
| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 149     | 100   | 7160 |       |       |
| 167     | 29.7  | 1.8  | 61.8  |       |





#90 BEFORE analyst DELETION  
Di-n-octylphthalate  
Concen: 0.50 ng/uL  
RT: 15.994 min Scan# 2975  
Delta R.T. -0.043 min  
Lab File: s1k1110.D  
Acq: 11 Nov 2016 15:21

Tgt Ion:149 Resp: 529  
Ion Ratio Lower Upper  
149 100  
43 190.4 0.0 43.5#



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

**SDG Number:** 409254  
**Lab Sample ID:** 409254034

**Date Collected:** 10/26/2016 09:46  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.015 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 20.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** DP020207  
**Batch ID:** 1614270  
**Run Date:** 11/11/2016 15:51  
**Prep Date:** 11/08/2016 12:02  
**Data File:** s111116.B\sk1111.D

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 417    | ug/kg | 125     | 417     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 417    | ug/kg | 125     | 417     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 417    | ug/kg | 125     | 417     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 417    | ug/kg | 125     | 417     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 417    | ug/kg | 125     | 417     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 417    | ug/kg | 125     | 417     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 417    | ug/kg | 125     | 417     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 834    | ug/kg | 125     | 834     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 417    | ug/kg | 125     | 417     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 417    | ug/kg | 125     | 417     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 95-57-8   | 2-Chlorophenol             | U         | 417    | ug/kg | 125     | 417     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 417    | ug/kg | 125     | 417     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 88-75-5   | 2-Nitrophenol              | U         | 417    | ug/kg | 125     | 417     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 417    | ug/kg | 125     | 417     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 417    | ug/kg | 125     | 417     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 417    | ug/kg | 167     | 417     |
| 106-47-8  | 4-Chloroaniline            | U         | 417    | ug/kg | 125     | 417     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 417    | ug/kg | 125     | 417     |
| 100-02-7  | 4-Nitrophenol              | U         | 417    | ug/kg | 125     | 417     |
| 83-32-9   | Acenaphthene               | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 208-96-8  | Acenaphthylene             | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 98-86-2   | Acetophenone               | U         | 417    | ug/kg | 125     | 417     |
| 120-12-7  | Anthracene                 | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 1912-24-9 | Atrazine                   | U         | 417    | ug/kg | 167     | 417     |
| 100-52-7  | Benzaldehyde               | U         | 417    | ug/kg | 125     | 417     |
| 56-55-3   | Benzo(a)anthracene         | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 50-32-8   | Benzo(a)pyrene             | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 85-68-7   | Butylbenzylphthalate       | U         | 417    | ug/kg | 125     | 417     |
| 105-60-2  | Caprolactam                | U         | 417    | ug/kg | 125     | 417     |
| 86-74-8   | Carbazole                  | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 218-01-9  | Chrysene                   | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 84-74-2   | Di-n-butylphthalate        | U         | 417    | ug/kg | 125     | 417     |
| 117-84-0  | Di-n-octylphthalate        | U         | 417    | ug/kg | 125     | 417     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

**SDG Number:** 409254  
**Lab Sample ID:** 409254034

**Date Collected:** 10/26/2016 09:46  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.015 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 20.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 132-64-9   | Dibenzofuran                     | U         | 417    | ug/kg | 125     | 417     |
| 84-66-2    | Diethylphthalate                 | U         | 417    | ug/kg | 125     | 417     |
| 131-11-3   | Dimethylphthalate                | U         | 417    | ug/kg | 125     | 417     |
| 122-39-4   | Diphenylamine                    | U         | 417    | ug/kg | 125     | 417     |
| 206-44-0   | Fluoranthene                     | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 86-73-7    | Fluorene                         | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 118-74-1   | Hexachlorobenzene                | U         | 417    | ug/kg | 125     | 417     |
| 87-68-3    | Hexachlorobutadiene              | U         | 417    | ug/kg | 125     | 417     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 417    | ug/kg | 125     | 417     |
| 67-72-1    | Hexachloroethane                 | U         | 417    | ug/kg | 125     | 417     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 78-59-1    | Isophorone                       | U         | 417    | ug/kg | 125     | 417     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 417    | ug/kg | 125     | 417     |
| 91-20-3    | Naphthalene                      | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 98-95-3    | Nitrobenzene                     | U         | 417    | ug/kg | 125     | 417     |
| 87-86-5    | Pentachlorophenol                | U         | 417    | ug/kg | 125     | 417     |
| 85-01-8    | Phenanthrene                     | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 108-95-2   | Phenol                           | U         | 417    | ug/kg | 125     | 417     |
| 129-00-0   | Pyrene                           | U         | 41.7   | ug/kg | 12.5    | 41.7    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 417    | ug/kg | 125     | 417     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 417    | ug/kg | 125     | 417     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 417    | ug/kg | 125     | 417     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 417    | ug/kg | 125     | 417     |
| 65794-96-9 | m,p-Cresols                      | U         | 417    | ug/kg | 125     | 417     |
| 99-09-2    | m-Nitroaniline                   | U         | 417    | ug/kg | 125     | 417     |
| 95-48-7    | o-Cresol                         | U         | 417    | ug/kg | 125     | 417     |
| 88-74-4    | o-Nitroaniline                   | U         | 417    | ug/kg | 138     | 417     |
| 100-01-6   | p-Nitroaniline                   | U         | 417    | ug/kg | 125     | 417     |

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/11/2016

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1111.D  
Acq On : 11 Nov 2016 15:51  
Operator : JMB3  
InstName : MSD1  
Sample : |409254034|1614270|1|SVM|1|HAAL  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 10 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 16:14:45 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

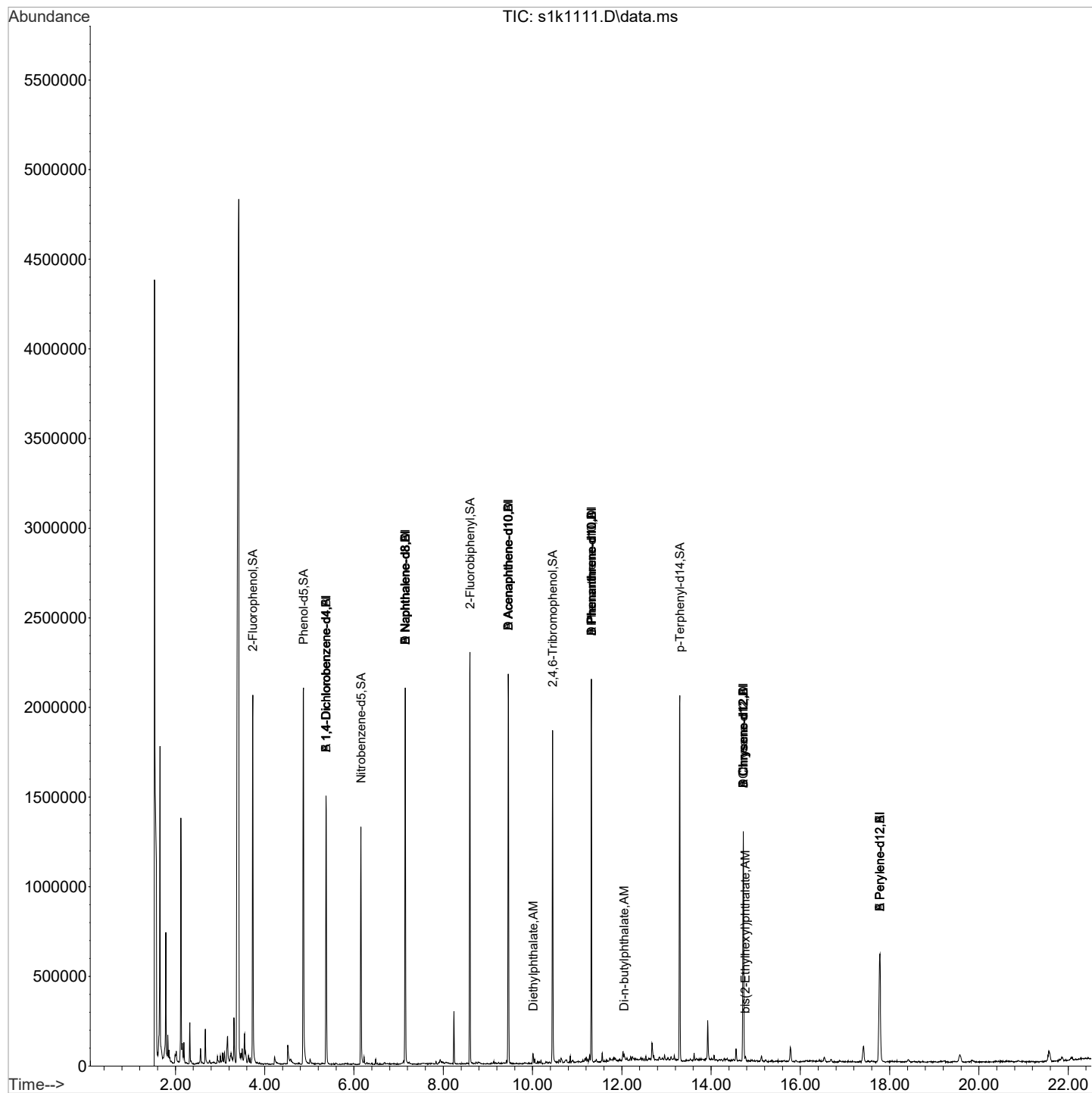
| Compound                    |                           | QIon    | R.T.   | Exp RT   | Rel RT | Response | Conc  | Units |           |
|-----------------------------|---------------------------|---------|--------|----------|--------|----------|-------|-------|-----------|
| Internal Standards          |                           |         |        |          |        |          |       |       | Dev (Min) |
| 1)                          | A 1,4-Dichlorobenzene-d4  | 152     | 5.372  | 5.372    | 1.000  | 244855   | 40.00 | ng/uL | 0.00      |
| 24)                         | A Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000  | 879606   | 40.00 | ng/uL | 0.00      |
| 42)                         | A Acenaphthene-d10        | 164     | 9.453  | 9.458    | 1.000  | 488958   | 40.00 | ng/uL | 0.00      |
| 67)                         | A Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000  | 836453   | 40.00 | ng/uL | 0.00      |
| 81)                         | A Chrysene-d12            | 240     | 14.722 | 14.732   | 1.000  | 649473   | 40.00 | ng/uL | -0.01     |
| 91)                         | A Perylene-d12            | 264     | 17.776 | 17.786   | 1.000  | 571706   | 40.00 | ng/uL | -0.01     |
| 99)                         | B 1,4-Dichlorobenzene-d4  | 152     | 5.372  | 5.372    | 1.000  | 244855   | 40.00 | ng/uL | 0.00      |
| 115)                        | B Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000  | 879606   | 40.00 | ng/uL | 0.00      |
| 123)                        | B Acenaphthene-d10        | 164     | 9.453  | 9.458    | 1.000  | 488958   | 40.00 | ng/uL | 0.00      |
| 132)                        | B Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000  | 836453   | 40.00 | ng/uL | 0.00      |
| 145)                        | B Chrysene-d12            | 240     | 14.722 | 14.732   | 1.000  | 649473   | 40.00 | ng/uL | -0.01     |
| 152)                        | B Perylene-d12            | 264     | 17.776 | 17.786   | 1.000  | 571706   | 40.00 | ng/uL | -0.01     |
| 155)                        | D Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000  | 879606   | 40.00 | ng/uL | 0.00      |
| 157)                        | D Acenaphthene-d10        | 164     | 9.453  | 9.458    | 1.000  | 488958   | 40.00 | ng/uL | 0.00      |
| 160)                        | D Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000  | 836453   | 40.00 | ng/uL | 0.00      |
| 167)                        | D Chrysene-d12            | 240     | 14.722 | 14.732   | 1.000  | 649473   | 40.00 | ng/uL | -0.01     |
| 169)                        | E Naphthalene-d8          | 136     | 7.148  | 7.153    | 1.000  | 879606   | 40.00 | ng/uL | 0.00      |
| 171)                        | E Perylene-d12            | 264     | 17.776 | 17.786   | 1.000  | 571706   | 40.00 | ng/uL | -0.01     |
| 173)                        | F 1,4-Dichlorobenzene-d4  | 152     | 5.372  | 5.372    | 1.000  | 244855   | 40.00 | ng/uL | 0.00      |
| 175)                        | J Phenanthrene-d10        | 188     | 11.320 | 11.319   | 1.000  | 836453   | 40.00 | ng/uL | 0.00      |
| 177)                        | J Chrysene-d12            | 240     | 14.722 | 14.732   | 1.000  | 649473   | 40.00 | ng/uL | -0.01     |
| System Monitoring Compounds |                           |         |        |          |        |          |       |       | Dev (Min) |
| 5)                          | 2-Fluorophenol            | 112     | 3.735  | 3.714    | 0.695  | 484596   | 53.32 | ng/uL | 0.02      |
| 8)                          | Phenol-d5                 | 99      | 4.869  | 4.864    | 0.906  | 712244   | 64.01 | ng/uL | 0.00      |
| 25)                         | Nitrobenzene-d5           | 82      | 6.153  | 6.158    | 0.861  | 424567   | 41.23 | ng/uL | 0.00      |
| 47)                         | 2-Fluorobiphenyl          | 172     | 8.597  | 8.597    | 0.909  | 714465   | 41.46 | ng/uL | 0.00      |
| 66)                         | 2,4,6-Tribromophenol      | 330     | 10.448 | 10.453   | 1.105  | 205214   | 64.35 | ng/uL | 0.00      |
| 83)                         | p-Terphenyl-d14           | 244     | 13.299 | 13.298   | 0.903  | 697063   | 40.20 | ng/uL | 0.00      |
| Compound                    |                           | Amount  |        | Range    |        | Recovery |       |       |           |
| 5)                          | 2-Fluorophenol            | 100.000 |        | 36 - 104 |        | 53%      |       |       |           |
| 8)                          | Phenol-d5                 | 100.000 |        | 39 - 106 |        | 64%      |       |       |           |
| 25)                         | Nitrobenzene-d5           | 50.000  |        | 34 - 109 |        | 82%      |       |       |           |
| 47)                         | 2-Fluorobiphenyl          | 50.000  |        | 35 - 107 |        | 83%      |       |       |           |
| 66)                         | 2,4,6-Tribromophenol      | 100.000 |        | 39 - 115 |        | 64%      |       |       |           |
| 83)                         | p-Terphenyl-d14           | 50.000  |        | 45 - 119 |        | 80%      |       |       |           |
| Target Compounds            |                           | QIon    | R.T.   | Exp RT   | Rel RT | Response | Conc  | Units | QValue    |
| 61)                         | Diethylphthalate          | 149     | 10.015 | 10.025   | 1.059  | 13978    | 0.66  | ng/uL | 97        |
| 79)                         | Di-n-butylphthalate       | 149     | 12.053 | 12.057   | 1.065  | 10806    | 0.35  | ng/uL | 98        |
| 85)                         | bis(2-Ethylhexyl)phtha... | 149     | 14.764 | 14.775   | 1.003  | 6494     | 0.46  | ng/uL | 100       |

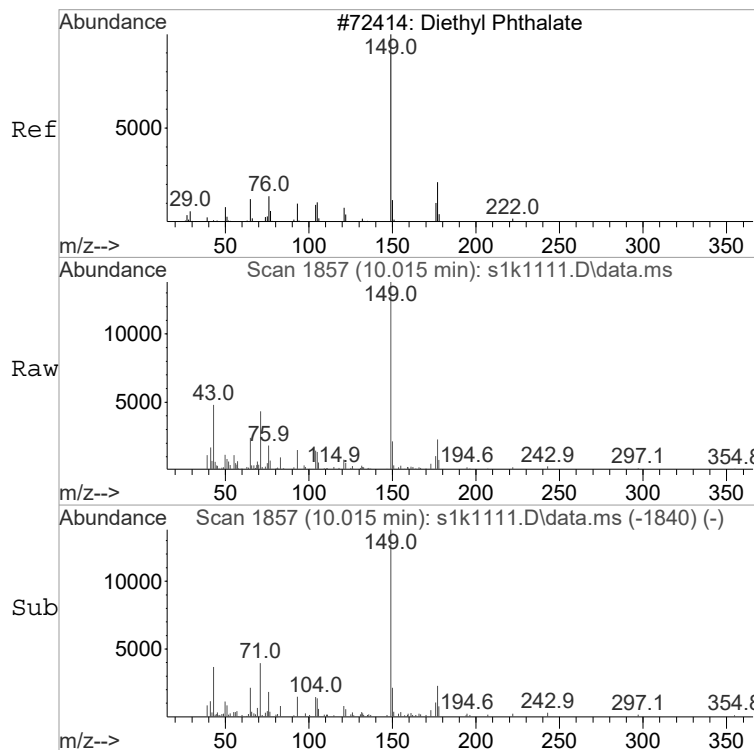
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1111.D  
Acq On : 11 Nov 2016 15:51  
Operator : JMB3  
InstName : MSD1  
Sample : |409254034|1614270|1|SVM|1|HAAL  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 10 Sample Multiplier: 1

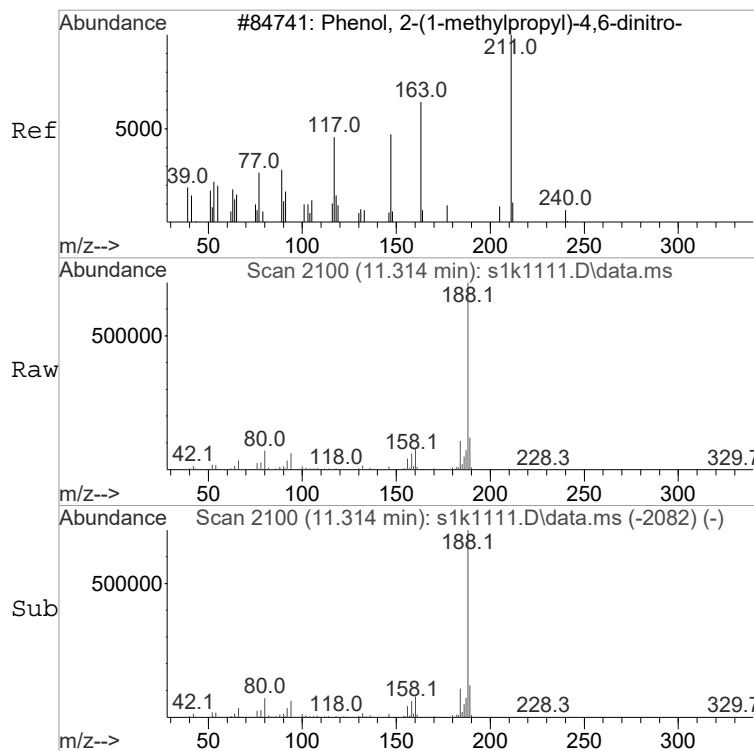
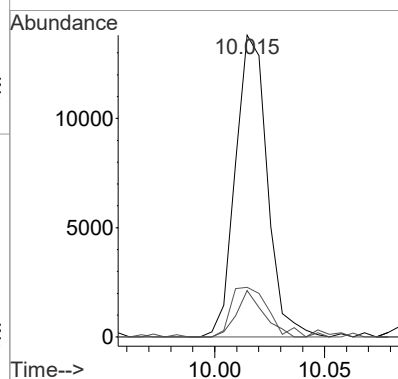
Quant Time: Nov 11 16:14:45 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE





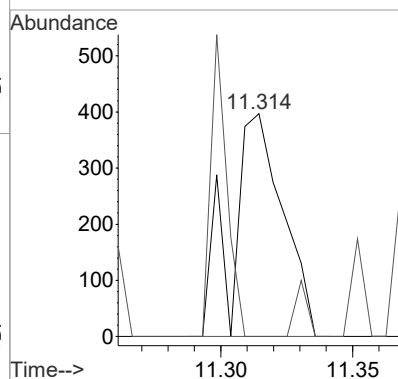
#61  
Diethylphthalate  
Concen: 0.66 ng/uL  
RT: 10.015 min Scan# 1857  
Delta R.T. -0.010 min  
Lab File: s1k1111.D  
Acq: 11 Nov 2016 15:51

| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 149     | 100   | 13978 |       |       |
| 177     | 19.8  | 0.0   | 52.0  |       |
| 150     | 13.1  | 0.0   | 43.4  |       |

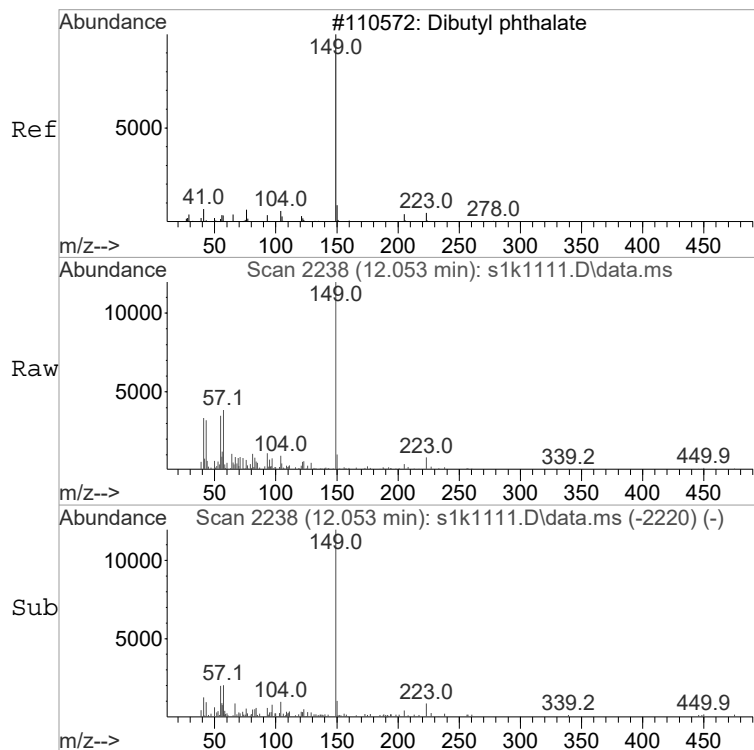


#75 BEFORE analyst DELETION  
Dinoseb  
Concen: 5.20 ng/uL  
RT: 11.314 min Scan# 2100  
Delta R.T. -0.005 min  
Lab File: s1k1111.D  
Acq: 11 Nov 2016 15:51

| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 211     | 100   | 535  |       |       |
| 163     | 0.0   | 8.4  | 68.4  | #     |

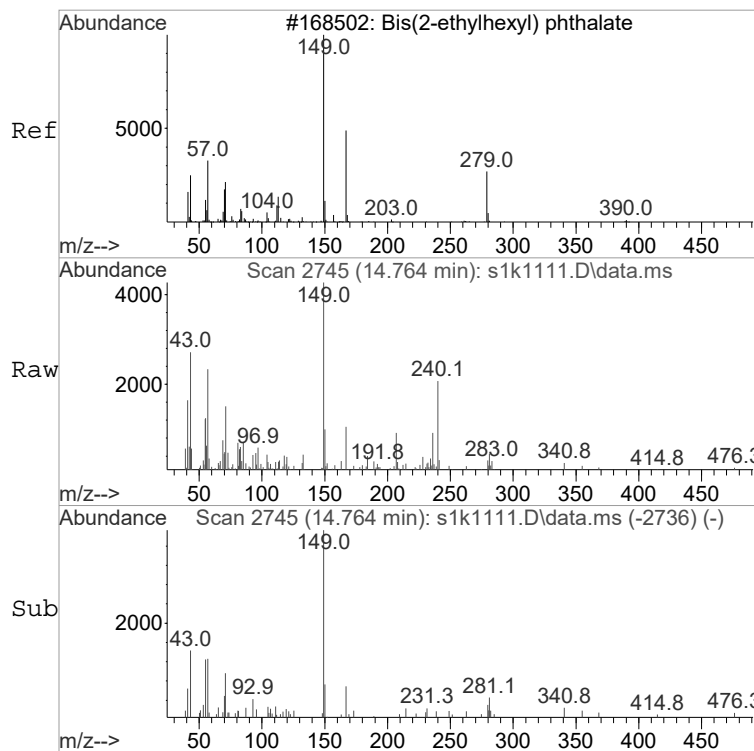
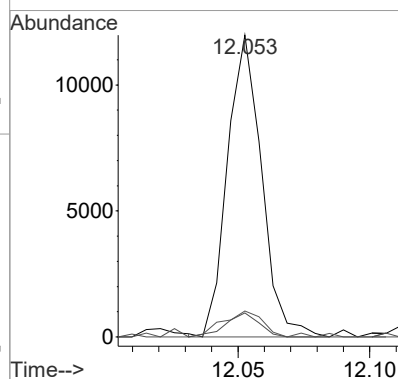






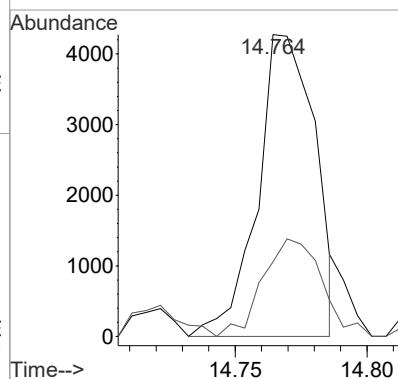
#79  
Di-n-butylphthalate  
Concen: 0.35 ng/uL  
RT: 12.053 min Scan# 2238  
Delta R.T. -0.005 min  
Lab File: s1k1111.D  
Acq: 11 Nov 2016 15:51

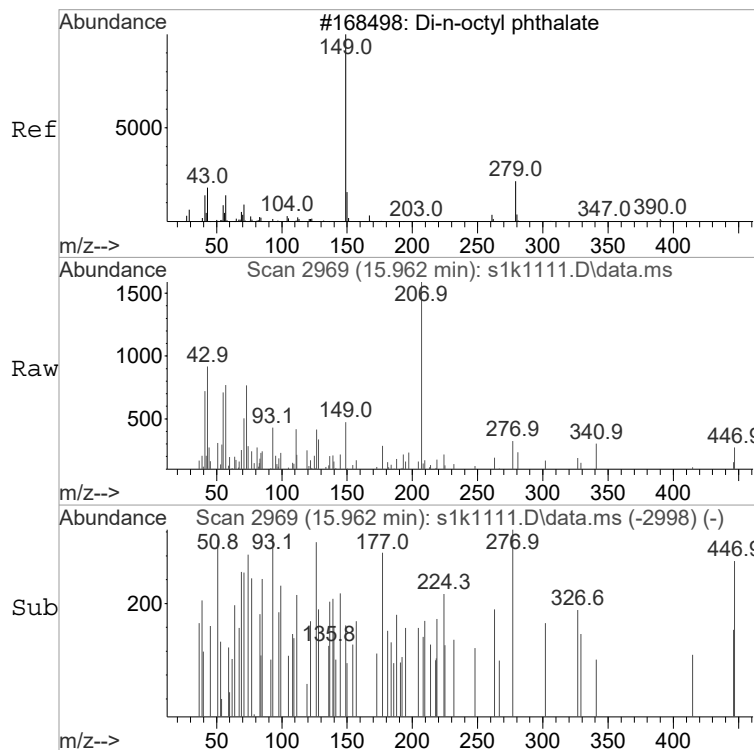
| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 149     | 100   | 10806 |       |       |
| 150     | 10.1  | 0.0   | 40.5  |       |
| 104     | 7.9   | 0.0   | 36.6  |       |



#85  
bis(2-Ethylhexyl)phthalate  
Concen: 0.46 ng/uL  
RT: 14.764 min Scan# 2745  
Delta R.T. -0.010 min  
Lab File: s1k1111.D  
Acq: 11 Nov 2016 15:51

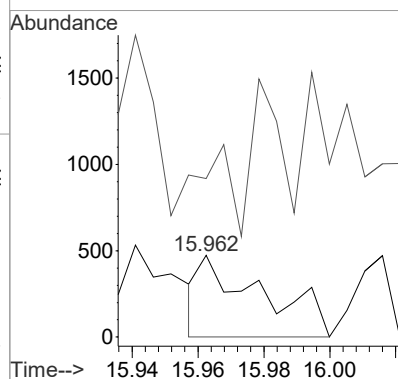
| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 149     | 100   | 6494 |       |       |
| 167     | 31.7  | 1.8  | 61.8  |       |





#90 BEFORE analyst DELETION  
Di-n-octylphthalate  
Concen: 0.50 ng/uL  
RT: 15.962 min Scan# 2969  
Delta R.T. -0.074 min  
Lab File: s1k1111.D  
Acq: 11 Nov 2016 15:51

Tgt Ion:149 Resp: 627  
Ion Ratio Lower Upper  
149 100  
43 80.4 0.0 43.5#



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254036

**Date Collected:** 10/26/2016 09:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.032 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 374    | ug/kg | 112     | 374     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 374    | ug/kg | 112     | 374     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 374    | ug/kg | 112     | 374     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 374    | ug/kg | 112     | 374     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 374    | ug/kg | 112     | 374     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 374    | ug/kg | 112     | 374     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 374    | ug/kg | 112     | 374     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 747    | ug/kg | 112     | 747     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 374    | ug/kg | 112     | 374     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 374    | ug/kg | 112     | 374     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 95-57-8   | 2-Chlorophenol             | U         | 374    | ug/kg | 112     | 374     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 374    | ug/kg | 112     | 374     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 88-75-5   | 2-Nitrophenol              | U         | 374    | ug/kg | 112     | 374     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 374    | ug/kg | 112     | 374     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 374    | ug/kg | 112     | 374     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 374    | ug/kg | 149     | 374     |
| 106-47-8  | 4-Chloroaniline            | U         | 374    | ug/kg | 112     | 374     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 374    | ug/kg | 112     | 374     |
| 100-02-7  | 4-Nitrophenol              | U         | 374    | ug/kg | 112     | 374     |
| 83-32-9   | Acenaphthene               | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 208-96-8  | Acenaphthylene             | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 98-86-2   | Acetophenone               | U         | 374    | ug/kg | 112     | 374     |
| 120-12-7  | Anthracene                 | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 1912-24-9 | Atrazine                   | U         | 374    | ug/kg | 149     | 374     |
| 100-52-7  | Benzaldehyde               | U         | 374    | ug/kg | 112     | 374     |
| 56-55-3   | Benzo(a)anthracene         | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 50-32-8   | Benzo(a)pyrene             | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 85-68-7   | Butylbenzylphthalate       | U         | 374    | ug/kg | 112     | 374     |
| 105-60-2  | Caprolactam                | U         | 374    | ug/kg | 112     | 374     |
| 86-74-8   | Carbazole                  | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 218-01-9  | Chrysene                   | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 84-74-2   | Di-n-butylphthalate        | U         | 374    | ug/kg | 112     | 374     |
| 117-84-0  | Di-n-octylphthalate        | U         | 374    | ug/kg | 112     | 374     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

**SDG Number:** 409254  
**Lab Sample ID:** 409254036

**Date Collected:** 10/26/2016 09:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.032 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 132-64-9   | Dibenzofuran                     | U         | 374    | ug/kg | 112     | 374     |
| 84-66-2    | Diethylphthalate                 | U         | 374    | ug/kg | 112     | 374     |
| 131-11-3   | Dimethylphthalate                | U         | 374    | ug/kg | 112     | 374     |
| 122-39-4   | Diphenylamine                    | U         | 374    | ug/kg | 112     | 374     |
| 206-44-0   | Fluoranthene                     | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 86-73-7    | Fluorene                         | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 118-74-1   | Hexachlorobenzene                | U         | 374    | ug/kg | 112     | 374     |
| 87-68-3    | Hexachlorobutadiene              | U         | 374    | ug/kg | 112     | 374     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 374    | ug/kg | 112     | 374     |
| 67-72-1    | Hexachloroethane                 | U         | 374    | ug/kg | 112     | 374     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 78-59-1    | Isophorone                       | U         | 374    | ug/kg | 112     | 374     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 374    | ug/kg | 112     | 374     |
| 91-20-3    | Naphthalene                      | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 98-95-3    | Nitrobenzene                     | U         | 374    | ug/kg | 112     | 374     |
| 87-86-5    | Pentachlorophenol                | U         | 374    | ug/kg | 112     | 374     |
| 85-01-8    | Phenanthrene                     | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 108-95-2   | Phenol                           | U         | 374    | ug/kg | 112     | 374     |
| 129-00-0   | Pyrene                           | U         | 37.4   | ug/kg | 11.2    | 37.4    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 374    | ug/kg | 112     | 374     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 374    | ug/kg | 112     | 374     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 374    | ug/kg | 112     | 374     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 374    | ug/kg | 112     | 374     |
| 65794-96-9 | m,p-Cresols                      | U         | 374    | ug/kg | 112     | 374     |
| 99-09-2    | m-Nitroaniline                   | U         | 374    | ug/kg | 112     | 374     |
| 95-48-7    | o-Cresol                         | U         | 374    | ug/kg | 112     | 374     |
| 88-74-4    | o-Nitroaniline                   | U         | 374    | ug/kg | 123     | 374     |
| 100-01-6   | p-Nitroaniline                   | U         | 374    | ug/kg | 112     | 374     |

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/14/2016

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1112.D  
Acq On : 11 Nov 2016 16:21  
Operator : JMB3  
InstName : MSD1  
Sample : |409254036|1614270|1|SVM|1|HAAL  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 11 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 14 07:38:29 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.377  | 5.372  | 1.000  | 276085   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.148  | 7.153  | 1.000  | 957993   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.453  | 9.458  | 1.000  | 529806   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.320 | 11.319 | 1.000  | 916581   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.721 | 14.732 | 1.000  | 662486   | 40.00 | ng/uL | -0.01     |
| 91) A Perylene-d12            | 264  | 17.775 | 17.786 | 1.000  | 571878   | 40.00 | ng/uL | -0.01     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.377  | 5.372  | 1.000  | 275311   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.148  | 7.153  | 1.000  | 957993   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.453  | 9.458  | 1.000  | 529806   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.320 | 11.319 | 1.000  | 916581   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.721 | 14.732 | 1.000  | 662486   | 40.00 | ng/uL | -0.01     |
| 152) B Perylene-d12           | 264  | 17.775 | 17.786 | 1.000  | 571878   | 40.00 | ng/uL | -0.01     |
| 155) D Naphthalene-d8         | 136  | 7.148  | 7.153  | 1.000  | 957993   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.453  | 9.458  | 1.000  | 529806   | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.320 | 11.319 | 1.000  | 916581   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.721 | 14.732 | 1.000  | 662381   | 40.00 | ng/uL | -0.01     |
| 169) E Naphthalene-d8         | 136  | 7.148  | 7.153  | 1.000  | 957993   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.775 | 17.786 | 1.000  | 571878   | 40.00 | ng/uL | -0.01     |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.377  | 5.372  | 1.000  | 275311   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.320 | 11.319 | 1.000  | 916581   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.721 | 14.732 | 1.000  | 662486   | 40.00 | ng/uL | -0.01     |

|                             |     |        |        |       |        |       |       |      |
|-----------------------------|-----|--------|--------|-------|--------|-------|-------|------|
| System Monitoring Compounds |     |        |        |       |        |       |       |      |
| 5) 2-Fluorophenol           | 112 | 3.735  | 3.714  | 0.695 | 582733 | 56.87 | ng/uL | 0.02 |
| 8) Phenol-d5                | 99  | 4.869  | 4.864  | 0.906 | 823052 | 65.60 | ng/uL | 0.00 |
| 25) Nitrobenzene-d5         | 82  | 6.153  | 6.158  | 0.861 | 488475 | 43.56 | ng/uL | 0.00 |
| 47) 2-Fluorobiphenyl        | 172 | 8.597  | 8.597  | 0.909 | 814172 | 43.60 | ng/uL | 0.00 |
| 66) 2,4,6-Tribromophenol    | 330 | 10.448 | 10.453 | 1.105 | 235329 | 68.10 | ng/uL | 0.00 |
| 83) p-Terphenyl-d14         | 244 | 13.299 | 13.298 | 0.903 | 760296 | 42.98 | ng/uL | 0.00 |

| Compound                 | Amount  | Range    | Recovery |
|--------------------------|---------|----------|----------|
| 5) 2-Fluorophenol        | 100.000 | 36 - 104 | 57%      |
| 8) Phenol-d5             | 100.000 | 39 - 106 | 66%      |
| 25) Nitrobenzene-d5      | 50.000  | 34 - 109 | 87%      |
| 47) 2-Fluorobiphenyl     | 50.000  | 35 - 107 | 87%      |
| 66) 2,4,6-Tribromophenol | 100.000 | 39 - 115 | 68%      |
| 83) p-Terphenyl-d14      | 50.000  | 45 - 119 | 86%      |

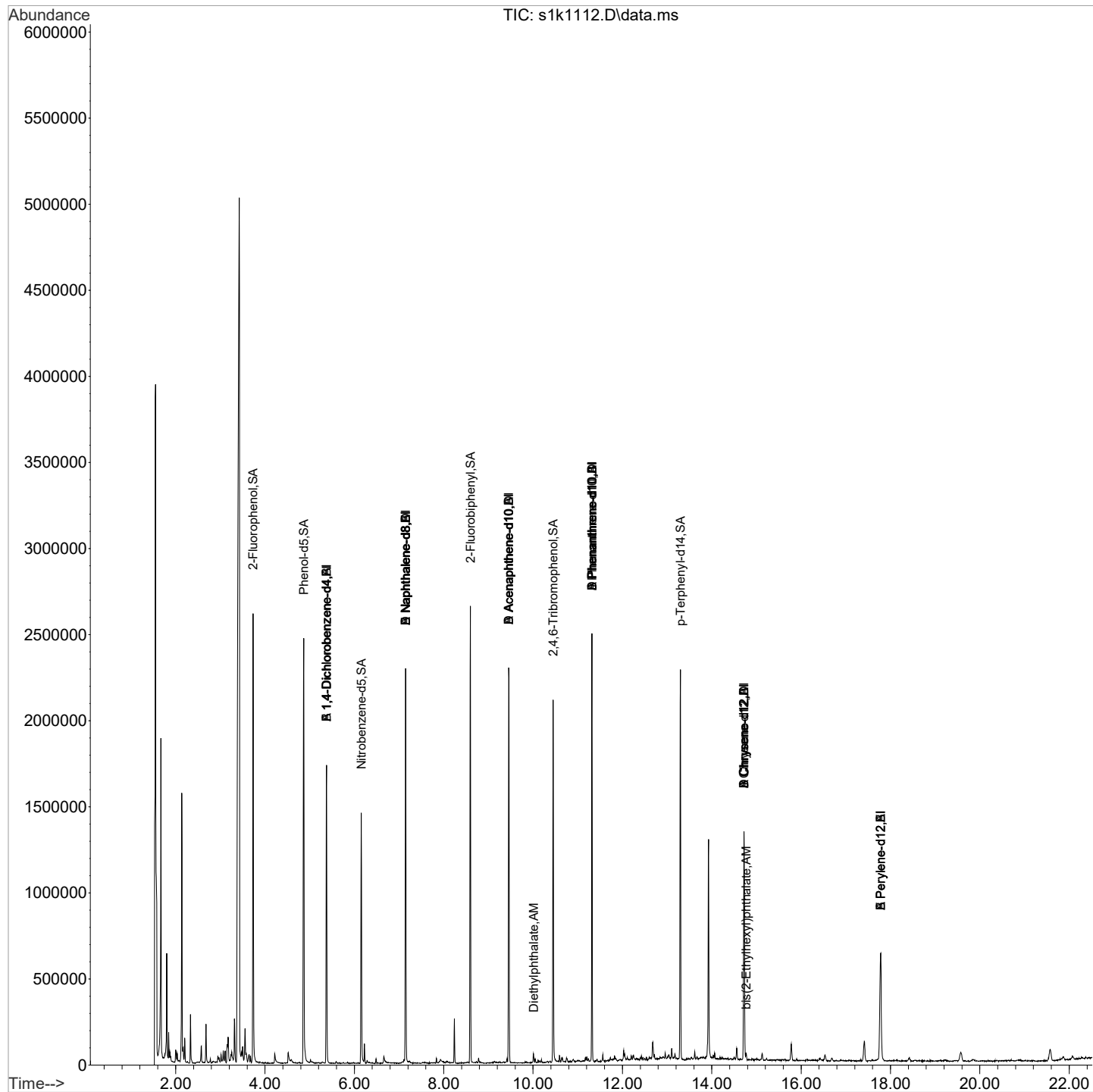
| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 61) Diethylphthalate          | 149  | 10.014 | 10.025 | 1.059  | 8224     | 0.36 | ng/uL | 97     |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.769 | 14.775 | 1.003  | 11617    | 0.81 | ng/uL | 98     |

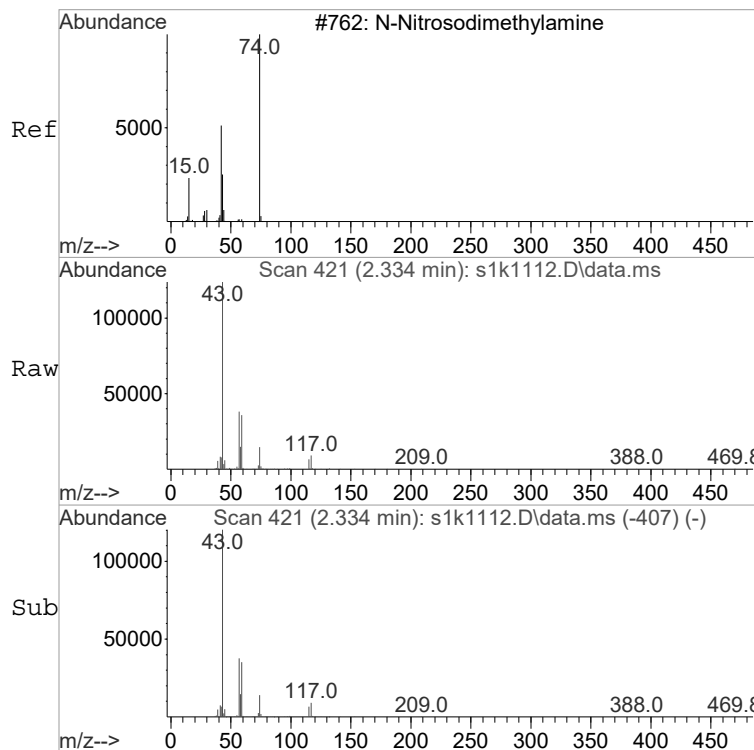
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1112.D  
Acq On : 11 Nov 2016 16:21  
Operator : JMB3  
InstName : MSD1  
Sample : |409254036|1614270|1|SVM|1|HAAL  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 11 Sample Multiplier: 1

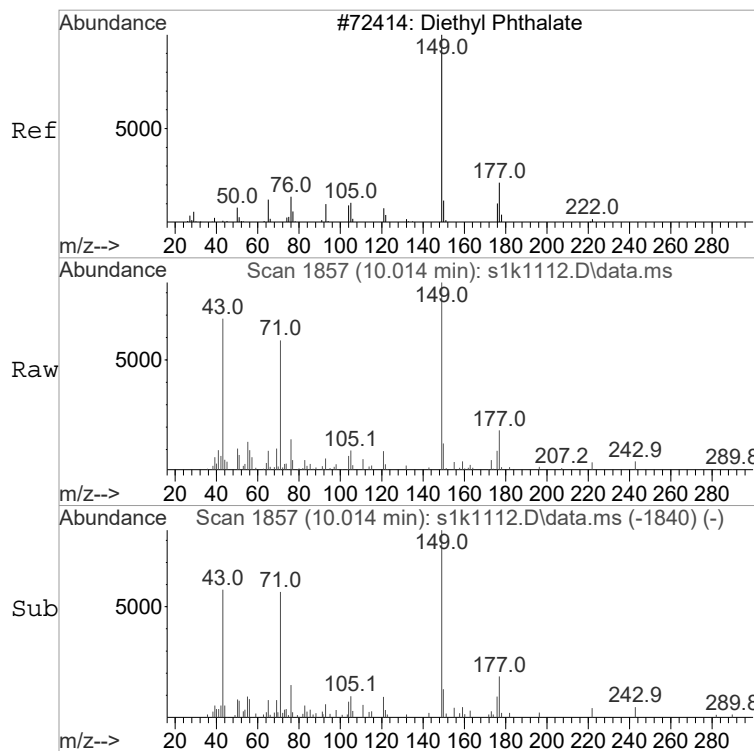
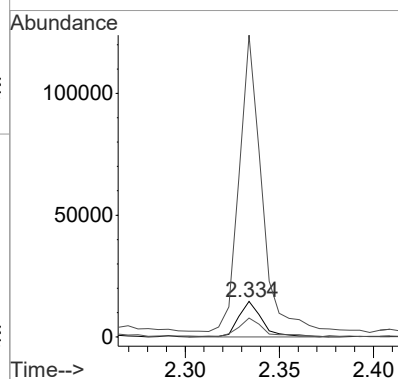
Quant Time: Nov 14 07:38:29 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE





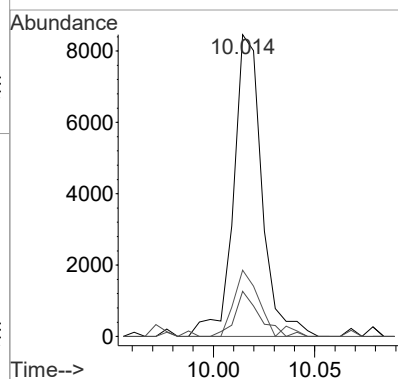
#3 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 1.97 ng/uL  
RT: 2.334 min Scan# 421  
Delta R.T. -0.059 min  
Lab File: s1k1112.D  
Acq: 11 Nov 2016 16:21

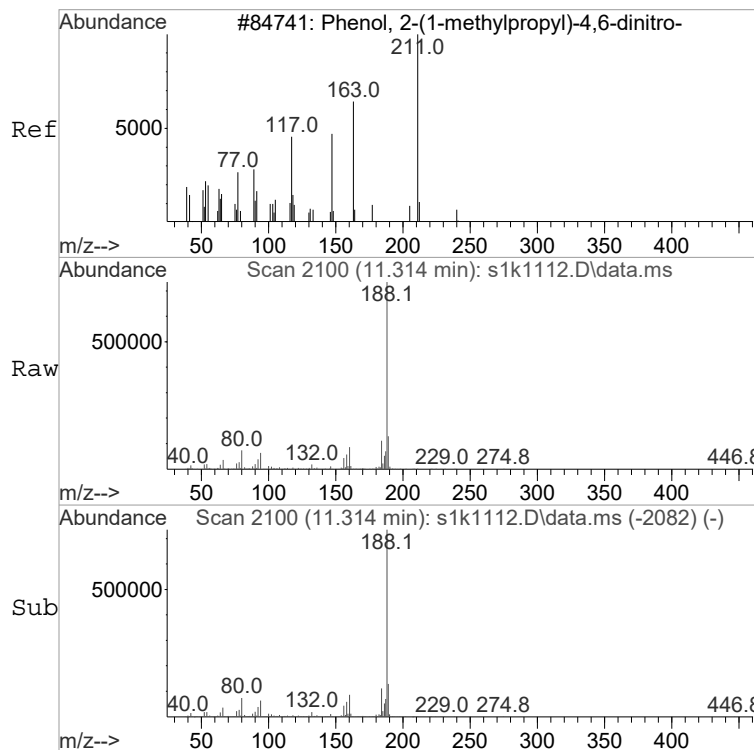
| Tgt Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 74      | 100   |       |        |
| 42      | 58.8  | 94.0  | 154.0# |
| 43      | 810.3 | 22.3  | 82.3#  |



#61  
Diethylphthalate  
Concen: 0.36 ng/uL  
RT: 10.014 min Scan# 1857  
Delta R.T. -0.011 min  
Lab File: s1k1112.D  
Acq: 11 Nov 2016 16:21

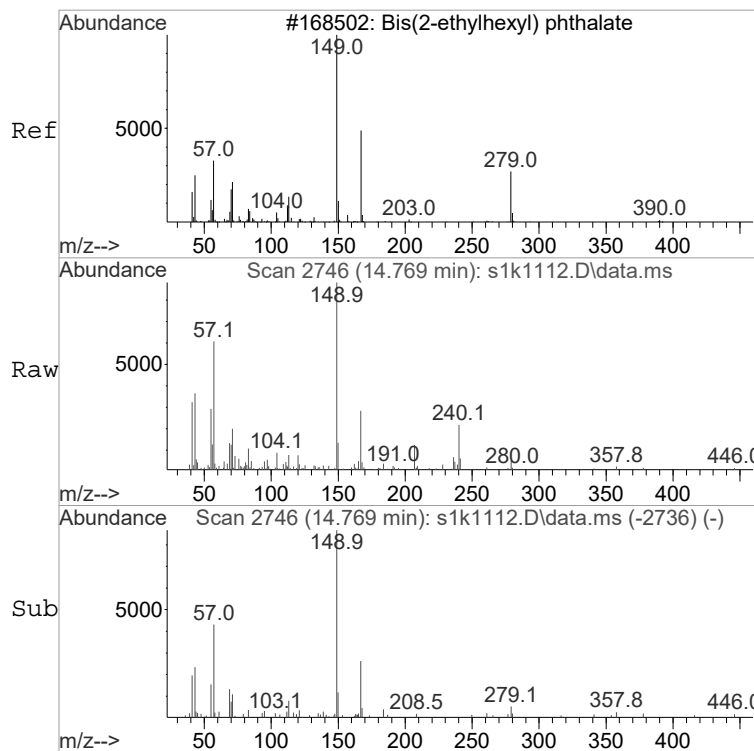
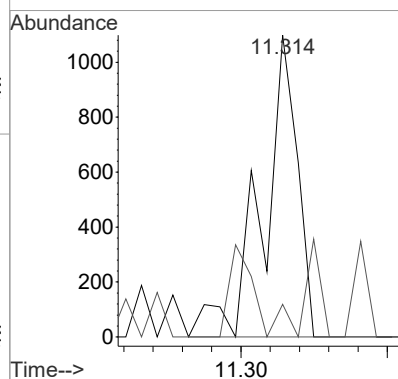
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 149     | 100   |       |       |
| 177     | 20.2  | 0.0   | 52.0  |
| 150     | 13.0  | 0.0   | 43.4  |





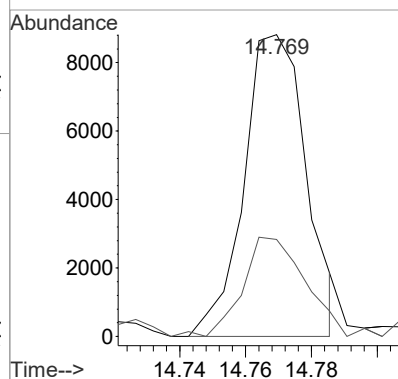
#75 BEFORE analyst DELETION  
Dinoseb  
Concen: 5.26 ng/uL  
RT: 11.314 min Scan# 2100  
Delta R.T. -0.005 min  
Lab File: s1k1112.D  
Acq: 11 Nov 2016 16:21

Tgt Ion:211 Resp: 900  
Ion Ratio Lower Upper  
211 100  
163 0.0 8.4 68.4#

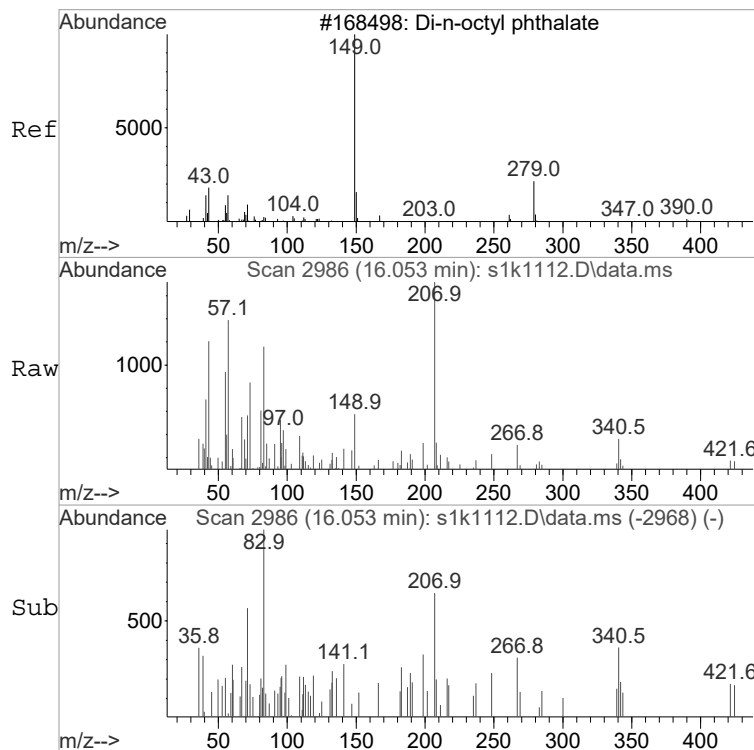


#85  
bis(2-Ethylhexyl)phthalate  
Concen: 0.81 ng/uL  
RT: 14.769 min Scan# 2746  
Delta R.T. -0.005 min  
Lab File: s1k1112.D  
Acq: 11 Nov 2016 16:21

Tgt Ion:149 Resp: 11617  
Ion Ratio Lower Upper  
149 100  
167 32.8 1.8 61.8

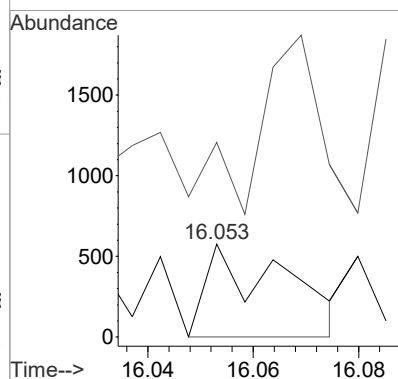






#90 BEFORE analyst DELETION  
Di-n-octylphthalate  
Concen: 0.49 ng/uL  
RT: 16.053 min Scan# 2986  
Delta R.T. 0.016 min  
Lab File: s1k1112.D  
Acq: 11 Nov 2016 16:21

Tgt Ion:149 Resp: 592  
Ion Ratio Lower Upper  
149 100  
43 148.8 0.0 43.5#



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254038

**Date Collected:** 10/26/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.041 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** DP020114  
**Batch ID:** 1614270  
**Run Date:** 11/11/2016 16:51  
**Prep Date:** 11/08/2016 12:02  
**Data File:** s111116.B\slk1113.D

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 340    | ug/kg | 102     | 340     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 340    | ug/kg | 102     | 340     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 340    | ug/kg | 102     | 340     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 340    | ug/kg | 102     | 340     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 340    | ug/kg | 102     | 340     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 340    | ug/kg | 102     | 340     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 340    | ug/kg | 102     | 340     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 679    | ug/kg | 102     | 679     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 340    | ug/kg | 102     | 340     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 340    | ug/kg | 102     | 340     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 95-57-8   | 2-Chlorophenol             | U         | 340    | ug/kg | 102     | 340     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 340    | ug/kg | 102     | 340     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 88-75-5   | 2-Nitrophenol              | U         | 340    | ug/kg | 102     | 340     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 340    | ug/kg | 102     | 340     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 340    | ug/kg | 102     | 340     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 340    | ug/kg | 136     | 340     |
| 106-47-8  | 4-Chloroaniline            | U         | 340    | ug/kg | 102     | 340     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 340    | ug/kg | 102     | 340     |
| 100-02-7  | 4-Nitrophenol              | U         | 340    | ug/kg | 102     | 340     |
| 83-32-9   | Acenaphthene               | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 208-96-8  | Acenaphthylene             | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 98-86-2   | Acetophenone               | U         | 340    | ug/kg | 102     | 340     |
| 120-12-7  | Anthracene                 | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 1912-24-9 | Atrazine                   | U         | 340    | ug/kg | 136     | 340     |
| 100-52-7  | Benzaldehyde               | U         | 340    | ug/kg | 102     | 340     |
| 56-55-3   | Benzo(a)anthracene         | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 50-32-8   | Benzo(a)pyrene             | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 85-68-7   | Butylbenzylphthalate       | U         | 340    | ug/kg | 102     | 340     |
| 105-60-2  | Caprolactam                | U         | 340    | ug/kg | 102     | 340     |
| 86-74-8   | Carbazole                  | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 218-01-9  | Chrysene                   | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 84-74-2   | Di-n-butylphthalate        | U         | 340    | ug/kg | 102     | 340     |
| 117-84-0  | Di-n-octylphthalate        | U         | 340    | ug/kg | 102     | 340     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

**SDG Number:** 409254  
**Lab Sample ID:** 409254038

**Date Collected:** 10/26/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D  
**Inst:** MSD1.I  
**Analyst:** JMB3  
**Aliquot:** 30.041 g  
**Column:** 25x.20x.33

**Matrix:** SOIL  
**%Moisture:** 2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

**Client ID:** DP020114  
**Batch ID:** 1614270  
**Run Date:** 11/11/2016 16:51  
**Prep Date:** 11/08/2016 12:02  
**Data File:** s111116.B\1k1113.D

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 132-64-9   | Dibenzofuran                     | U         | 340    | ug/kg | 102     | 340     |
| 84-66-2    | Diethylphthalate                 | U         | 340    | ug/kg | 102     | 340     |
| 131-11-3   | Dimethylphthalate                | U         | 340    | ug/kg | 102     | 340     |
| 122-39-4   | Diphenylamine                    | U         | 340    | ug/kg | 102     | 340     |
| 206-44-0   | Fluoranthene                     | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 86-73-7    | Fluorene                         | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 118-74-1   | Hexachlorobenzene                | U         | 340    | ug/kg | 102     | 340     |
| 87-68-3    | Hexachlorobutadiene              | U         | 340    | ug/kg | 102     | 340     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 340    | ug/kg | 102     | 340     |
| 67-72-1    | Hexachloroethane                 | U         | 340    | ug/kg | 102     | 340     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 78-59-1    | Isophorone                       | U         | 340    | ug/kg | 102     | 340     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 340    | ug/kg | 102     | 340     |
| 91-20-3    | Naphthalene                      | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 98-95-3    | Nitrobenzene                     | U         | 340    | ug/kg | 102     | 340     |
| 87-86-5    | Pentachlorophenol                | U         | 340    | ug/kg | 102     | 340     |
| 85-01-8    | Phenanthrene                     | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 108-95-2   | Phenol                           | U         | 340    | ug/kg | 102     | 340     |
| 129-00-0   | Pyrene                           | U         | 34.0   | ug/kg | 10.2    | 34.0    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 340    | ug/kg | 102     | 340     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 340    | ug/kg | 102     | 340     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 340    | ug/kg | 102     | 340     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 340    | ug/kg | 102     | 340     |
| 65794-96-9 | m,p-Cresols                      | U         | 340    | ug/kg | 102     | 340     |
| 99-09-2    | m-Nitroaniline                   | U         | 340    | ug/kg | 102     | 340     |
| 95-48-7    | o-Cresol                         | U         | 340    | ug/kg | 102     | 340     |
| 88-74-4    | o-Nitroaniline                   | U         | 340    | ug/kg | 112     | 340     |
| 100-01-6   | p-Nitroaniline                   | U         | 340    | ug/kg | 102     | 340     |

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/14/2016

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1113.D  
Acq On : 11 Nov 2016 16:51  
Operator : JMB3  
InstName : MSD1  
Sample : |409254038|1614270|1|SVM|1|HAAL  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 12 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 14 07:42:50 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.377  | 5.372  | 1.000  | 308067   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.147  | 7.153  | 1.000  | 1066527  | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.458  | 9.458  | 1.000  | 599493   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.319 | 11.319 | 1.000  | 1058081  | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.726 | 14.732 | 1.000  | 886340   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.786 | 17.786 | 1.000  | 740803   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.377  | 5.372  | 1.000  | 307664   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.147  | 7.153  | 1.000  | 1066527  | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.458  | 9.458  | 1.000  | 599493   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.319 | 11.319 | 1.000  | 1058081  | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.726 | 14.732 | 1.000  | 886340   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.786 | 17.786 | 1.000  | 740803   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.147  | 7.153  | 1.000  | 1066527  | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.458  | 9.458  | 1.000  | 599493   | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.319 | 11.319 | 1.000  | 1058081  | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.726 | 14.732 | 1.000  | 886581   | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.147  | 7.153  | 1.000  | 1066527  | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.786 | 17.786 | 1.000  | 740803   | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.377  | 5.372  | 1.000  | 307664   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.319 | 11.319 | 1.000  | 1058081  | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.726 | 14.732 | 1.000  | 886340   | 40.00 | ng/uL | 0.00      |

|                             |     |        |        |       |        |       |       |      |
|-----------------------------|-----|--------|--------|-------|--------|-------|-------|------|
| System Monitoring Compounds |     |        |        |       |        |       |       |      |
| 5) 2-Fluorophenol           | 112 | 3.740  | 3.714  | 0.696 | 599434 | 52.42 | ng/uL | 0.03 |
| 8) Phenol-d5                | 99  | 4.869  | 4.864  | 0.906 | 852224 | 60.87 | ng/uL | 0.00 |
| 25) Nitrobenzene-d5         | 82  | 6.153  | 6.158  | 0.861 | 507434 | 40.64 | ng/uL | 0.00 |
| 47) 2-Fluorobiphenyl        | 172 | 8.597  | 8.597  | 0.909 | 844874 | 39.99 | ng/uL | 0.00 |
| 66) 2,4,6-Tribromophenol    | 330 | 10.448 | 10.453 | 1.105 | 241557 | 61.78 | ng/uL | 0.00 |
| 83) p-Terphenyl-d14         | 244 | 13.298 | 13.298 | 0.903 | 872760 | 36.88 | ng/uL | 0.00 |

| Compound                 | Amount  | Range    | Recovery |
|--------------------------|---------|----------|----------|
| 5) 2-Fluorophenol        | 100.000 | 36 - 104 | 52%      |
| 8) Phenol-d5             | 100.000 | 39 - 106 | 61%      |
| 25) Nitrobenzene-d5      | 50.000  | 34 - 109 | 81%      |
| 47) 2-Fluorobiphenyl     | 50.000  | 35 - 107 | 80%      |
| 66) 2,4,6-Tribromophenol | 100.000 | 39 - 115 | 62%      |
| 83) p-Terphenyl-d14      | 50.000  | 45 - 119 | 74%      |

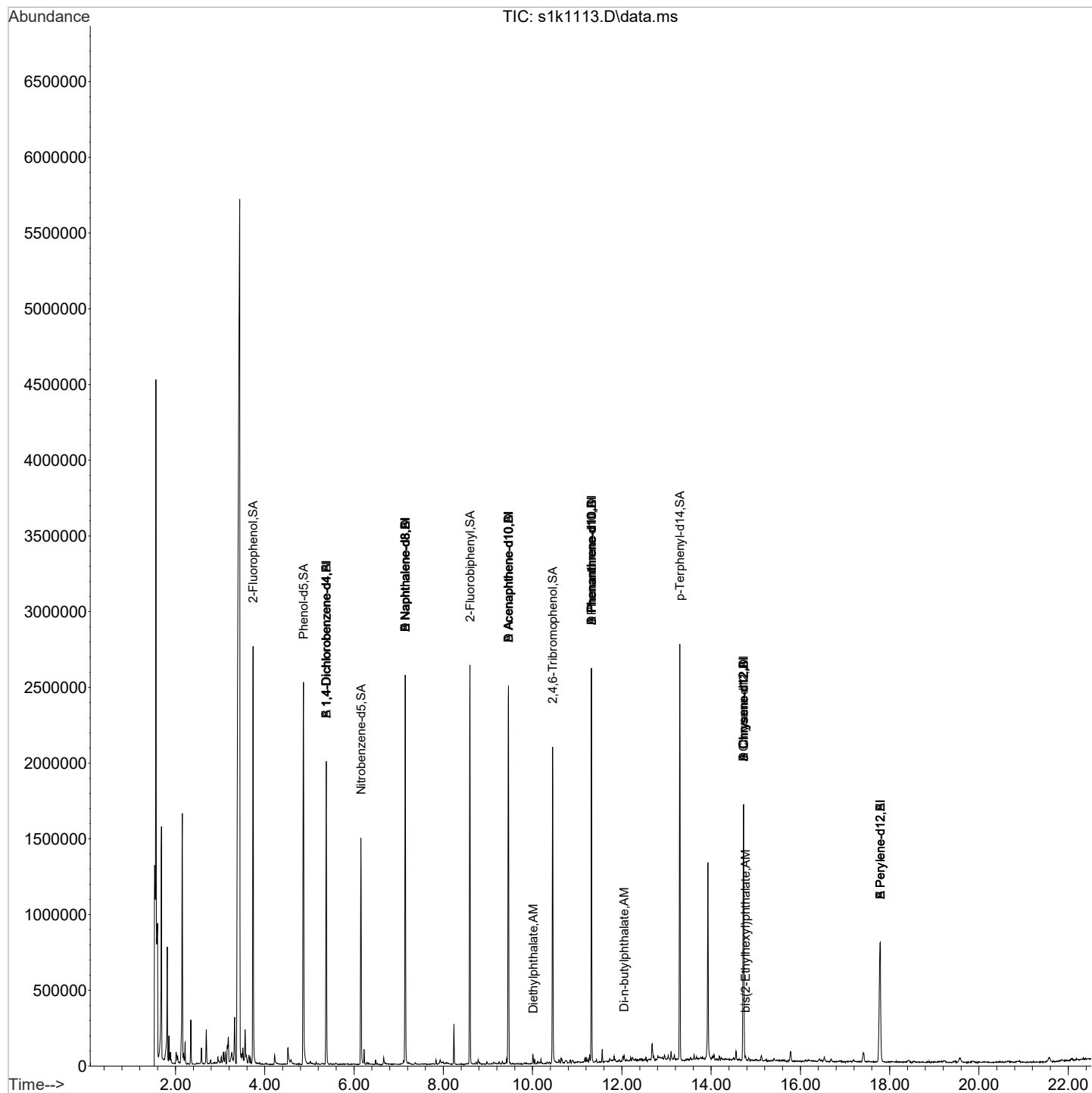
| Target Compounds              |      |        |        |        |          |      |       |        |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
| 61) Diethylphthalate          | 149  | 10.014 | 10.025 | 1.059  | 8651     | 0.33 | ng/uL | 93     |
| 79) Di-n-butylphthalate       | 149  | 12.052 | 12.057 | 1.065  | 12215    | 0.31 | ng/uL | 97     |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.769 | 14.775 | 1.003  | 8124     | 0.42 | ng/uL | 100    |

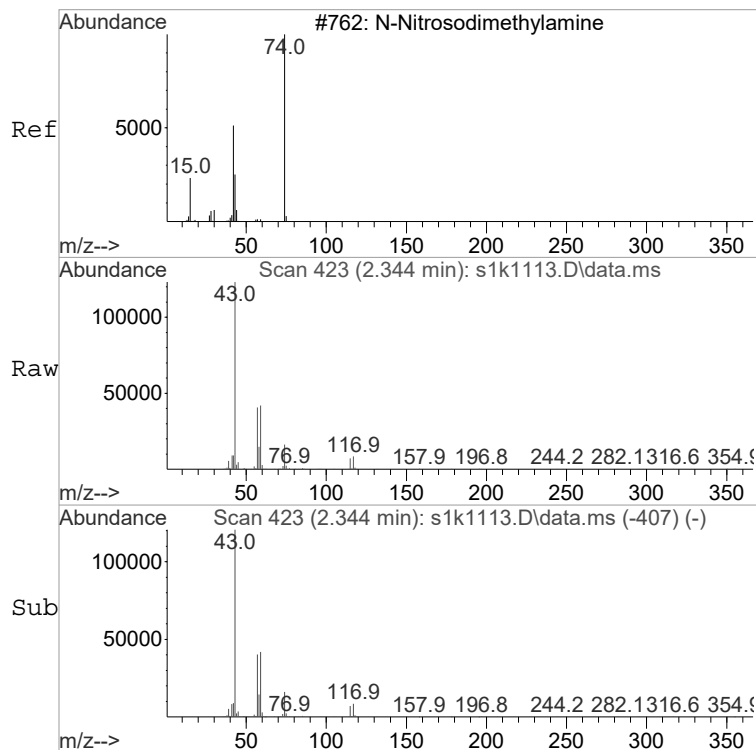
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1113.D  
Acq On : 11 Nov 2016 16:51  
Operator : JMB3  
InstName : MSD1  
Sample : |409254038|1614270|1|SVM|1|HAAL  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 12 Sample Multiplier: 1

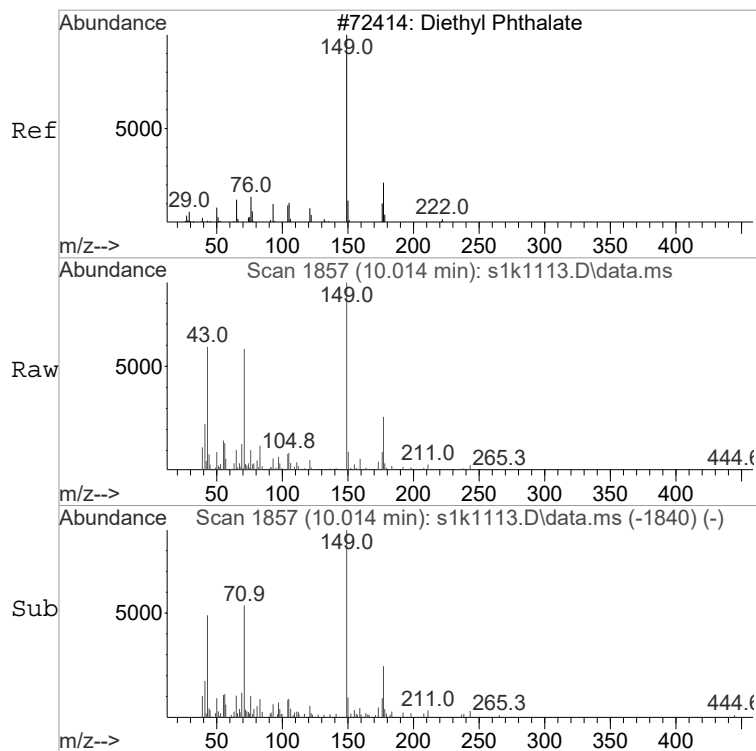
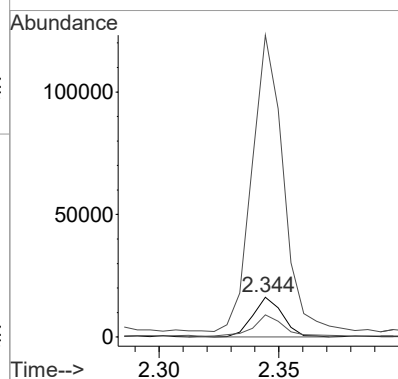
Quant Time: Nov 14 07:42:50 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE





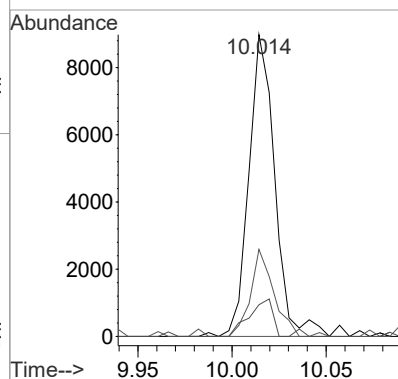
#3 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 1.95 ng/uL  
RT: 2.344 min Scan# 423  
Delta R.T. -0.048 min  
Lab File: s1k1113.D  
Acq: 11 Nov 2016 16:51

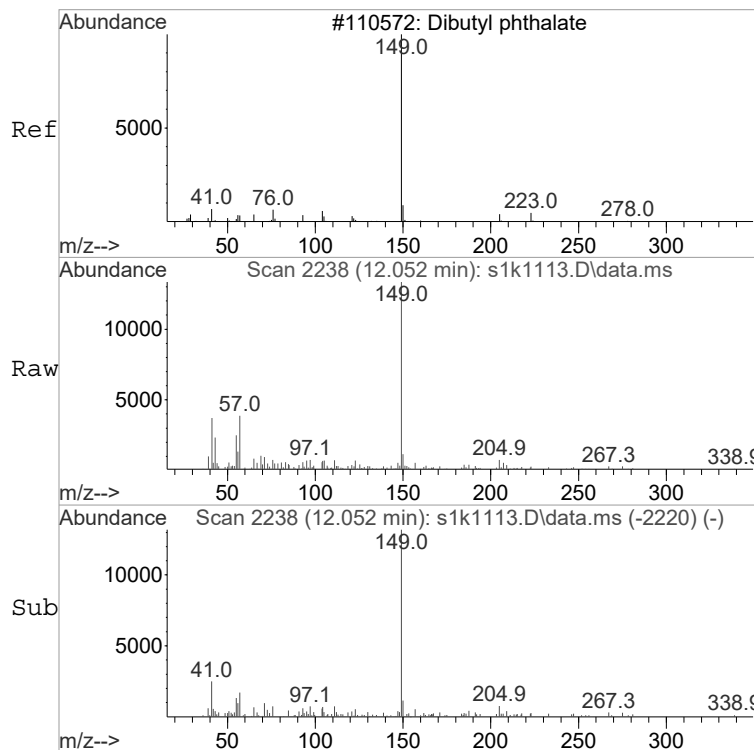
| Tgt Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 74      | 100   |       |        |
| 42      | 54.7  | 94.0  | 154.0# |
| 43      | 784.2 | 22.3  | 82.3#  |



#61  
Diethylphthalate  
Concen: 0.33 ng/uL  
RT: 10.014 min Scan# 1857  
Delta R.T. -0.011 min  
Lab File: s1k1113.D  
Acq: 11 Nov 2016 16:51

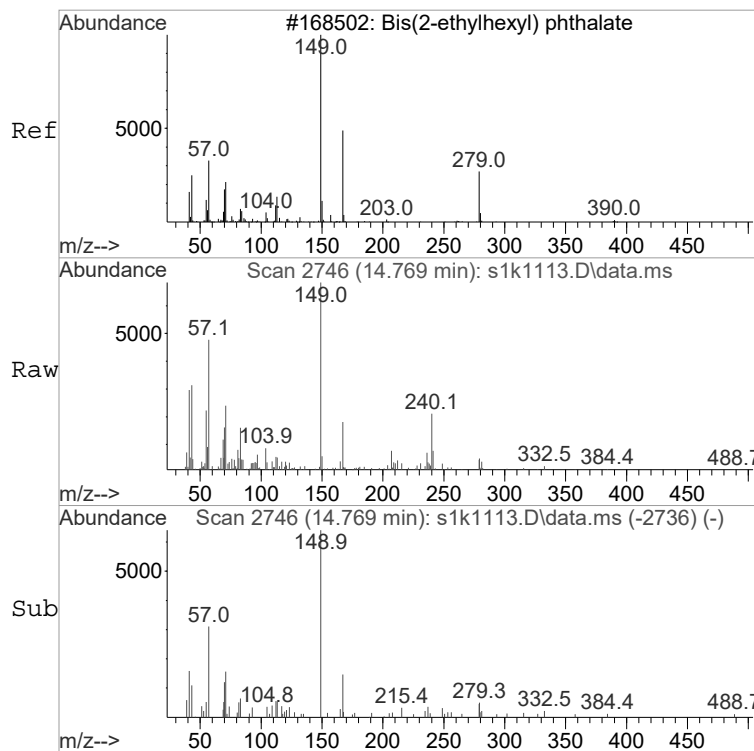
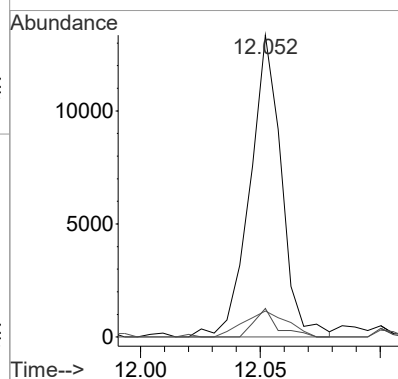
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 149     | 100   |       |       |
| 177     | 25.6  | 0.0   | 52.0  |
| 150     | 11.2  | 0.0   | 43.4  |





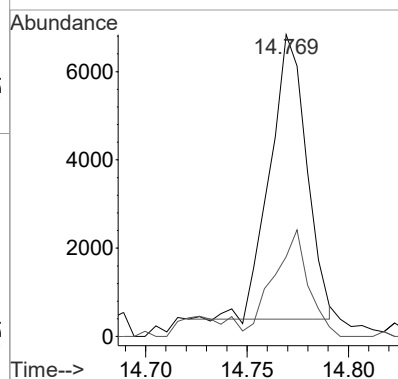
#79  
Di-n-butylphthalate  
Concen: 0.31 ng/uL  
RT: 12.052 min Scan# 2238  
Delta R.T. -0.005 min  
Lab File: s1k1113.D  
Acq: 11 Nov 2016 16:51

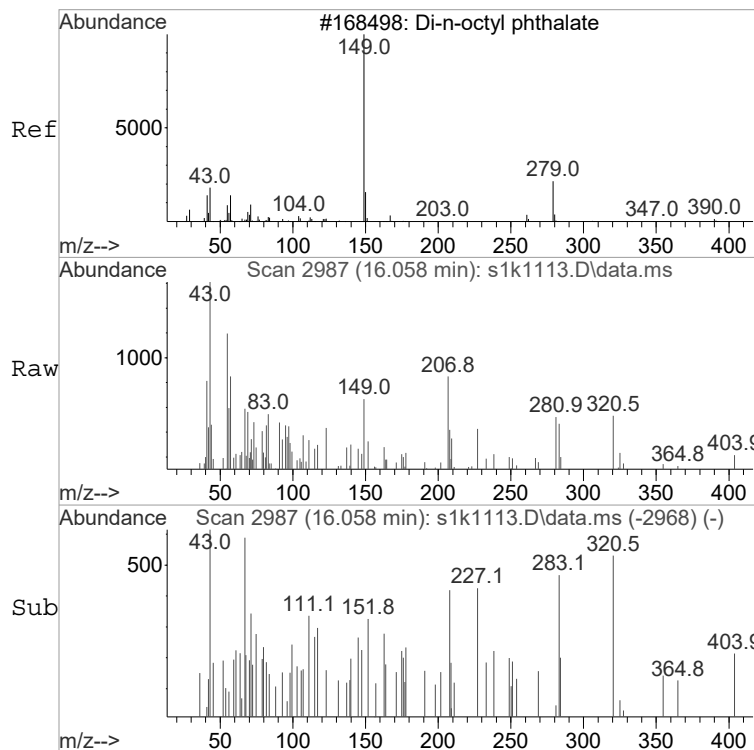
| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 149     | 100   | 12215 |       |       |
| 150     | 12.0  | 0.0   | 40.5  |       |
| 104     | 6.9   | 0.0   | 36.6  |       |



#85  
bis(2-Ethylhexyl)phthalate  
Concen: 0.42 ng/uL  
RT: 14.769 min Scan# 2746  
Delta R.T. -0.005 min  
Lab File: s1k1113.D  
Acq: 11 Nov 2016 16:51

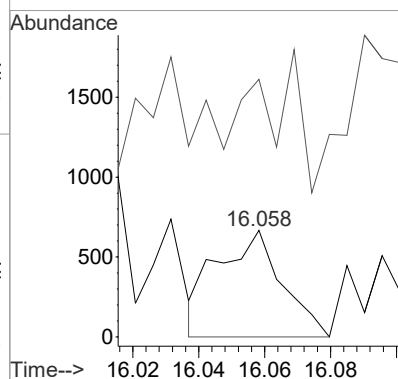
| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 149     | 100   | 8124 |       |       |
| 167     | 31.7  | 1.8  | 61.8  |       |





#90 BEFORE analyst DELETION  
Di-n-octylphthalate  
Concen: 0.50 ng/uL  
RT: 16.058 min Scan# 2987  
Delta R.T. 0.021 min  
Lab File: s1k1113.D  
Acq: 11 Nov 2016 16:51

Tgt Ion:149 Resp: 914  
Ion Ratio Lower Upper  
149 100  
43 86.9 0.0 43.5#





**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254013  
  
**Client ID:** SD140300  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 10:54  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0707.D

**Date Collected:** 10/24/2016 11:43  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.007 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 36.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 83-32-9  | Acenaphthene           | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 208-96-8 | Acenaphthylene         | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 120-12-7 | Anthracene             | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 56-55-3  | Benzo(a)anthracene     | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 50-32-8  | Benzo(a)pyrene         | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 205-99-2 | Benzo(b)fluoranthene   | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 218-01-9 | Chrysene               | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 206-44-0 | Fluoranthene           | J         | 3.15   | ug/kg | 2.63    | 5.26    |
| 86-73-7  | Fluorene               | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 5.26   | ug/kg | 2.63    | 5.26    |
| 91-20-3  | Naphthalene            | U         | 5.26   | ug/kg | 1.58    | 5.26    |
| 85-01-8  | Phenanthrene           | J         | 3.68   | ug/kg | 2.63    | 5.26    |
| 129-00-0 | Pyrene                 | J         | 2.63   | ug/kg | 2.63    | 5.26    |

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0707.D  
Acq On : 07 Nov 2016 10:54  
Operator : JMB3  
InstName : MSD4  
Sample : |409254013|1612777|1|SVM|1|HAAL  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

JMB  
11/07/2016

JCB  
11/08/2016

Quant Time: Nov 07 11:23:14 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

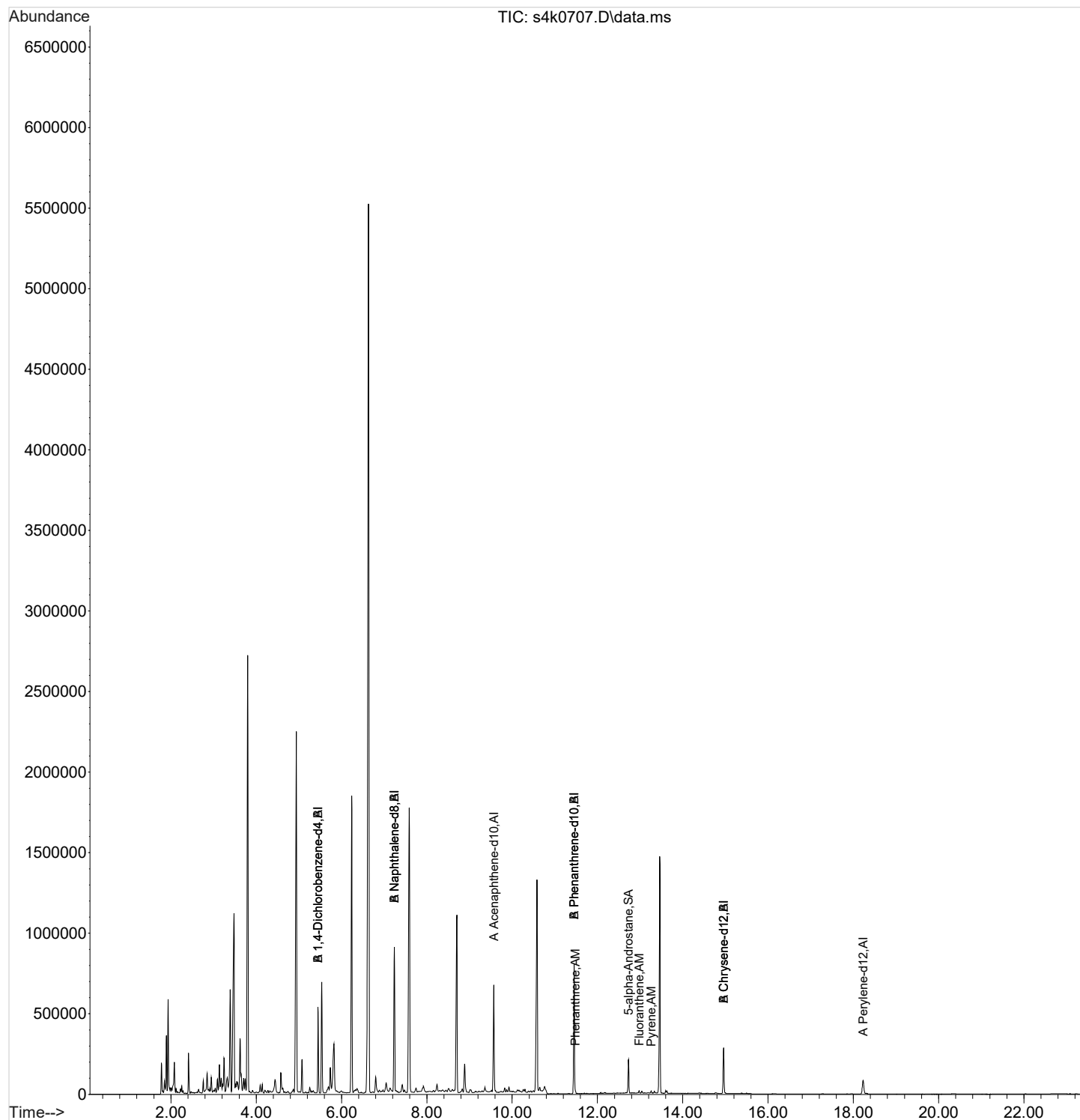
| Compound                     | QIon   | R.T.   | Exp RT   | Rel RT   | Response | Conc | Units |           |
|------------------------------|--------|--------|----------|----------|----------|------|-------|-----------|
| Internal Standards           |        |        |          |          |          |      |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152    | 5.448  | 5.448    | 1.000    | 344923   | 4.00 | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136    | 7.237  | 7.237    | 1.000    | 1150449  | 4.00 | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164    | 9.568  | 9.573    | 1.000    | 442849   | 4.00 | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188    | 11.455 | 11.457   | 1.000    | 776072   | 4.00 | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240    | 14.956 | 14.963   | 1.000    | 326618   | 4.00 | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264    | 18.228 | 18.231   | 1.000    | 184150   | 4.00 | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152    | 5.448  | 5.448    | 1.000    | 344923   | 4.00 | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000    | 1150449  | 4.00 | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188    | 11.455 | 11.457   | 1.000    | 776072   | 4.00 | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240    | 14.956 | 14.963   | 1.000    | 326618   | 4.00 | ng/uL | 0.00      |
| System Monitoring Compounds  |        |        |          |          |          |      |       | Dev (Min) |
| 17) 5-alpha-Androstane       | 245    | 12.729 | 12.731   | 1.111    | 119943   | 4.94 | ng/uL | 0.00      |
| Compound                     | Amount |        | Range    | Recovery |          |      |       |           |
| 17) 5-alpha-Androstane       | 5.000  |        | 30 - 115 | 99%      |          |      |       |           |
| Target Compounds             |        |        |          |          |          |      |       | QValue    |
| 15) Phenanthrene             | 178    | 11.483 | 11.489   | 1.002    | 17740    | 0.07 | ng/uL | 92        |
| 18) Fluoranthene             | 202    | 12.974 | 12.981   | 1.133    | 14082    | 0.06 | ng/uL | 97        |
| 20) Pyrene                   | 202    | 13.260 | 13.262   | 0.887    | 11502    | 0.05 | ng/uL | 98        |

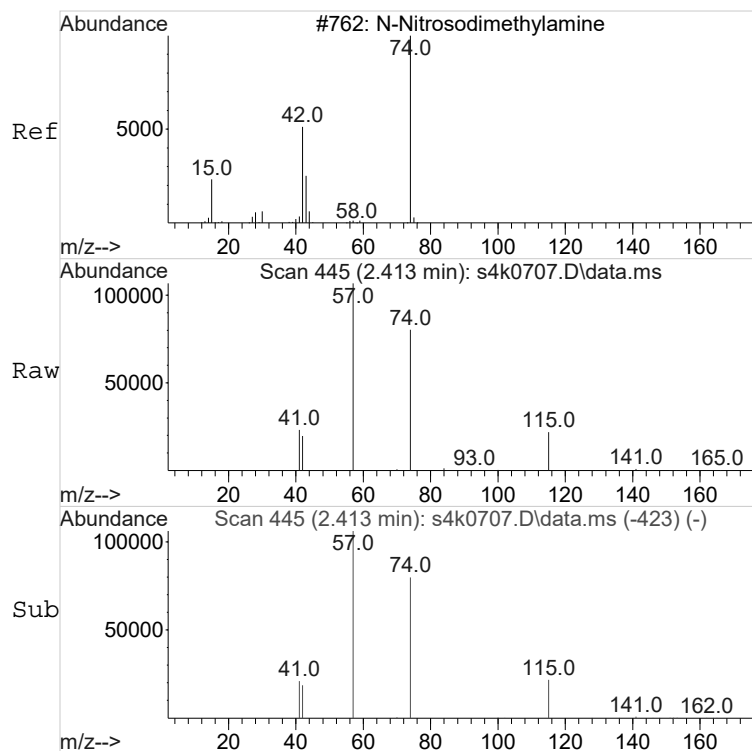
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0707.D  
Acq On : 07 Nov 2016 10:54  
Operator : JMB3  
InstName : MSD4  
Sample : |409254013|1612777|1|SVM|1|HAAL  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

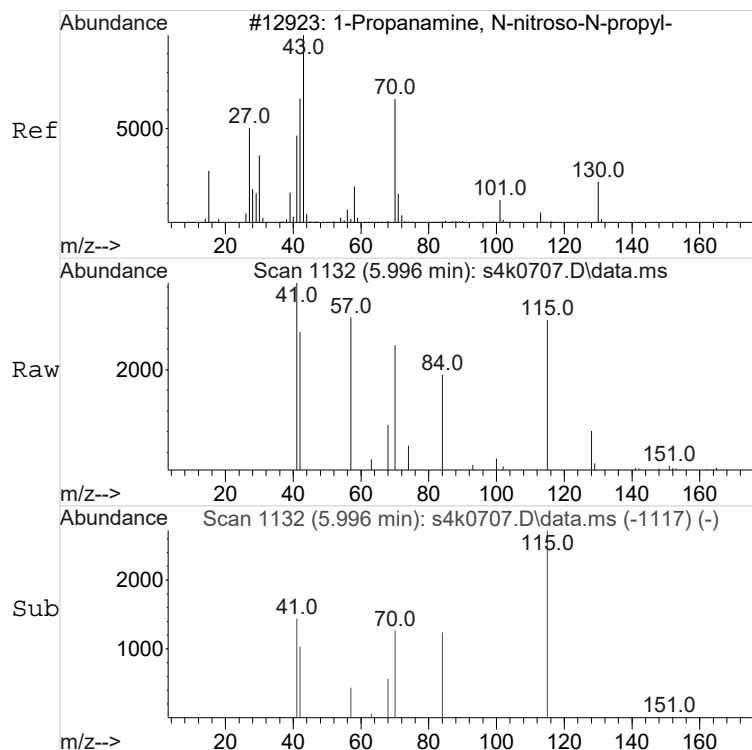
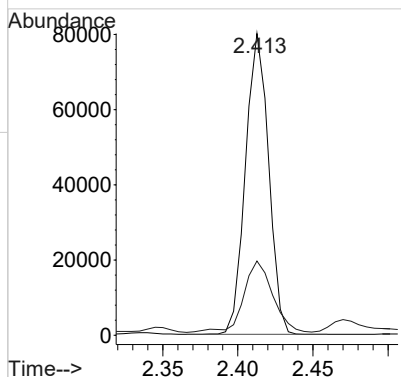
Quant Time: Nov 07 11:23:14 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE





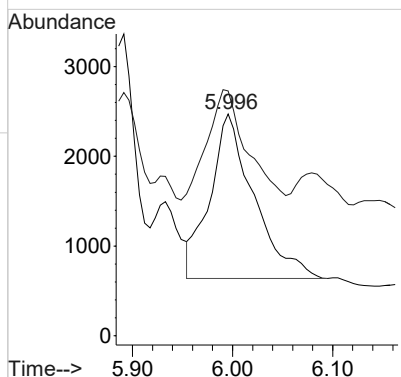
#2 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 1.37 ng/uL  
RT: 2.413 min Scan# 445  
Delta R.T. -0.015 min  
Lab File: s4k0707.D  
Acq: 07 Nov 2016 10:54

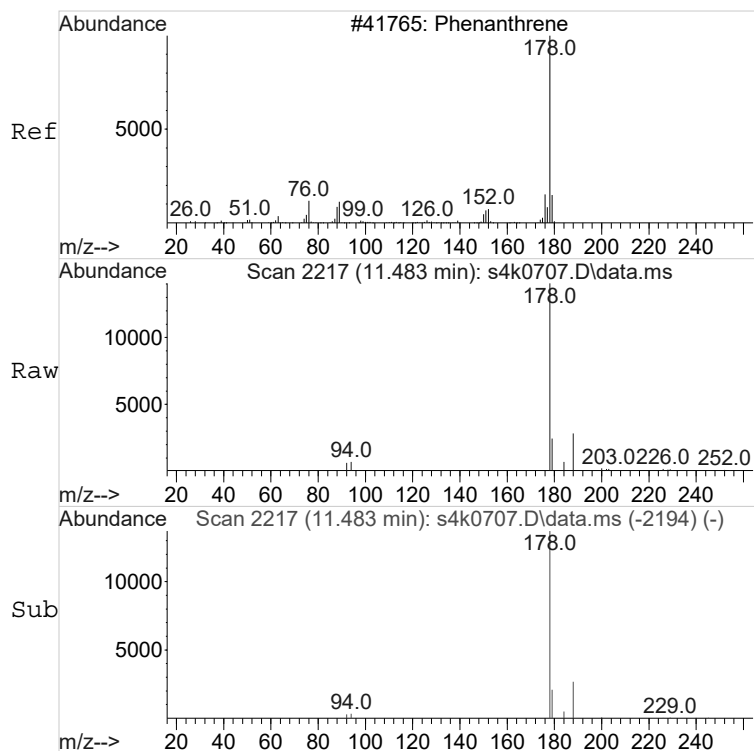
Tgt Ion: 74 Resp: 85471  
Ion Ratio Lower Upper  
74 100  
42 29.5 39.1 99.1#



#4 BEFORE analyst DELETION  
N-Nitrosodipropylamine  
Concen: 0.08 ng/uL  
RT: 5.996 min Scan# 1132  
Delta R.T. -0.021 min  
Lab File: s4k0707.D  
Acq: 07 Nov 2016 10:54

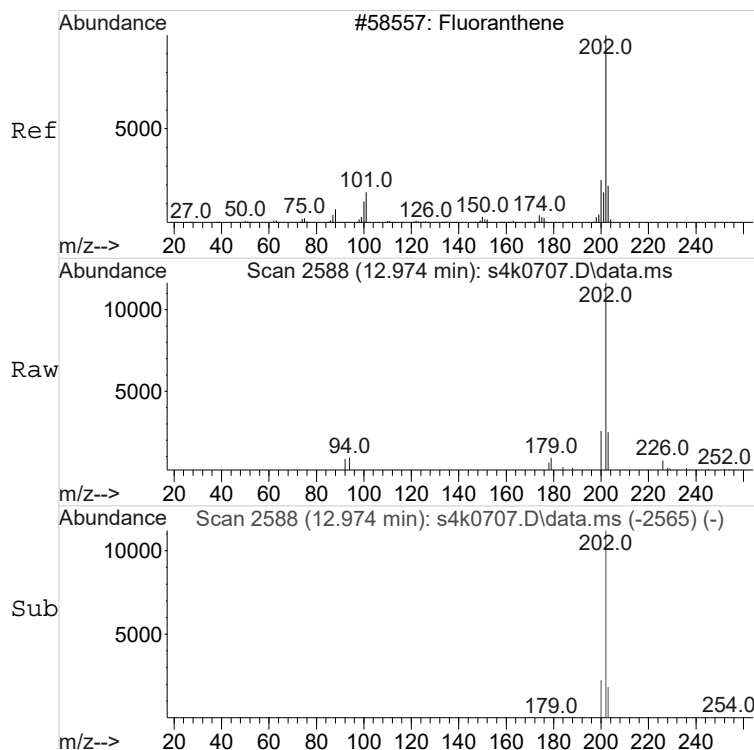
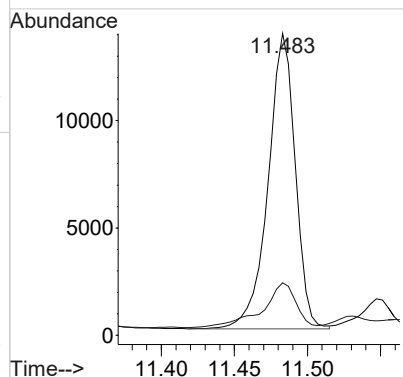
Tgt Ion: 70 Resp: 5596  
Ion Ratio Lower Upper  
70 100  
42 60.8 22.5 82.5





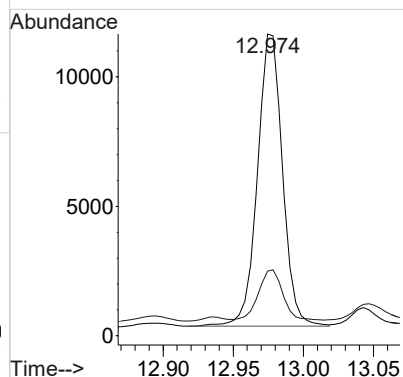
#15  
Phenanthrene  
Concen: 0.07 ng/uL  
RT: 11.483 min Scan# 2217  
Delta R.T. -0.006 min  
Lab File: s4k0707.D  
Acq: 07 Nov 2016 10:54

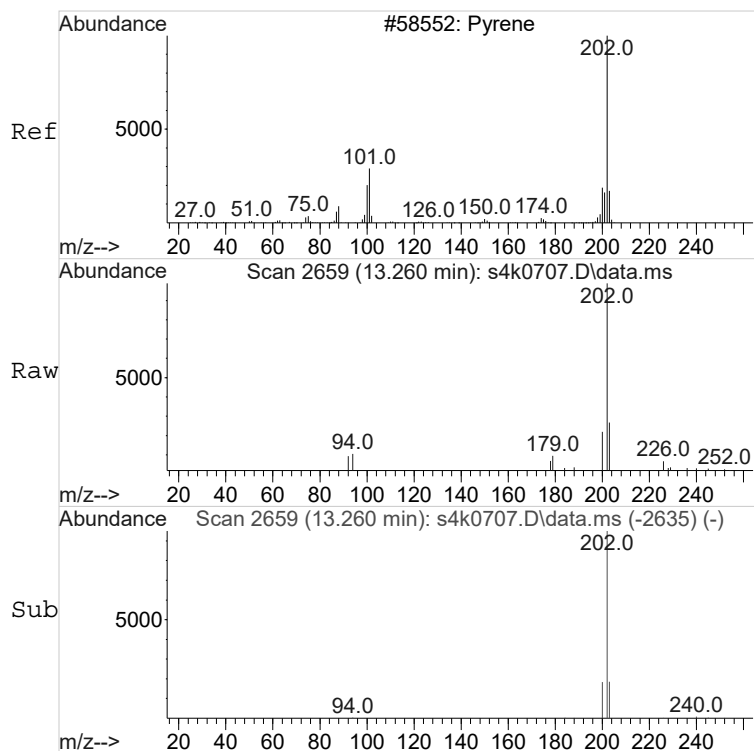
Tgt Ion:178 Resp: 17740  
Ion Ratio Lower Upper  
178 100  
179 18.9 0.0 45.6



#18  
Fluoranthene  
Concen: 0.06 ng/uL  
RT: 12.974 min Scan# 2588  
Delta R.T. -0.006 min  
Lab File: s4k0707.D  
Acq: 07 Nov 2016 10:54

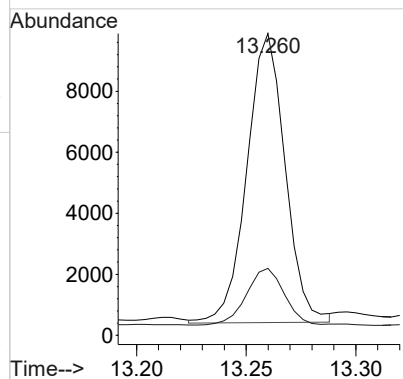
Tgt Ion:202 Resp: 14082  
Ion Ratio Lower Upper  
202 100  
203 16.3 0.0 47.7





#20  
Pyrene  
Concen: 0.05 ng/uL  
RT: 13.260 min Scan# 2659  
Delta R.T. -0.002 min  
Lab File: s4k0707.D  
Acq: 07 Nov 2016 10:54

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 202     | 100   |       |       |
| 200     | 19.4  | 0.0   | 50.4  |



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254014  
  
**Client ID:** SD140200  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 11:51  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0709.D

**Date Collected:** 10/24/2016 11:58  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.102 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 44.5  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 83-32-9  | Acenaphthene           | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 208-96-8 | Acenaphthylene         | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 120-12-7 | Anthracene             | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 56-55-3  | Benzo(a)anthracene     | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 50-32-8  | Benzo(a)pyrene         | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 4.79   | ug/kg | 2.99    | 5.98    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 207-08-9 | Benzo(k)fluoranthene   | J         | 3.59   | ug/kg | 2.99    | 5.98    |
| 218-01-9 | Chrysene               | J         | 3.59   | ug/kg | 2.99    | 5.98    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 206-44-0 | Fluoranthene           |           | 5.98   | ug/kg | 2.99    | 5.98    |
| 86-73-7  | Fluorene               | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 5.98   | ug/kg | 2.99    | 5.98    |
| 91-20-3  | Naphthalene            | U         | 5.98   | ug/kg | 1.80    | 5.98    |
| 85-01-8  | Phenanthrene           | J         | 4.19   | ug/kg | 2.99    | 5.98    |
| 129-00-0 | Pyrene                 | J         | 4.19   | ug/kg | 2.99    | 5.98    |

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0709.D  
Acq On : 07 Nov 2016 11:51  
Operator : JMB3  
InstName : MSD4  
Sample : |409254014|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

JMB  
11/07/2016

JCB  
11/08/2016

Quant Time: Nov 07 12:52:53 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                    |                          | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units |           |
|-----------------------------|--------------------------|--------|--------|----------|--------|----------|------|-------|-----------|
| Internal Standards          |                          |        |        |          |        |          |      |       | Dev (Min) |
| 1)                          | A 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 318606   | 4.00 | ng/uL | 0.00      |
| 5)                          | A Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1077102  | 4.00 | ng/uL | 0.00      |
| 9)                          | A Acenaphthene-d10       | 164    | 9.568  | 9.573    | 1.000  | 416993   | 4.00 | ng/uL | 0.00      |
| 14)                         | A Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 788172   | 4.00 | ng/uL | 0.00      |
| 19)                         | A Chrysene-d12           | 240    | 14.962 | 14.963   | 1.000  | 425874   | 4.00 | ng/uL | 0.00      |
| 23)                         | A Perylene-d12           | 264    | 18.236 | 18.231   | 1.000  | 245512   | 4.00 | ng/uL | 0.00      |
| 30)                         | B 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 318606   | 4.00 | ng/uL | 0.00      |
| 33)                         | B Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1077102  | 4.00 | ng/uL | 0.00      |
| 35)                         | B Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 788172   | 4.00 | ng/uL | 0.00      |
| 37)                         | B Chrysene-d12           | 240    | 14.962 | 14.963   | 1.000  | 425874   | 4.00 | ng/uL | 0.00      |
| System Monitoring Compounds |                          |        |        |          |        |          |      |       | Dev (Min) |
| 17)                         | 5-alpha-Androstane       | 245    | 12.730 | 12.731   | 1.111  | 100194   | 4.06 | ng/uL | 0.00      |
| Compound                    |                          | Amount |        | Range    |        | Recovery |      |       |           |
| 17)                         | 5-alpha-Androstane       | 5.000  |        | 30 - 115 |        | 81%      |      |       |           |
| Target Compounds            |                          | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units | QValue    |
| 15)                         | Phenanthrene             | 178    | 11.484 | 11.489   | 1.002  | 20177    | 0.07 | ng/uL | 96        |
| 18)                         | Fluoranthene             | 202    | 12.980 | 12.981   | 1.133  | 23940    | 0.10 | ng/uL | 98        |
| 20)                         | Pyrene                   | 202    | 13.261 | 13.262   | 0.886  | 19106    | 0.07 | ng/uL | 99        |
| 22)                         | Chrysene                 | 228    | 15.006 | 15.007   | 1.003  | 9317     | 0.06 | ng/uL | 99        |
| 24)                         | Benzo(b)fluoranthene     | 252    | 17.218 | 17.213   | 0.944  | 9015     | 0.08 | ng/uL | 97        |
| 25)                         | Benzo(k)fluoranthene     | 252    | 17.286 | 17.284   | 0.948  | 6612     | 0.06 | ng/uL | 74        |

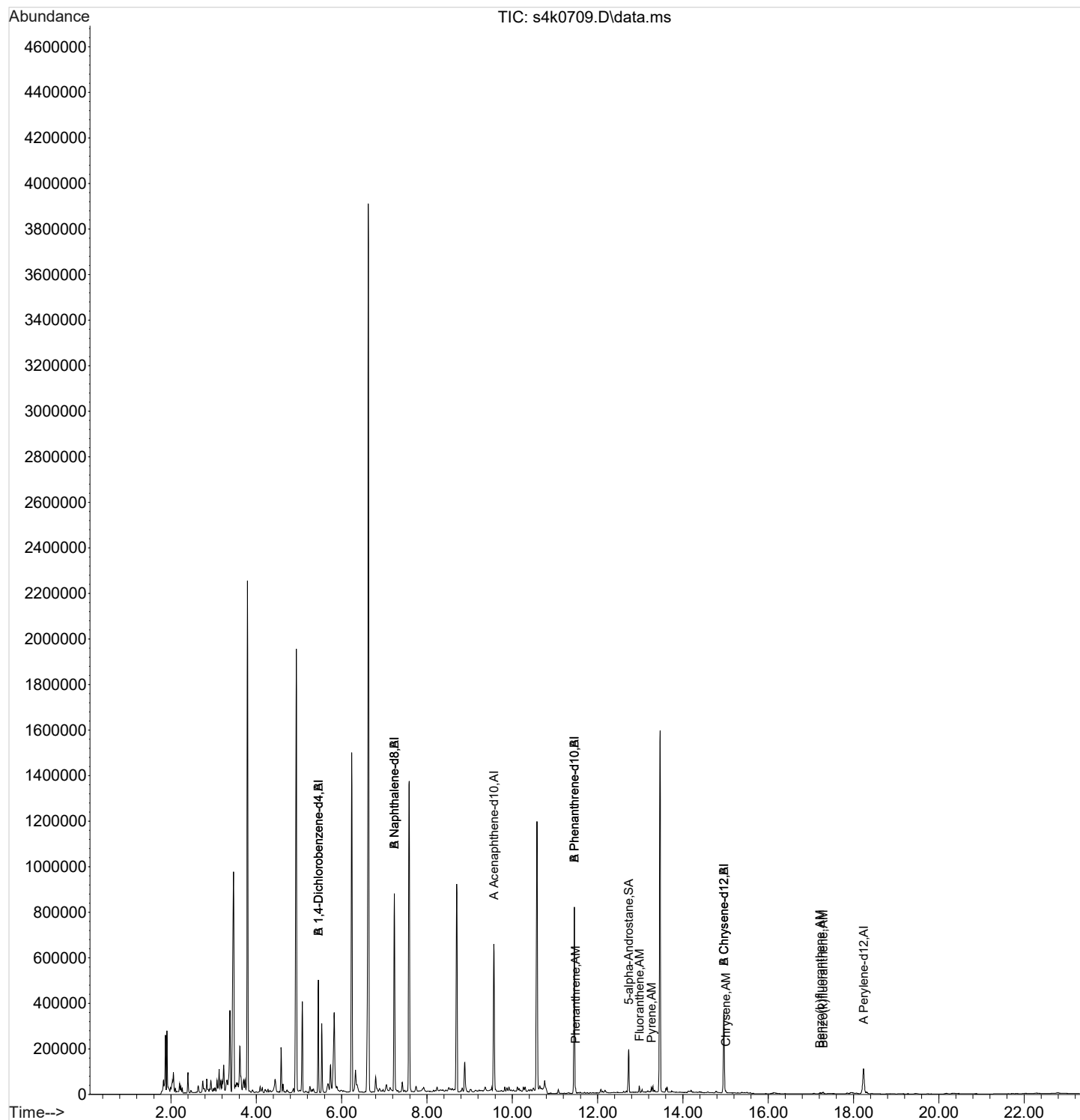
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

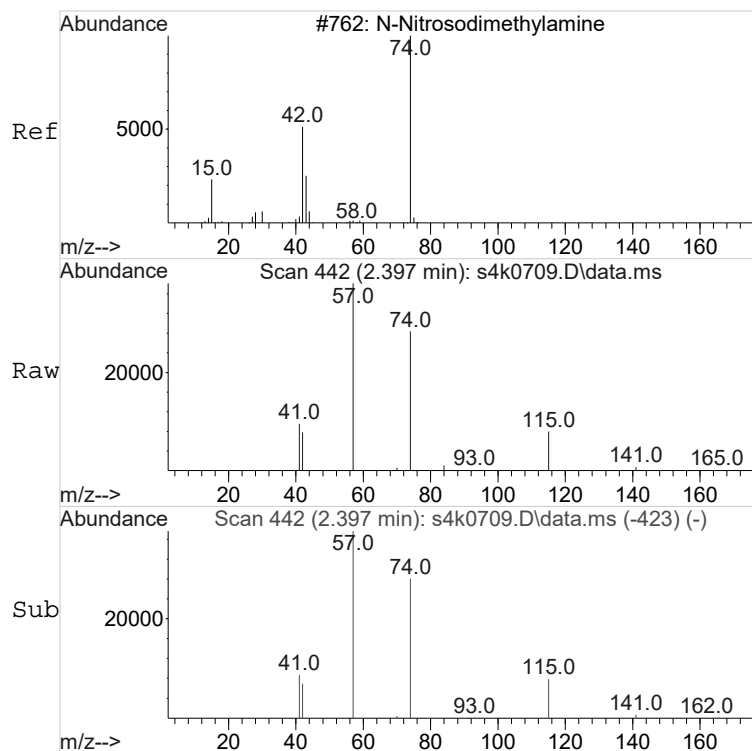


Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0709.D  
Acq On : 07 Nov 2016 11:51  
Operator : JMB3  
InstName : MSD4  
Sample : |409254014|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

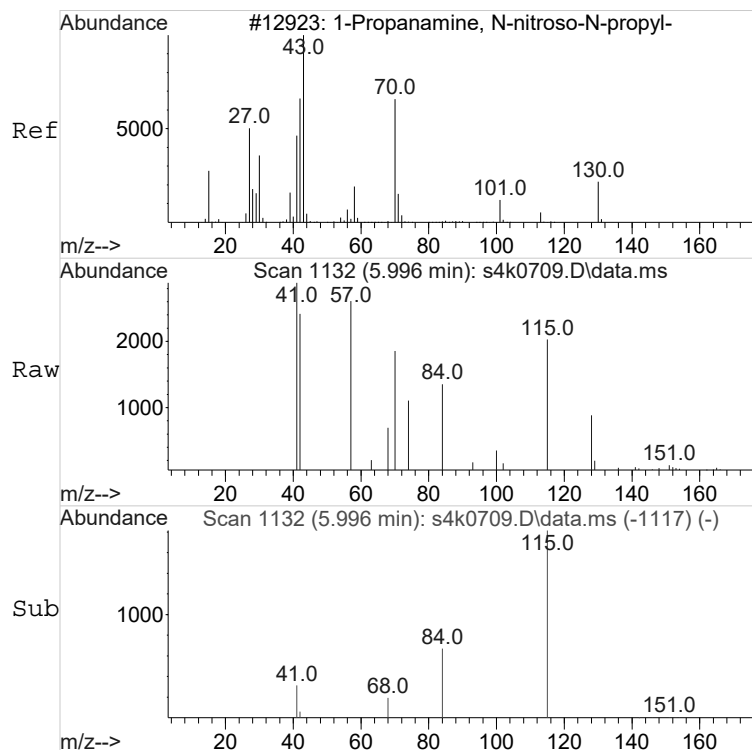
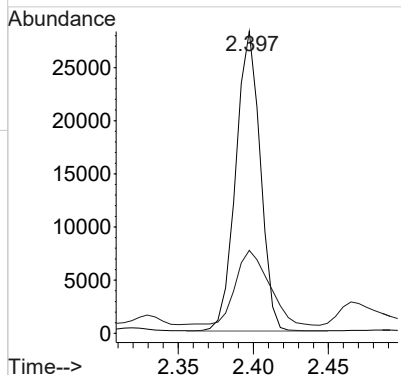
Quant Time: Nov 07 12:52:53 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE





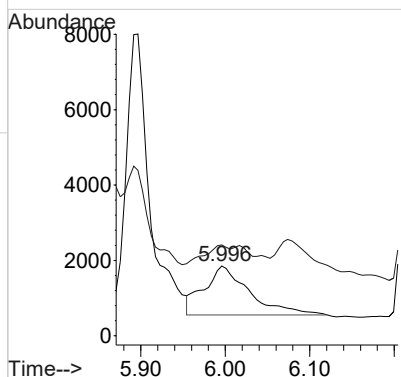
#2 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 0.55 ng/uL  
RT: 2.397 min Scan# 442  
Delta R.T. -0.031 min  
Lab File: s4k0709.D  
Acq: 07 Nov 2016 11:51

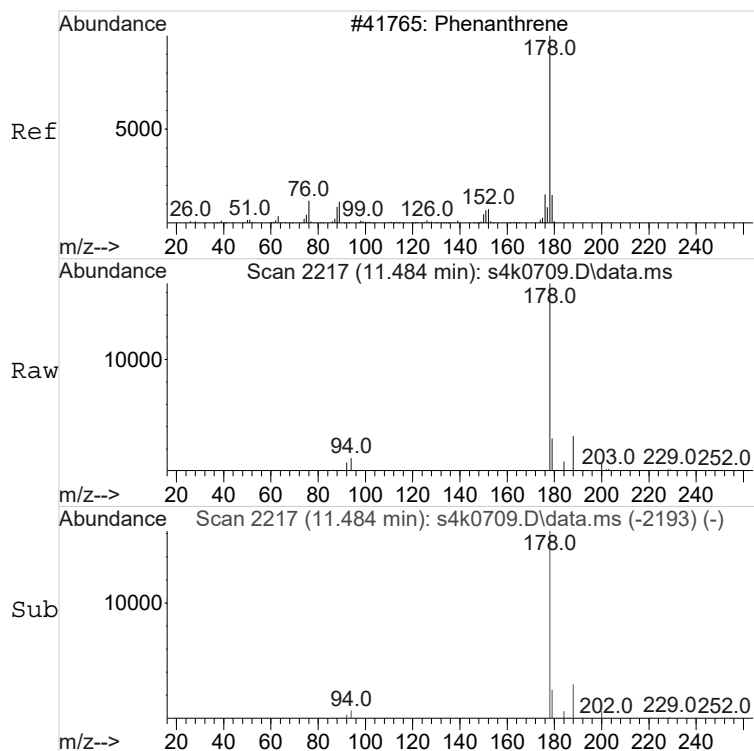
Tgt Ion: 74 Resp: 31922  
Ion Ratio Lower Upper  
74 100  
42 34.2 39.1 99.1#



#4 BEFORE analyst DELETION  
N-Nitrosodipropylamine  
Concen: 0.08 ng/uL  
RT: 5.996 min Scan# 1132  
Delta R.T. -0.021 min  
Lab File: s4k0709.D  
Acq: 07 Nov 2016 11:51

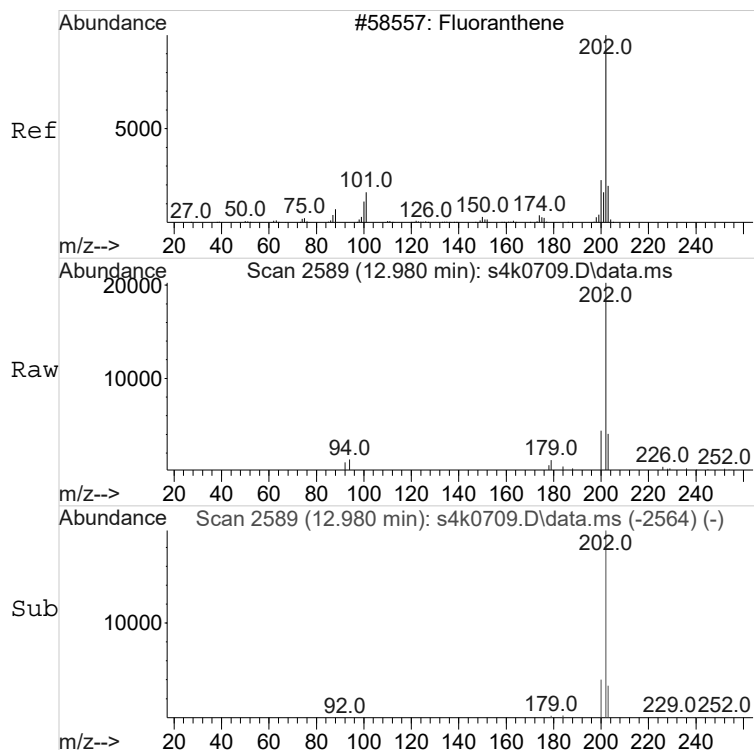
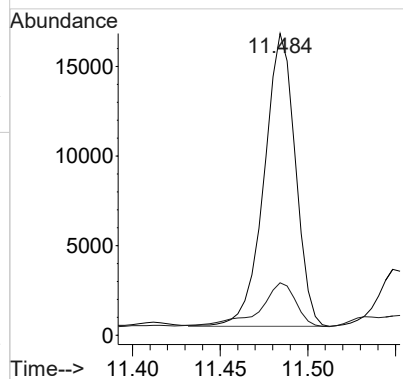
Tgt Ion: 70 Resp: 4908  
Ion Ratio Lower Upper  
70 100  
42 21.7 22.5 82.5#





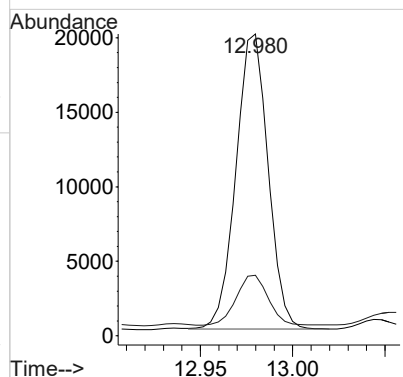
#15  
Phenanthrene  
Concen: 0.07 ng/uL  
RT: 11.484 min Scan# 2217  
Delta R.T. -0.005 min  
Lab File: s4k0709.D  
Acq: 07 Nov 2016 11:51

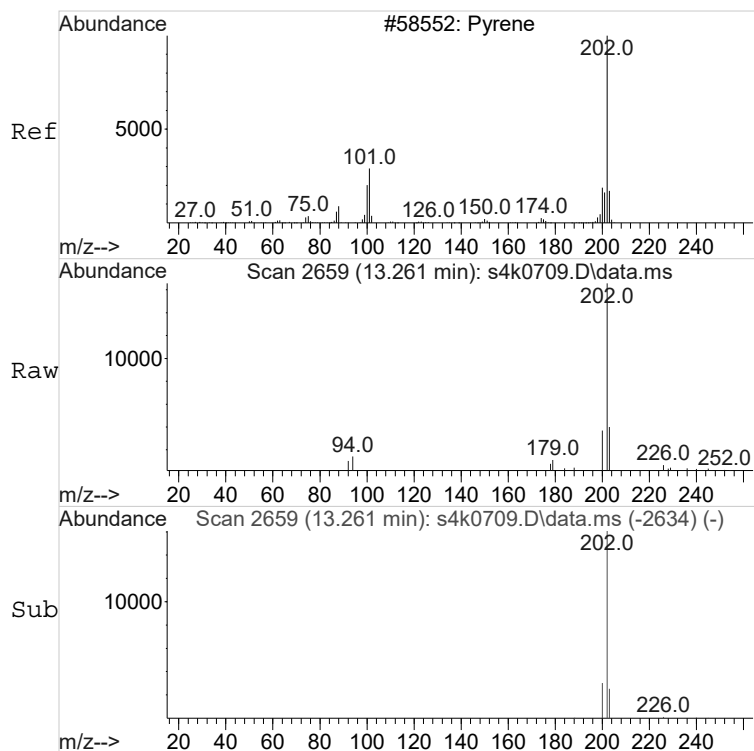
Tgt Ion:178 Resp: 20177  
Ion Ratio Lower Upper  
178 100  
179 17.4 0.0 45.6



#18  
Fluoranthene  
Concen: 0.10 ng/uL  
RT: 12.980 min Scan# 2589  
Delta R.T. -0.001 min  
Lab File: s4k0709.D  
Acq: 07 Nov 2016 11:51

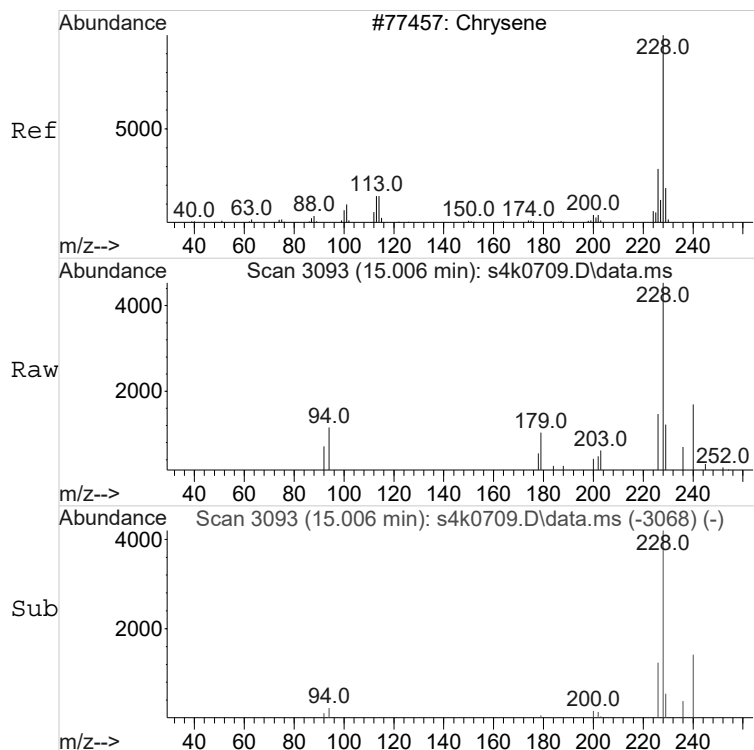
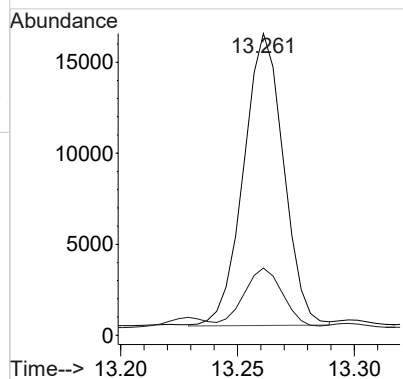
Tgt Ion:202 Resp: 23940  
Ion Ratio Lower Upper  
202 100  
203 16.7 0.0 47.7





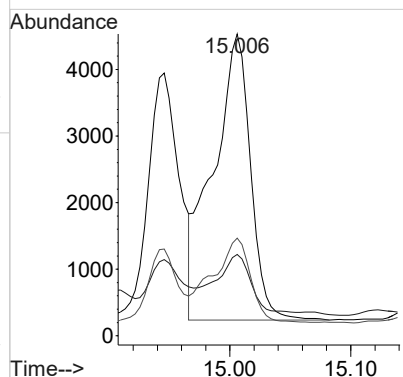
#20  
Pyrene  
Concen: 0.07 ng/uL  
RT: 13.261 min Scan# 2659  
Delta R.T. -0.001 min  
Lab File: s4k0709.D  
Acq: 07 Nov 2016 11:51

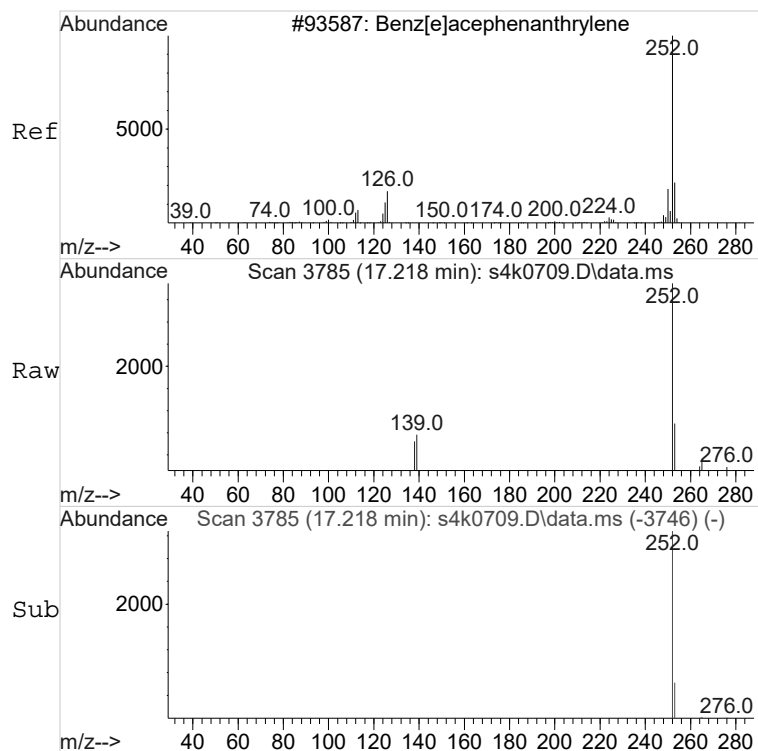
| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 202     | 100   | 19106 |       |       |
| 200     | 19.9  | 0.0   | 50.4  |       |



#22  
Chrysene  
Concen: 0.06 ng/uL  
RT: 15.006 min Scan# 3093  
Delta R.T. -0.001 min  
Lab File: s4k0709.D  
Acq: 07 Nov 2016 11:51

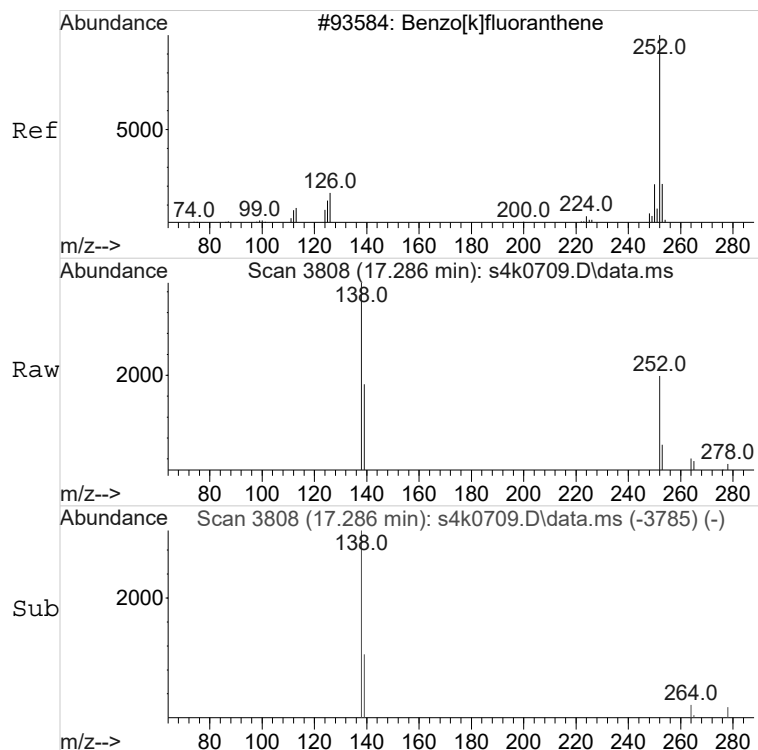
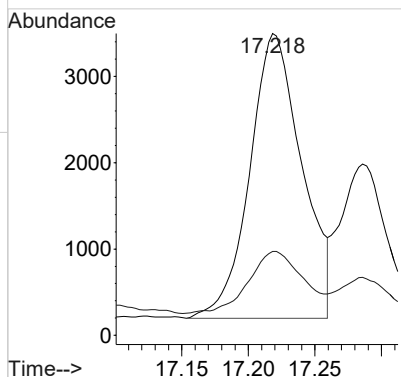
| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 228     | 100   | 9317 |       |       |
| 229     | 19.2  | 0.0  | 49.3  |       |
| 226     | 30.0  | 0.0  | 59.2  |       |





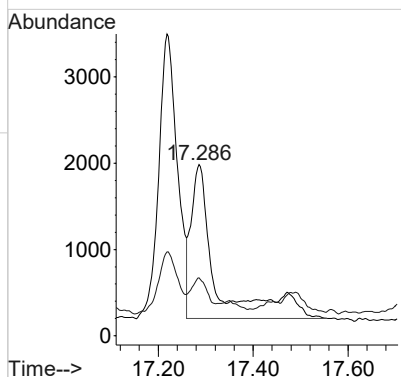
#24  
Benzo(b)fluoranthene  
Concen: 0.08 ng/uL  
RT: 17.218 min Scan# 3785  
Delta R.T. 0.005 min  
Lab File: s4k0709.D  
Acq: 07 Nov 2016 11:51

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 252     | 100   |       |       |
| 253     | 22.9  | 0.0   | 51.6  |



#25  
Benzo(k)fluoranthene  
Concen: 0.06 ng/uL  
RT: 17.286 min Scan# 3808  
Delta R.T. 0.002 min  
Lab File: s4k0709.D  
Acq: 07 Nov 2016 11:51

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 252     | 100   |       |       |
| 253     | 9.1   | 0.0   | 51.4  |



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

**SDG Number:** 409254  
**Lab Sample ID:** 409254015  
  
**Client ID:** SD140100  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 12:19  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0710.D

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.049 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 37.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 83-32-9  | Acenaphthene           | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 208-96-8 | Acenaphthylene         | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 120-12-7 | Anthracene             | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 56-55-3  | Benzo(a)anthracene     | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 50-32-8  | Benzo(a)pyrene         | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 3.20   | ug/kg | 2.67    | 5.34    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 218-01-9 | Chrysene               | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 206-44-0 | Fluoranthene           | J         | 3.74   | ug/kg | 2.67    | 5.34    |
| 86-73-7  | Fluorene               | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 5.34   | ug/kg | 2.67    | 5.34    |
| 91-20-3  | Naphthalene            | U         | 5.34   | ug/kg | 1.60    | 5.34    |
| 85-01-8  | Phenanthrene           | J         | 3.74   | ug/kg | 2.67    | 5.34    |
| 129-00-0 | Pyrene                 | J         | 3.20   | ug/kg | 2.67    | 5.34    |

JMB  
11/07/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0710.D  
Acq On : 07 Nov 2016 12:19  
Operator : JMB3  
InstName : MSD4  
Sample : |409254015|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

JCB  
11/08/2016

Quant Time: Nov 07 12:53:31 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

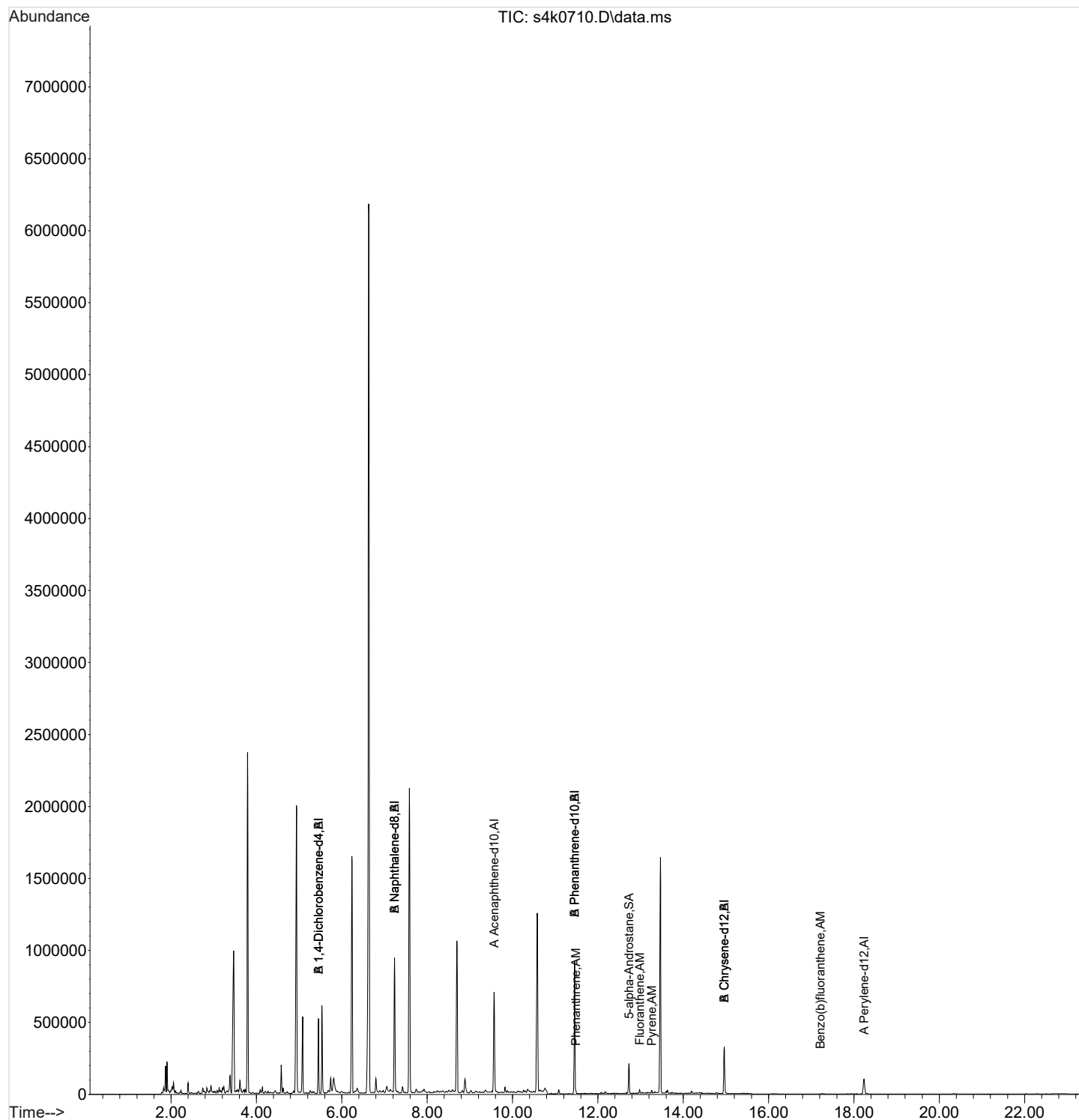
| Compound                    |                          | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units |           |
|-----------------------------|--------------------------|--------|--------|----------|--------|----------|------|-------|-----------|
| Internal Standards          |                          |        |        |          |        |          |      |       | Dev (Min) |
| 1)                          | A 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 337259   | 4.00 | ng/uL | 0.00      |
| 5)                          | A Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1158515  | 4.00 | ng/uL | 0.00      |
| 9)                          | A Acenaphthene-d10       | 164    | 9.568  | 9.573    | 1.000  | 458474   | 4.00 | ng/uL | 0.00      |
| 14)                         | A Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 870314   | 4.00 | ng/uL | 0.00      |
| 19)                         | A Chrysene-d12           | 240    | 14.961 | 14.963   | 1.000  | 368853   | 4.00 | ng/uL | 0.00      |
| 23)                         | A Perylene-d12           | 264    | 18.236 | 18.231   | 1.000  | 211102   | 4.00 | ng/uL | 0.00      |
| 30)                         | B 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 337259   | 4.00 | ng/uL | 0.00      |
| 33)                         | B Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1158515  | 4.00 | ng/uL | 0.00      |
| 35)                         | B Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 870314   | 4.00 | ng/uL | 0.00      |
| 37)                         | B Chrysene-d12           | 240    | 14.961 | 14.963   | 1.000  | 368853   | 4.00 | ng/uL | 0.00      |
| System Monitoring Compounds |                          |        |        |          |        |          |      |       | Dev (Min) |
| 17)                         | 5-alpha-Androstane       | 245    | 12.730 | 12.731   | 1.111  | 108569   | 3.99 | ng/uL | 0.00      |
| Compound                    |                          | Amount |        | Range    |        | Recovery |      |       |           |
| 17)                         | 5-alpha-Androstane       | 5.000  |        | 30 - 115 |        | 80%      |      |       |           |
| Target Compounds            |                          | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units | QValue    |
| 15)                         | Phenanthrene             | 178    | 11.484 | 11.489   | 1.002  | 20357    | 0.07 | ng/uL | 96        |
| 18)                         | Fluoranthene             | 202    | 12.979 | 12.981   | 1.133  | 20648    | 0.07 | ng/uL | 97        |
| 20)                         | Pyrene                   | 202    | 13.261 | 13.262   | 0.886  | 15521    | 0.06 | ng/uL | 100       |
| 24)                         | Benzo(b)fluoranthene     | 252    | 17.218 | 17.213   | 0.944  | 5231     | 0.06 | ng/uL | 94        |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

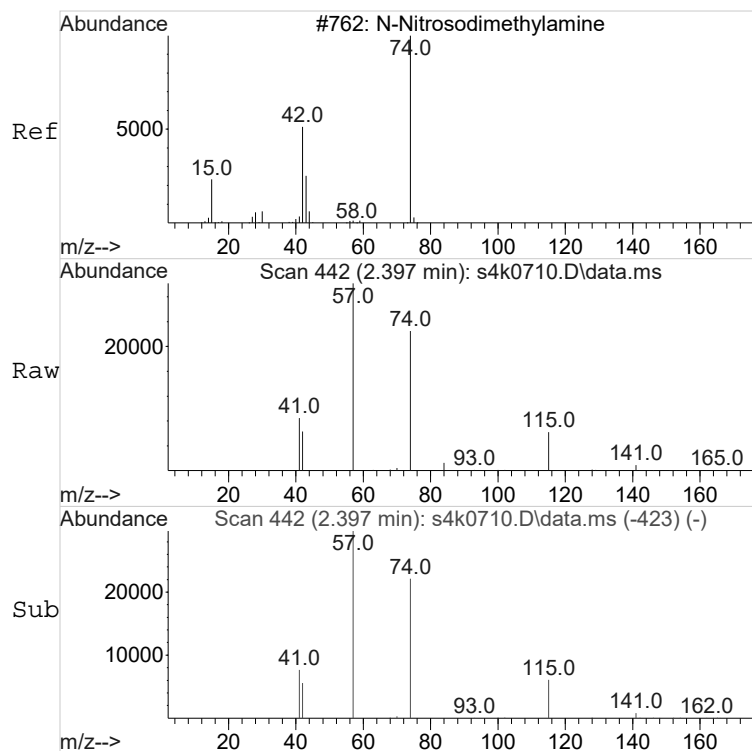
Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0710.D  
Acq On : 07 Nov 2016 12:19  
Operator : JMB3  
InstName : MSD4  
Sample : |409254015|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 07 12:53:31 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

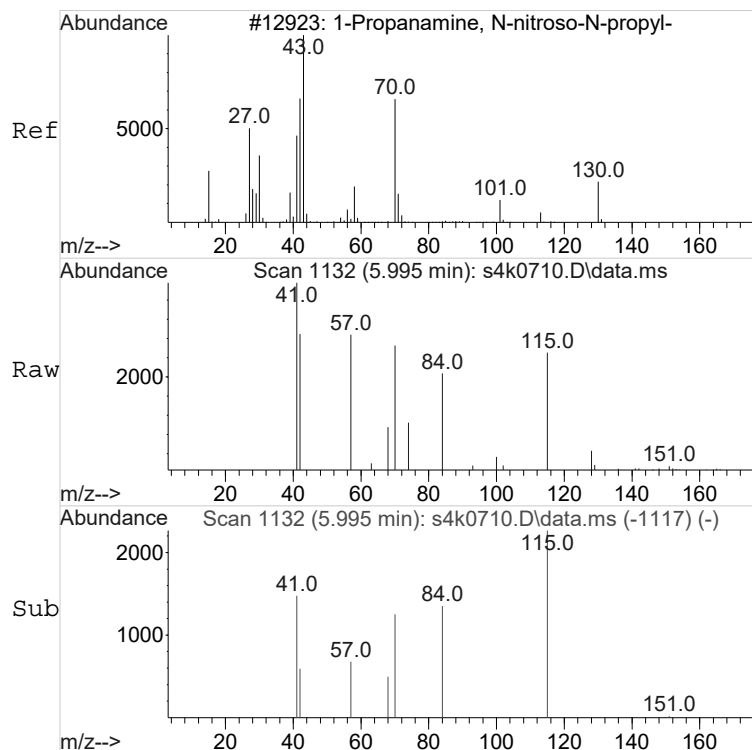
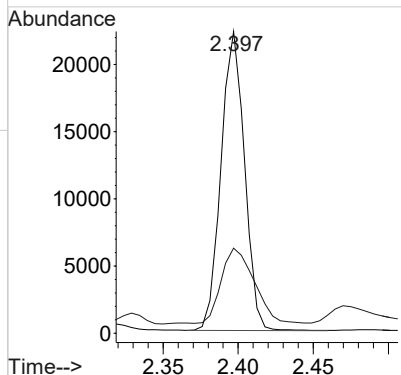






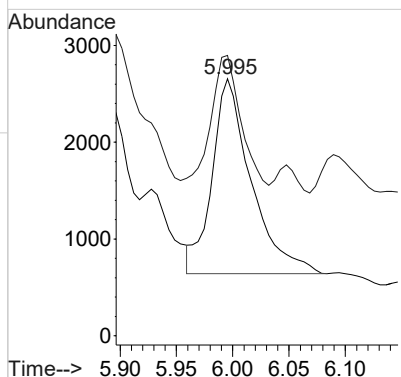
#2 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 0.40 ng/uL  
RT: 2.397 min Scan# 442  
Delta R.T. -0.031 min  
Lab File: s4k0710.D  
Acq: 07 Nov 2016 12:19

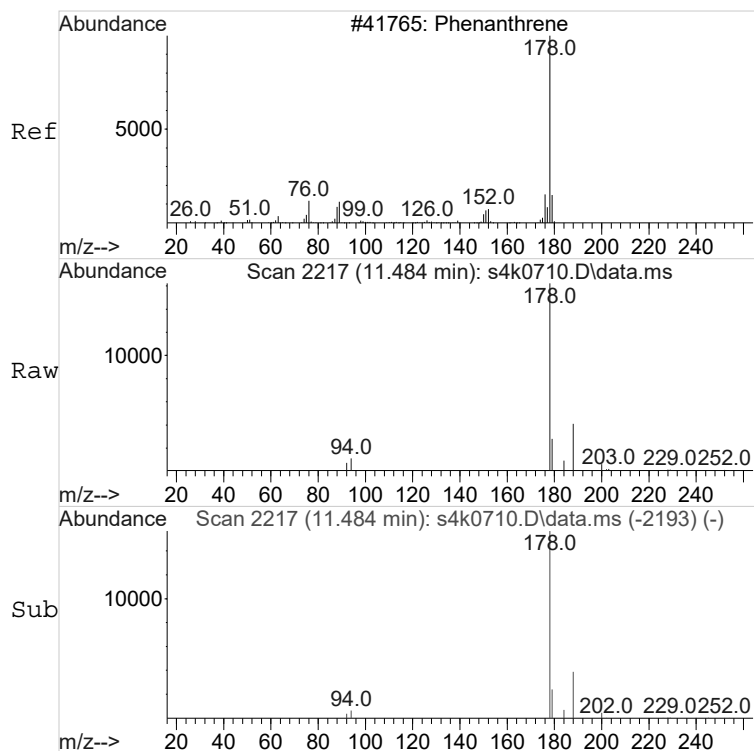
Tgt Ion: 74 Resp: 24153  
Ion Ratio Lower Upper  
74 100  
42 36.3 39.1 99.1#



#4 BEFORE analyst DELETION  
N-Nitrosodipropylamine  
Concen: 0.07 ng/uL  
RT: 5.995 min Scan# 1132  
Delta R.T. -0.021 min  
Lab File: s4k0710.D  
Acq: 07 Nov 2016 12:19

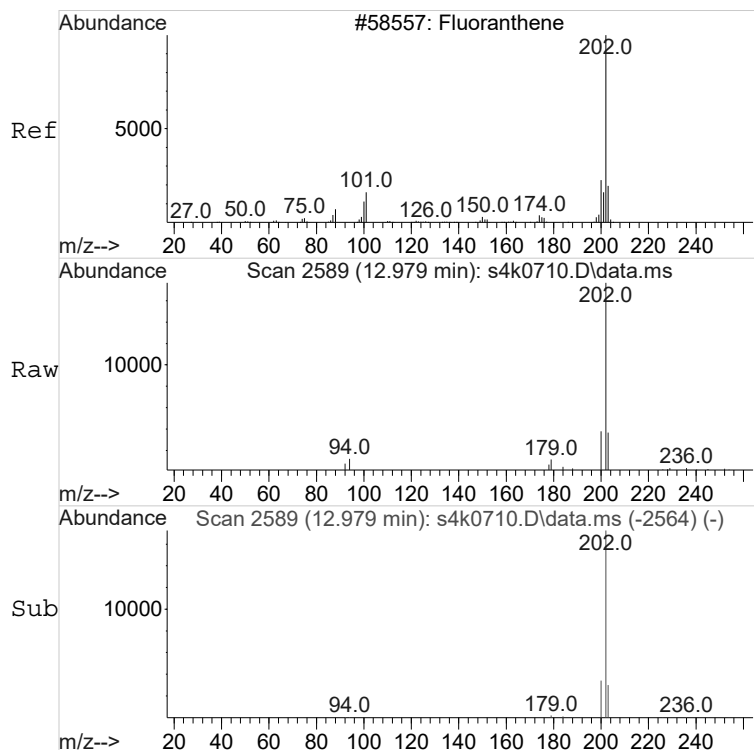
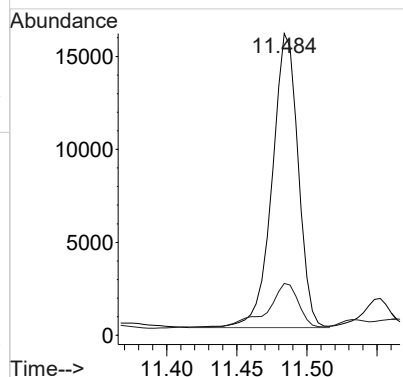
Tgt Ion: 70 Resp: 4876  
Ion Ratio Lower Upper  
70 100  
42 49.6 22.5 82.5





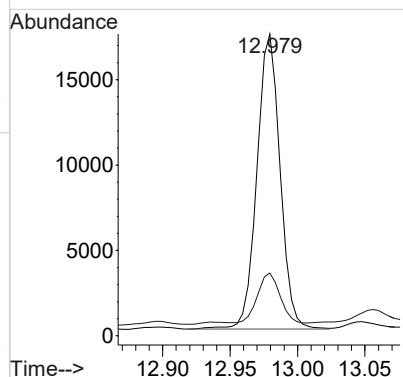
#15  
Phenanthrene  
Concen: 0.07 ng/uL  
RT: 11.484 min Scan# 2217  
Delta R.T. -0.005 min  
Lab File: s4k0710.D  
Acq: 07 Nov 2016 12:19

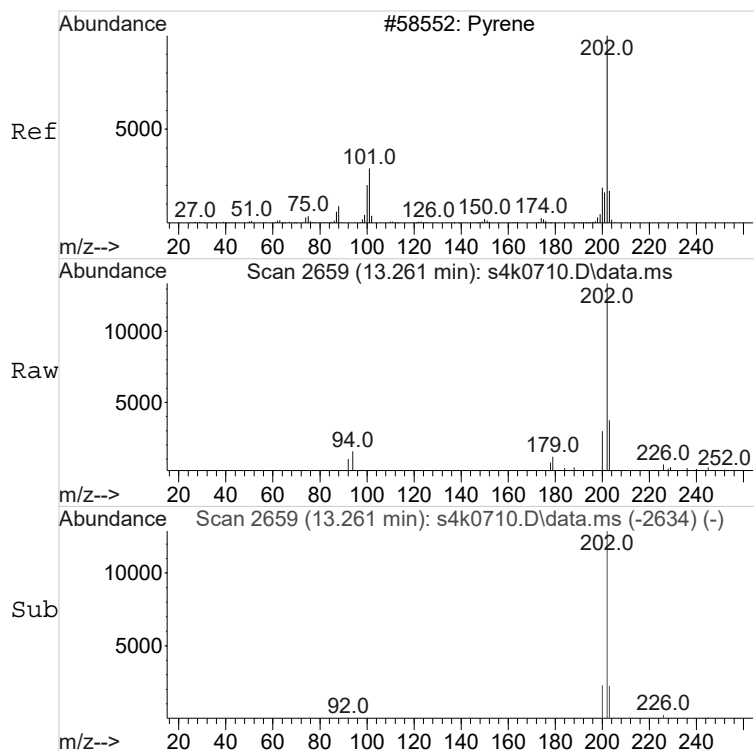
Tgt Ion:178 Resp: 20357  
Ion Ratio Lower Upper  
178 100  
179 17.4 0.0 45.6



#18  
Fluoranthene  
Concen: 0.07 ng/uL  
RT: 12.979 min Scan# 2589  
Delta R.T. -0.001 min  
Lab File: s4k0710.D  
Acq: 07 Nov 2016 12:19

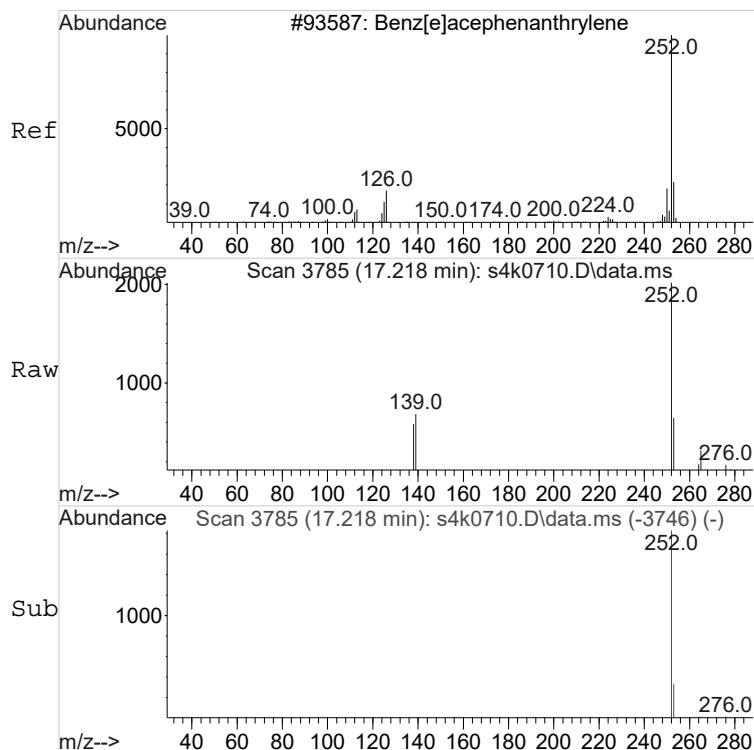
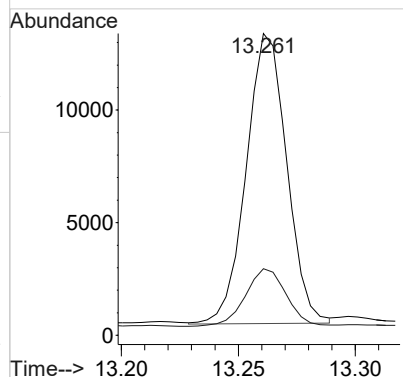
Tgt Ion:202 Resp: 20648  
Ion Ratio Lower Upper  
202 100  
203 16.3 0.0 47.7





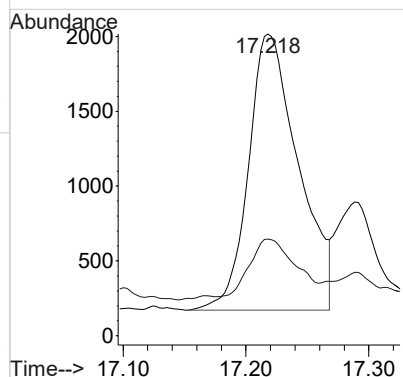
#20  
Pyrene  
Concen: 0.06 ng/uL  
RT: 13.261 min Scan# 2659  
Delta R.T. -0.001 min  
Lab File: s4k0710.D  
Acq: 07 Nov 2016 12:19

Tgt Ion: 202 Resp: 15521  
Ion Ratio Lower Upper  
202 100  
200 20.2 0.0 50.4



#24  
Benzo(b)fluoranthene  
Concen: 0.06 ng/uL  
RT: 17.218 min Scan# 3785  
Delta R.T. 0.005 min  
Lab File: s4k0710.D  
Acq: 07 Nov 2016 12:19

Tgt Ion: 252 Resp: 5231  
Ion Ratio Lower Upper  
252 100  
253 18.9 0.0 51.6



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254016  
  
**Client ID:** SD140100DUP  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 12:47  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0711.D

**Date Collected:** 10/24/2016 12:35  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.078 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 36.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 83-32-9  | Acenaphthene           | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 208-96-8 | Acenaphthylene         | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 120-12-7 | Anthracene             | J         | 4.20   | ug/kg | 2.62    | 5.25    |
| 56-55-3  | Benzo(a)anthracene     | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 50-32-8  | Benzo(a)pyrene         | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 3.67   | ug/kg | 2.62    | 5.25    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 218-01-9 | Chrysene               | J         | 2.62   | ug/kg | 2.62    | 5.25    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 206-44-0 | Fluoranthene           |           | 6.30   | ug/kg | 2.62    | 5.25    |
| 86-73-7  | Fluorene               | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 91-20-3  | Naphthalene            | U         | 5.25   | ug/kg | 1.57    | 5.25    |
| 85-01-8  | Phenanthrene           | U         | 5.25   | ug/kg | 2.62    | 5.25    |
| 129-00-0 | Pyrene                 | J         | 4.20   | ug/kg | 2.62    | 5.25    |

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0711.D  
Acq On : 07 Nov 2016 12:47  
Operator : JMB3  
InstName : MSD4  
Sample : |409254016|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 11 Sample Multiplier: 1

JMB  
11/07/2016

JCB  
11/08/2016

Quant Time: Nov 07 13:11:12 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

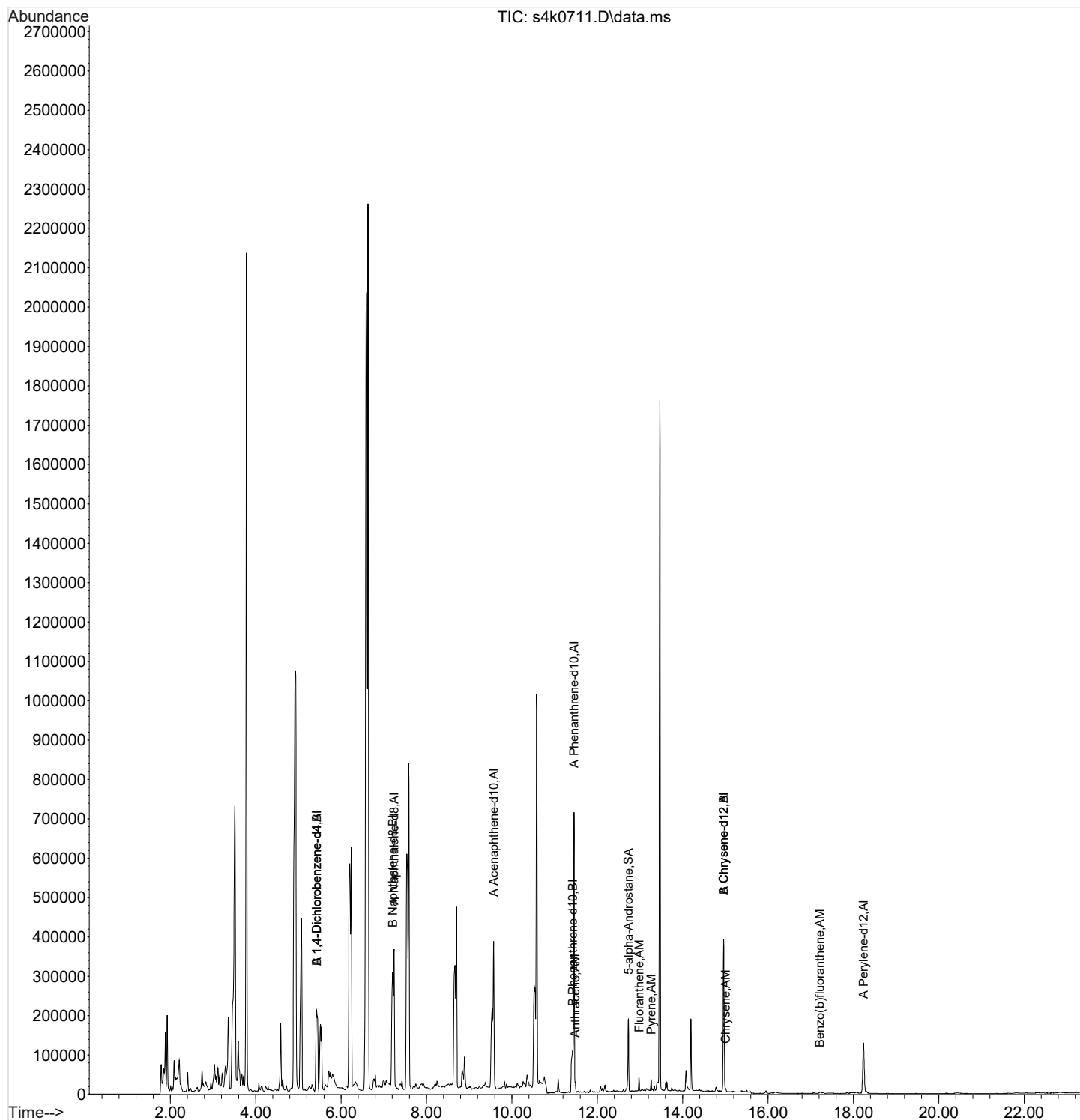
| Compound                    |                          | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units |           |
|-----------------------------|--------------------------|--------|--------|----------|--------|----------|------|-------|-----------|
| Internal Standards          |                          |        |        |          |        |          |      |       | Dev (Min) |
| 1)                          | A 1,4-Dichlorobenzene-d4 | 152    | 5.427  | 5.448    | 1.000  | 311265   | 4.00 | ng/uL | -0.02     |
| 5)                          | A Naphthalene-d8         | 136    | 7.242  | 7.237    | 1.000  | 1097833m | 4.00 | ng/uL | 0.00      |
| 9)                          | A Acenaphthene-d10       | 164    | 9.573  | 9.573    | 1.000  | 444139m  | 4.00 | ng/uL | 0.00      |
| 14)                         | A Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 843386m  | 4.00 | ng/uL | 0.00      |
| 19)                         | A Chrysene-d12           | 240    | 14.962 | 14.963   | 1.000  | 443480   | 4.00 | ng/uL | 0.00      |
| 23)                         | A Perylene-d12           | 264    | 18.236 | 18.231   | 1.000  | 268016   | 4.00 | ng/uL | 0.00      |
| 30)                         | B 1,4-Dichlorobenzene-d4 | 152    | 5.427  | 5.448    | 1.000  | 311265   | 4.00 | ng/uL | -0.02     |
| 33)                         | B Naphthalene-d8         | 136    | 7.211  | 7.237    | 1.000  | 701230   | 4.00 | ng/uL | -0.03     |
| 35)                         | B Phenanthrene-d10       | 188    | 11.424 | 11.457   | 1.000  | 217067   | 4.00 | ng/uL | -0.03     |
| 37)                         | B Chrysene-d12           | 240    | 14.962 | 14.963   | 1.000  | 443480   | 4.00 | ng/uL | 0.00      |
| System Monitoring Compounds |                          |        |        |          |        |          |      |       | Dev (Min) |
| 17)                         | 5-alpha-Androstane       | 245    | 12.730 | 12.731   | 1.111  | 103142   | 3.91 | ng/uL | 0.00      |
| Compound                    |                          | Amount |        | Range    |        | Recovery |      |       |           |
| 17)                         | 5-alpha-Androstane       | 5.000  |        | 30 - 115 |        | 78%      |      |       |           |
| Target Compounds            |                          | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units | QValue    |
| 16)                         | Anthracene               | 178    | 11.484 | 11.553   | 1.002  | 21299    | 0.08 | ng/uL | 98        |
| 18)                         | Fluoranthene             | 202    | 12.980 | 12.981   | 1.133  | 32053    | 0.12 | ng/uL | 97        |
| 20)                         | Pyrene                   | 202    | 13.261 | 13.262   | 0.886  | 24391    | 0.08 | ng/uL | 99        |
| 22)                         | Chrysene                 | 228    | 15.006 | 15.007   | 1.003  | 9268     | 0.05 | ng/uL | 97        |
| 24)                         | Benzo(b)fluoranthene     | 252    | 17.218 | 17.213   | 0.944  | 8981     | 0.07 | ng/uL | 99        |

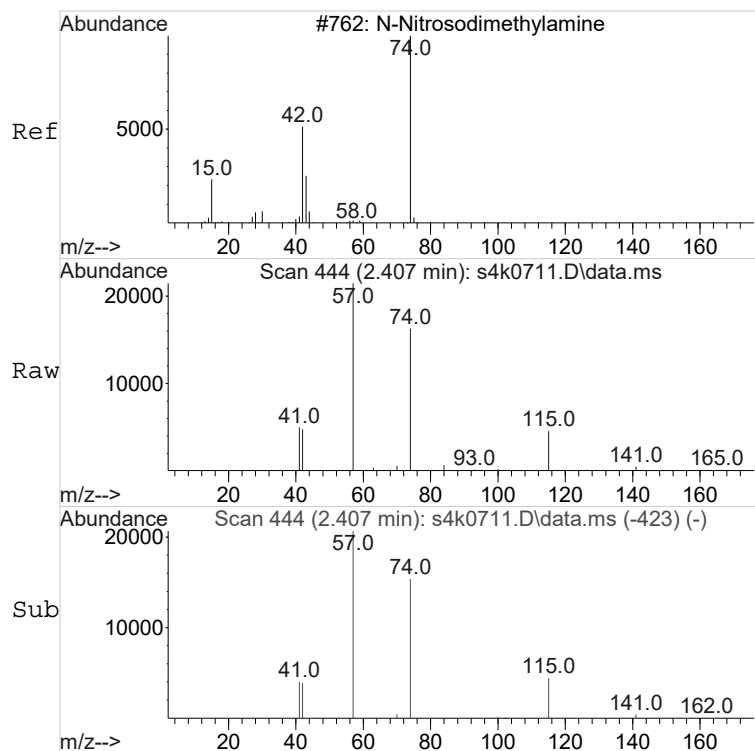
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0711.D  
Acq On : 07 Nov 2016 12:47  
Operator : JMB3  
InstName : MSD4  
Sample : |409254016|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 11 Sample Multiplier: 1

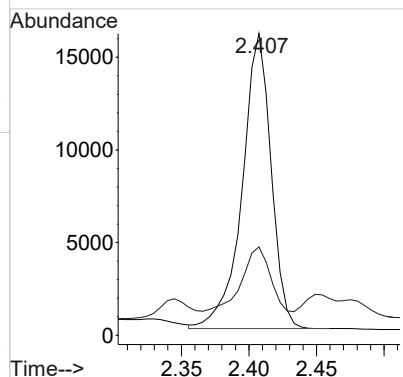
Quant Time: Nov 07 13:11:12 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

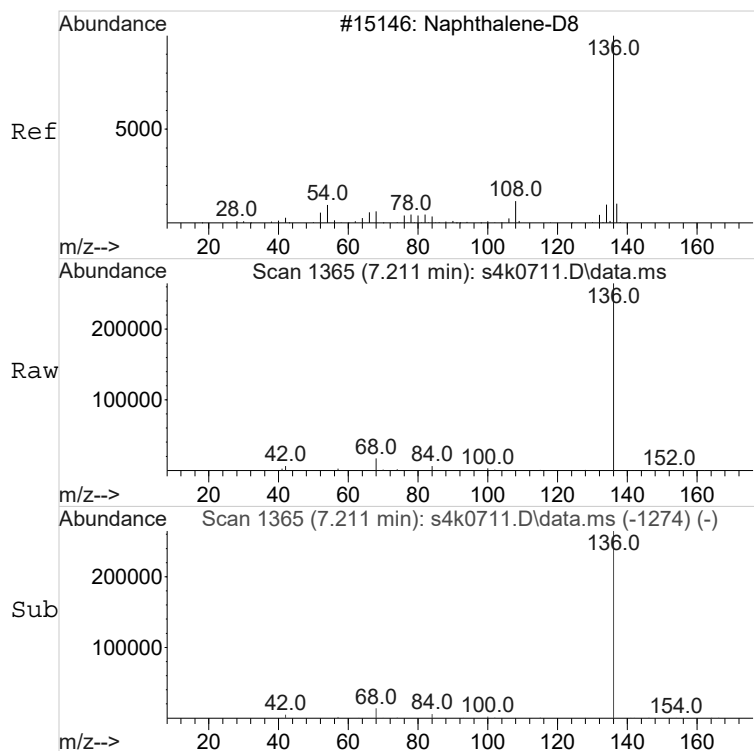




#2 BEFORE analyst DELETION  
 N-Methyl-N-nitrosomethylamine  
 Concen: 0.42 ng/uL  
 RT: 2.407 min Scan# 444  
 Delta R.T. -0.021 min  
 Lab File: s4k0711.D  
 Acq: 07 Nov 2016 12:47

Tgt Ion: 74 Resp: 23701  
 Ion Ratio Lower Upper  
 74 100  
 42 27.1 39.1 99.1#





#5 BEFORE analyst integration

A Naphthalene-d8

Concen: 4.00 ng/uL

RT: 7.211 min Scan# 1365

Delta R.T. -0.026 min

Lab File: s4k0711.D

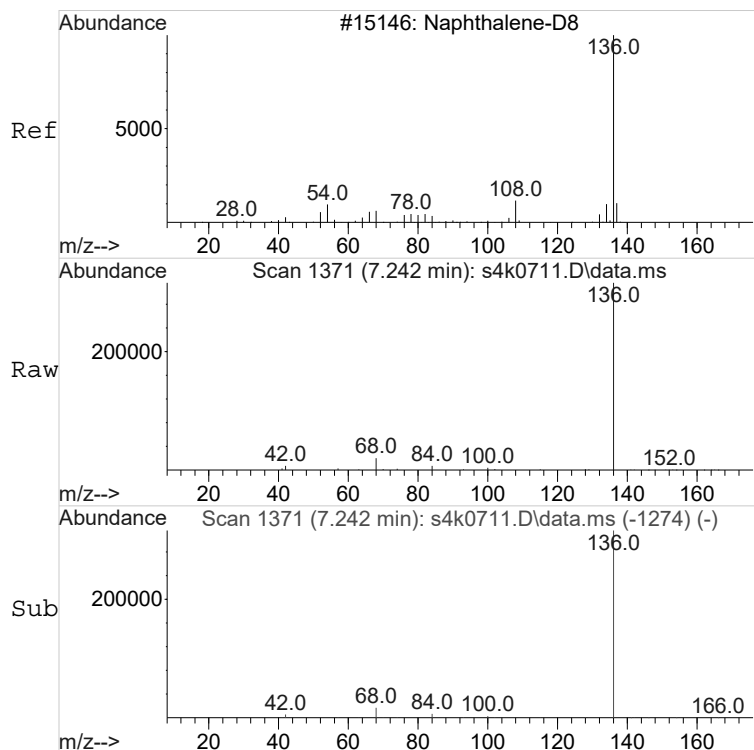
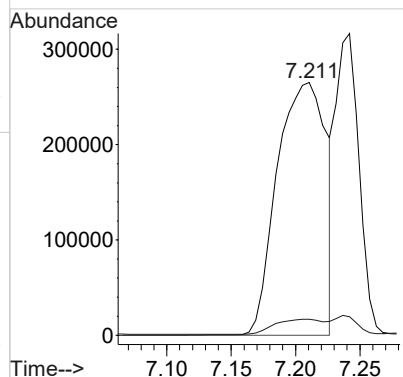
Acq: 07 Nov 2016 12:47

Tgt Ion:136 Resp: 701230

Ion Ratio Lower Upper

136 100

68 5.9 0.0 36.7



#5 AFTER analyst integration

A Naphthalene-d8

AB

Concen: 4.00 ng/uL MANUALLY INTEGRATED

RT: 7.242 min Scan# 1371

Delta R.T. 0.005 min

Lab File: s4k0711.D

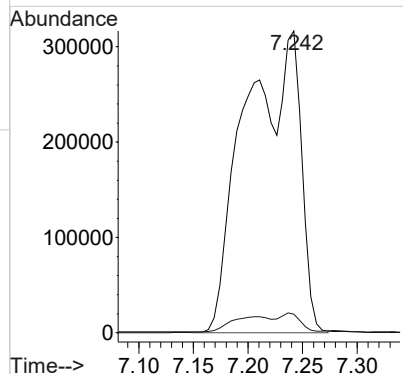
Acq: 07 Nov 2016 12:47

Tgt Ion:136 Resp: 1097833

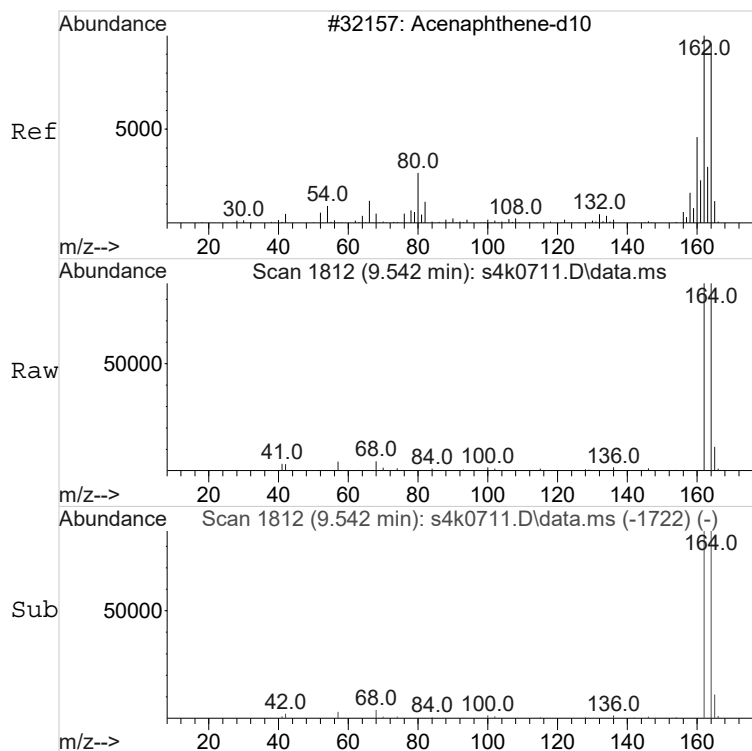
Ion Ratio Lower Upper

136 100

68 6.5 0.0 36.7







#9 BEFORE analyst integration

A Acenaphthene-d10

Concen: 4.00 ng/uL

RT: 9.542 min Scan# 1812

Delta R.T. -0.031 min

Lab File: s4k0711.D

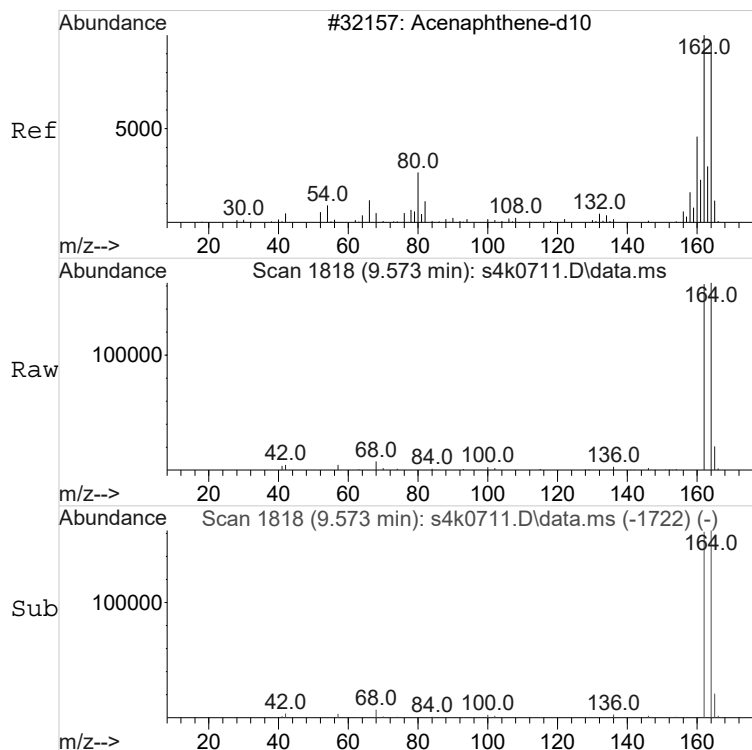
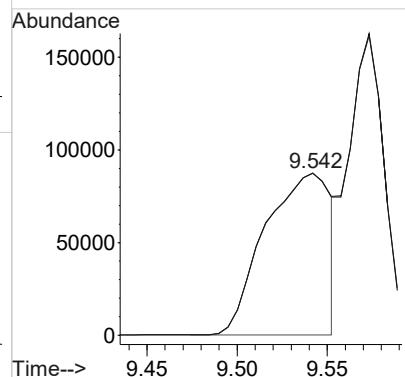
Acq: 07 Nov 2016 12:47

Tgt Ion:164 Resp: 220273

Ion Ratio Lower Upper

164 100

162 100.2 69.6 129.6



#9 AFTER analyst integration

A Acenaphthene-d10

AB

Concen: 4.00 ng/uL MANUALLY INTEGRATED

RT: 9.573 min Scan# 1818

Delta R.T. 0.000 min

Lab File: s4k0711.D

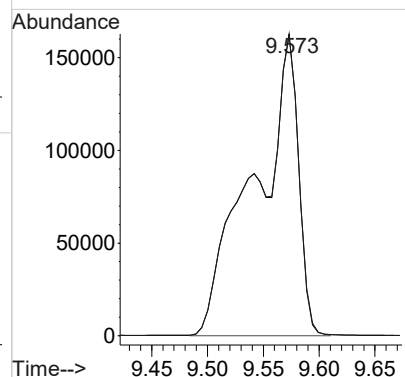
Acq: 07 Nov 2016 12:47

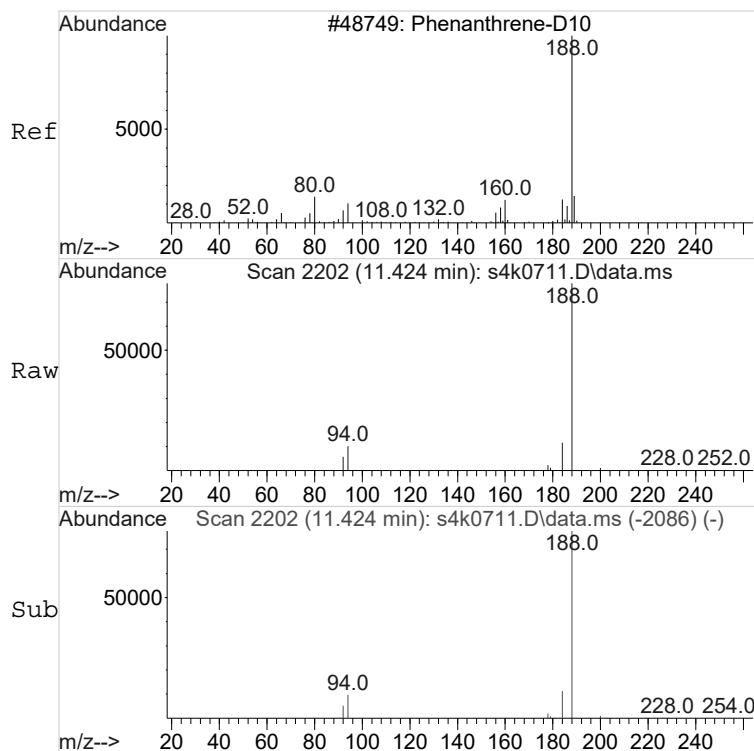
Tgt Ion:164 Resp: 444139

Ion Ratio Lower Upper

164 100

162 100.3 69.6 129.6





#14 BEFORE analyst integration

A Phenanthrene-d10

Concen: 4.00 ng/uL

RT: 11.424 min Scan# 2202

Delta R.T. -0.033 min

Lab File: s4k0711.D

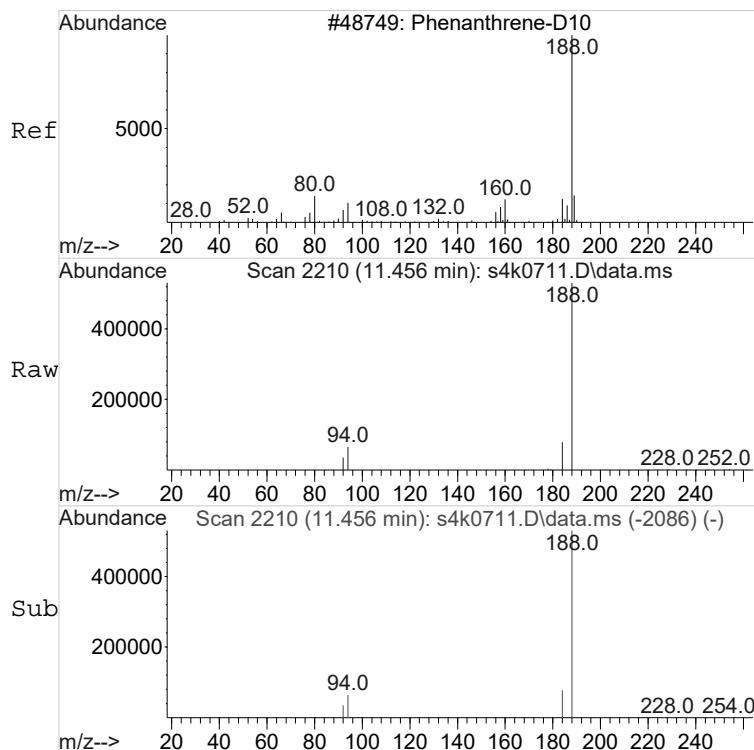
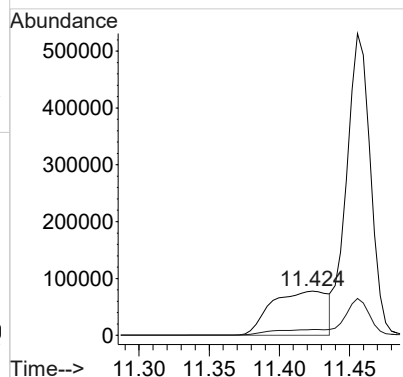
Acq: 07 Nov 2016 12:47

Tgt Ion:188 Resp: 217067

Ion Ratio Lower Upper

188 100

94 11.3 0.0 42.3



#14 AFTER analyst integration

A Phenanthrene-d10

AB

Concen: 4.00 ng/uL MANUALLY INTEGRATED

RT: 11.456 min Scan# 2210

Delta R.T. -0.001 min

Lab File: s4k0711.D

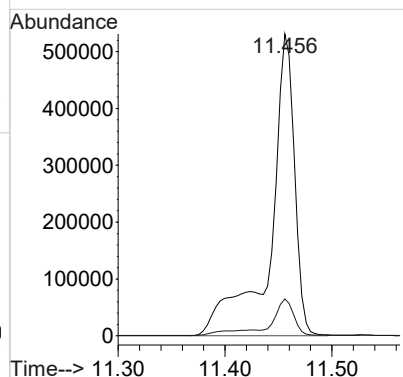
Acq: 07 Nov 2016 12:47

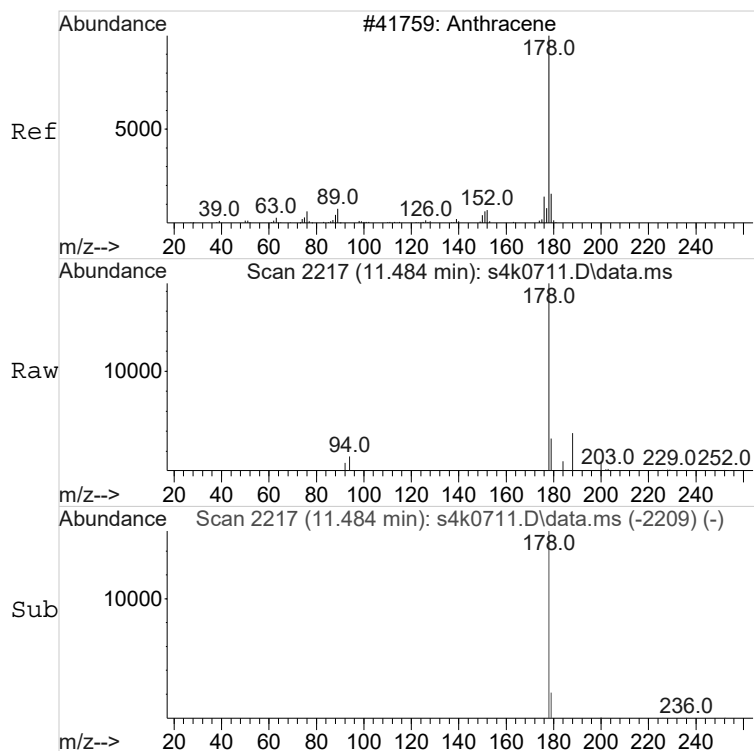
Tgt Ion:188 Resp: 843386

Ion Ratio Lower Upper

188 100

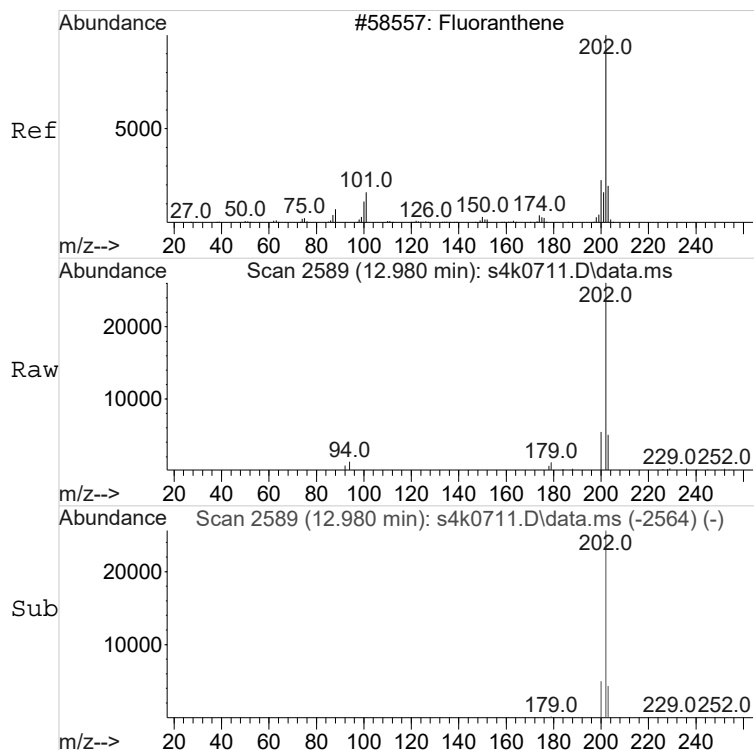
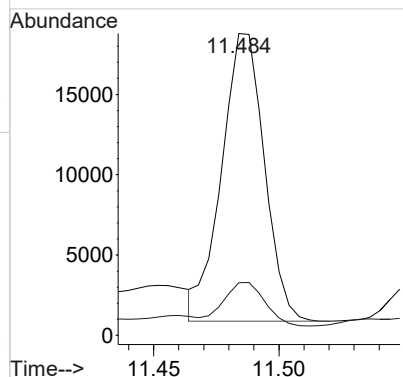
94 12.6 0.0 42.3





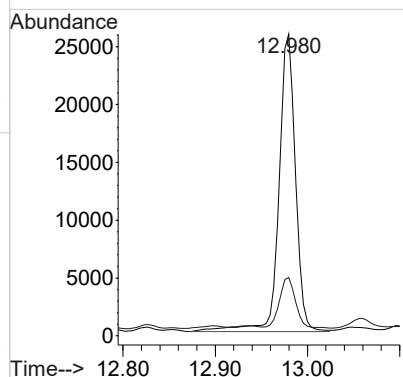
#16  
Anthracene  
Concen: 0.08 ng/uL  
RT: 11.484 min Scan# 2217  
Delta R.T. -0.069 min  
Lab File: s4k0711.D  
Acq: 07 Nov 2016 12:47

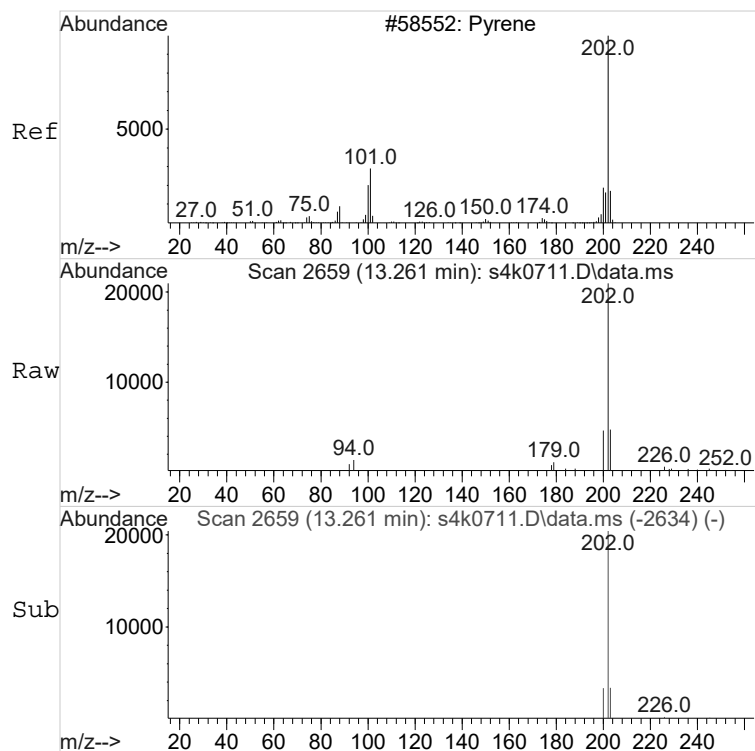
Tgt Ion: 178 Resp: 21299  
Ion Ratio Lower Upper  
178 100  
179 14.8 0.0 45.5



#18  
Fluoranthene  
Concen: 0.12 ng/uL  
RT: 12.980 min Scan# 2589  
Delta R.T. -0.001 min  
Lab File: s4k0711.D  
Acq: 07 Nov 2016 12:47

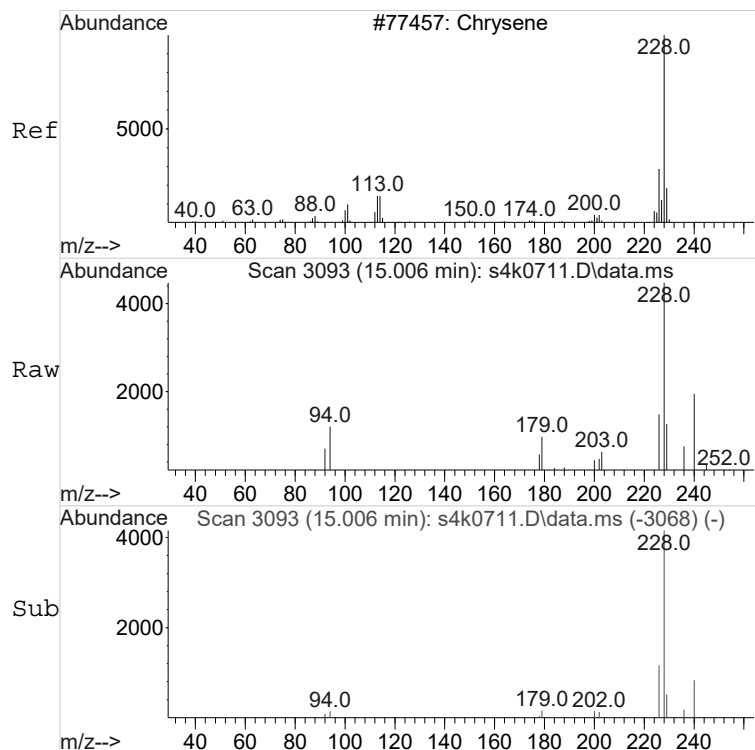
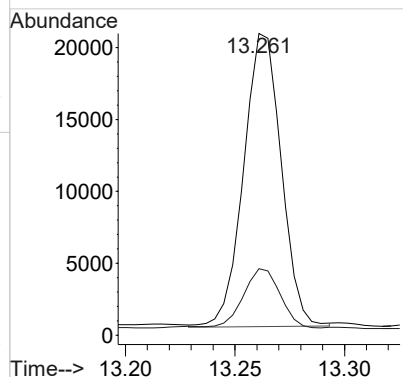
Tgt Ion: 202 Resp: 32053  
Ion Ratio Lower Upper  
202 100  
203 16.5 0.0 47.7





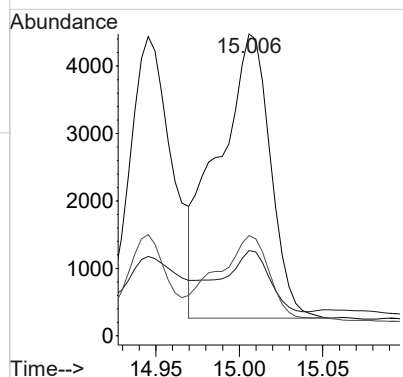
#20  
Pyrene  
Concen: 0.08 ng/uL  
RT: 13.261 min Scan# 2659  
Delta R.T. -0.001 min  
Lab File: s4k0711.D  
Acq: 07 Nov 2016 12:47

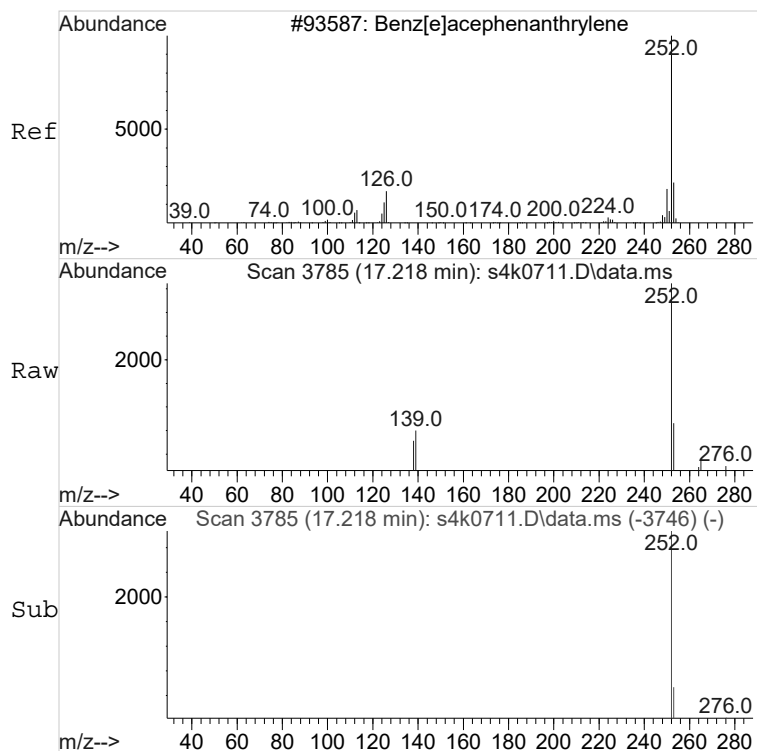
| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 202     | 100   | 24391 |       |       |
| 200     | 20.0  | 0.0   | 50.4  |       |



#22  
Chrysene  
Concen: 0.05 ng/uL  
RT: 15.006 min Scan# 3093  
Delta R.T. -0.001 min  
Lab File: s4k0711.D  
Acq: 07 Nov 2016 12:47

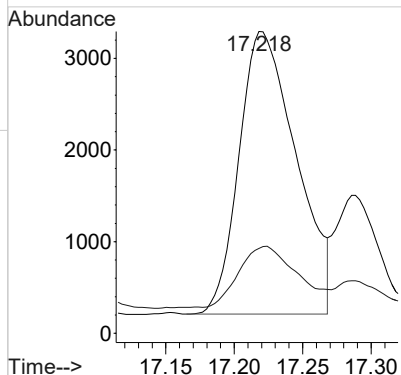
| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 228     | 100   | 9268 |       |       |
| 229     | 19.4  | 0.0  | 49.3  |       |
| 226     | 31.7  | 0.0  | 59.2  |       |





#24  
Benzo(b) fluoranthene  
Concen: 0.07 ng/uL  
RT: 17.218 min Scan# 3785  
Delta R.T. 0.005 min  
Lab File: s4k0711.D  
Acq: 07 Nov 2016 12:47

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 252     | 100   |       |       |
| 253     | 22.3  | 0.0   | 51.6  |



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254017  
  
**Client ID:** DP100113  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 13:16  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0712.D

**Date Collected:** 10/24/2016 14:30  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.038 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 27.4  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 83-32-9  | Acenaphthene           | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 208-96-8 | Acenaphthylene         | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 120-12-7 | Anthracene             | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 56-55-3  | Benzo(a)anthracene     | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 50-32-8  | Benzo(a)pyrene         | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 205-99-2 | Benzo(b)fluoranthene   | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 218-01-9 | Chrysene               | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 206-44-0 | Fluoranthene           | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 86-73-7  | Fluorene               | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 4.58   | ug/kg | 2.29    | 4.58    |
| 91-20-3  | Naphthalene            | U         | 4.58   | ug/kg | 1.38    | 4.58    |
| 85-01-8  | Phenanthrene           | J         | 2.29   | ug/kg | 2.29    | 4.58    |
| 129-00-0 | Pyrene                 | U         | 4.58   | ug/kg | 2.29    | 4.58    |

JMB  
11/07/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0712.D  
Acq On : 07 Nov 2016 13:16  
Operator : JMB3  
InstName : MSD4  
Sample : |409254017|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 12 Sample Multiplier: 1

JCB  
11/08/2016

Quant Time: Nov 07 13:51:32 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

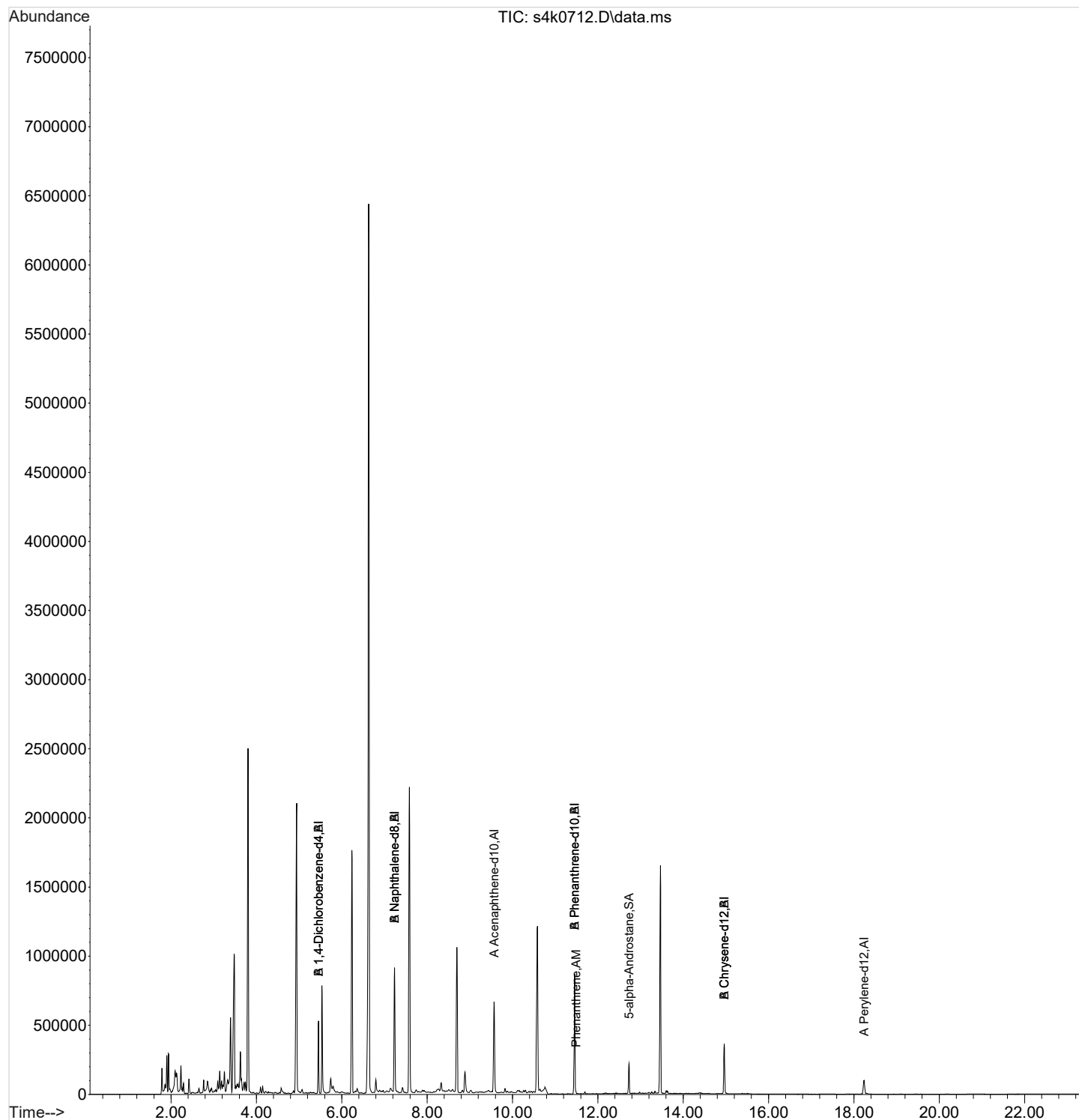
| Compound                     | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units |           |
|------------------------------|--------|--------|----------|--------|----------|------|-------|-----------|
|                              |        |        |          |        |          |      |       |           |
| Internal Standards           |        |        |          |        |          |      |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152    | 5.453  | 5.448    | 1.000  | 339001   | 4.00 | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136    | 7.237  | 7.237    | 1.000  | 1154778  | 4.00 | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164    | 9.568  | 9.573    | 1.000  | 456802   | 4.00 | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 880630   | 4.00 | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240    | 14.962 | 14.963   | 1.000  | 410605   | 4.00 | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264    | 18.236 | 18.231   | 1.000  | 207120   | 4.00 | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 339001   | 4.00 | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1154778  | 4.00 | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 880630   | 4.00 | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240    | 14.962 | 14.963   | 1.000  | 410605   | 4.00 | ng/uL | 0.00      |
| System Monitoring Compounds  |        |        |          |        |          |      |       | Dev (Min) |
| 17) 5-alpha-Androstane       | 245    | 12.730 | 12.731   | 1.111  | 125870   | 4.57 | ng/uL | 0.00      |
| Compound                     | Amount |        | Range    |        | Recovery |      |       |           |
| 17) 5-alpha-Androstane       | 5.000  |        | 30 - 115 |        | 91%      |      |       |           |
| Target Compounds             |        |        |          |        |          |      |       | QValue    |
| 15) Phenanthrene             | 178    | 11.488 | 11.489   | 1.003  | 16314    | 0.05 | ng/uL | 90        |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

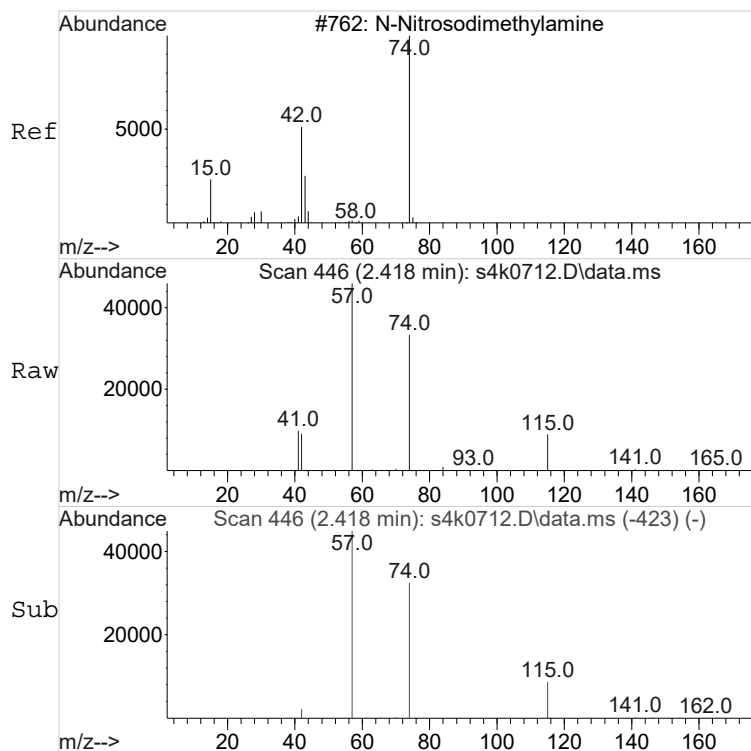
Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0712.D  
Acq On : 07 Nov 2016 13:16  
Operator : JMB3  
InstName : MSD4  
Sample : |409254017|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 07 13:51:32 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

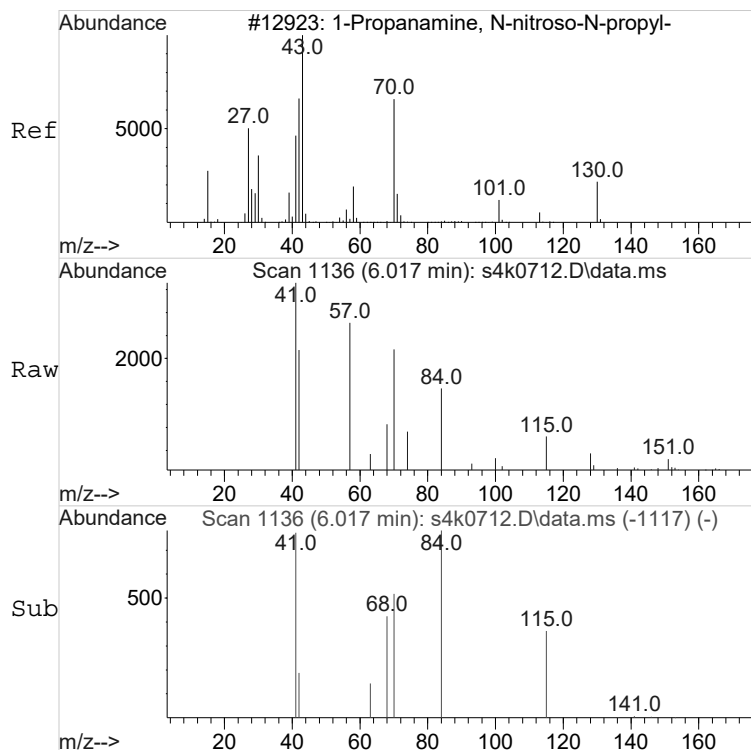
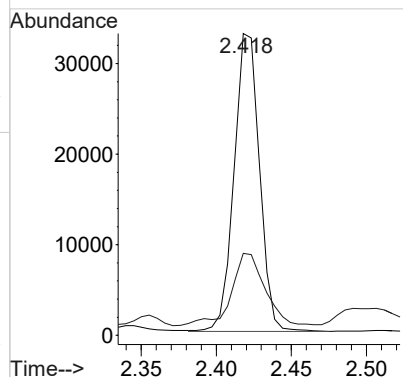






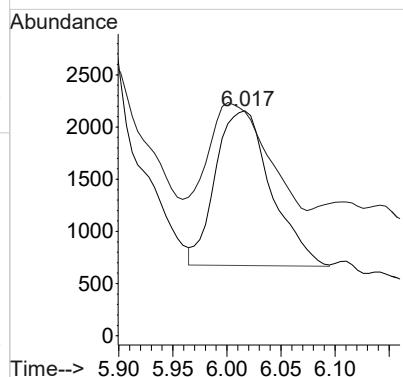
#2 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 0.63 ng/uL  
RT: 2.418 min Scan# 446  
Delta R.T. -0.010 min  
Lab File: s4k0712.D  
Acq: 07 Nov 2016 13:16

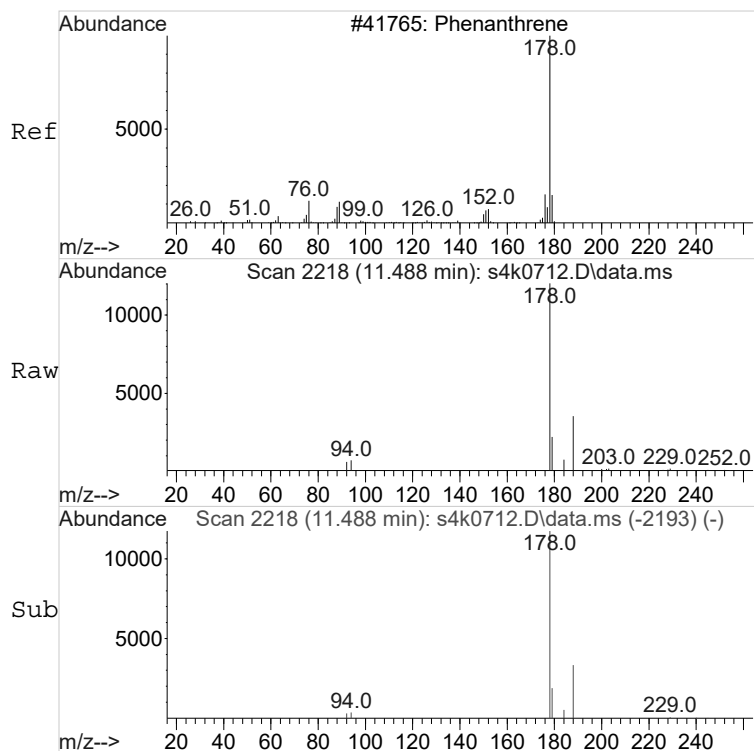
Tgt Ion: 74 Resp: 38640  
Ion Ratio Lower Upper  
74 100  
42 31.8 39.1 99.1#



#4 BEFORE analyst DELETION  
N-Nitrosodipropylamine  
Concen: 0.08 ng/uL  
RT: 6.017 min Scan# 1136  
Delta R.T. 0.000 min  
Lab File: s4k0712.D  
Acq: 07 Nov 2016 13:16

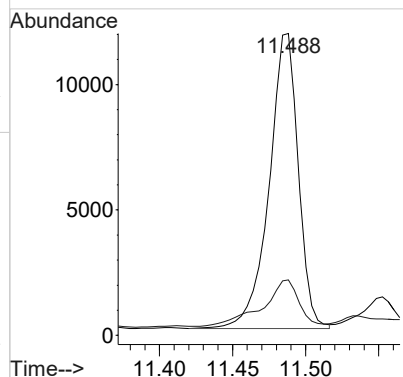
Tgt Ion: 70 Resp: 5286  
Ion Ratio Lower Upper  
70 100  
42 69.5 22.5 82.5





#15  
Phenanthrene  
Concen: 0.05 ng/uL  
RT: 11.488 min Scan# 2218  
Delta R.T. -0.001 min  
Lab File: s4k0712.D  
Acq: 07 Nov 2016 13:16

Tgt Ion:178 Resp: 16314  
Ion Ratio Lower Upper  
178 100  
179 19.8 0.0 45.6



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

**SDG Number:** 409254  
**Lab Sample ID:** 409254018

**Date Collected:** 10/25/2016 09:42

**Matrix:** SOIL

**Date Received:** 10/27/2016 09:00

**%Moisture:** 24.7

**Client:** HAAL002

**Project:** HAAL00201

**Method:** SW846 3541/8270D SIM P.

**SOP Ref:** GL-OA-E-009

**Inst:** MSD4.I

**Dilution:** 1

**Client ID:** DP100212

**Batch ID:** 1612777

**Run Date:** 11/07/2016 13:44

**Analyst:** JMB3

**Inj. Vol:** 1 uL

**Prep Date:** 11/04/2016 08:33

**Aliquot:** 30.015 g

**Final Volume:** 1 mL

**Data File:** s110716.B\4k0713.D

**Column:** DB-5ms

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 83-32-9  | Acenaphthene           | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 208-96-8 | Acenaphthylene         | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 120-12-7 | Anthracene             | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 56-55-3  | Benzo(a)anthracene     | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 50-32-8  | Benzo(a)pyrene         | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 205-99-2 | Benzo(b)fluoranthene   | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 218-01-9 | Chrysene               | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 206-44-0 | Fluoranthene           | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 86-73-7  | Fluorene               | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 4.42   | ug/kg | 2.21    | 4.42    |
| 91-20-3  | Naphthalene            | U         | 4.42   | ug/kg | 1.33    | 4.42    |
| 85-01-8  | Phenanthrene           | J         | 3.10   | ug/kg | 2.21    | 4.42    |
| 129-00-0 | Pyrene                 | U         | 4.42   | ug/kg | 2.21    | 4.42    |

JMB  
11/07/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0713.D  
Acq On : 07 Nov 2016 13:44  
Operator : JMB3  
InstName : MSD4  
Sample : |409254018|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 13 Sample Multiplier: 1

JCB  
11/08/2016

Quant Time: Nov 07 14:13:21 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

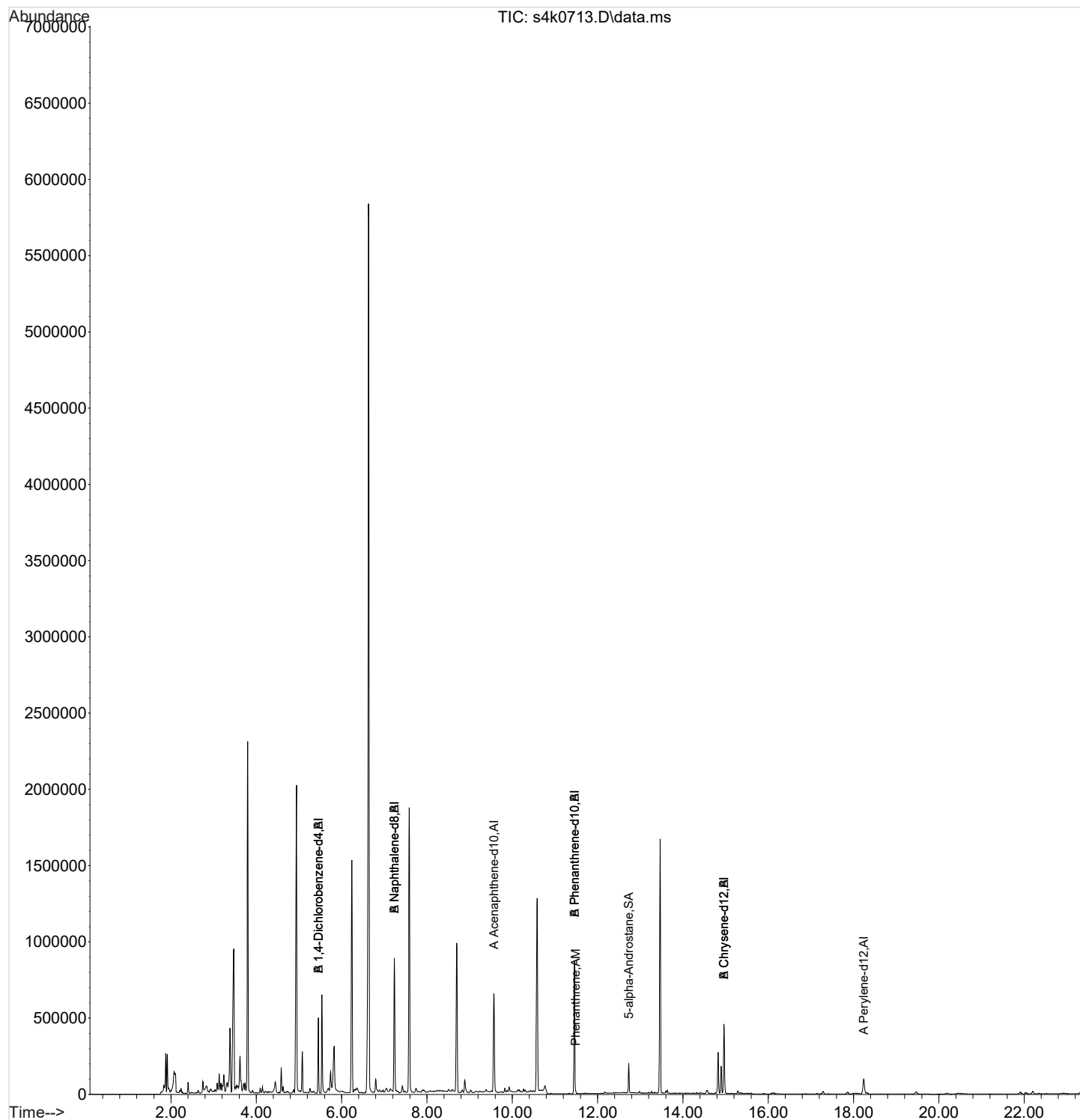
| Compound                     | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units |           |
|------------------------------|--------|--------|----------|--------|----------|------|-------|-----------|
|                              |        |        |          |        |          |      |       |           |
| Internal Standards           |        |        |          |        |          |      |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152    | 5.453  | 5.448    | 1.000  | 315527   | 4.00 | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136    | 7.237  | 7.237    | 1.000  | 1091693  | 4.00 | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164    | 9.568  | 9.573    | 1.000  | 440278   | 4.00 | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188    | 11.459 | 11.457   | 1.000  | 846866   | 4.00 | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240    | 14.964 | 14.963   | 1.000  | 370447   | 4.00 | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264    | 18.238 | 18.231   | 1.000  | 214311   | 4.00 | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 315527   | 4.00 | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1091693  | 4.00 | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188    | 11.459 | 11.457   | 1.000  | 846866   | 4.00 | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240    | 14.964 | 14.963   | 1.000  | 370447   | 4.00 | ng/uL | 0.00      |
| System Monitoring Compounds  |        |        |          |        |          |      |       | Dev (Min) |
| 17) 5-alpha-Androstane       | 245    | 12.733 | 12.731   | 1.111  | 112055   | 4.23 | ng/uL | 0.00      |
| Compound                     | Amount |        | Range    |        | Recovery |      |       |           |
| 17) 5-alpha-Androstane       | 5.000  |        | 30 - 115 |        | 85%      |      |       |           |
|                              |        |        |          |        |          |      |       |           |
| Target Compounds             | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units | QValue    |
| 15) Phenanthrene             | 178    | 11.487 | 11.489   | 1.002  | 19186    | 0.07 | ng/uL | 92        |
|                              |        |        |          |        |          |      |       |           |

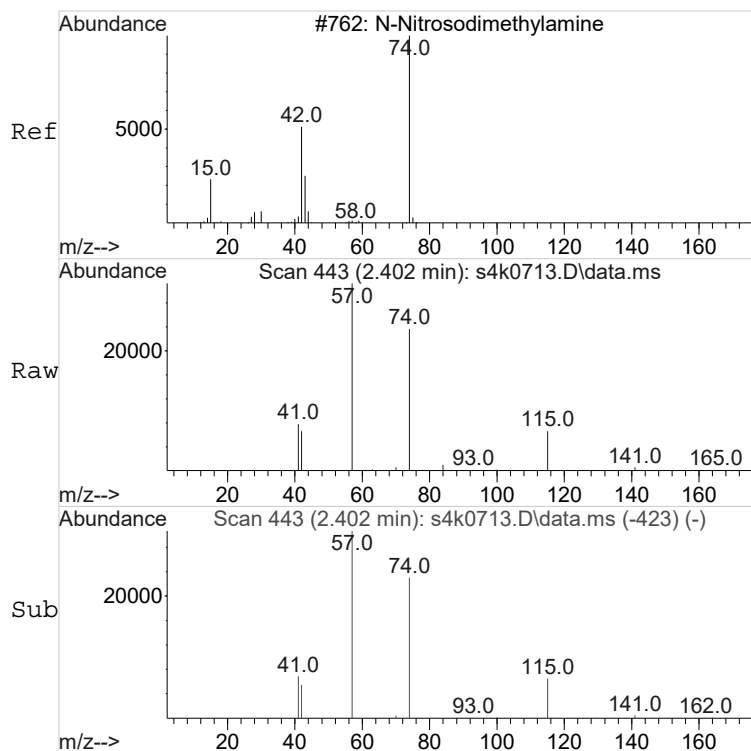
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0713.D  
Acq On : 07 Nov 2016 13:44  
Operator : JMB3  
InstName : MSD4  
Sample : |409254018|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 13 Sample Multiplier: 1

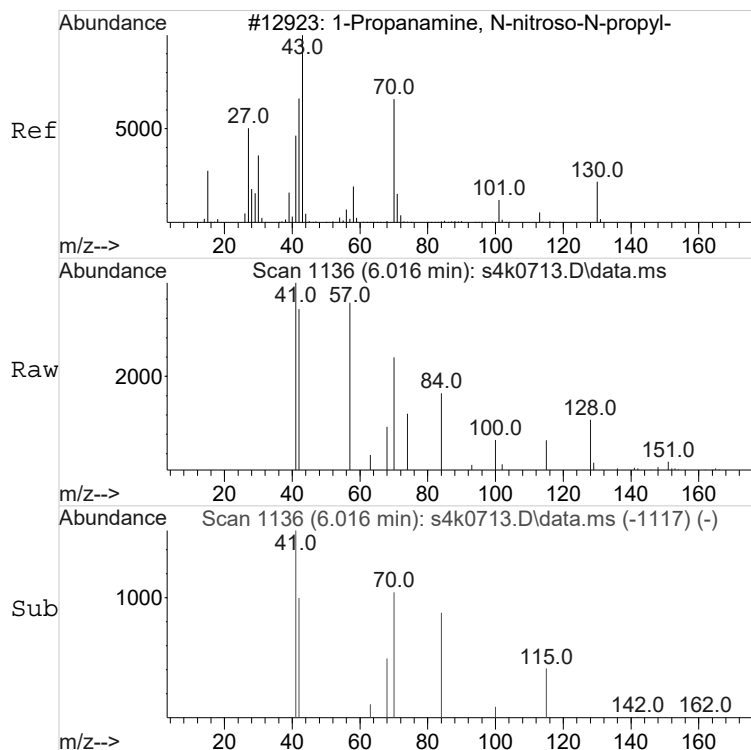
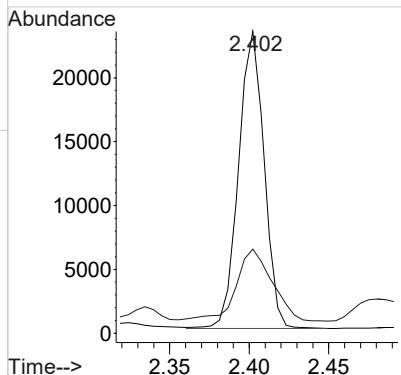
Quant Time: Nov 07 14:13:21 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE





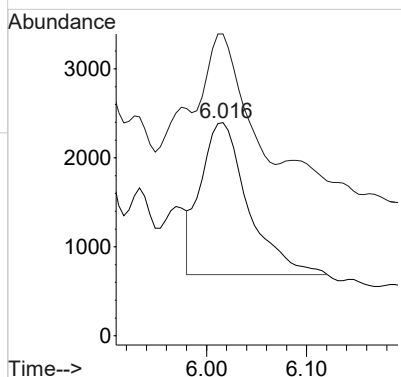
#2 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 0.45 ng/uL  
RT: 2.402 min Scan# 443  
Delta R.T. -0.026 min  
Lab File: s4k0713.D  
Acq: 07 Nov 2016 13:44

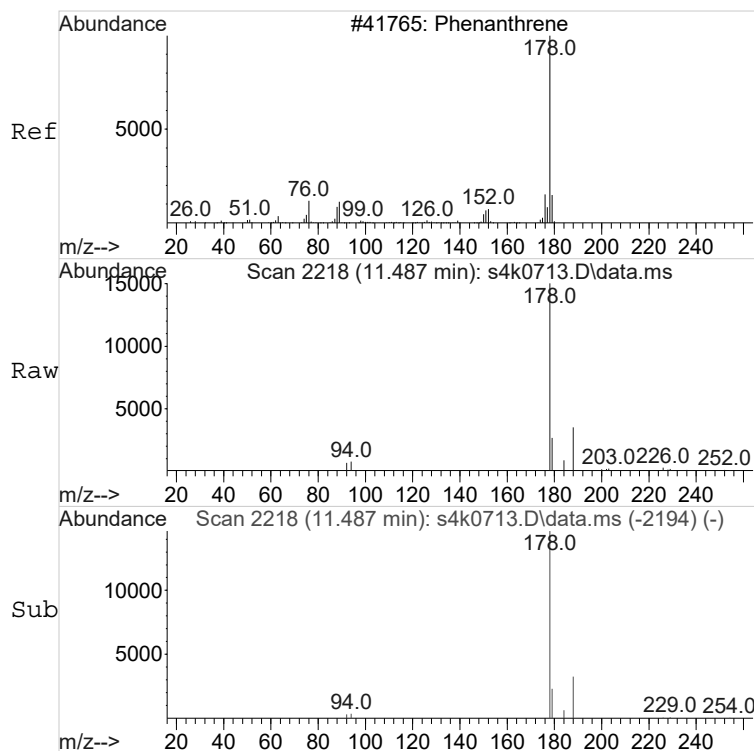
Tgt Ion: 74 Resp: 25888  
Ion Ratio Lower Upper  
74 100  
42 34.3 39.1 99.1#



#4 BEFORE analyst DELETION  
N-Nitrosodipropylamine  
Concen: 0.09 ng/uL  
RT: 6.016 min Scan# 1136  
Delta R.T. 0.000 min  
Lab File: s4k0713.D  
Acq: 07 Nov 2016 13:44

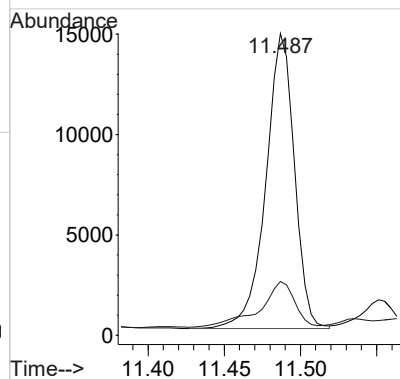
Tgt Ion: 70 Resp: 5631  
Ion Ratio Lower Upper  
70 100  
42 69.0 22.5 82.5





#15  
Phenanthrene  
Concen: 0.07 ng/uL  
RT: 11.487 min Scan# 2218  
Delta R.T. -0.002 min  
Lab File: s4k0713.D  
Acq: 07 Nov 2016 13:44

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 178     | 100   |       |       |
| 179     | 19.0  | 0.0   | 45.6  |



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254019  
  
**Client ID:** DP100310  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 14:12  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0714.D

**Date Collected:** 10/25/2016 10:04  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.055 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 25.2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 83-32-9  | Acenaphthene           | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 208-96-8 | Acenaphthylene         | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 120-12-7 | Anthracene             | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 56-55-3  | Benzo(a)anthracene     | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 50-32-8  | Benzo(a)pyrene         | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 3.56   | ug/kg | 2.22    | 4.45    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 218-01-9 | Chrysene               | J         | 2.22   | ug/kg | 2.22    | 4.45    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 206-44-0 | Fluoranthene           | J         | 3.56   | ug/kg | 2.22    | 4.45    |
| 86-73-7  | Fluorene               | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 4.45   | ug/kg | 2.22    | 4.45    |
| 91-20-3  | Naphthalene            | U         | 4.45   | ug/kg | 1.33    | 4.45    |
| 85-01-8  | Phenanthrene           | J         | 3.11   | ug/kg | 2.22    | 4.45    |
| 129-00-0 | Pyrene                 | J         | 3.11   | ug/kg | 2.22    | 4.45    |



JMB  
11/07/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0714.D  
Acq On : 07 Nov 2016 14:12  
Operator : JMB3  
InstName : MSD4  
Sample : |409254019|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 14 Sample Multiplier: 1

JCB  
11/08/2016

Quant Time: Nov 07 14:49:58 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

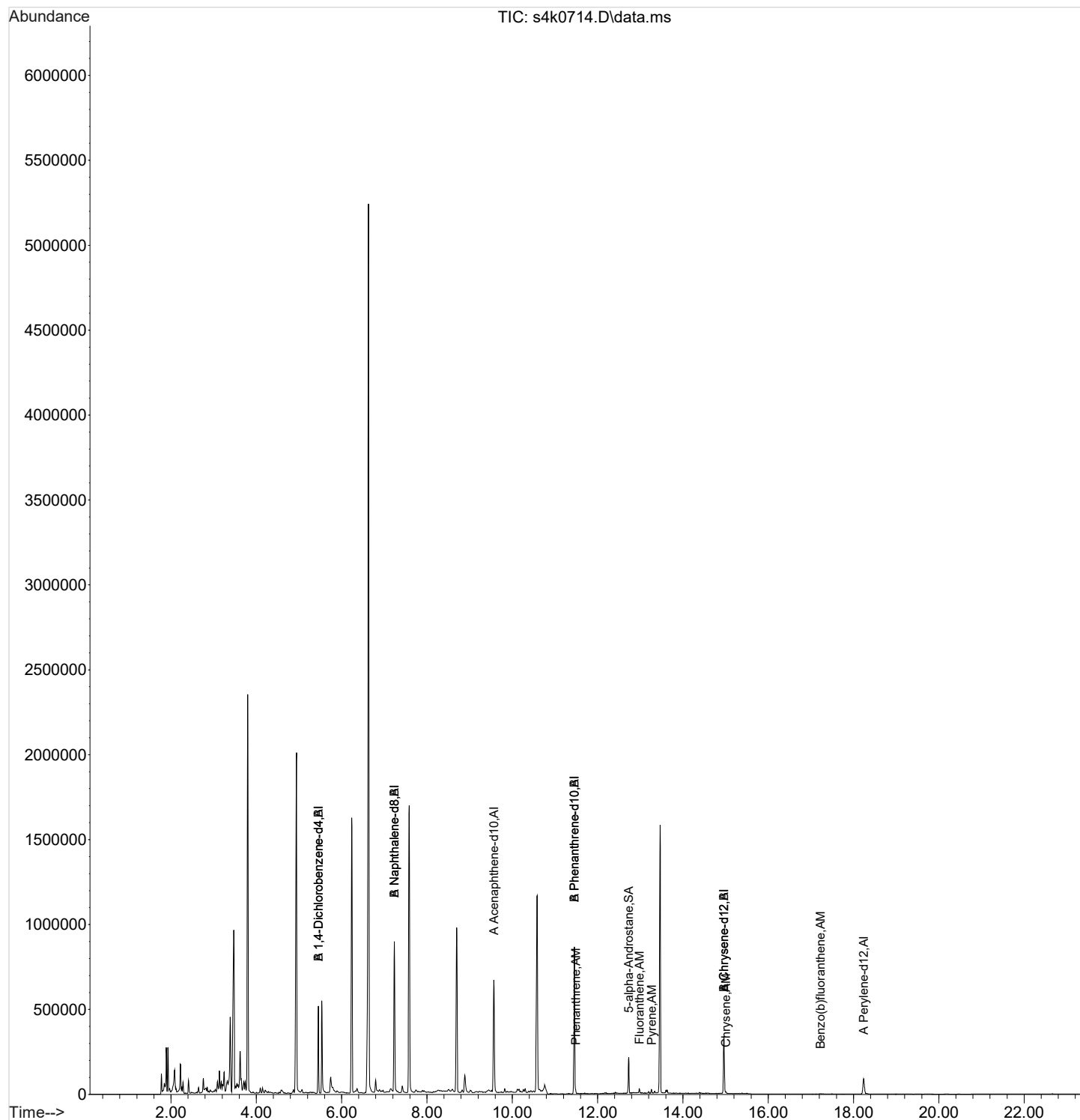
| Compound                    |                          | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units |           |
|-----------------------------|--------------------------|--------|--------|----------|--------|----------|------|-------|-----------|
| Internal Standards          |                          |        |        |          |        |          |      |       | Dev (Min) |
| 1)                          | A 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 328366   | 4.00 | ng/uL | 0.00      |
| 5)                          | A Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1129880  | 4.00 | ng/uL | 0.00      |
| 9)                          | A Acenaphthene-d10       | 164    | 9.568  | 9.573    | 1.000  | 451930   | 4.00 | ng/uL | 0.00      |
| 14)                         | A Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 872333   | 4.00 | ng/uL | 0.00      |
| 19)                         | A Chrysene-d12           | 240    | 14.961 | 14.963   | 1.000  | 382814   | 4.00 | ng/uL | 0.00      |
| 23)                         | A Perylene-d12           | 264    | 18.239 | 18.231   | 1.000  | 192292   | 4.00 | ng/uL | 0.00      |
| 30)                         | B 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 328366   | 4.00 | ng/uL | 0.00      |
| 33)                         | B Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1129880  | 4.00 | ng/uL | 0.00      |
| 35)                         | B Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 872333   | 4.00 | ng/uL | 0.00      |
| 37)                         | B Chrysene-d12           | 240    | 14.961 | 14.963   | 1.000  | 382814   | 4.00 | ng/uL | 0.00      |
| System Monitoring Compounds |                          |        |        |          |        |          |      |       | Dev (Min) |
| 17)                         | 5-alpha-Androstane       | 245    | 12.730 | 12.731   | 1.111  | 117819   | 4.32 | ng/uL | 0.00      |
| Compound                    |                          | Amount |        | Range    |        | Recovery |      |       |           |
| 17)                         | 5-alpha-Androstane       | 5.000  |        | 30 - 115 |        | 86%      |      |       |           |
| Target Compounds            |                          | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units | QValue    |
| 15)                         | Phenanthrene             | 178    | 11.488 | 11.489   | 1.003  | 20985    | 0.07 | ng/uL | 93        |
| 18)                         | Fluoranthene             | 202    | 12.979 | 12.981   | 1.133  | 22020    | 0.08 | ng/uL | 96        |
| 20)                         | Pyrene                   | 202    | 13.265 | 13.262   | 0.887  | 18977    | 0.07 | ng/uL | 100       |
| 22)                         | Chrysene                 | 228    | 15.010 | 15.007   | 1.003  | 7420     | 0.05 | ng/uL | 99        |
| 24)                         | Benzo(b)fluoranthene     | 252    | 17.224 | 17.213   | 0.944  | 6524     | 0.08 | ng/uL | 100       |

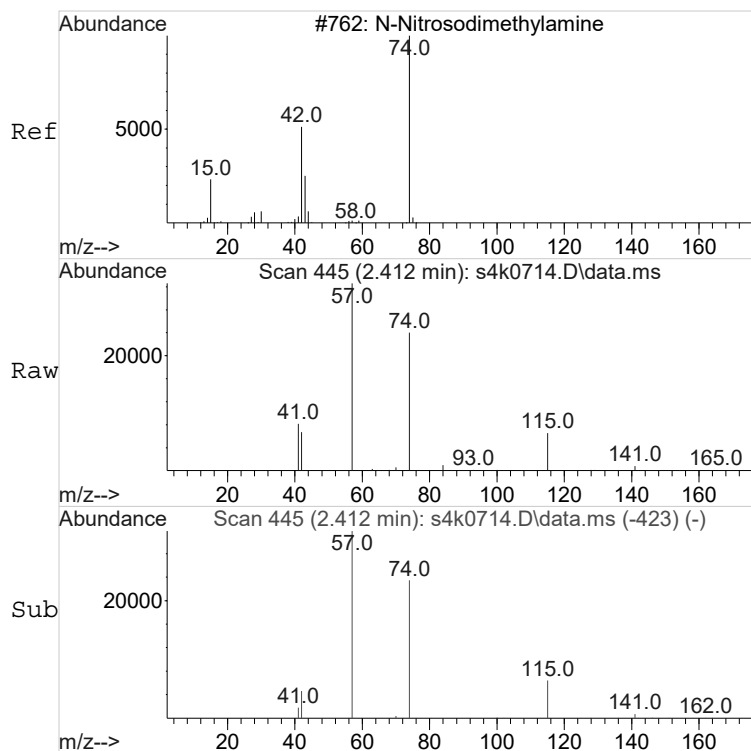
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0714.D  
Acq On : 07 Nov 2016 14:12  
Operator : JMB3  
InstName : MSD4  
Sample : |409254019|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 14 Sample Multiplier: 1

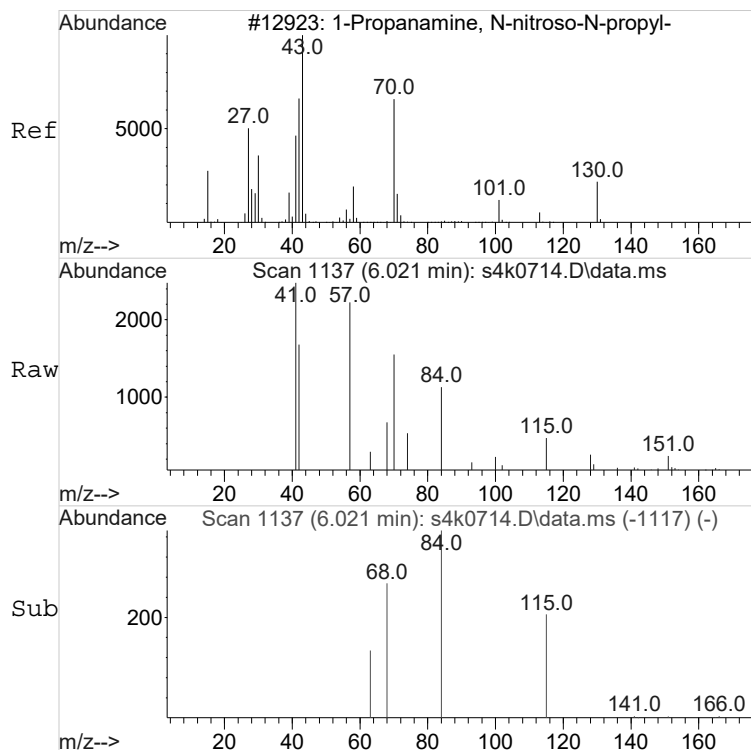
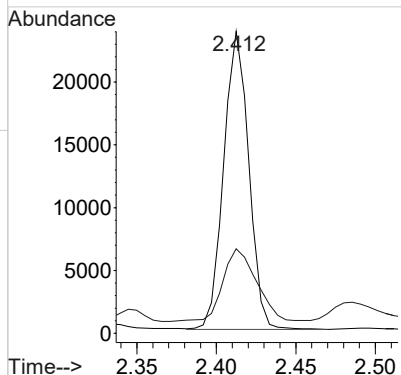
Quant Time: Nov 07 14:49:58 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE





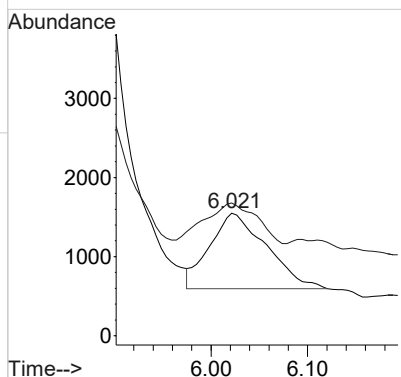
#2 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 0.44 ng/uL  
RT: 2.412 min Scan# 445  
Delta R.T. -0.016 min  
Lab File: s4k0714.D  
Acq: 07 Nov 2016 14:12

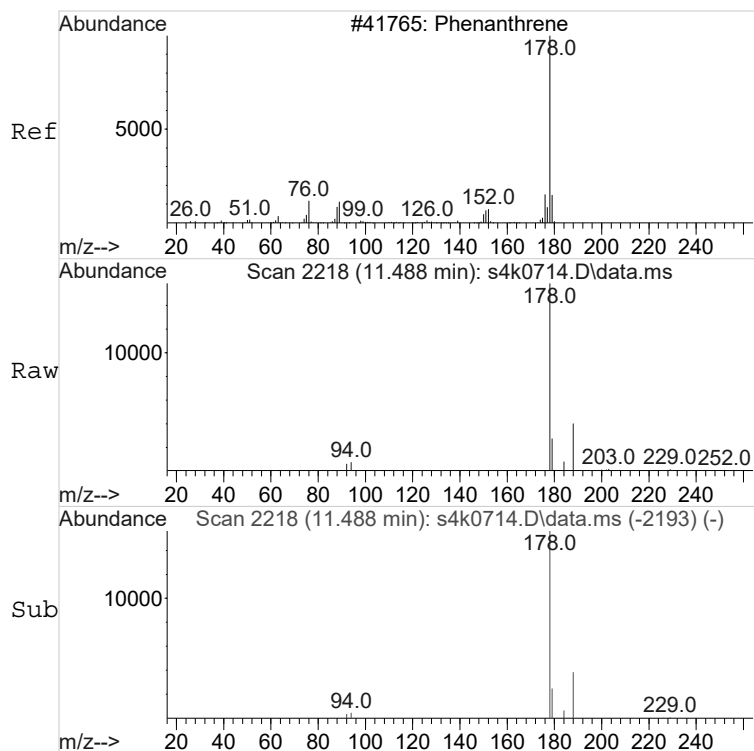
Tgt Ion: 74 Resp: 25998  
Ion Ratio Lower Upper  
74 100  
42 32.6 39.1 99.1#



#4 BEFORE analyst DELETION  
N-Nitrosodipropylamine  
Concen: 0.06 ng/uL  
RT: 6.021 min Scan# 1137  
Delta R.T. 0.005 min  
Lab File: s4k0714.D  
Acq: 07 Nov 2016 14:12

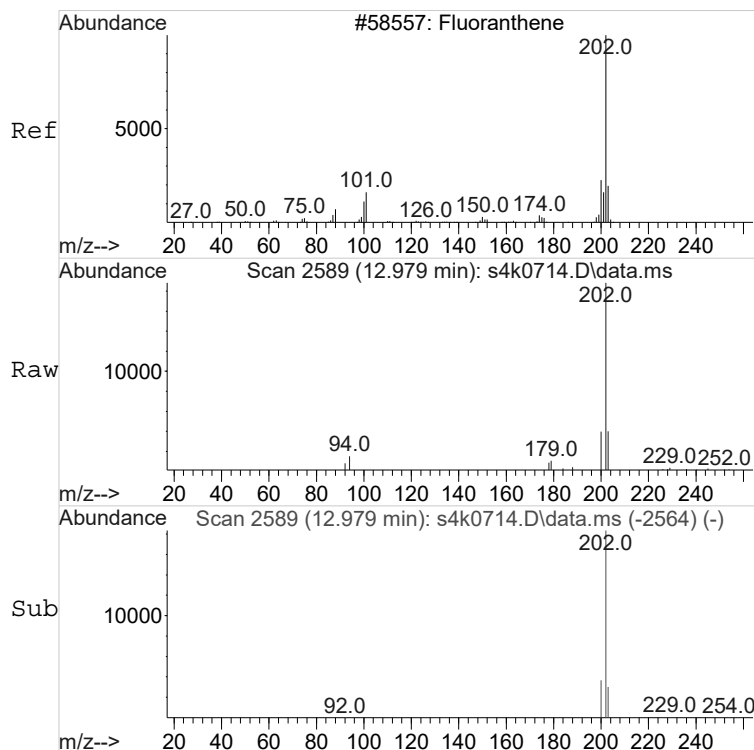
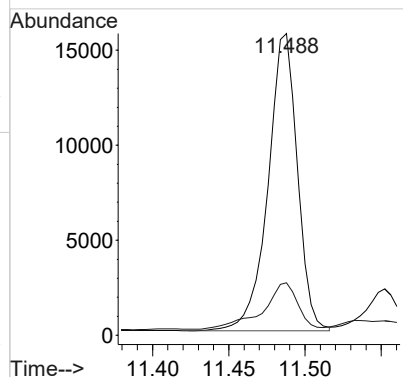
Tgt Ion: 70 Resp: 3891  
Ion Ratio Lower Upper  
70 100  
42 49.6 22.5 82.5





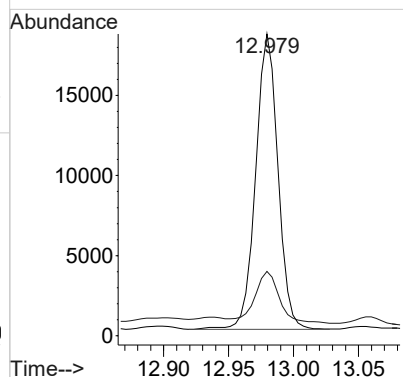
#15  
Phenanthrene  
Concen: 0.07 ng/uL  
RT: 11.488 min Scan# 2218  
Delta R.T. -0.001 min  
Lab File: s4k0714.D  
Acq: 07 Nov 2016 14:12

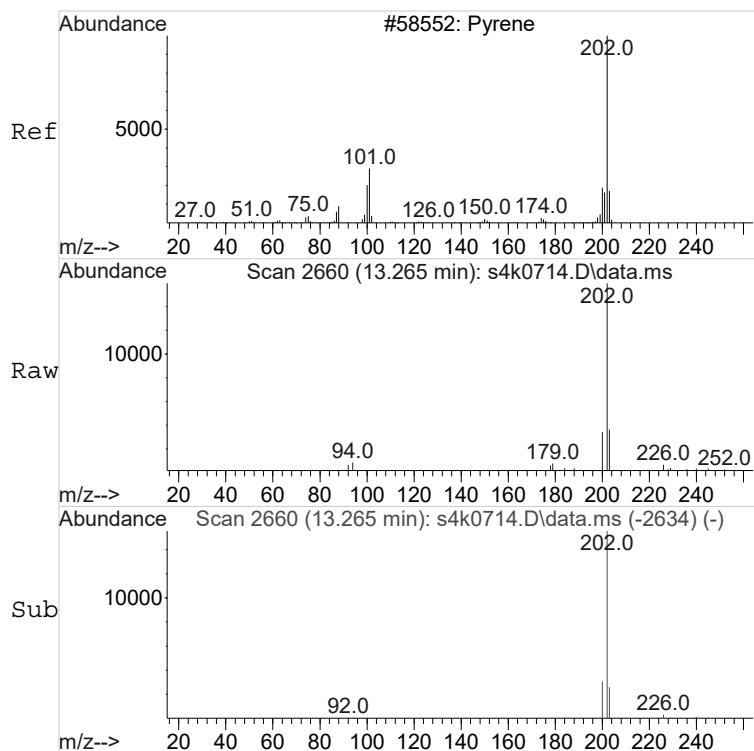
Tgt Ion:178 Resp: 20985  
Ion Ratio Lower Upper  
178 100  
179 18.6 0.0 45.6



#18  
Fluoranthene  
Concen: 0.08 ng/uL  
RT: 12.979 min Scan# 2589  
Delta R.T. -0.001 min  
Lab File: s4k0714.D  
Acq: 07 Nov 2016 14:12

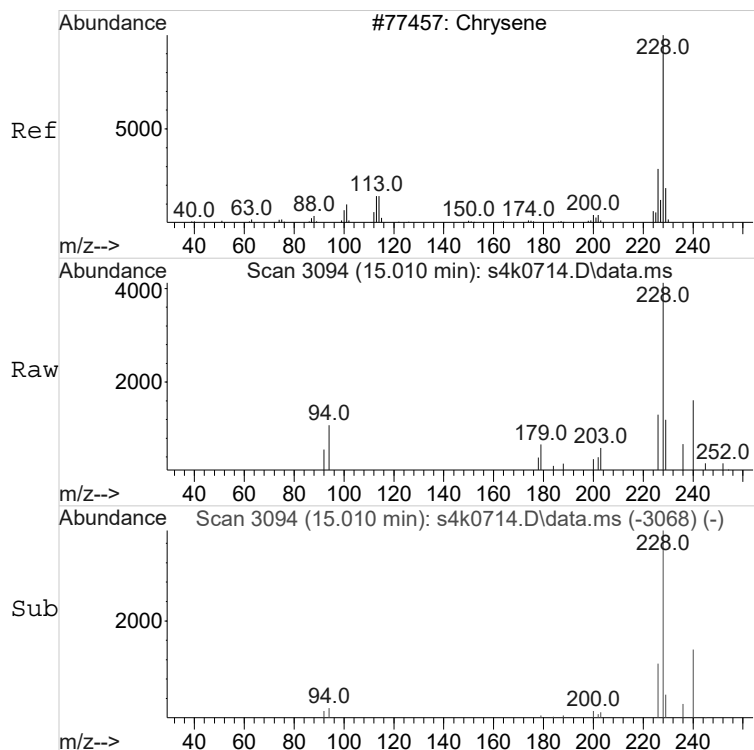
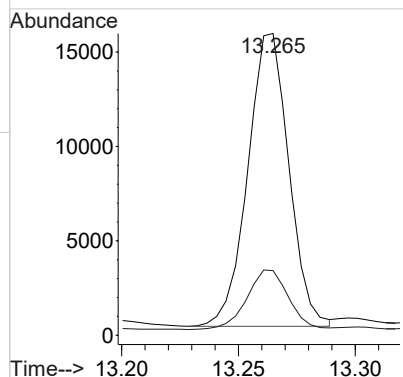
Tgt Ion:202 Resp: 22020  
Ion Ratio Lower Upper  
202 100  
203 19.5 0.0 47.7





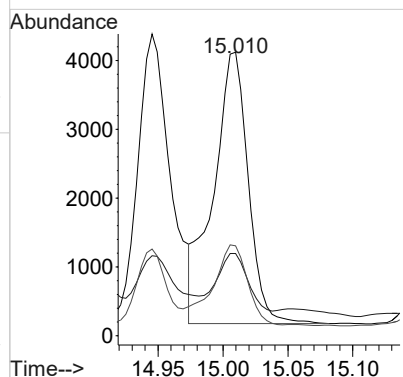
#20  
Pyrene  
Concen: 0.07 ng/uL  
RT: 13.265 min Scan# 2660  
Delta R.T. 0.003 min  
Lab File: s4k0714.D  
Acq: 07 Nov 2016 14:12

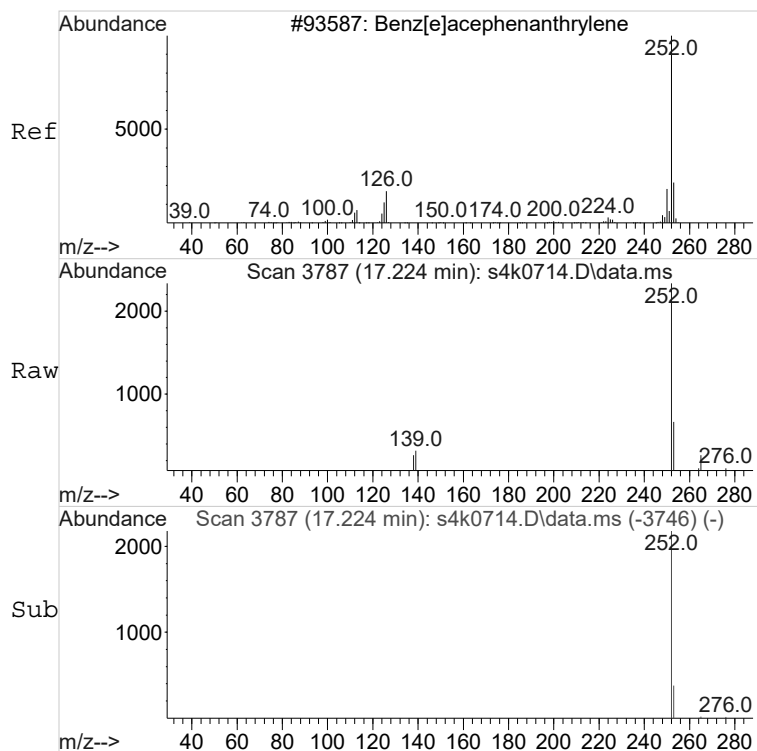
Tgt Ion:202 Resp: 18977  
Ion Ratio Lower Upper  
202 100  
200 20.5 0.0 50.4



#22  
Chrysene  
Concen: 0.05 ng/uL  
RT: 15.010 min Scan# 3094  
Delta R.T. 0.003 min  
Lab File: s4k0714.D  
Acq: 07 Nov 2016 14:12

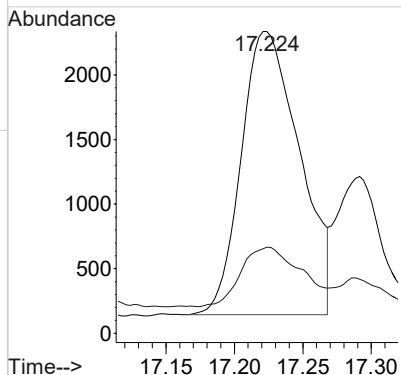
Tgt Ion:228 Resp: 7420  
Ion Ratio Lower Upper  
228 100  
229 18.4 0.0 49.3  
226 29.4 0.0 59.2





#24  
Benzo(b) fluoranthene  
Concen: 0.08 ng/uL  
RT: 17.224 min Scan# 3787  
Delta R.T. 0.011 min  
Lab File: s4k0714.D  
Acq: 07 Nov 2016 14:12

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 252     | 100   |       |       |
| 253     | 21.5  | 0.0   | 51.6  |



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254026  
  
**Client ID:** DP050113  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 14:41  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0715.D

**Date Collected:** 10/25/2016 12:14  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.057 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 19  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 83-32-9  | Acenaphthene           | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 208-96-8 | Acenaphthylene         | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 120-12-7 | Anthracene             | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 56-55-3  | Benzo(a)anthracene     | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 50-32-8  | Benzo(a)pyrene         | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 3.29   | ug/kg | 2.05    | 4.11    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 218-01-9 | Chrysene               | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 206-44-0 | Fluoranthene           | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 86-73-7  | Fluorene               | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 4.11   | ug/kg | 2.05    | 4.11    |
| 91-20-3  | Naphthalene            | U         | 4.11   | ug/kg | 1.23    | 4.11    |
| 85-01-8  | Phenanthrene           | J         | 2.47   | ug/kg | 2.05    | 4.11    |
| 129-00-0 | Pyrene                 | U         | 4.11   | ug/kg | 2.05    | 4.11    |

JMB  
11/07/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0715.D  
Acq On : 07 Nov 2016 14:41  
Operator : JMB3  
InstName : MSD4  
Sample : |409254026|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 15 Sample Multiplier: 1

JCB  
11/08/2016

Quant Time: Nov 07 15:05:51 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                     | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units |           |
|------------------------------|--------|--------|----------|--------|----------|------|-------|-----------|
|                              |        |        |          |        |          |      |       |           |
| Internal Standards           |        |        |          |        |          |      |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152    | 5.453  | 5.448    | 1.000  | 322201   | 4.00 | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136    | 7.237  | 7.237    | 1.000  | 1113162  | 4.00 | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164    | 9.573  | 9.573    | 1.000  | 445963   | 4.00 | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 873618   | 4.00 | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240    | 14.965 | 14.963   | 1.000  | 488764   | 4.00 | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264    | 18.240 | 18.231   | 1.000  | 286649   | 4.00 | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 322201   | 4.00 | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1113162  | 4.00 | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188    | 11.456 | 11.457   | 1.000  | 873618   | 4.00 | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240    | 14.965 | 14.963   | 1.000  | 488764   | 4.00 | ng/uL | 0.00      |
| System Monitoring Compounds  |        |        |          |        |          |      |       | Dev (Min) |
| 17) 5-alpha-Androstane       | 245    | 12.730 | 12.731   | 1.111  | 107581   | 3.94 | ng/uL | 0.00      |
|                              |        |        |          |        |          |      |       |           |
| Compound                     | Amount |        | Range    |        | Recovery |      |       |           |
| 17) 5-alpha-Androstane       | 5.000  |        | 30 - 115 |        | 79%      |      |       |           |
|                              |        |        |          |        |          |      |       |           |
| Target Compounds             | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units | QValue    |
| 15) Phenanthrene             | 178    | 11.488 | 11.489   | 1.003  | 19209    | 0.06 | ng/uL | 91        |
| 24) Benzo(b)fluoranthene     | 252    | 17.222 | 17.213   | 0.944  | 10887    | 0.08 | ng/uL | 100       |
|                              |        |        |          |        |          |      |       |           |

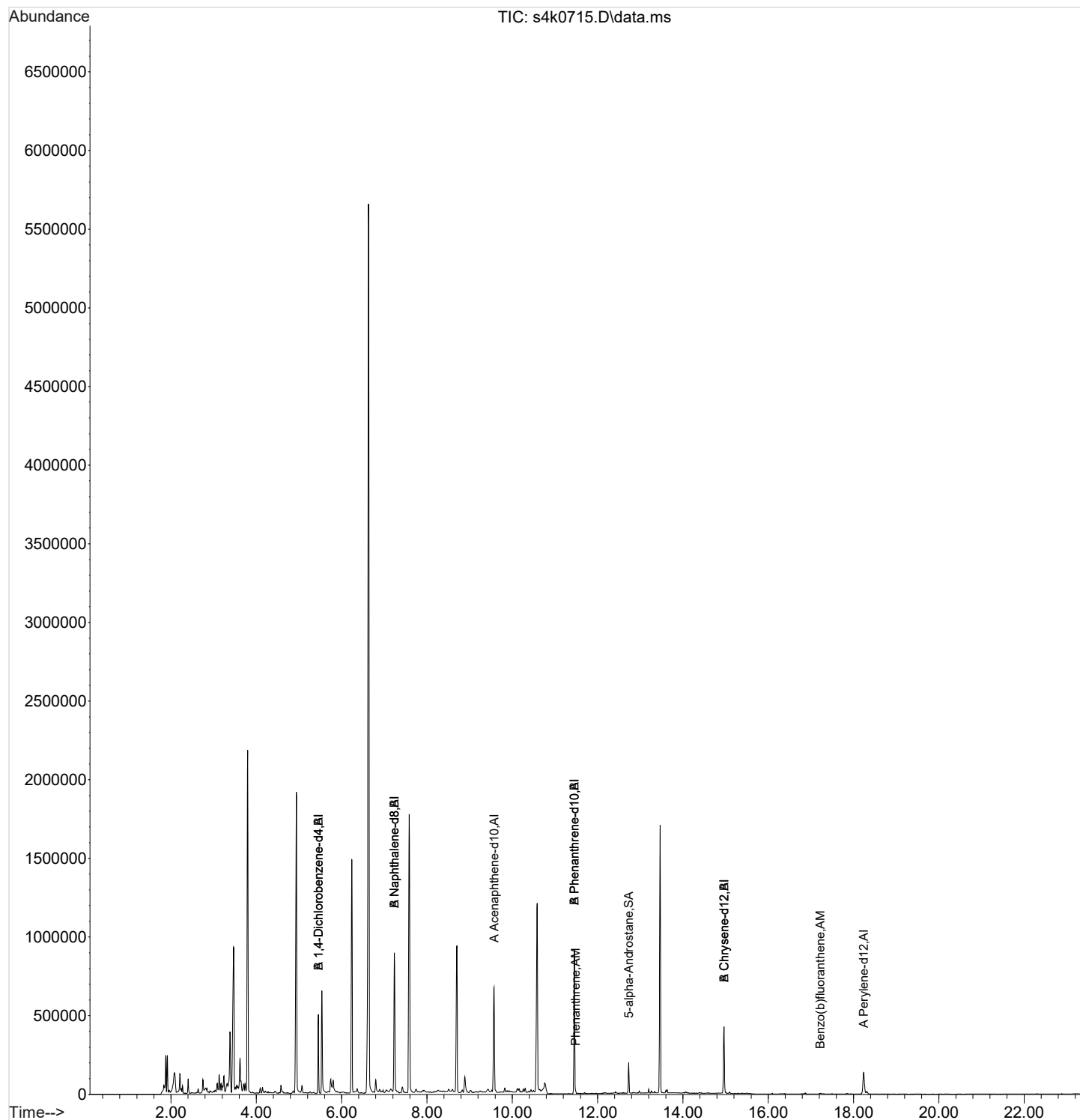
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

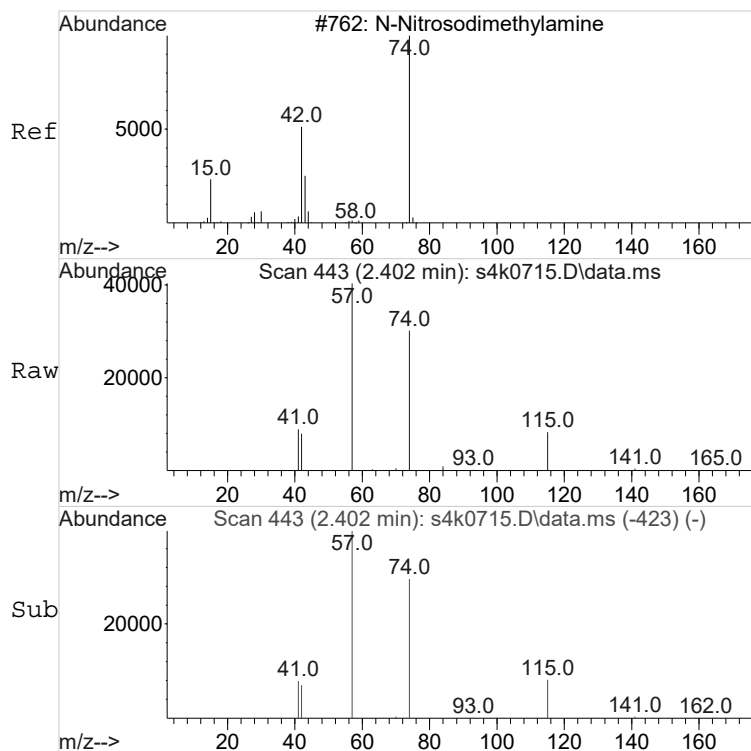


Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0715.D  
Acq On : 07 Nov 2016 14:41  
Operator : JMB3  
InstName : MSD4  
Sample : |409254026|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 15 Sample Multiplier: 1

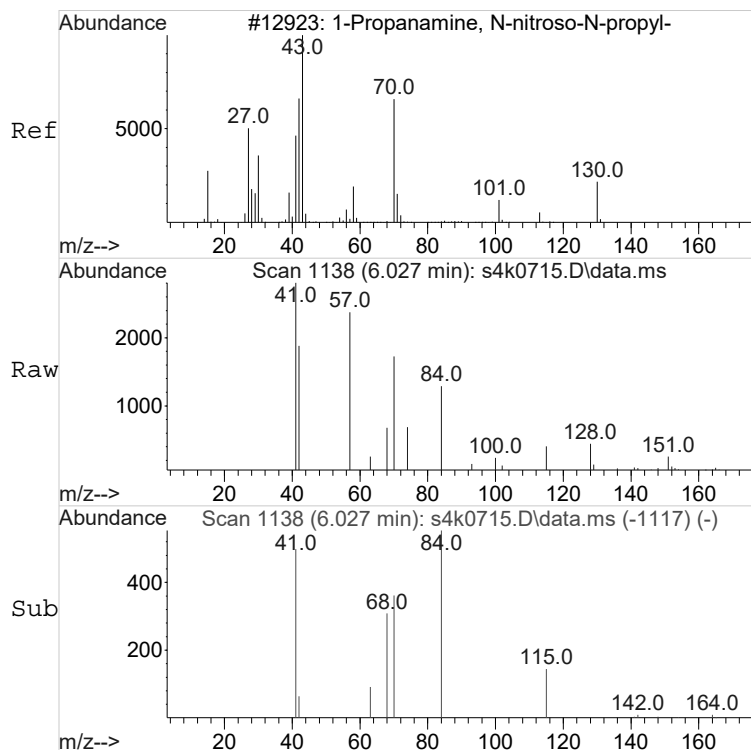
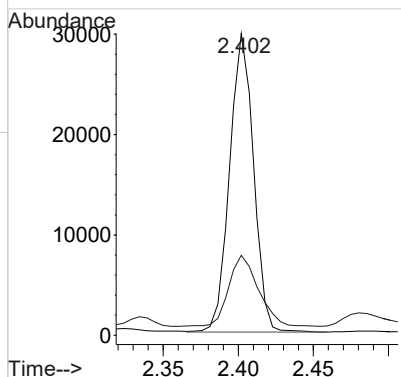
Quant Time: Nov 07 15:05:51 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE





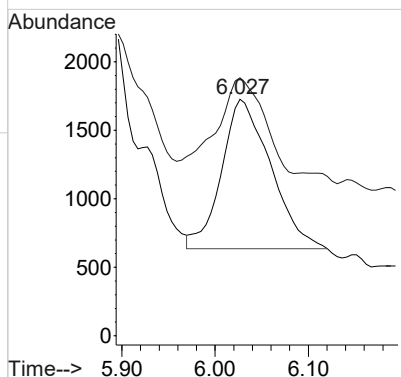
#2 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 0.57 ng/uL  
RT: 2.402 min Scan# 443  
Delta R.T. -0.026 min  
Lab File: s4k0715.D  
Acq: 07 Nov 2016 14:41

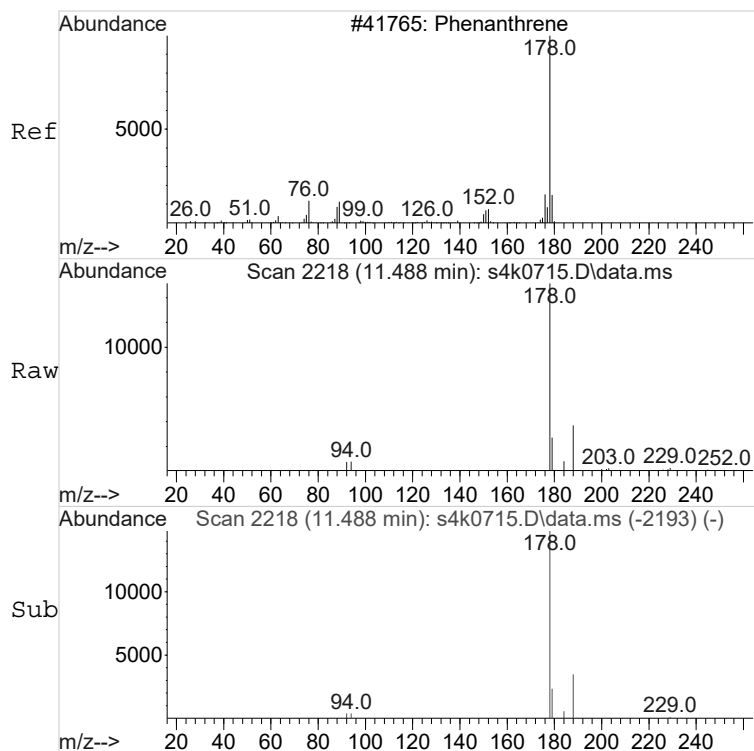
Tgt Ion: 74 Resp: 32992  
Ion Ratio Lower Upper  
74 100  
42 29.6 39.1 99.1#



#4 BEFORE analyst DELETION  
N-Nitrosodipropylamine  
Concen: 0.06 ng/uL  
RT: 6.027 min Scan# 1138  
Delta R.T. 0.010 min  
Lab File: s4k0715.D  
Acq: 07 Nov 2016 14:41

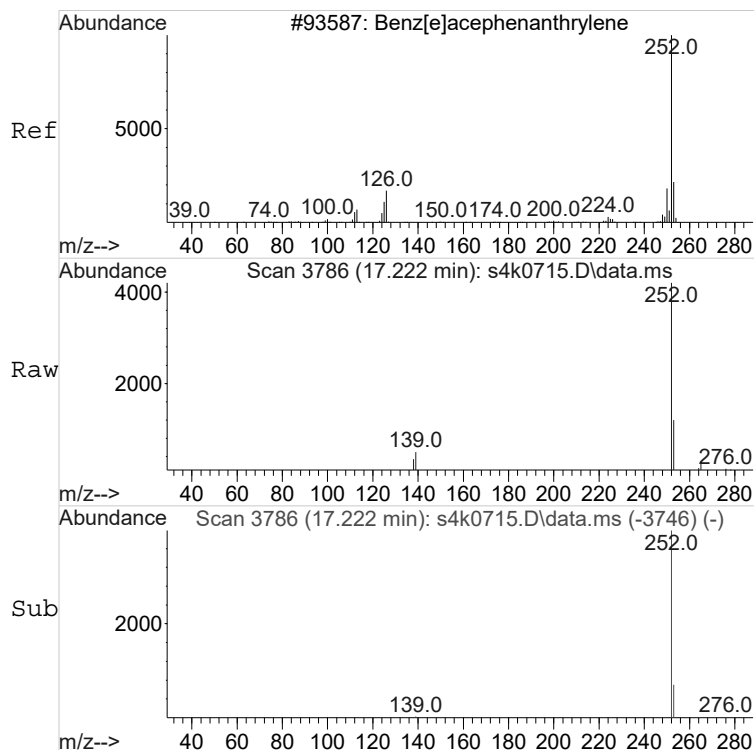
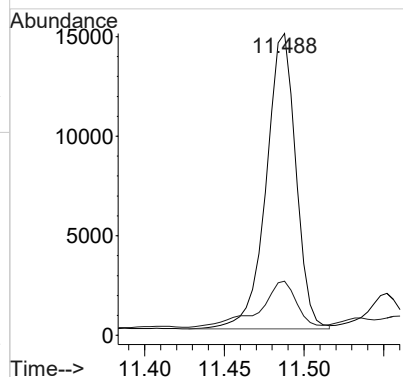
Tgt Ion: 70 Resp: 4000  
Ion Ratio Lower Upper  
70 100  
42 60.9 22.5 82.5





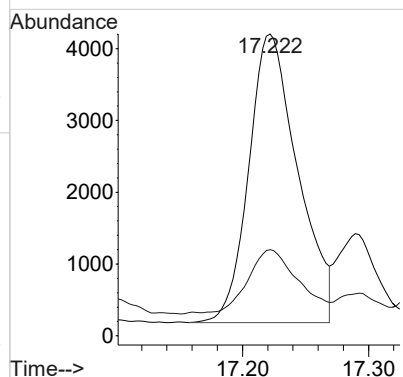
#15  
Phenanthrene  
Concen: 0.06 ng/uL  
RT: 11.488 min Scan# 2218  
Delta R.T. -0.001 min  
Lab File: s4k0715.D  
Acq: 07 Nov 2016 14:41

Tgt Ion: 178 Resp: 19209  
Ion Ratio Lower Upper  
178 100  
179 19.4 0.0 45.6



#24  
Benzo(b)fluoranthene  
Concen: 0.08 ng/uL  
RT: 17.222 min Scan# 3786  
Delta R.T. 0.009 min  
Lab File: s4k0715.D  
Acq: 07 Nov 2016 14:41

Tgt Ion: 252 Resp: 10887  
Ion Ratio Lower Upper  
252 100  
253 21.7 0.0 51.6



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254027

**Client ID:** DP050213  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 15:09  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0716.D

**Date Collected:** 10/25/2016 12:34  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.005 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 27.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 83-32-9  | Acenaphthene           | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 208-96-8 | Acenaphthylene         | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 120-12-7 | Anthracene             | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 56-55-3  | Benzo(a)anthracene     | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 50-32-8  | Benzo(a)pyrene         | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 205-99-2 | Benzo(b)fluoranthene   | J         | 3.22   | ug/kg | 2.30    | 4.60    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 218-01-9 | Chrysene               | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 206-44-0 | Fluoranthene           | J         | 3.22   | ug/kg | 2.30    | 4.60    |
| 86-73-7  | Fluorene               | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 4.60   | ug/kg | 2.30    | 4.60    |
| 91-20-3  | Naphthalene            |           | 5.52   | ug/kg | 1.38    | 4.60    |
| 85-01-8  | Phenanthrene           |           | 5.52   | ug/kg | 2.30    | 4.60    |
| 129-00-0 | Pyrene                 | J         | 2.76   | ug/kg | 2.30    | 4.60    |

JMB  
11/08/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0716.D  
Acq On : 07 Nov 2016 15:09  
Operator : JMB3  
InstName : MSD4  
Sample : |409254027|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 16 Sample Multiplier: 1

JCB  
11/08/2016

Quant Time: Nov 08 08:37:17 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

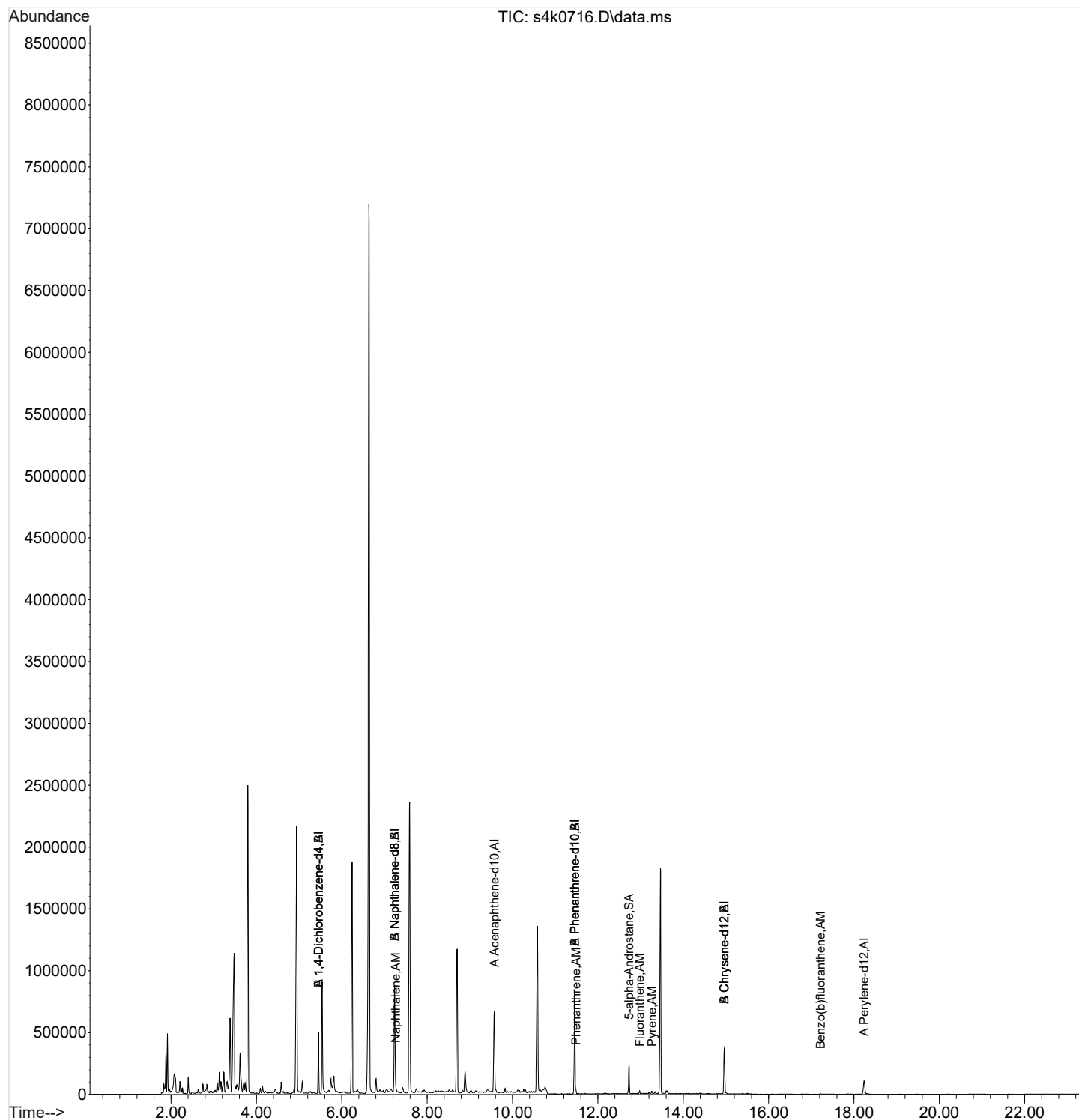
| Compound                    |                          | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units |           |
|-----------------------------|--------------------------|--------|--------|----------|--------|----------|------|-------|-----------|
| Internal Standards          |                          |        |        |          |        |          |      |       | Dev (Min) |
| 1)                          | A 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 320383   | 4.00 | ng/uL | 0.00      |
| 5)                          | A Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1099939  | 4.00 | ng/uL | 0.00      |
| 9)                          | A Acenaphthene-d10       | 164    | 9.573  | 9.573    | 1.000  | 439619   | 4.00 | ng/uL | 0.00      |
| 14)                         | A Phenanthrene-d10       | 188    | 11.460 | 11.457   | 1.000  | 839406   | 4.00 | ng/uL | 0.00      |
| 19)                         | A Chrysene-d12           | 240    | 14.961 | 14.963   | 1.000  | 423036   | 4.00 | ng/uL | 0.00      |
| 23)                         | A Perylene-d12           | 264    | 18.239 | 18.231   | 1.000  | 225794   | 4.00 | ng/uL | 0.00      |
| 30)                         | B 1,4-Dichlorobenzene-d4 | 152    | 5.453  | 5.448    | 1.000  | 320383   | 4.00 | ng/uL | 0.00      |
| 33)                         | B Naphthalene-d8         | 136    | 7.237  | 7.237    | 1.000  | 1099939  | 4.00 | ng/uL | 0.00      |
| 35)                         | B Phenanthrene-d10       | 188    | 11.460 | 11.457   | 1.000  | 839406   | 4.00 | ng/uL | 0.00      |
| 37)                         | B Chrysene-d12           | 240    | 14.961 | 14.963   | 1.000  | 423036   | 4.00 | ng/uL | 0.00      |
| System Monitoring Compounds |                          |        |        |          |        |          |      |       | Dev (Min) |
| 17)                         | 5-alpha-Androstane       | 245    | 12.730 | 12.731   | 1.111  | 129441   | 4.93 | ng/uL | 0.00      |
| Compound                    |                          | Amount |        | Range    |        | Recovery |      |       |           |
| 17)                         | 5-alpha-Androstane       | 5.000  |        | 30 - 115 |        | 99%      |      |       |           |
| Target Compounds            |                          | QIon   | R.T.   | Exp RT   | Rel RT | Response | Conc | Units | QValue    |
| 6)                          | Naphthalene              | 128    | 7.268  | 7.268    | 1.004  | 35609    | 0.12 | ng/uL | 80        |
| 15)                         | Phenanthrene             | 178    | 11.488 | 11.489   | 1.002  | 34898    | 0.12 | ng/uL | 96        |
| 18)                         | Fluoranthene             | 202    | 12.979 | 12.981   | 1.133  | 19461    | 0.07 | ng/uL | 99        |
| 20)                         | Pyrene                   | 202    | 13.265 | 13.262   | 0.887  | 16424    | 0.06 | ng/uL | 99        |
| 24)                         | Benzo(b)fluoranthene     | 252    | 17.221 | 17.213   | 0.944  | 7589     | 0.07 | ng/uL | 98        |

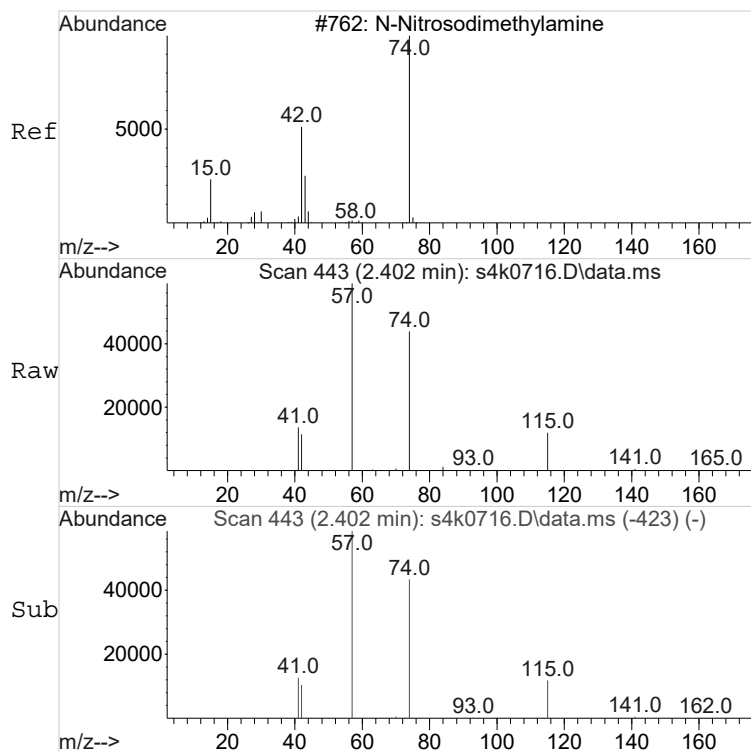
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0716.D  
Acq On : 07 Nov 2016 15:09  
Operator : JMB3  
InstName : MSD4  
Sample : |409254027|1612777|1|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 16 Sample Multiplier: 1

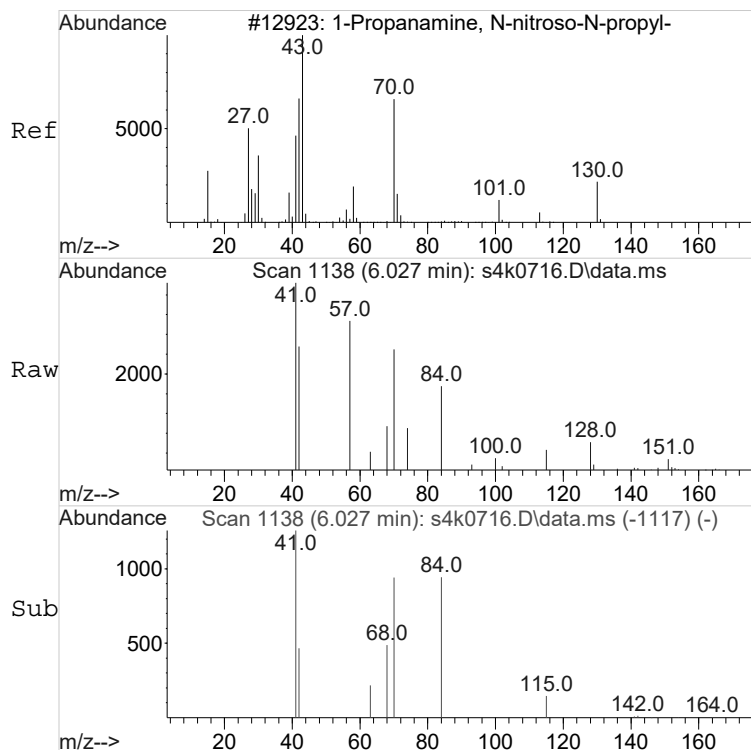
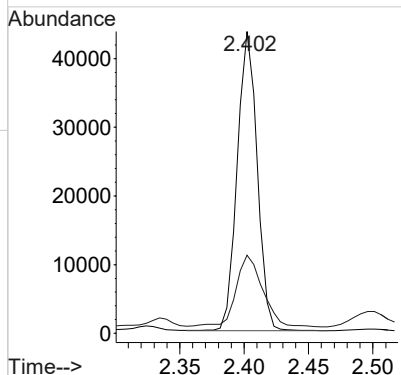
Quant Time: Nov 08 08:37:17 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE





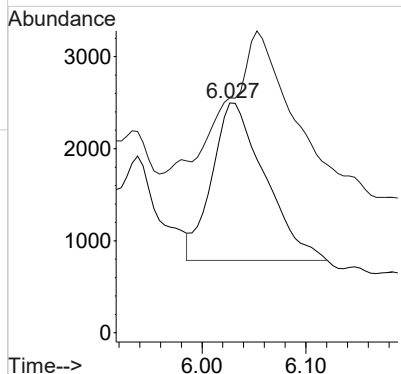
#2 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 0.82 ng/uL  
RT: 2.402 min Scan# 443  
Delta R.T. -0.026 min  
Lab File: s4k0716.D  
Acq: 07 Nov 2016 15:09

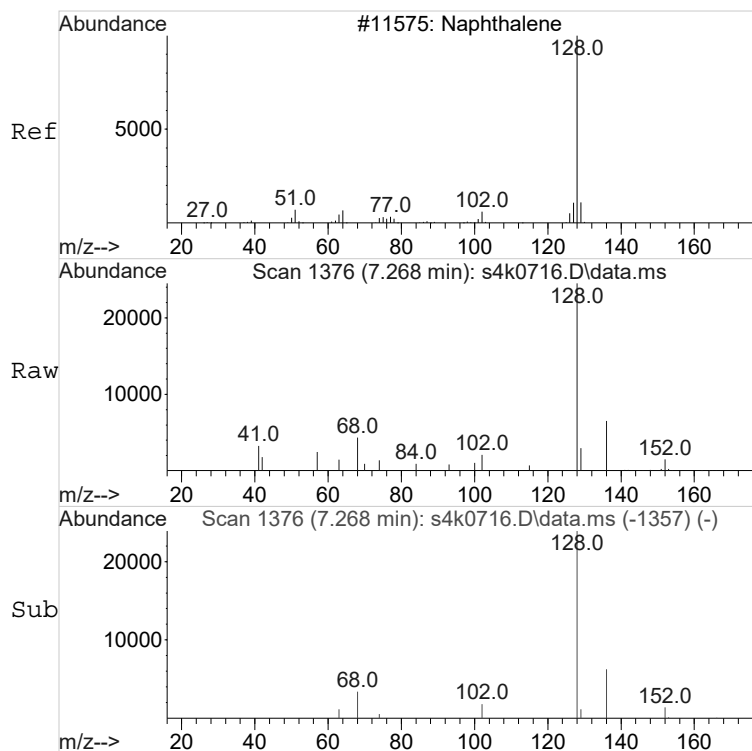
Tgt Ion: 74 Resp: 47276  
Ion Ratio Lower Upper  
74 100  
42 32.0 39.1 99.1#



#4 BEFORE analyst DELETION  
N-Nitrosodipropylamine  
Concen: 0.09 ng/uL  
RT: 6.027 min Scan# 1138  
Delta R.T. 0.010 min  
Lab File: s4k0716.D  
Acq: 07 Nov 2016 15:09

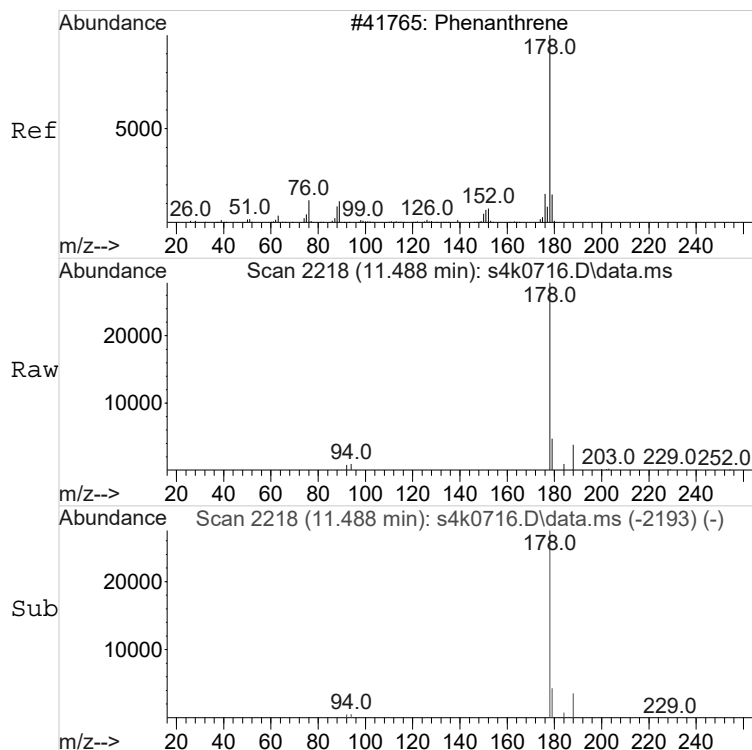
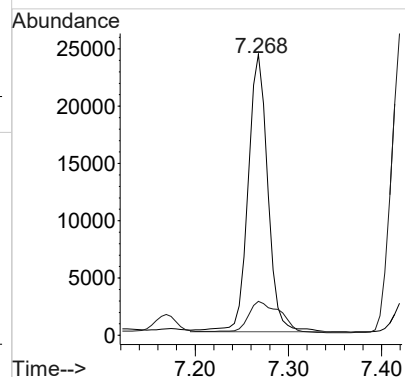
Tgt Ion: 70 Resp: 6061  
Ion Ratio Lower Upper  
70 100  
42 97.6 22.5 82.5#





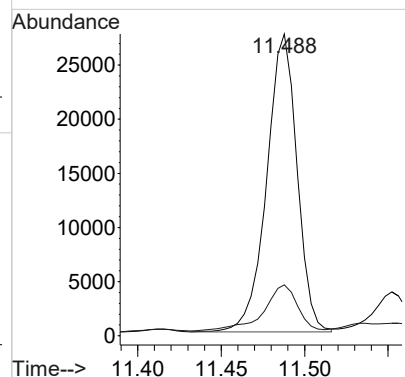
#6  
Naphthalene  
Concen: 0.12 ng/uL  
RT: 7.268 min Scan# 1376  
Delta R.T. -0.000 min  
Lab File: s4k0716.D  
Acq: 07 Nov 2016 15:09

Tgt Ion:128 Resp: 35609  
Ion Ratio Lower Upper  
128 100  
129 18.7 0.0 41.2

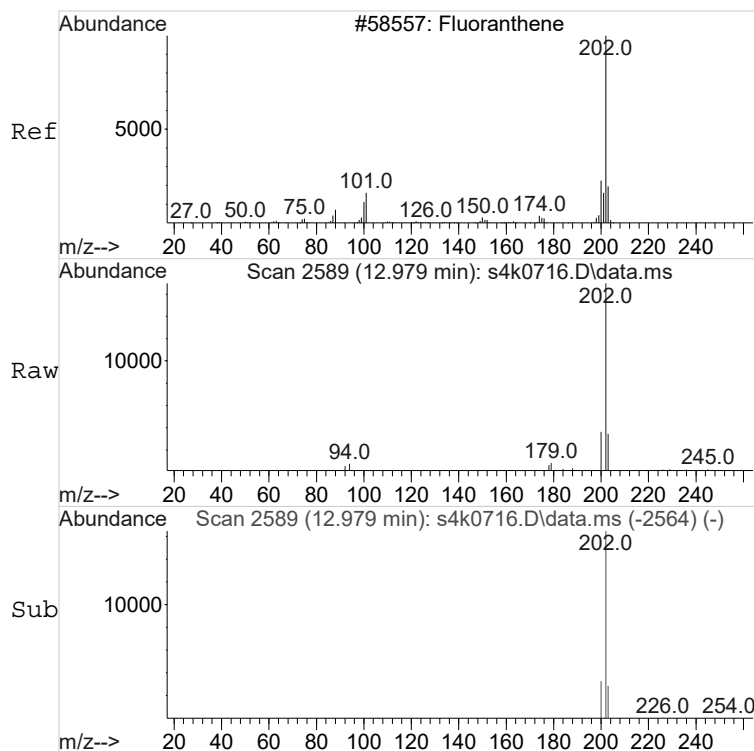


#15  
Phenanthrene  
Concen: 0.12 ng/uL  
RT: 11.488 min Scan# 2218  
Delta R.T. -0.001 min  
Lab File: s4k0716.D  
Acq: 07 Nov 2016 15:09

Tgt Ion:178 Resp: 34898  
Ion Ratio Lower Upper  
178 100  
179 17.2 0.0 45.6

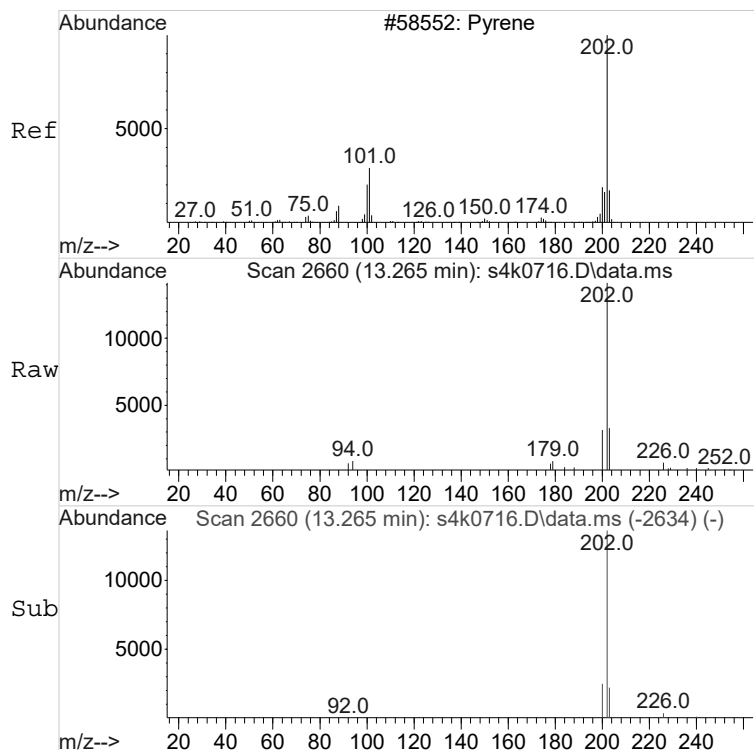
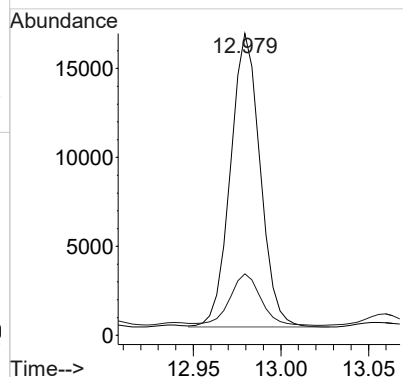






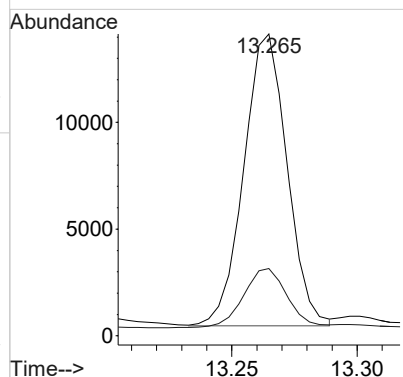
#18  
Fluoranthene  
Concen: 0.07 ng/uL  
RT: 12.979 min Scan# 2589  
Delta R.T. -0.001 min  
Lab File: s4k0716.D  
Acq: 07 Nov 2016 15:09

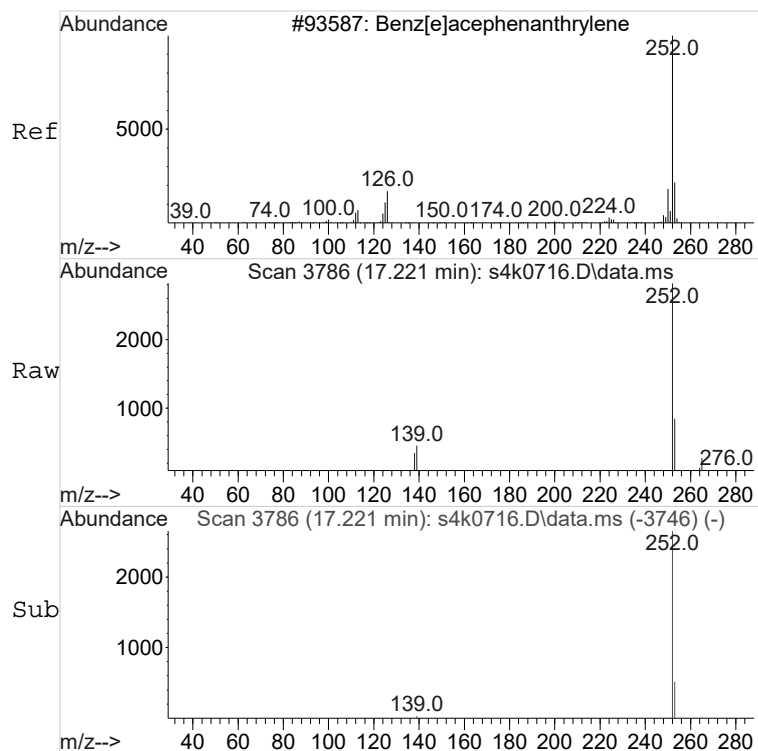
| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 202     | 100   | 19461 |       |       |
| 203     | 18.1  | 0.0   | 47.7  |       |



#20  
Pyrene  
Concen: 0.06 ng/uL  
RT: 13.265 min Scan# 2660  
Delta R.T. 0.003 min  
Lab File: s4k0716.D  
Acq: 07 Nov 2016 15:09

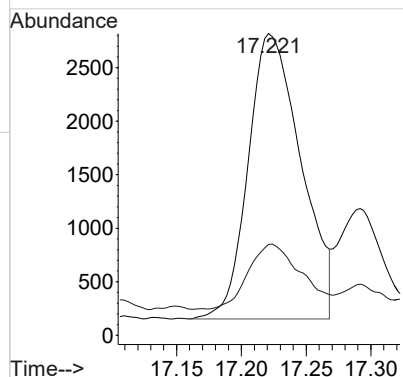
| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 202     | 100   | 16424 |       |       |
| 200     | 20.7  | 0.0   | 50.4  |       |

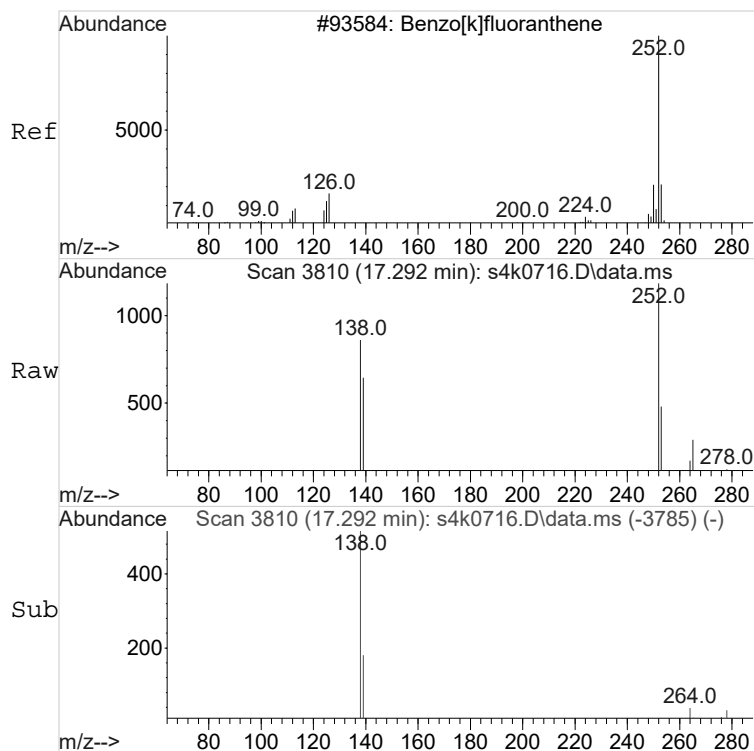




#24  
Benzo(b) fluoranthene  
Concen: 0.07 ng/uL  
RT: 17.221 min Scan# 3786  
Delta R.T. 0.008 min  
Lab File: s4k0716.D  
Acq: 07 Nov 2016 15:09

Tgt Ion: 252 Resp: 7589  
Ion Ratio Lower Upper  
252 100  
253 22.7 0.0 51.6





#25 BEFORE analyst integration

Benzo(k) fluoranthene

Concen: 0.05 ng/uL

RT: 17.292 min Scan# 3810

Delta R.T. 0.008 min

Lab File: s4k0716.D

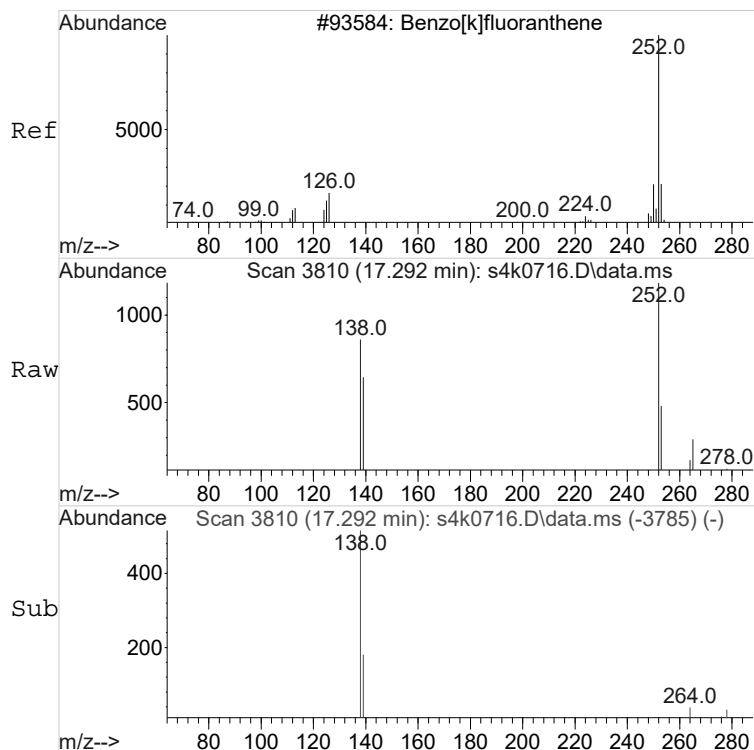
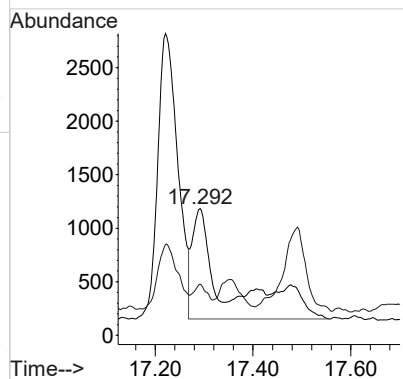
Acq: 07 Nov 2016 15:09

Tgt Ion:252 Resp: 5038

Ion Ratio Lower Upper

252 100

253 4.5 0.0 51.4



#25 AFTER analyst integration

Benzo(k) fluoranthene

AB

Concen: Below Cal MANUALLY INTEGRATED

RT: 17.292 min Scan# 3810

Delta R.T. 0.008 min

Lab File: s4k0716.D

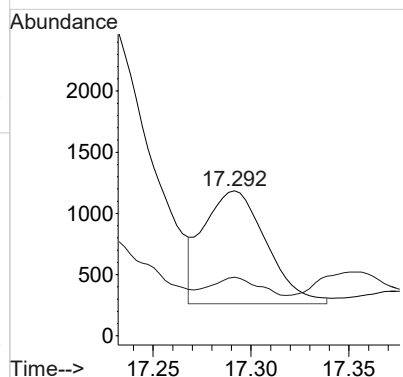
Acq: 07 Nov 2016 15:09

Tgt Ion:252 Resp: 2043

Ion Ratio Lower Upper

252 100

253 11.2 0.0 51.4



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

**SDG Number:** 409254  
**Lab Sample ID:** 409254028

**Client ID:** SS050100  
**Batch ID:** 1612777  
**Run Date:** 11/07/2016 15:38  
**Prep Date:** 11/04/2016 08:33  
**Data File:** s110716.B\4k0717.D

**Date Collected:** 10/25/2016 12:48  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8270D SIM P.  
**Inst:** MSD4.I  
**Analyst:** JMB3  
**Aliquot:** 30.055 g  
**Column:** DB-5ms

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-009  
**Dilution:** 200  
**Inj. Vol:** 1 uL  
**Final Volume:** 1.4 mL

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 1050   | ug/kg | 523     | 1050    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 1050   | ug/kg | 523     | 1050    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 1050   | ug/kg | 523     | 1050    |
| 83-32-9  | Acenaphthene           | U         | 1050   | ug/kg | 523     | 1050    |
| 208-96-8 | Acenaphthylene         | U         | 1050   | ug/kg | 523     | 1050    |
| 120-12-7 | Anthracene             | U         | 1050   | ug/kg | 523     | 1050    |
| 56-55-3  | Benzo(a)anthracene     | U         | 1050   | ug/kg | 523     | 1050    |
| 50-32-8  | Benzo(a)pyrene         | U         | 1050   | ug/kg | 523     | 1050    |
| 205-99-2 | Benzo(b)fluoranthene   | U         | 1050   | ug/kg | 523     | 1050    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 1050   | ug/kg | 523     | 1050    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 1050   | ug/kg | 523     | 1050    |
| 218-01-9 | Chrysene               | U         | 1050   | ug/kg | 523     | 1050    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 1050   | ug/kg | 523     | 1050    |
| 206-44-0 | Fluoranthene           | U         | 1050   | ug/kg | 523     | 1050    |
| 86-73-7  | Fluorene               | U         | 1050   | ug/kg | 523     | 1050    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 1050   | ug/kg | 523     | 1050    |
| 91-20-3  | Naphthalene            | U         | 1050   | ug/kg | 314     | 1050    |
| 85-01-8  | Phenanthrene           | U         | 1050   | ug/kg | 523     | 1050    |
| 129-00-0 | Pyrene                 | U         | 1050   | ug/kg | 523     | 1050    |

JMB  
11/08/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0717.D  
Acq On : 07 Nov 2016 15:38  
Operator : JMB3  
InstName : MSD4  
Sample : |409254028|1612777|200|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 17 Sample Multiplier: 280

JCB  
11/08/2016

Quant Time: Nov 08 08:37:19 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |           |
|------------------------------|------|--------|--------|--------|----------|------|-------|-----------|
| Internal Standards           |      |        |        |        |          |      |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.448  | 5.448  | 1.000  | 341266   | 4.00 | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136  | 7.242  | 7.237  | 1.000  | 1144747  | 4.00 | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164  | 9.578  | 9.573  | 1.000  | 465014   | 4.00 | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188  | 11.472 | 11.457 | 1.000  | 621005   | 4.00 | ng/uL | 0.01      |
| 19) A Chrysene-d12           | 240  | 14.969 | 14.963 | 1.000  | 402920   | 4.00 | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264  | 18.240 | 18.231 | 1.000  | 251495   | 4.00 | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.448  | 5.448  | 1.000  | 341266   | 4.00 | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136  | 7.242  | 7.237  | 1.000  | 1144747  | 4.00 | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188  | 11.472 | 11.457 | 1.000  | 621028   | 4.00 | ng/uL | 0.01      |
| 37) B Chrysene-d12           | 240  | 14.969 | 14.963 | 1.000  | 402920   | 4.00 | ng/uL | 0.00      |

|                             |     |       |        |       |    |      |       |           |
|-----------------------------|-----|-------|--------|-------|----|------|-------|-----------|
| System Monitoring Compounds |     |       |        |       |    |      |       | Dev (Min) |
| 17) 5-alpha-Androstane      | 245 | 0.000 | 12.731 | 0.000 | 0d | 0.00 | ng/uL |           |

| Compound               | Amount | Range    | Recovery |
|------------------------|--------|----------|----------|
| 17) 5-alpha-Androstane | 5.000  | 30 - 115 | 0%#      |

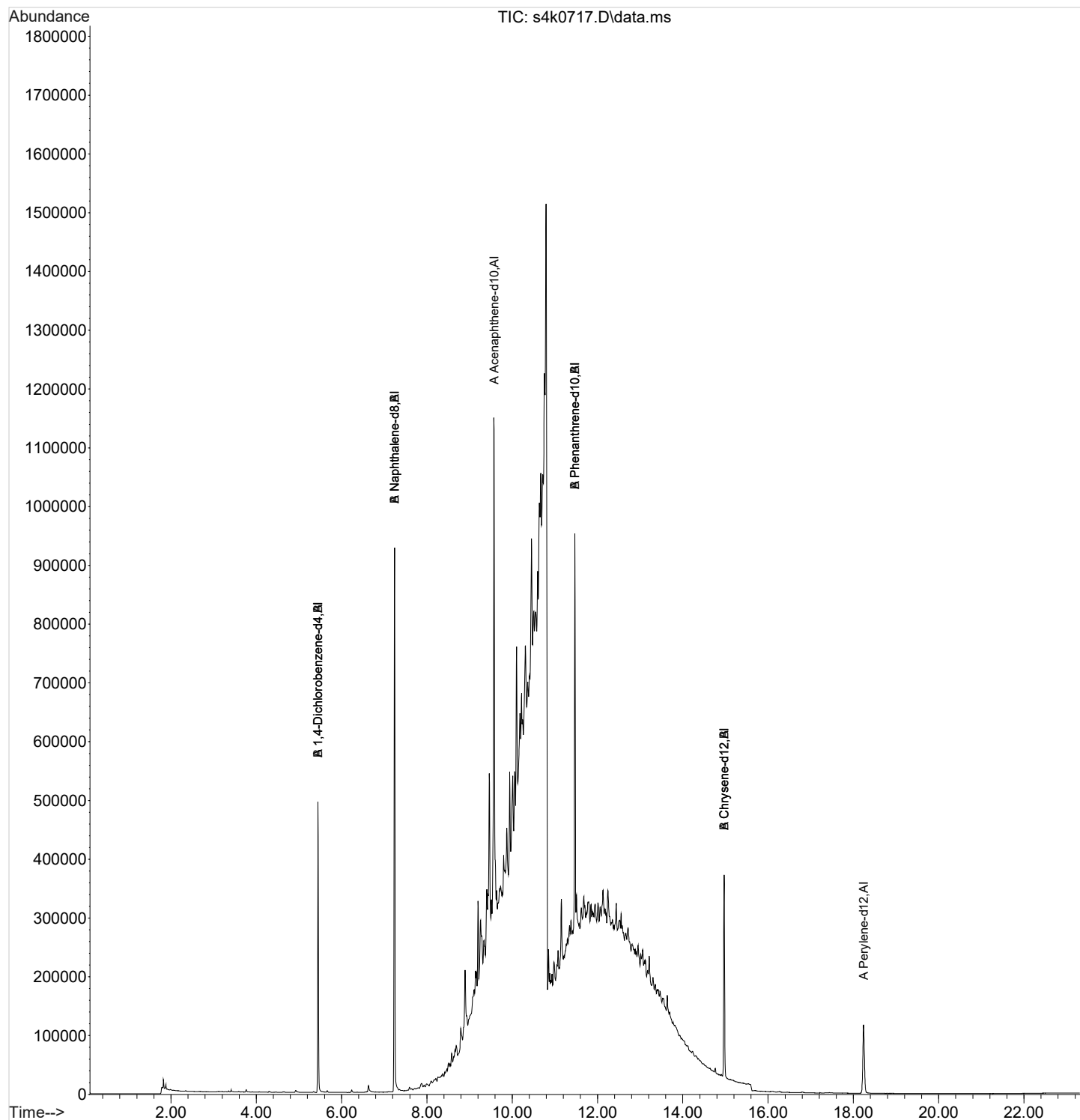
| Target Compounds | QIon | R.T. | Exp RT | Rel RT | Response | Conc | Units | QValue |
|------------------|------|------|--------|--------|----------|------|-------|--------|
|------------------|------|------|--------|--------|----------|------|-------|--------|

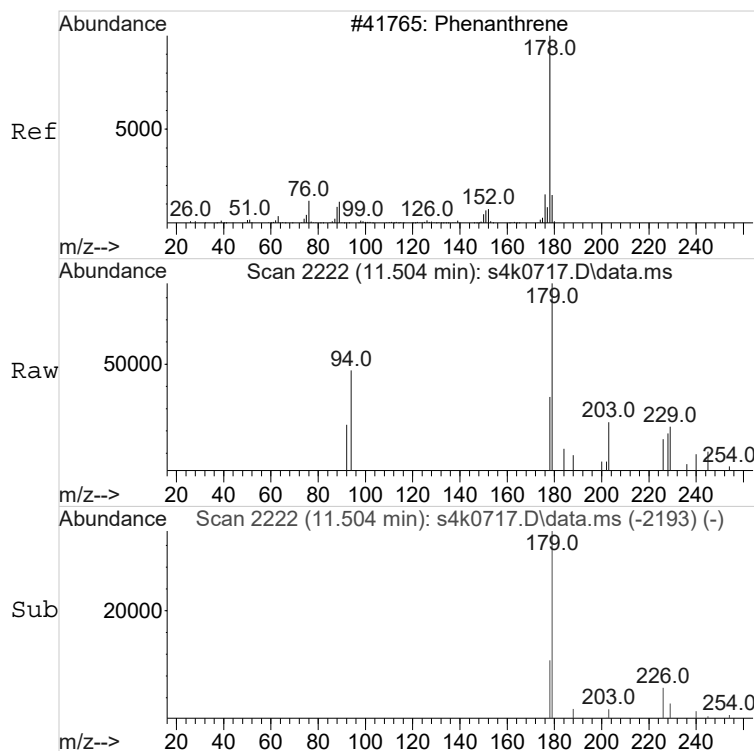
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0717.D  
Acq On : 07 Nov 2016 15:38  
Operator : JMB3  
InstName : MSD4  
Sample : |409254028|1612777|200|SVM|1|HAAL||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 17 Sample Multiplier: 280

Quant Time: Nov 08 08:37:19 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

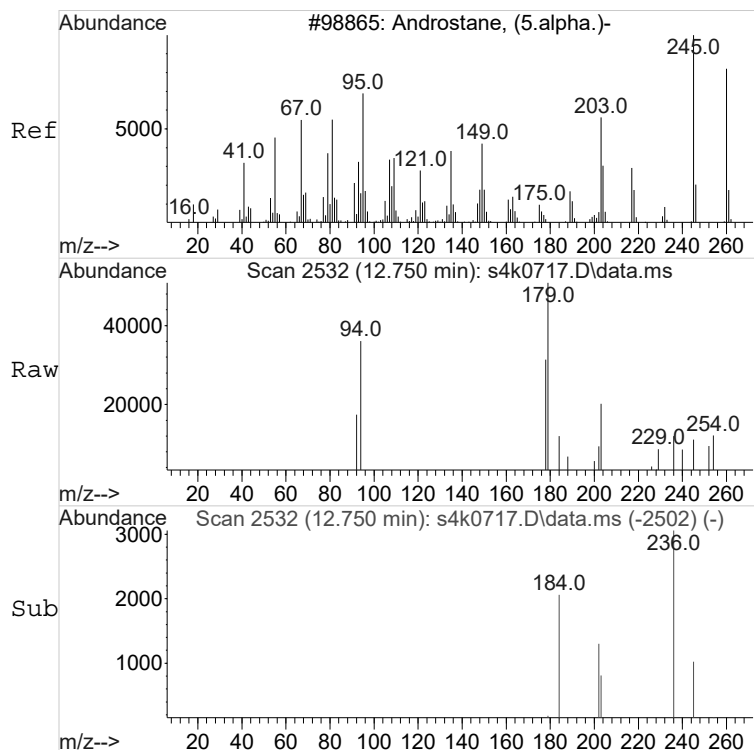
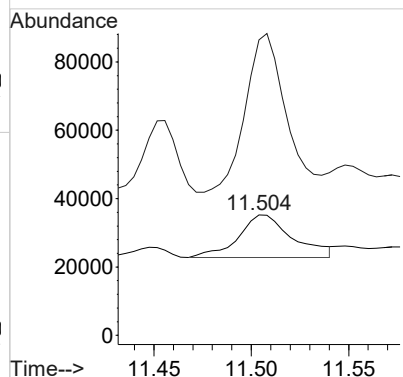




#15 BEFORE analyst DELETION  
Phenanthrene

Concen: 0.11 ng/uL  
RT: 11.504 min Scan# 2222  
Delta R.T. 0.015 min  
Lab File: s4k0717.D  
Acq: 07 Nov 2016 15:38

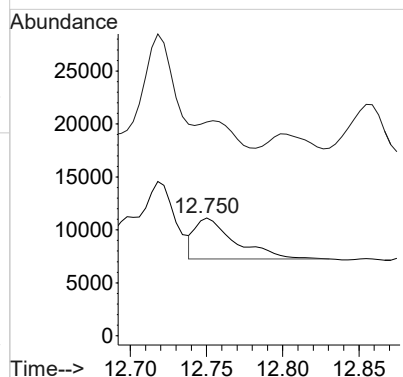
Tgt Ion:178 Resp: 24223  
Ion Ratio Lower Upper  
178 100  
179 277.5 0.0 45.6#



#17 BEFORE analyst DELETION  
5-alpha-Androstane

Concen: 100.14 ng/uL  
RT: 12.750 min Scan# 2532  
Delta R.T. 0.019 min  
Lab File: s4k0717.D  
Acq: 07 Nov 2016 15:38

Tgt Ion:245 Resp: 6950  
Ion Ratio Lower Upper  
245 100  
203 51.2 59.8 99.8#



# Standards



|   |         |         |         |          |         |         |         |         |         |          |
|---|---------|---------|---------|----------|---------|---------|---------|---------|---------|----------|
| SW846 8270/EPA 625                            |         |         |         |          |         |         |         |         |         |          |
| Calibration Standard Concentration Levels*    |         |         |         |          |         |         |         |         |         |          |
|   |         |         |         |          |         |         |         |         |         |          |
| MEGA MIX                                      | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 | Level 9 | Level 10 |
| 1,4-Dichlorobenzene-d4 (INTERNAL STANDARD)    |         |         |         |          |         |         |         |         |         |          |
| Naphthalene-d8 (INTERNAL STANDARD)            |         |         |         |          |         |         |         |         |         |          |
| Acenaphthene-d10 (INTERNAL STANDARD)          |         |         |         |          |         |         |         |         |         |          |
| Phenanthrene-d10 (INTERNAL STANDARD)          |         |         |         |          |         |         |         |         |         |          |
| Chrysene-d12 (INTERNAL STANDARD)              |         |         |         |          |         |         |         |         |         |          |
| Perylene-d12 (INTERNAL STANDARD)              |         |         |         |          |         |         |         |         |         |          |
| 2-Fluorophenol (SURROGATE)                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Phenol-d5 (SURROGATE)                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Chlorophenol-d4 (CLP SURROGATE)             |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,2-Dichlorobenzene-d4 (CLP SURROGATE)        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Nitrobenzene-d5 (SURROGATE)                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Fluorobiphenyl (SURROGATE)                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,4,6-Tribromophenol (SURROGATE)              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| p-Terphenyl-d14 (SURROGATE)                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| N-Nitrosodimethylamine                        | 1**     | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Pyridine                                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Aniline                                       |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Phenol  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| bis(2-Chloroethyl)ether                       |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Chlorophenol                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| n-Decane                                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,3-Dichlorobenzene                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,4-Dichlorobenzene                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Benzyl Alcohol                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,2-Dichlorobenzene                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| bis(2-Chloro-1-methylethyl)ether              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| o-Cresol (2-Methylphenol)                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| N-Nitrosodipropylamine                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| m,p-Cresols (3-Methylphenol & 4-Methylphenol) |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Hexachloroethane                              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Nitrobenzene                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Isophorone                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Nitrophenol                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,4-Dimethylphenol                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| bis(2-Chloroethoxy)methane                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,4-Dichlorophenol                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Benzoic Acid                                  |         |         | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,2,4-Trichlorobenzene                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Naphthalene                                   | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| alpha-Terpineol                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 4-Chloroaniline                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |

|  |         |         |         |          |         |         |         |         |         |          |
|--|---------|---------|---------|----------|---------|---------|---------|---------|---------|----------|
| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |         |          |
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |         |          |
| MEGA MIX                                   | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 | Level 9 | Level 10 |
| Hexachlorobutadiene                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 4-Chloro-3-methylphenol                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Methylnaphthalene                        | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1-Methylnaphthalene                        | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Hexachlorocyclopentadiene                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,3-Dichloroaniline                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,4,6-Trichlorophenol                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,4,5-Trichlorophenol                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Chloronaphthalene                        | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| o-Nitroaniline                             |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| m-Nitroaniline                             |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Dimethylphthalate                          | 1**     | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,6-Dinitrotoluene                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Acenaphthylene                             | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Acenaphthene                               | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,4-Dinitrophenol                          |         |         | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Dibenzofuran                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,4-Dinitrotoluene                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Diethylphthalate                           | 1**     | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 4-Nitrophenol                              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Fluorene                                   | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 4-Chlorophenyl phenyl ether                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Methyl-4,6-dinitrophenol                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| p-Nitroaniline                             |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Diphenylamine                              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,2-Diphenylhydrazine                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 4-Bromophenyl phenyether                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Hexachlorobenzene                          |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Pentachlorophenol                          |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| n-Octadecane                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Phenanthrene                               | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Anthracene                                 | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Di-n-butylphthalate                        | 1**     | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Fluoranthene                               | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Pyrene                                     | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Butylbenzylphthalate                       | 1**     | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Benzo(a)anthracene                         | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Chrysene                                   | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| bis (2-Ethylhexyl) phthalate               | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Di-n-octylphthalate                        | 1**     | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |

| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |         |          |
|--|---------|---------|---------|----------|---------|---------|---------|---------|---------|----------|
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |         |          |
| MEGA MIX                                   | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 | Level 9 | Level 10 |
| Benzo(b)fluoranthene                       | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Benzo(k)fluoranthene                       | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Benzo(a)pyrene                             | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Indeno-(1,2,3-cd)pyrene                    | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Dibenzo(a,h)anthracene                     | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Benzo(ghi)perylene                         | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| m-Dinitrobenzene                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,3,4,6-Tetrachlorophenol                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Dinoseb                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Carbazole                                  | 1       | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| p-Benzoquinone                             |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Methoxychlor                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| p-Toluidine                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| m-Toluidine                                |         | 10      | 20      | 40       | 50      | 80      | 10      | 120     | 30      | 60       |
| 1,4-Dinitrobenzene                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Ethoxyethanol                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Phthalic anhydride                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Methylenebis(2-chloroaniline)              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Dibenzo(a,e)pyrene                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |

| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |         |          |
|--|---------|---------|---------|----------|---------|---------|---------|---------|---------|----------|
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |         |          |
| AP MIX                                     | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 | Level 9 | Level 10 |
| Benzaldehyde                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Acetophenone                               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Caprolactam                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,1'-Biphenyl                              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Atrazine                                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Benzidine                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 3,3'-Dichlorobenzidine                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,4-Dioxane                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Methyl methacrylate                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Ethyl methacrylate                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Picoline                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| N-Nitrosomethylethylamine                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Butoxyethanol                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Methyl methanesulfonate                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| N-Nitrosodiethylamine                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Ethyl methanesulfonate                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Pentachloroethane                          |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| N-Nitrosopyrrolidine                       |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| N-Nitrosomorpholine                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| o-Toluidine                                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| N-Nitrosopiperidine                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| a,a-Dimethylphenethylamine                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,6-Dichlorophenol                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |

| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |         |          |
|--|---------|---------|---------|----------|---------|---------|---------|---------|---------|----------|
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |         |          |
| AP MIX                                     | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 | Level 9 | Level 10 |
| Hexachloropropene                          |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| N-Nitrosodi-n-butylamine                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Safrole                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,2,4,5-Tetrachlorobenzene                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Isosafrole                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,4-Naphthoquinone                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Pentachlorobenzene                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1-Naphthylamine                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Naphthylamine                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 5-Nitro-o-toluidine                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 1,3,5-Trinitrobenzene                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Phenacetin                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Diallate                                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| cis-Diallate                               |         | 1.5     | 3       | 6        | 7.5     | 12      | 15      | 18      | 4.5     | 9        |
| trans-Diallate                             |         | 8.5     | 17      | 34       | 42      | 68      | 85      | 102     | 25.5    | 51       |
| 4-Aminobiphenyl                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Pentachloronitrobenzene                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Pronamide                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 4-Nitroquinoline-1-oxide                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Methapyrilene                              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Isodrin                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Aramite                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Kepone                                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| p-(Dimethylamino)azobenzene                |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Chlorobenzilate                            |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 3,3'-Dimethylbenzidine                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2-Acetylaminofluorene                      |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 7,12-Dimethylbenz(a)anthracene             |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 3-Methylcholanthrene                       |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |

| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |         |          |
|--|---------|---------|---------|----------|---------|---------|---------|---------|---------|----------|
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |         |          |
|  | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 | Level 9 | Level 10 |
| Hexachlorophene                            |         | 500     | 1000    | 1250     | 1500    | 1750    | 2000    |         |         |          |
| p-Phenylenediamine                         |         | 500     | 1000    | 1250     | 1500    | 1750    | 2000    |         |         |          |

| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |         |          |
|--|---------|---------|---------|----------|---------|---------|---------|---------|---------|----------|
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |         |          |
| PEST MIX                                   | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 | Level 9 | Level 10 |
| bis(Chloromethyl)ether                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Tributylphosphate                          |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Triethylphosphorothioate                   |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Thionazin                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Sulfotepp                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Phorate                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Dimethoate                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Disulfoton                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Methyl parathion                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Famphur                                    |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Parathion                                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |

| SW846 8270/EPA 625                         |         |         |         |          |         |         |         |         |         |          |
|--|---------|---------|---------|----------|---------|---------|---------|---------|---------|----------|
| Calibration Standard Concentration Levels* |         |         |         |          |         |         |         |         |         |          |
| NEVADA MIX                                 | Level 1 | Level 2 | Level 3 | Level 4# | Level 5 | Level 6 | Level 7 | Level 8 | Level 9 | Level 10 |
| bis(Chloromethyl)ether                     |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 4-Chlorothiophenol                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 4-Chlorothioanisole                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Phthalic acid                              |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Hydroxymethyl phthalimide                  |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Diphenyl sulfide                           |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Diphenyl disulfide                         |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Phenyl sulfone                             |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Octachlorostyrene                          |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| Thiophenol                                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| 2,2'-Dichlorobenzil                        |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| bis(p-Chlorophenyl)disulfide               |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |
| bis(p-Chlorophenyl)sulfone                 |         | 10      | 20      | 40       | 50      | 80      | 100     | 120     | 30      | 60       |

All values are mg/L without the prep factor.

# Indicates the calibration verification concentration level used

\* Usual calibration levels using SCAN methodology

\*\* This analyte included in this level at special client request.

| EPA 522                                       |         |         |         |         |         |     |            |  |
|---|---------|---------|---------|---------|---------|-----|------------|--|
| Calibration Standard Concentration Levels#    |         |         |         |         |         |     |            |  |
|   | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | ICV | CCV        |  |
| <b>Tetrahydrofuran-d8 (INTERNAL STANDARD)</b> |         |         |         |         |         |     |            |  |
| <b>1,4-Dioxane-d8 (SURROGATE)</b>             | 50      | 100     | 200     | 400     | 500     | 200 | See Method |  |
| 1,4-Dioxane                                   | 50      | 100     | 200     | 400     | 500     | 200 | See Method |  |

All values are ug/L without the prep factor.

# Usual calibration levels using SIM methodology

|  |         |         |         |         |         |          |         |         |         |          |
|--|---------|---------|---------|---------|---------|----------|---------|---------|---------|----------|
| SW846 8270SIM                              |         |         |         |         |         |          |         |         |         |          |
| Calibration Standard Concentration Levels* |         |         |         |         |         |          |         |         |         |          |
| MEGASIM analytes (A)                       | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | Level 6# | Level 7 | Level 8 | Level 9 | Level 10 |
| 1,4-Dichlorobenzene-d4 (INTERNAL STANDARD) |         |         |         |         |         |          |         |         |         |          |
| Naphthalene-d8 (INTERNAL STANDARD)         |         |         |         |         |         |          |         |         |         |          |
| Acenaphthene-d10 (INTERNAL STANDARD)       |         |         |         |         |         |          |         |         |         |          |
| Phenanthrene-d10 (INTERNAL STANDARD)       |         |         |         |         |         |          |         |         |         |          |
| Chrysene-d12 (INTERNAL STANDARD)           |         |         |         |         |         |          |         |         |         |          |
| Perylene-d12 (INTERNAL STANDARD)           |         |         |         |         |         |          |         |         |         |          |
| 5-alpha-Androstane (SURROGATE)             | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| \$N-Methyl-N-nitrosomethylamine            |         | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| \$bis(2-Chloroethyl)ether                  | 0.1     | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| \$N-Nitrosodipropylamine                   | 0.1     | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Naphthalene                                | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| 2-Methylnaphthalene                        | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| 1-Methylnaphthalene                        | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| 2-Chloronaphthalene                        | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Acenaphthylene                             | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Acenaphthene                               | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Fluorene                                   | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Phenanthrene                               | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Anthracene                                 | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Fluoranthene                               | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Pyrene                                     | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Benzo(a)anthracene                         | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Chrysene                                   | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Benzo(b)fluoranthene                       | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Benzo(k)fluoranthene                       | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Benzo(a)pyrene                             | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Indeno-(1,2,3-cd)pyrene                    | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Dibenzo(a,h)anthracene                     | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| Benzo(ghi)perylene                         | \$0.1   | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |

\$ By special request - Not for regulatory purposes

|  |         |         |         |         |         |          |         |         |         |          |
|--|---------|---------|---------|---------|---------|----------|---------|---------|---------|----------|
| SW846 8270SIM                              |         |         |         |         |         |          |         |         |         |          |
| Calibration Standard Concentration Levels* |         |         |         |         |         |          |         |         |         |          |
| APSIM analytes (A)                         | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | Level 6# | Level 7 | Level 8 | Level 9 | Level 10 |
| \$N-Nitrosodimethylamine                   | 0.1     | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| \$N-Nitrosopyrrolidine                     | 0.1     | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| \$N-Nitrosodi-n-butylamine                 | 0.1     | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |
| \$Benzidine                                |         |         | 2.5     | 5       | 10      | 25       | 50      | 100     |         |          |
| \$3,3'-Dichlorobenzidine                   | 0.1     | 0.2     | 0.5     | 1       | 2       | 5        | 10      | 20      |         |          |

\$ By special request - Not for regulatory purposes

All values are mg/L without prep factor.

# indicates the calibration verification concentration level used.

\* Usual calibration levels using SIM methodology  
(10/16/Full list)

## Calibration History Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

Cal Lvl:1 Amt:1.00 Last Updated with: C:\msdchem\1\DATA\s092916.B\s1i2903.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 29 Sep 2016 10:05 | A   | C:\msdchem\1\DATA\s092916.B\s1i2903.D |

Cal Lvl:2 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\s092916.B\s1i2935.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 29 Sep 2016 10:35 | A   | C:\msdchem\1\DATA\s092916.B\s1i2904.D |
| 29 Sep 2016 17:40 | B   | C:\msdchem\1\DATA\s092916.B\s1i2917.D |
| 29 Sep 2016 21:38 | D   | C:\msdchem\1\DATA\s092916.B\s1i2925.D |
| 30 Sep 2016 02:22 | E   | C:\msdchem\1\DATA\s092916.B\s1i2935.D |
| 29 Sep 2016 21:38 | F   | C:\msdchem\1\DATA\s092916.B\s1i2925.D |
| 30 Sep 2016 05:21 | J   | C:\msdchem\1\DATA\s092916.B\s1i2941.D |

Cal Lvl:3 Amt:20.00 Last Updated with: C:\msdchem\1\DATA\s092916.B\s1i2936.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 29 Sep 2016 11:09 | A   | C:\msdchem\1\DATA\s092916.B\s1i2905.D |
| 29 Sep 2016 18:09 | B   | C:\msdchem\1\DATA\s092916.B\s1i2918.D |
| 29 Sep 2016 22:07 | D   | C:\msdchem\1\DATA\s092916.B\s1i2926.D |
| 30 Sep 2016 02:52 | E   | C:\msdchem\1\DATA\s092916.B\s1i2936.D |
| 29 Sep 2016 22:07 | F   | C:\msdchem\1\DATA\s092916.B\s1i2926.D |
| 30 Sep 2016 05:51 | J   | C:\msdchem\1\DATA\s092916.B\s1i2942.D |

Cal Lvl:4 Amt:40.00 Last Updated with: C:\msdchem\1\DATA\s092916.B\s1i2919.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 29 Sep 2016 15:44 | A   | C:\msdchem\1\DATA\s092916.B\s1i2913.D |
| 29 Sep 2016 18:39 | B   | C:\msdchem\1\DATA\s092916.B\s1i2919.D |
| 29 Sep 2016 22:37 | D   | C:\msdchem\1\DATA\s092916.B\s1i2927.D |
| 30 Sep 2016 03:21 | E   | C:\msdchem\1\DATA\s092916.B\s1i2937.D |
| 29 Sep 2016 22:37 | F   | C:\msdchem\1\DATA\s092916.B\s1i2927.D |
| 30 Sep 2016 06:20 | J   | C:\msdchem\1\DATA\s092916.B\s1i2943.D |

Cal Lvl:5 Amt:50.00 Last Updated with: C:\msdchem\1\DATA\s092916.B\s1i2938.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 29 Sep 2016 12:18 | A   | C:\msdchem\1\DATA\s092916.B\s1i2907.D |
| 29 Sep 2016 19:09 | B   | C:\msdchem\1\DATA\s092916.B\s1i2920.D |
| 29 Sep 2016 23:07 | D   | C:\msdchem\1\DATA\s092916.B\s1i2928.D |
| 30 Sep 2016 03:51 | E   | C:\msdchem\1\DATA\s092916.B\s1i2938.D |
| 29 Sep 2016 23:07 | F   | C:\msdchem\1\DATA\s092916.B\s1i2928.D |
| 30 Sep 2016 06:50 | J   | C:\msdchem\1\DATA\s092916.B\s1i2944.D |

Cal Lvl:6 Amt:80.00 Last Updated with: C:\msdchem\1\DATA\s092916.B\s1i2939.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 29 Sep 2016 12:52 | A   | C:\msdchem\1\DATA\s092916.B\s1i2908.D |
| 29 Sep 2016 19:38 | B   | C:\msdchem\1\DATA\s092916.B\s1i2921.D |
| 29 Sep 2016 23:37 | D   | C:\msdchem\1\DATA\s092916.B\s1i2929.D |
| 30 Sep 2016 04:21 | E   | C:\msdchem\1\DATA\s092916.B\s1i2939.D |
| 29 Sep 2016 23:37 | F   | C:\msdchem\1\DATA\s092916.B\s1i2929.D |

## Calibration History Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

Cal Lvl:7 Amt:100.00 Last Updated with: C:\msdchem\1\DATA\s092916.B\s1i2930.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 29 Sep 2016 13:26 | A   | C:\msdchem\1\DATA\s092916.B\s1i2909.D |
| 29 Sep 2016 20:08 | B   | C:\msdchem\1\DATA\s092916.B\s1i2922.D |
| 30 Sep 2016 00:06 | D   | C:\msdchem\1\DATA\s092916.B\s1i2930.D |
| 30 Sep 2016 00:06 | F   | C:\msdchem\1\DATA\s092916.B\s1i2930.D |
| 30 Sep 2016 07:20 | J   | C:\msdchem\1\DATA\s092916.B\s1i2945.D |

Cal Lvl:8 Amt:120.00 Last Updated with: C:\msdchem\1\DATA\s092916.B\s1i2931.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 29 Sep 2016 14:01 | A   | C:\msdchem\1\DATA\s092916.B\s1i2910.D |
| 29 Sep 2016 20:38 | B   | C:\msdchem\1\DATA\s092916.B\s1i2923.D |
| 30 Sep 2016 00:36 | D   | C:\msdchem\1\DATA\s092916.B\s1i2931.D |
| 30 Sep 2016 00:36 | F   | C:\msdchem\1\DATA\s092916.B\s1i2931.D |
| 30 Sep 2016 07:50 | J   | C:\msdchem\1\DATA\s092916.B\s1i2946.D |

MSD1\_8270C\_8270D\_092916.M Thu Nov 10 14:23:01 2016



## Response Factor Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1           | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|--------|--------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 2)A    | 2-Ethoxyethanol          |    | 1.1081252 | 1.0093194<br>1.1346603 | 1.0982738 | 1.1656964 | 1.1974576 | 1.1658352 | 1.1256 | AVRG  |     | 5.5058  |
| 3)AM   | N-Methyl-N-nitrosomethyl |    | 0.9197804 | 0.8659056<br>0.9275626 | 0.9401097 | 0.9699950 | 0.9969445 | 0.9633884 | 0.9405 | AVRG  |     | 4.4986  |
| 4)AM   | Pyridine                 |    | 1.4411387 | 1.5692027<br>1.4505470 | 1.6541635 | 1.5660191 | 1.5831253 | 1.5118292 | 1.5394 | AVRG  |     | 4.9606  |
| 5)SA   | 2-Fluorophenol           |    | 1.4114549 | 1.4534300<br>1.4222171 | 1.5773549 | 1.5524147 | 1.4913601 | 1.4842478 | 1.4846 | AVRG  |     | 4.2119  |
| 6)A    | p-Benzoquinone           |    | 1.0938225 | 0.8676222<br>1.1120292 | 1.0609828 | 1.1854889 | 1.1981328 | 1.1504742 | 1.0955 | AVRG  |     | 10.2090 |
| 7)AM   | Aniline                  |    | 1.7313497 | 2.1423116<br>1.7267872 | 2.0671321 | 1.8976871 | 1.8299145 | 1.8066386 | 1.8860 | AVRG  |     | 8.5866  |
| 8)SA   | Phenol-d5                |    | 1.7297366 | 1.8469596<br>1.7038169 | 1.9627402 | 1.8604032 | 1.8292240 | 1.7913091 | 1.8177 | AVRG  |     | 4.7776  |
| 9)AMC  | Phenol                   |    | 1.4479126 | 1.8332074<br>1.4682084 | 1.8551853 | 1.6370941 | 1.6218707 | 1.5258957 | 1.6271 | AVRG  |     | 10.1061 |
| 10)AM  | bis(2-Chloroethyl) ether |    | 1.2193270 | 1.4393461<br>1.2443535 | 1.3983602 | 1.3301920 | 1.3108929 | 1.2845949 | 1.3182 | AVRG  |     | 6.0102  |
| 11)AM  | 2-Chlorophenol           |    | 1.1857017 | 1.3870485<br>1.1998636 | 1.3050599 | 1.2908408 | 1.2672325 | 1.2522897 | 1.2697 | AVRG  |     | 5.3522  |
| 12)AM  | n-Decane                 |    | 1.7450252 | 2.4664362<br>1.7121776 | 2.2444100 | 2.0202325 | 1.9853861 | 1.8659003 | 2.0057 | AVRG  |     | 13.5560 |
| 13)AM  | 1,3-Dichlorobenzene      |    | 1.3119831 | 1.5623948<br>1.3025996 | 1.4705803 | 1.4356677 | 1.3947918 | 1.3618040 | 1.4057 | AVRG  |     | 6.5664  |
| 14)AMC | 1,4-Dichlorobenzene      |    | 1.2225357 | 1.3567350<br>1.2325867 | 1.3361808 | 1.2887552 | 1.2889875 | 1.2654555 | 1.2845 | AVRG  |     | 3.8698  |
| 15)AM  | 1,2-Dichlorobenzene      |    | 1.1703427 | 1.4343914<br>1.1839824 | 1.4062887 | 1.2933023 | 1.2574102 | 1.2476263 | 1.2848 | AVRG  |     | 7.9508  |
| 16)AM  | bis(2-Chloro-1-methyleth |    | 2.3087612 | 2.9163208<br>2.2841657 | 2.8856611 | 2.6104674 | 2.5504253 | 2.4532030 | 2.5727 | AVRG  |     | 9.8478  |

## Response Factor Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b       | Compound<br>m1           | m2   | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|---------|--------------------------|------|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 17)AM   | Benzyl alcohol           |      | 0.8803055 | 0.8349678<br>0.8885077 | 0.9156479 | 0.8817541 | 0.8711599 | 0.8794757 | 0.8788 | AVRG  |     | 2.7258  |
| 18)AM   | o-Cresol                 |      | 0.9741412 | 1.0747646<br>0.9971836 | 1.0601296 | 1.0294320 | 1.0242626 | 1.0219937 | 1.0260 | AVRG  |     | 3.3513  |
| 19)AM   | m,p-Cresols              |      | 1.2760866 | 1.3326051<br>1.3079291 | 1.3881947 | 1.3527301 | 1.3541714 | 1.3217684 | 1.3334 | AVRG  |     | 2.7174  |
| 20)AMP  | N-Nitrosodipropylamine   |      | 0.9992231 | 1.1176600<br>0.6958801 | 1.1439928 | 1.0430593 | 1.0277039 | 1.0301390 | 1.0082 | AVRG  |     | 14.6062 |
| 21)A    | p-Toluidine              |      | 1.3197848 | 1.8269067<br>1.2275831 | 1.7717800 | 1.5500816 | 1.5237708 | 1.4336355 | 1.5219 | AVRG  |     | 14.4834 |
| 22)A    | m-Toluidine              |      | 1.3768151 | 1.6444403<br>1.4136190 | 1.6148436 | 1.4468840 | 1.4187959 | 1.4107989 | 1.4752 | AVRG  |     | 7.3087  |
| 23)AM   | Hexachloroethane         |      | 0.5451462 | 0.6527356<br>0.5435357 | 0.6424789 | 0.6024963 | 0.5862078 | 0.5646525 | 0.5910 | AVRG  |     | 7.4606  |
| 25)SA   | Nitrobenzene-d5          |      | 0.4511734 | 0.4976207<br>0.4399261 | 0.4896922 | 0.4793970 | 0.4689075 | 0.4509563 | 0.4682 | AVRG  |     | 4.6464  |
| 26)AM   | Nitrobenzene             |      | 0.4027402 | 0.4696228<br>0.3965760 | 0.4625995 | 0.4315634 | 0.4253218 | 0.4108934 | 0.4285 | AVRG  |     | 6.6464  |
| 27)AM   | Isophorone               |      | 0.8463122 | 0.9908217<br>0.8290287 | 0.9912109 | 0.9142653 | 0.9085862 | 0.8750823 | 0.9079 | AVRG  |     | 7.1024  |
| 28)AMC  | 2-Nitrophenol            |      | 0.1953223 | 0.1912347<br>0.1941544 | 0.2011870 | 0.2111389 | 0.2055079 | 0.1982021 | 0.1995 | AVRG  |     | 3.4868  |
| 29)AM   | 2,4-Dimethylphenol       |      | 0.3043930 | 0.3605597<br>0.3009761 | 0.3473616 | 0.3286491 | 0.3194728 | 0.3040974 | 0.3236 | AVRG  |     | 7.1737  |
| 30)AM   | bis(2-Chloroethoxy)metha |      | 0.4515246 | 0.5292693<br>0.4398783 | 0.5245606 | 0.4858605 | 0.4703240 | 0.4671264 | 0.4812 | AVRG  |     | 7.1570  |
| 31)AMC  | 2,4-Dichlorophenol       |      | 0.3060685 | 0.3440697<br>0.2969641 | 0.3342069 | 0.3311085 | 0.3219300 | 0.3093544 | 0.3205 | AVRG  |     | 5.3196  |
| 32)AM   | Benzoic acid             |      |           |                        |           |           |           |           |        |       |     |         |
| -0.0902 | 0.2621                   | 0.00 | 342626    | 435790                 | 31937     | 125340    | 169459    | 257899    |        | LINR  | #   | 0.9941  |

Response Factor Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$

| b      | Compound<br>m1           | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|--------|--------------------------|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 33)AM  | 1,2,4-Trichlorobenzene   |    | 0.3562911              | 0.4479084<br>0.3521509 | 0.4231635 | 0.3976209 | 0.3885083 | 0.3732290 | 0.3913 | AVRG  |     | 8.9467  |
| 34)AM  | alpha-Terpineol          |    | 0.3843346              | 0.4357850<br>0.3794542 | 0.4475933 | 0.4210377 | 0.4091993 | 0.3917650 | 0.4099 | AVRG  |     | 6.3968  |
| 35)AM  | Naphthalene              |    | 1.0760512<br>0.8533258 | 1.0338600<br>0.8381479 | 1.0200830 | 0.9409483 | 0.9329618 | 0.8776850 | 0.9466 | AVRG  |     | 9.3808  |
| 36)AM  | 4-Chloroaniline          |    | 0.3074202              | 0.4091715<br>0.2807789 | 0.3963559 | 0.3502701 | 0.3555499 | 0.3280281 | 0.3468 | AVRG  |     | 13.2645 |
| 37)AMC | Hexachlorobutadiene      |    | 0.2488407              | 0.3054276<br>0.2398838 | 0.2945672 | 0.2808114 | 0.2696417 | 0.2525786 | 0.2703 | AVRG  |     | 9.1058  |
| 38)AMC | 4-Chloro-3-methylphenol  |    | 0.3942909              | 0.4196086<br>0.3845131 | 0.4417694 | 0.4199315 | 0.4178478 | 0.3990370 | 0.4110 | AVRG  |     | 4.7340  |
| 39)AM  | 2-Methylnaphthalene      |    | 0.8306832<br>0.6436408 | 0.8504886<br>0.6145673 | 0.8143440 | 0.7243556 | 0.7067756 | 0.6649937 | 0.7312 | AVRG  |     | 12.3769 |
| 40)A   | Phthalic anhydride       |    | 0.3530621              | 0.2447988<br>0.3561415 | 0.2665723 | 0.3070199 | 0.3389238 | 0.3400561 | 0.3152 | AVRG  |     | 13.9957 |
| 41)AM  | 1-Methylnaphthalene      |    | 0.8249950<br>0.5775352 | 0.7476440<br>0.5648512 | 0.7253685 | 0.6432940 | 0.6155497 | 0.5903406 | 0.6612 | AVRG  |     | 14.2483 |
| 43)AMP | Hexachlorocyclopentadien |    | 0.4951478              | 0.3880316<br>0.4873460 | 0.4316829 | 0.5054454 | 0.4973646 | 0.4887227 | 0.4705 | AVRG  |     | 9.2938  |
| 44)AM  | 2,3-Dichloroaniline      |    | 0.5706700              | 0.7742967<br>0.5346614 | 0.7175250 | 0.6489326 | 0.6258553 | 0.5685501 | 0.6344 | AVRG  |     | 13.6688 |
| 45)AMC | 2,4,6-Trichlorophenol    |    | 0.4343661              | 0.4669036<br>0.4295957 | 0.4475277 | 0.4609205 | 0.4512101 | 0.4403955 | 0.4473 | AVRG  |     | 3.0458  |
| 46)AM  | 2,4,5-Trichlorophenol    |    | 0.4316051              | 0.4425094<br>0.4248908 | 0.4402172 | 0.4286250 | 0.4359653 | 0.4179196 | 0.4317 | AVRG  |     | 2.0135  |
| 47)SA  | 2-Fluorobiphenyl         |    | 1.2966221              | 1.6731870<br>1.2532250 | 1.5506173 | 1.4203791 | 1.3795916 | 1.2943960 | 1.4097 | AVRG  |     | 10.8693 |
| 48)AM  | 2-Chloronaphthalene      |    | 1.5219185<br>1.1395957 | 1.4039404<br>1.1035024 | 1.2962177 | 1.2305256 | 1.2346674 | 1.1357605 | 1.2583 | AVRG  |     | 11.4990 |

## Response Factor Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1                               | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|--------|--|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 49)AM  | o-Nitroaniline                               |    | 0.4932207              | 0.5157137<br>0.4775304 | 0.5237328 | 0.4896490 | 0.5051106 | 0.4740170 | 0.4970 | AVRG  |     | 3.7699  |
| 50)A   | 1,4-Dinitrobenzene                           |    | 0.2568967              | 0.2287377<br>0.2448670 | 0.2332531 | 0.2395799 | 0.2488832 | 0.2401634 | 0.2418 | AVRG  |     | 3.9194  |
| 51)AM  | m-Nitroaniline                               |    | 0.2799356              | 0.3172656<br>0.2590853 | 0.3362687 | 0.2783612 | 0.2912677 | 0.2715292 | 0.2905 | AVRG  |     | 9.3394  |
| 52)AM  | Dimethylphthalate                            |    | 1.8415042<br>1.3529810 | 1.7986692<br>1.2935759 | 1.6611079 | 1.5068999 | 1.4546144 | 1.3452151 | 1.5318 | AVRG  |     | 13.8258 |
| 53)A   | m-Dinitrobenzene                             |    | 0.2347129              | 0.2425766<br>0.2297697 | 0.2523414 | 0.2316866 | 0.2410301 | 0.2237680 | 0.2366 | AVRG  |     | 4.0184  |
| 54)AM  | 2,6-Dinitrotoluene                           |    | 0.3139196              | 0.3667042<br>0.3157720 | 0.3377340 | 0.3287975 | 0.3236114 | 0.3165542 | 0.3290 | AVRG  |     | 5.6648  |
| 55)AM  | 2,4-Dinitrotoluene                           |    | 0.4411643              | 0.4686809<br>0.4311521 | 0.4860336 | 0.4374304 | 0.4655834 | 0.4359207 | 0.4523 | AVRG  |     | 4.6408  |
| 56)AM  | Acenaphthylene                               |    | 2.3731933<br>1.6747733 | 2.1802094<br>1.6079574 | 2.0075629 | 1.8010797 | 1.7597734 | 1.6439840 | 1.8811 | AVRG  |     | 14.7946 |
| 57)AMC | Acenaphthene                                 |    | 1.1255597<br>1.0409261 | 1.1578959<br>1.0238049 | 1.1110751 | 1.0750579 | 1.0797888 | 1.0338658 | 1.0810 | AVRG  |     | 4.4142  |
| 58)AMP | 2,4-Dinitrophenol<br>-0.0648   0.2230   0.00 |    | 174730                 | 204235                 | 20163     | 60258     | 87734     | 127702    |        | LINR  | #   | 0.9912  |
| 59)AM  | Dibenzofuran                                 |    | 1.5109887              | 1.9832026<br>1.4690272 | 1.8176564 | 1.6328674 | 1.5979028 | 1.5064550 | 1.6454 | AVRG  |     | 11.4956 |
| 60)A   | 2,3,4,6-Tetrachloropheno                     |    | 0.4015486              | 0.3688716<br>0.3891845 | 0.3875130 | 0.3988093 | 0.4067139 | 0.3877618 | 0.3915 | AVRG  |     | 3.1855  |
| 61)AM  | Diethylphthalate                             |    | 2.1194131<br>1.5511328 | 1.9363215<br>1.4892313 | 1.8293410 | 1.6911798 | 1.6397806 | 1.5359017 | 1.7240 | AVRG  |     | 12.8036 |
| 62)AMP | 4-Nitrophenol<br>-0.0290   0.2522   0.00     |    | 199756                 | 13351<br>251337        | 38081     | 83005     | 118630    | 169488    |        | LINR  |     | 0.9964  |
| 63)AM  | Fluorene                                     |    | 1.6419896<br>1.3211365 | 1.5987581<br>1.2888118 | 1.5384497 | 1.4002120 | 1.3848696 | 1.3116139 | 1.4357 | AVRG  |     | 9.6239  |

## Response Factor Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1                                      | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|--------|---|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 64)AM  | 4-Chlorophenylphenylethe                            |    | 0.7711866              | 0.9275976<br>0.7494850 | 0.8550291 | 0.7999162 | 0.7808761 | 0.7504011 | 0.8049 | AVRG  |     | 8.0748  |
| 65)AM  | p-Nitroaniline                                      |    | 0.2888827              | 0.2775044<br>0.2841553 | 0.2754802 | 0.2285436 | 0.2753864 | 0.2737646 | 0.2720 | AVRG  |     | 7.3206  |
| 66)SA  | 2,4,6-Tribromophenol                                |    | 0.2727470              | 0.2390762<br>0.2626495 | 0.2593884 | 0.2623379 | 0.2648716 | 0.2651665 | 0.2609 | AVRG  |     | 4.0141  |
| 68)AM  | 2-Methyl-4,6-dinitrophen<br>-0.0179   0.1396   0.00 |    | 216120                 | 12491<br>259338        | 35367     | 86384     | 117461    | 174074    |        | LINR  |     | 0.9993  |
| 69)AMC | Diphenylamine                                       |    | 0.5905591              | 0.7143331<br>0.5819935 | 0.6650494 | 0.6681441 | 0.6461581 | 0.6078438 | 0.6392 | AVRG  |     | 7.5091  |
| 70)AM  | 1,2-Diphenylhydrazine                               |    | 0.7038033              | 0.9161694<br>0.6971465 | 0.8494612 | 0.8363544 | 0.7919392 | 0.7416210 | 0.7909 | AVRG  |     | 10.3224 |
| 71)AM  | 4-Bromophenylphenylether                            |    | 0.2708062              | 0.2992793<br>0.2624301 | 0.3041712 | 0.3046755 | 0.2885827 | 0.2771679 | 0.2867 | AVRG  |     | 5.9095  |
| 72)AM  | Hexachlorobenzene                                   |    | 0.2594095              | 0.3307004<br>0.2590740 | 0.3088157 | 0.2979942 | 0.2898763 | 0.2784305 | 0.2892 | AVRG  |     | 9.0349  |
| 73)AMC | Pentachlorophenol<br>-0.0149   0.1817   0.00        |    | 282875                 | 17793<br>339577        | 49337     | 122694    | 160817    | 241273    |        | LINR  |     | 0.9988  |
| 74)AM  | n-Octadecane  |    | 0.6277406              | 0.9066128<br>0.6076223 | 0.8186156 | 0.7768084 | 0.7161152 | 0.6618562 | 0.7308 | AVRG  |     | 14.9383 |
| 75)A   | Dinoseb<br>-0.0291   0.2282   0.00                  |    | 352309                 | 18596<br>418761        | 56329     | 141680    | 190811    | 295913    |        | LINR  | #   | 0.9996  |
| 76)AM  | Phenanthrene  |    | 0.9668356<br>0.8532614 | 1.0120081<br>0.8325591 | 0.9843916 | 0.9257972 | 0.9276477 | 0.8746255 | 0.9221 | AVRG  |     | 6.9823  |
| 77)AM  | Anthracene  |    | 0.9740195<br>0.8960755 | 1.0547697<br>0.8728820 | 1.0547503 | 0.9575992 | 0.9867127 | 0.9238881 | 0.9651 | AVRG  |     | 6.9672  |
| 78)AM  | Carbazole   |    | 0.8487908<br>0.8805876 | 0.9559830<br>0.8590105 | 1.0118703 | 0.9092727 | 0.9817847 | 0.9069476 | 0.9193 | AVRG  |     | 6.3930  |
| 79)AM  | Di-n-butylphthalate                                 |    | 1.4751522<br>1.2773428 | 1.7706956<br>1.2371000 | 1.6714206 | 1.5259035 | 1.4733155 | 1.3642401 | 1.4744 | AVRG  |     | 12.4678 |

## Response Factor Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1           | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve         | Exp | %RSD/r2 |
|--------|--------------------------|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|---------------|-----|---------|
| 80)AMC | Fluoranthene             |    | 1.3524814<br>1.1971176 | 1.5746454<br>1.1664081 | 1.6043884 | 1.3053658 | 1.3938903 | 1.2625210 | 1.3571 | AVRG          |     | 11.9282 |
| 82)AM  | Pyrene                   |    | 1.8417480<br>1.3232537 | 1.8125797<br>1.3074962 | 1.7031748 | 1.8484109 | 1.6141230 | 1.5019184 | 1.6191 | AVRG          |     | 13.7124 |
| 83)SA  | p-Terphenyl-d14          |    | 0.9294282              | 1.1509693<br>0.9201300 | 1.1096405 | 1.2209873 | 1.1044431 | 1.0404700 | 1.0680 | AVRG          |     | 10.4807 |
| 84)AM  | Butylbenzylphthalate     |    | 0.6327252<br>0.7095033 | 0.8235246<br>0.7054183 | 0.8295571 | 0.8766597 | 0.8378568 | 0.7877832 | 0.7754 | AVRG          |     | 10.8071 |
| 85)AM  | bis(2-Ethylhexyl)phthala |    | 0.6938905<br>0.8303859 | 0.9466609<br>0.8380407 | 0.9044964 | 0.9276626 | 0.8858808 | 0.8838450 | 0.8639 | AVRG          |     | 9.1922  |
| 86)AM  | Benzo(a)anthracene       |    | 1.4297129<br>1.1186224 | 1.3833153<br>1.1116986 | 1.3161799 | 1.2423341 | 1.2143227 | 1.1591998 | 1.2469 | AVRG          |     | 9.6016  |
| 87)AM  | Chrysene                 |    | 1.0351435<br>0.9874430 | 1.1164425<br>0.9581124 | 1.1174270 | 1.0429096 | 1.0340272 | 1.0104002 | 1.0377 | AVRG          |     | 5.4279  |
| 88)A   | Methoxychlor             |    | 1.0352602              | 1.2573403<br>1.0049016 | 1.2121561 | 1.1856610 | 1.1493403 | 1.1220280 | 1.1381 | AVRG          |     | 8.0744  |
| 89)A   | Methylenebis(2-chloroani |    | 0.2399737              | 0.2214080<br>0.2318652 | 0.2629079 | 0.2335576 | 0.2390626 | 0.2355538 | 0.2378 | AVRG          |     | 5.3303  |
| 90)AMC | Di-n-octylphthalate      |    | 12792<br>2404237       | 260423<br>2704992      | 600833    | 842246    | 1325599   | 1920678   |        | 1/x^2<br>LINR |     | 0.9962  |
| 92)AM  | Benzo(b)fluoranthene     |    | 1.5304212<br>1.2751793 | 1.4833925<br>1.2944837 | 1.4727709 | 1.4360360 | 1.4395901 | 1.3893050 | 1.4151 | AVRG          |     | 6.3832  |
| 93)AM  | Benzo(k)fluoranthene     |    | 1.2354691<br>1.1087477 | 1.3230645<br>1.0987085 | 1.3035858 | 1.2571499 | 1.2417050 | 1.2272933 | 1.2245 | AVRG          |     | 6.6693  |
| 94)AMC | Benzo(a)pyrene           |    | 1.0786342<br>1.1535442 | 1.2680762<br>1.1342256 | 1.3252789 | 1.2885619 | 1.2885520 | 1.2541419 | 1.2239 | AVRG          |     | 7.2819  |
| 95)AM  | Indeno(1,2,3-cd)pyrene   |    | 0.6490129<br>0.8925018 | 0.9324752<br>0.8939028 | 1.0750200 | 1.0781826 | 0.9864915 | 0.9806533 | 0.9360 | AVRG          |     | 14.5660 |
| 96)AM  | Dibenzo(a,h)anthracene   |    | 0.8206250<br>0.8108194 | 0.8539362<br>0.7955004 | 0.9326725 | 0.9696170 | 0.8910570 | 0.8986763 | 0.8716 | AVRG          |     | 7.1049  |

## Response Factor Report MSD1

GEL Laboratories, LLC

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Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1           | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|--------|--------------------------|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 97)AM  | Benzo(ghi)perylene       |    | 0.9510580<br>0.8494200 | 0.9494962<br>0.8253401 | 1.0580143 | 1.0765328 | 0.9716901 | 0.9592775 | 0.9551 | AVRG  |     | 9.1690  |
| 98)A   | Dibenzo(a,e)pyrene       |    | 0.4329324              | 0.4436333<br>0.4161782 | 0.4688923 | 0.5776704 | 0.4556657 | 0.4750610 | 0.4671 | AVRG  |     | 11.3051 |
| 100)BM | 1,4-Dioxane              |    | 0.5184386              | 0.5969485<br>0.4900059 | 0.5756025 | 0.5214846 | 0.5276328 | 0.5223052 | 0.5361 | AVRG  |     | 6.8859  |
| 101)B  | Methyl methacrylate      |    | 0.2515492              | 0.2759391<br>0.2475221 | 0.2708045 | 0.2551193 | 0.2604468 | 0.2575220 | 0.2598 | AVRG  |     | 3.9369  |
| 102)B  | Ethyl methacrylate       |    | 1.1070048              | 1.2478903<br>1.0750378 | 1.2476417 | 1.1722668 | 1.1555152 | 1.1352791 | 1.1629 | AVRG  |     | 5.6772  |
| 103)B  | 2-Picoline               |    | 1.3778545              | 1.6604894<br>1.3144999 | 1.5887139 | 1.4540137 | 1.4800041 | 1.3950168 | 1.4672 | AVRG  |     | 8.2997  |
| 104)B  | N-Nitrosomethylethylamin |    | 0.5284201              | 0.6626241<br>0.5222548 | 0.6086362 | 0.5454958 | 0.5513981 | 0.5479531 | 0.5667 | AVRG  |     | 8.9506  |
| 105)B  | Methyl methanesulfonate  |    | 0.8922630              | 1.0875341<br>0.8376577 | 1.0306111 | 0.9716106 | 0.9444196 | 0.9137151 | 0.9540 | AVRG  |     | 8.8815  |
| 106)B  | N-Nitrosodiethylamine    |    | 0.6153762              | 0.6461397<br>0.5897390 | 0.6870664 | 0.6338710 | 0.6378635 | 0.6217799 | 0.6331 | AVRG  |     | 4.7508  |
| 107)B  | 2-Butoxyethanol          |    | 1.5135626              | 1.8591579<br>1.4454202 | 1.8270835 | 1.6913091 | 1.6297525 | 1.5617527 | 1.6469 | AVRG  |     | 9.4528  |
| 108)B  | Ethyl methanesulfonate   |    | 0.9402889              | 1.0570799<br>0.9107476 | 1.0747482 | 1.0105445 | 0.9856895 | 0.9702371 | 0.9928 | AVRG  |     | 5.9892  |
| 109)BM | Benzaldehyde             |    | 0.9702272              | 1.3429551              | 1.2833937 | 1.1344196 | 1.1397340 | 1.0516661 | 1.1537 | AVRG  |     | 12.0897 |
| 110)B  | Pentachloroethane        |    | 0.5507492              | 0.6498767<br>0.5334599 | 0.6314496 | 0.5920413 | 0.5902429 | 0.5722639 | 0.5886 | AVRG  |     | 7.0549  |
| 111)BM | N-Nitrosopyrrolidine     |    | 0.6511282              | 0.6547487<br>0.6311140 | 0.6838874 | 0.6802108 | 0.6694726 | 0.6744782 | 0.6636 | AVRG  |     | 2.8391  |
| 112)BM | Acetophenone             |    | 1.4778385              | 1.8973130<br>1.4384844 | 1.8156730 | 1.6883710 | 1.6074768 | 1.5295370 | 1.6364 | AVRG  |     | 10.5694 |

## Response Factor Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1                         | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve         | Exp | %RSD/r2 |
|--------|--|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|---------------|-----|---------|
| 113)B  | N-Nitrosomorpholine                    |    | 0.9072123 | 1.2238098<br>0.8720527 | 1.1276160 | 1.0484339 | 0.9916732 | 0.9388210 | 1.0157 | AVRG          |     | 12.4410 |
| 114)B  | o-Toluidine                            |    | 1.4495461 | 1.9505031<br>1.4005018 | 1.8050917 | 1.6384232 | 1.5545491 | 1.4824535 | 1.6116 | AVRG          |     | 12.5073 |
| 116)B  | N-Nitrosopiperidine                    |    | 0.1917987 | 0.2134694<br>0.1988715 | 0.2104986 | 0.2063099 | 0.2003093 | 0.1974850 | 0.2027 | AVRG          |     | 3.8018  |
| 117)B  | a,a-Dimethylphenethylami               |    | 1.3301719 | 1.4695628<br>1.3395553 | 1.5129893 | 1.4095332 | 1.3132824 | 1.3664136 | 1.3916 | AVRG          |     | 5.4398  |
| 118)BM | 2,6-Dichlorophenol                     |    | 0.2511271 | 0.2491174<br>0.2561961 | 0.2667323 | 0.2587792 | 0.2537929 | 0.2591006 | 0.2564 | AVRG          |     | 2.2929  |
| 119)B  | Hexachloropropene                      |    | 0.1951342 | 0.2484424<br>0.1713194 | 0.2603462 | 0.2522818 | 0.2325007 | 0.2179699 | 0.2254 | AVRG          |     | 14.5119 |
| 120)BM | Caprolactam                            |    | 0.1056628 | 0.1106851<br>0.1073435 | 0.1214588 | 0.1114892 | 0.1128344 | 0.1103030 | 0.1114 | AVRG          |     | 4.5528  |
| 121)B  | N-Nitrosodi-n-butylamine               |    | 0.3203107 | 0.3414736<br>0.3315924 | 0.3280611 | 0.3096867 | 0.3238457 | 0.3262383 | 0.3259 | AVRG          |     | 3.0119  |
| 122)B  | Safrole                                |    | 0.2637535 | 0.3168501<br>0.2618060 | 0.3113029 | 0.2874840 | 0.2807961 | 0.2723654 | 0.2849 | AVRG          |     | 7.6886  |
| 124)B  | 1,2,4,5-Tetrachlorobenze               |    | 0.6193503 | 0.8268634<br>0.5966420 | 0.7877046 | 0.7083713 | 0.6949548 | 0.6411645 | 0.6964 | AVRG          |     | 12.3578 |
| 125)BM | 1,1-Biphenyl<br>0.1585   1.1089   0.00 |    | 1086820   | 180322<br>1359584      | 367512    | 483996    | 658315    | 1001393   |        | 1/x^2<br>LINR |     | 0.9927  |
| 126)B  | Isosafrole                             |    | 0.4593892 | 0.5599538<br>0.4459644 | 0.5538091 | 0.4940415 | 0.4876655 | 0.4705244 | 0.4959 | AVRG          |     | 9.0174  |
| 127)B  | 1,4-Naphthoquinone                     |    | 0.3633547 | 0.4462257<br>0.3348640 | 0.4675541 | 0.4460601 | 0.4225653 | 0.3815953 | 0.4089 | AVRG          |     | 12.1064 |
| 128)B  | Pentachlorobenzene                     |    | 0.5616710 | 0.6933200<br>0.5454088 | 0.6704451 | 0.6300584 | 0.6068912 | 0.5786623 | 0.6124 | AVRG          |     | 9.0579  |
| 129)B  | 1-Naphthylamine                        |    | 0.9385415 | 1.2800887<br>0.8876382 | 1.1856304 | 1.1087055 | 1.0111506 | 0.9824153 | 1.0563 | AVRG          |     | 13.3528 |



## Response Factor Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b        | Compound<br>m1           | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|----------|--------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 130)B    | 2-Naphthylamine          |    | 0.9138039 | 1.1722791<br>0.8546680 | 1.1359666 | 1.0477874 | 0.9708625 | 0.9355909 | 1.0044 | AVRG  |     | 11.7704 |
| 131)B    | 5-Nitro-o-toluidine      |    | 0.3538942 | 0.3472239<br>0.3376830 | 0.3762904 | 0.3729147 | 0.3346579 | 0.3616941 | 0.3549 | AVRG  |     | 4.5930  |
| 133)B    | 1,3,5-Trinitrobenzene    |    | 0.2469037 | 0.2050580<br>0.2351387 | 0.2386939 | 0.2445237 | 0.2408708 | 0.2482138 | 0.2371 | AVRG  |     | 6.2617  |
| 134)B    | Phenacetin               |    | 0.3420201 | 0.4042600<br>0.3287510 | 0.3986475 | 0.3652120 | 0.3496950 | 0.3344904 | 0.3604 | AVRG  |     | 8.4267  |
| 135)B    | Diallate                 |    | 0.2682116 | 0.3783017<br>0.2688140 | 0.3742656 | 0.3171182 | 0.3349200 | 0.2868120 | 0.3183 | AVRG  |     | 14.5985 |
| 136)B    | Cis Diallate             |    | 0.3889517 | 0.5089806<br>0.3904081 | 0.4774810 | 0.3975295 | 0.4441503 | 0.4172146 | 0.4321 | AVRG  |     | 10.8269 |
| 137)B    | Trans Diallate           |    | 0.3155430 | 0.4450608<br>0.3162518 | 0.4403125 | 0.3730802 | 0.3940235 | 0.3374259 | 0.3745 | AVRG  |     | 14.5985 |
| 138)BM50 | Atrazine                 |    | 0.2079633 | 0.2829117<br>0.1961697 | 0.2888760 | 0.2541456 | 0.2588540 | 0.2248698 | 0.2448 | AVRG  |     | 14.7261 |
| 139)B    | 4-Aminobiphenyl          |    | 0.6224619 | 0.8420274<br>0.5907633 | 0.7344300 | 0.6685626 | 0.6168792 | 0.6294084 | 0.6721 | AVRG  |     | 13.1304 |
| 140)B    | Pentachloronitrobenzene  |    | 0.1098821 | 0.1470085<br>0.1056094 | 0.1454992 | 0.1220863 | 0.1322468 | 0.1151668 | 0.1254 | AVRG  |     | 13.2925 |
| 141)B    | Pronamide                |    | 0.3180361 | 0.4264598<br>0.3176971 | 0.4121377 | 0.3588705 | 0.3668042 | 0.3379034 | 0.3626 | AVRG  |     | 11.9038 |
| 142)B    | 4-Nitroquinoline-1-oxide |    |           |                        |           |           |           |           |        |       |     |         |
|          | -0.0155   0.1067   0.00  |    | 168701    | 8088                   | 28067     | 59843     | 80029     | 150665    |        | LINR  | #   | 0.9982  |
| 143)B    | Methapyrilene            |    | 0.6057112 | 0.9865284              | 0.9508766 | 0.8195178 | 0.7933491 | 0.6374281 | 0.7989 | AVRG  |     | 19.5647 |
| 144)B    | Isodrin                  |    | 0.1491405 | 0.2005010<br>0.1477279 | 0.1927688 | 0.1718603 | 0.1729621 | 0.1572949 | 0.1703 | AVRG  |     | 12.1105 |
| 146)B    | Aramite                  |    | 0.0970708 | 0.1010208<br>0.0968720 | 0.1081519 | 0.1022204 | 0.1169271 | 0.1017737 | 0.1034 | AVRG  |     | 6.8126  |

## Response Factor Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1             | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|--------|----------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 147)B  | Kepone                     |    | 0.1277315 | 0.1525779<br>0.1312541 | 0.1648237 | 0.1389623 | 0.1643904 | 0.1354215 | 0.1450 | AVRG  |     | 10.6889 |
| 148)B  | p- (Dimethylamino) azobenz |    | 0.3474168 | 0.4028121<br>0.3501800 | 0.4194389 | 0.3711045 | 0.3944673 | 0.3585887 | 0.3777 | AVRG  |     | 7.4390  |
| 149)B  | Chlorobenzilate            |    | 0.3715028 | 0.4371360<br>0.3773841 | 0.4593517 | 0.3965724 | 0.4422583 | 0.3886296 | 0.4104 | AVRG  |     | 8.5538  |
| 150)B  | 3,3'-Dimethylbenzidine     |    |           | 0.8973243              | 0.8984091 | 0.7555050 | 0.7351888 | 0.6653752 | 0.7904 | AVRG  |     | 13.1177 |
| 151)B  | 2-Acetylaminofluorene      |    | 0.4585375 | 0.4221987<br>0.4578553 | 0.4277785 | 0.4760041 | 0.4780136 | 0.4750558 | 0.4565 | AVRG  |     | 5.0551  |
| 153)B  | 7,12-Dimethylbenz (a) anth |    | 0.6176012 | 0.7439281<br>0.5961007 | 0.7542027 | 0.6683641 | 0.6494320 | 0.6373773 | 0.6667 | AVRG  |     | 9.1187  |
| 154)B  | 3-Methylcholanthrene       |    | 0.1261633 | 0.1453644<br>0.1211102 | 0.1438608 | 0.1355571 | 0.1324098 | 0.1299669 | 0.1335 | AVRG  |     | 6.6537  |
| 156)D  | Triethylphosphorothioate   |    | 0.2227378 | 0.2534080<br>0.2169595 | 0.2604142 | 0.2534705 | 0.2430870 | 0.2305640 | 0.2401 | AVRG  |     | 7.0218  |
| 158)D  | Thionazine                 |    | 0.2255838 | 0.2743256<br>0.2355566 | 0.2808111 | 0.2689750 | 0.2602864 | 0.2388456 | 0.2549 | AVRG  |     | 8.4247  |
| 159)DM | Tributylphosphate          |    |           | 2.1103948              | 1.9476812 | 1.7753298 | 1.6750215 | 1.5135237 | 1.8044 | AVRG  |     | 12.8891 |
| 161)D  | Sulfotepp                  |    | 0.1429893 | 0.1767142<br>0.1435192 | 0.1819718 | 0.1702236 | 0.1610076 | 0.1494975 | 0.1608 | AVRG  |     | 9.9407  |
| 162)D  | Phorate                    |    | 0.4185916 | 0.5748655<br>0.4089860 | 0.5556374 | 0.5375805 | 0.4925303 | 0.4484997 | 0.4910 | AVRG  |     | 13.7037 |
| 163)D  | Dimethoate                 |    | 0.2782113 | 0.3231734<br>0.2759562 | 0.3073601 | 0.3057247 | 0.3017621 | 0.2807216 | 0.2961 | AVRG  |     | 6.0827  |
| 164)D  | Disulfoton                 |    | 0.3231696 | 0.4445410<br>0.3338165 | 0.4194140 | 0.4071881 | 0.3822455 | 0.3530484 | 0.3805 | AVRG  |     | 12.0203 |
| 165)D  | Methyl parathion           |    | 0.2619307 | 0.2688084<br>0.2607830 | 0.2785763 | 0.2845388 | 0.2736153 | 0.2670460 | 0.2708 | AVRG  |     | 3.2134  |

## Response Factor Report MSD1

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s111016.B\MSD1\_8270C\_8270D\_092916.M

Last Update : Fri Sep 30 09:55:56 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1         | m2 | 1<br>7    | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|--------|------------------------|----|-----------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 166)D  | Parathion              |    | 0.1020543 | 0.1025695<br>0.1014047 | 0.1042419 | 0.1134138 | 0.1117549 | 0.1101515 | 0.1065 | AVRG  |     | 4.7722  |
| 168)D  | Famphur                |    | 0.5348330 | 0.7080119<br>0.5320649 | 0.6638943 | 0.6388593 | 0.6159355 | 0.5767916 | 0.6101 | AVRG  |     | 10.8331 |
| 170)E  | p-Phenylenediamine     |    |           | 0.3231331              | 0.2803492 | 0.2963245 | 0.2792065 | 0.2856358 | 0.2929 | AVRG  |     | 6.2098  |
| 172)E  | Hexachlorophene        |    |           | 0.1113213              | 0.0801289 | 0.0999107 | 0.1077964 | 0.1211828 | 0.1041 | AVRG  |     | 14.8070 |
| 174)F  | bis(Chloromethyl)ether |    |           | 0.6973531              | 0.6583360 | 0.6057753 | 0.5016917 | 0.5477707 | 0.6022 | AVRG  |     | 13.2023 |
| 176)JM | Benzidine              |    | 0.6151767 | 0.5920404<br>0.5573526 | 0.5629899 | 0.6598736 | 0.5685699 |           | 0.5927 | AVRG  |     | 6.6353  |
| 178)JM | 3,3'-Dichlorobenzidine |    | 0.5109481 | 0.5061185<br>0.5103083 | 0.4863471 | 0.5240062 | 0.4784068 |           | 0.5027 | AVRG  |     | 3.3866  |

(# ) = Out of Range (\$ ) = Individual RF Out of Range

AVRG = Average, LINR = Linear Regression,  $1/x$  = the inverse of concentration,  $1/x^2$  = the inverse square of concentration

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2903.D  
Acq On : 29 Sep 2016 10:05  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-08|ICAL|1|SVM|1|M1  
Misc : |MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 08:44:05 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 08:42:18 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |           |
|-------------------------------|------|--------|--------|--------|----------|-------|--------|-----------|
| Internal Standards            |      |        |        |        |          |       |        | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 235909   | 40.00 | ng/uL  | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 773532   | 40.00 | ng/uL  | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 419418   | 40.00 | ng/uL  | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.378 | 11.384 | 1.000  | 734975   | 40.00 | ng/uL  | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.796 | 14.807 | 1.000  | 565680   | 40.00 | ng/uL  | -0.01     |
| 91) A Perylene-d12            | 264  | 17.893 | 17.904 | 1.000  | 406032   | 40.00 | ng/uL  | -0.01     |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.378 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.796 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL  | -0.01     |
| 152) B Perylene-d12           | 264  | 17.893 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL  | -0.01     |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.378 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.796 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL  | -0.01     |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 171) E Perylene-d12           | 264  | 17.893 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL  | -0.01     |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.378 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.796 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL  | -0.01     |
| System Monitoring Compounds   |      |        |        |        |          |       |        | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 0.000  | 3.757  | 0.000  | 0d       | 0.00  | ng/uL  |           |
| 8) Phenol-d5                  | 99   | 0.000  | 4.906  | 0.000  | 0d       | 0.00  | ng/uL  |           |
| 25) Nitrobenzene-d5           | 82   | 0.000  | 6.222  | 0.000  | 0d       | 0.00  | ng/uL  |           |
| 47) 2-Fluorobiphenyl          | 172  | 0.000  | 8.656  | 0.000  | 0d       | 0.00  | ng/uL  |           |
| 66) 2,4,6-Tribromophenol      | 330  | 0.000  | 10.512 | 0.000  | 0d       | 0.00  | ng/uL  |           |
| 83) p-Terphenyl-d14           | 244  | 0.000  | 13.357 | 0.000  | 0d       | 0.00  | ng/uL  |           |
| Target Compounds              |      |        |        |        |          |       |        | QValue    |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.451  | 2.425  | 0.451  | 1361     | 0.25  | ng/uL# | 15        |
| 35) Naphthalene               | 128  | 7.238  | 7.244  | 1.004  | 20809    | 1.14  | ng/uL  | 96        |
| 39) 2-Methylnaphthalene       | 142  | 8.169  | 8.169  | 1.133  | 16064    | 1.14  | ng/uL  | 96        |
| 41) 1-Methylnaphthalene       | 142  | 8.297  | 8.303  | 1.151  | 15954    | 1.25  | ng/uL  | 97        |
| 48) 2-Chloronaphthalene       | 162  | 8.800  | 8.806  | 0.925  | 15958    | 1.21  | ng/uL  | 95        |
| 52) Dimethylphthalate         | 163  | 9.175  | 9.191  | 0.964  | 19309    | 1.20  | ng/uL  | 96        |
| 56) Acenaphthylene            | 152  | 9.335  | 9.341  | 0.981  | 24884    | 1.26  | ng/uL  | 95        |
| 57) Acenaphthene              | 154  | 9.554  | 9.560  | 1.004  | 11802    | 1.04  | ng/uL  | 89        |
| 61) Diethylphthalate          | 149  | 10.073 | 10.084 | 1.058  | 22223    | 1.23  | ng/uL  | 99        |
| 63) Fluorene                  | 166  | 10.207 | 10.212 | 1.073  | 17217    | 1.14  | ng/uL  | 99        |
| 76) Phenanthrene              | 178  | 11.405 | 11.410 | 1.002  | 17765    | 1.05  | ng/uL  | 95        |
| 77) Anthracene                | 178  | 11.469 | 11.475 | 1.008  | 17897    | 1.01  | ng/uL  | 98        |
| 78) Carbazole                 | 167  | 11.667 | 11.672 | 1.025  | 15596    | 0.92  | ng/uL  | 96        |
| 79) Di-n-butylphthalate       | 149  | 12.111 | 12.116 | 1.064  | 27105    | 1.00  | ng/uL  | 98        |
| 80) Fluoranthene              | 202  | 12.876 | 12.881 | 1.132  | 24851    | 1.00  | ng/uL  | 97        |
| 82) Pyrene                    | 202  | 13.159 | 13.159 | 0.889  | 26046    | 1.14  | ng/uL  | 98        |
| 84) Butylbenzylphthalate      | 149  | 13.967 | 13.972 | 0.944  | 8948     | 0.82  | ng/uL  | 97        |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.849 | 14.855 | 1.004  | 9813     | 0.80  | ng/uL  | 92        |
| 86) Benzo(a)anthracene        | 228  | 14.780 | 14.785 | 0.999  | 20219    | 1.15  | ng/uL  | 96        |
| 87) Chrysene                  | 228  | 14.839 | 14.850 | 1.003  | 14639    | 1.00  | ng/uL  | 96        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2903.D  
Acq On : 29 Sep 2016 10:05  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-08|ICAL|1|SVM|1|M1  
Misc : |MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 08:44:05 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 08:42:18 2016  
Response via : Initial Calibration  
Integrator: RTE

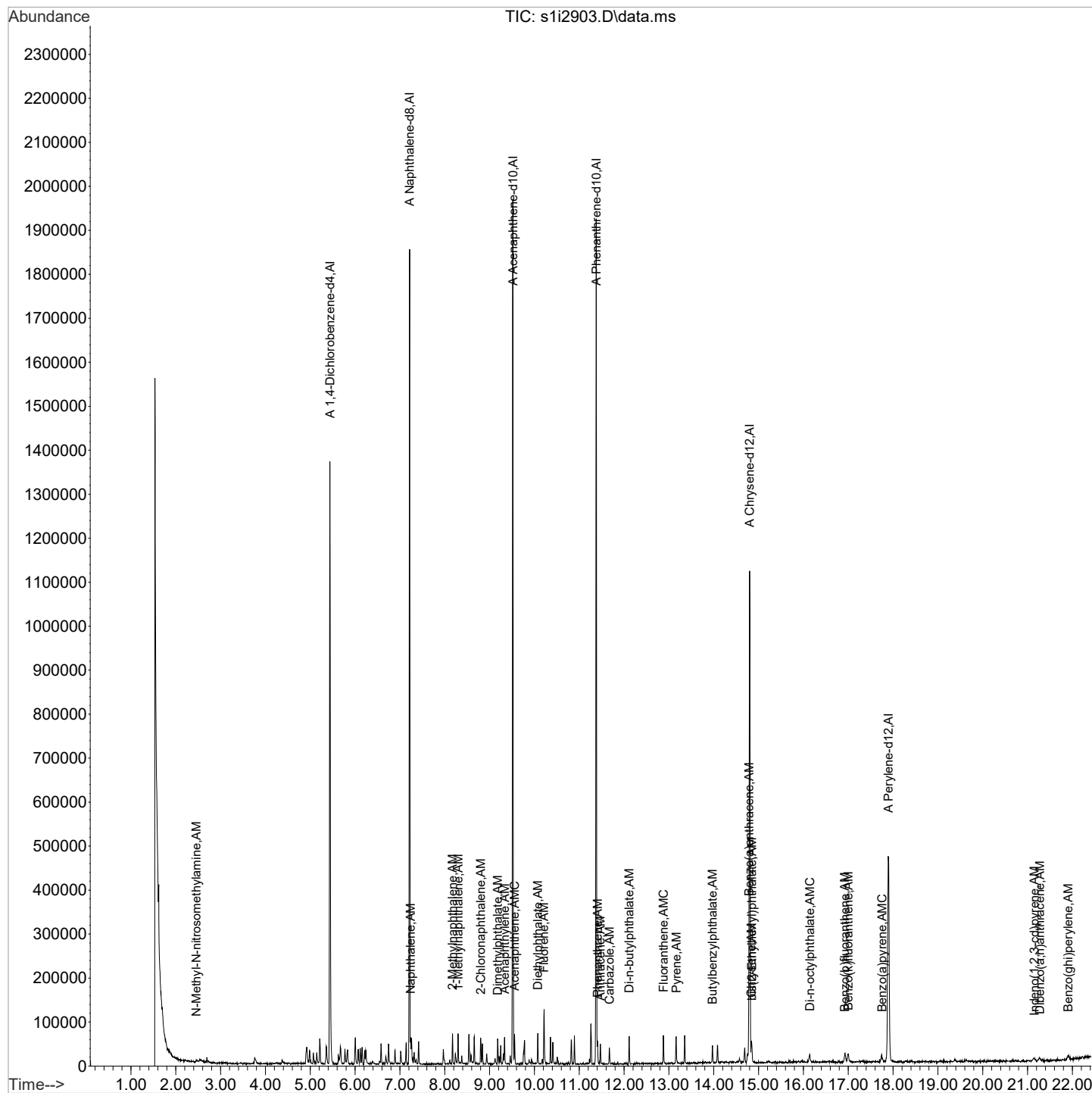
| Compound                   | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units    |
|----------------------------|------|--------|--------|--------|----------|------|----------|
| 90) Di-n-octylphthalate    | 149  | 16.139 | 16.139 | 1.091  | 12792    | 0.99 | ng/uL 64 |
| 92) Benzo(b)fluoranthene   | 252  | 16.919 | 16.941 | 0.946  | 15535    | 1.08 | ng/uL 91 |
| 93) Benzo(k)fluoranthene   | 252  | 17.000 | 17.010 | 0.950  | 12541    | 1.01 | ng/uL 88 |
| 94) Benzo(a)pyrene         | 252  | 17.748 | 17.754 | 0.992  | 10949    | 0.88 | ng/uL 93 |
| 95) Indeno(1,2,3-cd)pyrene | 276  | 21.150 | 21.161 | 1.182  | 6588     | 0.69 | ng/uL 70 |
| 96) Dibenzo(a,h)anthracene | 278  | 21.270 | 21.274 | 1.189  | 8330     | 0.94 | ng/uL 99 |
| 97) Benzo(ghi)perylene     | 276  | 21.899 | 21.926 | 1.224  | 9654     | 1.00 | ng/uL 81 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2903.D  
Acq On : 29 Sep 2016 10:05  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-08|ICAL|1|SVM|1|M1  
Misc : |MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 08:44:05 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 08:42:18 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2904.D  
Acq On : 29 Sep 2016 10:35  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-07|ICAL|1|SVM|1|M2  
Misc : |MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 30 08:43:51 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 08:42:18 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |           |
|-------------------------------|------|--------|--------|--------|----------|-------|--------|-----------|
| Internal Standards            |      |        |        |        |          |       |        | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 205057   | 40.00 | ng/uL  | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 676049   | 40.00 | ng/uL  | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 369104   | 40.00 | ng/uL  | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.379 | 11.384 | 1.000  | 690619   | 40.00 | ng/uL  | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.802 | 14.807 | 1.000  | 586212   | 40.00 | ng/uL  | 0.00      |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 545207   | 40.00 | ng/uL  | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.379 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 152) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.379 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 171) E Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.379 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL  | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |        | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 3.751  | 3.757  | 0.690  | 74509    | 9.79  | ng/uL  | 0.00      |
| 8) Phenol-d5                  | 99   | 4.901  | 4.906  | 0.902  | 94683    | 10.16 | ng/uL  | 0.00      |
| 25) Nitrobenzene-d5           | 82   | 6.212  | 6.222  | 0.861  | 84104    | 10.63 | ng/uL  | -0.01     |
| 47) 2-Fluorobiphenyl          | 172  | 8.656  | 8.656  | 0.910  | 154395   | 11.87 | ng/uL  | 0.00      |
| 66) 2,4,6-Tribromophenol      | 330  | 10.507 | 10.512 | 1.104  | 22061    | 9.16  | ng/uL  | 0.00      |
| 83) p-Terphenyl-d14           | 244  | 13.352 | 13.357 | 0.902  | 168678   | 10.78 | ng/uL  | 0.00      |
| Target Compounds              |      |        |        |        |          |       |        | QValue    |
| 2) 2-Ethoxyethanol            | 59   | 2.174  | 2.173  | 0.400  | 51742    | 8.97  | ng/uL  | 79        |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.430  | 2.425  | 0.447  | 44390    | 9.21  | ng/uL  | 90        |
| 4) Pyridine                   | 79   | 2.478  | 2.467  | 0.456  | 80444    | 10.19 | ng/uL# | 77        |
| 6) p-Benzquinone              | 54   | 4.361  | 4.361  | 0.802  | 44478    | 7.92  | ng/uL  | 99        |
| 7) Aniline                    | 93   | 4.982  | 4.987  | 0.916  | 109824   | 11.36 | ng/uL  | 100       |
| 9) Phenol                     | 94   | 4.917  | 4.928  | 0.905  | 93978    | 11.27 | ng/uL  | 98        |
| 10) bis(2-Chloroethyl) ether  | 93   | 5.067  | 5.067  | 0.932  | 73787    | 10.92 | ng/uL  | 98        |
| 11) 2-Chlorophenol            | 128  | 5.137  | 5.142  | 0.945  | 71106    | 10.92 | ng/uL  | 98        |
| 12) n-Decane                  | 43   | 5.212  | 5.217  | 0.959  | 126440   | 12.30 | ng/uL  | 97        |
| 13) 1,3-Dichlorobenzene       | 146  | 5.356  | 5.361  | 0.985  | 80095    | 11.11 | ng/uL  | 99        |
| 14) 1,4-Dichlorobenzene       | 146  | 5.463  | 5.463  | 1.005  | 69552    | 10.56 | ng/uL  | 96        |
| 15) 1,2-Dichlorobenzene       | 146  | 5.672  | 5.671  | 1.043  | 73533    | 11.16 | ng/uL  | 98        |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.827  | 5.832  | 1.072  | 149503   | 11.34 | ng/uL  | 98        |
| 17) Benzyl alcohol            | 108  | 5.618  | 5.629  | 1.033  | 42804    | 9.50  | ng/uL  | 95        |
| 18) o-Cresol                  | 107  | 5.773  | 5.773  | 1.062  | 55097    | 10.48 | ng/uL  | 97        |
| 19) m,p-Cresols               | 107  | 5.992  | 6.008  | 1.102  | 68315    | 9.99  | ng/uL  | 95        |
| 20) N-Nitrosodipropylamine    | 70   | 6.003  | 6.019  | 1.104  | 57296    | 11.09 | ng/uL  | 99        |
| 21) p-Toluidine               | 106  | 6.062  | 6.067  | 1.115  | 93655    | 12.00 | ng/uL  | 98        |
| 22) m-Toluidine               | 106  | 6.110  | 6.115  | 1.124  | 84301    | 11.15 | ng/uL  | 99        |
| 23) Hexachloroethane          | 117  | 6.153  | 6.153  | 1.132  | 33462    | 11.04 | ng/uL  | 97        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2904.D  
Acq On : 29 Sep 2016 10:35  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-07|ICAL|1|SVM|1|M2  
Misc : |MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 30 08:43:51 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 08:42:18 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 26) Nitrobenzene              | 77   | 6.238  | 6.249  | 0.865  | 79372    | 10.96 | ng/uL | 99  |
| 27) Isophorone                | 82   | 6.575  | 6.586  | 0.912  | 167461   | 10.91 | ng/uL | 99  |
| 28) 2-Nitrophenol             | 139  | 6.688  | 6.688  | 0.927  | 32321    | 9.58  | ng/uL | 98  |
| 29) 2,4-Dimethylphenol        | 122  | 6.747  | 6.752  | 0.935  | 60939    | 11.14 | ng/uL | 97  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.886  | 6.891  | 0.955  | 89453    | 11.00 | ng/uL | 99  |
| 31) 2,4-Dichlorophenol        | 162  | 7.014  | 7.019  | 0.973  | 58152    | 10.73 | ng/uL | 95  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.137  | 7.137  | 0.990  | 75702    | 11.45 | ng/uL | 97  |
| 34) alpha-Terpineol           | 59   | 7.260  | 7.265  | 1.007  | 73653    | 10.63 | ng/uL | 97  |
| 35) Naphthalene               | 128  | 7.239  | 7.244  | 1.004  | 174735   | 10.92 | ng/uL | 98  |
| 36) 4-Chloroaniline           | 127  | 7.314  | 7.319  | 1.014  | 69155    | 11.80 | ng/uL | 98  |
| 37) Hexachlorobutadiene       | 225  | 7.415  | 7.415  | 1.028  | 51621    | 11.30 | ng/uL | 98  |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.966  | 7.966  | 1.105  | 70919    | 10.21 | ng/uL | 95  |
| 39) 2-Methylnaphthalene       | 142  | 8.169  | 8.169  | 1.133  | 143743   | 11.63 | ng/uL | 97  |
| 40) Phthalic anhydride        | 104  | 8.234  | 8.244  | 1.142  | 41374    | 7.77  | ng/uL | 90  |
| 41) 1-Methylnaphthalene       | 142  | 8.298  | 8.303  | 1.151  | 126361   | 11.31 | ng/uL | 97  |
| 43) Hexachlorocyclopentadiene | 237  | 8.378  | 8.383  | 0.880  | 35806    | 8.25  | ng/uL | 100 |
| 44) 2,3-Dichloroaniline       | 161  | 8.533  | 8.538  | 0.897  | 71449    | 12.21 | ng/uL | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.538  | 8.538  | 0.897  | 43084    | 10.44 | ng/uL | 98  |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.576  | 8.581  | 0.901  | 40833    | 10.25 | ng/uL | 96  |
| 48) 2-Chloronaphthalene       | 162  | 8.800  | 8.806  | 0.925  | 129550   | 11.16 | ng/uL | 97  |
| 49) o-Nitroaniline            | 65   | 8.929  | 8.934  | 0.938  | 47588    | 10.38 | ng/uL | 96  |
| 50) 1,4-Dinitrobenzene        | 168  | 9.116  | 9.121  | 0.958  | 21107    | 9.46  | ng/uL | 99  |
| 51) m-Nitroaniline            | 138  | 9.458  | 9.464  | 0.994  | 29276    | 10.92 | ng/uL | 94  |
| 52) Dimethylphthalate         | 163  | 9.180  | 9.191  | 0.965  | 165974   | 11.74 | ng/uL | 99  |
| 53) m-Dinitrobenzene          | 168  | 9.207  | 9.217  | 0.967  | 22384    | 10.25 | ng/uL | 100 |
| 54) 2,6-Dinitrotoluene        | 165  | 9.250  | 9.260  | 0.972  | 33838    | 11.15 | ng/uL | 99  |
| 55) 2,4-Dinitrotoluene        | 165  | 9.758  | 9.763  | 1.025  | 43248    | 10.36 | ng/uL | 97  |
| 56) Acenaphthylene            | 152  | 9.335  | 9.341  | 0.981  | 201181   | 11.59 | ng/uL | 98  |
| 57) Acenaphthene              | 154  | 9.555  | 9.560  | 1.004  | 106846   | 10.71 | ng/uL | 99  |
| 59) Dibenzofuran              | 168  | 9.774  | 9.779  | 1.027  | 183002   | 12.05 | ng/uL | 98  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.929  | 9.934  | 1.043  | 34038    | 9.42  | ng/uL | 98  |
| 61) Diethylphthalate          | 149  | 10.073 | 10.084 | 1.058  | 178676   | 11.23 | ng/uL | 96  |
| 62) 4-Nitrophenol             | 139  | 9.667  | 9.672  | 1.016  | 13351    | 10.35 | ng/uL | 96  |
| 63) Fluorene                  | 166  | 10.207 | 10.212 | 1.072  | 147527   | 11.14 | ng/uL | 99  |
| 64) 4-Chlorophenylphenylether | 204  | 10.213 | 10.218 | 1.073  | 85595    | 11.52 | ng/uL | 96  |
| 65) p-Nitroaniline            | 138  | 10.223 | 10.234 | 1.074  | 25607    | 10.20 | ng/uL | 94  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.266 | 10.277 | 0.902  | 12491    | 10.30 | ng/uL | 99  |
| 69) Diphenylamine             | 169  | 10.357 | 10.362 | 0.910  | 123333   | 11.18 | ng/uL | 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.410 | 10.416 | 0.915  | 158181   | 11.58 | ng/uL | 95  |
| 71) 4-Bromophenylphenylether  | 248  | 10.822 | 10.827 | 0.951  | 51672    | 10.44 | ng/uL | 93  |
| 72) Hexachlorobenzene         | 284  | 10.892 | 10.897 | 0.957  | 57097    | 11.44 | ng/uL | 97  |
| 73) Pentachlorophenol         | 266  | 11.138 | 11.138 | 0.979  | 17793    | 8.95  | ng/uL | 96  |
| 74) n-Octadecane              | 57   | 11.261 | 11.261 | 0.990  | 156531   | 12.41 | ng/uL | 97  |
| 75) Dinoseb                   | 211  | 11.373 | 11.373 | 1.000  | 18596    | 9.81  | ng/uL | 94  |
| 76) Phenanthrene              | 178  | 11.405 | 11.410 | 1.002  | 174728   | 10.97 | ng/uL | 98  |
| 77) Anthracene                | 178  | 11.469 | 11.475 | 1.008  | 182111   | 10.93 | ng/uL | 95  |
| 78) Carbazole                 | 167  | 11.667 | 11.672 | 1.025  | 165055   | 10.40 | ng/uL | 98  |
| 79) Di-n-butylphthalate       | 149  | 12.111 | 12.116 | 1.064  | 305719   | 12.01 | ng/uL | 98  |
| 80) Fluoranthene              | 202  | 12.876 | 12.881 | 1.132  | 271870   | 11.60 | ng/uL | 98  |
| 82) Pyrene                    | 202  | 13.160 | 13.159 | 0.889  | 265639   | 11.20 | ng/uL | 99  |
| 84) Butylbenzylphthalate      | 149  | 13.973 | 13.972 | 0.944  | 120690   | 10.62 | ng/uL | 99  |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.850 | 14.855 | 1.003  | 138736   | 10.96 | ng/uL | 94  |
| 86) Benzo(a)anthracene        | 228  | 14.780 | 14.785 | 0.999  | 202729   | 11.09 | ng/uL | 97  |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2904.D  
Acq On : 29 Sep 2016 10:35  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-07|ICAL|1|SVM|1|M2  
Misc : |MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 30 08:43:51 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 08:42:18 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units     |
|-------------------------------|------|--------|--------|--------|----------|-------|-----------|
| 87) Chrysene                  | 228  | 14.839 | 14.850 | 1.003  | 163618   | 10.76 | ng/uL 97  |
| 88) Methoxychlor              | 227  | 14.689 | 14.689 | 0.992  | 184267   | 11.05 | ng/uL 97  |
| 89) Methylenebis(2-chloroa... | 231  | 14.748 | 14.753 | 0.996  | 32448    | 9.31  | ng/uL 93  |
| 90) Di-n-octylphthalate       | 149  | 16.139 | 16.139 | 1.090  | 260423   | 10.63 | ng/uL 100 |
| 92) Benzo(b)fluoranthene      | 252  | 16.930 | 16.941 | 0.946  | 202189   | 10.48 | ng/uL 100 |
| 93) Benzo(k)fluoranthene      | 252  | 16.995 | 17.010 | 0.949  | 180336   | 10.81 | ng/uL 98  |
| 94) Benzo(a)pyrene            | 252  | 17.738 | 17.754 | 0.991  | 172841   | 10.36 | ng/uL 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 21.140 | 21.161 | 1.181  | 127098   | 9.96  | ng/uL 96  |
| 96) Dibenzo(a,h)anthracene    | 278  | 21.264 | 21.274 | 1.188  | 116393   | 9.80  | ng/uL 91  |
| 97) Benzo(ghi)perylene        | 276  | 21.905 | 21.926 | 1.223  | 129418   | 9.94  | ng/uL 97  |
| 98) Dibenzo(a,e)pyrene        | 302  | 25.782 | 25.804 | 1.440  | 60468    | 9.50  | ng/uL 71  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2905.D  
Acq On : 29 Sep 2016 11:09  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-06|ICAL|1|SVM|1|M3  
Misc : |MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 30 08:46:27 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 08:42:18 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 192218   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 638401   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 364411   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.378 | 11.384 | 1.000  | 695010   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.802 | 14.807 | 1.000  | 636489   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 616969   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.378 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.378 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.378 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 3.751  | 3.757  | 0.690  | 151598   | 21.25 | ng/uL | 0.00      |
| 8) Phenol-d5                  | 99   | 4.901  | 4.906  | 0.902  | 188637   | 21.60 | ng/uL | 0.00      |
| 25) Nitrobenzene-d5           | 82   | 6.217  | 6.222  | 0.862  | 156310   | 20.92 | ng/uL | 0.00      |
| 47) 2-Fluorobiphenyl          | 172  | 8.656  | 8.656  | 0.910  | 282531   | 22.00 | ng/uL | 0.00      |
| 66) 2,4,6-Tribromophenol      | 330  | 10.507 | 10.512 | 1.104  | 47262    | 19.88 | ng/uL | 0.00      |
| 83) p-Terphenyl-d14           | 244  | 13.352 | 13.357 | 0.902  | 353137   | 20.78 | ng/uL | 0.00      |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 2) 2-Ethoxyethanol            | 59   | 2.173  | 2.173  | 0.400  | 105554   | 19.51 | ng/uL | 75        |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.425  | 2.425  | 0.446  | 90353    | 19.99 | ng/uL | 95        |
| 4) Pyridine                   | 79   | 2.468  | 2.467  | 0.454  | 158980   | 21.49 | ng/uL | 90        |
| 6) p-Benzquinone              | 54   | 4.361  | 4.361  | 0.802  | 101970   | 19.37 | ng/uL | 99        |
| 7) Aniline                    | 93   | 4.981  | 4.987  | 0.916  | 198670   | 21.92 | ng/uL | 99        |
| 9) Phenol                     | 94   | 4.923  | 4.928  | 0.906  | 178300   | 22.80 | ng/uL | 99        |
| 10) bis(2-Chloroethyl) ether  | 93   | 5.067  | 5.067  | 0.932  | 134395   | 21.22 | ng/uL | 97        |
| 11) 2-Chlorophenol            | 128  | 5.137  | 5.142  | 0.945  | 125428   | 20.56 | ng/uL | 97        |
| 12) n-Decane                  | 43   | 5.211  | 5.217  | 0.959  | 215708   | 22.38 | ng/uL | 98        |
| 13) 1,3-Dichlorobenzene       | 146  | 5.356  | 5.361  | 0.985  | 141336   | 20.92 | ng/uL | 98        |
| 14) 1,4-Dichlorobenzene       | 146  | 5.463  | 5.463  | 1.005  | 128419   | 20.81 | ng/uL | 99        |
| 15) 1,2-Dichlorobenzene       | 146  | 5.671  | 5.671  | 1.043  | 135157   | 21.89 | ng/uL | 96        |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.832  | 5.832  | 1.073  | 277338   | 22.43 | ng/uL | 99        |
| 17) Benzyl alcohol            | 108  | 5.623  | 5.629  | 1.034  | 88002    | 20.84 | ng/uL | 99        |
| 18) o-Cresol                  | 107  | 5.773  | 5.773  | 1.062  | 101888   | 20.67 | ng/uL | 97        |
| 19) m,p-Cresols               | 107  | 5.998  | 6.008  | 1.103  | 133418   | 20.82 | ng/uL | 98        |
| 20) N-Nitrosodipropylamine    | 70   | 6.008  | 6.019  | 1.105  | 109948   | 22.69 | ng/uL | 98        |
| 21) p-Toluidine               | 106  | 6.067  | 6.067  | 1.116  | 170284   | 23.28 | ng/uL | 98        |
| 22) m-Toluidine               | 106  | 6.115  | 6.115  | 1.125  | 155201   | 21.89 | ng/uL | 97        |
| 23) Hexachloroethane          | 117  | 6.153  | 6.153  | 1.132  | 61748    | 21.74 | ng/uL | 99        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2905.D  
Acq On : 29 Sep 2016 11:09  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-06|ICAL|1|SVM|1|M3  
Misc : |MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 30 08:46:27 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 08:42:18 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 26) Nitrobenzene              | 77   | 6.244  | 6.249  | 0.866  | 147662   | 21.59 | ng/uL | 98  |
| 27) Isophorone                | 82   | 6.581  | 6.586  | 0.912  | 316395   | 21.84 | ng/uL | 100 |
| 28) 2-Nitrophenol             | 139  | 6.688  | 6.688  | 0.927  | 64219    | 20.17 | ng/uL | 97  |
| 29) 2,4-Dimethylphenol        | 122  | 6.747  | 6.752  | 0.935  | 110878   | 21.47 | ng/uL | 95  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.891  | 6.891  | 0.956  | 167440   | 21.80 | ng/uL | 96  |
| 31) 2,4-Dichlorophenol        | 162  | 7.014  | 7.019  | 0.973  | 106679   | 20.85 | ng/uL | 98  |
| 32) Benzoic acid              | 105  | 6.854  | 6.891  | 0.950  | 31937    | 21.41 | ng/uL | 90  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.137  | 7.137  | 0.990  | 135074   | 21.63 | ng/uL | 100 |
| 34) alpha-Terpineol           | 59   | 7.260  | 7.265  | 1.007  | 142872   | 21.84 | ng/uL | 97  |
| 35) Naphthalene               | 128  | 7.239  | 7.244  | 1.004  | 325611   | 21.55 | ng/uL | 98  |
| 36) 4-Chloroaniline           | 127  | 7.314  | 7.319  | 1.014  | 126517   | 22.86 | ng/uL | 99  |
| 37) Hexachlorobutadiene       | 225  | 7.415  | 7.415  | 1.028  | 94026    | 21.80 | ng/uL | 100 |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.966  | 7.966  | 1.105  | 141013   | 21.50 | ng/uL | 99  |
| 39) 2-Methylnaphthalene       | 142  | 8.169  | 8.169  | 1.133  | 259939   | 22.27 | ng/uL | 99  |
| 40) Phthalic anhydride        | 104  | 8.233  | 8.244  | 1.142  | 85090    | 16.91 | ng/uL | 99  |
| 41) 1-Methylnaphthalene       | 142  | 8.298  | 8.303  | 1.151  | 231538   | 21.94 | ng/uL | 99  |
| 43) Hexachlorocyclopentadiene | 237  | 8.378  | 8.383  | 0.880  | 78655    | 18.35 | ng/uL | 97  |
| 44) 2,3-Dichloroaniline       | 161  | 8.538  | 8.538  | 0.897  | 130737   | 22.62 | ng/uL | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.538  | 8.538  | 0.897  | 81542    | 20.01 | ng/uL | 93  |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.581  | 8.581  | 0.902  | 80210    | 20.40 | ng/uL | 100 |
| 48) 2-Chloronaphthalene       | 162  | 8.800  | 8.806  | 0.925  | 236178   | 20.60 | ng/uL | 98  |
| 49) o-Nitroaniline            | 65   | 8.934  | 8.934  | 0.939  | 95427    | 21.08 | ng/uL | 97  |
| 50) 1,4-Dinitrobenzene        | 168  | 9.121  | 9.121  | 0.958  | 42500    | 19.30 | ng/uL | 95  |
| 51) m-Nitroaniline            | 138  | 9.458  | 9.464  | 0.994  | 61270    | 23.15 | ng/uL | 99  |
| 52) Dimethylphthalate         | 163  | 9.186  | 9.191  | 0.965  | 302663   | 21.69 | ng/uL | 99  |
| 53) m-Dinitrobenzene          | 168  | 9.212  | 9.217  | 0.968  | 45978    | 21.33 | ng/uL | 97  |
| 54) 2,6-Dinitrotoluene        | 165  | 9.255  | 9.260  | 0.972  | 61537    | 20.53 | ng/uL | 100 |
| 55) 2,4-Dinitrotoluene        | 165  | 9.758  | 9.763  | 1.025  | 88558    | 21.49 | ng/uL | 96  |
| 56) Acenaphthylene            | 152  | 9.335  | 9.341  | 0.981  | 365789   | 21.34 | ng/uL | 97  |
| 57) Acenaphthene              | 154  | 9.560  | 9.560  | 1.004  | 202444   | 20.56 | ng/uL | 99  |
| 58) 2,4-Dinitrophenol         | 184  | 9.592  | 9.597  | 1.008  | 20163    | 21.55 | ng/uL | 97  |
| 59) Dibenzofuran              | 168  | 9.779  | 9.779  | 1.028  | 331187   | 22.09 | ng/uL | 99  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.929  | 9.934  | 1.043  | 70607    | 19.80 | ng/uL | 98  |
| 61) Diethylphthalate          | 149  | 10.079 | 10.084 | 1.059  | 333316   | 21.22 | ng/uL | 98  |
| 62) 4-Nitrophenol             | 139  | 9.667  | 9.672  | 1.016  | 38081    | 21.18 | ng/uL | 98  |
| 63) Fluorene                  | 166  | 10.207 | 10.212 | 1.072  | 280314   | 21.43 | ng/uL | 99  |
| 64) 4-Chlorophenylphenylether | 204  | 10.212 | 10.218 | 1.073  | 155791   | 21.24 | ng/uL | 97  |
| 65) p-Nitroaniline            | 138  | 10.229 | 10.234 | 1.075  | 50194    | 20.26 | ng/uL | 99  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.271 | 10.277 | 0.903  | 35367    | 19.70 | ng/uL | 98  |
| 69) Diphenylamine             | 169  | 10.362 | 10.362 | 0.911  | 231108   | 20.81 | ng/uL | 100 |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.410 | 10.416 | 0.915  | 295192   | 21.48 | ng/uL | 98  |
| 71) 4-Bromophenylphenylether  | 248  | 10.828 | 10.827 | 0.952  | 105701   | 21.22 | ng/uL | 98  |
| 72) Hexachlorobenzene         | 284  | 10.897 | 10.897 | 0.958  | 107315   | 21.36 | ng/uL | 96  |
| 73) Pentachlorophenol         | 266  | 11.138 | 11.138 | 0.979  | 49337    | 18.90 | ng/uL | 96  |
| 74) n-Octadecane              | 57   | 11.261 | 11.261 | 0.990  | 284473   | 22.40 | ng/uL | 97  |
| 75) Dinoseb                   | 211  | 11.373 | 11.373 | 1.000  | 56329    | 19.30 | ng/uL | 93  |
| 76) Phenanthrene              | 178  | 11.411 | 11.410 | 1.003  | 342081   | 21.35 | ng/uL | 100 |
| 77) Anthracene                | 178  | 11.475 | 11.475 | 1.008  | 366531   | 21.86 | ng/uL | 98  |
| 78) Carbazole                 | 167  | 11.667 | 11.672 | 1.025  | 351630   | 22.01 | ng/uL | 99  |
| 79) Di-n-butylphthalate       | 149  | 12.111 | 12.116 | 1.064  | 580827   | 22.67 | ng/uL | 99  |
| 80) Fluoranthene              | 202  | 12.881 | 12.881 | 1.132  | 557533   | 23.64 | ng/uL | 98  |
| 82) Pyrene                    | 202  | 13.160 | 13.159 | 0.889  | 542026   | 21.04 | ng/uL | 96  |
| 84) Butylbenzylphthalate      | 149  | 13.973 | 13.972 | 0.944  | 264002   | 21.40 | ng/uL | 97  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2905.D  
Acq On : 29 Sep 2016 11:09  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-06|ICAL|1|SVM|1|M3  
Misc : |MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 30 08:46:27 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 08:42:18 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |    |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|----|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.850 | 14.855 | 1.003  | 287851   | 20.94 | ng/uL | 99 |
| 86) Benzo(a)anthracene        | 228  | 14.786 | 14.785 | 0.999  | 418867   | 21.11 | ng/uL | 99 |
| 87) Chrysene                  | 228  | 14.844 | 14.850 | 1.003  | 355615   | 21.54 | ng/uL | 97 |
| 88) Methoxychlor              | 227  | 14.689 | 14.689 | 0.992  | 385762   | 21.30 | ng/uL | 99 |
| 89) Methylenebis(2-chloroa... | 231  | 14.753 | 14.753 | 0.997  | 83669    | 22.12 | ng/uL | 98 |
| 90) Di-n-octylphthalate       | 149  | 16.139 | 16.139 | 1.090  | 600833   | 22.05 | ng/uL | 99 |
| 92) Benzo(b)fluoranthene      | 252  | 16.936 | 16.941 | 0.946  | 454327   | 20.81 | ng/uL | 99 |
| 93) Benzo(k)fluoranthene      | 252  | 17.000 | 17.010 | 0.950  | 402136   | 21.29 | ng/uL | 99 |
| 94) Benzo(a)pyrene            | 252  | 17.749 | 17.754 | 0.991  | 408828   | 21.66 | ng/uL | 98 |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 21.150 | 21.161 | 1.181  | 331627   | 22.97 | ng/uL | 97 |
| 96) Dibenzo(a,h)anthracene    | 278  | 21.268 | 21.274 | 1.188  | 287715   | 21.40 | ng/uL | 96 |
| 97) Benzo(ghi)perylene        | 276  | 21.915 | 21.926 | 1.224  | 326381   | 22.15 | ng/uL | 99 |
| 98) Dibenzo(a,e)pyrene        | 302  | 25.798 | 25.804 | 1.441  | 144646   | 20.07 | ng/uL | 96 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2907.D  
Acq On : 29 Sep 2016 12:18  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-04|ICAL|1|SVM|1|M5  
Misc : |MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 29 15:28:33 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| -----                         |      |        |        |        |          |       |       |           |
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.441  | 5.436  | 1.000  | 207364   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.217  | 7.212  | 1.000  | 694136   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.522  | 9.522  | 1.000  | 388330   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 724193   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.812 | 14.807 | 1.000  | 606897   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.909 | 17.904 | 1.000  | 514816   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.441  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 114) B Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 122) B Acenaphthene-d10       | 164  | 9.522  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 131) B Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 144) B Chrysene-d12           | 240  | 14.812 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 151) B Perylene-d12           | 264  | 17.909 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 154) D Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 156) D Acenaphthene-d10       | 164  | 9.522  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 159) D Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 166) D Chrysene-d12           | 240  | 14.812 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 168) E Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 170) E Perylene-d12           | 264  | 17.909 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 172) F 1,4-Dichlorobenzene-d4 | 152  | 5.441  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 174) J Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 176) J Chrysene-d12           | 240  | 14.812 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 3.757  | 3.757  | 0.690  | 386568   | 50.30 | ng/uL | 0.00      |
| 8) Phenol-d5                  | 99   | 4.912  | 4.906  | 0.903  | 474144   | 50.28 | ng/uL | 0.00      |
| 25) Nitrobenzene-d5           | 82   | 6.222  | 6.222  | 0.862  | 406857   | 50.09 | ng/uL | 0.00      |
| 47) 2-Fluorobiphenyl          | 172  | 8.661  | 8.656  | 0.910  | 669671   | 48.94 | ng/uL | 0.00      |
| 66) 2,4,6-Tribromophenol      | 330  | 10.517 | 10.512 | 1.104  | 128572   | 50.88 | ng/uL | 0.00      |
| 83) p-Terphenyl-d14           | 244  | 13.357 | 13.357 | 0.902  | 837854   | 52.61 | ng/uL | 0.00      |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 2) 2-Ethoxyethanol            | 59   | 2.173  | 2.173  | 0.399  | 310387   | 53.12 | ng/uL | 98        |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.430  | 2.425  | 0.447  | 258413   | 52.93 | ng/uL | 99        |
| 4) Pyridine                   | 79   | 2.468  | 2.467  | 0.453  | 410354   | 51.19 | ng/uL | 98        |
| 6) p-Benzquinone              | 54   | 4.361  | 4.361  | 0.801  | 310562   | 54.97 | ng/uL | 99        |
| 7) Aniline                    | 93   | 4.987  | 4.987  | 0.916  | 474323   | 48.59 | ng/uL | 99        |
| 9) Phenol                     | 94   | 4.933  | 4.928  | 0.907  | 420397   | 49.68 | ng/uL | 100       |
| 10) bis(2-Chloroethyl) ether  | 93   | 5.072  | 5.067  | 0.932  | 339790   | 49.71 | ng/uL | 99        |
| 11) 2-Chlorophenol            | 128  | 5.147  | 5.142  | 0.946  | 328473   | 49.85 | ng/uL | 99        |
| 12) n-Decane                  | 43   | 5.217  | 5.217  | 0.959  | 514622   | 49.36 | ng/uL | 97        |
| 13) 1,3-Dichlorobenzene       | 146  | 5.361  | 5.361  | 0.985  | 361537   | 49.64 | ng/uL | 98        |
| 14) 1,4-Dichlorobenzene       | 146  | 5.463  | 5.463  | 1.004  | 334112   | 50.23 | ng/uL | 99        |
| 15) 1,2-Dichlorobenzene       | 146  | 5.677  | 5.671  | 1.043  | 325927   | 48.90 | ng/uL | 100       |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.837  | 5.832  | 1.073  | 661083   | 49.46 | ng/uL | 98        |
| 17) Benzyl alcohol            | 108  | 5.629  | 5.629  | 1.034  | 225809   | 49.37 | ng/uL | 96        |
| 18) o-Cresol                  | 107  | 5.778  | 5.773  | 1.062  | 265494   | 49.73 | ng/uL | 98        |
| 19) m,p-Cresols               | 107  | 6.014  | 6.008  | 1.105  | 351008   | 50.71 | ng/uL | 99        |
| 20) N-Nitrosodipropylamine    | 70   | 6.024  | 6.019  | 1.107  | 266386   | 50.76 | ng/uL | 100       |
| 21) p-Toluidine               | 106  | 6.073  | 6.067  | 1.116  | 394969   | 49.91 | ng/uL | 97        |
| 22) m-Toluidine               | 106  | 6.121  | 6.115  | 1.125  | 367759   | 47.63 | ng/uL | 99        |
| 23) Hexachloroethane          | 117  | 6.153  | 6.153  | 1.131  | 151948   | 49.63 | ng/uL | 99        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2907.D  
Acq On : 29 Sep 2016 12:18  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-04|ICAL|1|SVM|1|M5  
Misc : |MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 29 15:28:33 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 26) Nitrobenzene              | 77   | 6.249  | 6.249  | 0.866  | 369039   | 49.52 | ng/uL | 99  |
| 27) Isophorone                | 82   | 6.586  | 6.586  | 0.913  | 788353   | 49.96 | ng/uL | 99  |
| 28) 2-Nitrophenol             | 139  | 6.693  | 6.688  | 0.927  | 178313   | 51.79 | ng/uL | 99  |
| 29) 2,4-Dimethylphenol        | 122  | 6.757  | 6.752  | 0.936  | 277197   | 49.49 | ng/uL | 97  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.896  | 6.891  | 0.956  | 408086   | 49.01 | ng/uL | 100 |
| 31) 2,4-Dichlorophenol        | 162  | 7.019  | 7.019  | 0.973  | 279329   | 50.24 | ng/uL | 96  |
| 32) Benzoic acid              | 105  | 6.923  | 6.891  | 0.959  | 169459   | 52.02 | ng/uL | 95  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.137  | 7.137  | 0.989  | 337097   | 49.77 | ng/uL | 99  |
| 34) alpha-Terpineol           | 59   | 7.271  | 7.265  | 1.007  | 355050   | 49.99 | ng/uL | 97  |
| 35) Naphthalene               | 128  | 7.244  | 7.244  | 1.004  | 809503   | 49.25 | ng/uL | 99  |
| 36) 4-Chloroaniline           | 127  | 7.319  | 7.319  | 1.014  | 308500   | 51.39 | ng/uL | 100 |
| 37) Hexachlorobutadiene       | 225  | 7.420  | 7.415  | 1.028  | 233960   | 50.09 | ng/uL | 99  |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.971  | 7.966  | 1.104  | 362554   | 50.88 | ng/uL | 99  |
| 39) 2-Methylnaphthalene       | 142  | 8.175  | 8.169  | 1.133  | 613248   | 48.33 | ng/uL | 99  |
| 40) Phthalic anhydride        | 104  | 8.244  | 8.244  | 1.142  | 294074   | 53.76 | ng/uL | 97  |
| 41) 1-Methylnaphthalene       | 142  | 8.303  | 8.303  | 1.150  | 534094   | 46.51 | ng/uL | 98  |
| 43) Hexachlorocyclopentadiene | 237  | 8.383  | 8.383  | 0.880  | 241427   | 53.37 | ng/uL | 97  |
| 44) 2,3-Dichloroaniline       | 161  | 8.538  | 8.538  | 0.897  | 303798   | 49.21 | ng/uL | 98  |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.544  | 8.538  | 0.897  | 219023   | 50.55 | ng/uL | 98  |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.581  | 8.581  | 0.901  | 211623   | 50.27 | ng/uL | 99  |
| 48) 2-Chloronaphthalene       | 162  | 8.806  | 8.806  | 0.925  | 599323   | 49.04 | ng/uL | 99  |
| 49) o-Nitroaniline            | 65   | 8.939  | 8.934  | 0.939  | 245187   | 50.66 | ng/uL | 98  |
| 50) 1,4-Dinitrobenzene        | 168  | 9.127  | 9.121  | 0.958  | 120811   | 51.57 | ng/uL | 98  |
| 51) m-Nitroaniline            | 138  | 9.469  | 9.464  | 0.994  | 141385   | 49.76 | ng/uL | 99  |
| 52) Dimethylphthalate         | 163  | 9.196  | 9.191  | 0.966  | 706088   | 47.42 | ng/uL | 99  |
| 53) m-Dinitrobenzene          | 168  | 9.218  | 9.217  | 0.968  | 116999   | 50.99 | ng/uL | 93  |
| 54) 2,6-Dinitrotoluene        | 165  | 9.260  | 9.260  | 0.972  | 157085   | 49.37 | ng/uL | 97  |
| 55) 2,4-Dinitrotoluene        | 165  | 9.768  | 9.763  | 1.026  | 226000   | 51.43 | ng/uL | 95  |
| 56) Acenaphthylene            | 152  | 9.341  | 9.341  | 0.981  | 854216   | 46.65 | ng/uL | 100 |
| 57) Acenaphthene              | 154  | 9.565  | 9.560  | 1.004  | 524143   | 49.95 | ng/uL | 97  |
| 58) 2,4-Dinitrophenol         | 184  | 9.603  | 9.597  | 1.008  | 87734    | 54.44 | ng/uL | 92  |
| 59) Dibenzofuran              | 168  | 9.784  | 9.779  | 1.028  | 775642   | 48.52 | ng/uL | 98  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.934  | 9.934  | 1.043  | 197424   | 52.19 | ng/uL | 99  |
| 61) Diethylphthalate          | 149  | 10.084 | 10.084 | 1.059  | 795970   | 47.64 | ng/uL | 100 |
| 62) 4-Nitrophenol             | 139  | 9.678  | 9.672  | 1.016  | 118630   | 53.22 | ng/uL | 94  |
| 63) Fluorene                  | 166  | 10.212 | 10.212 | 1.072  | 672233   | 48.27 | ng/uL | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 10.218 | 10.218 | 1.073  | 379047   | 48.73 | ng/uL | 98  |
| 65) p-Nitroaniline            | 138  | 10.244 | 10.234 | 1.076  | 133676   | 50.12 | ng/uL | 97  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.282 | 10.277 | 0.903  | 117461   | 55.94 | ng/uL | 98  |
| 69) Diphenylamine             | 169  | 10.367 | 10.362 | 0.911  | 584929   | 50.70 | ng/uL | 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.421 | 10.416 | 0.915  | 716896   | 50.34 | ng/uL | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 10.827 | 10.827 | 0.951  | 261237   | 50.37 | ng/uL | 97  |
| 72) Hexachlorobenzene         | 284  | 10.902 | 10.897 | 0.958  | 262408   | 50.21 | ng/uL | 97  |
| 73) Pentachlorophenol         | 266  | 11.143 | 11.138 | 0.979  | 160817   | 52.28 | ng/uL | 98  |
| 74) n-Octadecane              | 57   | 11.266 | 11.261 | 0.990  | 648257   | 48.98 | ng/uL | 99  |
| 75) Dinoseb                   | 211  | 11.378 | 11.373 | 1.000  | 190811   | 51.57 | ng/uL | 96  |
| 76) Phenanthrene              | 178  | 11.416 | 11.410 | 1.003  | 839745   | 50.16 | ng/uL | 99  |
| 77) Anthracene                | 178  | 11.480 | 11.475 | 1.008  | 893213   | 50.89 | ng/uL | 99  |
| 78) Carbazole                 | 167  | 11.678 | 11.672 | 1.026  | 888752   | 53.23 | ng/uL | 98  |
| 79) Di-n-butylphthalate       | 149  | 12.116 | 12.116 | 1.064  | 1333706  | 49.75 | ng/uL | 99  |
| 80) Fluoranthene              | 202  | 12.887 | 12.881 | 1.132  | 1261807  | 50.99 | ng/uL | 98  |
| 82) Pyrene                    | 202  | 13.165 | 13.159 | 0.889  | 1224508  | 50.69 | ng/uL | 99  |
| 84) Butylbenzylphthalate      | 149  | 13.978 | 13.972 | 0.944  | 635616   | 54.37 | ng/uL | 100 |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2907.D  
Acq On : 29 Sep 2016 12:18  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-04|ICAL|1|SVM|1|M5  
Misc : |MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 29 15:28:33 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units     |
|-------------------------------|------|--------|--------|--------|----------|-------|-----------|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.855 | 14.855 | 1.003  | 672048   | 51.36 | ng/uL 99  |
| 86) Benzo(a)anthracene        | 228  | 14.791 | 14.785 | 0.999  | 921211   | 48.72 | ng/uL 99  |
| 87) Chrysene                  | 228  | 14.855 | 14.850 | 1.003  | 784435   | 49.77 | ng/uL 100 |
| 88) Methoxychlor              | 227  | 14.695 | 14.689 | 0.992  | 871914   | 50.33 | ng/uL 97  |
| 89) Methylenebis(2-chloroa... | 231  | 14.759 | 14.753 | 0.996  | 181358   | 50.22 | ng/uL 97  |
| 90) Di-n-octylphthalate       | 149  | 16.144 | 16.139 | 1.090  | 1325599  | 51.69 | ng/uL 100 |
| 92) Benzo(b)fluoranthene      | 252  | 16.946 | 16.941 | 0.946  | 926405   | 50.82 | ng/uL 99  |
| 93) Benzo(k)fluoranthene      | 252  | 17.016 | 17.010 | 0.950  | 799062   | 50.71 | ng/uL 100 |
| 94) Benzo(a)pyrene            | 252  | 17.759 | 17.754 | 0.992  | 829209   | 52.59 | ng/uL 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 21.172 | 21.161 | 1.182  | 634827   | 52.96 | ng/uL 99  |
| 96) Dibenzo(a,h)anthracene    | 278  | 21.279 | 21.274 | 1.188  | 573413   | 51.42 | ng/uL 99  |
| 97) Benzo(ghi)perylene        | 276  | 21.931 | 21.926 | 1.225  | 625302   | 51.31 | ng/uL 100 |
| 98) Dibenzo(a,e)pyrene        | 302  | 25.798 | 25.804 | 1.441  | 293230   | 49.20 | ng/uL 98  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2908.D  
Acq On : 29 Sep 2016 12:52  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-03|ICAL|1|SVM|1|M6  
Misc : |MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 29 15:28:39 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.441  | 5.436  | 1.000  | 190418   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.217  | 7.212  | 1.000  | 646658   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.522  | 9.522  | 1.000  | 368395   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 681917   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.812 | 14.807 | 1.000  | 560613   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.909 | 17.904 | 1.000  | 472614   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.441  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 114) B Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 122) B Acenaphthene-d10       | 164  | 9.522  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 131) B Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 144) B Chrysene-d12           | 240  | 14.812 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 151) B Perylene-d12           | 264  | 17.909 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 154) D Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 156) D Acenaphthene-d10       | 164  | 9.522  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 159) D Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 166) D Chrysene-d12           | 240  | 14.812 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 168) E Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 170) E Perylene-d12           | 264  | 17.909 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 172) F 1,4-Dichlorobenzene-d4 | 152  | 5.441  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 174) J Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 176) J Chrysene-d12           | 240  | 14.812 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 3.756  | 3.757  | 0.690  | 565255   | 80.09 | ng/uL | 0.00      |
| 8) Phenol-d5                  | 99   | 4.917  | 4.906  | 0.904  | 682195   | 78.78 | ng/uL | 0.01      |
| 25) Nitrobenzene-d5           | 82   | 6.228  | 6.222  | 0.863  | 583229   | 77.08 | ng/uL | 0.00      |
| 47) 2-Fluorobiphenyl          | 172  | 8.661  | 8.656  | 0.910  | 953698   | 73.47 | ng/uL | 0.00      |
| 66) 2,4,6-Tribromophenol      | 330  | 10.517 | 10.512 | 1.104  | 195372   | 81.50 | ng/uL | 0.00      |
| 83) p-Terphenyl-d14           | 244  | 13.363 | 13.357 | 0.902  | 1166602  | 79.30 | ng/uL | 0.00      |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 2) 2-Ethoxyethanol            | 59   | 2.173  | 2.173  | 0.399  | 443992   | 82.74 | ng/uL | 98        |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.430  | 2.425  | 0.447  | 366893   | 81.84 | ng/uL | 99        |
| 4) Pyridine                   | 79   | 2.467  | 2.467  | 0.453  | 575759   | 78.22 | ng/uL | 99        |
| 6) p-Benzquinone              | 54   | 4.361  | 4.361  | 0.801  | 438142   | 84.45 | ng/uL | 99        |
| 7) Aniline                    | 93   | 4.987  | 4.987  | 0.916  | 688033   | 76.75 | ng/uL | 99        |
| 9) Phenol                     | 94   | 4.939  | 4.928  | 0.908  | 581116   | 74.78 | ng/uL | 99        |
| 10) bis(2-Chloroethyl) ether  | 93   | 5.078  | 5.067  | 0.933  | 489220   | 77.94 | ng/uL | 97        |
| 11) 2-Chlorophenol            | 128  | 5.147  | 5.142  | 0.946  | 476917   | 78.82 | ng/uL | 99        |
| 12) n-Decane                  | 43   | 5.217  | 5.217  | 0.959  | 710602   | 74.23 | ng/uL | 99        |
| 13) 1,3-Dichlorobenzene       | 146  | 5.361  | 5.361  | 0.985  | 518624   | 77.55 | ng/uL | 98        |
| 14) 1,4-Dichlorobenzene       | 146  | 5.468  | 5.463  | 1.005  | 481931   | 78.89 | ng/uL | 99        |
| 15) 1,2-Dichlorobenzene       | 146  | 5.677  | 5.671  | 1.043  | 475141   | 77.63 | ng/uL | 99        |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.837  | 5.832  | 1.073  | 934268   | 76.12 | ng/uL | 98        |
| 17) Benzyl alcohol            | 108  | 5.634  | 5.629  | 1.035  | 334936   | 79.75 | ng/uL | 100       |
| 18) o-Cresol                  | 107  | 5.784  | 5.773  | 1.063  | 389212   | 79.40 | ng/uL | 98        |
| 19) m,p-Cresols               | 107  | 6.019  | 6.008  | 1.106  | 503377   | 79.20 | ng/uL | 100       |
| 20) N-Nitrosodipropylamine    | 70   | 6.030  | 6.019  | 1.108  | 392314   | 81.41 | ng/uL | 100       |
| 21) p-Toluidine               | 106  | 6.072  | 6.067  | 1.116  | 545980   | 75.14 | ng/uL | 100       |
| 22) m-Toluidine               | 106  | 6.126  | 6.115  | 1.126  | 537283   | 75.79 | ng/uL | 98        |
| 23) Hexachloroethane          | 117  | 6.153  | 6.153  | 1.131  | 215040   | 76.49 | ng/uL | 98        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2908.D  
Acq On : 29 Sep 2016 12:52  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-03|ICAL|1|SVM|1|M6  
Misc : |MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 29 15:28:39 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 26) Nitrobenzene              | 77   | 6.260  | 6.249  | 0.867  | 531415   | 76.54 | ng/uL | 98  |
| 27) Isophorone                | 82   | 6.597  | 6.586  | 0.914  | 1131758  | 76.98 | ng/uL | 98  |
| 28) 2-Nitrophenol             | 139  | 6.693  | 6.688  | 0.927  | 256338   | 79.92 | ng/uL | 99  |
| 29) 2,4-Dimethylphenol        | 122  | 6.762  | 6.752  | 0.937  | 393294   | 75.38 | ng/uL | 97  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.901  | 6.891  | 0.956  | 604142   | 77.88 | ng/uL | 99  |
| 31) 2,4-Dichlorophenol        | 162  | 7.024  | 7.019  | 0.973  | 400093   | 77.24 | ng/uL | 97  |
| 32) Benzoic acid              | 105  | 6.955  | 6.891  | 0.964  | 257899   | 75.42 | ng/uL | 90  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.142  | 7.137  | 0.990  | 482703   | 76.49 | ng/uL | 99  |
| 34) alpha-Terpineol           | 59   | 7.276  | 7.265  | 1.008  | 506676   | 76.58 | ng/uL | 97  |
| 35) Naphthalene               | 128  | 7.249  | 7.244  | 1.004  | 1135124  | 74.13 | ng/uL | 98  |
| 36) 4-Chloroaniline           | 127  | 7.324  | 7.319  | 1.015  | 424244   | 75.86 | ng/uL | 98  |
| 37) Hexachlorobutadiene       | 225  | 7.420  | 7.415  | 1.028  | 326664   | 75.08 | ng/uL | 98  |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.977  | 7.966  | 1.105  | 516081   | 77.75 | ng/uL | 97  |
| 39) 2-Methylnaphthalene       | 142  | 8.174  | 8.169  | 1.133  | 860047   | 72.75 | ng/uL | 100 |
| 40) Phthalic anhydride        | 104  | 8.249  | 8.244  | 1.143  | 439800   | 86.30 | ng/uL | 97  |
| 41) 1-Methylnaphthalene       | 142  | 8.308  | 8.303  | 1.151  | 763497   | 71.37 | ng/uL | 98  |
| 43) Hexachlorocyclopentadiene | 237  | 8.383  | 8.383  | 0.880  | 360086   | 83.91 | ng/uL | 98  |
| 44) 2,3-Dichloroaniline       | 161  | 8.544  | 8.538  | 0.897  | 418902   | 71.53 | ng/uL | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.544  | 8.538  | 0.897  | 324479   | 78.95 | ng/uL | 100 |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.586  | 8.581  | 0.902  | 307919   | 77.10 | ng/uL | 96  |
| 48) 2-Chloronaphthalene       | 162  | 8.811  | 8.806  | 0.925  | 836817   | 72.17 | ng/uL | 98  |
| 49) o-Nitroaniline            | 65   | 8.945  | 8.934  | 0.939  | 349251   | 76.06 | ng/uL | 97  |
| 50) 1,4-Dinitrobenzene        | 168  | 9.132  | 9.121  | 0.959  | 176950   | 79.62 | ng/uL | 98  |
| 51) m-Nitroaniline            | 138  | 9.474  | 9.464  | 0.995  | 200060   | 74.22 | ng/uL | 95  |
| 52) Dimethylphthalate         | 163  | 9.201  | 9.191  | 0.966  | 991141   | 70.16 | ng/uL | 97  |
| 53) m-Dinitrobenzene          | 168  | 9.228  | 9.217  | 0.969  | 164870   | 75.74 | ng/uL | 94  |
| 54) 2,6-Dinitrotoluene        | 165  | 9.271  | 9.260  | 0.974  | 233234   | 77.26 | ng/uL | 96  |
| 55) 2,4-Dinitrotoluene        | 165  | 9.779  | 9.763  | 1.027  | 321182   | 77.05 | ng/uL | 95  |
| 56) Acenaphthylene            | 152  | 9.346  | 9.341  | 0.981  | 1211271  | 69.72 | ng/uL | 98  |
| 57) Acenaphthene              | 154  | 9.570  | 9.560  | 1.005  | 761742   | 76.52 | ng/uL | 98  |
| 58) 2,4-Dinitrophenol         | 184  | 9.608  | 9.597  | 1.009  | 127702   | 83.52 | ng/uL | 95  |
| 59) Dibenzofuran              | 168  | 9.784  | 9.779  | 1.028  | 1109941  | 73.19 | ng/uL | 99  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.940  | 9.934  | 1.044  | 285699   | 79.62 | ng/uL | 97  |
| 61) Diethylphthalate          | 149  | 10.089 | 10.084 | 1.060  | 1131637  | 71.39 | ng/uL | 97  |
| 62) 4-Nitrophenol             | 139  | 9.688  | 9.672  | 1.017  | 169488   | 77.63 | ng/uL | 96  |
| 63) Fluorene                  | 166  | 10.218 | 10.212 | 1.073  | 966384   | 73.15 | ng/uL | 99  |
| 64) 4-Chlorophenylphenylether | 204  | 10.223 | 10.218 | 1.074  | 552888   | 74.93 | ng/uL | 99  |
| 65) p-Nitroaniline            | 138  | 10.255 | 10.234 | 1.077  | 201707   | 79.72 | ng/uL | 98  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.287 | 10.277 | 0.904  | 174074   | 88.04 | ng/uL | 98  |
| 69) Diphenylamine             | 169  | 10.373 | 10.362 | 0.911  | 828998   | 76.31 | ng/uL | 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.421 | 10.416 | 0.915  | 1011448  | 75.43 | ng/uL | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 10.833 | 10.827 | 0.952  | 378011   | 77.41 | ng/uL | 99  |
| 72) Hexachlorobenzene         | 284  | 10.902 | 10.897 | 0.958  | 379733   | 77.17 | ng/uL | 98  |
| 73) Pentachlorophenol         | 266  | 11.143 | 11.138 | 0.979  | 241273   | 81.11 | ng/uL | 98  |
| 74) n-Octadecane              | 57   | 11.266 | 11.261 | 0.990  | 902662   | 72.43 | ng/uL | 97  |
| 75) Dinoseb                   | 211  | 11.384 | 11.373 | 1.000  | 295913   | 81.33 | ng/uL | 96  |
| 76) Phenanthrene              | 178  | 11.421 | 11.410 | 1.003  | 1192844  | 75.67 | ng/uL | 97  |
| 77) Anthracene                | 178  | 11.485 | 11.475 | 1.009  | 1260030  | 76.24 | ng/uL | 97  |
| 78) Carbazole                 | 167  | 11.678 | 11.672 | 1.026  | 1236926  | 78.67 | ng/uL | 97  |
| 79) Di-n-butylphthalate       | 149  | 12.116 | 12.116 | 1.064  | 1860597  | 73.71 | ng/uL | 98  |
| 80) Fluoranthene              | 202  | 12.887 | 12.881 | 1.132  | 1721869  | 73.90 | ng/uL | 96  |
| 82) Pyrene                    | 202  | 13.170 | 13.159 | 0.889  | 1683990  | 75.47 | ng/uL | 97  |
| 84) Butylbenzylphthalate      | 149  | 13.978 | 13.972 | 0.944  | 883283   | 81.80 | ng/uL | 99  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2908.D  
Acq On : 29 Sep 2016 12:52  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-03|ICAL|1|SVM|1|M6  
Misc : |MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 29 15:28:39 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units      |
|-------------------------------|------|--------|--------|--------|----------|-------|------------|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.860 | 14.855 | 1.003  | 990990   | 81.99 | ng/uL 99   |
| 86) Benzo(a)anthracene        | 228  | 14.796 | 14.785 | 0.999  | 1299725  | 74.41 | ng/uL 97   |
| 87) Chrysene                  | 228  | 14.860 | 14.850 | 1.003  | 1132887  | 77.81 | ng/uL 99   |
| 88) Methoxychlor              | 227  | 14.700 | 14.689 | 0.992  | 1258047  | 78.62 | ng/uL 98   |
| 89) Methylenebis(2-chloroa... | 231  | 14.764 | 14.753 | 0.997  | 264109   | 79.17 | ng/uL 99   |
| 90) Di-n-octylphthalate       | 149  | 16.149 | 16.139 | 1.090  | 1920678  | 82.67 | ng/uL 98   |
| 92) Benzo(b)fluoranthene      | 252  | 16.957 | 16.941 | 0.947  | 1313210  | 78.47 | ng/uL 99   |
| 93) Benzo(k)fluoranthene      | 252  | 17.026 | 17.010 | 0.951  | 1160072  | 80.19 | ng/uL 100  |
| 94) Benzo(a)pyrene            | 252  | 17.770 | 17.754 | 0.992  | 1185450  | 81.90 | ng/uL 99   |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 21.177 | 21.161 | 1.182  | 926941   | 84.23 | ng/uL 97   |
| 96) Dibenzo(a,h)anthracene    | 278  | 21.289 | 21.274 | 1.189  | 849454   | 82.98 | ng/uL 99   |
| 97) Benzo(ghi)perylene        | 276  | 21.942 | 21.926 | 1.225  | 906736   | 81.05 | ng/uL 99   |
| 98) Dibenzo(a,e)pyrene        | 302  | 25.809 | 25.804 | 1.441  | 449041   | 82.07 | ng/uL 88 A |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2909.D  
Acq On : 29 Sep 2016 13:26  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-02|ICAL|1|SVM|1|M7  
Misc : |MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 29 15:28:44 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |           |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-----------|
| Internal Standards            |      |        |        |        |          |        |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.441  | 5.436  | 1.000  | 181756   | 40.00  | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.217  | 7.212  | 1.000  | 610466   | 40.00  | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.522  | 9.522  | 1.000  | 339148   | 40.00  | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 656821   | 40.00  | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.818 | 14.807 | 1.000  | 584534   | 40.00  | ng/uL | 0.01      |
| 91) A Perylene-d12            | 264  | 17.920 | 17.904 | 1.000  | 570125   | 40.00  | ng/uL | 0.02      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.441  | 5.436  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 114) B Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 122) B Acenaphthene-d10       | 164  | 9.522  | 9.517  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 131) B Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 144) B Chrysene-d12           | 240  | 14.818 | 14.807 | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| 151) B Perylene-d12           | 264  | 17.920 | 17.904 | 1.000  | 0m       | 40.00  | ng/uL | 0.02      |
| 154) D Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 156) D Acenaphthene-d10       | 164  | 9.522  | 9.517  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 159) D Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 166) D Chrysene-d12           | 240  | 14.818 | 14.807 | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| 168) E Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 170) E Perylene-d12           | 264  | 17.920 | 17.904 | 1.000  | 0m       | 40.00  | ng/uL | 0.02      |
| 172) F 1,4-Dichlorobenzene-d4 | 152  | 5.441  | 5.436  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 174) J Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 176) J Chrysene-d12           | 240  | 14.818 | 14.807 | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| System Monitoring Compounds   |      |        |        |        |          |        |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 3.762  | 3.757  | 0.691  | 641351   | 95.20  | ng/uL | 0.00      |
| 8) Phenol-d5                  | 99   | 4.923  | 4.906  | 0.905  | 785975   | 95.09  | ng/uL | 0.02      |
| 25) Nitrobenzene-d5           | 82   | 6.233  | 6.222  | 0.864  | 688565   | 96.39  | ng/uL | 0.01      |
| 47) 2-Fluorobiphenyl          | 172  | 8.661  | 8.656  | 0.910  | 1099367  | 91.99  | ng/uL | 0.00      |
| 66) 2,4,6-Tribromophenol      | 330  | 10.523 | 10.512 | 1.105  | 231254   | 104.79 | ng/uL | 0.01      |
| 83) p-Terphenyl-d14           | 244  | 13.363 | 13.357 | 0.902  | 1358206  | 88.54  | ng/uL | 0.00      |
| Target Compounds              |      |        |        |        |          |        |       | QValue    |
| 2) 2-Ethoxyethanol            | 59   | 2.173  | 2.173  | 0.399  | 503521   | 98.31  | ng/uL | 99        |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.435  | 2.425  | 0.448  | 417939   | 97.67  | ng/uL | 99        |
| 4) Pyridine                   | 79   | 2.462  | 2.467  | 0.452  | 654839   | 93.20  | ng/uL | 99        |
| 6) p-Benzquinone              | 54   | 4.361  | 4.361  | 0.801  | 497022   | 100.36 | ng/uL | 99        |
| 7) Aniline                    | 93   | 4.987  | 4.987  | 0.916  | 786708   | 91.95  | ng/uL | 100       |
| 9) Phenol                     | 94   | 4.944  | 4.928  | 0.909  | 657917   | 88.70  | ng/uL | 97        |
| 10) bis(2-Chloroethyl) ether  | 93   | 5.078  | 5.067  | 0.933  | 554050   | 92.47  | ng/uL | 98        |
| 11) 2-Chlorophenol            | 128  | 5.153  | 5.142  | 0.947  | 538771   | 93.29  | ng/uL | 99        |
| 12) n-Decane                  | 43   | 5.217  | 5.217  | 0.959  | 792922   | 86.78  | ng/uL | 100       |
| 13) 1,3-Dichlorobenzene       | 146  | 5.361  | 5.361  | 0.985  | 596152   | 93.39  | ng/uL | 98        |
| 14) 1,4-Dichlorobenzene       | 146  | 5.468  | 5.463  | 1.005  | 555508   | 95.27  | ng/uL | 99        |
| 15) 1,2-Dichlorobenzene       | 146  | 5.677  | 5.671  | 1.043  | 531792   | 91.03  | ng/uL | 99        |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.837  | 5.832  | 1.073  | 1049078  | 89.54  | ng/uL | 96        |
| 17) Benzyl alcohol            | 108  | 5.639  | 5.629  | 1.036  | 400002   | 99.78  | ng/uL | 97        |
| 18) o-Cresol                  | 107  | 5.784  | 5.773  | 1.063  | 442640   | 94.60  | ng/uL | 98        |
| 19) m,p-Cresols               | 107  | 6.024  | 6.008  | 1.107  | 579841   | 95.57  | ng/uL | 100       |
| 20) N-Nitrosodipropylamine    | 70   | 6.035  | 6.019  | 1.109  | 454037   | 98.71  | ng/uL | 99        |
| 21) p-Toluidine               | 106  | 6.078  | 6.067  | 1.117  | 599697   | 86.46  | ng/uL | 97        |
| 22) m-Toluidine               | 106  | 6.126  | 6.115  | 1.126  | 625611   | 92.45  | ng/uL | 99        |
| 23) Hexachloroethane          | 117  | 6.158  | 6.153  | 1.132  | 247709   | 92.32  | ng/uL | 100       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2909.D  
Acq On : 29 Sep 2016 13:26  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-02|ICAL|1|SVM|1|M7  
Misc : |MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 29 15:28:44 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |      |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|------|
| 26) Nitrobenzene              | 77   | 6.260  | 6.249  | 0.867  | 614648   | 93.78  | ng/uL | 97   |
| 27) Isophorone                | 82   | 6.597  | 6.586  | 0.914  | 1291612  | 93.07  | ng/uL | 97   |
| 28) 2-Nitrophenol             | 139  | 6.698  | 6.688  | 0.928  | 298094   | 98.45  | ng/uL | 99   |
| 29) 2,4-Dimethylphenol        | 122  | 6.763  | 6.752  | 0.937  | 464554   | 94.32  | ng/uL | 96   |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.902  | 6.891  | 0.956  | 689101   | 94.09  | ng/uL | 98   |
| 31) 2,4-Dichlorophenol        | 162  | 7.030  | 7.019  | 0.974  | 467111   | 95.52  | ng/uL | 98   |
| 32) Benzoic acid              | 105  | 6.971  | 6.891  | 0.966  | 342626   | 99.98  | ng/uL | 92   |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.142  | 7.137  | 0.990  | 543759   | 91.28  | ng/uL | 99   |
| 34) alpha-Terpineol           | 59   | 7.276  | 7.265  | 1.008  | 586558   | 93.91  | ng/uL | 97   |
| 35) Naphthalene               | 128  | 7.249  | 7.244  | 1.004  | 1302316  | 90.10  | ng/uL | 96   |
| 36) 4-Chloroaniline           | 127  | 7.324  | 7.319  | 1.015  | 469174   | 88.87  | ng/uL | 98   |
| 37) Hexachlorobutadiene       | 225  | 7.420  | 7.415  | 1.028  | 379772   | 92.46  | ng/uL | 99   |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.977  | 7.966  | 1.105  | 601753   | 96.03  | ng/uL | 98   |
| 39) 2-Methylnaphthalene       | 142  | 8.180  | 8.169  | 1.133  | 982302   | 88.02  | ng/uL | 100  |
| 40) Phthalic anhydride        | 104  | 8.255  | 8.244  | 1.144  | 538831   | 112.00 | ng/uL | 82   |
| 41) 1-Methylnaphthalene       | 142  | 8.308  | 8.303  | 1.151  | 881414   | 87.28  | ng/uL | 98   |
| 43) Hexachlorocyclopentadiene | 237  | 8.383  | 8.383  | 0.880  | 419821   | 106.27 | ng/uL | 100  |
| 44) 2,3-Dichloroaniline       | 161  | 8.544  | 8.538  | 0.897  | 483854   | 89.74  | ng/uL | 99   |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.544  | 8.538  | 0.897  | 368286   | 97.33  | ng/uL | 96   |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.586  | 8.581  | 0.902  | 365945   | 99.53  | ng/uL | 98   |
| 48) 2-Chloronaphthalene       | 162  | 8.811  | 8.806  | 0.925  | 966229   | 90.52  | ng/uL | 97   |
| 49) o-Nitroaniline            | 65   | 8.945  | 8.934  | 0.939  | 418187   | 98.93  | ng/uL | 99   |
| 50) 1,4-Dinitrobenzene        | 168  | 9.132  | 9.121  | 0.959  | 217815   | 106.47 | ng/uL | 95   |
| 51) m-Nitroaniline            | 138  | 9.480  | 9.464  | 0.996  | 237349   | 95.65  | ng/uL | 97   |
| 52) Dimethylphthalate         | 163  | 9.207  | 9.191  | 0.967  | 1147152  | 88.21  | ng/uL | 97   |
| 53) m-Dinitrobenzene          | 168  | 9.228  | 9.217  | 0.969  | 199006   | 99.31  | ng/uL | 84   |
| 54) 2,6-Dinitrotoluene        | 165  | 9.271  | 9.260  | 0.974  | 266163   | 95.78  | ng/uL | 98   |
| 55) 2,4-Dinitrotoluene        | 165  | 9.779  | 9.763  | 1.027  | 374050   | 97.47  | ng/uL | 93   |
| 56) Acenaphthylene            | 152  | 9.346  | 9.341  | 0.981  | 1419990  | 88.79  | ng/uL | 97   |
| 57) Acenaphthene              | 154  | 9.571  | 9.560  | 1.005  | 882570   | 96.31  | ng/uL | 98   |
| 58) 2,4-Dinitrophenol         | 184  | 9.608  | 9.597  | 1.009  | 174730   | 124.14 | ng/uL | 89 A |
| 59) Dibenzofuran              | 168  | 9.790  | 9.779  | 1.028  | 1281122  | 91.76  | ng/uL | 97   |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.940  | 9.934  | 1.044  | 340461   | 103.06 | ng/uL | 100  |
| 61) Diethylphthalate          | 149  | 10.095 | 10.084 | 1.060  | 1315159  | 90.12  | ng/uL | 97   |
| 62) 4-Nitrophenol             | 139  | 9.694  | 9.672  | 1.018  | 199756   | 97.98  | ng/uL | 99   |
| 63) Fluorene                  | 166  | 10.223 | 10.212 | 1.074  | 1120152  | 92.11  | ng/uL | 100  |
| 64) 4-Chlorophenylphenylether | 204  | 10.223 | 10.218 | 1.074  | 653866   | 96.26  | ng/uL | 97   |
| 65) p-Nitroaniline            | 138  | 10.261 | 10.234 | 1.078  | 244935   | 105.15 | ng/uL | 96   |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.293 | 10.277 | 0.904  | 216120   | 113.49 | ng/uL | 96   |
| 69) Diphenylamine             | 169  | 10.378 | 10.362 | 0.912  | 969729   | 92.68  | ng/uL | 99   |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.426 | 10.416 | 0.916  | 1155682  | 89.48  | ng/uL | 98   |
| 71) 4-Bromophenylphenylether  | 248  | 10.833 | 10.827 | 0.952  | 444678   | 94.54  | ng/uL | 98   |
| 72) Hexachlorobenzene         | 284  | 10.908 | 10.897 | 0.958  | 425964   | 89.87  | ng/uL | 99   |
| 73) Pentachlorophenol         | 266  | 11.143 | 11.138 | 0.979  | 282875   | 97.93  | ng/uL | 95   |
| 74) n-Octadecane              | 57   | 11.266 | 11.261 | 0.990  | 1030783  | 85.87  | ng/uL | 97   |
| 75) Dinoseb                   | 211  | 11.384 | 11.373 | 1.000  | 352309   | 99.22  | ng/uL | 94   |
| 76) Phenanthrene              | 178  | 11.421 | 11.410 | 1.003  | 1401100  | 92.28  | ng/uL | 96   |
| 77) Anthracene                | 178  | 11.485 | 11.475 | 1.009  | 1471403  | 92.43  | ng/uL | 97   |
| 78) Carbazole                 | 167  | 11.683 | 11.672 | 1.026  | 1445971  | 95.48  | ng/uL | 96   |
| 79) Di-n-butylphthalate       | 149  | 12.122 | 12.116 | 1.065  | 2097464  | 86.27  | ng/uL | 96   |
| 80) Fluoranthene              | 202  | 12.892 | 12.881 | 1.132  | 1965730  | 87.59  | ng/uL | 95   |
| 82) Pyrene                    | 202  | 13.170 | 13.159 | 0.889  | 1933717  | 83.11  | ng/uL | 96   |
| 84) Butylbenzylphthalate      | 149  | 13.983 | 13.972 | 0.944  | 1036822  | 92.09  | ng/uL | 98   |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2909.D  
Acq On : 29 Sep 2016 13:26  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-02|ICAL|1|SVM|1|M7  
Misc : |MIX[A]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 29 15:28:44 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |      |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|------|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.860 | 14.855 | 1.003  | 1213472  | 96.28  | ng/uL | 97   |
| 86) Benzo(a)anthracene        | 228  | 14.802 | 14.785 | 0.999  | 1634682  | 89.75  | ng/uL | 96   |
| 87) Chrysene                  | 228  | 14.866 | 14.850 | 1.003  | 1442985  | 95.06  | ng/uL | 99   |
| 88) Methoxychlor              | 227  | 14.705 | 14.689 | 0.992  | 1512862  | 90.67  | ng/uL | 96   |
| 89) Methylenebis(2-chloroa... | 231  | 14.769 | 14.753 | 0.997  | 350682   | 100.82 | ng/uL | 99   |
| 90) Di-n-octylphthalate       | 149  | 16.155 | 16.139 | 1.090  | 2404237  | 99.82  | ng/uL | 99   |
| 92) Benzo(b)fluoranthene      | 252  | 16.968 | 16.941 | 0.947  | 1817529  | 90.03  | ng/uL | 98   |
| 93) Benzo(k)fluoranthene      | 252  | 17.043 | 17.010 | 0.951  | 1580312  | 90.56  | ng/uL | 99   |
| 94) Benzo(a)pyrene            | 252  | 17.786 | 17.754 | 0.993  | 1644161  | 94.16  | ng/uL | 99   |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 21.198 | 21.161 | 1.183  | 1272094  | 95.82  | ng/uL | 99   |
| 96) Dibenzo(a,h)anthracene    | 278  | 21.303 | 21.274 | 1.189  | 1155671  | 93.58  | ng/uL | 98   |
| 97) Benzo(ghi)perylene        | 276  | 21.958 | 21.926 | 1.225  | 1210689  | 89.71  | ng/uL | 100  |
| 98) Dibenzo(a,e)pyrene        | 302  | 25.830 | 25.804 | 1.441  | 617064   | 93.50  | ng/uL | 96 A |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2910.D  
Acq On : 29 Sep 2016 14:01  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-01|ICAL|1|SVM|1|M8  
Misc : |MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 29 15:28:49 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |           |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-----------|
| Internal Standards            |      |        |        |        |          |        |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.442  | 5.436  | 1.000  | 176939   | 40.00  | ng/uL | # 0.00    |
| 24) A Naphthalene-d8          | 136  | 7.217  | 7.212  | 1.000  | 607180   | 40.00  | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.528  | 9.522  | 1.000  | 337522   | 40.00  | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.389 | 11.384 | 1.000  | 640620   | 40.00  | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.818 | 14.807 | 1.000  | 565465   | 40.00  | ng/uL | 0.01      |
| 91) A Perylene-d12            | 264  | 17.920 | 17.904 | 1.000  | 518314   | 40.00  | ng/uL | 0.02      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.442  | 5.436  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 114) B Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 122) B Acenaphthene-d10       | 164  | 9.528  | 9.517  | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| 131) B Phenanthrene-d10       | 188  | 11.389 | 11.379 | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| 144) B Chrysene-d12           | 240  | 14.818 | 14.807 | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| 151) B Perylene-d12           | 264  | 17.920 | 17.904 | 1.000  | 0m       | 40.00  | ng/uL | 0.02      |
| 154) D Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 156) D Acenaphthene-d10       | 164  | 9.528  | 9.517  | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| 159) D Phenanthrene-d10       | 188  | 11.389 | 11.379 | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| 166) D Chrysene-d12           | 240  | 14.818 | 14.807 | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| 168) E Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 170) E Perylene-d12           | 264  | 17.920 | 17.904 | 1.000  | 0m       | 40.00  | ng/uL | 0.02      |
| 172) F 1,4-Dichlorobenzene-d4 | 152  | 5.442  | 5.436  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 174) J Phenanthrene-d10       | 188  | 11.389 | 11.379 | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| 176) J Chrysene-d12           | 240  | 14.818 | 14.807 | 1.000  | 0m       | 40.00  | ng/uL | 0.01      |
| System Monitoring Compounds   |      |        |        |        |          |        |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 3.762  | 3.757  | 0.691  | 754937   | 115.11 | ng/uL | 0.00      |
| 8) Phenol-d5                  | 99   | 4.928  | 4.906  | 0.906  | 904415   | 112.40 | ng/uL | 0.02      |
| 25) Nitrobenzene-d5           | 82   | 6.233  | 6.222  | 0.864  | 801343   | 112.78 | ng/uL | 0.01      |
| 47) 2-Fluorobiphenyl          | 172  | 8.667  | 8.656  | 0.910  | 1268973  | 106.69 | ng/uL | 0.01      |
| 66) 2,4,6-Tribromophenol      | 330  | 10.523 | 10.512 | 1.104  | 265950   | 121.10 | ng/uL | 0.01      |
| 83) p-Terphenyl-d14           | 244  | 13.363 | 13.357 | 0.902  | 1560904  | 105.19 | ng/uL | 0.00      |
| Target Compounds              |      |        |        |        |          |        |       | QValue    |
| 2) 2-Ethoxyethanol            | 59   | 2.174  | 2.173  | 0.399  | 602297   | 120.80 | ng/uL | 99 A      |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.436  | 2.425  | 0.448  | 492366   | 118.19 | ng/uL | 98        |
| 4) Pyridine                   | 79   | 2.462  | 2.467  | 0.453  | 769975   | 112.57 | ng/uL | 98        |
| 6) p-Benzquinone              | 54   | 4.367  | 4.361  | 0.802  | 590284   | 122.44 | ng/uL | 98 A      |
| 7) Aniline                    | 93   | 4.992  | 4.987  | 0.917  | 916608   | 110.04 | ng/uL | 100       |
| 9) Phenol                     | 94   | 4.950  | 4.928  | 0.910  | 779350   | 107.93 | ng/uL | 99        |
| 10) bis(2-Chloroethyl) ether  | 93   | 5.083  | 5.067  | 0.934  | 660524   | 113.24 | ng/uL | 97        |
| 11) 2-Chlorophenol            | 128  | 5.153  | 5.142  | 0.947  | 636908   | 113.29 | ng/uL | 99        |
| 12) n-Decane                  | 43   | 5.222  | 5.217  | 0.960  | 908853   | 102.17 | ng/uL | 99        |
| 13) 1,3-Dichlorobenzene       | 146  | 5.367  | 5.361  | 0.986  | 691442   | 111.27 | ng/uL | 97        |
| 14) 1,4-Dichlorobenzene       | 146  | 5.468  | 5.463  | 1.005  | 654278   | 115.27 | ng/uL | 99        |
| 15) 1,2-Dichlorobenzene       | 146  | 5.682  | 5.671  | 1.044  | 628478   | 110.50 | ng/uL | 100       |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.843  | 5.832  | 1.074  | 1212474  | 106.31 | ng/uL | 95        |
| 17) Benzyl alcohol            | 108  | 5.640  | 5.629  | 1.036  | 471635   | 120.85 | ng/uL | 96 A      |
| 18) o-Cresol                  | 107  | 5.789  | 5.773  | 1.064  | 529322   | 116.20 | ng/uL | 98        |
| 19) m,p-Cresols               | 107  | 6.030  | 6.008  | 1.108  | 694271   | 117.55 | ng/uL | 99        |
| 20) N-Nitrosodipropylamine    | 70   | 6.041  | 6.019  | 1.110  | 369385   | 82.49  | ng/uL | 97        |
| 21) p-Toluidine               | 106  | 6.078  | 6.067  | 1.117  | 651622   | 96.51  | ng/uL | 98        |
| 22) m-Toluidine               | 106  | 6.132  | 6.115  | 1.127  | 750373   | 113.91 | ng/uL | 99        |
| 23) Hexachloroethane          | 117  | 6.158  | 6.153  | 1.132  | 288518   | 110.45 | ng/uL | 97        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2910.D  
Acq On : 29 Sep 2016 14:01  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-01|ICAL|1|SVM|1|M8  
Misc : |MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 29 15:28:49 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |      |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|------|
| 26) Nitrobenzene              | 77   | 6.265  | 6.249  | 0.868  | 722379   | 110.81 | ng/uL | 98   |
| 27) Isophorone                | 82   | 6.602  | 6.586  | 0.915  | 1510109  | 109.40 | ng/uL | 97   |
| 28) 2-Nitrophenol             | 139  | 6.699  | 6.688  | 0.928  | 353660   | 117.43 | ng/uL | 100  |
| 29) 2,4-Dimethylphenol        | 122  | 6.768  | 6.752  | 0.938  | 548240   | 111.91 | ng/uL | 95   |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.907  | 6.891  | 0.957  | 801256   | 110.00 | ng/uL | 99   |
| 31) 2,4-Dichlorophenol        | 162  | 7.036  | 7.019  | 0.975  | 540932   | 111.22 | ng/uL | 97   |
| 32) Benzoic acid              | 105  | 6.987  | 6.891  | 0.968  | 435790   | 123.65 | ng/uL | 90 A |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.143  | 7.137  | 0.990  | 641457   | 108.26 | ng/uL | 99   |
| 34) alpha-Terpineol           | 59   | 7.282  | 7.265  | 1.009  | 691191   | 111.27 | ng/uL | 97   |
| 35) Naphthalene               | 128  | 7.250  | 7.244  | 1.004  | 1526720  | 106.19 | ng/uL | 95   |
| 36) 4-Chloroaniline           | 127  | 7.330  | 7.319  | 1.016  | 511450   | 97.40  | ng/uL | 99   |
| 37) Hexachlorobutadiene       | 225  | 7.421  | 7.415  | 1.028  | 436958   | 106.95 | ng/uL | 99   |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.982  | 7.966  | 1.106  | 700406   | 112.38 | ng/uL | 99   |
| 39) 2-Methylnaphthalene       | 142  | 8.180  | 8.169  | 1.133  | 1119459  | 100.86 | ng/uL | 100  |
| 40) Phthalic anhydride        | 104  | 8.255  | 8.244  | 1.144  | 648726   | 135.58 | ng/uL | 84 A |
| 41) 1-Methylnaphthalene       | 142  | 8.309  | 8.303  | 1.151  | 1028899  | 102.43 | ng/uL | 97   |
| 43) Hexachlorocyclopentadiene | 237  | 8.383  | 8.383  | 0.880  | 493470   | 125.51 | ng/uL | 99 A |
| 44) 2,3-Dichloroaniline       | 161  | 8.544  | 8.538  | 0.897  | 541380   | 100.90 | ng/uL | 98   |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.549  | 8.538  | 0.897  | 434994   | 115.52 | ng/uL | 98   |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.592  | 8.581  | 0.902  | 430230   | 117.58 | ng/uL | 97   |
| 48) 2-Chloronaphthalene       | 162  | 8.817  | 8.806  | 0.925  | 1117369  | 105.19 | ng/uL | 97   |
| 49) o-Nitroaniline            | 65   | 8.950  | 8.934  | 0.939  | 483531   | 114.94 | ng/uL | 98   |
| 50) 1,4-Dinitrobenzene        | 168  | 9.138  | 9.121  | 0.959  | 247944   | 121.78 | ng/uL | 95 A |
| 51) m-Nitroaniline            | 138  | 9.485  | 9.464  | 0.996  | 262341   | 106.23 | ng/uL | 97   |
| 52) Dimethylphthalate         | 163  | 9.212  | 9.191  | 0.967  | 1309831  | 101.20 | ng/uL | 96   |
| 53) m-Dinitrobenzene          | 168  | 9.234  | 9.217  | 0.969  | 232657   | 116.66 | ng/uL | 77   |
| 54) 2,6-Dinitrotoluene        | 165  | 9.277  | 9.260  | 0.974  | 319740   | 115.61 | ng/uL | 95   |
| 55) 2,4-Dinitrotoluene        | 165  | 9.785  | 9.763  | 1.027  | 436570   | 114.31 | ng/uL | 93   |
| 56) Acenaphthylene            | 152  | 9.352  | 9.341  | 0.981  | 1628163  | 102.29 | ng/uL | 96   |
| 57) Acenaphthene              | 154  | 9.571  | 9.560  | 1.004  | 1036670  | 113.67 | ng/uL | 98   |
| 58) 2,4-Dinitrophenol         | 184  | 9.614  | 9.597  | 1.009  | 204235   | 145.80 | ng/uL | 96 A |
| 59) Dibenzofuran              | 168  | 9.790  | 9.779  | 1.028  | 1487487  | 107.05 | ng/uL | 97   |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.940  | 9.934  | 1.043  | 394075   | 119.86 | ng/uL | 98   |
| 61) Diethylphthalate          | 149  | 10.095 | 10.084 | 1.060  | 1507945  | 103.83 | ng/uL | 97   |
| 62) 4-Nitrophenol             | 139  | 9.699  | 9.672  | 1.018  | 251337   | 122.56 | ng/uL | 93 A |
| 63) Fluorene                  | 166  | 10.223 | 10.212 | 1.073  | 1305007  | 107.82 | ng/uL | 100  |
| 64) 4-Chlorophenylphenylether | 204  | 10.223 | 10.218 | 1.073  | 758903   | 112.26 | ng/uL | 97   |
| 65) p-Nitroaniline            | 138  | 10.266 | 10.234 | 1.077  | 287726   | 124.12 | ng/uL | 96 A |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.298 | 10.277 | 0.904  | 259338   | 139.62 | ng/uL | 94 A |
| 69) Diphenylamine             | 169  | 10.378 | 10.362 | 0.911  | 1118510  | 109.60 | ng/uL | 97   |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.427 | 10.416 | 0.915  | 1339818  | 106.36 | ng/uL | 97   |
| 71) 4-Bromophenylphenylether  | 248  | 10.838 | 10.827 | 0.952  | 504354   | 109.94 | ng/uL | 99   |
| 72) Hexachlorobenzene         | 284  | 10.908 | 10.897 | 0.958  | 497904   | 107.70 | ng/uL | 99   |
| 73) Pentachlorophenol         | 266  | 11.149 | 11.138 | 0.979  | 339577   | 119.68 | ng/uL | 98   |
| 74) n-Octadecane              | 57   | 11.272 | 11.261 | 0.990  | 1167765  | 99.74  | ng/uL | 96   |
| 75) Dinoseb                   | 211  | 11.384 | 11.373 | 1.000  | 418761   | 119.71 | ng/uL | 96   |
| 76) Phenanthrene              | 178  | 11.421 | 11.410 | 1.003  | 1600062  | 108.05 | ng/uL | 94   |
| 77) Anthracene                | 178  | 11.491 | 11.475 | 1.009  | 1677557  | 108.04 | ng/uL | 95   |
| 78) Carbazole                 | 167  | 11.684 | 11.672 | 1.026  | 1650898  | 111.77 | ng/uL | 95   |
| 79) Di-n-butylphthalate       | 149  | 12.122 | 12.116 | 1.064  | 2377533  | 100.26 | ng/uL | 95   |
| 80) Fluoranthene              | 202  | 12.892 | 12.881 | 1.132  | 2241673  | 102.41 | ng/uL | 94   |
| 82) Pyrene                    | 202  | 13.176 | 13.159 | 0.889  | 2218030  | 98.55  | ng/uL | 95   |
| 84) Butylbenzylphthalate      | 149  | 13.983 | 13.972 | 0.944  | 1196668  | 109.87 | ng/uL | 98   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2910.D  
Acq On : 29 Sep 2016 14:01  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-01|ICAL|1|SVM|1|M8  
Misc : |MIX[A]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 29 15:28:49 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:27:48 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |      |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|------|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.866 | 14.855 | 1.003  | 1421648  | 116.61 | ng/uL | 97   |
| 86) Benzo(a)anthracene        | 228  | 14.802 | 14.785 | 0.999  | 1885880  | 107.04 | ng/uL | 96   |
| 87) Chrysene                  | 228  | 14.871 | 14.850 | 1.004  | 1625337  | 110.68 | ng/uL | 97   |
| 88) Methoxychlor              | 227  | 14.706 | 14.689 | 0.992  | 1704710  | 105.62 | ng/uL | 95   |
| 89) Methylenebis(2-chloroa... | 231  | 14.770 | 14.753 | 0.997  | 393335   | 116.90 | ng/uL | 97   |
| 90) Di-n-octylphthalate       | 149  | 16.155 | 16.139 | 1.090  | 2704992  | 116.55 | ng/uL | 98   |
| 92) Benzo(b)fluoranthene      | 252  | 16.973 | 16.941 | 0.947  | 2012847  | 109.67 | ng/uL | 98   |
| 93) Benzo(k)fluoranthene      | 252  | 17.048 | 17.010 | 0.951  | 1708428  | 107.69 | ng/uL | 98   |
| 94) Benzo(a)pyrene            | 252  | 17.786 | 17.754 | 0.993  | 1763655  | 111.10 | ng/uL | 98   |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 21.204 | 21.161 | 1.183  | 1389967  | 115.16 | ng/uL | 99   |
| 96) Dibenzo(a,h)anthracene    | 278  | 21.305 | 21.274 | 1.189  | 1236957  | 110.17 | ng/uL | 99   |
| 97) Benzo(ghi)perylene        | 276  | 21.958 | 21.926 | 1.225  | 1283356  | 104.61 | ng/uL | 99   |
| 98) Dibenzo(a,e)pyrene        | 302  | 25.825 | 25.804 | 1.441  | 647133   | 107.85 | ng/uL | 97 A |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2913.D  
Acq On : 29 Sep 2016 15:44  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-05.1|ICAL|1|SVM|1|M4  
Misc : |MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 30 08:20:57 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:56:47 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| -----                         |      |        |        |        |          |       |       |           |
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 218164   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.217  | 7.212  | 1.000  | 724992   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.523  | 9.522  | 1.000  | 405660   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 718571   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.807 | 14.807 | 1.000  | 490286   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 418853   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 114) B Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 122) B Acenaphthene-d10       | 164  | 9.523  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 131) B Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 144) B Chrysene-d12           | 240  | 14.807 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 151) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 154) D Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 156) D Acenaphthene-d10       | 164  | 9.523  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 159) D Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 166) D Chrysene-d12           | 240  | 14.807 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 168) E Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 170) E Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 172) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 174) J Phenanthrene-d10       | 188  | 11.384 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 176) J Chrysene-d12           | 240  | 14.807 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 3.757  | 3.757  | 0.691  | 338681   | 41.88 | ng/uL | 0.00      |
| 8) Phenol-d5                  | 99   | 4.907  | 4.906  | 0.903  | 405873   | 40.91 | ng/uL | 0.00      |
| 25) Nitrobenzene-d5           | 82   | 6.223  | 6.222  | 0.862  | 347559   | 40.97 | ng/uL | 0.00      |
| 47) 2-Fluorobiphenyl          | 172  | 8.656  | 8.656  | 0.909  | 576191   | 40.31 | ng/uL | 0.00      |
| 66) 2,4,6-Tribromophenol      | 330  | 10.512 | 10.512 | 1.104  | 106420   | 40.34 | ng/uL | 0.00      |
| 83) p-Terphenyl-d14           | 244  | 13.358 | 13.357 | 0.902  | 598633   | 46.53 | ng/uL | 0.00      |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 2) 2-Ethoxyethanol            | 59   | 2.174  | 2.173  | 0.400  | 254313   | 41.51 | ng/uL | 100       |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.430  | 2.425  | 0.447  | 211618   | 41.20 | ng/uL | 97        |
| 4) Pyridine                   | 79   | 2.468  | 2.467  | 0.454  | 341649   | 40.51 | ng/uL | 99        |
| 6) p-Benzoquinone             | 54   | 4.361  | 4.361  | 0.802  | 258631   | 43.51 | ng/uL | 97        |
| 7) Aniline                    | 93   | 4.987  | 4.987  | 0.917  | 414007   | 40.28 | ng/uL | 100       |
| 9) Phenol                     | 94   | 4.928  | 4.928  | 0.907  | 357155   | 40.12 | ng/uL | 99        |
| 10) bis(2-Chloroethyl) ether  | 93   | 5.073  | 5.067  | 0.933  | 290200   | 40.35 | ng/uL | 99        |
| 11) 2-Chlorophenol            | 128  | 5.142  | 5.142  | 0.946  | 281615   | 40.62 | ng/uL | 100       |
| 12) n-Decane                  | 43   | 5.217  | 5.217  | 0.960  | 440742   | 40.18 | ng/uL | 99        |
| 13) 1,3-Dichlorobenzene       | 146  | 5.362  | 5.361  | 0.986  | 313211   | 40.88 | ng/uL | 100       |
| 14) 1,4-Dichlorobenzene       | 146  | 5.463  | 5.463  | 1.005  | 281160   | 40.17 | ng/uL | 99        |
| 15) 1,2-Dichlorobenzene       | 146  | 5.677  | 5.671  | 1.044  | 282152   | 40.24 | ng/uL | 99        |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.832  | 5.832  | 1.073  | 569510   | 40.50 | ng/uL | 99        |
| 17) Benzyl alcohol            | 108  | 5.629  | 5.629  | 1.035  | 192367   | 39.97 | ng/uL | 98        |
| 18) o-Cresol                  | 107  | 5.779  | 5.773  | 1.063  | 224585   | 39.99 | ng/uL | 97        |
| 19) m,p-Cresols               | 107  | 6.009  | 6.008  | 1.105  | 295117   | 40.53 | ng/uL | 98        |
| 20) N-Nitrosodipropylamine    | 70   | 6.019  | 6.019  | 1.107  | 227558   | 41.21 | ng/uL | 97        |
| 21) p-Toluidine               | 106  | 6.068  | 6.067  | 1.116  | 338172   | 40.62 | ng/uL | 97        |
| 22) m-Toluidine               | 106  | 6.121  | 6.115  | 1.126  | 315658   | 38.86 | ng/uL | 98        |
| 23) Hexachloroethane          | 117  | 6.153  | 6.153  | 1.132  | 131443   | 40.81 | ng/uL | 100       |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2913.D  
Acq On : 29 Sep 2016 15:44  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-05.1|ICAL|1|SVM|1|M4  
Misc : |MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 30 08:20:57 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:56:47 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units     |
|-------------------------------|------|--------|--------|--------|----------|-------|-----------|
| 26) Nitrobenzene              | 77   | 6.249  | 6.249  | 0.866  | 312880   | 40.20 | ng/uL 99  |
| 27) Isophorone                | 82   | 6.586  | 6.586  | 0.913  | 662835   | 40.20 | ng/uL 99  |
| 28) 2-Nitrophenol             | 139  | 6.688  | 6.688  | 0.927  | 153074   | 42.57 | ng/uL 97  |
| 29) 2,4-Dimethylphenol        | 122  | 6.752  | 6.752  | 0.936  | 238268   | 40.73 | ng/uL 97  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.897  | 6.891  | 0.956  | 352245   | 40.50 | ng/uL 100 |
| 31) 2,4-Dichlorophenol        | 162  | 7.020  | 7.019  | 0.973  | 240051   | 41.34 | ng/uL 98  |
| 32) Benzoic acid              | 105  | 6.907  | 6.891  | 0.957  | 125340   | 41.20 | ng/uL 93  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.137  | 7.137  | 0.989  | 288272   | 40.75 | ng/uL 99  |
| 34) alpha-Terpineol           | 59   | 7.266  | 7.265  | 1.007  | 305249   | 41.15 | ng/uL 99  |
| 35) Naphthalene               | 128  | 7.244  | 7.244  | 1.004  | 682180   | 39.74 | ng/uL 99  |
| 36) 4-Chloroaniline           | 127  | 7.319  | 7.319  | 1.014  | 253943   | 40.50 | ng/uL 98  |
| 37) Hexachlorobutadiene       | 225  | 7.421  | 7.415  | 1.028  | 203586   | 41.73 | ng/uL 98  |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.966  | 7.966  | 1.104  | 304447   | 40.91 | ng/uL 98  |
| 39) 2-Methylnaphthalene       | 142  | 8.175  | 8.169  | 1.133  | 525152   | 39.62 | ng/uL 100 |
| 40) Phthalic anhydride        | 104  | 8.244  | 8.244  | 1.142  | 222587   | 38.91 | ng/uL 96  |
| 41) 1-Methylnaphthalene       | 142  | 8.303  | 8.303  | 1.150  | 466383   | 38.89 | ng/uL 98  |
| 43) Hexachlorocyclopentadiene | 237  | 8.378  | 8.383  | 0.880  | 205039   | 43.39 | ng/uL 99  |
| 44) 2,3-Dichloroaniline       | 161  | 8.539  | 8.538  | 0.897  | 263246   | 40.80 | ng/uL 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.539  | 8.538  | 0.897  | 186977   | 41.31 | ng/uL 99  |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.581  | 8.581  | 0.901  | 173876   | 39.54 | ng/uL 96  |
| 48) 2-Chloronaphthalene       | 162  | 8.806  | 8.806  | 0.925  | 499175   | 39.10 | ng/uL 98  |
| 49) o-Nitroaniline            | 65   | 8.934  | 8.934  | 0.938  | 198631   | 39.29 | ng/uL 99  |
| 50) 1,4-Dinitrobenzene        | 168  | 9.122  | 9.121  | 0.958  | 97188    | 39.73 | ng/uL 97  |
| 51) m-Nitroaniline            | 138  | 9.464  | 9.464  | 0.994  | 112920   | 38.26 | ng/uL 98  |
| 52) Dimethylphthalate         | 163  | 9.191  | 9.191  | 0.965  | 611289   | 39.30 | ng/uL 98  |
| 53) m-Dinitrobenzene          | 168  | 9.218  | 9.217  | 0.968  | 93986    | 39.21 | ng/uL 97  |
| 54) 2,6-Dinitrotoluene        | 165  | 9.261  | 9.260  | 0.972  | 133380   | 40.08 | ng/uL 100 |
| 55) 2,4-Dinitrotoluene        | 165  | 9.769  | 9.763  | 1.026  | 177448   | 38.66 | ng/uL 98  |
| 56) Acenaphthylene            | 152  | 9.341  | 9.341  | 0.981  | 730626   | 38.19 | ng/uL 99  |
| 57) Acenaphthene              | 154  | 9.560  | 9.560  | 1.004  | 436108   | 39.81 | ng/uL 99  |
| 58) 2,4-Dinitrophenol         | 184  | 9.598  | 9.597  | 1.008  | 60258    | 37.58 | ng/uL 93  |
| 59) Dibenzofuran              | 168  | 9.779  | 9.779  | 1.027  | 662389   | 39.66 | ng/uL 99  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.935  | 9.934  | 1.043  | 161781   | 40.94 | ng/uL 99  |
| 61) Diethylphthalate          | 149  | 10.084 | 10.084 | 1.059  | 686044   | 39.30 | ng/uL 99  |
| 62) 4-Nitrophenol             | 139  | 9.678  | 9.672  | 1.016  | 83005    | 37.30 | ng/uL 96  |
| 63) Fluorene                  | 166  | 10.213 | 10.212 | 1.072  | 568010   | 39.05 | ng/uL 98  |
| 64) 4-Chlorophenylphenylether | 204  | 10.218 | 10.218 | 1.073  | 324494   | 39.94 | ng/uL 97  |
| 65) p-Nitroaniline            | 138  | 10.239 | 10.234 | 1.075  | 92711    | 33.28 | ng/uL 95  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.277 | 10.277 | 0.903  | 86384    | 39.91 | ng/uL 94  |
| 69) Diphenylamine             | 169  | 10.368 | 10.362 | 0.911  | 480109   | 41.94 | ng/uL 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.416 | 10.416 | 0.915  | 600980   | 42.53 | ng/uL 99  |
| 71) 4-Bromophenylphenylether  | 248  | 10.828 | 10.827 | 0.951  | 218931   | 42.54 | ng/uL 98  |
| 72) Hexachlorobenzene         | 284  | 10.897 | 10.897 | 0.957  | 214130   | 41.29 | ng/uL 99  |
| 73) Pentachlorophenol         | 266  | 11.138 | 11.138 | 0.978  | 122694   | 41.26 | ng/uL 99  |
| 74) n-Octadecane              | 57   | 11.261 | 11.261 | 0.989  | 558192   | 42.50 | ng/uL 99  |
| 75) Dinoseb                   | 211  | 11.373 | 11.373 | 0.999  | 141680   | 39.99 | ng/uL 96  |
| 76) Phenanthrene              | 178  | 11.411 | 11.410 | 1.002  | 665251   | 40.05 | ng/uL 99  |
| 77) Anthracene                | 178  | 11.475 | 11.475 | 1.008  | 688103   | 39.51 | ng/uL 99  |
| 78) Carbazole                 | 167  | 11.673 | 11.672 | 1.025  | 653377   | 39.44 | ng/uL 99  |
| 79) Di-n-butylphthalate       | 149  | 12.117 | 12.116 | 1.064  | 1096470  | 41.22 | ng/uL 99  |
| 80) Fluoranthene              | 202  | 12.882 | 12.881 | 1.132  | 937998   | 38.20 | ng/uL 100 |
| 82) Pyrene                    | 202  | 13.160 | 13.159 | 0.889  | 906250   | 46.44 | ng/uL 99  |
| 84) Butylbenzylphthalate      | 149  | 13.973 | 13.972 | 0.944  | 429814   | 45.51 | ng/uL 99  |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2913.D  
Acq On : 29 Sep 2016 15:44  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-05.1|ICAL|1|SVM|1|M4  
Misc : |MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 30 08:20:57 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Thu Sep 29 15:56:47 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units     |
|-------------------------------|------|--------|--------|--------|----------|-------|-----------|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.850 | 14.855 | 1.003  | 454820   | 43.03 | ng/uL 98  |
| 86) Benzo(a)anthracene        | 228  | 14.786 | 14.785 | 0.999  | 609099   | 39.87 | ng/uL 99  |
| 87) Chrysene                  | 228  | 14.850 | 14.850 | 1.003  | 511324   | 40.13 | ng/uL 99  |
| 88) Methoxychlor              | 227  | 14.695 | 14.689 | 0.992  | 581313   | 41.54 | ng/uL 99  |
| 89) Methylenebis(2-chloroa... | 231  | 14.754 | 14.753 | 0.996  | 114510   | 39.25 | ng/uL 99  |
| 90) Di-n-octylphthalate       | 149  | 16.139 | 16.139 | 1.090  | 842246   | 40.05 | ng/uL 99  |
| 92) Benzo(b)fluoranthene      | 252  | 16.941 | 16.941 | 0.946  | 601488   | 40.55 | ng/uL 100 |
| 93) Benzo(k)fluoranthene      | 252  | 17.005 | 17.010 | 0.950  | 526561   | 41.07 | ng/uL 98  |
| 94) Benzo(a)pyrene            | 252  | 17.749 | 17.754 | 0.991  | 539718   | 42.07 | ng/uL 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 21.161 | 21.161 | 1.182  | 451600   | 46.36 | ng/uL 98  |
| 96) Dibenzo(a,h)anthracene    | 278  | 21.275 | 21.274 | 1.188  | 406127   | 44.75 | ng/uL 98  |
| 97) Benzo(ghi)perylene        | 276  | 21.921 | 21.926 | 1.224  | 450909   | 45.47 | ng/uL 100 |
| 98) Dibenzo(a,e)pyrene        | 302  | 25.799 | 25.804 | 1.441  | 241959   | 50.94 | ng/uL 97  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



## Continuing Calibration Summary

**Client SDG:** 409254  
**Instrument ID:** MSD1.I  
**Injection Date:** 29-SEP-16 16:19  
**Data File:** s092916.B\si2914.D  
**Init. Cal. Date(s)** 29-SEP-16 10:05 - 30-SEP-16 07:50  
**Lab Sample ID** WBN160920-09.1  
**Method:** s092916.B\MSD1\_8270C\_8270D\_092916.M  
**Quant Type** ISTD  
**Method Update:** 30-SEP-16 09:55

| Compound                       | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| S2-Fluorophenol                | 1.4846         | 1.30883 |             | .01    |      | -11.83955   | 30  |         | Averaged   |
| SPhenol-d5                     | 1.8177         | 1.7169  |             | .01    |      | -5.54547    | 30  |         | Averaged   |
| SNitrobenzene-d5               | 0.4682         | 0.43633 |             | .01    |      | -6.80692    | 30  |         | Averaged   |
| S2-Fluorobiphenyl              | 1.4097         | 1.32043 |             | .01    |      | -6.33255    | 30  |         | Averaged   |
| S2,4,6-Tribromophenol          | 0.2609         | 0.23898 |             | .01    |      | -8.40169    | 30  |         | Averaged   |
| Sp-Terphenyl-d14               | 1.068          | 1.04809 |             | .01    |      | -1.86423    | 30  |         | Averaged   |
| Phenol                         | 1.6271         | 1.41005 |             | .8     |      | -13.33968   | 30  |         | Averaged   |
| bis(2-Chloroethyl) ether       | 1.3182         | 1.1448  |             | .7     |      | -13.1543    | 30  |         | Averaged   |
| 2-Chlorophenol                 | 1.2697         | 1.02539 |             | .8     |      | -19.24155   | 30  |         | Averaged   |
| o-Cresol                       | 1.026          | 0.91804 |             | .7     |      | -10.52242   | 30  |         | Averaged   |
| bis(2-Chloro-1-methylethyl)eth | 2.5727         | 2.39304 |             | .01    |      | -6.98332    | 30  |         | Averaged   |
| m,p-Cresols                    | 1.3334         | 1.23027 |             | .6     |      | -7.73436    | 30  |         | Averaged   |
| N-Nitrosodipropylamine         | 1.0082         | 0.9045  |             | .5     |      | -10.28566   | 30  |         | Averaged   |
| Hexachloroethane               | 0.591          | 0.52713 |             | .3     |      | -10.80711   | 30  |         | Averaged   |
| Nitrobenzene                   | 0.4285         | 0.40806 |             | .2     |      | -4.77013    | 30  |         | Averaged   |
| Isophorone                     | 0.9079         | 0.84976 |             | .4     |      | -6.40379    | 30  |         | Averaged   |
| 2-Nitrophenol                  | 0.1995         | 0.18916 |             | .1     |      | -5.18296    | 30  |         | Averaged   |
| 2,4-Dimethylphenol             | 0.3236         | 0.30014 |             | .2     |      | -7.24969    | 30  |         | Averaged   |
| bis(2-Chloroethoxy)methane     | 0.4812         | 0.40635 |             | .3     |      | -15.55486   | 30  |         | Averaged   |
| 2,4-Dichlorophenol             | 0.3205         | 0.29254 |             | .2     |      | -8.72387    | 30  |         | Averaged   |
| Naphthalene                    | 0.9466         | 0.84998 |             | .7     |      | -10.20706   | 30  |         | Averaged   |
| 4-Chloroaniline                | 0.3468         | 0.36041 |             | .01    |      | 3.92445     | 30  |         | Averaged   |
| Hexachlorobutadiene            | 0.2703         | 0.25588 |             | .01    |      | -5.33481    | 30  |         | Averaged   |
| 4-Chloro-3-methylphenol        | 0.411          | 0.38542 |             | .2     |      | -6.22384    | 30  |         | Averaged   |
| 2-Methylnaphthalene            | 0.7312         | 0.66225 |             | .4     |      | -9.4297     | 30  |         | Averaged   |
| 1-Methylnaphthalene            | 0.6612         | 0.58811 |             | .4     |      | -11.05414   | 30  |         | Averaged   |
| Hexachlorocyclopentadiene      | 0.4705         | 0.41143 |             | .05    |      | -12.55473   | 30  |         | Averaged   |
| 2,4,6-Trichlorophenol          | 0.4473         | 0.40132 |             | .2     |      | -10.27945   | 30  |         | Averaged   |
| 2,4,5-Trichlorophenol          | 0.4317         | 0.40271 |             | .2     |      | -6.71531    | 30  |         | Averaged   |
| 2-Chloronaphthalene            | 1.2583         | 1.1047  |             | .8     |      | -12.20695   | 30  |         | Averaged   |
| o-Nitroaniline                 | 0.497          | 0.47248 |             | .01    |      | -4.9336     | 30  |         | Averaged   |
| Dimethylphthalate              | 1.5318         | 1.39803 |             | .01    |      | -8.73286    | 30  |         | Averaged   |
| 2,6-Dinitrotoluene             | 0.329          | 0.29883 |             | .2     |      | -9.17021    | 30  |         | Averaged   |
| Acenaphthylene                 | 1.8811         | 1.65373 |             | .9     |      | -12.08708   | 30  |         | Averaged   |
| m-Nitroaniline                 | 0.2905         | 0.28861 |             | .01    |      | -0.6506     | 30  |         | Averaged   |
| Acenaphthene                   | 1.081          | 1.01406 |             | .9     |      | -6.19241    | 30  |         | Averaged   |
| 2,4-Dinitrophenol              | 40             | 37.64   | 40          |        |      | -5.9        | 30  |         | Linear     |

## Continuing Calibration Summary

Instrument ID: MSD1.I

Injection Date: 29-SEP-16 16:19

Data File: s092916.B\si2914.D

Init. Cal. Date(s) 29-SEP-16 10:05 30-SEP-16 07:50

Lab Sample ID WBN160920-09.1

Method: s092916.B\MSD1\_8270C\_8270D\_092916.M

Quant Type ISTD

| Compound                   | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| 4-Nitrophenol              | 40             | 36.42   | 40          |        |      | -8.95       | 30  |         | Linear     |
| 2,4-Dinitrotoluene         | 0.4523         | 0.41491 |             | .2     |      | -8.26664    | 30  |         | Averaged   |
| Dibenzofuran               | 1.6454         | 1.44871 |             | .8     |      | -11.95393   | 30  |         | Averaged   |
| 2,3,4,6-Tetrachlorophenol  | 0.3915         | 0.38778 |             | .01    |      | -0.95019    | 30  |         | Averaged   |
| Diethylphthalate           | 1.724          | 1.54623 |             | .01    |      | -10.31148   | 30  |         | Averaged   |
| Fluorene                   | 1.4357         | 1.28659 |             | .9     |      | -10.38587   | 30  |         | Averaged   |
| 4-Chlorophenylphenylether  | 0.8049         | 0.73784 |             | .4     |      | -8.33147    | 30  |         | Averaged   |
| p-Nitroaniline             | 0.272          | 0.24622 |             | .01    |      | -9.47794    | 30  |         | Averaged   |
| 2-Methyl-4,6-dinitrophenol | 40             | 38.47   | 40          |        |      | -3.825      | 30  |         | Linear     |
| Diphenylamine              | 0.6392         | 0.58448 |             | .01    |      | -8.5607     | 30  |         | Averaged   |
| 4-Bromophenylphenylether   | 0.2867         | 0.26694 |             | .1     |      | -6.89222    | 30  |         | Averaged   |
| Hexachlorobenzene          | 0.2892         | 0.26625 |             | .1     |      | -7.93568    | 30  |         | Averaged   |
| Pentachlorophenol          | 40             | 38.23   | 40          |        |      | -4.425      | 30  |         | Linear     |
| Phenanthrene               | 0.9221         | 0.8532  |             | .7     |      | -7.47207    | 30  |         | Averaged   |
| Anthracene                 | 0.9651         | 0.90382 |             | .7     |      | -6.3496     | 30  |         | Averaged   |
| Carbazole                  | 0.9193         | 0.88795 |             | .01    |      | -3.4102     | 30  |         | Averaged   |
| Di-n-butylphthalate        | 1.4744         | 1.42742 |             | .01    |      | -3.18638    | 30  |         | Averaged   |
| Fluoranthene               | 1.3571         | 1.29203 |             | .6     |      | -4.79478    | 30  |         | Averaged   |
| Pyrene                     | 1.6191         | 1.39856 |             | .6     |      | -13.62115   | 30  |         | Averaged   |
| Butylbenzylphthalate       | 0.7754         | 0.72348 |             | .01    |      | -6.6959     | 30  |         | Averaged   |
| Benzo(a)anthracene         | 1.2469         | 1.09025 |             | .8     |      | -12.56316   | 30  |         | Averaged   |
| Chrysene                   | 1.0377         | 0.97783 |             | .7     |      | -5.76949    | 30  |         | Averaged   |
| bis(2-Ethylhexyl)phthalate | 0.8639         | 0.80104 |             | .01    |      | -7.27631    | 30  |         | Averaged   |
| Di-n-octylphthalate        | 40             | 38.01   | 40          |        |      | -4.975      | 30  |         | Linear     |
| Benzo(b)fluoranthene       | 1.4151         | 1.24005 |             | .7     |      | -12.37015   | 30  |         | Averaged   |
| Benzo(k)fluoranthene       | 1.2245         | 1.08908 |             | .7     |      | -11.05921   | 30  |         | Averaged   |
| Benzo(a)pyrene             | 1.2239         | 1.15358 |             | .7     |      | -5.74557    | 30  |         | Averaged   |
| Indeno(1,2,3-cd)pyrene     | 0.936          | 0.95074 |             | .5     |      | 1.57479     | 30  |         | Averaged   |
| Dibenzo(a,h)anthracene     | 0.8716         | 0.86383 |             | .4     |      | -0.89146    | 30  |         | Averaged   |
| Benzo(ghi)perylene         | 0.9551         | 0.97881 |             | .5     |      | 2.48246     | 30  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2914.D  
Acq On : 29 Sep 2016 16:19  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-09.1|ICV|1|SVM|1|MICV  
Misc : |MIX[A]  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 30 10:30:48 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 234259   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.217  | 7.212  | 1.000  | 753535   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.522  | 9.522  | 1.000  | 427835   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 783542   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.807 | 14.807 | 1.000  | 727099   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.914 | 17.904 | 1.000  | 718855   | 40.00 | ng/uL | 0.01      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 234254   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 753535   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.522  | 9.517  | 1.000  | 427835   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.384 | 11.384 | 1.000  | 783542   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.807 | 14.802 | 1.000  | 727099   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.914 | 17.904 | 1.000  | 688271   | 40.00 | ng/uL | 0.01      |
| 155) D Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 753535   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.522  | 9.517  | 1.000  | 427835   | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 783542   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.807 | 14.796 | 1.000  | 727047   | 40.00 | ng/uL | 0.01      |
| 169) E Naphthalene-d8         | 136  | 7.217  | 7.212  | 1.000  | 753535   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.914 | 17.914 | 1.000  | 680080   | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 234254   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 783542   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.807 | 14.801 | 1.000  | 727099   | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 3.757  | 3.757  | 0.691  | 306605   | 35.26 | ng/uL | 0.00      |
| 8) Phenol-d5                  | 99   | 4.912  | 4.906  | 0.904  | 402200   | 37.78 | ng/uL | 0.00      |
| 25) Nitrobenzene-d5           | 82   | 6.222  | 6.222  | 0.862  | 328787   | 37.27 | ng/uL | 0.00      |
| 47) 2-Fluorobiphenyl          | 172  | 8.656  | 8.656  | 0.909  | 564928   | 37.47 | ng/uL | 0.00      |
| 66) 2,4,6-Tribromophenol      | 330  | 10.512 | 10.512 | 1.104  | 102246   | 36.64 | ng/uL | 0.00      |
| 83) p-Terphenyl-d14           | 244  | 13.357 | 13.357 | 0.902  | 762068   | 39.25 | ng/uL | 0.00      |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 2) 2-Ethoxyethanol            | 59   | 2.173  | 2.173  | 0.400  | 219734   | 33.33 | ng/uL | 99        |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.425  | 2.425  | 0.446  | 194606   | 35.33 | ng/uL | 98        |
| 4) Pyridine                   | 79   | 2.468  | 2.467  | 0.454  | 338524   | 37.55 | ng/uL | 98        |
| 6) p-Benzquinone              | 54   | 4.356  | 4.361  | 0.801  | 266861   | 41.59 | ng/uL | 99        |
| 7) Aniline                    | 93   | 4.981  | 4.987  | 0.916  | 395538   | 35.81 | ng/uL | 99        |
| 9) Phenol                     | 94   | 4.928  | 4.928  | 0.907  | 330316   | 34.67 | ng/uL | 98        |
| 10) bis(2-Chloroethyl) ether  | 93   | 5.072  | 5.067  | 0.933  | 268180   | 34.74 | ng/uL | 99        |
| 11) 2-Chlorophenol            | 128  | 5.142  | 5.142  | 0.946  | 240206   | 32.30 | ng/uL | 93        |
| 12) n-Decane                  | 43   | 5.217  | 5.217  | 0.960  | 406301   | 34.59 | ng/uL | 98        |
| 13) 1,3-Dichlorobenzene       | 146  | 5.361  | 5.361  | 0.986  | 298436   | 36.25 | ng/uL | 99        |
| 14) 1,4-Dichlorobenzene       | 146  | 5.463  | 5.463  | 1.005  | 262933   | 34.95 | ng/uL | 99        |
| 15) 1,2-Dichlorobenzene       | 146  | 5.677  | 5.671  | 1.044  | 247368   | 32.88 | ng/uL | 98        |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.827  | 5.832  | 1.072  | 560591   | 37.21 | ng/uL | 99        |
| 17) Benzyl alcohol            | 108  | 5.629  | 5.629  | 1.035  | 191679   | 37.24 | ng/uL | 98        |
| 18) o-Cresol                  | 107  | 5.778  | 5.773  | 1.063  | 215058   | 35.79 | ng/uL | 100       |
| 19) m,p-Cresols               | 107  | 6.008  | 6.008  | 1.105  | 288201   | 36.91 | ng/uL | 98        |
| 20) N-Nitrosodipropylamine    | 70   | 6.019  | 6.019  | 1.107  | 211888   | 35.88 | ng/uL | 98        |
| 21) p-Toluidine               | 106  | 6.073  | 6.067  | 1.117  | 376654   | 42.26 | ng/uL | 98        |
| 22) m-Toluidine               | 106  | 6.121  | 6.115  | 1.126  | 337029   | 39.01 | ng/uL | 97        |
| 23) Hexachloroethane          | 117  | 6.153  | 6.153  | 1.132  | 123484   | 35.67 | ng/uL | 99        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2914.D  
Acq On : 29 Sep 2016 16:19  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-09.1|ICV|1|SVM|1|MICV  
Misc : |MIX[A]  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 30 10:30:48 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 26) Nitrobenzene              | 77   | 6.249  | 6.249  | 0.866  | 307484   | 38.09 | ng/uL | 98  |
| 27) Isophorone                | 82   | 6.586  | 6.586  | 0.913  | 640327   | 37.44 | ng/uL | 99  |
| 28) 2-Nitrophenol             | 139  | 6.688  | 6.688  | 0.927  | 142542   | 37.92 | ng/uL | 97  |
| 29) 2,4-Dimethylphenol        | 122  | 6.752  | 6.752  | 0.936  | 226169   | 37.10 | ng/uL | 95  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.891  | 6.891  | 0.955  | 306202   | 33.78 | ng/uL | 98  |
| 31) 2,4-Dichlorophenol        | 162  | 7.019  | 7.019  | 0.973  | 220439   | 36.51 | ng/uL | 97  |
| 32) Benzoic acid              | 105  | 6.902  | 6.891  | 0.956  | 133971   | 40.91 | ng/uL | 94  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.137  | 7.137  | 0.989  | 270508   | 36.70 | ng/uL | 98  |
| 34) alpha-Terpineol           | 59   | 7.265  | 7.265  | 1.007  | 280051   | 36.27 | ng/uL | 96  |
| 35) Naphthalene               | 128  | 7.244  | 7.244  | 1.004  | 640488   | 35.92 | ng/uL | 99  |
| 36) 4-Chloroaniline           | 127  | 7.319  | 7.319  | 1.014  | 271580   | 41.57 | ng/uL | 100 |
| 37) Hexachlorobutadiene       | 225  | 7.420  | 7.415  | 1.028  | 192814   | 37.87 | ng/uL | 98  |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.966  | 7.966  | 1.104  | 290429   | 37.51 | ng/uL | 99  |
| 39) 2-Methylnaphthalene       | 142  | 8.169  | 8.169  | 1.132  | 499030   | 36.23 | ng/uL | 100 |
| 40) Phthalic anhydride        | 104  | 8.244  | 8.244  | 1.142  | 207479   | 34.94 | ng/uL | 99  |
| 41) 1-Methylnaphthalene       | 142  | 8.303  | 8.303  | 1.150  | 443163   | 35.58 | ng/uL | 100 |
| 43) Hexachlorocyclopentadiene | 237  | 8.383  | 8.383  | 0.880  | 176026   | 34.98 | ng/uL | 99  |
| 44) 2,3-Dichloroaniline       | 161  | 8.538  | 8.538  | 0.897  | 259014   | 38.17 | ng/uL | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.538  | 8.538  | 0.897  | 171697   | 35.89 | ng/uL | 96  |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.581  | 8.581  | 0.901  | 172293   | 37.32 | ng/uL | 96  |
| 48) 2-Chloronaphthalene       | 162  | 8.806  | 8.806  | 0.925  | 472629   | 35.12 | ng/uL | 98  |
| 49) o-Nitroaniline            | 65   | 8.939  | 8.934  | 0.939  | 202145   | 38.03 | ng/uL | 98  |
| 50) 1,4-Dinitrobenzene        | 168  | 9.121  | 9.121  | 0.958  | 106542   | 41.20 | ng/uL | 97  |
| 51) m-Nitroaniline            | 138  | 9.469  | 9.464  | 0.994  | 123476   | 39.74 | ng/uL | 97  |
| 52) Dimethylphthalate         | 163  | 9.191  | 9.191  | 0.965  | 598126   | 36.51 | ng/uL | 99  |
| 53) m-Dinitrobenzene          | 168  | 9.218  | 9.217  | 0.968  | 101481   | 40.11 | ng/uL | 99  |
| 54) 2,6-Dinitrotoluene        | 165  | 9.260  | 9.260  | 0.972  | 127851   | 36.33 | ng/uL | 97  |
| 55) 2,4-Dinitrotoluene        | 165  | 9.763  | 9.763  | 1.025  | 177514   | 36.70 | ng/uL | 99  |
| 56) Acenaphthylene            | 152  | 9.341  | 9.341  | 0.981  | 707525   | 35.17 | ng/uL | 99  |
| 57) Acenaphthene              | 154  | 9.565  | 9.560  | 1.004  | 433851   | 37.52 | ng/uL | 98  |
| 58) 2,4-Dinitrophenol         | 184  | 9.597  | 9.597  | 1.008  | 62048    | 37.64 | ng/uL | 99  |
| 59) Dibenzofuran              | 168  | 9.779  | 9.779  | 1.027  | 619808   | 35.22 | ng/uL | 99  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.929  | 9.934  | 1.043  | 165906   | 39.62 | ng/uL | 98  |
| 61) Diethylphthalate          | 149  | 10.084 | 10.084 | 1.059  | 661533   | 35.87 | ng/uL | 99  |
| 62) 4-Nitrophenol             | 139  | 9.678  | 9.672  | 1.016  | 85807    | 36.42 | ng/uL | 95  |
| 63) Fluorene                  | 166  | 10.212 | 10.212 | 1.072  | 550448   | 35.84 | ng/uL | 99  |
| 64) 4-Chlorophenylphenylether | 204  | 10.218 | 10.218 | 1.073  | 315674   | 36.67 | ng/uL | 97  |
| 65) p-Nitroaniline            | 138  | 10.239 | 10.234 | 1.075  | 105343   | 36.21 | ng/uL | 98  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.277 | 10.277 | 0.903  | 91196    | 38.47 | ng/uL | 99  |
| 69) Diphenylamine             | 169  | 10.368 | 10.362 | 0.911  | 457968   | 36.58 | ng/uL | 100 |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.416 | 10.416 | 0.915  | 583262   | 37.65 | ng/uL | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 10.827 | 10.827 | 0.951  | 209159   | 37.24 | ng/uL | 99  |
| 72) Hexachlorobenzene         | 284  | 10.897 | 10.897 | 0.957  | 208621   | 36.83 | ng/uL | 97  |
| 73) Pentachlorophenol         | 266  | 11.138 | 11.138 | 0.978  | 124437   | 38.23 | ng/uL | 97  |
| 74) n-Octadecane              | 57   | 11.261 | 11.261 | 0.989  | 513970   | 35.91 | ng/uL | 98  |
| 75) Dinoseb                   | 211  | 11.378 | 11.373 | 1.000  | 160529   | 41.01 | ng/uL | 97  |
| 76) Phenanthrene              | 178  | 11.416 | 11.410 | 1.003  | 668517   | 37.01 | ng/uL | 100 |
| 77) Anthracene                | 178  | 11.475 | 11.475 | 1.008  | 708181   | 37.46 | ng/uL | 99  |
| 78) Carbazole                 | 167  | 11.673 | 11.672 | 1.025  | 695747   | 38.64 | ng/uL | 99  |
| 79) Di-n-butylphthalate       | 149  | 12.117 | 12.116 | 1.064  | 1118440  | 38.73 | ng/uL | 99  |
| 80) Fluoranthene              | 202  | 12.881 | 12.881 | 1.132  | 1012356  | 38.08 | ng/uL | 98  |
| 82) Pyrene                    | 202  | 13.165 | 13.159 | 0.889  | 1016889  | 34.55 | ng/uL | 99  |
| 84) Butylbenzylphthalate      | 149  | 13.972 | 13.972 | 0.944  | 526040   | 37.32 | ng/uL | 98  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2914.D  
Acq On : 29 Sep 2016 16:19  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160920-09.1|ICV|1|SVM|1|MICV  
Misc : |MIX[A]  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 30 10:30:48 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

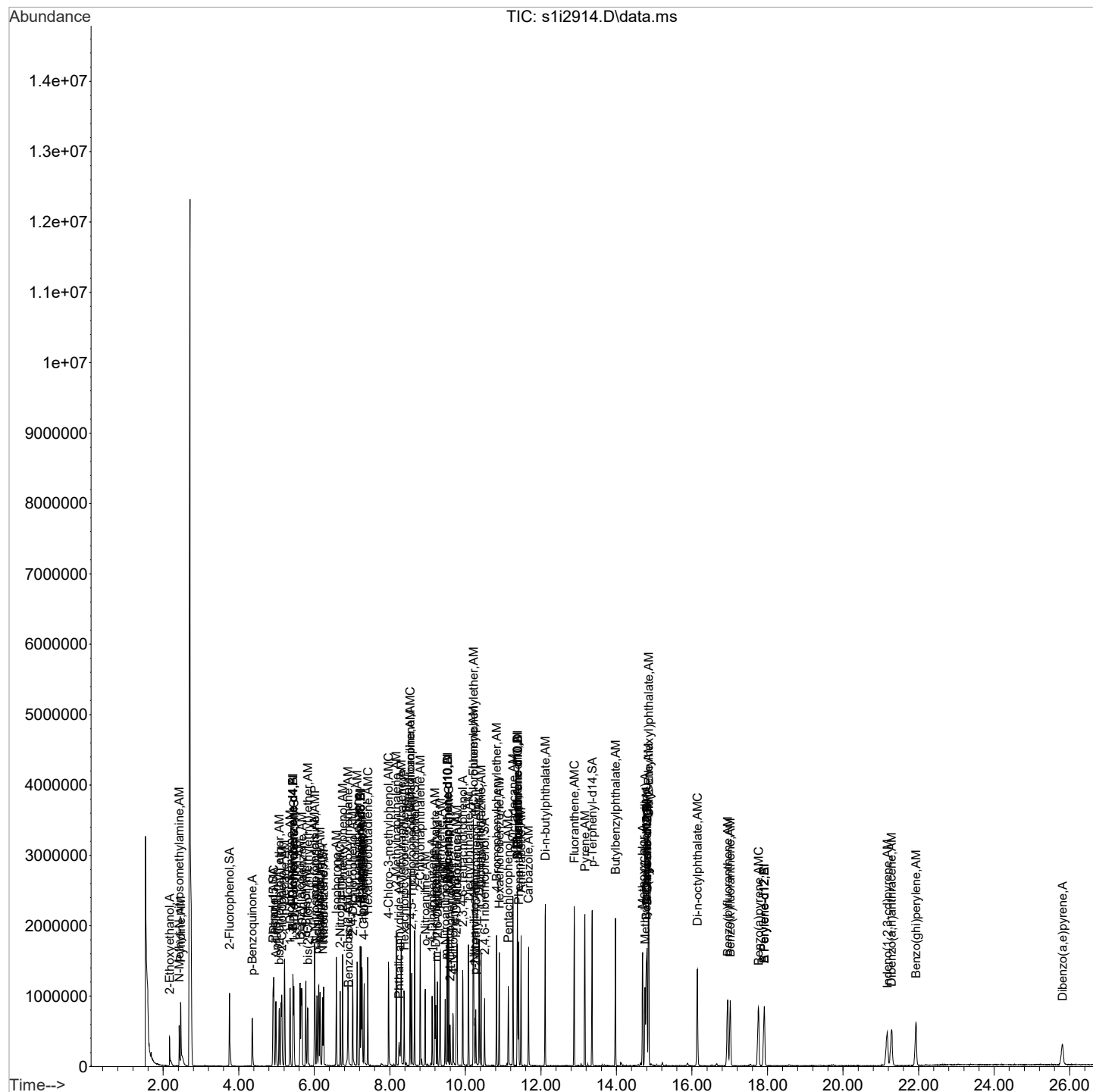
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units     |
|-------------------------------|------|--------|--------|--------|----------|-------|-----------|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.855 | 14.855 | 1.003  | 582435   | 37.09 | ng/uL 99  |
| 86) Benzo(a)anthracene        | 228  | 14.791 | 14.785 | 0.999  | 792717   | 34.97 | ng/uL 99  |
| 87) Chrysene                  | 228  | 14.850 | 14.850 | 1.003  | 710978   | 37.69 | ng/uL 100 |
| 88) Methoxychlor              | 227  | 14.695 | 14.689 | 0.992  | 754340   | 36.46 | ng/uL 99  |
| 89) Methylenebis(2-chloroa... | 231  | 14.759 | 14.753 | 0.997  | 179626   | 41.56 | ng/uL 98  |
| 90) Di-n-octylphthalate       | 149  | 16.144 | 16.139 | 1.090  | 1194383  | 38.01 | ng/uL 98  |
| 92) Benzo(b)fluoranthene      | 252  | 16.946 | 16.941 | 0.946  | 891413   | 35.05 | ng/uL 100 |
| 93) Benzo(k)fluoranthene      | 252  | 17.016 | 17.010 | 0.950  | 782892   | 35.58 | ng/uL 98  |
| 94) Benzo(a)pyrene            | 252  | 17.765 | 17.754 | 0.992  | 829254   | 37.70 | ng/uL 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 21.172 | 21.161 | 1.182  | 683442   | 40.63 | ng/uL 98  |
| 96) Dibenzo(a,h)anthracene    | 278  | 21.283 | 21.274 | 1.188  | 620969   | 39.64 | ng/uL 98  |
| 97) Benzo(ghi)perylene        | 276  | 21.931 | 21.926 | 1.224  | 703622   | 40.99 | ng/uL 99  |
| 98) Dibenzo(a,e)pyrene        | 302  | 25.809 | 25.804 | 1.441  | 416965   | 49.67 | ng/uL 96  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

GEL Laboratories, LLC

```
Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2914.D  
Acq On    : 29 Sep 2016 16:19  
Operator  : JLD1  
InstName  : MSD1  
Sample    : |WBN160920-09.1|ICV|1|SVM|1|MICV  
Misc      : |MIX[A]  
ALS Vial  : 11 Sample Multiplier: 1
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Quant Time: Sep 30 10:30:48 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2917.D  
Acq On : 29 Sep 2016 17:40  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-17|ICAL|1|SVM|1|A2  
Misc : |MIX[B]  
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 30 10:04:24 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.379 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 229065   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 764475   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 429164   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.379 | 11.384 | 1.000  | 751358   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.802 | 14.802 | 1.000  | 729988   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 666188   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.379 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.802 | 14.796 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 0.000  | 17.957 | 1.000  | 0        | 0.00  | ng/uL | -17.96    |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.379 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.802 | 14.801 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |

|                             |     |       |        |       |   |      |       |           |
|-----------------------------|-----|-------|--------|-------|---|------|-------|-----------|
| System Monitoring Compounds |     |       |        |       |   |      |       |           |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.757  | 0.000 | 0 | 0.00 | ng/uL | Dev (Min) |
| 8) Phenol-d5                | 99  | 0.000 | 4.906  | 0.000 | 0 | 0.00 | ng/uL |           |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 6.222  | 0.000 | 0 | 0.00 | ng/uL |           |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 8.656  | 0.000 | 0 | 0.00 | ng/uL |           |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 10.512 | 0.000 | 0 | 0.00 | ng/uL |           |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 13.357 | 0.000 | 0 | 0.00 | ng/uL |           |

| Target Compounds               |      |       |        |        |          |       |        |        |
|--------------------------------|------|-------|--------|--------|----------|-------|--------|--------|
| Compound                       | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  | QValue |
| 100) 1,4-Dioxane               | 88   | 2.174 | 2.163  | 0.400  | 34185    | 11.14 | ng/uL  | 88     |
| 101) Methyl methacrylate       | 100  | 2.174 | 2.168  | 0.400  | 15802    | 10.62 | ng/uL# | 21     |
| 102) Ethyl methacrylate        | 69   | 2.826 | 2.821  | 0.520  | 71462    | 10.73 | ng/uL  | 91     |
| 103) 2-Picoline                | 93   | 3.158 | 3.152  | 0.581  | 95090    | 11.32 | ng/uL  | 96     |
| 104) N-Nitrosomethylethylamine | 88   | 3.265 | 3.249  | 0.601  | 37946    | 11.69 | ng/uL  | 86     |
| 105) Methyl methanesulfonate   | 80   | 3.575 | 3.575  | 0.658  | 62279    | 11.40 | ng/uL  | 95     |
| 106) N-Nitrosodiethylamine     | 102  | 4.040 | 4.040  | 0.743  | 37002    | 10.21 | ng/uL  | 95     |
| 107) 2-Butoxyethanol           | 57   | 4.121 | 4.121  | 0.758  | 106467   | 11.29 | ng/uL  | 97     |
| 108) Ethyl methanesulfonate    | 79   | 4.399 | 4.399  | 0.809  | 60535    | 10.65 | ng/uL  | 92     |
| 109) Benzaldehyde              | 77   | 4.843 | 4.843  | 0.891  | 76906    | 11.64 | ng/uL  | 94     |
| 110) Pentachloroethane         | 167  | 5.051 | 5.051  | 0.929  | 37216    | 11.04 | ng/uL  | 98     |
| 111) N-Nitrosopyrrolidine      | 100  | 5.960 | 5.971  | 1.096  | 37495    | 9.87  | ng/uL  | 90     |
| 112) Acetophenone              | 105  | 6.003 | 6.003  | 1.104  | 108652   | 11.59 | ng/uL  | 97     |
| 113) N-Nitrosomorpholine       | 56   | 6.019 | 6.030  | 1.107  | 70083    | 12.05 | ng/uL  | 98     |
| 114) o-Toluidine               | 106  | 6.046 | 6.051  | 1.112  | 111698   | 12.10 | ng/uL  | 96     |
| 116) N-Nitrosopiperidine       | 114  | 6.447 | 6.453  | 0.894  | 40798    | 10.53 | ng/uL  | 96     |
| 117) a,a-Dimethylphenethyla... | 58   | 6.977 | 6.977  | 0.967  | 280861   | 10.56 | ng/uL  | 98     |
| 118) 2,6-Dichlorophenol        | 162  | 7.324 | 7.324  | 1.016  | 47611    | 9.72  | ng/uL  | 92     |
| 119) Hexachloropropene         | 213  | 7.362 | 7.362  | 1.021  | 47482    | 11.02 | ng/uL  | 99     |
| 120) Caprolactam               | 113  | 7.747 | 7.763  | 1.074  | 21154    | 9.94  | ng/uL# | 62     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2917.D  
Acq On : 29 Sep 2016 17:40  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-17|ICAL|1|SVM|1|A2  
Misc : |MIX[B]  
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 30 10:04:24 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

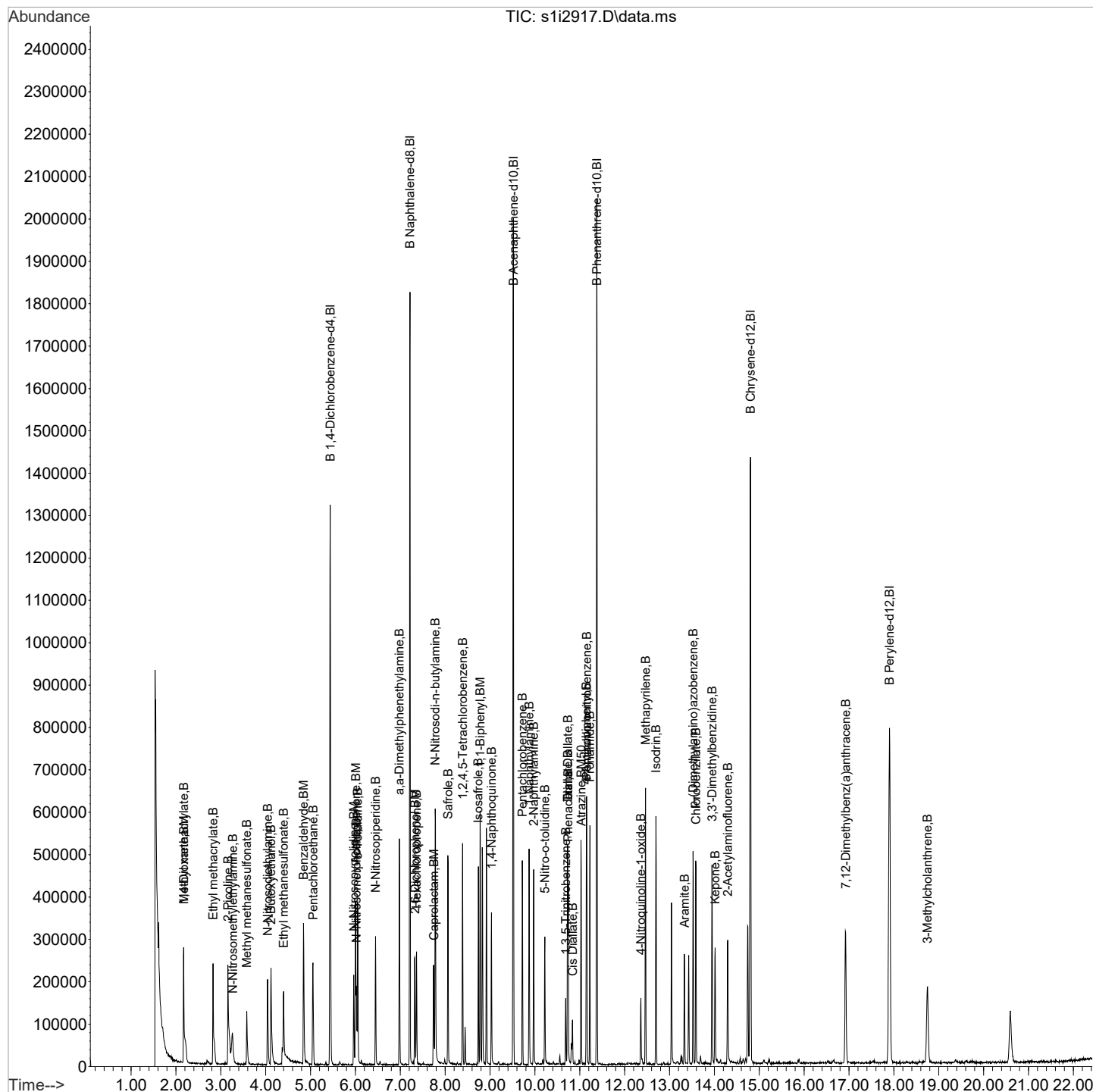
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 121) N-Nitrosodi-n-butylamine  | 84   | 7.779  | 7.784  | 1.079  | 65262    | 10.48 | ng/uL  | 97  |
| 122) Safrole                   | 162  | 8.062  | 8.063  | 1.118  | 60556    | 11.12 | ng/uL  | 98  |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.389  | 8.389  | 0.881  | 88715    | 11.87 | ng/uL  | 98  |
| 125) 1,1-Biphenyl              | 154  | 8.779  | 8.785  | 0.922  | 180322   | 9.44  | ng/uL  | 97  |
| 126) Isosafrole                | 162  | 8.736  | 8.742  | 0.918  | 60078    | 11.29 | ng/uL  | 99  |
| 127) 1,4-Naphthoquinone        | 158  | 9.031  | 9.031  | 0.949  | 47876    | 10.91 | ng/uL  | 96  |
| 128) Pentachlorobenzene        | 250  | 9.721  | 9.726  | 1.021  | 74387    | 11.32 | ng/uL  | 98  |
| 129) 1-Naphthylamine           | 143  | 9.870  | 9.876  | 1.037  | 137342   | 12.12 | ng/uL  | 94  |
| 130) 2-Naphthylamine           | 143  | 9.972  | 9.972  | 1.048  | 125775   | 11.67 | ng/uL  | 99  |
| 131) 5-Nitro-o-toluidine       | 152  | 10.218 | 10.223 | 1.074  | 37254    | 9.78  | ng/uL  | 94  |
| 133) 1,3,5-Trinitrobenzene     | 75   | 10.683 | 10.683 | 0.939  | 38518    | 8.65  | ng/uL  | 94  |
| 134) Phenacetin                | 108  | 10.742 | 10.753 | 0.944  | 75936    | 11.22 | ng/uL  | 98  |
| 135) Diallate                  | 86   | 10.726 | 10.726 | 0.943  | 71060    | 11.88 | ng/uL  | 100 |
| 136) Cis Diallate              | 86   | 10.838 | 10.838 | 0.953  | 14341    | 1.77  | ng/uL  | 96  |
| 137) Trans Diallate            | 86   | 10.726 | 10.726 | 0.943  | 71060    | 10.10 | ng/uL  | 100 |
| 138) Atrazine                  | 200  | 11.031 | 11.036 | 0.969  | 53142    | 11.56 | ng/uL  | 91  |
| 139) 4-Aminobiphenyl           | 169  | 11.143 | 11.149 | 0.979  | 158166   | 12.53 | ng/uL  | 99  |
| 140) Pentachloronitrobenzene   | 237  | 11.154 | 11.159 | 0.980  | 27614    | 11.73 | ng/uL  | 96  |
| 141) Pronamide                 | 173  | 11.224 | 11.229 | 0.986  | 80106    | 11.76 | ng/uL  | 99  |
| 142) 4-Nitroquinoline-1-oxide  | 190  | 12.363 | 12.363 | 1.086  | 8088     | 9.86  | ng/uL# | 1   |
| 143) Methapyrilene             | 58   | 12.464 | 12.464 | 1.095  | 185309   | 12.35 | ng/uL  | 99  |
| 144) Isodrin                   | 193  | 12.694 | 12.694 | 1.116  | 37662    | 11.77 | ng/uL  | 93  |
| 146) Aramite                   | 185  | 13.336 | 13.336 | 0.901  | 18436    | 9.77  | ng/uL  | 89  |
| 147) Kepone                    | 272  | 14.015 | 14.016 | 0.947  | 27845    | 10.52 | ng/uL  | 97  |
| 148) p-(Dimethylamino)azobe... | 120  | 13.523 | 13.529 | 0.914  | 73512    | 10.66 | ng/uL  | 98  |
| 149) Chlorobenzilate           | 251  | 13.588 | 13.588 | 0.918  | 79776    | 10.65 | ng/uL  | 96  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 13.946 | 13.951 | 0.942  | 163759   | 11.35 | ng/uL  | 100 |
| 151) 2-Acetylaminofluorene     | 181  | 14.294 | 14.299 | 0.966  | 77050    | 9.25  | ng/uL  | 96  |
| 153) 7,12-Dimethylbenz(a)an... | 256  | 16.925 | 16.931 | 0.945  | 123899   | 11.16 | ng/uL  | 99  |
| 154) 3-Methylcholanthrene      | 269  | 18.744 | 18.760 | 1.047  | 24210    | 10.89 | ng/uL  | 91  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2917.D  
Acq On : 29 Sep 2016 17:40  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-17|ICAL|1|SVM|1|A2  
Misc : |MIX[B]  
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 30 10:04:24 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2918.D  
Acq On : 29 Sep 2016 18:09  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-16|ICAL|1|SVM|1|A3  
Misc : |MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 30 09:57:20 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.801 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 260461   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 847464   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 481155   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.384 | 11.384 | 1.000  | 815111   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.801 | 14.802 | 1.000  | 728087   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 632570   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.801 | 14.796 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.979 | 17.957 | 1.000  | 0m       | 40.00 | ng/uL | 0.02      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.801 | 14.801 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |

|                             |     |       |        |       |   |      |       |           |
|-----------------------------|-----|-------|--------|-------|---|------|-------|-----------|
| System Monitoring Compounds |     |       |        |       |   |      |       |           |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.757  | 0.000 | 0 | 0.00 | ng/uL | Dev (Min) |
| 8) Phenol-d5                | 99  | 0.000 | 4.906  | 0.000 | 0 | 0.00 | ng/uL |           |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 6.222  | 0.000 | 0 | 0.00 | ng/uL |           |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 8.656  | 0.000 | 0 | 0.00 | ng/uL |           |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 10.512 | 0.000 | 0 | 0.00 | ng/uL |           |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 13.357 | 0.000 | 0 | 0.00 | ng/uL |           |

| Target Compounds               |      |       |        |        |          |       |        |        |
|--------------------------------|------|-------|--------|--------|----------|-------|--------|--------|
| Compound                       | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  | QValue |
| 100) 1,4-Dioxane               | 88   | 2.168 | 2.163  | 0.399  | 74961    | 21.48 | ng/uL  | 72     |
| 101) Methyl methacrylate       | 100  | 2.168 | 2.168  | 0.399  | 35267    | 20.84 | ng/uL# | 48     |
| 102) Ethyl methacrylate        | 69   | 2.826 | 2.821  | 0.520  | 162481   | 21.46 | ng/uL  | 98     |
| 103) 2-Picoline                | 93   | 3.152 | 3.152  | 0.580  | 206899   | 21.66 | ng/uL  | 99     |
| 104) N-Nitrosomethylethylamine | 88   | 3.254 | 3.249  | 0.599  | 79263    | 21.48 | ng/uL  | 94     |
| 105) Methyl methanesulfonate   | 80   | 3.575 | 3.575  | 0.658  | 134217   | 21.61 | ng/uL  | 97     |
| 106) N-Nitrosodiethylamine     | 102  | 4.040 | 4.040  | 0.743  | 89477    | 21.70 | ng/uL  | 95     |
| 107) 2-Butoxyethanol           | 57   | 4.120 | 4.121  | 0.758  | 237942   | 22.19 | ng/uL  | 98     |
| 108) Ethyl methanesulfonate    | 79   | 4.398 | 4.399  | 0.809  | 139965   | 21.65 | ng/uL  | 100    |
| 109) Benzaldehyde              | 77   | 4.842 | 4.843  | 0.891  | 167137   | 22.25 | ng/uL  | 96     |
| 110) Pentachloroethane         | 167  | 5.051 | 5.051  | 0.929  | 82234    | 21.46 | ng/uL  | 96     |
| 111) N-Nitrosopyrrolidine      | 100  | 5.965 | 5.971  | 1.097  | 89063    | 20.61 | ng/uL  | 92     |
| 112) Acetophenone              | 105  | 6.003 | 6.003  | 1.104  | 236456   | 22.19 | ng/uL  | 98     |
| 113) N-Nitrosomorpholine       | 56   | 6.024 | 6.030  | 1.108  | 146850   | 22.20 | ng/uL  | 100    |
| 114) o-Toluidine               | 106  | 6.051 | 6.051  | 1.113  | 235078   | 22.40 | ng/uL  | 98     |
| 116) N-Nitrosopiperidine       | 114  | 6.452 | 6.453  | 0.895  | 89195    | 20.77 | ng/uL  | 92     |
| 117) a,a-Dimethylphenethyla... | 58   | 6.976 | 6.977  | 0.967  | 641102   | 21.74 | ng/uL  | 100    |
| 118) 2,6-Dichlorophenol        | 162  | 7.324 | 7.324  | 1.016  | 113023   | 20.81 | ng/uL  | 98     |
| 119) Hexachloropropene         | 213  | 7.361 | 7.362  | 1.021  | 110317   | 23.10 | ng/uL  | 98     |
| 120) Caprolactam               | 113  | 7.757 | 7.763  | 1.076  | 51466    | 21.81 | ng/uL# | 63     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2918.D  
Acq On : 29 Sep 2016 18:09  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-16|ICAL|1|SVM|1|A3  
Misc : |MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 30 09:57:20 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

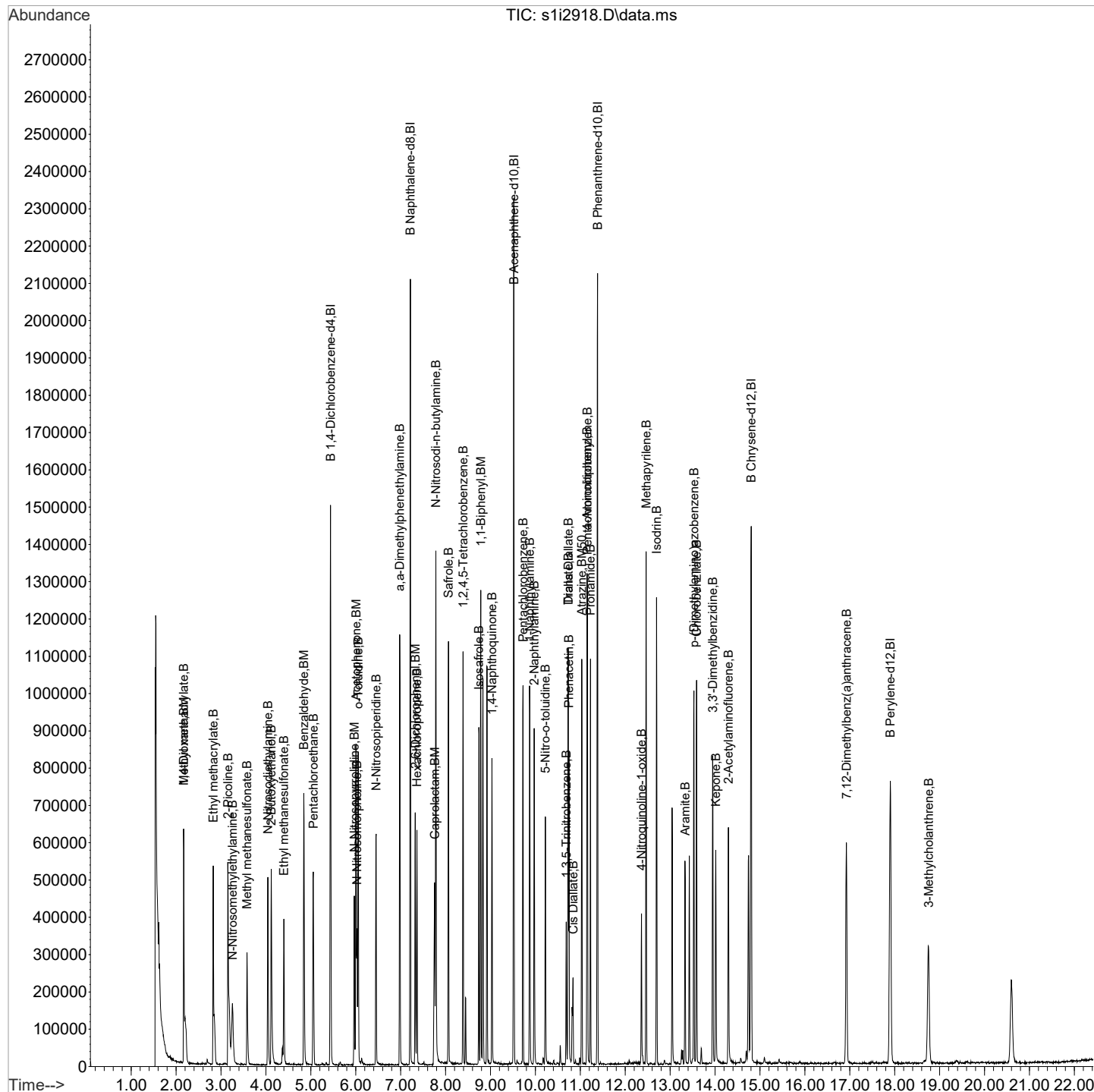
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 121) N-Nitrosodi-n-butylamine  | 84   | 7.784  | 7.784  | 1.079  | 139010   | 20.13 | ng/uL | 95  |
| 122) Safrole                   | 162  | 8.062  | 8.063  | 1.118  | 131909   | 21.85 | ng/uL | 100 |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.388  | 8.389  | 0.881  | 189504   | 22.62 | ng/uL | 97  |
| 125) 1,1-Biphenyl              | 154  | 8.784  | 8.785  | 0.923  | 367512   | 21.83 | ng/uL | 97  |
| 126) Isosafrole                | 162  | 8.741  | 8.742  | 0.919  | 133234   | 22.34 | ng/uL | 100 |
| 127) 1,4-Naphthoquinone        | 158  | 9.030  | 9.031  | 0.949  | 112483   | 22.87 | ng/uL | 95  |
| 128) Pentachlorobenzene        | 250  | 9.726  | 9.726  | 1.022  | 161294   | 21.90 | ng/uL | 99  |
| 129) 1-Naphthylamine           | 143  | 9.870  | 9.876  | 1.037  | 285236   | 22.45 | ng/uL | 100 |
| 130) 2-Naphthylamine           | 143  | 9.972  | 9.972  | 1.048  | 273288   | 22.62 | ng/uL | 100 |
| 131) 5-Nitro-o-toluidine       | 152  | 10.218 | 10.223 | 1.074  | 90527    | 21.20 | ng/uL | 97  |
| 133) 1,3,5-Trinitrobenzene     | 75   | 10.683 | 10.683 | 0.938  | 97281    | 20.14 | ng/uL | 99  |
| 134) Phenacetin                | 108  | 10.747 | 10.753 | 0.944  | 162471   | 22.12 | ng/uL | 98  |
| 135) Diallate                  | 86   | 10.726 | 10.726 | 0.942  | 152534   | 23.51 | ng/uL | 99  |
| 136) Cis Diallate              | 86   | 10.838 | 10.838 | 0.952  | 29190    | 3.32  | ng/uL | 91  |
| 137) Trans Diallate            | 86   | 10.726 | 10.726 | 0.942  | 152534   | 19.99 | ng/uL | 99  |
| 138) Atrazine                  | 200  | 11.031 | 11.036 | 0.969  | 117733   | 23.60 | ng/uL | 99  |
| 139) 4-Aminobiphenyl           | 169  | 11.148 | 11.149 | 0.979  | 299321   | 21.86 | ng/uL | 99  |
| 140) Pentachloronitrobenzene   | 237  | 11.154 | 11.159 | 0.980  | 59299    | 23.21 | ng/uL | 97  |
| 141) Pronamide                 | 173  | 11.223 | 11.229 | 0.986  | 167969   | 22.73 | ng/uL | 98  |
| 142) 4-Nitroquinoline-1-oxide  | 190  | 12.362 | 12.363 | 1.086  | 28067    | 18.73 | ng/uL | 63  |
| 143) Methapyrilene             | 58   | 12.464 | 12.464 | 1.095  | 387535   | 23.80 | ng/uL | 100 |
| 144) Isodrin                   | 193  | 12.694 | 12.694 | 1.115  | 78564    | 22.64 | ng/uL | 98  |
| 146) Aramite                   | 185  | 13.336 | 13.336 | 0.901  | 39372    | 20.91 | ng/uL | 91  |
| 147) Kepone                    | 272  | 14.015 | 14.016 | 0.947  | 60003    | 22.73 | ng/uL | 95  |
| 148) p-(Dimethylamino)azobe... | 120  | 13.528 | 13.529 | 0.914  | 152694   | 22.21 | ng/uL | 100 |
| 149) Chlorobenzilate           | 251  | 13.587 | 13.588 | 0.918  | 167224   | 22.39 | ng/uL | 98  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 13.946 | 13.951 | 0.942  | 327060   | 22.73 | ng/uL | 99  |
| 151) 2-Acetylaminofluorene     | 181  | 14.293 | 14.299 | 0.966  | 155730   | 18.74 | ng/uL | 96  |
| 153) 7,12-Dimethylbenz(a)an... | 256  | 16.925 | 16.931 | 0.945  | 238543   | 22.62 | ng/uL | 98  |
| 154) 3-Methylcholanthrene      | 269  | 18.754 | 18.760 | 1.048  | 45501    | 21.55 | ng/uL | 96  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2918.D  
Acq On : 29 Sep 2016 18:09  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-16|ICAL|1|SVM|1|A3  
Misc : |MIX[B]  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 30 09:57:20 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2919.D  
Acq On : 29 Sep 2016 18:39  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-15.1|ICAL|1|SVM|1|A4  
Misc : |MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 30 09:56:02 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:57 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 189578   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 619791   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 360911   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.384 | 11.384 | 1.000  | 638024   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.802 | 14.802 | 1.000  | 619211   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 607965   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.802 | 14.796 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 0.000  | 17.957 | 1.000  | 0        | 0.00  | ng/uL | -17.96    |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.802 | 14.801 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |

|                             |     |       |        |       |   |      |       |           |
|-----------------------------|-----|-------|--------|-------|---|------|-------|-----------|
| System Monitoring Compounds |     |       |        |       |   |      |       |           |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.757  | 0.000 | 0 | 0.00 | ng/uL | Dev (Min) |
| 8) Phenol-d5                | 99  | 0.000 | 4.906  | 0.000 | 0 | 0.00 | ng/uL |           |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 6.222  | 0.000 | 0 | 0.00 | ng/uL |           |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 8.656  | 0.000 | 0 | 0.00 | ng/uL |           |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 10.512 | 0.000 | 0 | 0.00 | ng/uL |           |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 13.357 | 0.000 | 0 | 0.00 | ng/uL |           |

| Target Compounds               |      |       |        |        |          |       |       |        |
|--------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| Compound                       | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
| 100) 1,4-Dioxane               | 88   | 2.163 | 2.163  | 0.398  | 98862    | 38.91 | ng/uL | 100    |
| 101) Methyl methacrylate       | 100  | 2.168 | 2.168  | 0.399  | 48365    | 39.27 | ng/uL | 100    |
| 102) Ethyl methacrylate        | 69   | 2.821 | 2.821  | 0.519  | 222236   | 40.32 | ng/uL | 100    |
| 103) 2-Picoline                | 93   | 3.152 | 3.152  | 0.580  | 275649   | 39.64 | ng/uL | 100    |
| 104) N-Nitrosomethylethylamine | 88   | 3.249 | 3.249  | 0.598  | 103414   | 38.50 | ng/uL | 100    |
| 105) Methyl methanesulfonate   | 80   | 3.575 | 3.575  | 0.658  | 184196   | 40.74 | ng/uL | 100    |
| 106) N-Nitrosodiethylamine     | 102  | 4.040 | 4.040  | 0.743  | 120168   | 40.05 | ng/uL | 100    |
| 107) 2-Butoxyethanol           | 57   | 4.121 | 4.121  | 0.758  | 320635   | 41.08 | ng/uL | 100    |
| 108) Ethyl methanesulfonate    | 79   | 4.399 | 4.399  | 0.809  | 191577   | 40.72 | ng/uL | 100    |
| 109) Benzaldehyde              | 77   | 4.843 | 4.843  | 0.891  | 215061   | 39.33 | ng/uL | 100    |
| 110) Pentachloroethane         | 167  | 5.051 | 5.051  | 0.929  | 112238   | 40.23 | ng/uL | 100    |
| 111) N-Nitrosopyrrolidine      | 100  | 5.971 | 5.971  | 1.098  | 128953   | 41.00 | ng/uL | 100    |
| 112) Acetophenone              | 105  | 6.003 | 6.003  | 1.104  | 320078   | 41.27 | ng/uL | 100    |
| 113) N-Nitrosomorpholine       | 56   | 6.030 | 6.030  | 1.109  | 198760   | 41.29 | ng/uL | 100    |
| 114) o-Toluidine               | 106  | 6.051 | 6.051  | 1.113  | 310609   | 40.67 | ng/uL | 100    |
| 116) N-Nitrosopiperidine       | 114  | 6.453 | 6.453  | 0.895  | 127869   | 40.72 | ng/uL | 100    |
| 117) a,a-Dimethylphenethyla... | 58   | 6.977 | 6.977  | 0.967  | 873616   | 40.51 | ng/uL | 100    |
| 118) 2,6-Dichlorophenol        | 162  | 7.324 | 7.324  | 1.016  | 160389   | 40.37 | ng/uL | 100    |
| 119) Hexachloropropene         | 213  | 7.362 | 7.362  | 1.021  | 156362   | 44.76 | ng/uL | 100    |
| 120) Caprolactam               | 113  | 7.763 | 7.763  | 1.076  | 69100    | 40.03 | ng/uL | 100    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2919.D  
Acq On : 29 Sep 2016 18:39  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-15.1|ICAL|1|SVM|1|A4  
Misc : |MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 30 09:56:02 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:57 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units     |
|--------------------------------|------|--------|--------|--------|----------|-------|-----------|
| 121) N-Nitrosodi-n-butylamine  | 84   | 7.784  | 7.784  | 1.079  | 191941   | 38.01 | ng/uL 100 |
| 122) Safrole                   | 162  | 8.063  | 8.063  | 1.118  | 178180   | 40.36 | ng/uL 100 |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.389  | 8.389  | 0.881  | 255659   | 40.69 | ng/uL 100 |
| 125) 1,1-Biphenyl              | 154  | 8.785  | 8.785  | 0.923  | 483996   | 42.66 | ng/uL 100 |
| 126) Isosafrole                | 162  | 8.742  | 8.742  | 0.919  | 178305   | 39.85 | ng/uL 100 |
| 127) 1,4-Naphthoquinone        | 158  | 9.031  | 9.031  | 0.949  | 160988   | 43.64 | ng/uL 100 |
| 128) Pentachlorobenzene        | 250  | 9.726  | 9.726  | 1.022  | 227395   | 41.16 | ng/uL 100 |
| 129) 1-Naphthylamine           | 143  | 9.876  | 9.876  | 1.038  | 400144   | 41.98 | ng/uL 100 |
| 130) 2-Naphthylamine           | 143  | 9.972  | 9.972  | 1.048  | 378158   | 41.73 | ng/uL 100 |
| 131) 5-Nitro-o-toluidine       | 152  | 10.223 | 10.223 | 1.074  | 134589   | 42.03 | ng/uL 100 |
| 133) 1,3,5-Trinitrobenzene     | 75   | 10.683 | 10.683 | 0.938  | 156012   | 41.26 | ng/uL 100 |
| 134) Phenacetin                | 108  | 10.753 | 10.753 | 0.945  | 233014   | 40.53 | ng/uL 100 |
| 135) Diallate                  | 86   | 10.726 | 10.726 | 0.942  | 202329   | 39.85 | ng/uL 100 |
| 136) Cis Diallate              | 86   | 10.838 | 10.838 | 0.952  | 38045    | 5.52  | ng/uL 100 |
| 137) Trans Diallate            | 86   | 10.726 | 10.726 | 0.942  | 202329   | 33.87 | ng/uL 100 |
| 138) Atrazine                  | 200  | 11.036 | 11.036 | 0.969  | 162151   | 41.52 | ng/uL 100 |
| 139) 4-Aminobiphenyl           | 169  | 11.149 | 11.149 | 0.979  | 426559   | 39.79 | ng/uL 100 |
| 140) Pentachloronitrobenzene   | 237  | 11.159 | 11.159 | 0.980  | 77894    | 38.96 | ng/uL 100 |
| 141) Pronamide                 | 173  | 11.229 | 11.229 | 0.986  | 228968   | 39.59 | ng/uL 100 |
| 142) 4-Nitroquinoline-1-oxide  | 190  | 12.363 | 12.363 | 1.086  | 59843    | 40.99 | ng/uL 100 |
| 143) Methapyrilene             | 58   | 12.464 | 12.464 | 1.095  | 522872   | 41.03 | ng/uL 100 |
| 144) Isodrin                   | 193  | 12.694 | 12.694 | 1.115  | 109651   | 40.36 | ng/uL 100 |
| 146) Aramite                   | 185  | 13.336 | 13.336 | 0.901  | 63296    | 39.53 | ng/uL 100 |
| 147) Kepone                    | 272  | 14.016 | 14.016 | 0.947  | 86047    | 38.33 | ng/uL 100 |
| 148) p-(Dimethylamino)azobe... | 120  | 13.529 | 13.529 | 0.914  | 229792   | 39.30 | ng/uL 100 |
| 149) Chlorobenzilate           | 251  | 13.588 | 13.588 | 0.918  | 245562   | 38.65 | ng/uL 100 |
| 150) 3,3'-Dimethylbenzidine    | 212  | 13.951 | 13.951 | 0.943  | 467817   | 38.24 | ng/uL 100 |
| 151) 2-Acetylaminofluorene     | 181  | 14.299 | 14.299 | 0.966  | 294747   | 41.71 | ng/uL 100 |
| 153) 7,12-Dimethylbenz(a)an... | 256  | 16.931 | 16.931 | 0.946  | 406342   | 40.10 | ng/uL 100 |
| 154) 3-Methylcholanthrene      | 269  | 18.760 | 18.760 | 1.048  | 82414    | 40.62 | ng/uL 100 |

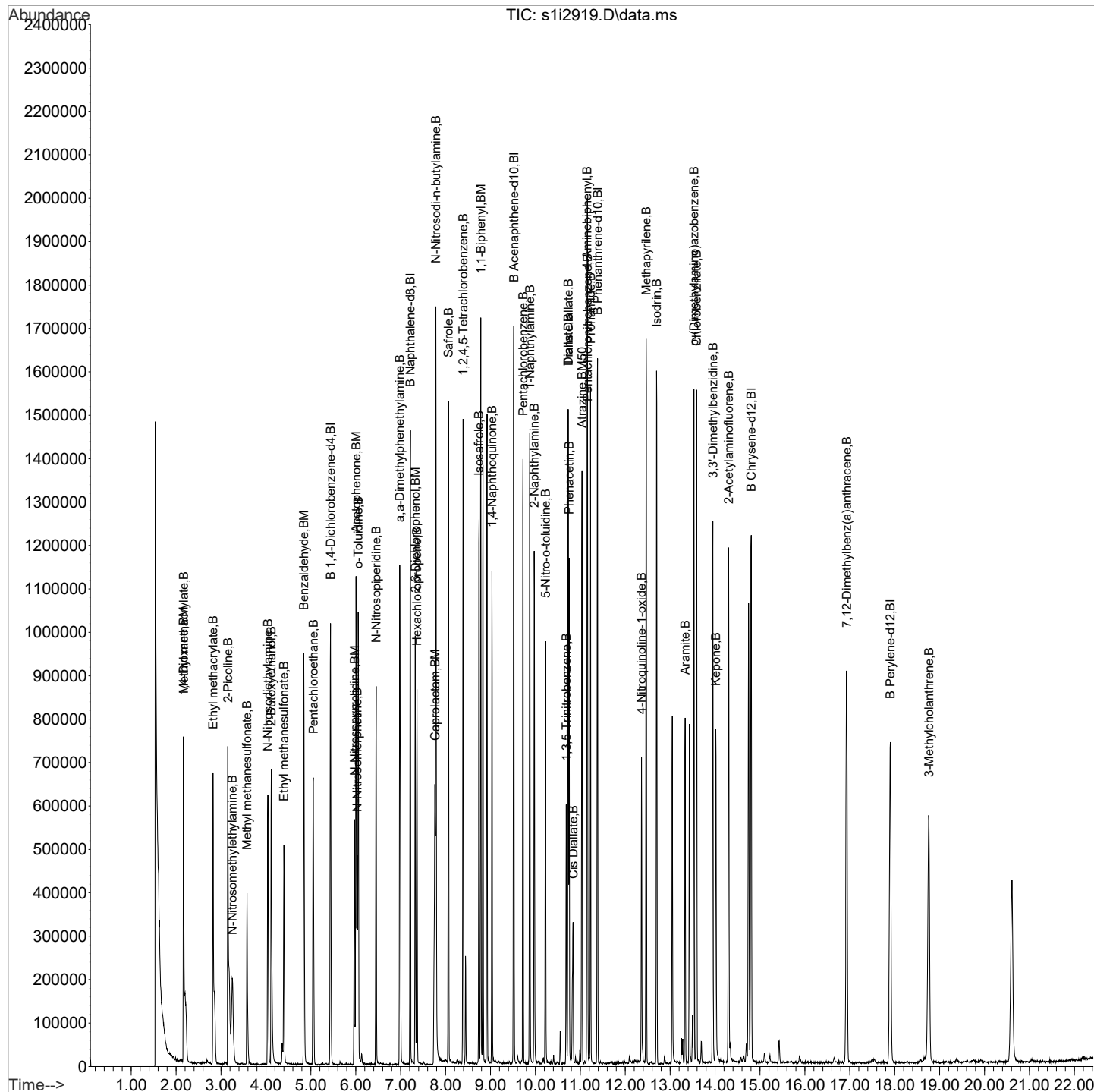
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2919.D  
Acq On : 29 Sep 2016 18:39  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-15.1|ICAL|1|SVM|1|A4  
Misc : |MIX[B]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 30 09:56:02 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:57 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2920.D  
Acq On : 29 Sep 2016 19:09  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-14|ICAL|1|SVM|1|A5  
Misc : |MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 30 09:58:05 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 222341   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 722255   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 414991   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.384 | 11.384 | 1.000  | 675519   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.802 | 14.802 | 1.000  | 563989   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 555826   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.802 | 14.796 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 0.000  | 17.957 | 1.000  | 0        | 0.00  | ng/uL | -17.96    |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.802 | 14.801 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |

|                             |     |       |        |       |   |      |       |           |
|-----------------------------|-----|-------|--------|-------|---|------|-------|-----------|
| System Monitoring Compounds |     |       |        |       |   |      |       |           |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.757  | 0.000 | 0 | 0.00 | ng/uL | Dev (Min) |
| 8) Phenol-d5                | 99  | 0.000 | 4.906  | 0.000 | 0 | 0.00 | ng/uL |           |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 6.222  | 0.000 | 0 | 0.00 | ng/uL |           |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 8.656  | 0.000 | 0 | 0.00 | ng/uL |           |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 10.512 | 0.000 | 0 | 0.00 | ng/uL |           |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 13.357 | 0.000 | 0 | 0.00 | ng/uL |           |

| Target Compounds               |      |       |        |        |          |       |        |        |
|--------------------------------|------|-------|--------|--------|----------|-------|--------|--------|
| Compound                       | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  | QValue |
| 100) 1,4-Dioxane               | 88   | 2.168 | 2.163  | 0.399  | 146643   | 49.21 | ng/uL  | 67     |
| 101) Methyl methacrylate       | 100  | 2.168 | 2.168  | 0.399  | 72385    | 50.12 | ng/uL# | 33     |
| 102) Ethyl methacrylate        | 69   | 2.826 | 2.821  | 0.520  | 321148   | 49.68 | ng/uL  | 99     |
| 103) 2-Picoline                | 93   | 3.152 | 3.152  | 0.580  | 411332   | 50.44 | ng/uL  | 98     |
| 104) N-Nitrosomethylethylamine | 88   | 3.259 | 3.249  | 0.600  | 153248   | 48.65 | ng/uL  | 92     |
| 105) Methyl methanesulfonate   | 80   | 3.580 | 3.575  | 0.659  | 262479   | 49.50 | ng/uL  | 97     |
| 106) N-Nitrosodiethylamine     | 102  | 4.046 | 4.040  | 0.744  | 177279   | 50.37 | ng/uL  | 96     |
| 107) 2-Butoxyethanol           | 57   | 4.120 | 4.121  | 0.758  | 452951   | 49.48 | ng/uL  | 99     |
| 108) Ethyl methanesulfonate    | 79   | 4.404 | 4.399  | 0.810  | 273949   | 49.64 | ng/uL  | 97     |
| 109) Benzaldehyde              | 77   | 4.848 | 4.843  | 0.892  | 316762   | 49.39 | ng/uL  | 98     |
| 110) Pentachloroethane         | 167  | 5.051 | 5.051  | 0.929  | 164044   | 50.14 | ng/uL  | 99     |
| 111) N-Nitrosopyrrolidine      | 100  | 5.976 | 5.971  | 1.099  | 186064   | 50.44 | ng/uL  | 100    |
| 112) Acetophenone              | 105  | 6.009 | 6.003  | 1.105  | 446760   | 49.12 | ng/uL  | 100    |
| 113) N-Nitrosomorpholine       | 56   | 6.035 | 6.030  | 1.110  | 275612   | 48.82 | ng/uL  | 96     |
| 114) o-Toluidine               | 106  | 6.057 | 6.051  | 1.114  | 432050   | 48.23 | ng/uL  | 98     |
| 116) N-Nitrosopiperidine       | 114  | 6.458 | 6.453  | 0.895  | 180843   | 49.42 | ng/uL  | 98     |
| 117) a,a-Dimethylphenethyla... | 58   | 6.977 | 6.977  | 0.967  | 1185656  | 47.18 | ng/uL  | 98     |
| 118) 2,6-Dichlorophenol        | 162  | 7.324 | 7.324  | 1.016  | 229129   | 49.49 | ng/uL  | 99     |
| 119) Hexachloropropene         | 213  | 7.362 | 7.362  | 1.021  | 209906   | 51.57 | ng/uL  | 99     |
| 120) Caprolactam               | 113  | 7.774 | 7.763  | 1.078  | 101869   | 50.65 | ng/uL  | 91     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2920.D  
Acq On : 29 Sep 2016 19:09  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-14|ICAL|1|SVM|1|A5  
Misc : |MIX[B]  
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 30 09:58:05 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 121) N-Nitrosodi-n-butylamine  | 84   | 7.790  | 7.784  | 1.080  | 292374   | 49.69 | ng/uL | 95  |
| 122) Safrole                   | 162  | 8.062  | 8.063  | 1.118  | 253508   | 49.28 | ng/uL | 100 |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.389  | 8.389  | 0.881  | 360500   | 49.89 | ng/uL | 98  |
| 125) 1,1-Biphenyl              | 154  | 8.784  | 8.785  | 0.923  | 658315   | 51.50 | ng/uL | 99  |
| 126) Isosafrole                | 162  | 8.742  | 8.742  | 0.919  | 252971   | 49.17 | ng/uL | 99  |
| 127) 1,4-Naphthoquinone        | 158  | 9.036  | 9.031  | 0.949  | 219201   | 51.67 | ng/uL | 96  |
| 128) Pentachlorobenzene        | 250  | 9.726  | 9.726  | 1.022  | 314818   | 49.55 | ng/uL | 99  |
| 129) 1-Naphthylamine           | 143  | 9.876  | 9.876  | 1.038  | 524523   | 47.86 | ng/uL | 99  |
| 130) 2-Naphthylamine           | 143  | 9.977  | 9.972  | 1.048  | 503624   | 48.33 | ng/uL | 98  |
| 131) 5-Nitro-o-toluidine       | 152  | 10.223 | 10.223 | 1.074  | 173600   | 47.15 | ng/uL | 97  |
| 133) 1,3,5-Trinitrobenzene     | 75   | 10.689 | 10.683 | 0.939  | 203391   | 50.80 | ng/uL | 100 |
| 134) Phenacetin                | 108  | 10.758 | 10.753 | 0.945  | 295282   | 48.51 | ng/uL | 99  |
| 135) Diallate                  | 86   | 10.726 | 10.726 | 0.942  | 282806   | 52.60 | ng/uL | 99  |
| 136) Cis Diallate              | 86   | 10.838 | 10.838 | 0.952  | 56256    | 7.71  | ng/uL | 98  |
| 137) Trans Diallate            | 86   | 10.726 | 10.726 | 0.942  | 282806   | 44.71 | ng/uL | 99  |
| 138) Atrazine                  | 200  | 11.042 | 11.036 | 0.970  | 218576   | 52.86 | ng/uL | 98  |
| 139) 4-Aminobiphenyl           | 169  | 11.154 | 11.149 | 0.980  | 520892   | 45.89 | ng/uL | 97  |
| 140) Pentachloronitrobenzene   | 237  | 11.159 | 11.159 | 0.980  | 111669   | 52.75 | ng/uL | 96  |
| 141) Pronamide                 | 173  | 11.229 | 11.229 | 0.986  | 309729   | 50.59 | ng/uL | 99  |
| 142) 4-Nitroquinoline-1-oxide  | 190  | 12.368 | 12.363 | 1.086  | 80029    | 50.25 | ng/uL | 89  |
| 143) Methapyrilene             | 58   | 12.464 | 12.464 | 1.095  | 669903   | 49.65 | ng/uL | 98  |
| 144) Isodrin                   | 193  | 12.700 | 12.694 | 1.116  | 146049   | 50.77 | ng/uL | 98  |
| 146) Aramite                   | 185  | 13.336 | 13.336 | 0.901  | 82432    | 56.52 | ng/uL | 95  |
| 147) Kepone                    | 272  | 14.021 | 14.016 | 0.947  | 115893   | 56.68 | ng/uL | 98  |
| 148) p-(Dimethylamino)azobe... | 120  | 13.529 | 13.529 | 0.914  | 278094   | 52.22 | ng/uL | 100 |
| 149) Chlorobenzilate           | 251  | 13.588 | 13.588 | 0.918  | 311786   | 53.88 | ng/uL | 98  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 13.951 | 13.951 | 0.943  | 518298   | 46.51 | ng/uL | 99  |
| 151) 2-Acetylaminofluorene     | 181  | 14.299 | 14.299 | 0.966  | 336993   | 52.36 | ng/uL | 98  |
| 153) 7,12-Dimethylbenz(a)an... | 256  | 16.936 | 16.931 | 0.946  | 451214   | 48.70 | ng/uL | 98  |
| 154) 3-Methylcholanthrene      | 269  | 18.760 | 18.760 | 1.048  | 91996    | 49.60 | ng/uL | 94  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2921.D  
Acq On : 29 Sep 2016 19:38  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-13|ICAL|1|SVM|1|A6  
Misc : |MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 30 09:58:33 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards             |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4    | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8           | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10         | 164  | 9.517  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10         | 188  | 11.384 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12             | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12             | 264  | 17.909 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 221383   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 720556   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10        | 164  | 9.517  | 9.517  | 1.000  | 426081   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 740682   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12            | 240  | 14.802 | 14.802 | 1.000  | 654442   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12            | 264  | 17.909 | 17.904 | 1.000  | 630599   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10        | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10        | 188  | 11.384 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12            | 240  | 14.802 | 14.796 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12            | 264  | 0.000  | 17.957 | 1.000  | 0        | 0.00  | ng/uL | -17.96    |
| 173) F 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10        | 188  | 11.384 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12            | 240  | 14.802 | 14.801 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds    |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol              | 112  | 0.000  | 3.757  | 0.000  | 0        | 0.00  | ng/uL |           |
| 8) Phenol-d5                   | 99   | 0.000  | 4.906  | 0.000  | 0        | 0.00  | ng/uL |           |
| 25) Nitrobenzene-d5            | 82   | 0.000  | 6.222  | 0.000  | 0        | 0.00  | ng/uL |           |
| 47) 2-Fluorobiphenyl           | 172  | 0.000  | 8.656  | 0.000  | 0        | 0.00  | ng/uL |           |
| 66) 2,4,6-Tribromophenol       | 330  | 0.000  | 10.512 | 0.000  | 0        | 0.00  | ng/uL |           |
| 83) p-Terphenyl-d14            | 244  | 0.000  | 13.357 | 0.000  | 0        | 0.00  | ng/uL |           |
| Target Compounds               |      |        |        |        |          |       |       | QValue    |
| 100) 1,4-Dioxane               | 88   | 2.168  | 2.163  | 0.399  | 231259   | 77.95 | ng/uL | 99        |
| 101) Methyl methacrylate       | 100  | 2.168  | 2.168  | 0.399  | 114022   | 79.29 | ng/uL | 94        |
| 102) Ethyl methacrylate        | 69   | 2.821  | 2.821  | 0.519  | 502663   | 78.10 | ng/uL | 96        |
| 103) 2-Picoline                | 93   | 3.152  | 3.152  | 0.580  | 617666   | 76.06 | ng/uL | 98        |
| 104) N-Nitrosomethylethylamine | 88   | 3.259  | 3.249  | 0.600  | 242615   | 77.36 | ng/uL | 90        |
| 105) Methyl methanesulfonate   | 80   | 3.586  | 3.575  | 0.660  | 404562   | 76.62 | ng/uL | 96        |
| 106) N-Nitrosodiethylamine     | 102  | 4.051  | 4.040  | 0.745  | 275303   | 78.57 | ng/uL | 96        |
| 107) 2-Butoxyethanol           | 57   | 4.126  | 4.121  | 0.759  | 691491   | 75.87 | ng/uL | 99        |
| 108) Ethyl methanesulfonate    | 79   | 4.415  | 4.399  | 0.812  | 429588   | 78.18 | ng/uL | 99        |
| 109) Benzaldehyde              | 77   | 4.848  | 4.843  | 0.892  | 465642   | 72.92 | ng/uL | 98        |
| 110) Pentachloroethane         | 167  | 5.051  | 5.051  | 0.929  | 253379   | 77.78 | ng/uL | 99        |
| 111) N-Nitrosopyrrolidine      | 100  | 5.987  | 5.971  | 1.101  | 298636   | 81.31 | ng/uL | 97        |
| 112) Acetophenone              | 105  | 6.014  | 6.003  | 1.106  | 677227   | 74.78 | ng/uL | 98        |
| 113) N-Nitrosomorpholine       | 56   | 6.046  | 6.030  | 1.112  | 415678   | 73.95 | ng/uL | 94        |
| 114) o-Toluidine               | 106  | 6.067  | 6.051  | 1.116  | 656380   | 73.59 | ng/uL | 99        |
| 116) N-Nitrosopiperidine       | 114  | 6.463  | 6.453  | 0.896  | 284598   | 77.95 | ng/uL | 98        |
| 117) a,a-Dimethylphenethyla... | 58   | 7.019  | 6.977  | 0.973  | 1969155  | 78.55 | ng/uL | 91        |
| 118) 2,6-Dichlorophenol        | 162  | 7.330  | 7.324  | 1.016  | 373393   | 80.84 | ng/uL | 95        |
| 119) Hexachloropropene         | 213  | 7.367  | 7.362  | 1.022  | 314119   | 77.35 | ng/uL | 99        |
| 120) Caprolactam               | 113  | 7.800  | 7.763  | 1.082  | 158959   | 79.21 | ng/uL | 85        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2921.D  
Acq On : 29 Sep 2016 19:38  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-13|ICAL|1|SVM|1|A6  
Misc : |MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 30 09:58:33 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

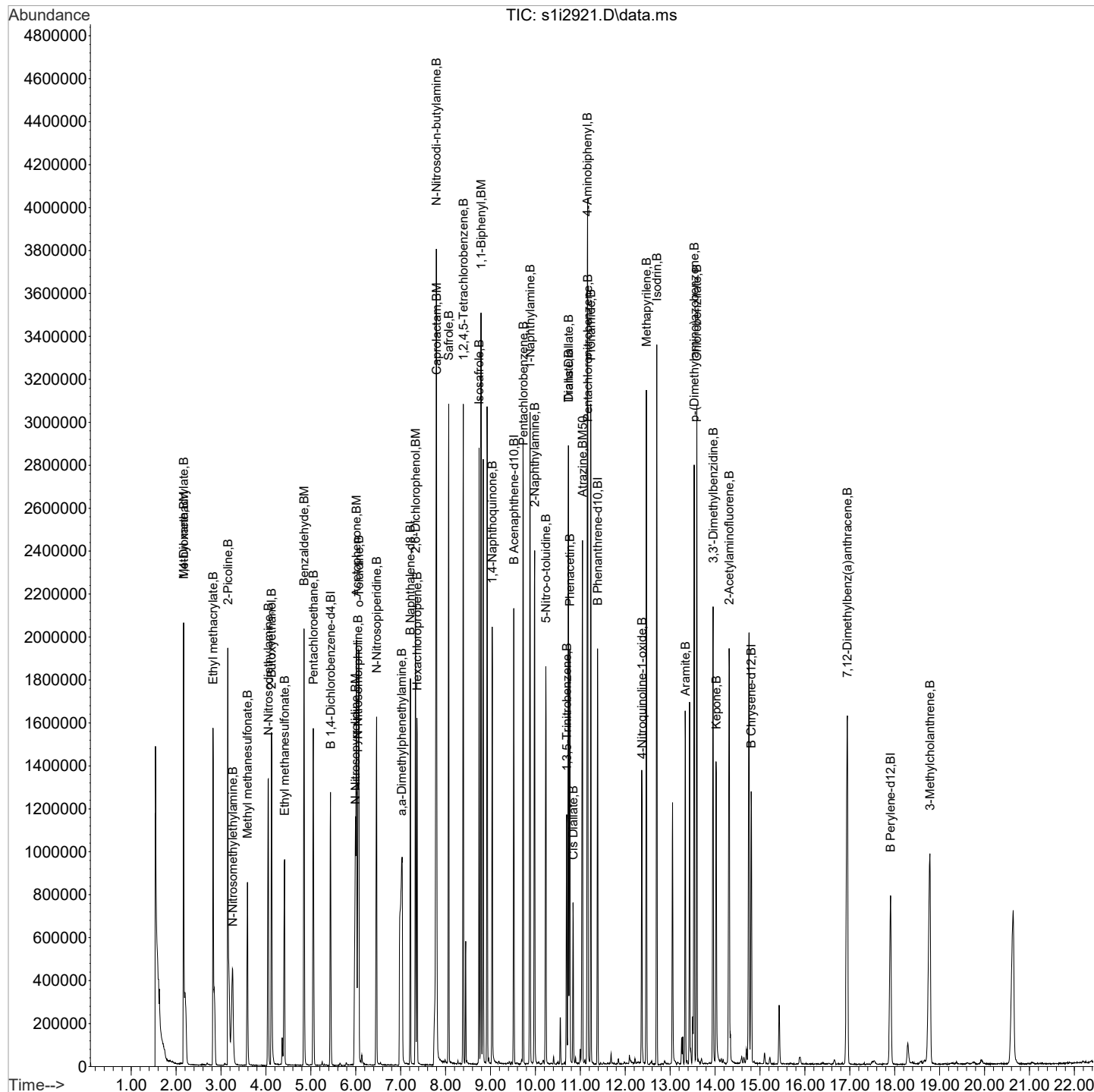
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units     |
|--------------------------------|------|--------|--------|--------|----------|-------|-----------|
| 121) N-Nitrosodi-n-butylamine  | 84   | 7.795  | 7.784  | 1.081  | 470146   | 80.09 | ng/uL 93  |
| 122) Safrole                   | 162  | 8.068  | 8.063  | 1.119  | 392509   | 76.48 | ng/uL 100 |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.394  | 8.389  | 0.882  | 546376   | 73.65 | ng/uL 100 |
| 125) 1,1-Biphenyl              | 154  | 8.790  | 8.785  | 0.924  | 1001393  | 79.06 | ng/uL 98  |
| 126) Isosafrole                | 162  | 8.747  | 8.742  | 0.919  | 400963   | 75.91 | ng/uL 100 |
| 127) 1,4-Naphthoquinone        | 158  | 9.036  | 9.031  | 0.949  | 325181   | 74.66 | ng/uL 97  |
| 128) Pentachlorobenzene        | 250  | 9.731  | 9.726  | 1.022  | 493114   | 75.60 | ng/uL 99  |
| 129) 1-Naphthylamine           | 143  | 9.881  | 9.876  | 1.038  | 837177   | 74.40 | ng/uL 99  |
| 130) 2-Naphthylamine           | 143  | 9.982  | 9.972  | 1.049  | 797275   | 74.52 | ng/uL 98  |
| 131) 5-Nitro-o-toluidine       | 152  | 10.229 | 10.223 | 1.075  | 308222   | 81.53 | ng/uL 99  |
| 133) 1,3,5-Trinitrobenzene     | 75   | 10.694 | 10.683 | 0.939  | 367695   | 83.76 | ng/uL 99  |
| 134) Phenacetin                | 108  | 10.769 | 10.753 | 0.946  | 495502   | 74.24 | ng/uL 95  |
| 135) Diallate                  | 86   | 10.731 | 10.726 | 0.943  | 424873   | 72.07 | ng/uL 96  |
| 136) Cis Diallate              | 86   | 10.838 | 10.838 | 0.952  | 92707    | 11.59 | ng/uL 98  |
| 137) Trans Diallate            | 86   | 10.731 | 10.726 | 0.943  | 424873   | 61.26 | ng/uL 96  |
| 138) Atrazine                  | 200  | 11.047 | 11.036 | 0.970  | 333114   | 73.48 | ng/uL 98  |
| 139) 4-Aminobiphenyl           | 169  | 11.154 | 11.149 | 0.980  | 932383   | 74.92 | ng/uL 96  |
| 140) Pentachloronitrobenzene   | 237  | 11.165 | 11.159 | 0.981  | 170604   | 73.50 | ng/uL 99  |
| 141) Pronamide                 | 173  | 11.234 | 11.229 | 0.987  | 500558   | 74.56 | ng/uL 99  |
| 142) 4-Nitroquinoline-1-oxide  | 190  | 12.373 | 12.363 | 1.087  | 150665   | 82.10 | ng/uL 72  |
| 143) Methapyrilene             | 58   | 12.470 | 12.464 | 1.095  | 944263   | 63.83 | ng/uL 96  |
| 144) Isodrin                   | 193  | 12.700 | 12.694 | 1.116  | 233011   | 73.88 | ng/uL 100 |
| 146) Aramite                   | 185  | 13.341 | 13.336 | 0.901  | 133210   | 78.72 | ng/uL 93  |
| 147) Kepone                    | 272  | 14.026 | 14.016 | 0.948  | 177251   | 74.70 | ng/uL 98  |
| 148) p-(Dimethylamino)azobe... | 120  | 13.534 | 13.529 | 0.914  | 469351   | 75.95 | ng/uL 97  |
| 149) Chlorobenzilate           | 251  | 13.593 | 13.588 | 0.918  | 508671   | 75.76 | ng/uL 99  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 13.957 | 13.951 | 0.943  | 870899   | 67.35 | ng/uL 99  |
| 151) 2-Acetylaminofluorene     | 181  | 14.310 | 14.299 | 0.967  | 621793   | 83.25 | ng/uL 99  |
| 153) 7,12-Dimethylbenz(a)an... | 256  | 16.941 | 16.931 | 0.946  | 803859   | 76.48 | ng/uL 98  |
| 154) 3-Methylcholanthrene      | 269  | 18.781 | 18.760 | 1.049  | 163914   | 77.89 | ng/uL 96  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2921.D  
Acq On : 29 Sep 2016 19:38  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-13|ICAL|1|SVM|1|A6  
Misc : |MIX[B]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 30 09:58:33 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2922.D  
Acq On : 29 Sep 2016 20:08  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-12.1|ICAL|1|SVM|1|A7  
Misc : |MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 30 09:58:52 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.909 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 200492   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 657162   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 389027   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.384 | 11.384 | 1.000  | 685775   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.802 | 14.802 | 1.000  | 632483   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.909 | 17.904 | 1.000  | 601300   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.802 | 14.796 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 0.000  | 17.957 | 1.000  | 0        | 0.00  | ng/uL | -17.96    |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.802 | 14.801 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |

|                             |     |       |        |       |   |      |       |           |
|-----------------------------|-----|-------|--------|-------|---|------|-------|-----------|
| System Monitoring Compounds |     |       |        |       |   |      |       |           |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.757  | 0.000 | 0 | 0.00 | ng/uL | Dev (Min) |
| 8) Phenol-d5                | 99  | 0.000 | 4.906  | 0.000 | 0 | 0.00 | ng/uL |           |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 6.222  | 0.000 | 0 | 0.00 | ng/uL |           |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 8.656  | 0.000 | 0 | 0.00 | ng/uL |           |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 10.512 | 0.000 | 0 | 0.00 | ng/uL |           |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 13.357 | 0.000 | 0 | 0.00 | ng/uL |           |

| Target Compounds               |      |       |        |        |          |       |       |        |
|--------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| Compound                       | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
| 100) 1,4-Dioxane               | 88   | 2.163 | 2.163  | 0.398  | 259857   | 96.71 | ng/uL | 71     |
| 101) Methyl methacrylate       | 100  | 2.168 | 2.168  | 0.399  | 126084   | 96.81 | ng/uL | 95     |
| 102) Ethyl methacrylate        | 69   | 2.821 | 2.821  | 0.519  | 554864   | 95.19 | ng/uL | 96     |
| 103) 2-Picoline                | 93   | 3.152 | 3.152  | 0.580  | 690622   | 93.91 | ng/uL | 99     |
| 104) N-Nitrosomethylethylamine | 88   | 3.259 | 3.249  | 0.600  | 264860   | 93.25 | ng/uL | 90     |
| 105) Methyl methanesulfonate   | 80   | 3.585 | 3.575  | 0.660  | 447229   | 93.53 | ng/uL | 96     |
| 106) N-Nitrosodiethylamine     | 102  | 4.051 | 4.040  | 0.745  | 308445   | 97.20 | ng/uL | 94     |
| 107) 2-Butoxyethanol           | 57   | 4.131 | 4.121  | 0.760  | 758643   | 91.91 | ng/uL | 99     |
| 108) Ethyl methanesulfonate    | 79   | 4.414 | 4.399  | 0.812  | 471301   | 94.71 | ng/uL | 100    |
| 109) Benzaldehyde              | 77   | 4.848 | 4.843  | 0.892  | 486307   | 84.09 | ng/uL | 99     |
| 110) Pentachloroethane         | 167  | 5.051 | 5.051  | 0.929  | 276052   | 93.57 | ng/uL | 99     |
| 111) N-Nitrosopyrrolidine      | 100  | 5.992 | 5.971  | 1.102  | 326365   | 98.12 | ng/uL | 97     |
| 112) Acetophenone              | 105  | 6.014 | 6.003  | 1.106  | 740737   | 90.31 | ng/uL | 100    |
| 113) N-Nitrosomorpholine       | 56   | 6.051 | 6.030  | 1.113  | 454722   | 89.32 | ng/uL | 93     |
| 114) o-Toluidine               | 106  | 6.067 | 6.051  | 1.116  | 726556   | 89.95 | ng/uL | 99     |
| 116) N-Nitrosopiperidine       | 114  | 6.463 | 6.453  | 0.896  | 315107   | 94.63 | ng/uL | 98     |
| 117) a,a-Dimethylphenethyla... | 58   | 7.035 | 6.977  | 0.976  | 2185346  | 95.58 | ng/uL | 81     |
| 118) 2,6-Dichlorophenol        | 162  | 7.335 | 7.324  | 1.017  | 412578   | 97.94 | ng/uL | 96     |
| 119) Hexachloropropene         | 213  | 7.367 | 7.362  | 1.022  | 320587   | 86.56 | ng/uL | 98     |
| 120) Caprolactam               | 113  | 7.805 | 7.763  | 1.082  | 173594   | 94.85 | ng/uL | 86     |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2922.D  
Acq On : 29 Sep 2016 20:08  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-12.1|ICAL|1|SVM|1|A7  
Misc : |MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 30 09:58:52 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

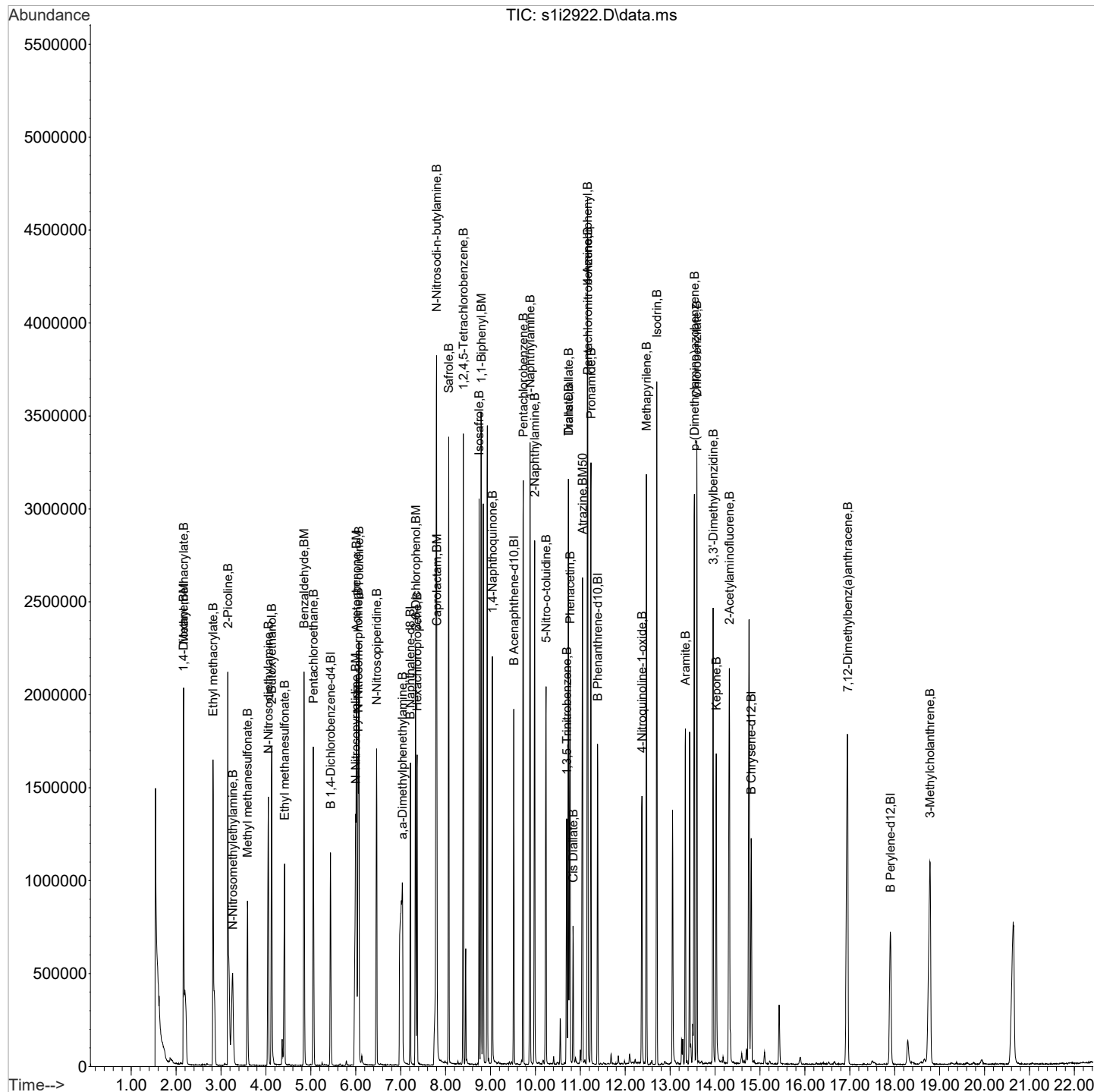
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |     |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|-----|
| 121) N-Nitrosodi-n-butylamine  | 84   | 7.800  | 7.784  | 1.082  | 526240   | 98.29  | ng/uL | 91  |
| 122) Safrole                   | 162  | 8.068  | 8.063  | 1.119  | 433322   | 92.57  | ng/uL | 100 |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.394  | 8.389  | 0.882  | 602360   | 88.93  | ng/uL | 100 |
| 125) 1,1-Biphenyl              | 154  | 8.795  | 8.785  | 0.924  | 1086820  | 95.05  | ng/uL | 97  |
| 126) Isosafrole                | 162  | 8.747  | 8.742  | 0.919  | 446787   | 92.64  | ng/uL | 99  |
| 127) 1,4-Naphthoquinone        | 158  | 9.041  | 9.031  | 0.950  | 353387   | 88.86  | ng/uL | 98  |
| 128) Pentachlorobenzene        | 250  | 9.731  | 9.726  | 1.022  | 546263   | 91.72  | ng/uL | 99  |
| 129) 1-Naphthylamine           | 143  | 9.881  | 9.876  | 1.038  | 912795   | 88.85  | ng/uL | 98  |
| 130) 2-Naphthylamine           | 143  | 9.982  | 9.972  | 1.049  | 888736   | 90.98  | ng/uL | 99  |
| 131) 5-Nitro-o-toluidine       | 152  | 10.234 | 10.223 | 1.075  | 344186   | 99.71  | ng/uL | 98  |
| 133) 1,3,5-Trinitrobenzene     | 75   | 10.694 | 10.683 | 0.939  | 423301   | 104.15 | ng/uL | 97  |
| 134) Phenacetin                | 108  | 10.774 | 10.753 | 0.946  | 586372   | 94.89  | ng/uL | 97  |
| 135) Diallate                  | 86   | 10.731 | 10.726 | 0.943  | 459832   | 84.25  | ng/uL | 98  |
| 136) Cis Diallate              | 86   | 10.838 | 10.838 | 0.952  | 100025   | 13.50  | ng/uL | 99  |
| 137) Trans Diallate            | 86   | 10.731 | 10.726 | 0.943  | 459832   | 71.61  | ng/uL | 98  |
| 138) Atrazine                  | 200  | 11.047 | 11.036 | 0.970  | 356540   | 84.94  | ng/uL | 96  |
| 139) 4-Aminobiphenyl           | 169  | 11.159 | 11.149 | 0.980  | 1067172  | 92.62  | ng/uL | 95  |
| 140) Pentachloronitrobenzene   | 237  | 11.164 | 11.159 | 0.981  | 188386   | 87.66  | ng/uL | 99  |
| 141) Pronamide                 | 173  | 11.239 | 11.229 | 0.987  | 545253   | 87.72  | ng/uL | 99  |
| 142) 4-Nitroquinoline-1-oxide  | 190  | 12.373 | 12.363 | 1.087  | 168701   | 98.07  | ng/uL | 70  |
| 143) Methapyrilene             | 58   | 12.470 | 12.464 | 1.095  | 1038454  | 75.82  | ng/uL | 96  |
| 144) Isodrin                   | 193  | 12.699 | 12.694 | 1.116  | 255692   | 87.56  | ng/uL | 99  |
| 146) Aramite                   | 185  | 13.341 | 13.336 | 0.901  | 153489   | 93.85  | ng/uL | 96  |
| 147) Kepone                    | 272  | 14.026 | 14.016 | 0.948  | 201970   | 88.08  | ng/uL | 98  |
| 148) p-(Dimethylamino)azobe... | 120  | 13.539 | 13.529 | 0.915  | 549338   | 91.98  | ng/uL | 99  |
| 149) Chlorobenzilate           | 251  | 13.593 | 13.588 | 0.918  | 587423   | 90.52  | ng/uL | 99  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 13.956 | 13.951 | 0.943  | 987511   | 79.02  | ng/uL | 98  |
| 151) 2-Acetylaminofluorene     | 181  | 14.315 | 14.299 | 0.967  | 725043   | 100.45 | ng/uL | 98  |
| 153) 7,12-Dimethylbenz(a)an... | 256  | 16.952 | 16.931 | 0.947  | 928409   | 92.63  | ng/uL | 99  |
| 154) 3-Methylcholanthrene      | 269  | 18.781 | 18.760 | 1.049  | 189655   | 94.51  | ng/uL | 96  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2922.D  
Acq On : 29 Sep 2016 20:08  
Operator : JLD1  
InstName : MSD1  
Sample : WBN160921-12.1 | ICAL | 1 | SVM | 1 | A7  
Misc : MIX[B]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 30 09:58:52 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2923.D  
Acq On : 29 Sep 2016 20:38  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-11|ICAL|1|SVM|1|A8  
Misc : |MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 30 09:59:15 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.389 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.801 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.909 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 218530   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 686227   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 418348   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.389 | 11.384 | 1.000  | 729032   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.801 | 14.802 | 1.000  | 631696   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.909 | 17.904 | 1.000  | 605977   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.389 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.01      |
| 167) D Chrysene-d12           | 240  | 14.801 | 14.796 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 0.000  | 17.957 | 1.000  | 0        | 0.00  | ng/uL | -17.96    |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.389 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.01      |
| 177) J Chrysene-d12           | 240  | 14.801 | 14.801 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |

|                             |     |       |        |       |    |      |       |           |
|-----------------------------|-----|-------|--------|-------|----|------|-------|-----------|
| System Monitoring Compounds |     |       |        |       |    |      |       |           |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.757  | 0.000 | 0  | 0.00 | ng/uL | Dev (Min) |
| 8) Phenol-d5                | 99  | 0.000 | 4.906  | 0.000 | 0  | 0.00 | ng/uL |           |
| 25) Nitrobenzene-d5         | 82  | 6.147 | 6.222  | 0.852 | 0d | 0.00 | ng/uL |           |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 8.656  | 0.000 | 0  | 0.00 | ng/uL |           |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 10.512 | 0.000 | 0  | 0.00 | ng/uL |           |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 13.357 | 0.000 | 0  | 0.00 | ng/uL |           |

| Target Compounds               |      |       |        |        |          |        |        |        |
|--------------------------------|------|-------|--------|--------|----------|--------|--------|--------|
| Compound                       | QIon | R.T.  | Exp RT | Rel RT | Response | Conc   | Units  | QValue |
| 100) 1,4-Dioxane               | 88   | 2.163 | 2.163  | 0.398  | 321243   | 109.69 | ng/uL  | 70     |
| 101) Methyl methacrylate       | 100  | 2.168 | 2.168  | 0.399  | 162273   | 114.31 | ng/uL# | 65     |
| 102) Ethyl methacrylate        | 69   | 2.820 | 2.821  | 0.519  | 704784   | 110.93 | ng/uL  | 94     |
| 103) 2-Picoline                | 93   | 3.152 | 3.152  | 0.580  | 861773   | 107.51 | ng/uL  | 99     |
| 104) N-Nitrosomethylethylamine | 88   | 3.259 | 3.249  | 0.600  | 342385   | 110.59 | ng/uL  | 87     |
| 105) Methyl methanesulfonate   | 80   | 3.591 | 3.575  | 0.661  | 549160   | 105.37 | ng/uL  | 94     |
| 106) N-Nitrosodiethylamine     | 102  | 4.056 | 4.040  | 0.746  | 386627   | 111.78 | ng/uL  | 94     |
| 107) 2-Butoxyethanol           | 57   | 4.136 | 4.121  | 0.761  | 947603   | 105.32 | ng/uL  | 99     |
| 108) Ethyl methanesulfonate    | 79   | 4.420 | 4.399  | 0.813  | 597077   | 110.09 | ng/uL  | 100    |
| 109) Benzaldehyde              | 77   | 4.848 | 4.843  | 0.892  | 553365   | 87.79  | ng/uL  | 98     |
| 110) Pentachloroethane         | 167  | 5.051 | 5.051  | 0.929  | 349731   | 108.76 | ng/uL  | 98     |
| 111) N-Nitrosopyrrolidine      | 100  | 6.003 | 5.971  | 1.104  | 413752   | 114.13 | ng/uL  | 93     |
| 112) Acetophenone              | 105  | 6.019 | 6.003  | 1.107  | 943056   | 105.49 | ng/uL  | 98     |
| 113) N-Nitrosomorpholine       | 56   | 6.056 | 6.030  | 1.114  | 571709   | 103.03 | ng/uL  | 93     |
| 114) o-Toluidine               | 106  | 6.072 | 6.051  | 1.117  | 918155   | 104.28 | ng/uL  | 99     |
| 116) N-Nitrosopiperidine       | 114  | 6.468 | 6.453  | 0.897  | 409413   | 117.75 | ng/uL  | 94     |
| 117) a,a-Dimethylphenethyla... | 58   | 7.024 | 6.977  | 0.974  | 2757717  | 115.51 | ng/uL  | 100    |
| 118) 2,6-Dichlorophenol        | 162  | 7.335 | 7.324  | 1.017  | 527426   | 119.90 | ng/uL  | 97     |
| 119) Hexachloropropene         | 213  | 7.367 | 7.362  | 1.022  | 352692   | 91.20  | ng/uL  | 100    |
| 120) Caprolactam               | 113  | 7.821 | 7.763  | 1.085  | 220986   | 115.63 | ng/uL# | 84     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2923.D  
Acq On : 29 Sep 2016 20:38  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-11|ICAL|1|SVM|1|A8  
Misc : |MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 30 09:59:15 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

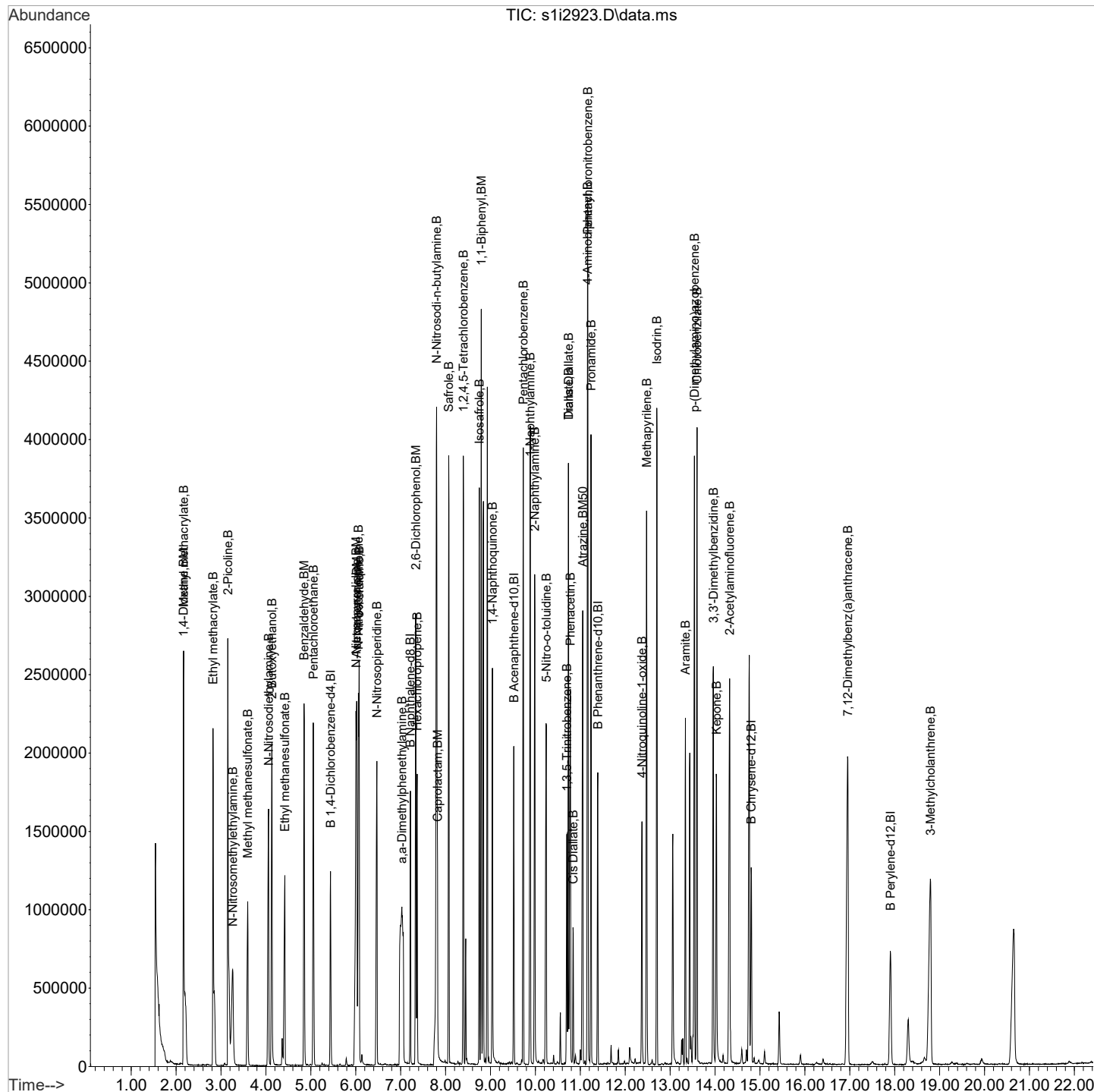
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |       |
|--------------------------------|------|--------|--------|--------|----------|--------|-------|-------|
| 121) N-Nitrosodi-n-butylamine  | 84   | 7.800  | 7.784  | 1.082  | 682643   | 122.10 | ng/uL | 91 A  |
| 122) Safrole                   | 162  | 8.067  | 8.063  | 1.119  | 538975   | 110.27 | ng/uL | 99    |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.394  | 8.389  | 0.882  | 748812   | 102.80 | ng/uL | 100   |
| 125) 1,1-Biphenyl              | 154  | 8.795  | 8.785  | 0.924  | 1359584  | 111.51 | ng/uL | 96    |
| 126) Isosafrole                | 162  | 8.752  | 8.742  | 0.920  | 559705   | 107.91 | ng/uL | 97    |
| 127) 1,4-Naphthoquinone        | 158  | 9.041  | 9.031  | 0.950  | 420269   | 98.28  | ng/uL | 99    |
| 128) Pentachlorobenzene        | 250  | 9.731  | 9.726  | 1.022  | 684512   | 106.88 | ng/uL | 98    |
| 129) 1-Naphthylamine           | 143  | 9.881  | 9.876  | 1.038  | 1114025  | 100.84 | ng/uL | 100   |
| 130) 2-Naphthylamine           | 143  | 9.982  | 9.972  | 1.049  | 1072646  | 102.11 | ng/uL | 98    |
| 131) 5-Nitro-o-toluidine       | 152  | 10.239 | 10.223 | 1.076  | 423807   | 114.18 | ng/uL | 96    |
| 133) 1,3,5-Trinitrobenzene     | 75   | 10.694 | 10.683 | 0.939  | 514271   | 119.03 | ng/uL | 99    |
| 134) Phenacetin                | 108  | 10.779 | 10.753 | 0.946  | 719010   | 109.45 | ng/uL | 96    |
| 135) Diallate                  | 86   | 10.731 | 10.726 | 0.942  | 587922   | 101.33 | ng/uL | 98    |
| 136) Cis Diallate              | 86   | 10.838 | 10.838 | 0.952  | 128079   | 16.26  | ng/uL | 98    |
| 137) Trans Diallate            | 86   | 10.731 | 10.726 | 0.942  | 587922   | 86.13  | ng/uL | 98    |
| 138) Atrazine                  | 200  | 11.052 | 11.036 | 0.970  | 429042   | 96.15  | ng/uL | 96    |
| 139) 4-Aminobiphenyl           | 169  | 11.159 | 11.149 | 0.980  | 1292056  | 105.48 | ng/uL | 93    |
| 140) Pentachloronitrobenzene   | 237  | 11.164 | 11.159 | 0.980  | 230978   | 101.10 | ng/uL | 97    |
| 141) Pronamide                 | 173  | 11.239 | 11.229 | 0.987  | 694834   | 105.15 | ng/uL | 99    |
| 142) 4-Nitroquinoline-1-oxide  | 190  | 12.373 | 12.363 | 1.086  | 178047   | 97.40  | ng/uL | 68    |
| 143) Methapyrilene             | 58   | 12.475 | 12.464 | 1.095  | 1251258  | 85.93  | ng/uL | 96    |
| 144) Isodrin                   | 193  | 12.699 | 12.694 | 1.115  | 323095   | 104.08 | ng/uL | 98    |
| 146) Aramite                   | 185  | 13.341 | 13.336 | 0.901  | 183581   | 112.39 | ng/uL | 98    |
| 147) Kepone                    | 272  | 14.031 | 14.016 | 0.948  | 248738   | 108.61 | ng/uL | 95    |
| 148) p-(Dimethylamino)azobe... | 120  | 13.539 | 13.529 | 0.915  | 663622   | 111.25 | ng/uL | 99    |
| 149) Chlorobenzilate           | 251  | 13.598 | 13.588 | 0.919  | 715176   | 110.34 | ng/uL | 97    |
| 150) 3,3'-Dimethylbenzidine    | 212  | 13.962 | 13.951 | 0.943  | 1131355  | 90.64  | ng/uL | 100 A |
| 151) 2-Acetylaminofluorene     | 181  | 14.320 | 14.299 | 0.967  | 867676   | 120.36 | ng/uL | 98 A  |
| 153) 7,12-Dimethylbenz(a)an... | 256  | 16.957 | 16.931 | 0.947  | 1083670  | 107.29 | ng/uL | 98    |
| 154) 3-Methylcholanthrene      | 269  | 18.791 | 18.760 | 1.049  | 220170   | 108.87 | ng/uL | 99    |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2923.D  
Acq On : 29 Sep 2016 20:38  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160921-11|ICAL|1|SVM|1|A8  
Misc : |MIX[B]  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 30 09:59:15 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2941.D  
Acq On : 30 Sep 2016 05:21  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-43|ICAL|1|SVM|1|B2  
Misc : |MIX[J]  
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Sep 30 10:11:29 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

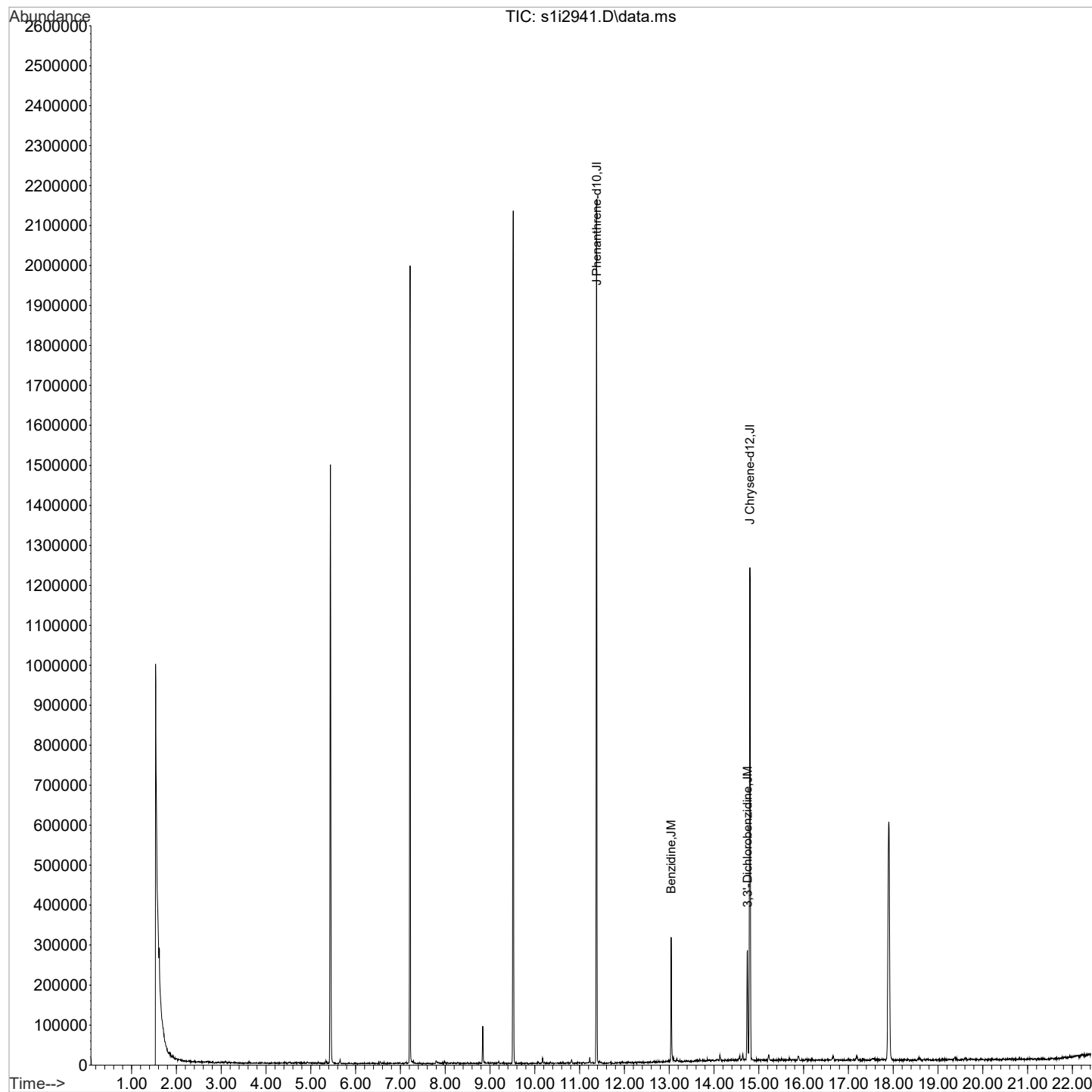
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.378 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.796 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | -0.01     |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.378 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.796 | 14.802 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.378 | 11.378 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.796 | 14.796 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.973 | 17.957 | 1.000  | 0m       | 40.00 | ng/uL | 0.02      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.378 | 11.378 | 1.000  | 824518   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.796 | 14.801 | 1.000  | 625237   | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 0.000  | 3.757  | 0.000  | 0        | 0.00  | ng/uL |           |
| 8) Phenol-d5                  | 99   | 0.000  | 4.906  | 0.000  | 0        | 0.00  | ng/uL |           |
| 25) Nitrobenzene-d5           | 82   | 0.000  | 6.222  | 0.000  | 0        | 0.00  | ng/uL |           |
| 47) 2-Fluorobiphenyl          | 172  | 0.000  | 8.656  | 0.000  | 0        | 0.00  | ng/uL |           |
| 66) 2,4,6-Tribromophenol      | 330  | 0.000  | 10.512 | 0.000  | 0        | 0.00  | ng/uL |           |
| 83) p-Terphenyl-d14           | 244  | 0.000  | 13.357 | 0.000  | 0        | 0.00  | ng/uL |           |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 176) Benzidine                | 184  | 13.042 | 13.047 | 1.146  | 122037   | 9.99  | ng/uL | 97        |
| 178) 3,3'-Dichlorobenzidine   | 252  | 14.743 | 14.743 | 0.996  | 79111    | 10.07 | ng/uL | 99        |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2941.D  
Acq On : 30 Sep 2016 05:21  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-43|ICAL|1|SVM|1|B2  
Misc : |MIX[J]  
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Sep 30 10:11:29 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2942.D  
Acq On : 30 Sep 2016 05:51  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-44|ICAL|1|SVM|1|B3  
Misc : |MIX[J]  
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Sep 30 09:17:36 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:17:11 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.378 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.796 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | -0.01     |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.378 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.796 | 14.802 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.378 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.796 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | -0.01     |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.378 | 11.378 | 1.000  | 792572   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.796 | 14.801 | 1.000  | 548090   | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 0.000  | 3.757  | 0.000  | 0        | 0.00  | ng/uL |           |
| 8) Phenol-d5                  | 99   | 0.000  | 4.906  | 0.000  | 0        | 0.00  | ng/uL |           |
| 25) Nitrobenzene-d5           | 82   | 0.000  | 6.222  | 0.000  | 0        | 0.00  | ng/uL |           |
| 47) 2-Fluorobiphenyl          | 172  | 0.000  | 8.656  | 0.000  | 0        | 0.00  | ng/uL |           |
| 66) 2,4,6-Tribromophenol      | 330  | 0.000  | 10.512 | 0.000  | 0        | 0.00  | ng/uL |           |
| 83) p-Terphenyl-d14           | 244  | 0.000  | 13.357 | 0.000  | 0        | 0.00  | ng/uL |           |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 176) Benzidine                | 184  | 13.042 | 13.047 | 1.146  | 223105   | 12.21 | ng/uL | 99        |
| 178) 3,3'-Dichlorobenzidine   | 252  | 14.743 | 14.743 | 0.996  | 133281   | 21.07 | ng/uL | 99        |

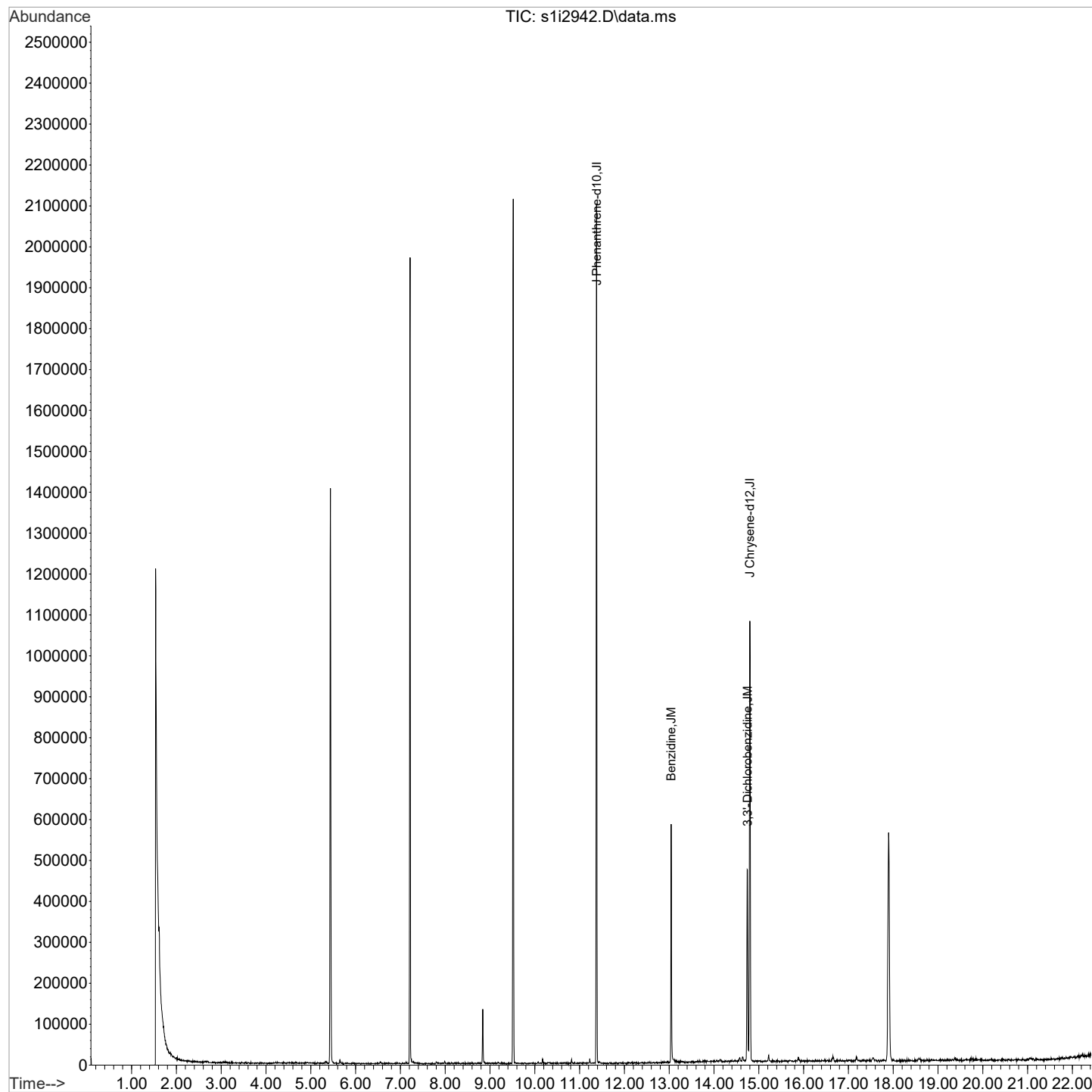
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2942.D  
Acq On : 30 Sep 2016 05:51  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-44|ICAL|1|SVM|1|B3  
Misc : |MIX[J]  
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Sep 30 09:17:36 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:17:11 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2943.D  
Acq On : 30 Sep 2016 06:20  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-45.1|ICAL|1|SVM|1|B4  
Misc : |MIX[J]  
ALS Vial : 36 Sample Multiplier: 1

Quant Time: Sep 30 09:15:58 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:15:22 2016  
Response via : Initial Calibration  
Integrator: RTE

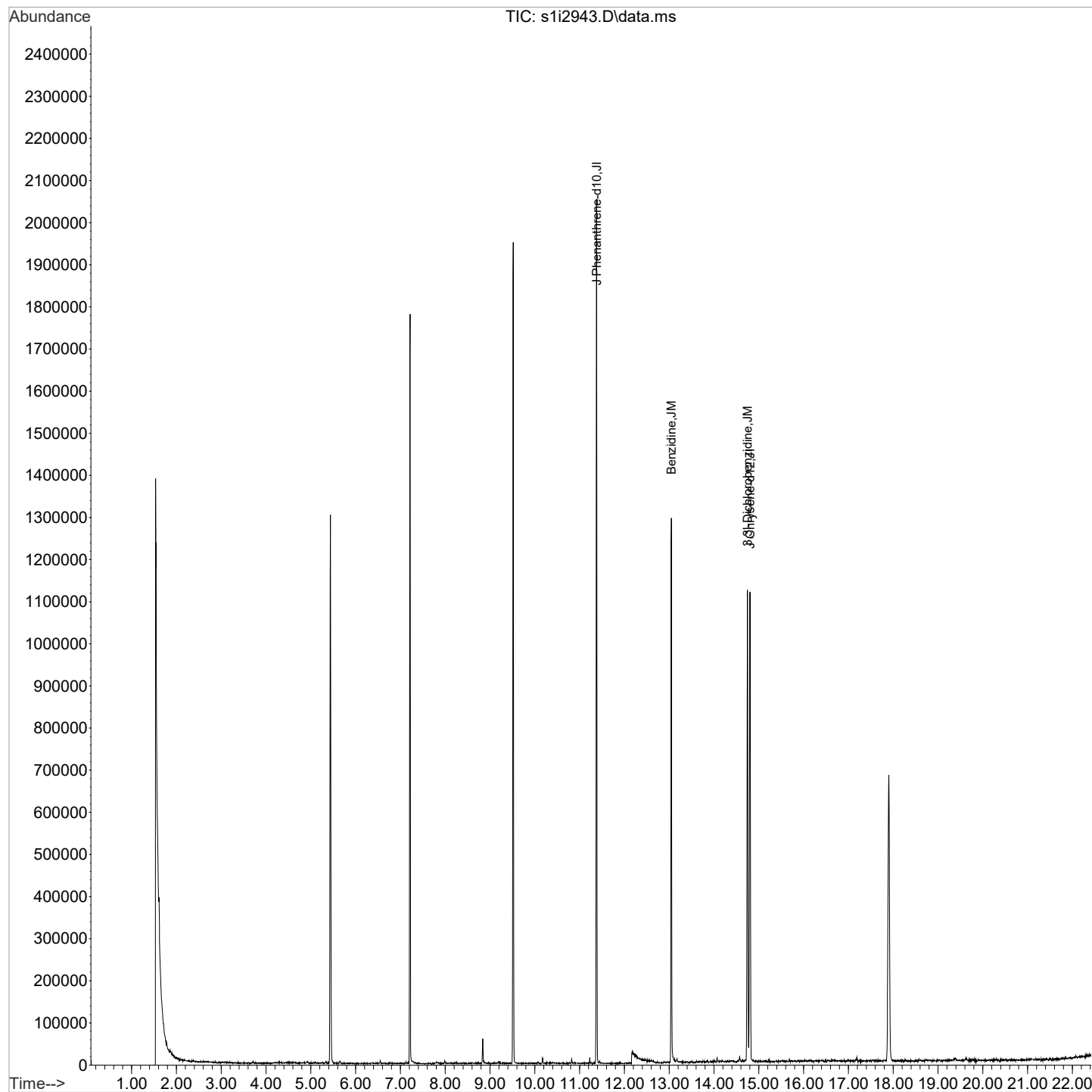
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.512  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | -0.01     |
| 67) A Phenanthrene-d10        | 188  | 11.378 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.801 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.512  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.378 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.801 | 14.802 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.512  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.378 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.801 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.378 | 11.378 | 1.000  | 784373   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.801 | 14.801 | 1.000  | 589827   | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 0.000  | 3.757  | 0.000  | 0        | 0.00  | ng/uL |           |
| 8) Phenol-d5                  | 99   | 0.000  | 4.906  | 0.000  | 0        | 0.00  | ng/uL |           |
| 25) Nitrobenzene-d5           | 82   | 0.000  | 6.222  | 0.000  | 0        | 0.00  | ng/uL |           |
| 47) 2-Fluorobiphenyl          | 172  | 0.000  | 8.656  | 0.000  | 0        | 0.00  | ng/uL |           |
| 66) 2,4,6-Tribromophenol      | 330  | 0.000  | 10.512 | 0.000  | 0        | 0.00  | ng/uL |           |
| 83) p-Terphenyl-d14           | 244  | 0.000  | 13.357 | 0.000  | 0        | 0.00  | ng/uL |           |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 176) Benzidine                | 184  | 13.047 | 13.047 | 1.147  | 517587   | 63.38 | ng/uL | 100       |
| 178) 3,3'-Dichlorobenzidine   | 252  | 14.743 | 14.743 | 0.996  | 309073   | 45.40 | ng/uL | 100       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2943.D  
Acq On : 30 Sep 2016 06:20  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-45.1|ICAL|1|SVM|1|B4  
Misc : |MIX[J]  
ALS Vial : 36 Sample Multiplier: 1

Quant Time: Sep 30 09:15:58 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:15:22 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2944.D  
Acq On : 30 Sep 2016 06:50  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-46|ICAL|1|SVM|1|B5  
Misc : |MIX[J]  
ALS Vial : 37 Sample Multiplier: 1

Quant Time: Sep 30 09:17:41 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:17:11 2016  
Response via : Initial Calibration  
Integrator: RTE

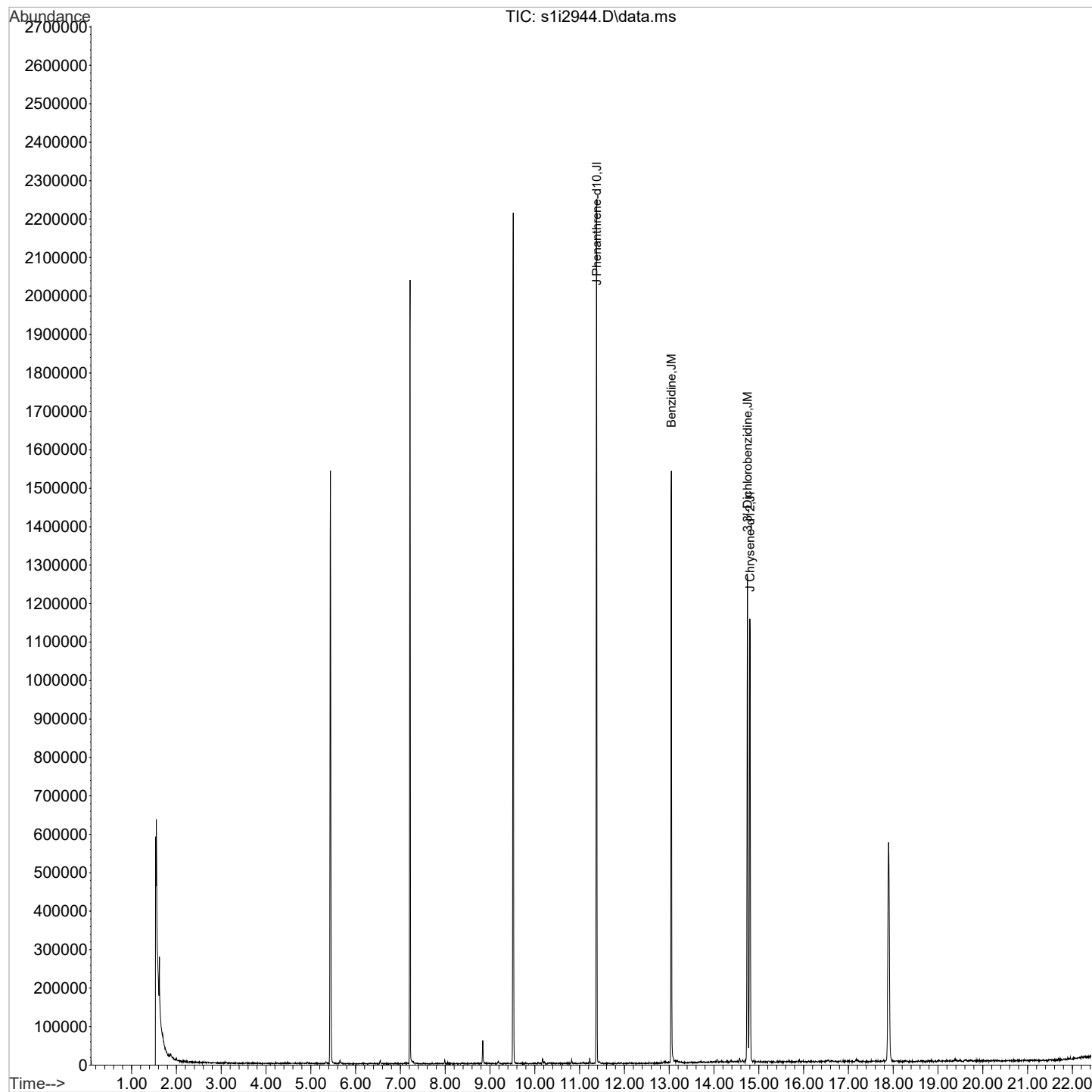
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.379 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.899 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.379 | 11.384 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.802 | 14.802 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.899 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.379 | 11.379 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.899 | 17.904 | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.379 | 11.378 | 1.000  | 854748   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.802 | 14.801 | 1.000  | 578062   | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 0.000  | 3.757  | 0.000  | 0        | 0.00  | ng/uL |           |
| 8) Phenol-d5                  | 99   | 0.000  | 4.906  | 0.000  | 0        | 0.00  | ng/uL |           |
| 25) Nitrobenzene-d5           | 82   | 0.000  | 6.222  | 0.000  | 0        | 0.00  | ng/uL |           |
| 47) 2-Fluorobiphenyl          | 172  | 0.000  | 8.656  | 0.000  | 0        | 0.00  | ng/uL |           |
| 66) 2,4,6-Tribromophenol      | 330  | 0.000  | 10.512 | 0.000  | 0        | 0.00  | ng/uL |           |
| 83) p-Terphenyl-d14           | 244  | 0.000  | 13.357 | 0.000  | 0        | 0.00  | ng/uL |           |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 176) Benzidine                | 184  | 13.047 | 13.047 | 1.147  | 607480   | 70.26 | ng/uL | 99        |
| 178) 3,3'-Dichlorobenzidine   | 252  | 14.743 | 14.743 | 0.996  | 345686   | 51.82 | ng/uL | 98        |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2944.D  
Acq On : 30 Sep 2016 06:50  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-46|ICAL|1|SVM|1|B5  
Misc : |MIX[J]  
ALS Vial : 37 Sample Multiplier: 1

Quant Time: Sep 30 09:17:41 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:17:11 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2945.D  
Acq On : 30 Sep 2016 07:20  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-48|ICAL|1|SVM|1|B7  
Misc : |MIX[J]  
ALS Vial : 38 Sample Multiplier: 1

Quant Time: Sep 30 09:17:46 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:17:11 2016  
Response via : Initial Calibration  
Integrator: RTE

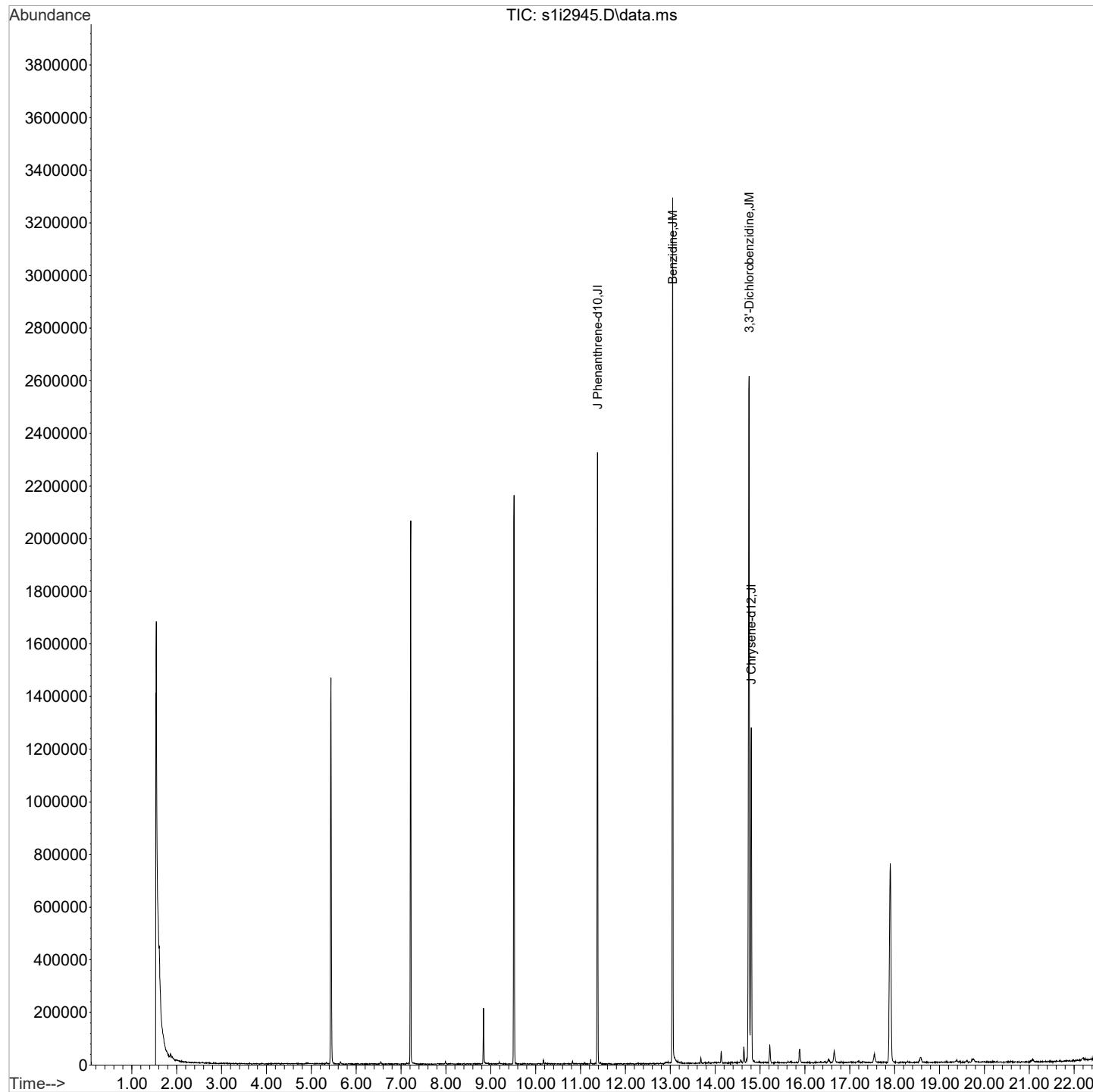
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |           |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-----------|
| Internal Standards            |      |        |        |        |          |        |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.512  | 9.522  | 1.000  | 0m       | 40.00  | ng/uL | -0.01     |
| 67) A Phenanthrene-d10        | 188  | 11.379 | 11.384 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.512  | 9.517  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.379 | 11.384 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.802 | 14.802 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.512  | 9.517  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.379 | 11.379 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.904 | 17.904 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.379 | 11.378 | 1.000  | 881640   | 40.00  | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.802 | 14.801 | 1.000  | 644853   | 40.00  | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |        |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 0.000  | 3.757  | 0.000  | 0        | 0.00   | ng/uL |           |
| 8) Phenol-d5                  | 99   | 0.000  | 4.906  | 0.000  | 0        | 0.00   | ng/uL |           |
| 25) Nitrobenzene-d5           | 82   | 0.000  | 6.222  | 0.000  | 0        | 0.00   | ng/uL |           |
| 47) 2-Fluorobiphenyl          | 172  | 0.000  | 8.656  | 0.000  | 0        | 0.00   | ng/uL |           |
| 66) 2,4,6-Tribromophenol      | 330  | 0.000  | 10.512 | 0.000  | 0        | 0.00   | ng/uL |           |
| 83) p-Terphenyl-d14           | 244  | 0.000  | 13.357 | 0.000  | 0        | 0.00   | ng/uL |           |
| Target Compounds              |      |        |        |        |          |        |       | QValue    |
| 176) Benzidine                | 184  | 13.053 | 13.047 | 1.147  | 1355911  | 182.14 | ng/uL | 97 A      |
| 178) 3,3'-Dichlorobenzidine   | 252  | 14.754 | 14.743 | 0.997  | 823716   | 110.68 | ng/uL | 96        |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2945.D  
Acq On : 30 Sep 2016 07:20  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-48|ICAL|1|SVM|1|B7  
Misc : |MIX[J]  
ALS Vial : 38 Sample Multiplier: 1

Quant Time: Sep 30 09:17:46 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:17:11 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2946.D  
Acq On : 30 Sep 2016 07:50  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-49|ICAL|1|SVM|1|B8  
Misc : |MIX[J]  
ALS Vial : 39 Sample Multiplier: 1

Quant Time: Sep 30 09:17:51 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:17:11 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |           |
|-------------------------------|------|--------|--------|--------|----------|--------|-------|-----------|
| Internal Standards            |      |        |        |        |          |        |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.512  | 9.522  | 1.000  | 0m       | 40.00  | ng/uL | -0.01     |
| 67) A Phenanthrene-d10        | 188  | 11.379 | 11.384 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.899 | 17.904 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.512  | 9.517  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.379 | 11.384 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.802 | 14.802 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.899 | 17.904 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.512  | 9.517  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.379 | 11.379 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.802 | 14.807 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.899 | 17.904 | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 0m       | 40.00  | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.379 | 11.378 | 1.000  | 754209   | 40.00  | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.802 | 14.801 | 1.000  | 487715   | 40.00  | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |        |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 0.000  | 3.757  | 0.000  | 0        | 0.00   | ng/uL |           |
| 8) Phenol-d5                  | 99   | 0.000  | 4.906  | 0.000  | 0        | 0.00   | ng/uL |           |
| 25) Nitrobenzene-d5           | 82   | 0.000  | 6.222  | 0.000  | 0        | 0.00   | ng/uL |           |
| 47) 2-Fluorobiphenyl          | 172  | 0.000  | 8.656  | 0.000  | 0        | 0.00   | ng/uL |           |
| 66) 2,4,6-Tribromophenol      | 330  | 0.000  | 10.512 | 0.000  | 0        | 0.00   | ng/uL |           |
| 83) p-Terphenyl-d14           | 244  | 0.000  | 13.357 | 0.000  | 0        | 0.00   | ng/uL |           |
| Target Compounds              |      |        |        |        |          |        |       | QValue    |
| 176) Benzidine                | 184  | 13.053 | 13.047 | 1.147  | 1261081  | 200.28 | ng/uL | 98 A      |
| 178) 3,3'-Dichlorobenzidine   | 252  | 14.754 | 14.743 | 0.997  | 746655   | 132.65 | ng/uL | 96 A      |

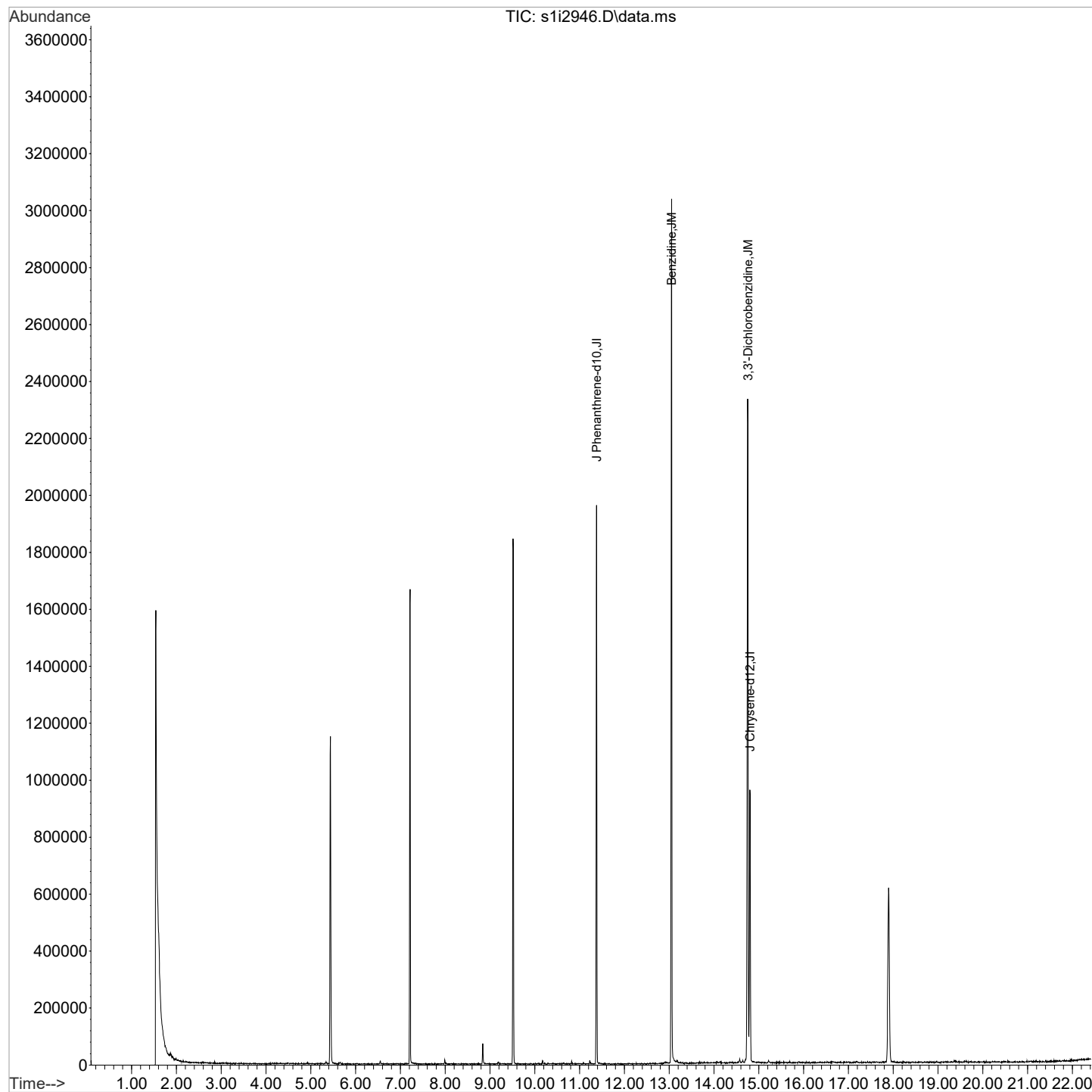
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2946.D  
Acq On : 30 Sep 2016 07:50  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160801-49|ICAL|1|SVM|1|B8  
Misc : |MIX[J]  
ALS Vial : 39 Sample Multiplier: 1

Quant Time: Sep 30 09:17:51 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:17:11 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Client SDG:** 409254  
**Instrument ID:** MSD1.I  
**Injection Date:** 30-SEP-16 09:49  
**Data File:** s092916.B\s1i2948.D  
**Init. Cal. Date(s)** 29-SEP-16 10:05 - 30-SEP-16 07:50  
**Lab Sample ID** WBN160922-18.2  
**Method:** s092916.B\MSD1\_8270C\_8270D\_092916.M  
**Quant Type** ISTD  
**Method Update:** 30-SEP-16 09:55

| Compound                   | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|----------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| Benzaldehyde               | 1.1537            | 1.06723   |                | .01    |         | -7.49502       | 30  |            | Averaged      |
| Acetophenone               | 1.6364            | 1.70608   |                | .01    |         | 4.25813        | 30  |            | Averaged      |
| Caprolactam                | 0.1114            | 0.1129    |                | .01    |         | 1.3465         | 30  |            | Averaged      |
| 1,2,4,5-Tetrachlorobenzene | 0.6964            | 0.69087   |                | .01    |         | -0.79408       | 30  |            | Averaged      |
| 1,1'-Biphenyl              | 40                | 41.51     | 40             |        |         | 3.775          | 30  |            | Linear        |
| Atrazine                   | 0.2448            | 0.25701   |                | .01    |         | 4.98775        | 30  |            | Averaged      |
| 3,3'-Dichlorobenzidine     | 0.5027            | 0.48146   |                | .01    |         | -4.22518       | 30  |            | Averaged      |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2948.D  
Acq On : 30 Sep 2016 09:49  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160922-18.2|ICV|1|SVM|1|AICV  
Misc : |MIX[B,J]  
ALS Vial : 41 Sample Multiplier: 1

Quant Time: Sep 30 11:27:30 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.436  | 5.436  | 1.000  | 219003   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.212  | 7.212  | 1.000  | 725283   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.517  | 9.522  | 1.000  | 414218   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.384 | 11.384 | 1.000  | 720966   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.807 | 14.807 | 1.000  | 696170   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.914 | 17.914 | 1.000  | 672870   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.436  | 5.436  | 1.000  | 219001   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 725283   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 414218   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.384 | 11.384 | 1.000  | 720966   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.807 | 14.807 | 1.000  | 696170   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.914 | 17.920 | 1.000  | 661322   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 725283   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.517  | 9.517  | 1.000  | 414218   | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 720966   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.807 | 14.796 | 1.000  | 696105   | 40.00 | ng/uL | 0.01      |
| 169) E Naphthalene-d8         | 136  | 7.212  | 7.212  | 1.000  | 725283   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.914 | 17.914 | 1.000  | 672870   | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.436  | 5.436  | 1.000  | 219001   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.384 | 11.378 | 1.000  | 720966   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.807 | 14.801 | 1.000  | 696170   | 40.00 | ng/uL | 0.00      |

|                             |     |       |        |       |   |      |       |           |
|-----------------------------|-----|-------|--------|-------|---|------|-------|-----------|
| System Monitoring Compounds |     |       |        |       |   |      |       |           |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.757  | 0.000 | 0 | 0.00 | ng/uL | Dev (Min) |
| 8) Phenol-d5                | 99  | 0.000 | 4.906  | 0.000 | 0 | 0.00 | ng/uL |           |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 6.222  | 0.000 | 0 | 0.00 | ng/uL |           |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 8.656  | 0.000 | 0 | 0.00 | ng/uL |           |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 10.512 | 0.000 | 0 | 0.00 | ng/uL |           |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 13.357 | 0.000 | 0 | 0.00 | ng/uL |           |

| Target Compounds               |      |       |        |        |          |       |        |        |
|--------------------------------|------|-------|--------|--------|----------|-------|--------|--------|
| Compound                       | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  | QValue |
| 100) 1,4-Dioxane               | 88   | 2.168 | 2.163  | 0.399  | 121312   | 41.33 | ng/uL  | 73     |
| 101) Methyl methacrylate       | 100  | 2.168 | 2.168  | 0.399  | 63998    | 44.99 | ng/uL  | 98     |
| 102) Ethyl methacrylate        | 69   | 2.820 | 2.821  | 0.519  | 272606   | 42.81 | ng/uL  | 98     |
| 103) 2-Picoline                | 93   | 3.152 | 3.152  | 0.580  | 333399   | 41.50 | ng/uL  | 99     |
| 104) N-Nitrosomethylethylamine | 88   | 3.254 | 3.249  | 0.599  | 133946   | 43.17 | ng/uL  | 85     |
| 105) Methyl methanesulfonate   | 80   | 3.575 | 3.575  | 0.658  | 216681   | 41.49 | ng/uL  | 96     |
| 106) N-Nitrosodiethylamine     | 102  | 4.040 | 4.040  | 0.743  | 148036   | 42.71 | ng/uL  | 96     |
| 107) 2-Butoxyethanol           | 57   | 4.040 | 4.121  | 0.743  | 97277    | 10.79 | ng/uL# | 50     |
| 108) Ethyl methanesulfonate    | 79   | 4.404 | 4.399  | 0.810  | 238335   | 43.85 | ng/uL  | 97     |
| 109) Benzaldehyde              | 77   | 4.842 | 4.843  | 0.891  | 233724   | 37.00 | ng/uL  | 98     |
| 110) Pentachloroethane         | 167  | 5.051 | 5.051  | 0.929  | 131469   | 40.80 | ng/uL  | 99     |
| 111) N-Nitrosopyrrolidine      | 100  | 5.971 | 5.971  | 1.098  | 152110   | 41.87 | ng/uL  | 99     |
| 112) Acetophenone              | 105  | 6.008 | 6.003  | 1.105  | 373634   | 41.70 | ng/uL  | 99     |
| 113) N-Nitrosomorpholine       | 56   | 6.030 | 6.030  | 1.109  | 224002   | 40.28 | ng/uL  | 94     |
| 114) o-Toluidine               | 106  | 6.056 | 6.051  | 1.114  | 364531   | 41.31 | ng/uL  | 99     |
| 116) N-Nitrosopiperidine       | 114  | 6.452 | 6.453  | 0.895  | 140077   | 38.12 | ng/uL  | 96     |
| 117) a,a-Dimethylphenethyla... | 58   | 6.982 | 6.977  | 0.968  | 920197   | 36.47 | ng/uL  | 100    |
| 118) 2,6-Dichlorophenol        | 162  | 7.324 | 7.324  | 1.016  | 198452   | 42.69 | ng/uL  | 96     |
| 119) Hexachloropropene         | 213  | 7.361 | 7.362  | 1.021  | 181477   | 44.40 | ng/uL  | 99     |
| 120) Caprolactam               | 113  | 7.773 | 7.763  | 1.078  | 81883    | 40.54 | ng/uL# | 88     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2948.D  
Acq On : 30 Sep 2016 09:49  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160922-18.2|ICV|1|SVM|1|AICV  
Misc : |MIX[B,J]  
ALS Vial : 41 Sample Multiplier: 1

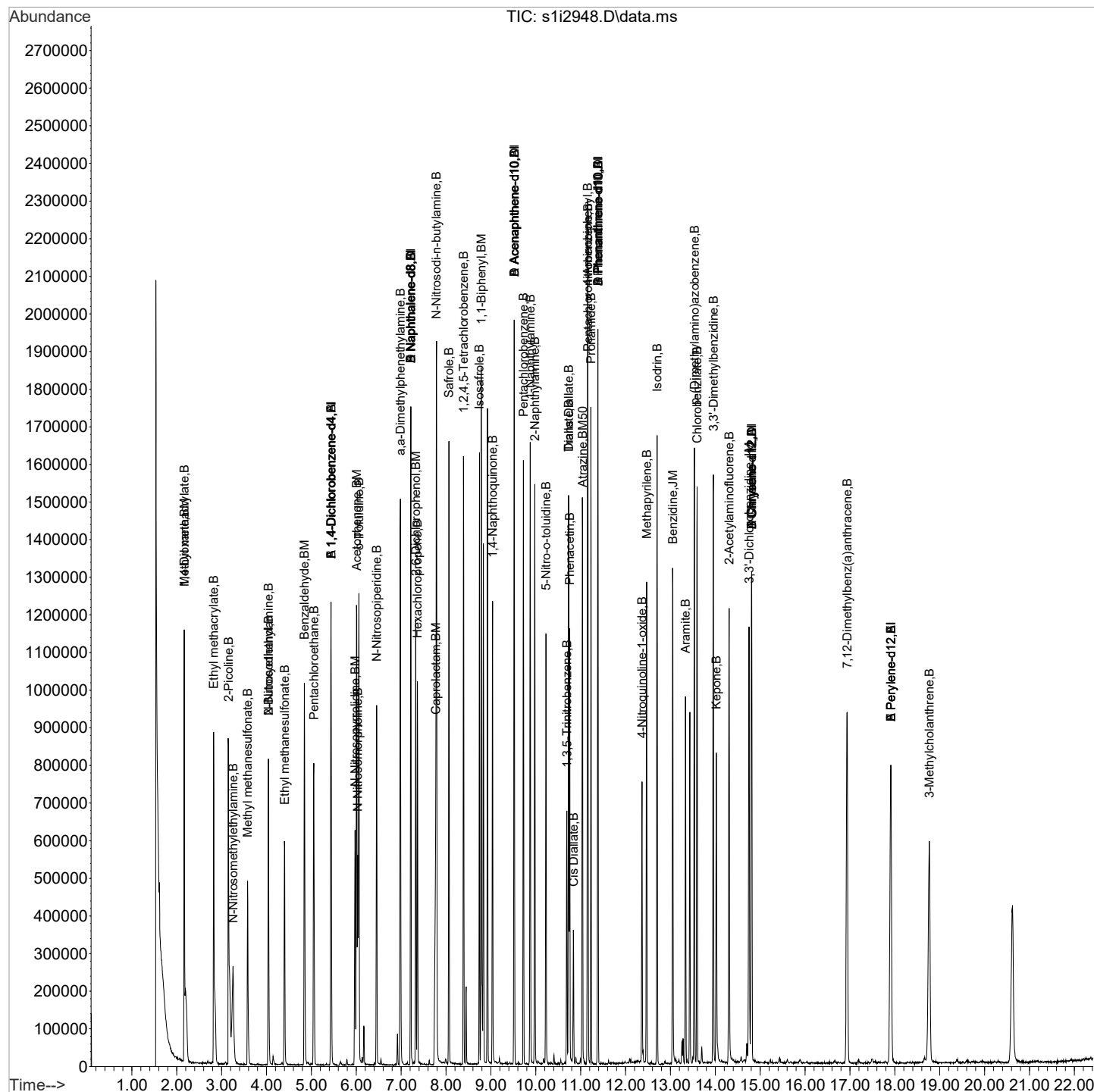
Quant Time: Sep 30 11:27:30 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units     |
|--------------------------------|------|--------|--------|--------|----------|-------|-----------|
| 121) N-Nitrosodi-n-butylamine  | 84   | 7.784  | 7.784  | 1.079  | 238394   | 40.34 | ng/uL 94  |
| 122) Safrole                   | 162  | 8.062  | 8.063  | 1.118  | 198594   | 38.44 | ng/uL 96  |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.388  | 8.389  | 0.881  | 286171   | 39.68 | ng/uL 99  |
| 125) 1,1-Biphenyl              | 154  | 8.784  | 8.785  | 0.923  | 542388   | 41.51 | ng/uL 100 |
| 126) Isosafrole                | 162  | 8.741  | 8.742  | 0.919  | 219537   | 42.75 | ng/uL 98  |
| 127) 1,4-Naphthoquinone        | 158  | 9.036  | 9.031  | 0.949  | 178246   | 42.10 | ng/uL 98  |
| 128) Pentachlorobenzene        | 250  | 9.725  | 9.726  | 1.022  | 245633   | 38.74 | ng/uL 100 |
| 129) 1-Naphthylamine           | 143  | 9.875  | 9.876  | 1.038  | 434814   | 39.75 | ng/uL 98  |
| 130) 2-Naphthylamine           | 143  | 9.977  | 9.972  | 1.048  | 452459   | 43.50 | ng/uL 98  |
| 131) 5-Nitro-o-toluidine       | 152  | 10.223 | 10.223 | 1.074  | 159432   | 43.38 | ng/uL 98  |
| 133) 1,3,5-Trinitrobenzene     | 75   | 10.688 | 10.683 | 0.939  | 184060   | 43.08 | ng/uL 99  |
| 134) Phenacetin                | 108  | 10.758 | 10.753 | 0.945  | 254766   | 39.22 | ng/uL 99  |
| 135) Diallate                  | 86   | 10.726 | 10.726 | 0.942  | 223000   | 38.86 | ng/uL 99  |
| 136) Cis Diallate              | 86   | 10.838 | 10.838 | 0.952  | 45398    | 5.83  | ng/uL 94  |
| 137) Trans Diallate            | 86   | 10.726 | 10.726 | 0.942  | 223000   | 33.03 | ng/uL 99  |
| 138) Atrazine                  | 200  | 11.041 | 11.036 | 0.970  | 185293   | 41.99 | ng/uL 98  |
| 139) 4-Aminobiphenyl           | 169  | 11.154 | 11.149 | 0.980  | 535407   | 44.20 | ng/uL 99  |
| 140) Pentachloronitrobenzene   | 237  | 11.159 | 11.159 | 0.980  | 85607    | 37.89 | ng/uL 98  |
| 141) Pronamide                 | 173  | 11.228 | 11.229 | 0.986  | 264389   | 40.46 | ng/uL 100 |
| 142) 4-Nitroquinoline-1-oxide  | 190  | 12.368 | 12.363 | 1.086  | 69880    | 42.17 | ng/uL 97  |
| 143) Methapyrilene             | 58   | 12.469 | 12.464 | 1.095  | 388663   | 26.99 | ng/uL 99  |
| 144) Isodrin                   | 193  | 12.699 | 12.694 | 1.116  | 114868   | 37.42 | ng/uL 98  |
| 146) Aramite                   | 185  | 13.336 | 13.341 | 0.901  | 74155    | 41.19 | ng/uL 97  |
| 147) Kepone                    | 272  | 14.020 | 14.020 | 0.947  | 90483    | 35.85 | ng/uL 97  |
| 148) p-(Dimethylamino)azobe... | 120  | 13.534 | 13.533 | 0.914  | 261878   | 39.84 | ng/uL 99  |
| 149) Chlorobenzilate           | 251  | 13.593 | 13.592 | 0.918  | 260492   | 36.47 | ng/uL 99  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 13.956 | 13.956 | 0.943  | 614303   | 44.66 | ng/uL 100 |
| 151) 2-Acetylaminofluorene     | 181  | 14.304 | 14.304 | 0.966  | 325516   | 40.97 | ng/uL 99  |
| 153) 7,12-Dimethylbenz(a)an... | 256  | 16.935 | 16.945 | 0.945  | 417150   | 37.84 | ng/uL 99  |
| 154) 3-Methylcholanthrene      | 269  | 18.765 | 18.776 | 1.047  | 86308    | 39.11 | ng/uL 95  |
| 176) Benzidine                 | 184  | 13.052 | 13.047 | 1.147  | 542905   | 50.82 | ng/uL 99  |
| 178) 3,3'-Dichlorobenzidine    | 252  | 14.748 | 14.743 | 0.996  | 335178   | 38.31 | ng/uL 98  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path   : C:\msdchem\1\DATA\s092916.B\  
Data File   : s1i2948.D  
Acq On      : 30 Sep 2016   09:49  
Operator    : JLD1  
InstName    : MSD1  
Sample      : |WBN160922-18.2|ICV|1|SVM|1|AICV  
Misc        : |MIX[B,J]  
ALS Vial    : 41      Sample Multiplier: 1
```

Quant Time: Sep 30 11:27:30 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Client SDG:** 409254  
**Instrument ID:** MSD1.I  
**Injection Date:** 10-NOV-16 12:09  
**Data File:** s111016.B\s1k1005.D  
**Init. Cal. Date(s)** 29-SEP-16 10:05 - 30-SEP-16 07:50  
**Lab Sample ID** WBN161004-18.4  
**Method:** s111016.B\MSD1\_8270C\_8270D\_092916.M  
**Quant Type** ISTD  
**Method Update:** 30-SEP-16 09:55

| Compound                   | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|----------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| Benzaldehyde               | 1.1537            | 1.03516   |                | .01    |         | -10.27477      | 20  |            | Averaged      |
| Acetophenone               | 1.6364            | 1.65716   |                | .01    |         | 1.26864        | 20  |            | Averaged      |
| Caprolactam                | 0.1114            | 0.12111   |                | .01    |         | 8.71634        | 20  |            | Averaged      |
| 1,2,4,5-Tetrachlorobenzene | 0.6964            | 0.68334   |                | .01    |         | -1.87536       | 20  |            | Averaged      |
| 1,1'-Biphenyl              | 40                | 41.62     | 40             |        |         | 4.05           | 20  |            | Linear        |
| Atrazine                   | 0.2448            | 0.2594    |                | .01    |         | 5.96405        | 20  |            | Averaged      |

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/10/2016

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1005.D  
Acq On : 10 Nov 2016 12:09  
Operator : JMB3  
InstName : MSD1  
Sample : WBN161004-18.4|CCV|1|SVM|1|A-CCV  
Misc : MIX[B]  
ALS Vial : 3 Sample Multiplier: 1

JCB  
11/11/2016

Quant Time: Nov 10 14:58:18 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  | Dev (Min) |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|-----------|
| Internal Standards             |      |        |        |        |          |       |        |           |
| 1) A 1,4-Dichlorobenzene-d4    | 152  | 5.324  | 5.324  | 1.000  | 242096   | 40.00 | ng/uL  | 0.00      |
| 24) A Naphthalene-d8           | 136  | 7.099  | 7.105  | 1.000  | 795525   | 40.00 | ng/uL  | 0.00      |
| 42) A Acenaphthene-d10         | 164  | 9.410  | 9.415  | 1.000  | 467843   | 40.00 | ng/uL  | 0.00      |
| 67) A Phenanthrene-d10         | 188  | 11.271 | 11.271 | 1.000  | 766902   | 40.00 | ng/uL  | 0.00      |
| 81) A Chrysene-d12             | 240  | 14.657 | 14.662 | 1.000  | 691425   | 40.00 | ng/uL  | 0.00      |
| 91) A Perylene-d12             | 264  | 17.658 | 17.668 | 1.000  | 722665   | 40.00 | ng/uL  | -0.01     |
| 99) B 1,4-Dichlorobenzene-d4   | 152  | 5.324  | 5.324  | 1.000  | 242094   | 40.00 | ng/uL  | 0.00      |
| 115) B Naphthalene-d8          | 136  | 7.099  | 7.105  | 1.000  | 795525   | 40.00 | ng/uL  | 0.00      |
| 123) B Acenaphthene-d10        | 164  | 9.410  | 9.415  | 1.000  | 467843   | 40.00 | ng/uL  | 0.00      |
| 132) B Phenanthrene-d10        | 188  | 11.271 | 11.271 | 1.000  | 766902   | 40.00 | ng/uL  | 0.00      |
| 145) B Chrysene-d12            | 240  | 14.657 | 14.662 | 1.000  | 691425   | 40.00 | ng/uL  | 0.00      |
| 152) B Perylene-d12            | 264  | 17.658 | 17.668 | 1.000  | 722665   | 40.00 | ng/uL  | -0.01     |
| 155) D Naphthalene-d8          | 136  | 7.099  | 7.105  | 1.000  | 795525   | 40.00 | ng/uL  | 0.00      |
| 157) D Acenaphthene-d10        | 164  | 9.410  | 9.415  | 1.000  | 467843   | 40.00 | ng/uL  | 0.00      |
| 160) D Phenanthrene-d10        | 188  | 11.271 | 11.271 | 1.000  | 766902   | 40.00 | ng/uL  | 0.00      |
| 167) D Chrysene-d12            | 240  | 14.657 | 14.662 | 1.000  | 693208   | 40.00 | ng/uL  | 0.00      |
| 169) E Naphthalene-d8          | 136  | 7.099  | 7.105  | 1.000  | 795525   | 40.00 | ng/uL  | 0.00      |
| 171) E Perylene-d12            | 264  | 17.658 | 17.668 | 1.000  | 722665   | 40.00 | ng/uL  | -0.01     |
| 173) F 1,4-Dichlorobenzene-d4  | 152  | 5.324  | 5.324  | 1.000  | 242094   | 40.00 | ng/uL  | 0.00      |
| 175) J Phenanthrene-d10        | 188  | 11.271 | 11.271 | 1.000  | 766902   | 40.00 | ng/uL  | 0.00      |
| 177) J Chrysene-d12            | 240  | 14.657 | 14.662 | 1.000  | 691425   | 40.00 | ng/uL  | 0.00      |
| System Monitoring Compounds    |      |        |        |        |          |       |        |           |
| 5) 2-Fluorophenol              | 112  | 0.000  | 3.660  | 0.000  | 0        | 0.00  | ng/uL  | Dev (Min) |
| 8) Phenol-d5                   | 99   | 0.000  | 4.810  | 0.000  | 0        | 0.00  | ng/uL  |           |
| 25) Nitrobenzene-d5            | 82   | 0.000  | 6.110  | 0.000  | 0        | 0.00  | ng/uL  |           |
| 47) 2-Fluorobiphenyl           | 172  | 0.000  | 8.554  | 0.000  | 0        | 0.00  | ng/uL  |           |
| 66) 2,4,6-Tribromophenol       | 330  | 0.000  | 10.405 | 0.000  | 0        | 0.00  | ng/uL  |           |
| 83) p-Terphenyl-d14            | 244  | 13.245 | 13.245 | 0.904  | 519      | 0.03  | ng/uL  | 0.00      |
| Target Compounds               |      |        |        |        |          |       |        |           |
| 100) 1,4-Dioxane               | 88   | 2.077  | 2.077  | 0.390  | 141656   | 43.66 | ng/uL  | QValue 84 |
| 101) Methyl methacrylate       | 100  | 2.077  | 2.077  | 0.390  | 68427    | 43.51 | ng/uL# | 54        |
| 102) Ethyl methacrylate        | 69   | 2.730  | 2.730  | 0.513  | 300176   | 42.65 | ng/uL  | 82        |
| 103) 2-Picoline                | 93   | 3.056  | 3.056  | 0.574  | 360097   | 40.55 | ng/uL  | 100       |
| 104) N-Nitrosomethylethylamine | 88   | 3.168  | 3.168  | 0.595  | 135783   | 39.59 | ng/uL  | 97        |
| 105) Methyl methanesulfonate   | 80   | 3.489  | 3.489  | 0.655  | 229320   | 39.72 | ng/uL  | 98        |
| 106) N-Nitrosodiethylamine     | 102  | 3.944  | 3.944  | 0.741  | 164262   | 42.87 | ng/uL  | 100       |
| 107) 2-Butoxyethanol           | 57   | 4.024  | 4.024  | 0.756  | 394267   | 39.56 | ng/uL  | 96        |
| 108) Ethyl methanesulfonate    | 79   | 4.307  | 4.307  | 0.809  | 246367   | 41.00 | ng/uL  | 99        |
| 109) Benzaldehyde              | 77   | 4.735  | 4.735  | 0.889  | 250607   | 35.89 | ng/uL  | 98        |
| 110) Pentachloroethane         | 167  | 4.939  | 4.939  | 0.928  | 141040   | 39.59 | ng/uL  | 100       |
| 111) N-Nitrosopyrrolidine      | 100  | 5.869  | 5.869  | 1.102  | 171408   | 42.68 | ng/uL  | 93        |
| 112) Acetophenone              | 105  | 5.896  | 5.896  | 1.108  | 401189   | 40.51 | ng/uL  | 100       |
| 113) N-Nitrosomorpholine       | 56   | 5.928  | 5.928  | 1.114  | 266566   | 43.36 | ng/uL  | 96        |
| 114) o-Toluidine               | 106  | 5.949  | 5.949  | 1.118  | 393555   | 40.35 | ng/uL  | 99        |
| 116) N-Nitrosopiperidine       | 114  | 6.345  | 6.345  | 0.894  | 164188   | 40.73 | ng/uL  | 87        |
| 117) a,a-Dimethylphenethyla... | 58   | 6.869  | 6.869  | 0.968  | 1154585  | 41.72 | ng/uL  | 98        |
| 118) 2,6-Dichlorophenol        | 162  | 7.222  | 7.222  | 1.017  | 198086   | 38.84 | ng/uL  | 95        |
| 119) Hexachloropropene         | 213  | 7.254  | 7.254  | 1.022  | 144294   | 32.18 | ng/uL  | 100       |
| 120) Caprolactam               | 113  | 7.677  | 7.677  | 1.081  | 96348    | 43.49 | ng/uL  | 94        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1005.D  
Acq On : 10 Nov 2016 12:09  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161004-18.4|CCV|1|SVM|1|A-CCV  
Misc : |MIX[B]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 10 14:58:18 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |    |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|----|
| 121) N-Nitrosodi-n-butylamine  | 84   | 7.682  | 7.682  | 1.082  | 283214   | 43.70 | ng/uL | 91 |
| 122) Safrole                   | 162  | 7.955  | 7.955  | 1.121  | 229966   | 40.58 | ng/uL | 90 |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.281  | 8.281  | 0.880  | 319697   | 39.25 | ng/uL | 99 |
| 125) 1,1-Biphenyl              | 154  | 8.683  | 8.683  | 0.923  | 613908   | 41.62 | ng/uL | 99 |
| 126) Isosafrole                | 162  | 8.640  | 8.640  | 0.918  | 234085   | 40.36 | ng/uL | 99 |
| 127) 1,4-Naphthoquinone        | 158  | 8.929  | 8.929  | 0.949  | 201781   | 42.19 | ng/uL | 99 |
| 128) Pentachlorobenzene        | 250  | 9.619  | 9.619  | 1.022  | 281734   | 39.34 | ng/uL | 99 |
| 129) 1-Naphthylamine           | 143  | 9.768  | 9.768  | 1.038  | 473729   | 38.34 | ng/uL | 93 |
| 130) 2-Naphthylamine           | 143  | 9.870  | 9.870  | 1.049  | 448791   | 38.20 | ng/uL | 99 |
| 131) 5-Nitro-o-toluidine       | 152  | 10.121 | 10.121 | 1.076  | 159187   | 38.35 | ng/uL | 96 |
| 133) 1,3,5-Trinitrobenzene     | 75   | 10.597 | 10.597 | 0.940  | 191975   | 42.24 | ng/uL | 99 |
| 134) Phenacetin                | 108  | 10.656 | 10.656 | 0.945  | 271092   | 39.23 | ng/uL | 99 |
| 135) Diallate                  | 86   | 10.619 | 10.619 | 0.942  | 261438   | 42.83 | ng/uL | 99 |
| 136) Cis Diallate              | 86   | 10.731 | 10.731 | 0.952  | 52708    | 6.36  | ng/uL | 99 |
| 137) Trans Diallate            | 86   | 10.619 | 10.619 | 0.942  | 261438   | 36.41 | ng/uL | 99 |
| 138) Atrazine                  | 200  | 10.934 | 10.934 | 0.970  | 198934   | 42.38 | ng/uL | 99 |
| 139) 4-Aminobiphenyl           | 169  | 11.047 | 11.047 | 0.980  | 451804   | 35.06 | ng/uL | 99 |
| 140) Pentachloronitrobenzene   | 237  | 11.052 | 11.052 | 0.981  | 103264   | 42.97 | ng/uL | 97 |
| 141) Pronamide                 | 173  | 11.127 | 11.127 | 0.987  | 289881   | 41.70 | ng/uL | 97 |
| 142) 4-Nitroquinoline-1-oxide  | 190  | 12.261 | 12.261 | 1.088  | 60001    | 35.16 | ng/uL | 91 |
| 143) Methapyrilene             | 58   | 12.357 | 12.357 | 1.096  | 604596   | 39.47 | ng/uL | 95 |
| 144) Isodrin                   | 193  | 12.582 | 12.582 | 1.116  | 136097   | 41.68 | ng/uL | 99 |
| 146) Aramite                   | 185  | 13.229 | 13.229 | 0.903  | 79446    | 44.43 | ng/uL | 98 |
| 147) Kepone                    | 272  | 13.892 | 13.892 | 0.948  | 100773   | 40.20 | ng/uL | 96 |
| 148) p-(Dimethylamino)azobe... | 120  | 13.421 | 13.421 | 0.916  | 265142   | 40.61 | ng/uL | 99 |
| 149) Chlorobenzilate           | 251  | 13.480 | 13.480 | 0.920  | 316752   | 44.65 | ng/uL | 98 |
| 150) 3,3'-Dimethylbenzidine    | 212  | 13.839 | 13.839 | 0.944  | 493955   | 36.16 | ng/uL | 98 |
| 151) 2-Acetylaminofluorene     | 181  | 14.181 | 14.181 | 0.968  | 346467   | 43.91 | ng/uL | 99 |
| 153) 7,12-Dimethylbenz(a)an... | 256  | 16.716 | 16.716 | 0.947  | 457343   | 37.97 | ng/uL | 98 |
| 154) 3-Methylcholanthrene      | 269  | 18.497 | 18.497 | 1.048  | 89170    | 36.97 | ng/uL | 96 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted





## Continuing Calibration Summary

**Instrument ID:** MSD1.I  
**Data File:** s111016.B\s1k1006.D  
**Lab Sample ID** WBN161025-05.4  
**Quant Type** ISTD

**Client SDG:** 409254  
**Injection Date:** 10-NOV-16 12:40  
**Init. Cal. Date(s)** 29-SEP-16 10:05 - 30-SEP-16 07:50  
**Method:** s111016.B\MSD1\_8270C\_8270D\_092916.M  
**Method Update:** 30-SEP-16 09:55

| Compound                       | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| S2-Fluorophenol                | 1.4846         | 1.47567 |             | .01    |      | -0.60151    | 20  |         | Averaged   |
| SPhenol-d5                     | 1.8177         | 1.83149 |             | .01    |      | 0.75865     | 20  |         | Averaged   |
| SNitrobenzene-d5               | 0.4682         | 0.4693  |             | .01    |      | 0.23494     | 20  |         | Averaged   |
| S2-Fluorobiphenyl              | 1.4097         | 1.43554 |             | .01    |      | 1.83301     | 20  |         | Averaged   |
| S2,4,6-Tribromophenol          | 0.2609         | 0.26299 |             | .01    |      | 0.80107     | 20  |         | Averaged   |
| S p-Terphenyl-d14              | 1.068          | 1.13696 |             | .01    |      | 6.45693     | 20  |         | Averaged   |
| Phenol                         | 1.6271         | 1.79747 |             | .8     |      | 10.47078    | 20  |         | Averaged   |
| bis(2-Chloroethyl) ether       | 1.3182         | 1.31503 |             | .7     |      | -0.24048    | 20  |         | Averaged   |
| 2-Chlorophenol                 | 1.2697         | 1.29759 |             | .8     |      | 2.19658     | 20  |         | Averaged   |
| o-Cresol                       | 1.026          | 1.0619  |             | .7     |      | 3.49903     | 20  |         | Averaged   |
| bis(2-Chloro-1-methylethyl)eth | 2.5727         | 2.8728  |             | .01    |      | 11.66479    | 20  |         | Averaged   |
| N-Nitrosodipropylamine         | 1.0082         | 1.11365 |             | .5     |      | 10.45923    | 20  |         | Averaged   |
| m,p-Cresols                    | 1.3334         | 1.26712 |             | .6     |      | -4.97075    | 20  |         | Averaged   |
| Hexachloroethane               | 0.591          | 0.57355 |             | .3     |      | -2.95262    | 20  |         | Averaged   |
| Nitrobenzene                   | 0.4285         | 0.43839 |             | .2     |      | 2.30805     | 20  |         | Averaged   |
| Isophorone                     | 0.9079         | 0.93344 |             | .4     |      | 2.81309     | 20  |         | Averaged   |
| 2-Nitrophenol                  | 0.1995         | 0.21278 |             | .1     |      | 6.65664     | 20  |         | Averaged   |
| 2,4-Dimethylphenol             | 0.3236         | 0.33852 |             | .2     |      | 4.61063     | 20  |         | Averaged   |
| bis(2-Chloroethoxy)methane     | 0.4812         | 0.49392 |             | .3     |      | 2.64339     | 20  |         | Averaged   |
| 2,4-Dichlorophenol             | 0.3205         | 0.34214 |             | .2     |      | 6.75195     | 20  |         | Averaged   |
| Naphthalene                    | 0.9466         | 0.96436 |             | .7     |      | 1.87619     | 20  |         | Averaged   |
| 4-Chloroaniline                | 0.3468         | 0.33728 |             | .01    |      | -2.7451     | 20  |         | Averaged   |
| Hexachlorobutadiene            | 0.2703         | 0.26922 |             | .01    |      | -0.39956    | 20  |         | Averaged   |
| 4-Chloro-3-methylphenol        | 0.411          | 0.4374  |             | .2     |      | 6.42336     | 20  |         | Averaged   |
| 2-Methylnaphthalene            | 0.7312         | 0.74973 |             | .4     |      | 2.53419     | 20  |         | Averaged   |
| 1-Methylnaphthalene            | 0.6612         | 0.66605 |             | .4     |      | 0.73351     | 20  |         | Averaged   |
| Hexachlorocyclopentadiene      | 0.4705         | 0.37677 |             | .05    |      | -19.92136   | 20  |         | Averaged   |
| 2,4,6-Trichlorophenol          | 0.4473         | 0.45504 |             | .2     |      | 1.73038     | 20  |         | Averaged   |
| 2,4,5-Trichlorophenol          | 0.4317         | 0.43988 |             | .2     |      | 1.89483     | 20  |         | Averaged   |
| 2-Chloronaphthalene            | 1.2583         | 1.28577 |             | .8     |      | 2.1831      | 20  |         | Averaged   |
| o-Nitroaniline                 | 0.497          | 0.52405 |             | .01    |      | 5.44266     | 20  |         | Averaged   |
| Dimethylphthalate              | 1.5318         | 1.56041 |             | .01    |      | 1.86774     | 20  |         | Averaged   |
| 2,6-Dinitrotoluene             | 0.329          | 0.34414 |             | .2     |      | 4.60182     | 20  |         | Averaged   |
| Acenaphthylene                 | 1.8811         | 1.91854 |             | .9     |      | 1.99032     | 20  |         | Averaged   |
| m-Nitroaniline                 | 0.2905         | 0.29552 |             | .01    |      | 1.72806     | 20  |         | Averaged   |
| Acenaphthene                   | 1.081          | 1.11115 |             | .9     |      | 2.78908     | 20  |         | Averaged   |
| 2,4-Dinitrophenol              | 40             | 42.78   | 40          |        |      | 6.95        | 20  |         | Linear     |

## Continuing Calibration Summary

Instrument ID: MSD1.I

Injection Date: 10-NOV-16 12:40

Data File: s111016.B\s1k1006.D

Init. Cal. Date(s) 29-SEP-16 10:05 30-SEP-16 07:50

Lab Sample ID WBN161025-05.4

Method: s111016.B\MSD1\_8270C\_8270D\_092916.M

Quant Type ISTD

| Compound                   | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| 4-Nitrophenol              | 40             | 38.11   | 40          |        |      | -4.725      | 20  |         | Linear     |
| 2,4-Dinitrotoluene         | 0.4523         | 0.46516 |             | .2     |      | 2.84325     | 20  |         | Averaged   |
| Dibenzofuran               | 1.6454         | 1.69682 |             | .8     |      | 3.12508     | 20  |         | Averaged   |
| 2,3,4,6-Tetrachlorophenol  | 0.3915         | 0.40002 |             | .01    |      | 2.17625     | 20  |         | Averaged   |
| Diethylphthalate           | 1.724          | 1.7556  |             | .01    |      | 1.83295     | 20  |         | Averaged   |
| 4-Chlorophenylphenylether  | 0.8049         | 0.81188 |             | .4     |      | 0.86719     | 20  |         | Averaged   |
| Fluorene                   | 1.4357         | 1.47839 |             | .9     |      | 2.97346     | 20  |         | Averaged   |
| p-Nitroaniline             | 0.272          | 0.27218 |             | .01    |      | 0.06618     | 20  |         | Averaged   |
| 2-Methyl-4,6-dinitrophenol | 40             | 42.25   | 40          |        |      | 5.625       | 20  |         | Linear     |
| Diphenylamine              | 0.6392         | 0.63903 |             | .01    |      | -0.0266     | 20  |         | Averaged   |
| 4-Bromophenylphenylether   | 0.2867         | 0.29102 |             | .1     |      | 1.5068      | 20  |         | Averaged   |
| Hexachlorobenzene          | 0.2892         | 0.29194 |             | .1     |      | 0.94744     | 20  |         | Averaged   |
| Pentachlorophenol          | 40             | 33.98   | 40          |        |      | -15.05      | 20  |         | Linear     |
| Phenanthrene               | 0.9221         | 0.93343 |             | .7     |      | 1.22872     | 20  |         | Averaged   |
| Anthracene                 | 0.9651         | 0.99001 |             | .7     |      | 2.58108     | 20  |         | Averaged   |
| Carbazole                  | 0.9193         | 0.97485 |             | .01    |      | 6.04264     | 20  |         | Averaged   |
| Di-n-butylphthalate        | 1.4744         | 1.55288 |             | .01    |      | 5.32284     | 20  |         | Averaged   |
| Fluoranthene               | 1.3571         | 1.43429 |             | .6     |      | 5.68786     | 20  |         | Averaged   |
| Pyrene                     | 1.6191         | 1.67588 |             | .6     |      | 3.50689     | 20  |         | Averaged   |
| Butylbenzylphthalate       | 0.7754         | 0.8657  |             | .01    |      | 11.6456     | 20  |         | Averaged   |
| Benzo(a)anthracene         | 1.2469         | 1.25862 |             | .8     |      | 0.93993     | 20  |         | Averaged   |
| bis(2-Ethylhexyl)phthalate | 0.8639         | 0.93313 |             | .01    |      | 8.01366     | 20  |         | Averaged   |
| Chrysene                   | 1.0377         | 1.06917 |             | .7     |      | 3.03267     | 20  |         | Averaged   |
| Di-n-octylphthalate        | 40             | 42.41   | 40          |        |      | 6.025       | 20  |         | Linear     |
| Benzo(b)fluoranthene       | 1.4151         | 1.32355 |             | .7     |      | -6.46951    | 20  |         | Averaged   |
| Benzo(k)fluoranthene       | 1.2245         | 1.1262  |             | .7     |      | -8.02777    | 20  |         | Averaged   |
| Benzo(a)pyrene             | 1.2239         | 1.20842 |             | .7     |      | -1.26481    | 20  |         | Averaged   |
| Indeno(1,2,3-cd)pyrene     | 0.936          | 1.05522 |             | .5     |      | 12.73718    | 20  |         | Averaged   |
| Dibenzo(a,h)anthracene     | 0.8716         | 0.9988  |             | .4     |      | 14.59385    | 20  |         | Averaged   |
| Benzo(ghi)perylene         | 0.9551         | 1.13329 |             | .5     |      | 18.65669    | 20  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/10/2016

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1006.D  
Acq On : 10 Nov 2016 12:40  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161025-05.4|CCV|1|SVM|1|M-CCV  
Misc : |MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

JCB  
11/11/2016

Quant Time: Nov 10 15:03:12 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|--------|-----------|
| Internal Standards            |      |        |        |        |          |       |        |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.324  | 5.324  | 1.000  | 192132   | 40.00 | ng/uL  | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.105  | 7.105  | 1.000  | 631767   | 40.00 | ng/uL  | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.415  | 9.415  | 1.000  | 354895   | 40.00 | ng/uL  | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.271 | 11.271 | 1.000  | 689318   | 40.00 | ng/uL  | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.662 | 14.662 | 1.000  | 564283   | 40.00 | ng/uL  | 0.00      |
| 91) A Perylene-d12            | 264  | 17.668 | 17.668 | 1.000  | 586549   | 40.00 | ng/uL  | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.324  | 5.324  | 1.000  | 191499   | 40.00 | ng/uL  | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 631767   | 40.00 | ng/uL  | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.415  | 9.415  | 1.000  | 354895   | 40.00 | ng/uL  | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 689318   | 40.00 | ng/uL  | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.662 | 14.662 | 1.000  | 564283   | 40.00 | ng/uL  | 0.00      |
| 152) B Perylene-d12           | 264  | 17.668 | 17.668 | 1.000  | 586549   | 40.00 | ng/uL  | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 631767   | 40.00 | ng/uL  | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.415  | 9.415  | 1.000  | 354895   | 40.00 | ng/uL  | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 689318   | 40.00 | ng/uL  | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.662 | 14.662 | 1.000  | 564295   | 40.00 | ng/uL  | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 631767   | 40.00 | ng/uL  | 0.00      |
| 171) E Perylene-d12           | 264  | 17.668 | 17.668 | 1.000  | 586549   | 40.00 | ng/uL  | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.324  | 5.324  | 1.000  | 191499   | 40.00 | ng/uL  | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 689318   | 40.00 | ng/uL  | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.662 | 14.662 | 1.000  | 564283   | 40.00 | ng/uL  | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |        |           |
| 5) 2-Fluorophenol             | 112  | 3.660  | 3.660  | 0.688  | 283524   | 39.76 | ng/uL  | 0.00      |
| 8) Phenol-d5                  | 99   | 4.810  | 4.810  | 0.904  | 351887   | 40.30 | ng/uL  | 0.00      |
| 25) Nitrobenzene-d5           | 82   | 6.110  | 6.110  | 0.860  | 296489   | 40.09 | ng/uL  | 0.00      |
| 47) 2-Fluorobiphenyl          | 172  | 8.554  | 8.554  | 0.909  | 509465   | 40.73 | ng/uL  | 0.00      |
| 66) 2,4,6-Tribromophenol      | 330  | 10.405 | 10.405 | 1.105  | 93335    | 40.32 | ng/uL  | 0.00      |
| 83) p-Terphenyl-d14           | 244  | 13.245 | 13.245 | 0.903  | 641565   | 42.58 | ng/uL  | 0.00      |
| Target Compounds              |      |        |        |        |          |       |        |           |
| 2) 2-Ethoxyethanol            | 59   | 2.077  | 2.077  | 0.390  | 170946   | 31.62 | ng/uL  | 97        |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.334  | 2.334  | 0.438  | 147292   | 32.60 | ng/uL# | 65        |
| 4) Pyridine                   | 79   | 2.366  | 2.366  | 0.444  | 277230   | 37.49 | ng/uL  | 76        |
| 6) p-Benzquinone              | 54   | 4.254  | 4.254  | 0.799  | 162595   | 30.90 | ng/uL  | 97        |
| 7) Aniline                    | 93   | 4.874  | 4.874  | 0.916  | 323343   | 35.69 | ng/uL  | 95        |
| 9) Phenol                     | 94   | 4.832  | 4.832  | 0.908  | 345352   | 44.19 | ng/uL  | 93        |
| 10) bis(2-Chloroethyl) ether  | 93   | 4.960  | 4.960  | 0.932  | 252659   | 39.91 | ng/uL  | 98        |
| 11) 2-Chlorophenol            | 128  | 5.035  | 5.035  | 0.946  | 249309   | 40.88 | ng/uL  | 98        |
| 12) n-Decane                  | 43   | 5.099  | 5.099  | 0.958  | 433334   | 44.98 | ng/uL  | 94        |
| 13) 1,3-Dichlorobenzene       | 146  | 5.243  | 5.243  | 0.985  | 272458   | 40.35 | ng/uL  | 100       |
| 14) 1,4-Dichlorobenzene       | 146  | 5.345  | 5.345  | 1.004  | 249933   | 40.51 | ng/uL  | 99        |
| 15) 1,2-Dichlorobenzene       | 146  | 5.559  | 5.559  | 1.044  | 250481   | 40.59 | ng/uL  | 99        |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.719  | 5.719  | 1.074  | 551957   | 44.67 | ng/uL  | 98        |
| 17) Benzyl alcohol            | 108  | 5.516  | 5.516  | 1.036  | 161395   | 38.23 | ng/uL  | 95        |
| 18) o-Cresol                  | 107  | 5.671  | 5.671  | 1.065  | 204025   | 41.40 | ng/uL  | 98        |
| 19) m,p-Cresols               | 107  | 5.907  | 5.907  | 1.110  | 243455   | 38.01 | ng/uL  | 99        |
| 20) N-Nitrosodipropylamine    | 70   | 5.907  | 5.907  | 1.110  | 213968   | 44.18 | ng/uL  | 94        |
| 21) p-Toluidine               | 106  | 5.960  | 5.960  | 1.120  | 259621   | 35.51 | ng/uL  | 98        |
| 22) m-Toluidine               | 106  | 6.008  | 6.008  | 1.129  | 259341   | 36.60 | ng/uL  | 100       |
| 23) Hexachloroethane          | 117  | 6.035  | 6.035  | 1.134  | 110197   | 38.82 | ng/uL  | 99        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1006.D  
Acq On : 10 Nov 2016 12:40  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161025-05.4|CCV|1|SVM|1|M-CCV  
Misc : |MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 10 15:03:12 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 26) Nitrobenzene              | 77   | 6.137  | 6.137  | 0.864  | 276958   | 40.93 | ng/uL | 98  |
| 27) Isophorone                | 82   | 6.474  | 6.474  | 0.911  | 589714   | 41.13 | ng/uL | 97  |
| 28) 2-Nitrophenol             | 139  | 6.581  | 6.581  | 0.926  | 134429   | 42.66 | ng/uL | 98  |
| 29) 2,4-Dimethylphenol        | 122  | 6.650  | 6.650  | 0.936  | 213868   | 41.84 | ng/uL | 95  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.784  | 6.784  | 0.955  | 312042   | 41.06 | ng/uL | 98  |
| 31) 2,4-Dichlorophenol        | 162  | 6.918  | 6.918  | 0.974  | 216151   | 42.70 | ng/uL | 99  |
| 32) Benzoic acid              | 105  | 6.816  | 6.816  | 0.959  | 79278    | 32.92 | ng/uL | 92  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.030  | 7.030  | 0.989  | 253340   | 41.00 | ng/uL | 99  |
| 34) alpha-Terpineol           | 59   | 7.158  | 7.158  | 1.008  | 284744   | 43.98 | ng/uL | 96  |
| 35) Naphthalene               | 128  | 7.131  | 7.131  | 1.004  | 609249   | 40.75 | ng/uL | 99  |
| 36) 4-Chloroaniline           | 127  | 7.212  | 7.212  | 1.015  | 213082   | 38.90 | ng/uL | 99  |
| 37) Hexachlorobutadiene       | 225  | 7.308  | 7.308  | 1.029  | 170082   | 39.85 | ng/uL | 98  |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.880  | 7.880  | 1.109  | 276336   | 42.57 | ng/uL | 98  |
| 39) 2-Methylnaphthalene       | 142  | 8.062  | 8.062  | 1.135  | 473653   | 41.01 | ng/uL | 99  |
| 40) Phthalic anhydride        | 104  | 8.142  | 8.142  | 1.146  | 187118   | 37.58 | ng/uL | 89  |
| 41) 1-Methylnaphthalene       | 142  | 8.191  | 8.191  | 1.153  | 420791   | 40.29 | ng/uL | 98  |
| 43) Hexachlorocyclopentadiene | 237  | 8.271  | 8.271  | 0.878  | 133714   | 32.03 | ng/uL | 100 |
| 44) 2,3-Dichloroaniline       | 161  | 8.431  | 8.431  | 0.895  | 241472   | 42.90 | ng/uL | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.442  | 8.442  | 0.897  | 161493   | 40.69 | ng/uL | 100 |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.490  | 8.490  | 0.902  | 156111   | 40.76 | ng/uL | 97  |
| 48) 2-Chloronaphthalene       | 162  | 8.699  | 8.699  | 0.924  | 456312   | 40.87 | ng/uL | 99  |
| 49) o-Nitroaniline            | 65   | 8.838  | 8.838  | 0.939  | 185984   | 42.18 | ng/uL | 100 |
| 50) 1,4-Dinitrobenzene        | 168  | 9.025  | 9.025  | 0.959  | 91155    | 42.50 | ng/uL | 95  |
| 51) m-Nitroaniline            | 138  | 9.367  | 9.367  | 0.995  | 104879   | 40.69 | ng/uL | 98  |
| 52) Dimethylphthalate         | 163  | 9.089  | 9.089  | 0.965  | 553783   | 40.75 | ng/uL | 99  |
| 53) m-Dinitrobenzene          | 168  | 9.116  | 9.116  | 0.968  | 88667    | 42.25 | ng/uL | 94  |
| 54) 2,6-Dinitrotoluene        | 165  | 9.159  | 9.159  | 0.973  | 122134   | 41.84 | ng/uL | 99  |
| 55) 2,4-Dinitrotoluene        | 165  | 9.667  | 9.667  | 1.027  | 165083   | 41.14 | ng/uL | 98  |
| 56) Acenaphthylene            | 152  | 9.228  | 9.228  | 0.980  | 680882   | 40.80 | ng/uL | 99  |
| 57) Acenaphthene              | 154  | 9.453  | 9.453  | 1.004  | 394340   | 41.12 | ng/uL | 100 |
| 58) 2,4-Dinitrophenol         | 184  | 9.501  | 9.501  | 1.009  | 61645    | 42.78 | ng/uL | 90  |
| 59) Dibenzofuran              | 168  | 9.672  | 9.672  | 1.027  | 602192   | 41.25 | ng/uL | 97  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.833  | 9.833  | 1.044  | 141964   | 40.87 | ng/uL | 97  |
| 61) Diethylphthalate          | 149  | 9.977  | 9.977  | 1.060  | 623055   | 40.73 | ng/uL | 100 |
| 62) 4-Nitrophenol             | 139  | 9.603  | 9.603  | 1.020  | 74954    | 38.11 | ng/uL | 94  |
| 63) Fluorene                  | 166  | 10.105 | 10.105 | 1.073  | 524672   | 41.19 | ng/uL | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 10.111 | 10.111 | 1.074  | 288132   | 40.35 | ng/uL | 99  |
| 65) p-Nitroaniline            | 138  | 10.137 | 10.137 | 1.077  | 96595    | 40.03 | ng/uL | 99  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.180 | 10.180 | 0.903  | 89313    | 42.25 | ng/uL | 97  |
| 69) Diphenylamine             | 169  | 10.260 | 10.260 | 0.910  | 440495   | 39.99 | ng/uL | 99  |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.309 | 10.309 | 0.915  | 540433   | 39.65 | ng/uL | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 10.720 | 10.720 | 0.951  | 200602   | 40.60 | ng/uL | 99  |
| 72) Hexachlorobenzene         | 284  | 10.790 | 10.790 | 0.957  | 201238   | 40.38 | ng/uL | 97  |
| 73) Pentachlorophenol         | 266  | 11.041 | 11.041 | 0.980  | 96171    | 33.98 | ng/uL | 96  |
| 74) n-Octadecane              | 57   | 11.159 | 11.159 | 0.990  | 538524   | 42.76 | ng/uL | 96  |
| 75) Dinoseb                   | 211  | 11.271 | 11.271 | 1.000  | 148680   | 42.90 | ng/uL | 92  |
| 76) Phenanthrene              | 178  | 11.303 | 11.303 | 1.003  | 643429   | 40.49 | ng/uL | 99  |
| 77) Anthracene                | 178  | 11.368 | 11.368 | 1.009  | 682435   | 41.03 | ng/uL | 100 |
| 78) Carbazole                 | 167  | 11.566 | 11.566 | 1.026  | 671980   | 42.42 | ng/uL | 100 |
| 79) Di-n-butylphthalate       | 149  | 12.009 | 12.009 | 1.065  | 1070429  | 42.13 | ng/uL | 99  |
| 80) Fluoranthene              | 202  | 12.774 | 12.774 | 1.133  | 988681   | 42.28 | ng/uL | 99  |
| 82) Pyrene                    | 202  | 13.052 | 13.052 | 0.890  | 945669   | 41.40 | ng/uL | 99  |
| 84) Butylbenzylphthalate      | 149  | 13.860 | 13.860 | 0.945  | 488501   | 44.66 | ng/uL | 99  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1006.D  
Acq On : 10 Nov 2016 12:40  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161025-05.4|CCV|1|SVM|1|M-CCV  
Misc : |MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 10 15:03:12 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units     |
|-------------------------------|------|--------|--------|--------|----------|-------|-----------|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.711 | 14.711 | 1.003  | 526548   | 43.21 | ng/uL 99  |
| 86) Benzo(a)anthracene        | 228  | 14.646 | 14.646 | 0.999  | 710220   | 40.38 | ng/uL 99  |
| 87) Chrysene                  | 228  | 14.705 | 14.705 | 1.003  | 603315   | 41.21 | ng/uL 99  |
| 88) Methoxychlor              | 227  | 14.555 | 14.555 | 0.993  | 688430   | 42.88 | ng/uL 99  |
| 89) Methylenebis(2-chloroa... | 231  | 14.614 | 14.614 | 0.997  | 138848   | 41.40 | ng/uL 98  |
| 90) Di-n-octylphthalate       | 149  | 15.951 | 15.951 | 1.088  | 1035507  | 42.41 | ng/uL 97  |
| 92) Benzo(b)fluoranthene      | 252  | 16.727 | 16.727 | 0.947  | 776326   | 37.41 | ng/uL 100 |
| 93) Benzo(k)fluoranthene      | 252  | 16.796 | 16.796 | 0.951  | 660572   | 36.79 | ng/uL 99  |
| 94) Benzo(a)pyrene            | 252  | 17.519 | 17.519 | 0.992  | 708800   | 39.49 | ng/uL 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 20.851 | 20.851 | 1.180  | 618941   | 45.09 | ng/uL 96  |
| 96) Dibenzo(a,h)anthracene    | 278  | 20.958 | 20.958 | 1.186  | 585843   | 45.84 | ng/uL 100 |
| 97) Benzo(ghi)perylene        | 276  | 21.674 | 21.674 | 1.227  | 664731   | 47.46 | ng/uL 97  |
| 98) Dibenzo(a,e)pyrene        | 302  | 25.488 | 25.488 | 1.443  | 395814   | 57.78 | ng/uL 97  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Continuing Calibration Summary

**Instrument ID:** MSD1.I

**Data File:** s111016.B\s1k1009.D

**Lab Sample ID** WBN160801-45.2

**Quant Type** ISTD

**Client SDG:** 409254

**Injection Date:** 10-NOV-16 14:07

**Init. Cal. Date(s)** 29-SEP-16 10:05 - 30-SEP-16 07:50

**Method:** s111016.B\MSD1\_8270C\_8270D\_092916.M

**Method Update:** 30-SEP-16 09:55

| Compound               | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| 3,3'-Dichlorobenzidine | 0.5027         | 0.51975 |             | .01    |      | 3.39168     | 20  |         | Averaged   |



Quantitation Report  
GEL Laboratories, LLC

JMB  
11/10/2016

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1009.D  
Acq On : 10 Nov 2016 14:07  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN160801-45.2|CCV|1|SVM|1|B-CCV  
Misc : |MIX[J]  
ALS Vial : 6 Sample Multiplier: 1

JCB  
11/11/2016

Quant Time: Nov 10 14:59:00 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

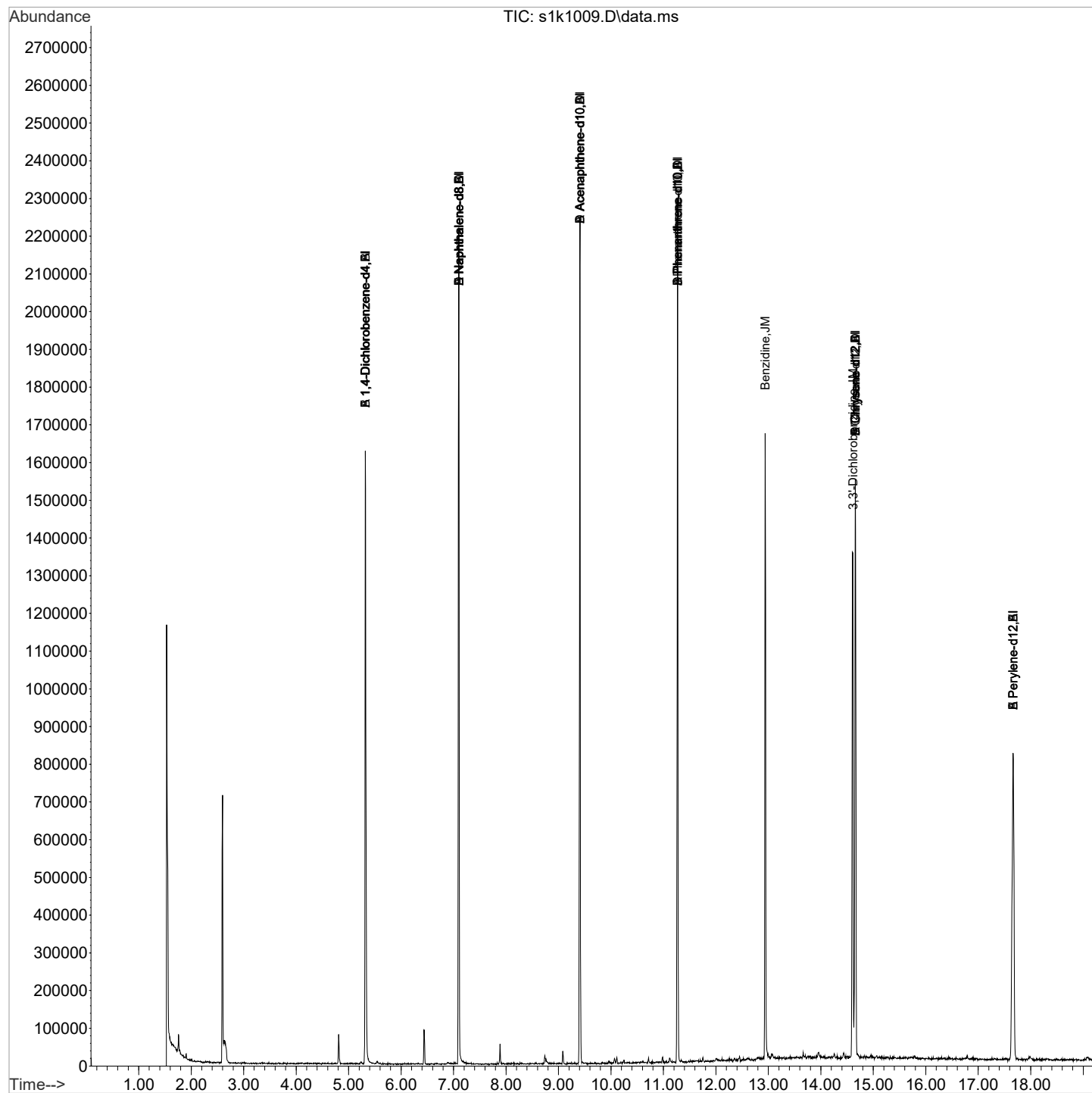
| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.318  | 5.324  | 1.000  | 307846   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.099  | 7.105  | 1.000  | 951882   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.405  | 9.415  | 1.000  | 505351   | 40.00 | ng/uL | -0.01     |
| 67) A Phenanthrene-d10        | 188  | 11.271 | 11.271 | 1.000  | 909713   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.657 | 14.662 | 1.000  | 761954   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.663 | 17.668 | 1.000  | 775495   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.318  | 5.324  | 1.000  | 305802   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.099  | 7.105  | 1.000  | 951882   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.405  | 9.415  | 1.000  | 505351   | 40.00 | ng/uL | -0.01     |
| 132) B Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 909713   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.657 | 14.662 | 1.000  | 761954   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.663 | 17.668 | 1.000  | 775495   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.099  | 7.105  | 1.000  | 951882   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.405  | 9.415  | 1.000  | 505351   | 40.00 | ng/uL | -0.01     |
| 160) D Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 909713   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.657 | 14.662 | 1.000  | 761954   | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.099  | 7.105  | 1.000  | 951882   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.663 | 17.668 | 1.000  | 775495   | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.318  | 5.324  | 1.000  | 305802   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 909713   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.657 | 14.662 | 1.000  | 761954   | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 0.000  | 3.660  | 0.000  | 0        | 0.00  | ng/uL |           |
| 8) Phenol-d5                  | 99   | 0.000  | 4.810  | 0.000  | 0        | 0.00  | ng/uL |           |
| 25) Nitrobenzene-d5           | 82   | 0.000  | 6.110  | 0.000  | 0        | 0.00  | ng/uL |           |
| 47) 2-Fluorobiphenyl          | 172  | 0.000  | 8.554  | 0.000  | 0        | 0.00  | ng/uL |           |
| 66) 2,4,6-Tribromophenol      | 330  | 0.000  | 10.405 | 0.000  | 0        | 0.00  | ng/uL |           |
| 83) p-Terphenyl-d14           | 244  | 0.000  | 13.245 | 0.000  | 0d       | 0.00  | ng/uL |           |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 176) Benzidine                | 184  | 12.940 | 12.940 | 1.148  | 646502   | 47.96 | ng/uL | 99        |
| 178) 3,3'-Dichlorobenzidine   | 252  | 14.609 | 14.604 | 0.997  | 396027   | 41.36 | ng/uL | 98        |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1009.D  
Acq On : 10 Nov 2016 14:07  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN160801-45.2|CCV|1|SVM|1|B-CCV  
Misc : |MIX[J]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 10 14:59:00 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Client SDG:** 409254  
**Instrument ID:** MSD1.I  
**Injection Date:** 11-NOV-16 11:27  
**Data File:** s111116.B\s1k1103.D  
**Init. Cal. Date(s)** 29-SEP-16 10:05 - 30-SEP-16 07:50  
**Lab Sample ID** WBN161004-18.4  
**Method:** s111116.B\MSD1\_8270C\_8270D\_092916.M  
**Quant Type** ISTD  
**Method Update:** 30-SEP-16 09:55

| Compound                   | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|----------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| Benzaldehyde               | 1.1537            | 1.186     |                | .01    |         | 2.79969        | 20  |            | Averaged      |
| Acetophenone               | 1.6364            | 1.7262    |                | .01    |         | 5.48766        | 20  |            | Averaged      |
| Caprolactam                | 0.1114            | 0.11639   |                | .01    |         | 4.47935        | 20  |            | Averaged      |
| 1,2,4,5-Tetrachlorobenzene | 0.6964            | 0.73319   |                | .01    |         | 5.28288        | 20  |            | Averaged      |
| 1,1'-Biphenyl              | 40                | 43.78     | 40             |        |         | 9.45           | 20  |            | Linear        |
| Atrazine                   | 0.2448            | 0.26149   |                | .01    |         | 6.81781        | 20  |            | Averaged      |

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1103.D  
Acq On : 11 Nov 2016 11:27  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161004-18.4|CCV|1|SVM|1|A-CCV  
Misc : |MIX[B]  
ALS Vial : 3 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 13:01:39 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.372  | 5.372  | 1.000  | 207441   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.148  | 7.153  | 1.000  | 680079   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.458  | 9.458  | 1.000  | 381014   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.325 | 11.319 | 1.000  | 614875   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.721 | 14.732 | 1.000  | 486858   | 40.00 | ng/uL | -0.01     |
| 91) A Perylene-d12            | 264  | 17.781 | 17.786 | 1.000  | 369798   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.372  | 5.372  | 1.000  | 205643   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.148  | 7.153  | 1.000  | 680079   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.458  | 9.458  | 1.000  | 381014   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.325 | 11.319 | 1.000  | 614875   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.721 | 14.732 | 1.000  | 486858   | 40.00 | ng/uL | -0.01     |
| 152) B Perylene-d12           | 264  | 17.781 | 17.786 | 1.000  | 369798   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.148  | 7.153  | 1.000  | 680079   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.458  | 9.458  | 1.000  | 381014   | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.325 | 11.319 | 1.000  | 614875   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.721 | 14.732 | 1.000  | 486858   | 40.00 | ng/uL | -0.01     |
| 169) E Naphthalene-d8         | 136  | 7.148  | 7.153  | 1.000  | 680079   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.781 | 17.786 | 1.000  | 369798   | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.372  | 5.372  | 1.000  | 205643   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.325 | 11.319 | 1.000  | 614875   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.721 | 14.732 | 1.000  | 486858   | 40.00 | ng/uL | -0.01     |

|                             |     |       |        |       |   |      |       |           |
|-----------------------------|-----|-------|--------|-------|---|------|-------|-----------|
| System Monitoring Compounds |     |       |        |       |   |      |       | Dev (Min) |
| 5) 2-Fluorophenol           | 112 | 0.000 | 3.714  | 0.000 | 0 | 0.00 | ng/uL |           |
| 8) Phenol-d5                | 99  | 0.000 | 4.864  | 0.000 | 0 | 0.00 | ng/uL |           |
| 25) Nitrobenzene-d5         | 82  | 0.000 | 6.158  | 0.000 | 0 | 0.00 | ng/uL |           |
| 47) 2-Fluorobiphenyl        | 172 | 0.000 | 8.597  | 0.000 | 0 | 0.00 | ng/uL |           |
| 66) 2,4,6-Tribromophenol    | 330 | 0.000 | 10.453 | 0.000 | 0 | 0.00 | ng/uL |           |
| 83) p-Terphenyl-d14         | 244 | 0.000 | 13.298 | 0.000 | 0 | 0.00 | ng/uL |           |

| Target Compounds               | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  | QValue |
|--------------------------------|------|-------|--------|--------|----------|-------|--------|--------|
| 100) 1,4-Dioxane               | 88   | 2.125 | 2.125  | 0.396  | 119204   | 43.25 | ng/uL  | 86     |
| 101) Methyl methacrylate       | 100  | 2.125 | 2.125  | 0.396  | 59490    | 44.53 | ng/uL# | 62     |
| 102) Ethyl methacrylate        | 69   | 2.778 | 2.778  | 0.517  | 198583   | 33.21 | ng/uL  | 89     |
| 103) 2-Picoline                | 93   | 3.109 | 3.109  | 0.579  | 270144   | 35.81 | ng/uL  | 97     |
| 104) N-Nitrosomethylethylamine | 88   | 3.216 | 3.216  | 0.599  | 100242   | 34.41 | ng/uL  | 94     |
| 105) Methyl methanesulfonate   | 80   | 3.532 | 3.532  | 0.657  | 210330   | 42.89 | ng/uL  | 99     |
| 106) N-Nitrosodiethylamine     | 102  | 3.992 | 3.992  | 0.743  | 117160   | 35.99 | ng/uL  | 96     |
| 107) 2-Butoxyethanol           | 57   | 4.072 | 4.072  | 0.758  | 332450   | 39.27 | ng/uL  | 98     |
| 108) Ethyl methanesulfonate    | 79   | 4.350 | 4.350  | 0.810  | 216955   | 42.51 | ng/uL  | 100    |
| 109) Benzaldehyde              | 77   | 4.789 | 4.789  | 0.891  | 243892   | 41.12 | ng/uL  | 96     |
| 110) Pentachloroethane         | 167  | 4.987 | 4.987  | 0.928  | 132439   | 43.77 | ng/uL  | 98     |
| 111) N-Nitrosopyrrolidine      | 100  | 5.912 | 5.912  | 1.101  | 120074   | 35.20 | ng/uL  | 84     |
| 112) Acetophenone              | 105  | 5.944 | 5.944  | 1.107  | 354981   | 42.20 | ng/uL  | 100    |
| 113) N-Nitrosomorpholine       | 56   | 5.971 | 5.971  | 1.112  | 203157   | 38.91 | ng/uL  | 99     |
| 114) o-Toluidine               | 106  | 5.992 | 5.992  | 1.115  | 290693   | 35.09 | ng/uL  | 100    |
| 116) N-Nitrosopiperidine       | 114  | 6.393 | 6.393  | 0.894  | 119674   | 34.73 | ng/uL# | 83     |
| 117) a,a-Dimethylphenethyla... | 58   | 6.918 | 6.918  | 0.968  | 894657   | 37.81 | ng/uL  | 99     |
| 118) 2,6-Dichlorophenol        | 162  | 7.271 | 7.271  | 1.017  | 178659   | 40.98 | ng/uL  | 99     |
| 119) Hexachloropropene         | 213  | 7.303 | 7.303  | 1.022  | 166090   | 43.33 | ng/uL  | 100    |
| 120) Caprolactam               | 113  | 7.725 | 7.725  | 1.081  | 79151    | 41.79 | ng/uL  | 98     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1103.D  
Acq On : 11 Nov 2016 11:27  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161004-18.4|CCV|1|SVM|1|A-CCV  
Misc : |MIX[B]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 11 13:01:39 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

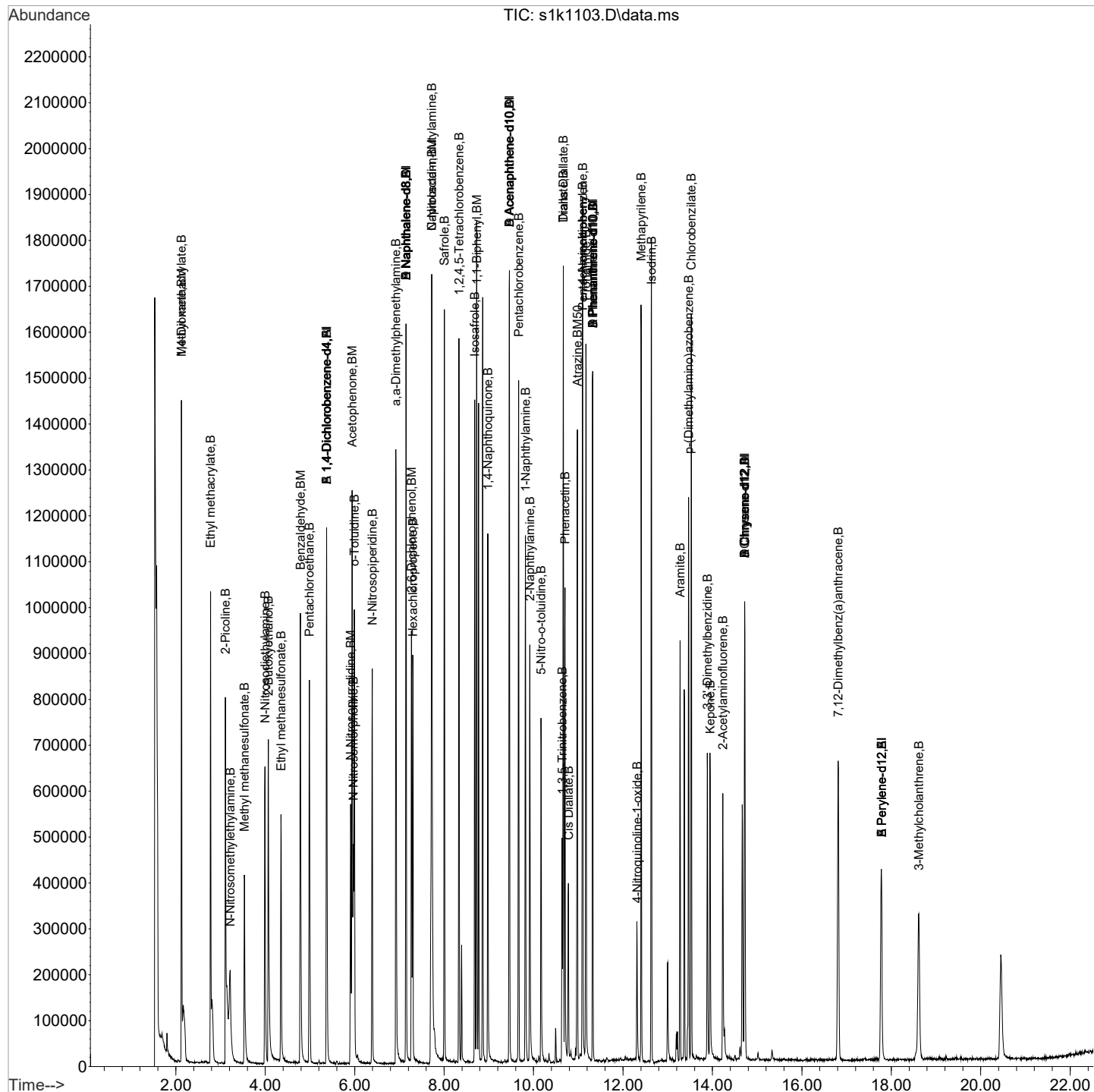
| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|--------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 121) N-Nitrosodi-n-butylamine  | 84   | 7.725  | 7.725  | 1.081  | 224495   | 40.52 | ng/uL | 87  |
| 122) Safrole                   | 162  | 8.003  | 8.003  | 1.120  | 192477   | 39.74 | ng/uL | 92  |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.330  | 8.330  | 0.881  | 279355   | 42.11 | ng/uL | 97  |
| 125) 1,1-Biphenyl              | 154  | 8.725  | 8.725  | 0.923  | 522786   | 43.78 | ng/uL | 99  |
| 126) Isosafrole                | 162  | 8.683  | 8.683  | 0.918  | 193912   | 41.05 | ng/uL | 99  |
| 127) 1,4-Naphthoquinone        | 158  | 8.977  | 8.977  | 0.949  | 162610   | 41.75 | ng/uL | 95  |
| 128) Pentachlorobenzene        | 250  | 9.667  | 9.667  | 1.022  | 240137   | 41.17 | ng/uL | 98  |
| 129) 1-Naphthylamine           | 143  | 9.817  | 9.817  | 1.038  | 324127   | 32.21 | ng/uL | 93  |
| 130) 2-Naphthylamine           | 143  | 9.918  | 9.918  | 1.049  | 319963   | 33.44 | ng/uL | 98  |
| 131) 5-Nitro-o-toluidine       | 152  | 10.164 | 10.164 | 1.075  | 112352   | 33.23 | ng/uL | 96  |
| 133) 1,3,5-Trinitrobenzene     | 75   | 10.640 | 10.640 | 0.940  | 156273   | 42.88 | ng/uL | 98  |
| 134) Phenacetin                | 108  | 10.704 | 10.704 | 0.945  | 225096   | 40.63 | ng/uL | 100 |
| 135) Diallate                  | 86   | 10.667 | 10.667 | 0.942  | 228717   | 46.74 | ng/uL | 98  |
| 136) Cis Diallate              | 86   | 10.779 | 10.779 | 0.952  | 44364    | 6.68  | ng/uL | 97  |
| 137) Trans Diallate            | 86   | 10.667 | 10.667 | 0.942  | 228717   | 39.73 | ng/uL | 98  |
| 138) Atrazine                  | 200  | 10.983 | 10.983 | 0.970  | 160781   | 42.72 | ng/uL | 100 |
| 139) 4-Aminobiphenyl           | 169  | 11.095 | 11.095 | 0.980  | 316963   | 30.68 | ng/uL | 99  |
| 140) Pentachloronitrobenzene   | 237  | 11.100 | 11.100 | 0.980  | 90725    | 47.08 | ng/uL | 98  |
| 141) Pronamide                 | 173  | 11.170 | 11.170 | 0.986  | 245926   | 44.13 | ng/uL | 99  |
| 142) 4-Nitroquinoline-1-oxide  | 190  | 12.314 | 12.314 | 1.087  | 27053    | 22.32 | ng/uL | 82  |
| 143) Methapyrilene             | 58   | 12.405 | 12.405 | 1.095  | 542469   | 44.17 | ng/uL | 95  |
| 144) Isodrin                   | 193  | 12.635 | 12.635 | 1.116  | 119481   | 45.64 | ng/uL | 97  |
| 146) Aramite                   | 185  | 13.277 | 13.277 | 0.902  | 66380    | 52.73 | ng/uL | 99  |
| 147) Kepone                    | 272  | 13.951 | 13.951 | 0.948  | 72497    | 41.07 | ng/uL | 94  |
| 148) p-(Dimethylamino)azobe... | 120  | 13.470 | 13.470 | 0.915  | 182202   | 39.63 | ng/uL | 97  |
| 149) Chlorobenzilate           | 251  | 13.529 | 13.529 | 0.919  | 261719   | 52.39 | ng/uL | 99  |
| 150) 3,3'-Dimethylbenzidine    | 212  | 13.887 | 13.887 | 0.943  | 262151   | 27.25 | ng/uL | 99  |
| 151) 2-Acetylaminofluorene     | 181  | 14.235 | 14.235 | 0.967  | 158375   | 28.50 | ng/uL | 96  |
| 153) 7,12-Dimethylbenz(a)an... | 256  | 16.813 | 16.813 | 0.946  | 261582   | 42.44 | ng/uL | 99  |
| 154) 3-Methylcholanthrene      | 269  | 18.615 | 18.615 | 1.047  | 42292    | 34.27 | ng/uL | 90  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1103.D  
Acq On : 11 Nov 2016 11:27  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161004-18.4|CCV|1|SVM|1|A-CCV  
Misc : |MIX[B]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 11 13:01:39 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Client SDG:** 409254  
**Instrument ID:** MSD1.I  
**Injection Date:** 11-NOV-16 12:50  
**Data File:** s111116.B\s1k1106.D  
**Init. Cal. Date(s)** 29-SEP-16 10:05 - 30-SEP-16 07:50  
**Lab Sample ID** WBN160801-45.2  
**Method:** s111116.B\MSD1\_8270C\_8270D\_092916.M  
**Quant Type** ISTD  
**Method Update:** 30-SEP-16 09:55

| Compound               | AVERF /<br>Amount | RF<br>CCV | Nominal<br>CCV | Min RF | RF<br>Q | %D /<br>%Drift | Max | Drift<br>Q | Curve<br>Type |
|------------------------|-------------------|-----------|----------------|--------|---------|----------------|-----|------------|---------------|
| 3,3'-Dichlorobenzidine | 0.5027            | 0.48752   |                | .01    |         | -3.01969       | 20  |            | Averaged      |

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/11/2016

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1106.D  
Acq On : 11 Nov 2016 12:50  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN160801-45.2|CCV|1|SVM|1|B-CCV  
Misc : |MIX[J]  
ALS Vial : 6 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 13:45:52 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.372  | 5.372  | 1.000  | 296357   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.148  | 7.153  | 1.000  | 956324   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.453  | 9.458  | 1.000  | 497317   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.319 | 11.319 | 1.000  | 840842   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.727 | 14.732 | 1.000  | 619660   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.786 | 17.786 | 1.000  | 641512   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.372  | 5.372  | 1.000  | 296279   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.148  | 7.153  | 1.000  | 956324   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.453  | 9.458  | 1.000  | 497317   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.319 | 11.319 | 1.000  | 840842   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.727 | 14.732 | 1.000  | 619660   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.786 | 17.786 | 1.000  | 641512   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.148  | 7.153  | 1.000  | 956324   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.453  | 9.458  | 1.000  | 497317   | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.319 | 11.319 | 1.000  | 840842   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.727 | 14.732 | 1.000  | 619660   | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.148  | 7.153  | 1.000  | 956324   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.786 | 17.786 | 1.000  | 641512   | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.372  | 5.372  | 1.000  | 296279   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.319 | 11.319 | 1.000  | 840842   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.727 | 14.732 | 1.000  | 619660   | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       | Dev (Min) |
| 5) 2-Fluorophenol             | 112  | 0.000  | 3.714  | 0.000  | 0        | 0.00  | ng/uL |           |
| 8) Phenol-d5                  | 99   | 0.000  | 4.864  | 0.000  | 0        | 0.00  | ng/uL |           |
| 25) Nitrobenzene-d5           | 82   | 0.000  | 6.158  | 0.000  | 0        | 0.00  | ng/uL |           |
| 47) 2-Fluorobiphenyl          | 172  | 0.000  | 8.597  | 0.000  | 0        | 0.00  | ng/uL |           |
| 66) 2,4,6-Tribromophenol      | 330  | 0.000  | 10.453 | 0.000  | 0        | 0.00  | ng/uL |           |
| 83) p-Terphenyl-d14           | 244  | 0.000  | 13.298 | 0.000  | 0        | 0.00  | ng/uL |           |
| Target Compounds              |      |        |        |        |          |       |       | QValue    |
| 176) Benzidine                | 184  | 12.988 | 12.995 | 1.147  | 483393   | 38.80 | ng/uL | 99        |
| 178) 3,3'-Dichlorobenzidine   | 252  | 14.668 | 14.673 | 0.996  | 302097   | 38.79 | ng/uL | 98        |

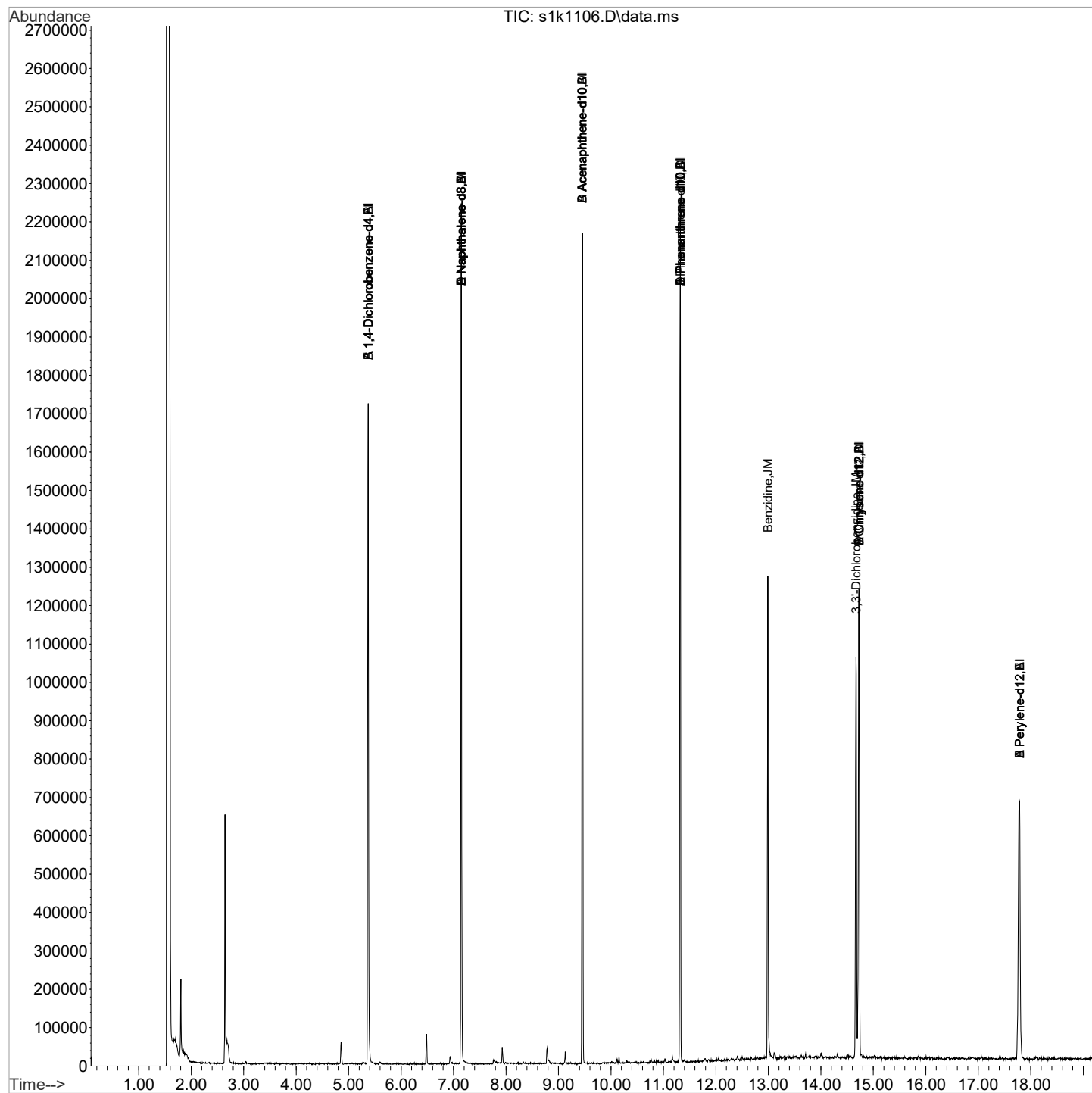
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1106.D  
Acq On : 11 Nov 2016 12:50  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN160801-45.2|CCV|1|SVM|1|B-CCV  
Misc : |MIX[J]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 11 13:45:52 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Instrument ID:** MSD1.I  
**Data File:** s111116.B\sk1107.D  
**Lab Sample ID** WBN161025-05.4  
**Quant Type** ISTD

**Client SDG:** 409254  
**Injection Date:** 11-NOV-16 13:48  
**Init. Cal. Date(s)** 29-SEP-16 10:05 - 30-SEP-16 07:50  
**Method:** s111116.B\MSD1\_8270C\_8270D\_092916.M  
**Method Update:** 30-SEP-16 09:55

| Compound                       | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| S2-Fluorophenol                | 1.4846         | 1.53322 |             | .01    |      | 3.27496     | 20  |         | Averaged   |
| SPhenol-d5                     | 1.8177         | 1.90443 |             | .01    |      | 4.77141     | 20  |         | Averaged   |
| SNitrobenzene-d5               | 0.4682         | 0.49632 |             | .01    |      | 6.00598     | 20  |         | Averaged   |
| S2-Fluorobiphenyl              | 1.4097         | 1.43229 |             | .01    |      | 1.60247     | 20  |         | Averaged   |
| S2,4,6-Tribromophenol          | 0.2609         | 0.2678  |             | .01    |      | 2.64469     | 20  |         | Averaged   |
| Sp-Terphenyl-d14               | 1.068          | 1.17622 |             | .01    |      | 10.13296    | 20  |         | Averaged   |
| Phenol                         | 1.6271         | 1.61343 |             | .8     |      | -0.84015    | 20  |         | Averaged   |
| bis(2-Chloroethyl) ether       | 1.3182         | 1.33196 |             | .7     |      | 1.04385     | 20  |         | Averaged   |
| 2-Chlorophenol                 | 1.2697         | 1.31362 |             | .8     |      | 3.45908     | 20  |         | Averaged   |
| o-Cresol                       | 1.026          | 1.03252 |             | .7     |      | 0.63548     | 20  |         | Averaged   |
| bis(2-Chloro-1-methylethyl)eth | 2.5727         | 2.97099 |             | .01    |      | 15.4814     | 20  |         | Averaged   |
| m,p-Cresols                    | 1.3334         | 1.29805 |             | .6     |      | -2.65112    | 20  |         | Averaged   |
| N-Nitrosodipropylamine         | 1.0082         | 1.12643 |             | .5     |      | 11.72684    | 20  |         | Averaged   |
| Hexachloroethane               | 0.591          | 0.58325 |             | .3     |      | -1.31134    | 20  |         | Averaged   |
| Nitrobenzene                   | 0.4285         | 0.45588 |             | .2     |      | 6.38973     | 20  |         | Averaged   |
| Isophorone                     | 0.9079         | 0.95261 |             | .4     |      | 4.92455     | 20  |         | Averaged   |
| 2-Nitrophenol                  | 0.1995         | 0.22103 |             | .1     |      | 10.79198    | 20  |         | Averaged   |
| 2,4-Dimethylphenol             | 0.3236         | 0.33669 |             | .2     |      | 4.04512     | 20  |         | Averaged   |
| bis(2-Chloroethoxy)methane     | 0.4812         | 0.4964  |             | .3     |      | 3.15877     | 20  |         | Averaged   |
| 2,4-Dichlorophenol             | 0.3205         | 0.34246 |             | .2     |      | 6.85179     | 20  |         | Averaged   |
| Naphthalene                    | 0.9466         | 0.9631  |             | .7     |      | 1.74308     | 20  |         | Averaged   |
| 4-Chloroaniline                | 0.3468         | 0.33342 |             | .01    |      | -3.85813    | 20  |         | Averaged   |
| Hexachlorobutadiene            | 0.2703         | 0.28373 |             | .01    |      | 4.96855     | 20  |         | Averaged   |
| 4-Chloro-3-methylphenol        | 0.411          | 0.43266 |             | .2     |      | 5.27007     | 20  |         | Averaged   |
| 2-Methylnaphthalene            | 0.7312         | 0.74243 |             | .4     |      | 1.53583     | 20  |         | Averaged   |
| 1-Methylnaphthalene            | 0.6612         | 0.65896 |             | .4     |      | -0.33878    | 20  |         | Averaged   |
| Hexachlorocyclopentadiene      | 0.4705         | 0.38068 |             | .05    |      | -19.09033   | 20  |         | Averaged   |
| 2,4,6-Trichlorophenol          | 0.4473         | 0.45852 |             | .2     |      | 2.50838     | 20  |         | Averaged   |
| 2,4,5-Trichlorophenol          | 0.4317         | 0.4386  |             | .2     |      | 1.59833     | 20  |         | Averaged   |
| 2-Chloronaphthalene            | 1.2583         | 1.2284  |             | .8     |      | -2.37622    | 20  |         | Averaged   |
| o-Nitroaniline                 | 0.497          | 0.52542 |             | .01    |      | 5.71831     | 20  |         | Averaged   |
| Dimethylphthalate              | 1.5318         | 1.5084  |             | .01    |      | -1.52761    | 20  |         | Averaged   |
| 2,6-Dinitrotoluene             | 0.329          | 0.34028 |             | .2     |      | 3.42857     | 20  |         | Averaged   |
| Acenaphthylene                 | 1.8811         | 1.87918 |             | .9     |      | -0.10207    | 20  |         | Averaged   |
| m-Nitroaniline                 | 0.2905         | 0.25955 |             | .01    |      | -10.65404   | 20  |         | Averaged   |
| Acenaphthene                   | 1.081          | 1.09501 |             | .9     |      | 1.29602     | 20  |         | Averaged   |
| 2,4-Dinitrophenol              | 40             | 43.92   | 40          |        |      | 9.8         | 20  |         | Linear     |

## Continuing Calibration Summary

Instrument ID: MSD1.I

Injection Date: 11-NOV-16 13:48

Data File: s111116.B\sk1107.D

Init. Cal. Date(s) 29-SEP-16 10:05 30-SEP-16 07:50

Lab Sample ID WBN161025-05.4

Method: s111116.B\MSD1\_8270C\_8270D\_092916.M

Quant Type ISTD

| Compound                   | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|----------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| 4-Nitrophenol              | 40             | 36.12   | 40          |        |      | -9.7        | 20  |         | Linear     |
| 2,4-Dinitrotoluene         | 0.4523         | 0.44401 |             | .2     |      | -1.83285    | 20  |         | Averaged   |
| Dibenzofuran               | 1.6454         | 1.63956 |             | .8     |      | -0.35493    | 20  |         | Averaged   |
| 2,3,4,6-Tetrachlorophenol  | 0.3915         | 0.39387 |             | .01    |      | 0.60536     | 20  |         | Averaged   |
| Diethylphthalate           | 1.724          | 1.67182 |             | .01    |      | -3.02668    | 20  |         | Averaged   |
| Fluorene                   | 1.4357         | 1.40519 |             | .9     |      | -2.1251     | 20  |         | Averaged   |
| 4-Chlorophenylphenylether  | 0.8049         | 0.79557 |             | .4     |      | -1.15915    | 20  |         | Averaged   |
| p-Nitroaniline             | 0.272          | 0.22735 |             | .01    |      | -16.41544   | 20  |         | Averaged   |
| 2-Methyl-4,6-dinitrophenol | 40             | 45.81   | 40          |        |      | 14.525      | 20  |         | Linear     |
| Diphenylamine              | 0.6392         | 0.66272 |             | .01    |      | 3.6796      | 20  |         | Averaged   |
| 4-Bromophenylphenylether   | 0.2867         | 0.29948 |             | .1     |      | 4.45762     | 20  |         | Averaged   |
| Hexachlorobenzene          | 0.2892         | 0.30021 |             | .1     |      | 3.80705     | 20  |         | Averaged   |
| Pentachlorophenol          | 40             | 41.98   | 40          |        |      | 4.95        | 20  |         | Linear     |
| Phenanthrene               | 0.9221         | 0.96121 |             | .7     |      | 4.24141     | 20  |         | Averaged   |
| Anthracene                 | 0.9651         | 1.00143 |             | .7     |      | 3.76438     | 20  |         | Averaged   |
| Carbazole                  | 0.9193         | 0.96251 |             | .01    |      | 4.70032     | 20  |         | Averaged   |
| Di-n-butylphthalate        | 1.4744         | 1.55279 |             | .01    |      | 5.31674     | 20  |         | Averaged   |
| Fluoranthene               | 1.3571         | 1.36321 |             | .6     |      | 0.45022     | 20  |         | Averaged   |
| Pyrene                     | 1.6191         | 1.74406 |             | .6     |      | 7.71787     | 20  |         | Averaged   |
| Butylbenzylphthalate       | 0.7754         | 0.85812 |             | .01    |      | 10.66804    | 20  |         | Averaged   |
| Benzo(a)anthracene         | 1.2469         | 1.26905 |             | .8     |      | 1.77641     | 20  |         | Averaged   |
| bis(2-Ethylhexyl)phthalate | 0.8639         | 0.93846 |             | .01    |      | 8.63063     | 20  |         | Averaged   |
| Chrysene                   | 1.0377         | 1.03523 |             | .7     |      | -0.23803    | 20  |         | Averaged   |
| Di-n-octylphthalate        | 40             | 40.81   | 40          |        |      | 2.025       | 20  |         | Linear     |
| Benzo(b)fluoranthene       | 1.4151         | 1.35353 |             | .7     |      | -4.35093    | 20  |         | Averaged   |
| Benzo(k)fluoranthene       | 1.2245         | 1.22279 |             | .7     |      | -0.13965    | 20  |         | Averaged   |
| Benzo(a)pyrene             | 1.2239         | 1.19057 |             | .7     |      | -2.72326    | 20  |         | Averaged   |
| Indeno(1,2,3-cd)pyrene     | 0.936          | 0.89974 |             | .5     |      | -3.87393    | 20  |         | Averaged   |
| Dibenzo(a,h)anthracene     | 0.8716         | 0.83613 |             | .4     |      | -4.06953    | 20  |         | Averaged   |
| Benzo(ghi)perylene         | 0.9551         | 0.87397 |             | .5     |      | -8.4944     | 20  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/11/2016

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1107.D  
Acq On : 11 Nov 2016 13:48  
Operator : JMB3  
InstName : MSD1  
Sample : WBN161025-05.4|CCV|1|SVM|1|M-CCV  
Misc : MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 14:17:46 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.377  | 5.372  | 1.000  | 241123   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.153  | 7.153  | 1.000  | 790182   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.463  | 9.458  | 1.000  | 442603   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.325 | 11.319 | 1.000  | 785711   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.737 | 14.732 | 1.000  | 593459   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.786 | 17.786 | 1.000  | 511459   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.377  | 5.372  | 1.000  | 239981   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.153  | 7.153  | 1.000  | 790182   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.463  | 9.458  | 1.000  | 442603   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.325 | 11.319 | 1.000  | 785711   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.737 | 14.732 | 1.000  | 593459   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.786 | 17.786 | 1.000  | 511459   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.153  | 7.153  | 1.000  | 790182   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.463  | 9.458  | 1.000  | 442603   | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.325 | 11.319 | 1.000  | 785711   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.737 | 14.732 | 1.000  | 593463   | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.153  | 7.153  | 1.000  | 790182   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.786 | 17.786 | 1.000  | 511459   | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.377  | 5.372  | 1.000  | 239981   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.325 | 11.319 | 1.000  | 785711   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.737 | 14.732 | 1.000  | 593459   | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds   |      |        |        |        |          |       |       |           |
| 5) 2-Fluorophenol             | 112  | 3.714  | 3.714  | 0.691  | 369695   | 41.31 | ng/uL | 0.00      |
| 8) Phenol-d5                  | 99   | 4.864  | 4.864  | 0.905  | 459202   | 41.91 | ng/uL | 0.00      |
| 25) Nitrobenzene-d5           | 82   | 6.163  | 6.158  | 0.862  | 392183   | 42.40 | ng/uL | 0.00      |
| 47) 2-Fluorobiphenyl          | 172  | 8.602  | 8.597  | 0.909  | 633937   | 40.64 | ng/uL | 0.00      |
| 66) 2,4,6-Tribromophenol      | 330  | 10.458 | 10.453 | 1.105  | 118527   | 41.06 | ng/uL | 0.00      |
| 83) p-Terphenyl-d14           | 244  | 13.298 | 13.298 | 0.902  | 698038   | 44.05 | ng/uL | 0.00      |
| Target Compounds              |      |        |        |        |          |       |       |           |
| 2) 2-Ethoxyethanol            | 59   | 2.141  | 2.136  | 0.398  | 299914   | 44.20 | ng/uL | 86        |
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.398  | 2.392  | 0.446  | 249133   | 43.94 | ng/uL | 91        |
| 4) Pyridine                   | 79   | 2.430  | 2.430  | 0.452  | 360855   | 38.89 | ng/uL | 81        |
| 6) p-Benzquinone              | 54   | 4.307  | 4.313  | 0.801  | 200937   | 30.43 | ng/uL | 94        |
| 7) Aniline                    | 93   | 4.928  | 4.928  | 0.916  | 420223   | 36.96 | ng/uL | 95        |
| 9) Phenol                     | 94   | 4.885  | 4.880  | 0.908  | 389034   | 39.66 | ng/uL | 96        |
| 10) bis(2-Chloroethyl) ether  | 93   | 5.013  | 5.008  | 0.932  | 321167   | 40.42 | ng/uL | 99        |
| 11) 2-Chlorophenol            | 128  | 5.088  | 5.083  | 0.946  | 316744   | 41.38 | ng/uL | 96        |
| 12) n-Decane                  | 43   | 5.152  | 5.152  | 0.958  | 557228   | 46.09 | ng/uL | 93        |
| 13) 1,3-Dichlorobenzene       | 146  | 5.297  | 5.297  | 0.985  | 350630   | 41.38 | ng/uL | 98        |
| 14) 1,4-Dichlorobenzene       | 146  | 5.404  | 5.398  | 1.005  | 322391   | 41.64 | ng/uL | 100       |
| 15) 1,2-Dichlorobenzene       | 146  | 5.612  | 5.607  | 1.044  | 317696   | 41.02 | ng/uL | 99        |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.773  | 5.767  | 1.074  | 716375   | 46.19 | ng/uL | 99        |
| 17) Benzyl alcohol            | 108  | 5.570  | 5.570  | 1.036  | 209099   | 39.47 | ng/uL | 97        |
| 18) o-Cresol                  | 107  | 5.725  | 5.719  | 1.065  | 248965   | 40.25 | ng/uL | 98        |
| 19) m,p-Cresols               | 107  | 5.960  | 5.955  | 1.108  | 312989   | 38.94 | ng/uL | 99        |
| 20) N-Nitrosodipropylamine    | 70   | 5.965  | 5.955  | 1.109  | 271607   | 44.69 | ng/uL | 91        |
| 21) p-Toluidine               | 106  | 6.014  | 6.008  | 1.118  | 319886   | 34.87 | ng/uL | 100       |
| 22) m-Toluidine               | 106  | 6.062  | 6.056  | 1.127  | 326312   | 36.70 | ng/uL | 99        |
| 23) Hexachloroethane          | 117  | 6.088  | 6.088  | 1.132  | 140635   | 39.47 | ng/uL | 98        |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1107.D  
Acq On : 11 Nov 2016 13:48  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161025-05.4|CCV|1|SVM|1|M-CCV  
Misc : |MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 11 14:17:46 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |     |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----|
| 26) Nitrobenzene              | 77   | 6.190  | 6.185  | 0.865  | 360232   | 42.56 | ng/uL | 97  |
| 27) Isophorone                | 82   | 6.532  | 6.527  | 0.913  | 752739   | 41.97 | ng/uL | 97  |
| 28) 2-Nitrophenol             | 139  | 6.629  | 6.629  | 0.927  | 174656   | 44.31 | ng/uL | 98  |
| 29) 2,4-Dimethylphenol        | 122  | 6.704  | 6.698  | 0.937  | 266044   | 41.61 | ng/uL | 97  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.837  | 6.832  | 0.956  | 392245   | 41.26 | ng/uL | 99  |
| 31) 2,4-Dichlorophenol        | 162  | 6.971  | 6.966  | 0.975  | 270604   | 42.74 | ng/uL | 99  |
| 32) Benzoic acid              | 105  | 6.891  | 6.869  | 0.963  | 141003   | 41.01 | ng/uL | 99  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.078  | 7.078  | 0.990  | 317921   | 41.13 | ng/uL | 99  |
| 34) alpha-Terpineol           | 59   | 7.212  | 7.206  | 1.008  | 362205   | 44.73 | ng/uL | 97  |
| 35) Naphthalene               | 128  | 7.185  | 7.180  | 1.004  | 761027   | 40.70 | ng/uL | 99  |
| 36) 4-Chloroaniline           | 127  | 7.265  | 7.260  | 1.016  | 263464   | 38.46 | ng/uL | 99  |
| 37) Hexachlorobutadiene       | 225  | 7.356  | 7.356  | 1.028  | 224201   | 42.00 | ng/uL | 99  |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.923  | 7.918  | 1.108  | 341881   | 42.11 | ng/uL | 98  |
| 39) 2-Methylnaphthalene       | 142  | 8.116  | 8.110  | 1.135  | 586655   | 40.61 | ng/uL | 99  |
| 40) Phthalic anhydride        | 104  | 8.196  | 8.196  | 1.146  | 227366   | 36.51 | ng/uL | 84  |
| 41) 1-Methylnaphthalene       | 142  | 8.244  | 8.239  | 1.153  | 520700   | 39.86 | ng/uL | 99  |
| 43) Hexachlorocyclopentadiene | 237  | 8.324  | 8.319  | 0.880  | 168490   | 32.36 | ng/uL | 97  |
| 44) 2,3-Dichloroaniline       | 161  | 8.485  | 8.479  | 0.897  | 295712   | 42.13 | ng/uL | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.490  | 8.485  | 0.897  | 202944   | 41.01 | ng/uL | 99  |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.533  | 8.533  | 0.902  | 194126   | 40.64 | ng/uL | 97  |
| 48) 2-Chloronaphthalene       | 162  | 8.747  | 8.747  | 0.924  | 543694   | 39.05 | ng/uL | 98  |
| 49) o-Nitroaniline            | 65   | 8.886  | 8.880  | 0.939  | 232554   | 42.29 | ng/uL | 98  |
| 50) 1,4-Dinitrobenzene        | 168  | 9.073  | 9.068  | 0.959  | 107888   | 40.33 | ng/uL | 95  |
| 51) m-Nitroaniline            | 138  | 9.415  | 9.410  | 0.995  | 114877   | 35.73 | ng/uL | 97  |
| 52) Dimethylphthalate         | 163  | 9.142  | 9.137  | 0.966  | 667623   | 39.39 | ng/uL | 98  |
| 53) m-Dinitrobenzene          | 168  | 9.169  | 9.164  | 0.969  | 103151   | 39.41 | ng/uL | 92  |
| 54) 2,6-Dinitrotoluene        | 165  | 9.212  | 9.207  | 0.973  | 150610   | 41.37 | ng/uL | 97  |
| 55) 2,4-Dinitrotoluene        | 165  | 9.715  | 9.709  | 1.027  | 196522   | 39.27 | ng/uL | 98  |
| 56) Acenaphthylene            | 152  | 9.282  | 9.276  | 0.981  | 831732   | 39.96 | ng/uL | 100 |
| 57) Acenaphthene              | 154  | 9.506  | 9.501  | 1.005  | 484656   | 40.52 | ng/uL | 99  |
| 58) 2,4-Dinitrophenol         | 184  | 9.554  | 9.549  | 1.010  | 79691    | 43.92 | ng/uL | 85  |
| 59) Dibenzofuran              | 168  | 9.725  | 9.720  | 1.028  | 725675   | 39.86 | ng/uL | 98  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.881  | 9.875  | 1.044  | 174328   | 40.24 | ng/uL | 97  |
| 61) Diethylphthalate          | 149  | 10.030 | 10.025 | 1.060  | 739952   | 38.79 | ng/uL | 98  |
| 62) 4-Nitrophenol             | 139  | 9.640  | 9.640  | 1.019  | 87930    | 36.12 | ng/uL | 97  |
| 63) Fluorene                  | 166  | 10.153 | 10.153 | 1.073  | 621940   | 39.15 | ng/uL | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 10.159 | 10.153 | 1.073  | 352122   | 39.54 | ng/uL | 99  |
| 65) p-Nitroaniline            | 138  | 10.191 | 10.185 | 1.077  | 100627   | 33.44 | ng/uL | 94  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.228 | 10.223 | 0.903  | 111563   | 45.81 | ng/uL | 96  |
| 69) Diphenylamine             | 169  | 10.308 | 10.308 | 0.910  | 520705   | 41.47 | ng/uL | 98  |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.362 | 10.357 | 0.915  | 653845   | 42.09 | ng/uL | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 10.768 | 10.768 | 0.951  | 235302   | 41.78 | ng/uL | 96  |
| 72) Hexachlorobenzene         | 284  | 10.843 | 10.838 | 0.957  | 235881   | 41.53 | ng/uL | 99  |
| 73) Pentachlorophenol         | 266  | 11.089 | 11.084 | 0.979  | 138158   | 41.98 | ng/uL | 97  |
| 74) n-Octadecane              | 57   | 11.207 | 11.202 | 0.990  | 641215   | 44.67 | ng/uL | 95  |
| 75) Dinoseb                   | 211  | 11.325 | 11.319 | 1.000  | 184308   | 46.21 | ng/uL | 95  |
| 76) Phenanthrene              | 178  | 11.357 | 11.351 | 1.003  | 755234   | 41.69 | ng/uL | 97  |
| 77) Anthracene                | 178  | 11.421 | 11.416 | 1.009  | 786834   | 41.51 | ng/uL | 99  |
| 78) Carbazole                 | 167  | 11.619 | 11.614 | 1.026  | 756254   | 41.88 | ng/uL | 99  |
| 79) Di-n-butylphthalate       | 149  | 12.057 | 12.057 | 1.065  | 1220048  | 42.13 | ng/uL | 99  |
| 80) Fluoranthene              | 202  | 12.828 | 12.822 | 1.133  | 1071088  | 40.18 | ng/uL | 99  |
| 82) Pyrene                    | 202  | 13.106 | 13.100 | 0.889  | 1035030  | 43.09 | ng/uL | 99  |
| 84) Butylbenzylphthalate      | 149  | 13.913 | 13.908 | 0.944  | 509261   | 44.27 | ng/uL | 100 |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1107.D  
Acq On : 11 Nov 2016 13:48  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161025-05.4|CCV|1|SVM|1|M-CCV  
Misc : |MIX[A]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 11 14:17:46 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units     |
|-------------------------------|------|--------|--------|--------|----------|-------|-----------|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.780 | 14.775 | 1.003  | 556940   | 43.45 | ng/uL 99  |
| 86) Benzo(a)anthracene        | 228  | 14.716 | 14.710 | 0.999  | 753131   | 40.71 | ng/uL 99  |
| 87) Chrysene                  | 228  | 14.775 | 14.769 | 1.003  | 614364   | 39.90 | ng/uL 99  |
| 88) Methoxychlor              | 227  | 14.619 | 14.614 | 0.992  | 662666   | 39.24 | ng/uL 100 |
| 89) Methylenebis(2-chloroa... | 231  | 14.684 | 14.678 | 0.996  | 135991   | 38.55 | ng/uL 98  |
| 90) Di-n-octylphthalate       | 149  | 16.042 | 16.037 | 1.089  | 1047559  | 40.81 | ng/uL 95  |
| 92) Benzo(b)fluoranthene      | 252  | 16.839 | 16.828 | 0.947  | 692277   | 38.26 | ng/uL 99  |
| 93) Benzo(k)fluoranthene      | 252  | 16.903 | 16.898 | 0.950  | 625407   | 39.95 | ng/uL 99  |
| 94) Benzo(a)pyrene            | 252  | 17.641 | 17.636 | 0.992  | 608926   | 38.91 | ng/uL 99  |
| 95) Indeno(1,2,3-cd)pyrene    | 276  | 21.016 | 21.000 | 1.182  | 460182   | 38.45 | ng/uL 100 |
| 96) Dibenzo(a,h)anthracene    | 278  | 21.123 | 21.118 | 1.188  | 427647   | 38.37 | ng/uL 88  |
| 97) Benzo(ghi)perylene        | 276  | 21.813 | 21.797 | 1.226  | 446998   | 36.60 | ng/uL 97  |
| 98) Dibenzo(a,e)pyrene        | 302  | 25.670 | 25.659 | 1.443  | 233998   | 39.17 | ng/uL 97  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



## Calibration History Report MSD4

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s110716.B\MSD4\_SIMPAHPLUS\_8270d\_101316.m

Last Update : Thu Oct 13 14:32:32 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

Cal Lvl:1 Amt:0.10 Last Updated with: C:\msdchem\1\DATA\s101316.B\s4j1303.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Oct 2016 11:06 | A   | C:\msdchem\1\DATA\s101316.B\s4j1303.D |
| 13 Oct 2016 11:06 | B   | C:\msdchem\1\DATA\s101316.B\s4j1303.D |

Cal Lvl:2 Amt:0.20 Last Updated with: C:\msdchem\1\DATA\s101316.B\s4j1304.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Oct 2016 11:34 | A   | C:\msdchem\1\DATA\s101316.B\s4j1304.D |
| 13 Oct 2016 11:34 | B   | C:\msdchem\1\DATA\s101316.B\s4j1304.D |

Cal Lvl:3 Amt:0.50 Last Updated with: C:\msdchem\1\DATA\s101316.B\s4j1305.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Oct 2016 12:02 | A   | C:\msdchem\1\DATA\s101316.B\s4j1305.D |
| 13 Oct 2016 12:02 | B   | C:\msdchem\1\DATA\s101316.B\s4j1305.D |

Cal Lvl:4 Amt:1.00 Last Updated with: C:\msdchem\1\DATA\s101316.B\s4j1306.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Oct 2016 12:31 | A   | C:\msdchem\1\DATA\s101316.B\s4j1306.D |
| 13 Oct 2016 12:31 | B   | C:\msdchem\1\DATA\s101316.B\s4j1306.D |

Cal Lvl:5 Amt:2.00 Last Updated with: C:\msdchem\1\DATA\s101316.B\s4j1307.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Oct 2016 12:59 | A   | C:\msdchem\1\DATA\s101316.B\s4j1307.D |
| 13 Oct 2016 12:59 | B   | C:\msdchem\1\DATA\s101316.B\s4j1307.D |

Cal Lvl:6 Amt:5.00 Last Updated with: C:\msdchem\1\DATA\s101316.B\s4j1302.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Oct 2016 10:29 | A   | C:\msdchem\1\DATA\s101316.B\s4j1302.D |
| 13 Oct 2016 10:29 | B   | C:\msdchem\1\DATA\s101316.B\s4j1302.D |

Cal Lvl:7 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\s101316.B\s4j1308.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Oct 2016 13:27 | A   | C:\msdchem\1\DATA\s101316.B\s4j1308.D |
| 13 Oct 2016 13:27 | B   | C:\msdchem\1\DATA\s101316.B\s4j1308.D |

Cal Lvl:8 Amt:20.00 Last Updated with: C:\msdchem\1\DATA\s101316.B\s4j1309.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 13 Oct 2016 13:56 | A   | C:\msdchem\1\DATA\s101316.B\s4j1309.D |
| 13 Oct 2016 13:56 | B   | C:\msdchem\1\DATA\s101316.B\s4j1309.D |

MSD4\_SIMPAH...70d\_101316.m Mon Nov 07 09:00:05 2016

MSD4\_SIMPAH...70d\_101316.m Mon Nov 07 09:00:03 2016

1



Response Factor Report MSD4

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s110716.B\MSD4\_SIMPAHPLUS\_8270d\_101316.m

Last Update : Thu Oct 13 14:32:32 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m_1(x) + m_2(xE2)$

| b     | Compound<br>m1           | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|-------|--------------------------|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 2)AM  | N-Methyl-N-nitrosomethyl |    | 0.7316918<br>0.7144917 | 0.7124514<br>0.7064045 | 0.7164934 | 0.7048517 | 0.7601937 | 0.7393063 | 0.7232 | AVRG  |     | 2.6417  |
| 3)AM  | bis(2-Chloroethyl) ether |    | 1.3285168<br>1.1339326 | 1.2832059<br>1.1114494 | 1.2518506 | 1.2388250 | 1.2561431 | 1.1944111 | 1.2248 | AVRG  |     | 6.0242  |
| 4)AM  | N-Nitrosodipropylamine   |    | 0.8616756<br>0.7481424 | 0.8262404<br>0.7524866 | 0.8014444 | 0.8144556 | 0.8208618 | 0.8129702 | 0.8048 | AVRG  |     | 4.7130  |
| 6)AM  | Naphthalene              |    | 1.2380335<br>0.9367508 | 1.2145612<br>0.8789245 | 1.1974043 | 1.1616167 | 1.1832900 | 1.0978126 | 1.1135 | AVRG  |     | 12.0703 |
| 7)AM  | 2-Methylnaphthalene      |    | 0.8722291<br>0.5739995 | 0.8310334<br>0.5455074 | 0.7965694 | 0.7974133 | 0.8057490 | 0.7583017 | 0.7476 | AVRG  |     | 16.1345 |
| 8)AM  | 1-Methylnaphthalene      |    | 0.7483744<br>0.4855433 | 0.7162345<br>0.4601742 | 0.6898314 | 0.6819017 | 0.6912243 | 0.6380105 | 0.6389 | AVRG  |     | 16.7958 |
| 10)AM | 2-Chloronaphthalene      |    | 2.2903900<br>1.5759496 | 2.0033334<br>1.4688559 | 1.9594057 | 1.9303836 | 1.9265854 | 1.8212299 | 1.8720 | AVRG  |     | 13.6799 |
| 11)AM | Acenaphthylene           |    | 3.1102073<br>2.4261580 | 2.6881677<br>2.2432721 | 2.6096853 | 2.6665085 | 2.7197536 | 2.6682596 | 2.6415 | AVRG  |     | 9.4405  |
| 12)AM | Acenaphthene             |    | 1.4789898<br>1.3821953 | 1.6022969<br>1.2888031 | 1.5876758 | 1.3932777 | 1.3888778 | 1.2695028 | 1.4240 | AVRG  |     | 8.7099  |
| 13)AM | Fluorene                 |    | 1.8439275<br>1.5810649 | 1.8841916<br>1.4689755 | 1.7943637 | 1.6460279 | 1.6156926 | 1.4359956 | 1.6588 | AVRG  |     | 10.1182 |
| 15)AM | Phenanthrene             |    | 1.5199732<br>1.1706226 | 1.4988919<br>1.1134672 | 1.4631615 | 1.4331228 | 1.4713019 | 1.3353007 | 1.3757 | AVRG  |     | 11.2787 |
| 16)AM | Anthracene               |    | 1.3847571<br>1.1445855 | 1.3234226<br>1.0706937 | 1.3166538 | 1.3393789 | 1.3917604 | 1.2483304 | 1.2774 | AVRG  |     | 9.0383  |
| 17)SA | 5-alpha-Androstane       |    | 0.1399509<br>0.1198983 | 0.1284359<br>0.1119868 | 0.1215147 | 0.1246861 | 0.1295520 | 0.1253533 | 0.1252 | AVRG  |     | 6.5012  |
| 18)AM | Fluoranthene             |    | 1.4202843<br>1.1202099 | 1.3037650<br>1.0437779 | 1.2866228 | 1.3246011 | 1.3867833 | 1.2745764 | 1.2701 | AVRG  |     | 10.0591 |
| 20)AM | Pyrene                   |    | 2.8626325<br>2.5006705 | 2.9037015<br>2.2156296 | 2.9170725 | 2.7287442 | 2.6775814 | 2.5357031 | 2.6677 | AVRG  |     | 9.0653  |

## Response Factor Report MSD4

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\s110716.B\MSD4\_SIMPAHPLUS\_8270d\_101316.m

Last Update : Thu Oct 13 14:32:32 2016

Integrator : (RTE Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m_1(x) + m_2(xE2)$ 

| b     | Compound<br>m1           | m2 | 1<br>7                 | 2<br>8                 | 3         | 4         | 5         | 6         | Avg    | Curve | Exp | %RSD/r2 |
|-------|--------------------------|----|------------------------|------------------------|-----------|-----------|-----------|-----------|--------|-------|-----|---------|
| 21)AM | Benzo(a)anthracene       |    | 1.7983877<br>1.6134965 | 1.5895880<br>1.5258077 | 1.5434289 | 1.5409483 | 1.6194865 | 1.6290958 | 1.6075 | AVRG  |     | 5.3931  |
| 22)AM | Chrysene                 |    | 1.6252365<br>1.4542237 | 1.5505500<br>1.4356263 | 1.5411531 | 1.5241116 | 1.5754411 | 1.4796692 | 1.5233 | AVRG  |     | 4.1914  |
| 24)AM | Benzo(b)fluoranthene     |    | 1.8719094<br>1.8428448 | 1.7965651<br>1.8130902 | 1.6825142 | 1.7368604 | 1.7988748 | 1.8401236 | 1.7978 | AVRG  |     | 3.4258  |
| 25)AM | Benzo(k)fluoranthene     |    | 1.7780248<br>1.8148309 | 1.7580805<br>1.7822474 | 1.6819019 | 1.7206332 | 1.8180428 | 1.8057523 | 1.7699 | AVRG  |     | 2.7139  |
| 26)AM | Benzo(a)pyrene           |    | 1.5575450<br>1.5366661 | 1.4033035<br>1.5251336 | 1.3608628 | 1.4156793 | 1.5177583 | 1.5389222 | 1.4820 | AVRG  |     | 5.1225  |
| 27)AM | Indeno(1,2,3-cd)pyrene   |    | 1.1175794<br>0.9078057 | 1.0161995<br>0.8390593 | 1.0302464 | 0.9505615 | 0.9788614 | 0.9930675 | 0.9792 | AVRG  |     | 8.5335  |
| 28)AM | Dibenzo(a,h)anthracene   |    | 0.9820386<br>0.6878199 | 0.8942802<br>0.6235758 | 0.9079270 | 0.8167625 | 0.8734501 | 0.8271965 | 0.8266 | AVRG  |     | 14.3230 |
| 29)AM | Benzo(ghi)perylene       |    | 1.2750779<br>0.7799238 | 1.1567966<br>0.7339782 | 1.1704522 | 1.0693712 | 1.0735333 | 1.0385416 | 1.0372 | AVRG  |     | 18.1888 |
| 31)BM | N-Nitrosodiethylamine    |    | 0.6405656<br>0.5583719 | 0.6022813<br>0.5478652 | 0.5803471 | 0.5772405 | 0.5976772 | 0.5859299 | 0.5863 | AVRG  |     | 4.8691  |
| 32)BM | N-Nitrosopyrrolidine     |    | 0.6147064<br>0.5944907 | 0.5990103<br>0.6003595 | 0.5820054 | 0.5969133 | 0.6072366 | 0.6304542 | 0.6031 | AVRG  |     | 2.4121  |
| 34)BM | N-Nitrosodi-n-butylamine |    | 0.2309662<br>0.1884071 | 0.2173212<br>0.1808448 | 0.2078769 | 0.2161710 | 0.2274830 | 0.2306298 | 0.2125 | AVRG  |     | 8.9565  |
| 36)BM | Benzidine                |    | 0.4746448              | 0.4767608              | 0.3299054 | 0.4189819 | 0.5017142 | 0.4790461 | 0.4468 | AVRG  |     | 14.2127 |
| 38)BM | 3,3'-Dichlorobenzidine   |    | 0.5677960<br>0.6516129 | 0.4397475<br>0.6295383 | 0.4394055 | 0.4531775 | 0.5353837 | 0.5926232 | 0.5387 | AVRG  |     | 15.9592 |

(# ) = Out of Range (\$) = Individual RF Out of Range

AVRG = Average, LINR = Linear Regression,  $1/x$  = the inverse of concentration,  $1/x^2$  = the inverse square of concentration

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1302.D  
Acq On : 13 Oct 2016 10:29  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-83.1|ICAL|1|SVM|1|S-6  
Misc : |MIX[A,B]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 13 14:32:54 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

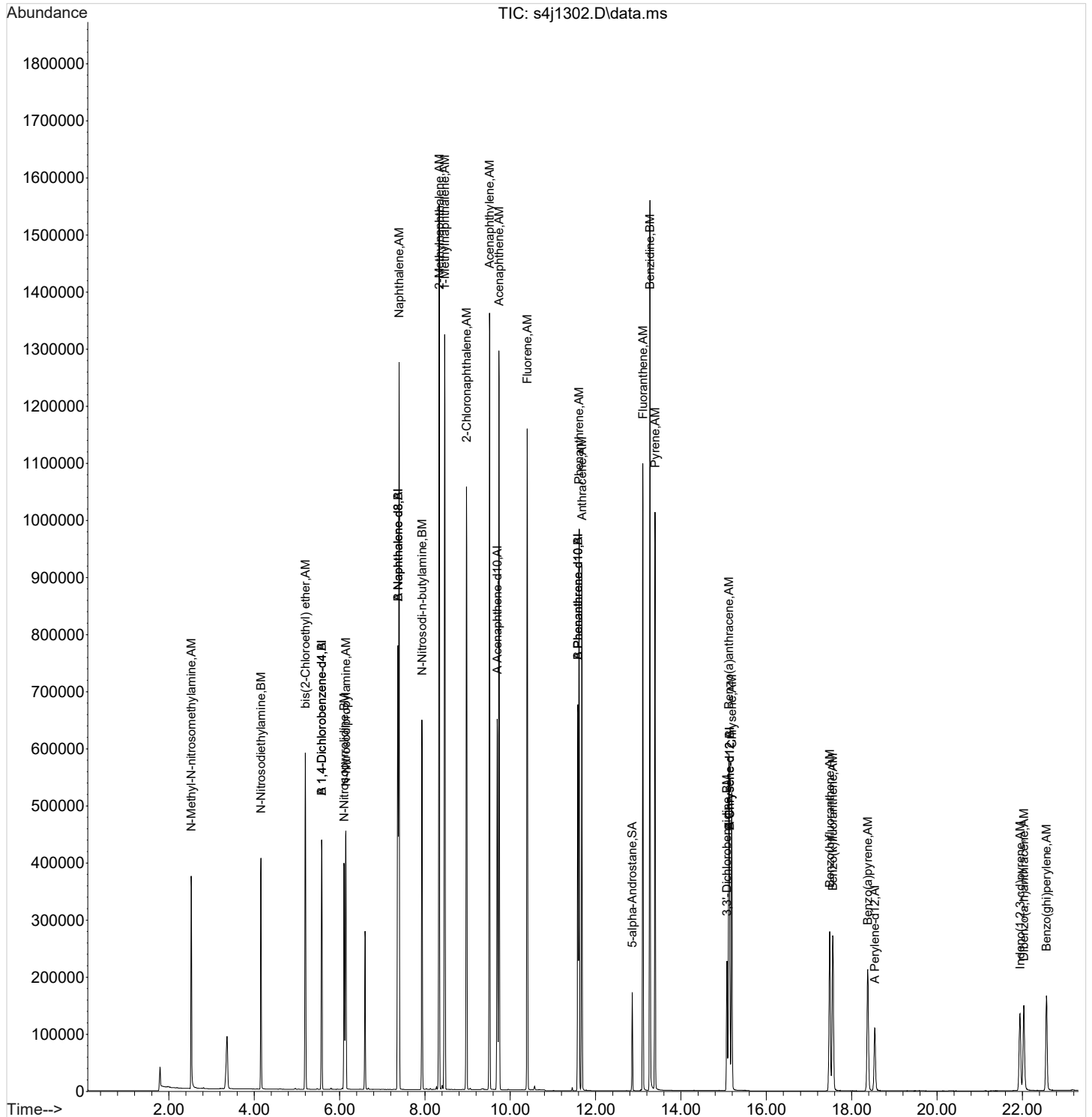
| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards           |      |        |        |        |          |       |       | Dev(Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.578  | 5.578  | 1.000  | 290574   | 4.00  | ng/uL | 0.00     |
| 5) A Naphthalene-d8          | 136  | 7.367  | 7.367  | 1.000  | 903481   | 4.00  | ng/uL | 0.00     |
| 9) A Acenaphthene-d10        | 164  | 9.693  | 9.693  | 1.000  | 363600   | 4.00  | ng/uL | 0.00     |
| 14) A Phenanthrene-d10       | 188  | 11.581 | 11.581 | 1.000  | 571607   | 4.00  | ng/uL | 0.00     |
| 19) A Chrysene-d12           | 240  | 15.139 | 15.139 | 1.000  | 268327   | 4.00  | ng/uL | 0.00     |
| 23) A Perylene-d12           | 264  | 18.539 | 18.539 | 1.000  | 221999   | 4.00  | ng/uL | 0.00     |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.578  | 5.578  | 1.000  | 290574   | 4.00  | ng/uL | 0.00     |
| 33) B Naphthalene-d8         | 136  | 7.367  | 7.367  | 1.000  | 903481   | 4.00  | ng/uL | 0.00     |
| 35) B Phenanthrene-d10       | 188  | 11.581 | 11.581 | 1.000  | 571607   | 4.00  | ng/uL | 0.00     |
| 37) B Chrysene-d12           | 240  | 15.139 | 15.139 | 1.000  | 268327   | 4.00  | ng/uL | 0.00     |
| System Monitoring Compounds  |      |        |        |        |          |       |       | Dev(Min) |
| 17) 5-alpha-Androstane       | 245  | 12.859 | 12.859 | 1.110  | 89566    | 5.01  | ng/uL | 0.00     |
| Target Compounds             |      |        |        |        |          |       |       |          |
| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | QValue   |
| 2) N-Methyl-N-nitrosometh... | 74   | 2.522  | 2.522  | 0.452  | 268529   | 5.11  | ng/uL | 100      |
| 3) bis(2-Chloroethyl) ether  | 93   | 5.198  | 5.198  | 0.932  | 433831   | 4.88  | ng/uL | 100      |
| 4) N-Nitrosodipropylamine    | 70   | 6.147  | 6.147  | 1.102  | 295285   | 5.05  | ng/uL | 100      |
| 6) Naphthalene               | 128  | 7.393  | 7.393  | 1.004  | 1239816  | 4.93  | ng/uL | 100      |
| 7) 2-Methylnaphthalene       | 142  | 8.332  | 8.332  | 1.131  | 856389   | 5.07  | ng/uL | 100      |
| 8) 1-Methylnaphthalene       | 142  | 8.462  | 8.462  | 1.149  | 720538   | 4.99  | ng/uL | 100      |
| 10) 2-Chloronaphthalene      | 162  | 8.974  | 8.974  | 0.926  | 827749   | 4.86  | ng/uL | 100      |
| 11) Acenaphthylene           | 152  | 9.511  | 9.511  | 0.981  | 1212724  | 5.05  | ng/uL | 100      |
| 12) Acenaphthene             | 154  | 9.735  | 9.735  | 1.004  | 576989   | 4.46  | ng/uL | 100      |
| 13) Fluorene                 | 166  | 10.397 | 10.397 | 1.073  | 652660   | 4.33  | ng/uL | 100      |
| 15) Phenanthrene             | 178  | 11.613 | 11.613 | 1.003  | 954084   | 4.85  | ng/uL | 100      |
| 16) Anthracene               | 178  | 11.677 | 11.677 | 1.008  | 891943   | 4.89  | ng/uL | 100      |
| 18) Fluoranthene             | 202  | 13.104 | 13.104 | 1.132  | 910696   | 5.02  | ng/uL | 100      |
| 20) Pyrene                   | 202  | 13.390 | 13.390 | 0.884  | 850497   | 4.75  | ng/uL | 100      |
| 21) Benzo(a)anthracene       | 228  | 15.122 | 15.122 | 0.999  | 546413   | 5.07  | ng/uL | 100      |
| 22) Chrysene                 | 228  | 15.187 | 15.187 | 1.003  | 496294   | 4.86  | ng/uL | 100      |
| 24) Benzo(b)fluoranthene     | 252  | 17.486 | 17.486 | 0.943  | 510632   | 5.12  | ng/uL | 100      |
| 25) Benzo(k)fluoranthene     | 252  | 17.556 | 17.556 | 0.947  | 501094   | 5.10  | ng/uL | 100      |
| 26) Benzo(a)pyrene           | 252  | 18.374 | 18.374 | 0.991  | 427049   | 5.19  | ng/uL | 100      |
| 27) Indeno(1,2,3-cd)pyrene   | 276  | 21.941 | 21.941 | 1.183  | 275575   | 5.07  | ng/uL | 100      |
| 28) Dibenzo(a,h)anthracene   | 278  | 22.032 | 22.032 | 1.188  | 229546   | 5.00  | ng/uL | 100      |
| 29) Benzo(ghi)perylene       | 276  | 22.564 | 22.564 | 1.217  | 288194   | 5.01  | ng/uL | 100      |
| 31) N-Nitrosodiethylamine    | 102  | 4.160  | 4.160  | 0.746  | 212820   | 5.00  | ng/uL | 100      |
| 32) N-Nitrosopyrrolidine     | 100  | 6.110  | 6.110  | 1.095  | 228992   | 5.23  | ng/uL | 100      |
| 34) N-Nitrosodi-n-butylamine | 84   | 7.931  | 7.931  | 1.076  | 260462   | 5.43  | ng/uL | 100      |
| 36) Benzidine                | 184  | 13.273 | 13.273 | 1.146  | 1711413  | 26.80 | ng/uL | 100      |
| 38) 3,3'-Dichlorobenzidine   | 252  | 15.074 | 15.074 | 0.996  | 198771   | 5.50  | ng/uL | 100      |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1302.D  
Acq On : 13 Oct 2016 10:29  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-83.1|ICAL|1|SVM|1|S-6  
Misc : |MIX[A,B]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 13 14:32:54 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1303.D  
Acq On : 13 Oct 2016 11:06  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-88|ICAL|1|SVM|1|S-1  
Misc : |MIX[A,B]  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 13 14:32:59 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |           |
|------------------------------|------|--------|--------|--------|----------|------|-------|-----------|
| Internal Standards           |      |        |        |        |          |      |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.584  | 5.578  | 1.000  | 581611   | 4.00 | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136  | 7.367  | 7.367  | 1.000  | 1791777  | 4.00 | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164  | 9.699  | 9.693  | 1.000  | 665319   | 4.00 | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188  | 11.585 | 11.581 | 1.000  | 1241864  | 4.00 | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240  | 15.143 | 15.139 | 1.000  | 617264   | 4.00 | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264  | 18.548 | 18.539 | 1.000  | 442671   | 4.00 | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.584  | 5.578  | 1.000  | 581611   | 4.00 | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136  | 7.367  | 7.367  | 1.000  | 1791777  | 4.00 | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188  | 11.585 | 11.581 | 1.000  | 1241864  | 4.00 | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240  | 15.143 | 15.139 | 1.000  | 617264   | 4.00 | ng/uL | 0.00      |
| System Monitoring Compounds  |      |        |        |        |          |      |       | Dev (Min) |
| 17) 5-alpha-Androstane       | 245  | 12.859 | 12.859 | 1.110  | 4345     | 0.11 | ng/uL | 0.00      |
| Target Compounds             |      |        |        |        |          |      |       | QValue    |
| 2) N-Methyl-N-nitrosometh... | 74   | 2.548  | 2.522  | 0.456  | 10639    | 0.10 | ng/uL | 99        |
| 3) bis(2-Chloroethyl) ether  | 93   | 5.198  | 5.198  | 0.931  | 19317    | 0.11 | ng/uL | 99        |
| 4) N-Nitrosodipropylamine    | 70   | 6.147  | 6.147  | 1.101  | 12529    | 0.11 | ng/uL | 99        |
| 6) Naphthalene               | 128  | 7.393  | 7.393  | 1.004  | 55457    | 0.11 | ng/uL | 100       |
| 7) 2-Methylnaphthalene       | 142  | 8.332  | 8.332  | 1.131  | 39071    | 0.12 | ng/uL | 99        |
| 8) 1-Methylnaphthalene       | 142  | 8.463  | 8.462  | 1.149  | 33523    | 0.12 | ng/uL | 98        |
| 10) 2-Chloronaphthalene      | 162  | 8.979  | 8.974  | 0.926  | 38096    | 0.12 | ng/uL | 99        |
| 11) Acenaphthylene           | 152  | 9.516  | 9.511  | 0.981  | 51732    | 0.12 | ng/uL | 99        |
| 12) Acenaphthene             | 154  | 9.740  | 9.735  | 1.004  | 24600    | 0.10 | ng/uL | 96        |
| 13) Fluorene                 | 166  | 10.397 | 10.397 | 1.072  | 30670    | 0.11 | ng/uL | 100       |
| 15) Phenanthrene             | 178  | 11.613 | 11.613 | 1.002  | 47190    | 0.11 | ng/uL | 96        |
| 16) Anthracene               | 178  | 11.677 | 11.677 | 1.008  | 42992    | 0.11 | ng/uL | 98        |
| 18) Fluoranthene             | 202  | 13.108 | 13.104 | 1.132  | 44095    | 0.11 | ng/uL | 99        |
| 20) Pyrene                   | 202  | 13.394 | 13.390 | 0.885  | 44175    | 0.11 | ng/uL | 100       |
| 21) Benzo(a)anthracene       | 228  | 15.127 | 15.122 | 0.999  | 27752    | 0.11 | ng/uL | 98        |
| 22) Chrysene                 | 228  | 15.191 | 15.187 | 1.003  | 25080    | 0.11 | ng/uL | 100       |
| 24) Benzo(b)fluoranthene     | 252  | 17.486 | 17.486 | 0.943  | 20716    | 0.10 | ng/uL | 100       |
| 25) Benzo(k)fluoranthene     | 252  | 17.560 | 17.556 | 0.947  | 19677    | 0.10 | ng/uL | 99        |
| 26) Benzo(a)pyrene           | 252  | 18.380 | 18.374 | 0.991  | 17237    | 0.11 | ng/uL | 100       |
| 27) Indeno(1,2,3-cd)pyrene   | 276  | 21.941 | 21.941 | 1.183  | 12368    | 0.11 | ng/uL | 98        |
| 28) Dibenzo(a,h)anthracene   | 278  | 22.038 | 22.032 | 1.188  | 10868    | 0.12 | ng/uL | 97        |
| 29) Benzo(ghi)perylene       | 276  | 22.564 | 22.564 | 1.217  | 14111    | 0.12 | ng/uL | 99        |
| 31) N-Nitrosodiethylamine    | 102  | 4.160  | 4.160  | 0.745  | 9314     | 0.11 | ng/uL | 99        |
| 32) N-Nitrosopyrrolidine     | 100  | 6.110  | 6.110  | 1.094  | 8938     | 0.10 | ng/uL | 96        |
| 34) N-Nitrosodi-n-butylamine | 84   | 7.931  | 7.931  | 1.076  | 10346    | 0.11 | ng/uL | 99        |
| 36) Benzidine                |      | 0.000  | 13.273 | 0.000  | 0m       | N.D. | d     |           |
| 38) 3,3'-Dichlorobenzidine   | 252  | 15.078 | 15.074 | 0.996  | 8762     | 0.11 | ng/uL | 100       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1303.D  
Acq On : 13 Oct 2016 11:06  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-88|ICAL|1|SVM|1|S-1  
Misc : |MIX[A,B]  
ALS Vial : 3 Sample Multiplier: 1
```

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1304.D  
Acq On : 13 Oct 2016 11:34  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-87|ICAL|1|SVM|1|S-2  
Misc : |MIX[A,B]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 13 14:33:01 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

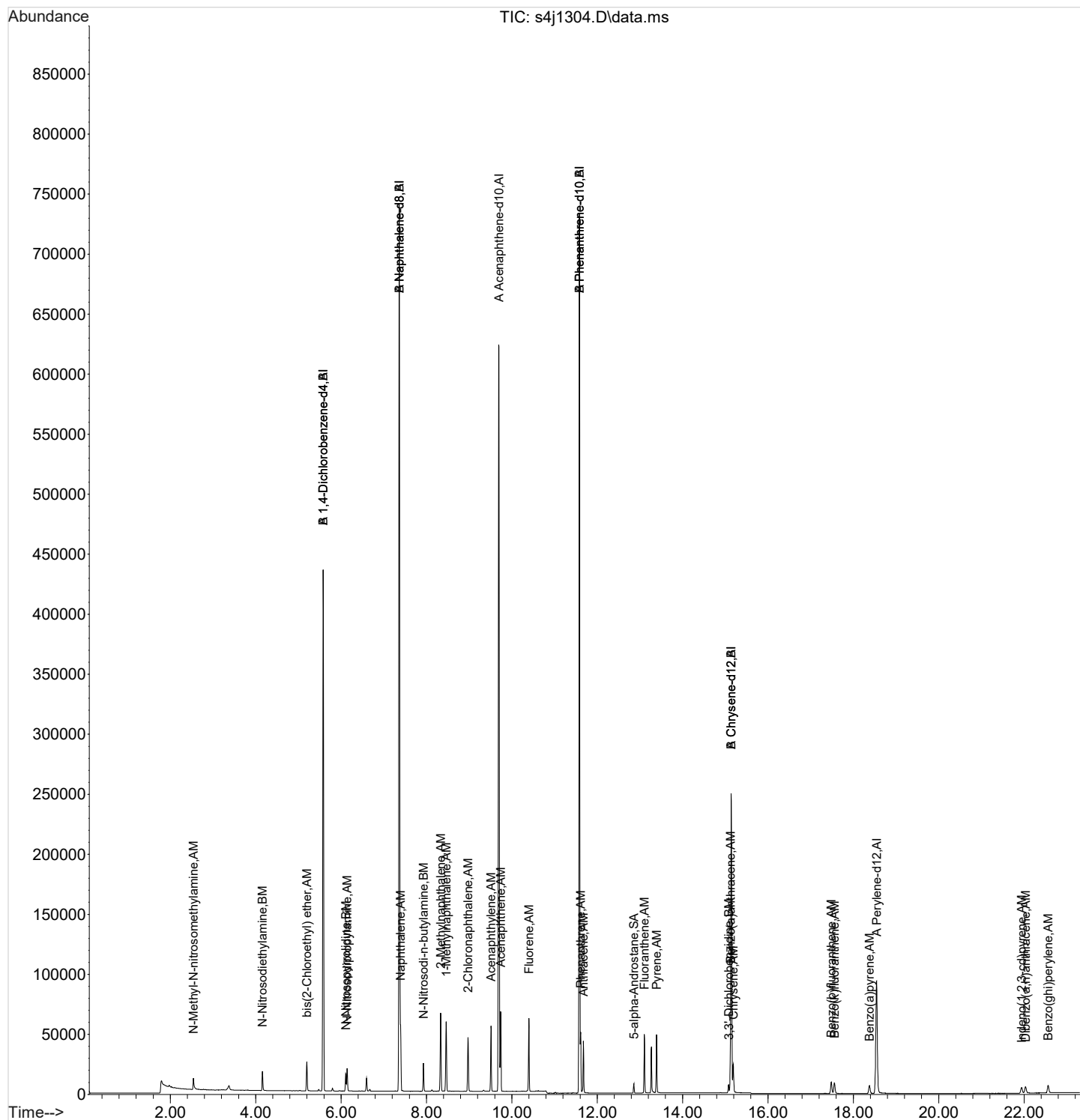
| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |          |
|------------------------------|------|--------|--------|--------|----------|------|-------|----------|
| Internal Standards           |      |        |        |        |          |      |       | Dev(Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.578  | 5.578  | 1.000  | 287374   | 4.00 | ng/uL | 0.00     |
| 5) A Naphthalene-d8          | 136  | 7.362  | 7.367  | 1.000  | 886246   | 4.00 | ng/uL | 0.00     |
| 9) A Acenaphthene-d10        | 164  | 9.698  | 9.693  | 1.000  | 367797   | 4.00 | ng/uL | 0.00     |
| 14) A Phenanthrene-d10       | 188  | 11.585 | 11.581 | 1.000  | 634869   | 4.00 | ng/uL | 0.00     |
| 19) A Chrysene-d12           | 240  | 15.138 | 15.139 | 1.000  | 280752   | 4.00 | ng/uL | 0.00     |
| 23) A Perylene-d12           | 264  | 18.545 | 18.539 | 1.000  | 194883   | 4.00 | ng/uL | 0.00     |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.578  | 5.578  | 1.000  | 287374   | 4.00 | ng/uL | 0.00     |
| 33) B Naphthalene-d8         | 136  | 7.362  | 7.367  | 1.000  | 886246   | 4.00 | ng/uL | 0.00     |
| 35) B Phenanthrene-d10       | 188  | 11.585 | 11.581 | 1.000  | 634869   | 4.00 | ng/uL | 0.00     |
| 37) B Chrysene-d12           | 240  | 15.138 | 15.139 | 1.000  | 280752   | 4.00 | ng/uL | 0.00     |
| System Monitoring Compounds  |      |        |        |        |          |      |       | Dev(Min) |
| 17) 5-alpha-Androstane       | 245  | 12.859 | 12.859 | 1.110  | 4077     | 0.21 | ng/uL | 0.00     |
| Target Compounds             |      |        |        |        |          |      |       |          |
|                              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue   |
| 2) N-Methyl-N-nitrosometh... | 74   | 2.543  | 2.522  | 0.456  | 10237    | 0.20 | ng/uL | 99       |
| 3) bis(2-Chloroethyl) ether  | 93   | 5.198  | 5.198  | 0.932  | 18438    | 0.21 | ng/uL | 99       |
| 4) N-Nitrosodipropylamine    | 70   | 6.142  | 6.147  | 1.101  | 11872    | 0.21 | ng/uL | 96       |
| 6) Naphthalene               | 128  | 7.393  | 7.393  | 1.004  | 53820    | 0.22 | ng/uL | 100      |
| 7) 2-Methylnaphthalene       | 142  | 8.332  | 8.332  | 1.132  | 36825    | 0.22 | ng/uL | 98       |
| 8) 1-Methylnaphthalene       | 142  | 8.462  | 8.462  | 1.149  | 31738    | 0.22 | ng/uL | 98       |
| 10) 2-Chloronaphthalene      | 162  | 8.973  | 8.974  | 0.925  | 36841    | 0.21 | ng/uL | 98       |
| 11) Acenaphthylene           | 152  | 9.511  | 9.511  | 0.981  | 49435    | 0.20 | ng/uL | 99       |
| 12) Acenaphthene             | 154  | 9.735  | 9.735  | 1.004  | 29466    | 0.23 | ng/uL | 97       |
| 13) Fluorene                 | 166  | 10.397 | 10.397 | 1.072  | 34650    | 0.23 | ng/uL | 99       |
| 15) Phenanthrene             | 178  | 11.613 | 11.613 | 1.002  | 47580    | 0.22 | ng/uL | 99       |
| 16) Anthracene               | 178  | 11.677 | 11.677 | 1.008  | 42010    | 0.21 | ng/uL | 99       |
| 18) Fluoranthene             | 202  | 13.104 | 13.104 | 1.131  | 41386    | 0.21 | ng/uL | 99       |
| 20) Pyrene                   | 202  | 13.390 | 13.390 | 0.884  | 40761    | 0.22 | ng/uL | 100      |
| 21) Benzo(a)anthracene       | 228  | 15.122 | 15.122 | 0.999  | 22314    | 0.20 | ng/uL | 99       |
| 22) Chrysene                 | 228  | 15.187 | 15.187 | 1.003  | 21766    | 0.20 | ng/uL | 99       |
| 24) Benzo(b)fluoranthene     | 252  | 17.483 | 17.486 | 0.943  | 17506    | 0.20 | ng/uL | 99       |
| 25) Benzo(k)fluoranthene     | 252  | 17.556 | 17.556 | 0.947  | 17131    | 0.20 | ng/uL | 98       |
| 26) Benzo(a)pyrene           | 252  | 18.377 | 18.374 | 0.991  | 13674    | 0.19 | ng/uL | 98       |
| 27) Indeno(1,2,3-cd)pyrene   | 276  | 21.941 | 21.941 | 1.183  | 9902     | 0.21 | ng/uL | 99       |
| 28) Dibenzo(a,h)anthracene   | 278  | 22.035 | 22.032 | 1.188  | 8714     | 0.22 | ng/uL | 98       |
| 29) Benzo(ghi)perylene       | 276  | 22.564 | 22.564 | 1.217  | 11272    | 0.22 | ng/uL | 99       |
| 31) N-Nitrosodiethylamine    | 102  | 4.160  | 4.160  | 0.746  | 8654     | 0.21 | ng/uL | 99       |
| 32) N-Nitrosopyrrolidine     | 100  | 6.110  | 6.110  | 1.095  | 8607     | 0.20 | ng/uL | 96       |
| 34) N-Nitrosodi-n-butylamine | 84   | 7.930  | 7.931  | 1.077  | 9630     | 0.20 | ng/uL | 98       |
| 36) Benzidine                |      | 0.000  | 13.273 | 0.000  | 0m       | N.D. | d     |          |
| 38) 3,3'-Dichlorobenzidine   | 252  | 15.078 | 15.074 | 0.996  | 6173     | 0.16 | ng/uL | 100      |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1304.D  
Acq On : 13 Oct 2016 11:34  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-87|ICAL|1|SVM|1|S-2  
Misc : |MIX[A,B]  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 13 14:33:01 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1305.D  
Acq On : 13 Oct 2016 12:02  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-86|ICAL|1|SVM|1|S-3  
Misc : |MIX[A,B]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 13 14:33:03 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

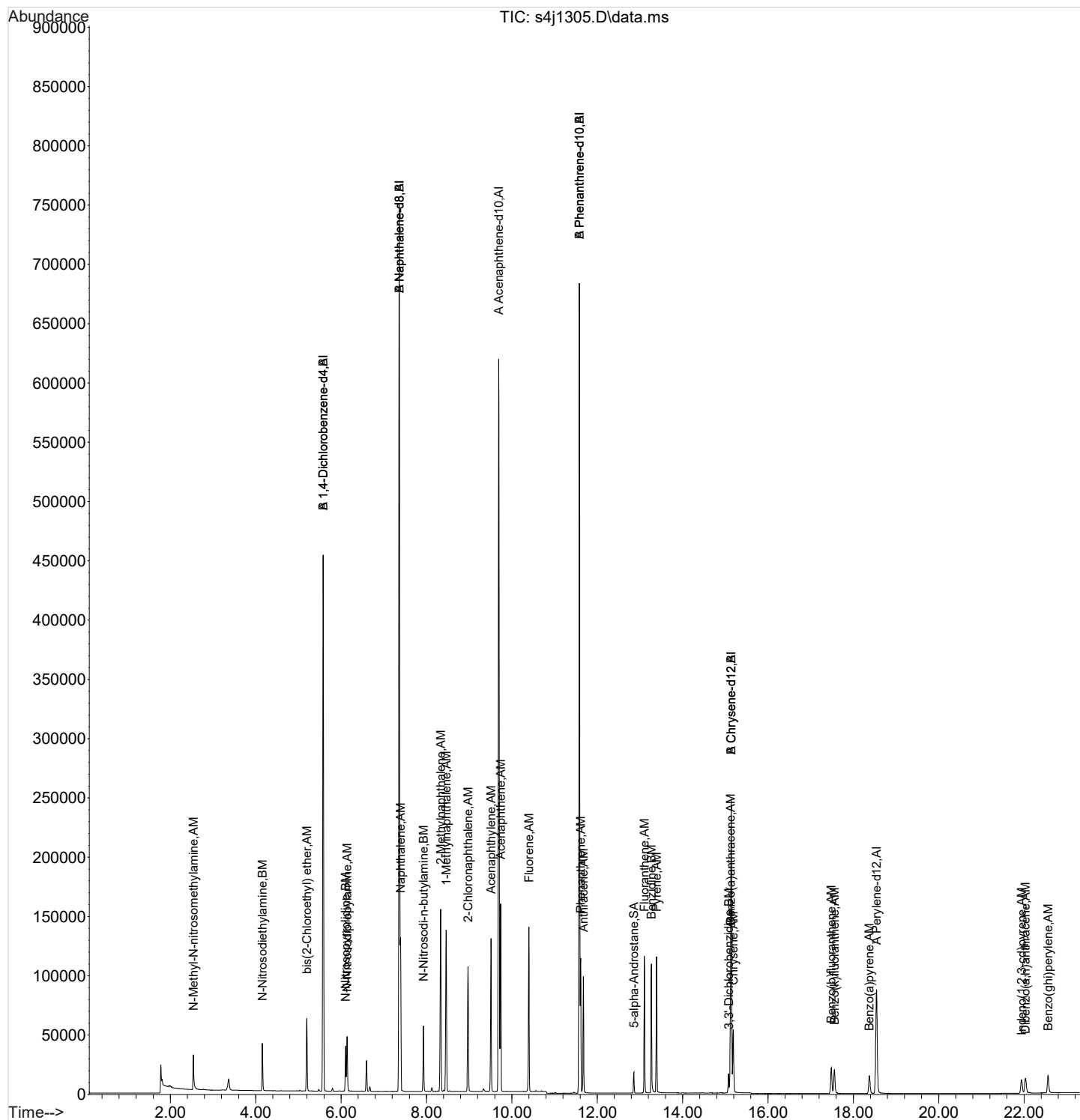
| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |          |
|------------------------------|------|--------|--------|--------|----------|------|-------|----------|
| Internal Standards           |      |        |        |        |          |      |       | Dev(Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.578  | 5.578  | 1.000  | 299090   | 4.00 | ng/uL | 0.00     |
| 5) A Naphthalene-d8          | 136  | 7.362  | 7.367  | 1.000  | 898724   | 4.00 | ng/uL | 0.00     |
| 9) A Acenaphthene-d10        | 164  | 9.693  | 9.693  | 1.000  | 363253   | 4.00 | ng/uL | 0.00     |
| 14) A Phenanthrene-d10       | 188  | 11.581 | 11.581 | 1.000  | 609770   | 4.00 | ng/uL | 0.00     |
| 19) A Chrysene-d12           | 240  | 15.138 | 15.139 | 1.000  | 267161   | 4.00 | ng/uL | 0.00     |
| 23) A Perylene-d12           | 264  | 18.542 | 18.539 | 1.000  | 182931   | 4.00 | ng/uL | 0.00     |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.578  | 5.578  | 1.000  | 299090   | 4.00 | ng/uL | 0.00     |
| 33) B Naphthalene-d8         | 136  | 7.362  | 7.367  | 1.000  | 898724   | 4.00 | ng/uL | 0.00     |
| 35) B Phenanthrene-d10       | 188  | 11.581 | 11.581 | 1.000  | 609770   | 4.00 | ng/uL | 0.00     |
| 37) B Chrysene-d12           | 240  | 15.138 | 15.139 | 1.000  | 267161   | 4.00 | ng/uL | 0.00     |
| System Monitoring Compounds  |      |        |        |        |          |      |       | Dev(Min) |
| 17) 5-alpha-Androstane       | 245  | 12.859 | 12.859 | 1.110  | 9262     | 0.49 | ng/uL | 0.00     |
| Target Compounds             |      |        |        |        |          |      |       | QValue   |
| 2) N-Methyl-N-nitrosometh... | 74   | 2.538  | 2.522  | 0.455  | 26787    | 0.50 | ng/uL | 99       |
| 3) bis(2-Chloroethyl) ether  | 93   | 5.198  | 5.198  | 0.932  | 46802    | 0.51 | ng/uL | 99       |
| 4) N-Nitrosodipropylamine    | 70   | 6.142  | 6.147  | 1.101  | 29963    | 0.50 | ng/uL | 98       |
| 6) Naphthalene               | 128  | 7.393  | 7.393  | 1.004  | 134517   | 0.54 | ng/uL | 99       |
| 7) 2-Methylnaphthalene       | 142  | 8.332  | 8.332  | 1.132  | 89487    | 0.53 | ng/uL | 99       |
| 8) 1-Methylnaphthalene       | 142  | 8.462  | 8.462  | 1.149  | 77496    | 0.54 | ng/uL | 98       |
| 10) 2-Chloronaphthalene      | 162  | 8.974  | 8.974  | 0.926  | 88970    | 0.52 | ng/uL | 99       |
| 11) Acenaphthylene           | 152  | 9.511  | 9.511  | 0.981  | 118497   | 0.49 | ng/uL | 100      |
| 12) Acenaphthene             | 154  | 9.735  | 9.735  | 1.004  | 72091    | 0.56 | ng/uL | 99       |
| 13) Fluorene                 | 166  | 10.397 | 10.397 | 1.073  | 81476    | 0.54 | ng/uL | 99       |
| 15) Phenanthrene             | 178  | 11.613 | 11.613 | 1.003  | 111524   | 0.53 | ng/uL | 100      |
| 16) Anthracene               | 178  | 11.677 | 11.677 | 1.008  | 100357   | 0.52 | ng/uL | 99       |
| 18) Fluoranthene             | 202  | 13.104 | 13.104 | 1.132  | 98068    | 0.51 | ng/uL | 98       |
| 20) Pyrene                   | 202  | 13.390 | 13.390 | 0.884  | 97416    | 0.55 | ng/uL | 100      |
| 21) Benzo(a)anthracene       | 228  | 15.122 | 15.122 | 0.999  | 51543    | 0.48 | ng/uL | 100      |
| 22) Chrysene                 | 228  | 15.187 | 15.187 | 1.003  | 51467    | 0.51 | ng/uL | 100      |
| 24) Benzo(b)fluoranthene     | 252  | 17.483 | 17.486 | 0.943  | 38473    | 0.47 | ng/uL | 99       |
| 25) Benzo(k)fluoranthene     | 252  | 17.556 | 17.556 | 0.947  | 38459    | 0.48 | ng/uL | 98       |
| 26) Benzo(a)pyrene           | 252  | 18.374 | 18.374 | 0.991  | 31118    | 0.46 | ng/uL | 100      |
| 27) Indeno(1,2,3-cd)pyrene   | 276  | 21.941 | 21.941 | 1.183  | 23558    | 0.53 | ng/uL | 98       |
| 28) Dibenzo(a,h)anthracene   | 278  | 22.032 | 22.032 | 1.188  | 20761    | 0.55 | ng/uL | 98       |
| 29) Benzo(ghi)perylene       | 276  | 22.561 | 22.564 | 1.217  | 26764    | 0.56 | ng/uL | 99       |
| 31) N-Nitrosodiethylamine    | 102  | 4.160  | 4.160  | 0.746  | 21697    | 0.49 | ng/uL | 99       |
| 32) N-Nitrosopyrrolidine     | 100  | 6.105  | 6.110  | 1.094  | 21759    | 0.48 | ng/uL | 100      |
| 34) N-Nitrosodi-n-butylamine | 84   | 7.930  | 7.931  | 1.077  | 23353    | 0.49 | ng/uL | 98       |
| 36) Benzidine                | 184  | 13.269 | 13.273 | 1.146  | 125729   | 1.85 | ng/uL | 98       |
| 38) 3,3'-Dichlorobenzidine   | 252  | 15.078 | 15.074 | 0.996  | 14674    | 0.41 | ng/uL | 99       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1305.D  
Acq On : 13 Oct 2016 12:02  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-86|ICAL|1|SVM|1|S-3  
Misc : |MIX[A,B]  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 13 14:33:03 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1306.D  
Acq On : 13 Oct 2016 12:31  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-85|ICAL|1|SVM|1|S-4  
Misc : |MIX[A,B]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 13 14:33:05 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |          |
|------------------------------|------|--------|--------|--------|----------|------|-------|----------|
| Internal Standards           |      |        |        |        |          |      |       | Dev(Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.579  | 5.578  | 1.000  | 304989   | 4.00 | ng/uL | 0.00     |
| 5) A Naphthalene-d8          | 136  | 7.362  | 7.367  | 1.000  | 940200   | 4.00 | ng/uL | 0.00     |
| 9) A Acenaphthene-d10        | 164  | 9.699  | 9.693  | 1.000  | 387782   | 4.00 | ng/uL | 0.00     |
| 14) A Phenanthrene-d10       | 188  | 11.583 | 11.581 | 1.000  | 724058   | 4.00 | ng/uL | 0.00     |
| 19) A Chrysene-d12           | 240  | 15.141 | 15.139 | 1.000  | 353751   | 4.00 | ng/uL | 0.00     |
| 23) A Perylene-d12           | 264  | 18.543 | 18.539 | 1.000  | 239105   | 4.00 | ng/uL | 0.00     |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.579  | 5.578  | 1.000  | 304989   | 4.00 | ng/uL | 0.00     |
| 33) B Naphthalene-d8         | 136  | 7.362  | 7.367  | 1.000  | 940200   | 4.00 | ng/uL | 0.00     |
| 35) B Phenanthrene-d10       | 188  | 11.583 | 11.581 | 1.000  | 724058   | 4.00 | ng/uL | 0.00     |
| 37) B Chrysene-d12           | 240  | 15.141 | 15.139 | 1.000  | 353751   | 4.00 | ng/uL | 0.00     |
| System Monitoring Compounds  |      |        |        |        |          |      |       | Dev(Min) |
| 17) 5-alpha-Androstane       | 245  | 12.858 | 12.859 | 1.110  | 22570    | 1.00 | ng/uL | 0.00     |
| Target Compounds             |      |        |        |        |          |      |       |          |
| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue   |
| 2) N-Methyl-N-nitrosometh... | 74   | 2.533  | 2.522  | 0.454  | 53743    | 0.97 | ng/uL | 98       |
| 3) bis(2-Chloroethyl) ether  | 93   | 5.198  | 5.198  | 0.932  | 94457    | 1.01 | ng/uL | 100      |
| 4) N-Nitrosodipropylamine    | 70   | 6.142  | 6.147  | 1.101  | 62100    | 1.01 | ng/uL | 97       |
| 6) Naphthalene               | 128  | 7.393  | 7.393  | 1.004  | 273038   | 1.04 | ng/uL | 99       |
| 7) 2-Methylnaphthalene       | 142  | 8.332  | 8.332  | 1.132  | 187432   | 1.07 | ng/uL | 99       |
| 8) 1-Methylnaphthalene       | 142  | 8.463  | 8.462  | 1.149  | 160281   | 1.07 | ng/uL | 99       |
| 10) 2-Chloronaphthalene      | 162  | 8.974  | 8.974  | 0.925  | 187142   | 1.03 | ng/uL | 99       |
| 11) Acenaphthylene           | 152  | 9.516  | 9.511  | 0.981  | 258506   | 1.01 | ng/uL | 100      |
| 12) Acenaphthene             | 154  | 9.740  | 9.735  | 1.004  | 135072   | 0.98 | ng/uL | 100      |
| 13) Fluorene                 | 166  | 10.397 | 10.397 | 1.072  | 159575   | 0.99 | ng/uL | 100      |
| 15) Phenanthrene             | 178  | 11.612 | 11.613 | 1.002  | 259416   | 1.04 | ng/uL | 100      |
| 16) Anthracene               | 178  | 11.676 | 11.677 | 1.008  | 242447   | 1.05 | ng/uL | 99       |
| 18) Fluoranthene             | 202  | 13.107 | 13.104 | 1.132  | 239772   | 1.04 | ng/uL | 99       |
| 20) Pyrene                   | 202  | 13.393 | 13.390 | 0.885  | 241324   | 1.02 | ng/uL | 100      |
| 21) Benzo(a)anthracene       | 228  | 15.121 | 15.122 | 0.999  | 136278   | 0.96 | ng/uL | 100      |
| 22) Chrysene                 | 228  | 15.190 | 15.187 | 1.003  | 134789   | 1.00 | ng/uL | 100      |
| 24) Benzo(b)fluoranthene     | 252  | 17.484 | 17.486 | 0.943  | 103823   | 0.97 | ng/uL | 99       |
| 25) Benzo(k)fluoranthene     | 252  | 17.558 | 17.556 | 0.947  | 102853   | 0.97 | ng/uL | 99       |
| 26) Benzo(a)pyrene           | 252  | 18.378 | 18.374 | 0.991  | 84624    | 0.96 | ng/uL | 99       |
| 27) Indeno(1,2,3-cd)pyrene   | 276  | 21.942 | 21.941 | 1.183  | 56821    | 0.97 | ng/uL | 99       |
| 28) Dibenzo(a,h)anthracene   | 278  | 22.033 | 22.032 | 1.188  | 48823    | 0.99 | ng/uL | 98       |
| 29) Benzo(ghi)perylene       | 276  | 22.562 | 22.564 | 1.217  | 63923    | 1.03 | ng/uL | 99       |
| 31) N-Nitrosodiethylamine    | 102  | 4.155  | 4.160  | 0.745  | 44013    | 0.98 | ng/uL | 99       |
| 32) N-Nitrosopyrrolidine     | 100  | 6.105  | 6.110  | 1.094  | 45513    | 0.99 | ng/uL | 99       |
| 34) N-Nitrosodi-n-butylamine | 84   | 7.931  | 7.931  | 1.077  | 50811    | 1.02 | ng/uL | 99       |
| 36) Benzidine                | 184  | 13.268 | 13.273 | 1.145  | 379209   | 4.69 | ng/uL | 98       |
| 38) 3,3'-Dichlorobenzidine   | 252  | 15.077 | 15.074 | 0.996  | 40078    | 0.84 | ng/uL | 100      |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

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Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1306.D  
Acq On    : 13 Oct 2016  12:31  
Operator  : JMB3  
InstName  : MSD4  
Sample    : |WBN160804-85|ICAL|1|SVM|1|S-4  
Misc      : |MIX[A,B]  
ALS Vial  : 6      Sample Multiplier: 1
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Abundance

TIC: s4j1306.D\data.ms

Time-->

1000000

950000

900000

850000

800000

750000

700000

650000

600000

550000

500000

450000

400000

350000

300000

250000

200000

150000

100000

50000

0

2.00

4.00

6.00

8.00

10.00

12.00

14.00

16.00

18.00

20.00

22.00

N-Methyl-N-nitrosomethylamine, AM

N-Nitrosodiethylamine, BM

bis(2-Chloroethyl) ether, AM

N-Nitrosodipropylamine, BM

N-Nitrosodipropylamine, AM

Napthalene, AM

Napthalene-d8, BI

N-Nitrosodi-n-butylamine, BM

1-Methylnapthalene, AM

2-Chloronapthalene, AM

Acenaphthylene, AM

Acenaphthene, AM

Fluorene, AM

Anthracene, AM

Phenanthrene-d10, BI

5-alpha-Androstane, SA

Fluoranthene, AM

Pyrene, AM

Benzo(a)pyrene, BM

Benzo(a)pyrene, AM

Chrysene, AM

Chrysene-d12, BI

3,3'-Dichlorobenzidine, BM

Benzo(a)fluoranthene, AM

Benzo(a)fluoranthene, AM

Benzo(a)pyrene, AM

Benzo(a)pyrene-d12, AI

Benzo(a)pyrene, AM

Benzo(a)pyrene, AM

Benzo(ghi)perylene, AM

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1307.D  
Acq On : 13 Oct 2016 12:59  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-84|ICAL|1|SVM|1|S-5  
Misc : |MIX[A,B]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 13 14:33:07 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

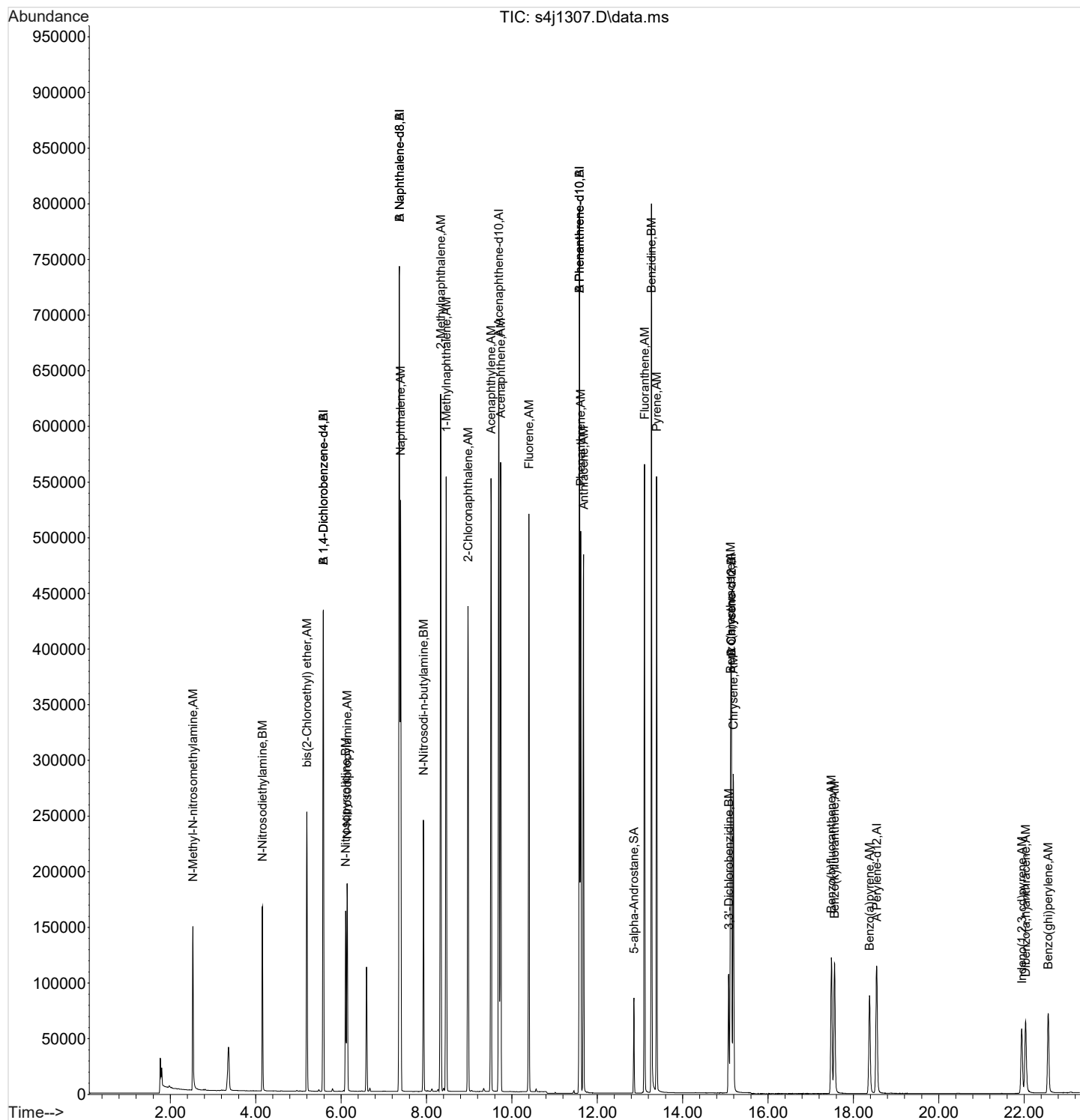
| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards           |      |        |        |        |          |       |       | Dev(Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.584  | 5.578  | 1.000  | 298345   | 4.00  | ng/uL | 0.00     |
| 5) A Naphthalene-d8          | 136  | 7.367  | 7.367  | 1.000  | 907769   | 4.00  | ng/uL | 0.00     |
| 9) A Acenaphthene-d10        | 164  | 9.693  | 9.693  | 1.000  | 374367   | 4.00  | ng/uL | 0.00     |
| 14) A Phenanthrene-d10       | 188  | 11.582 | 11.581 | 1.000  | 686736   | 4.00  | ng/uL | 0.00     |
| 19) A Chrysene-d12           | 240  | 15.144 | 15.139 | 1.000  | 350048   | 4.00  | ng/uL | 0.00     |
| 23) A Perylene-d12           | 264  | 18.546 | 18.539 | 1.000  | 238001   | 4.00  | ng/uL | 0.00     |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.584  | 5.578  | 1.000  | 298345   | 4.00  | ng/uL | 0.00     |
| 33) B Naphthalene-d8         | 136  | 7.367  | 7.367  | 1.000  | 907769   | 4.00  | ng/uL | 0.00     |
| 35) B Phenanthrene-d10       | 188  | 11.582 | 11.581 | 1.000  | 686736   | 4.00  | ng/uL | 0.00     |
| 37) B Chrysene-d12           | 240  | 15.144 | 15.139 | 1.000  | 350048   | 4.00  | ng/uL | 0.00     |
| System Monitoring Compounds  |      |        |        |        |          |       |       | Dev(Min) |
| 17) 5-alpha-Androstane       | 245  | 12.860 | 12.859 | 1.110  | 44484    | 2.07  | ng/uL | 0.00     |
| Target Compounds             |      |        |        |        |          |       |       |          |
|                              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | QValue   |
| 2) N-Methyl-N-nitrosometh... | 74   | 2.528  | 2.522  | 0.453  | 113400   | 2.10  | ng/uL | 99       |
| 3) bis(2-Chloroethyl) ether  | 93   | 5.198  | 5.198  | 0.931  | 187382   | 2.05  | ng/uL | 100      |
| 4) N-Nitrosodipropylamine    | 70   | 6.142  | 6.147  | 1.100  | 122450   | 2.04  | ng/uL | 97       |
| 6) Naphthalene               | 128  | 7.393  | 7.393  | 1.004  | 537077   | 2.13  | ng/uL | 99       |
| 7) 2-Methylnaphthalene       | 142  | 8.332  | 8.332  | 1.131  | 365717   | 2.16  | ng/uL | 99       |
| 8) 1-Methylnaphthalene       | 142  | 8.463  | 8.462  | 1.149  | 313736   | 2.16  | ng/uL | 99       |
| 10) 2-Chloronaphthalene      | 162  | 8.974  | 8.974  | 0.926  | 360625   | 2.06  | ng/uL | 100      |
| 11) Acenaphthylene           | 152  | 9.511  | 9.511  | 0.981  | 509093   | 2.06  | ng/uL | 100      |
| 12) Acenaphthene             | 154  | 9.735  | 9.735  | 1.004  | 259975   | 1.95  | ng/uL | 100      |
| 13) Fluorene                 | 166  | 10.397 | 10.397 | 1.073  | 302431   | 1.95  | ng/uL | 100      |
| 15) Phenanthrene             | 178  | 11.614 | 11.613 | 1.003  | 505198   | 2.14  | ng/uL | 100      |
| 16) Anthracene               | 178  | 11.678 | 11.677 | 1.008  | 477886   | 2.18  | ng/uL | 100      |
| 18) Fluoranthene             | 202  | 13.106 | 13.104 | 1.132  | 476177   | 2.18  | ng/uL | 99       |
| 20) Pyrene                   | 202  | 13.391 | 13.390 | 0.884  | 468641   | 2.01  | ng/uL | 100      |
| 21) Benzo(a)anthracene       | 228  | 15.124 | 15.122 | 0.999  | 283449   | 2.01  | ng/uL | 100      |
| 22) Chrysene                 | 228  | 15.188 | 15.187 | 1.003  | 275740   | 2.07  | ng/uL | 100      |
| 24) Benzo(b)fluoranthene     | 252  | 17.487 | 17.486 | 0.943  | 214067   | 2.00  | ng/uL | 100      |
| 25) Benzo(k)fluoranthene     | 252  | 17.558 | 17.556 | 0.947  | 216348   | 2.05  | ng/uL | 100      |
| 26) Benzo(a)pyrene           | 252  | 18.379 | 18.374 | 0.991  | 180614   | 2.05  | ng/uL | 100      |
| 27) Indeno(1,2,3-cd)pyrene   | 276  | 21.945 | 21.941 | 1.183  | 116485   | 2.00  | ng/uL | 99       |
| 28) Dibenzo(a,h)anthracene   | 278  | 22.036 | 22.032 | 1.188  | 103941   | 2.11  | ng/uL | 98       |
| 29) Benzo(ghi)perylene       | 276  | 22.563 | 22.564 | 1.217  | 127751   | 2.07  | ng/uL | 100      |
| 31) N-Nitrosodiethylamine    | 102  | 4.160  | 4.160  | 0.745  | 89157    | 2.04  | ng/uL | 99       |
| 32) N-Nitrosopyrrolidine     | 100  | 6.105  | 6.110  | 1.093  | 90583    | 2.01  | ng/uL | 96       |
| 34) N-Nitrosodi-n-butylamine | 84   | 7.931  | 7.931  | 1.076  | 103251   | 2.14  | ng/uL | 99       |
| 36) Benzidine                | 184  | 13.270 | 13.273 | 1.146  | 861363   | 11.23 | ng/uL | 99       |
| 38) 3,3'-Dichlorobenzidine   | 252  | 15.080 | 15.074 | 0.996  | 93705    | 1.99  | ng/uL | 100      |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1307.D  
Acq On : 13 Oct 2016 12:59  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-84|ICAL|1|SVM|1|S-5  
Misc : |MIX[A,B]  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 13 14:33:07 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1308.D  
Acq On : 13 Oct 2016 13:27  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-82|ICAL|1|SVM|1|S-7  
Misc : |MIX[A,B]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 13 14:33:09 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards           |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.584  | 5.578  | 1.000  | 465143   | 4.00  | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136  | 7.367  | 7.367  | 1.000  | 1410229  | 4.00  | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164  | 9.698  | 9.693  | 1.000  | 509763   | 4.00  | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188  | 11.585 | 11.581 | 1.000  | 976301   | 4.00  | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240  | 15.151 | 15.139 | 1.000  | 425622   | 4.00  | ng/uL | 0.01      |
| 23) A Perylene-d12           | 264  | 18.551 | 18.539 | 1.000  | 327452   | 4.00  | ng/uL | 0.01      |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.584  | 5.578  | 1.000  | 465143   | 4.00  | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136  | 7.367  | 7.367  | 1.000  | 1410229  | 4.00  | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188  | 11.585 | 11.581 | 1.000  | 976301   | 4.00  | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240  | 15.151 | 15.139 | 1.000  | 425622   | 4.00  | ng/uL | 0.01      |
| System Monitoring Compounds  |      |        |        |        |          |       |       | Dev (Min) |
| 17) 5-alpha-Androstane       | 245  | 12.863 | 12.859 | 1.110  | 292642   | 9.58  | ng/uL | 0.00      |
| Target Compounds             |      |        |        |        |          |       |       | QValue    |
| 2) N-Methyl-N-nitrosometh... | 74   | 2.517  | 2.522  | 0.451  | 830852   | 9.88  | ng/uL | 99        |
| 3) bis(2-Chloroethyl) ether  | 93   | 5.203  | 5.198  | 0.932  | 1318602  | 9.26  | ng/uL | 100       |
| 4) N-Nitrosodipropylamine    | 70   | 6.152  | 6.147  | 1.102  | 869983   | 9.30  | ng/uL | 99        |
| 6) Naphthalene               | 128  | 7.398  | 7.393  | 1.004  | 3302583  | 8.41  | ng/uL | 98        |
| 7) 2-Methylnaphthalene       | 142  | 8.337  | 8.332  | 1.132  | 2023677  | 7.68  | ng/uL | 99        |
| 8) 1-Methylnaphthalene       | 142  | 8.468  | 8.462  | 1.149  | 1711818  | 7.60  | ng/uL | 100       |
| 10) 2-Chloronaphthalene      | 162  | 8.979  | 8.974  | 0.926  | 2008402  | 8.42  | ng/uL | 100       |
| 11) Acenaphthylene           | 152  | 9.516  | 9.511  | 0.981  | 3091914  | 9.18  | ng/uL | 100       |
| 12) Acenaphthene             | 154  | 9.745  | 9.735  | 1.005  | 1761480  | 9.71  | ng/uL | 99        |
| 13) Fluorene                 | 166  | 10.402 | 10.397 | 1.073  | 2014921  | 9.53  | ng/uL | 99        |
| 15) Phenanthrene             | 178  | 11.617 | 11.613 | 1.003  | 2857200  | 8.51  | ng/uL | 99        |
| 16) Anthracene               | 178  | 11.685 | 11.677 | 1.009  | 2793650  | 8.96  | ng/uL | 99        |
| 18) Fluoranthene             | 202  | 13.112 | 13.104 | 1.132  | 2734155  | 8.82  | ng/uL | 98        |
| 20) Pyrene                   | 202  | 13.398 | 13.390 | 0.884  | 2660851  | 9.37  | ng/uL | 99        |
| 21) Benzo(a)anthracene       | 228  | 15.130 | 15.122 | 0.999  | 1716849  | 10.04 | ng/uL | 99        |
| 22) Chrysene                 | 228  | 15.199 | 15.187 | 1.003  | 1547374  | 9.55  | ng/uL | 99        |
| 24) Benzo(b)fluoranthene     | 252  | 17.501 | 17.486 | 0.943  | 1508608  | 10.25 | ng/uL | 99        |
| 25) Benzo(k)fluoranthene     | 252  | 17.574 | 17.556 | 0.947  | 1485675  | 10.25 | ng/uL | 99        |
| 26) Benzo(a)pyrene           | 252  | 18.392 | 18.374 | 0.991  | 1257961  | 10.37 | ng/uL | 99        |
| 27) Indeno(1,2,3-cd)pyrene   | 276  | 21.955 | 21.941 | 1.184  | 743157   | 9.27  | ng/uL | 100       |
| 28) Dibenzo(a,h)anthracene   | 278  | 22.046 | 22.032 | 1.188  | 563070   | 8.32  | ng/uL | 100       |
| 29) Benzo(ghi)perylene       | 276  | 22.576 | 22.564 | 1.217  | 638469   | 7.52  | ng/uL | 99        |
| 31) N-Nitrosodiethylamine    | 102  | 4.165  | 4.160  | 0.746  | 649307   | 9.52  | ng/uL | 100       |
| 32) N-Nitrosopyrrolidine     | 100  | 6.116  | 6.110  | 1.095  | 691308   | 9.86  | ng/uL | 95        |
| 34) N-Nitrosodi-n-butylamine | 84   | 7.941  | 7.931  | 1.078  | 664243   | 8.87  | ng/uL | 100       |
| 36) Benzidine                | 184  | 13.289 | 13.273 | 1.147  | 5792452  | 53.11 | ng/uL | 98        |
| 38) 3,3'-Dichlorobenzidine   | 252  | 15.086 | 15.074 | 0.996  | 693352   | 12.10 | ng/uL | 100       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path   : C:\msdchem\1\DATA\s101316.B\  
Data File   : s4j1308.D  
Acq On      : 13 Oct 2016   13:27  
Operator    : JMB3  
InstName    : MSD4  
Sample      : |WBN160804-82|ICAL|1|SVM|1|S-7  
Misc        : |MIX [A,B]  
ALS Vial    : 8      Sample Multiplier: 1
```

TIC: s4j1308.D\data.ms

Abundance

Time-->

5000000

4800000

4600000

4400000

4200000

4000000

3800000

3600000

3400000

3200000

3000000

2800000

2600000

2400000

2200000

2000000

1800000

1600000

1400000

1200000

1000000

800000

600000

400000

200000

0

2.00

4.00

6.00

8.00

10.00

12.00

14.00

16.00

18.00

20.00

22.00

N-Methyl-N-nitrosomethylamine, AM

N-Nitrosodiethylamine, BM

bis(2-Chloroethyl) ether, AM

1,4-Dichlorobenzene-d4, BI

N-Nitrosodimethylamine, AM

N-Nitrosopropylamine, AM

Naphthalene-d8, BI

Naphthalene, AM

N-Nitrosodi-n-butylamine, BM

1-Methylnaphthalene, AM

2-Methylnaphthalene, AM

2-Chloronaphthalene, AM

Acenaphthene-d10, AI

Acenaphthylene, AM

Acenaphthene, AM

Fluorene, AM

Anthracene-d10, BI

Anthracene, AM

5-alpha-Androstane, SA

Fluoranthene, AM

Pyrene, AM

Benzo(a)pyrene, BM

Benzo(a)anthracene, AM

Benzo(b)fluoranthene, AM

Benzo(k)fluoranthene, AM

Benzo(a)pyrene, AM

A Perylene-d12, AI

Benzo(ghi)perylene, AM

Benzo(ghi)perylene, AM



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1309.D  
Acq On : 13 Oct 2016 13:56  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-81|ICAL|1|SVM|1|S-8  
Misc : |MIX[A,B]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 13 14:33:11 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

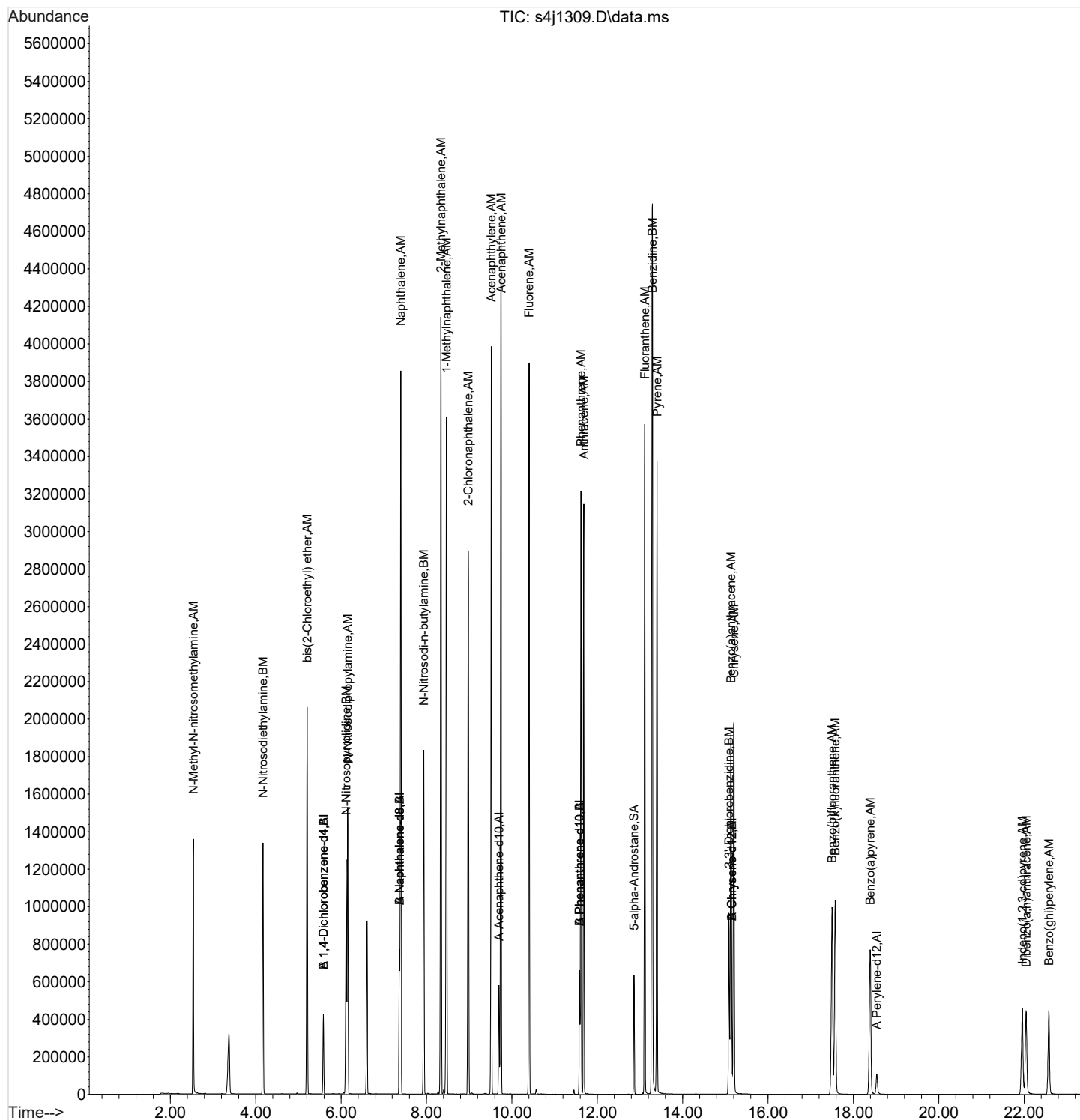
| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units |          |
|------------------------------|------|--------|--------|--------|----------|--------|-------|----------|
| Internal Standards           |      |        |        |        |          |        |       | Dev(Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.584  | 5.578  | 1.000  | 274293   | 4.00   | ng/uL | 0.00     |
| 5) A Naphthalene-d8          | 136  | 7.367  | 7.367  | 1.000  | 869373   | 4.00   | ng/uL | 0.00     |
| 9) A Acenaphthene-d10        | 164  | 9.698  | 9.693  | 1.000  | 317678   | 4.00   | ng/uL | 0.00     |
| 14) A Phenanthrene-d10       | 188  | 11.585 | 11.581 | 1.000  | 593518   | 4.00   | ng/uL | 0.00     |
| 19) A Chrysene-d12           | 240  | 15.151 | 15.139 | 1.000  | 273225   | 4.00   | ng/uL | 0.01     |
| 23) A Perylene-d12           | 264  | 18.548 | 18.539 | 1.000  | 214008   | 4.00   | ng/uL | 0.00     |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.584  | 5.578  | 1.000  | 274293   | 4.00   | ng/uL | 0.00     |
| 33) B Naphthalene-d8         | 136  | 7.367  | 7.367  | 1.000  | 869373   | 4.00   | ng/uL | 0.00     |
| 35) B Phenanthrene-d10       | 188  | 11.585 | 11.581 | 1.000  | 593518   | 4.00   | ng/uL | 0.00     |
| 37) B Chrysene-d12           | 240  | 15.151 | 15.139 | 1.000  | 273225   | 4.00   | ng/uL | 0.01     |
| System Monitoring Compounds  |      |        |        |        |          |        |       | Dev(Min) |
| 17) 5-alpha-Androstane       | 245  | 12.863 | 12.859 | 1.110  | 332331   | 17.89  | ng/uL | 0.00     |
| Target Compounds             |      |        |        |        |          |        |       |          |
|                              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc   | Units | QValue   |
| 2) N-Methyl-N-nitrosometh... | 74   | 2.538  | 2.522  | 0.455  | 968809   | 19.53  | ng/uL | 99       |
| 3) bis(2-Chloroethyl) ether  | 93   | 5.203  | 5.198  | 0.932  | 1524314  | 18.15  | ng/uL | 99       |
| 4) N-Nitrosodipropylamine    | 70   | 6.152  | 6.147  | 1.102  | 1032009  | 18.70  | ng/uL | 96       |
| 6) Naphthalene               | 128  | 7.399  | 7.393  | 1.004  | 3820566  | 15.79  | ng/uL | 97       |
| 7) 2-Methylnaphthalene       | 142  | 8.337  | 8.332  | 1.132  | 2371247  | 14.59  | ng/uL | 99       |
| 8) 1-Methylnaphthalene       | 142  | 8.468  | 8.462  | 1.149  | 2000315  | 14.40  | ng/uL | 99       |
| 10) 2-Chloronaphthalene      | 162  | 8.979  | 8.974  | 0.926  | 2333116  | 15.69  | ng/uL | 99       |
| 11) Acenaphthylene           | 152  | 9.521  | 9.511  | 0.982  | 3563191  | 16.98  | ng/uL | 99       |
| 12) Acenaphthene             | 154  | 9.745  | 9.735  | 1.005  | 2047122  | 18.10  | ng/uL | 99       |
| 13) Fluorene                 | 166  | 10.403 | 10.397 | 1.073  | 2333306  | 17.71  | ng/uL | 100      |
| 15) Phenanthrene             | 178  | 11.621 | 11.613 | 1.003  | 3304314  | 16.19  | ng/uL | 98       |
| 16) Anthracene               | 178  | 11.685 | 11.677 | 1.009  | 3177380  | 16.76  | ng/uL | 99       |
| 18) Fluoranthene             | 202  | 13.112 | 13.104 | 1.132  | 3097505  | 16.44  | ng/uL | 98       |
| 20) Pyrene                   | 202  | 13.402 | 13.390 | 0.885  | 3026827  | 16.61  | ng/uL | 98       |
| 21) Benzo(a)anthracene       | 228  | 15.134 | 15.122 | 0.999  | 2084444  | 18.98  | ng/uL | 99       |
| 22) Chrysene                 | 228  | 15.203 | 15.187 | 1.003  | 1961245  | 18.85  | ng/uL | 99       |
| 24) Benzo(b)fluoranthene     | 252  | 17.504 | 17.486 | 0.944  | 1940079  | 20.17  | ng/uL | 99 A     |
| 25) Benzo(k)fluoranthene     | 252  | 17.577 | 17.556 | 0.948  | 1907076  | 20.14  | ng/uL | 99 A     |
| 26) Benzo(a)pyrene           | 252  | 18.395 | 18.374 | 0.992  | 1631954  | 20.58  | ng/uL | 99 A     |
| 27) Indeno(1,2,3-cd)pyrene   | 276  | 21.958 | 21.941 | 1.184  | 897827   | 17.14  | ng/uL | 100      |
| 28) Dibenzo(a,h)anthracene   | 278  | 22.046 | 22.032 | 1.189  | 667251   | 15.09  | ng/uL | 99       |
| 29) Benzo(ghi)perylene       | 276  | 22.579 | 22.564 | 1.217  | 785386   | 14.15  | ng/uL | 100      |
| 31) N-Nitrosodiethylamine    | 102  | 4.170  | 4.160  | 0.747  | 751378   | 18.69  | ng/uL | 100      |
| 32) N-Nitrosopyrrolidine     | 100  | 6.121  | 6.110  | 1.096  | 823372   | 19.91  | ng/uL | 98       |
| 34) N-Nitrosodi-n-butylamine | 84   | 7.941  | 7.931  | 1.078  | 786108   | 17.02  | ng/uL | 100      |
| 36) Benzidine                | 184  | 13.293 | 13.273 | 1.147  | 7074153  | 106.70 | ng/uL | 97 A     |
| 38) 3,3'-Dichlorobenzidine   | 252  | 15.086 | 15.074 | 0.996  | 860028   | 23.37  | ng/uL | 100 A    |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1309.D  
Acq On : 13 Oct 2016 13:56  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-81|ICAL|1|SVM|1|S-8  
Misc : |MIX[A,B]  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 13 14:33:11 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Instrument ID:** MSD4.I  
**Data File:** s101316.B\s4j1310.D  
**Lab Sample ID** WBN160804-89.1  
**Quant Type** ISTD

**Client SDG:** 409254  
**Injection Date:** 13-OCT-16 14:24  
**Init. Cal. Date(s)** 13-OCT-16 10:29 - 13-OCT-16 13:5  
**Method:** s101316.B\MSD4\_SIMPAHPLUS\_8270d\_101316.  
**Method Update:** 13-OCT-16 14:32

| Compound                 | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| S5-alpha-Androstane      | 0.1252         | 0.12257 |             | .01    |      | -2.10064    | 30  |         | Averaged   |
| bis(2-Chloroethyl) ether | 1.2248         | 1.26616 |             | .7     |      | 3.37688     | 30  |         | Averaged   |
| N-Nitrosodipropylamine   | 0.8048         | 0.80921 |             | .5     |      | 0.54796     | 30  |         | Averaged   |
| Naphthalene              | 1.1135         | 1.11279 |             | .7     |      | -0.06376    | 30  |         | Averaged   |
| 2-Methylnaphthalene      | 0.7476         | 0.75413 |             | .4     |      | 0.87346     | 30  |         | Averaged   |
| 1-Methylnaphthalene      | 0.6389         | 0.68537 |             | .01    |      | 7.27344     | 30  |         | Averaged   |
| 2-Chloronaphthalene      | 1.872          | 1.71808 |             | .8     |      | -8.22222    | 30  |         | Averaged   |
| Acenaphthylene           | 2.6415         | 2.59083 |             | .9     |      | -1.91823    | 30  |         | Averaged   |
| Acenaphthene             | 1.424          | 1.41362 |             | .9     |      | -0.72893    | 30  |         | Averaged   |
| Fluorene                 | 1.6588         | 1.44856 |             | .9     |      | -12.67422   | 30  |         | Averaged   |
| Phenanthrene             | 1.3757         | 1.34308 |             | .7     |      | -2.37116    | 30  |         | Averaged   |
| Anthracene               | 1.2774         | 1.35393 |             | .7     |      | 5.99108     | 30  |         | Averaged   |
| Fluoranthene             | 1.2701         | 1.25903 |             | .6     |      | -0.87158    | 30  |         | Averaged   |
| Pyrene                   | 2.6677         | 2.49805 |             | .6     |      | -6.35941    | 30  |         | Averaged   |
| 3,3'-Dichlorobenzidine   | 0.5387         | 0.52321 |             | .01    |      | -2.87544    | 30  |         | Averaged   |
| Benzo(a)anthracene       | 1.6075         | 1.58822 |             | .8     |      | -1.19938    | 30  |         | Averaged   |
| Chrysene                 | 1.5233         | 1.501   |             | .7     |      | -1.46393    | 30  |         | Averaged   |
| Benzo(b)fluoranthene     | 1.7978         | 1.80409 |             | .7     |      | 0.34987     | 30  |         | Averaged   |
| Benzo(k)fluoranthene     | 1.7699         | 1.83939 |             | .7     |      | 3.92621     | 30  |         | Averaged   |
| Benzo(a)pyrene           | 1.482          | 1.50035 |             | .7     |      | 1.23819     | 30  |         | Averaged   |
| Indeno(1,2,3-cd)pyrene   | 0.9792         | 0.93286 |             | .5     |      | -4.73243    | 30  |         | Averaged   |
| Dibenzo(a,h)anthracene   | 0.8266         | 0.81968 |             | .4     |      | -0.83716    | 30  |         | Averaged   |
| Benzo(ghi)perylene       | 1.0372         | 0.99937 |             | .5     |      | -3.64732    | 30  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1310.D  
Acq On : 13 Oct 2016 14:24  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-89.1|ICV|1|SVM|1|S-ICV  
Misc : |MIX[A,B]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 13 14:51:24 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

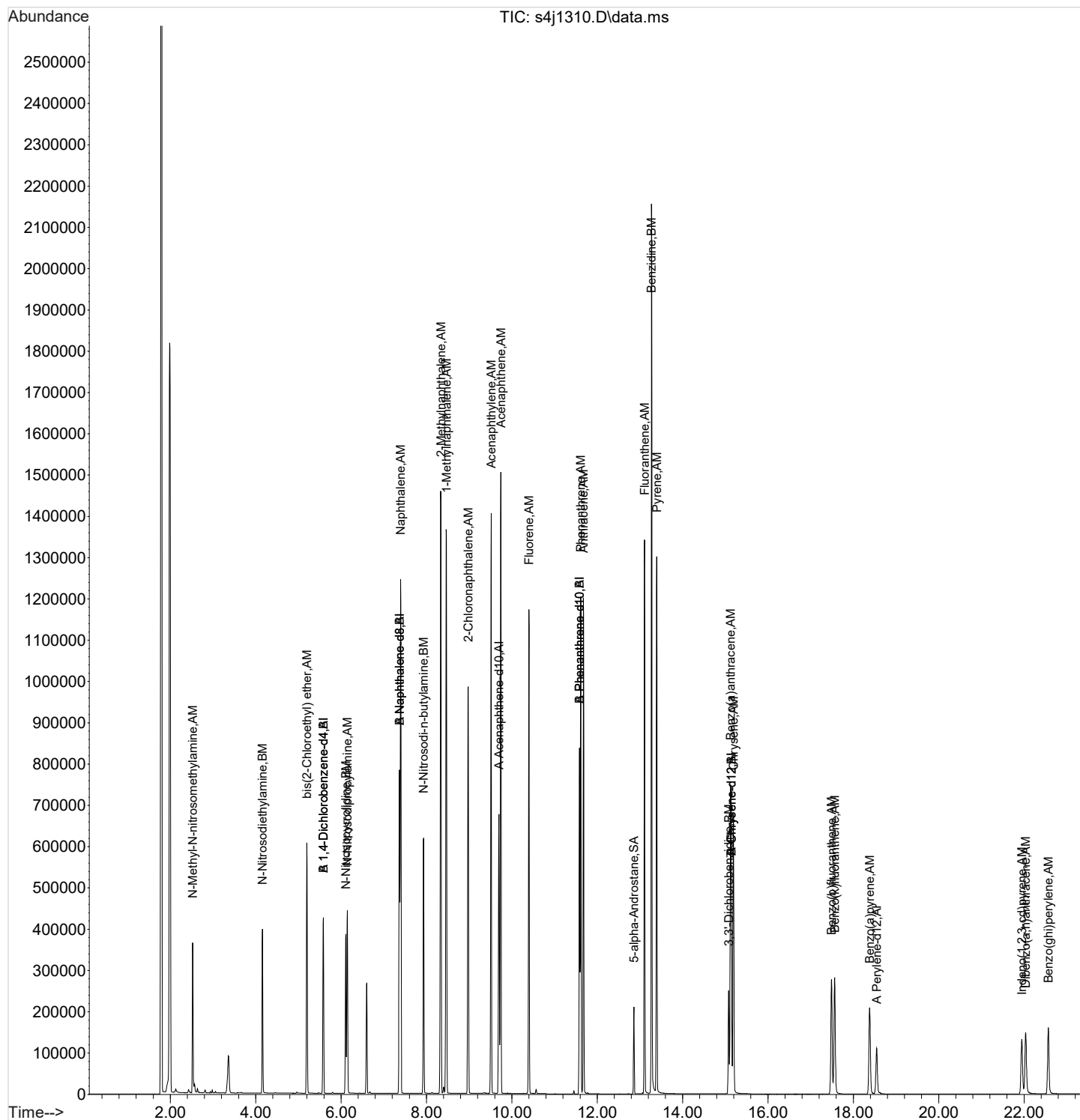
| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |          |
|------------------------------|------|--------|--------|--------|----------|-------|-------|----------|
| Internal Standards           |      |        |        |        |          |       |       | Dev(Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.584  | 5.578  | 1.000  | 286657   | 4.00  | ng/uL | 0.00     |
| 5) A Naphthalene-d8          | 136  | 7.367  | 7.367  | 1.000  | 902532   | 4.00  | ng/uL | 0.00     |
| 9) A Acenaphthene-d10        | 164  | 9.699  | 9.693  | 1.000  | 378962   | 4.00  | ng/uL | 0.00     |
| 14) A Phenanthrene-d10       | 188  | 11.585 | 11.581 | 1.000  | 709640   | 4.00  | ng/uL | 0.00     |
| 19) A Chrysene-d12           | 240  | 15.143 | 15.139 | 1.000  | 348379   | 4.00  | ng/uL | 0.00     |
| 23) A Perylene-d12           | 264  | 18.545 | 18.539 | 1.000  | 227015   | 4.00  | ng/uL | 0.00     |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.584  | 5.578  | 1.000  | 286657   | 4.00  | ng/uL | 0.00     |
| 33) B Naphthalene-d8         | 136  | 7.367  | 7.367  | 1.000  | 902532   | 4.00  | ng/uL | 0.00     |
| 35) B Phenanthrene-d10       | 188  | 11.585 | 11.581 | 1.000  | 709640   | 4.00  | ng/uL | 0.00     |
| 37) B Chrysene-d12           | 240  | 15.143 | 15.139 | 1.000  | 348379   | 4.00  | ng/uL | 0.00     |
| System Monitoring Compounds  |      |        |        |        |          |       |       | Dev(Min) |
| 17) 5-alpha-Androstane       | 245  | 12.859 | 12.859 | 1.110  | 108725   | 4.90  | ng/uL | 0.00     |
| Target Compounds             |      |        |        |        |          |       |       | QValue   |
| 2) N-Methyl-N-nitrosometh... | 74   | 2.522  | 2.522  | 0.452  | 257237   | 4.96  | ng/uL | 100      |
| 3) bis(2-Chloroethyl) ether  | 93   | 5.198  | 5.198  | 0.931  | 453693   | 5.17  | ng/uL | 100      |
| 4) N-Nitrosodipropylamine    | 70   | 6.147  | 6.147  | 1.101  | 289956   | 5.03  | ng/uL | 100      |
| 6) Naphthalene               | 128  | 7.394  | 7.393  | 1.004  | 1255409  | 5.00  | ng/uL | 100      |
| 7) 2-Methylnaphthalene       | 142  | 8.337  | 8.332  | 1.132  | 850781   | 5.04  | ng/uL | 100      |
| 8) 1-Methylnaphthalene       | 142  | 8.468  | 8.462  | 1.149  | 773215   | 5.36  | ng/uL | 99       |
| 10) 2-Chloronaphthalene      | 162  | 8.979  | 8.974  | 0.926  | 813858   | 4.59  | ng/uL | 100      |
| 11) Acenaphthylene           | 152  | 9.516  | 9.511  | 0.981  | 1227283  | 4.90  | ng/uL | 100      |
| 12) Acenaphthene             | 154  | 9.740  | 9.735  | 1.004  | 669635   | 4.96  | ng/uL | 99       |
| 13) Fluorene                 | 166  | 10.398 | 10.397 | 1.072  | 686186   | 4.37  | ng/uL | 100      |
| 15) Phenanthrene             | 178  | 11.613 | 11.613 | 1.002  | 1191382  | 4.88  | ng/uL | 100      |
| 16) Anthracene               | 178  | 11.677 | 11.677 | 1.008  | 1201008  | 5.30  | ng/uL | 100      |
| 18) Fluoranthene             | 202  | 13.108 | 13.104 | 1.132  | 1116820  | 4.96  | ng/uL | 100      |
| 20) Pyrene                   | 202  | 13.394 | 13.390 | 0.885  | 1087836  | 4.68  | ng/uL | 100      |
| 21) Benzo(a)anthracene       | 228  | 15.127 | 15.122 | 0.999  | 691629   | 4.94  | ng/uL | 100      |
| 22) Chrysene                 | 228  | 15.191 | 15.187 | 1.003  | 653646   | 4.93  | ng/uL | 100      |
| 24) Benzo(b)fluoranthene     | 252  | 17.489 | 17.486 | 0.943  | 511944   | 5.02  | ng/uL | 100      |
| 25) Benzo(k)fluoranthene     | 252  | 17.563 | 17.556 | 0.947  | 521961   | 5.20  | ng/uL | 100      |
| 26) Benzo(a)pyrene           | 252  | 18.383 | 18.374 | 0.991  | 425752   | 5.06  | ng/uL | 100      |
| 27) Indeno(1,2,3-cd)pyrene   | 276  | 21.947 | 21.941 | 1.183  | 264717   | 4.76  | ng/uL | 99       |
| 28) Dibenzo(a,h)anthracene   | 278  | 22.038 | 22.032 | 1.188  | 232600   | 4.96  | ng/uL | 99       |
| 29) Benzo(ghi)perylene       | 276  | 22.567 | 22.564 | 1.217  | 283590   | 4.82  | ng/uL | 99       |
| 31) N-Nitrosodiethylamine    | 102  | 4.160  | 4.160  | 0.745  | 208761   | 4.97  | ng/uL | 99       |
| 32) N-Nitrosopyrrolidine     | 100  | 6.111  | 6.110  | 1.094  | 222684   | 5.15  | ng/uL | 100      |
| 34) N-Nitrosodi-n-butylamine | 84   | 7.936  | 7.931  | 1.077  | 260550   | 5.44  | ng/uL | 100      |
| 36) Benzidine                | 184  | 13.273 | 13.273 | 1.146  | 2374295  | 29.95 | ng/uL | 100      |
| 38) 3,3'-Dichlorobenzidine   | 252  | 15.078 | 15.074 | 0.996  | 227846   | 4.86  | ng/uL | 100      |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1310.D  
Acq On : 13 Oct 2016 14:24  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-89.1|ICV|1|SVM|1|S-ICV  
Misc : |MIX[A,B]  
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 13 14:51:24 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE



## Continuing Calibration Summary

**Instrument ID:** MSD4.I  
**Data File:** s110716.B\s4k0702.D  
**Lab Sample ID** WBN160804-83.4  
**Quant Type** ISTD

**Client SDG:** 409254  
**Injection Date:** 07-NOV-16 08:29  
**Init. Cal. Date(s)** 13-OCT-16 10:29 - 13-OCT-16 13:5  
**Method:** s110716.B\MSD4\_SIMPAHPLUS\_8270d\_101316.  
**Method Update:** 13-OCT-16 14:32

| Compound                 | AVERF / Amount | RF CCV  | Nominal CCV | Min RF | RF Q | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|---------|-------------|--------|------|-------------|-----|---------|------------|
| S5-alpha-Androstane      | 0.1252         | 0.12961 |             | .01    |      | 3.52236     | 20  |         | Averaged   |
| bis(2-Chloroethyl) ether | 1.2248         | 1.17256 |             | .7     |      | -4.26519    | 20  |         | Averaged   |
| N-Nitrosodipropylamine   | 0.8048         | 0.78065 |             | .5     |      | -3.00075    | 20  |         | Averaged   |
| Naphthalene              | 1.1135         | 1.12712 |             | .7     |      | 1.22317     | 20  |         | Averaged   |
| 2-Methylnaphthalene      | 0.7476         | 0.78166 |             | .4     |      | 4.55591     | 20  |         | Averaged   |
| 1-Methylnaphthalene      | 0.6389         | 0.67158 |             | .01    |      | 5.11504     | 20  |         | Averaged   |
| 2-Chloronaphthalene      | 1.872          | 1.7591  |             | .8     |      | -6.03098    | 20  |         | Averaged   |
| Acenaphthylene           | 2.6415         | 2.61796 |             | .9     |      | -0.89116    | 20  |         | Averaged   |
| Acenaphthene             | 1.424          | 1.48424 |             | .9     |      | 4.23034     | 20  |         | Averaged   |
| Fluorene                 | 1.6588         | 1.65532 |             | .9     |      | -0.20979    | 20  |         | Averaged   |
| Phenanthrene             | 1.3757         | 1.38328 |             | .7     |      | 0.55099     | 20  |         | Averaged   |
| Anthracene               | 1.2774         | 1.36067 |             | .7     |      | 6.51871     | 20  |         | Averaged   |
| Fluoranthene             | 1.2701         | 1.29108 |             | .6     |      | 1.65184     | 20  |         | Averaged   |
| Pyrene                   | 2.6677         | 2.70336 |             | .6     |      | 1.33673     | 20  |         | Averaged   |
| 3,3'-Dichlorobenzidine   | 0.5387         | 0.59962 |             | .01    |      | 11.30871    | 20  |         | Averaged   |
| Benzo(a)anthracene       | 1.6075         | 1.62026 |             | .8     |      | 0.79378     | 20  |         | Averaged   |
| Chrysene                 | 1.5233         | 1.49003 |             | .7     |      | -2.18407    | 20  |         | Averaged   |
| Benzo(b)fluoranthene     | 1.7978         | 1.98828 |             | .7     |      | 10.59517    | 20  |         | Averaged   |
| Benzo(k)fluoranthene     | 1.7699         | 1.99821 |             | .7     |      | 12.8996     | 20  |         | Averaged   |
| Benzo(a)pyrene           | 1.482          | 1.6209  |             | .7     |      | 9.37247     | 20  |         | Averaged   |
| Indeno(1,2,3-cd)pyrene   | 0.9792         | 0.84895 |             | .5     |      | -13.30167   | 20  |         | Averaged   |
| Dibenzo(a,h)anthracene   | 0.8266         | 0.78736 |             | .4     |      | -4.74716    | 20  |         | Averaged   |
| Benzo(ghi)perylene       | 1.0372         | 0.83085 |             | .5     |      | -19.89491   | 20  |         | Averaged   |

JMB  
11/07/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0702.D  
Acq On : 07 Nov 2016 08:29  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-83.4|CCV|1|SVM|1|S-CCV  
Misc : |MIX[A,B]  
ALS Vial : 2 Sample Multiplier: 1

JCB  
11/08/2016

Quant Time: Nov 07 08:53:17 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

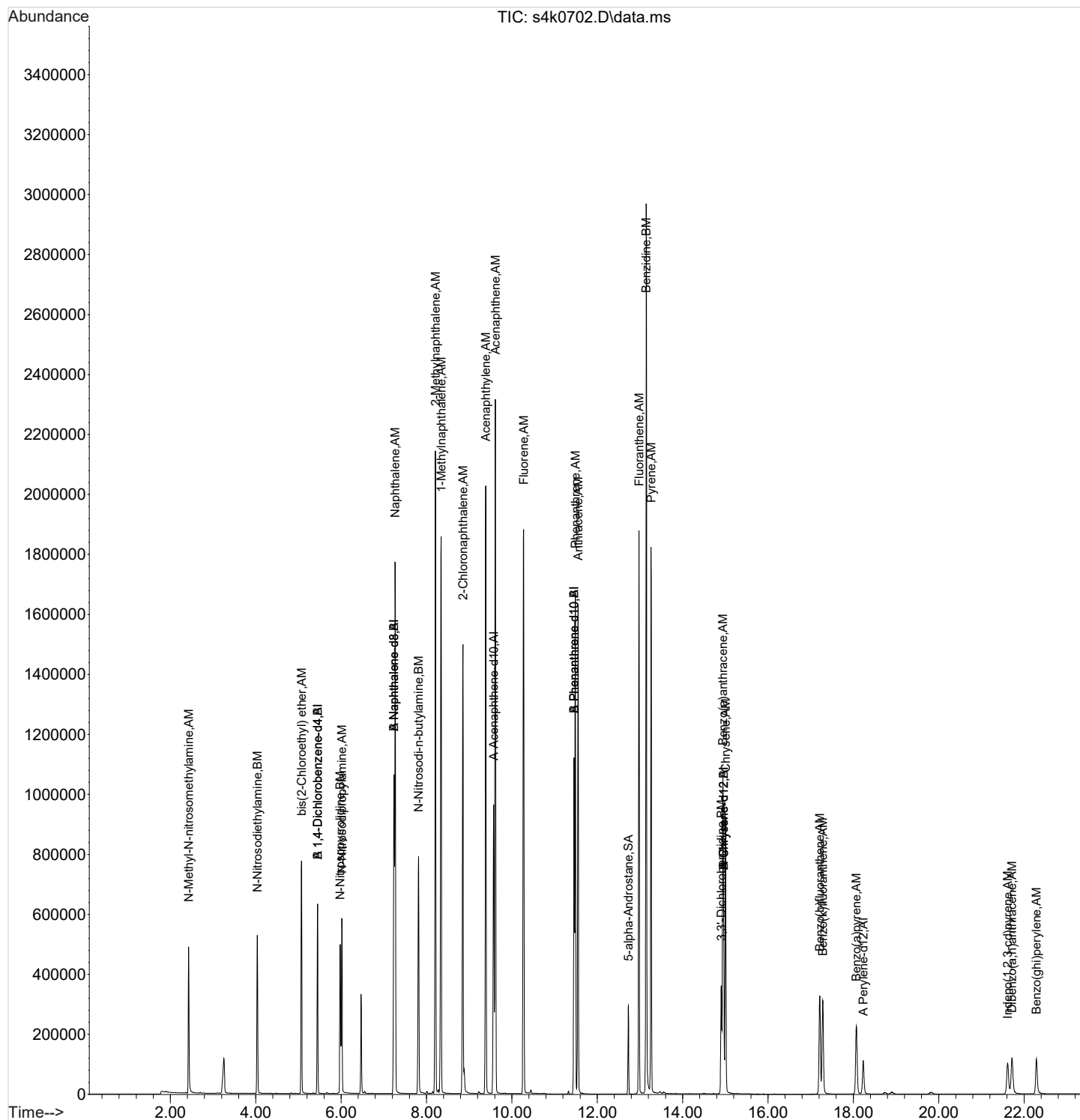
| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units |           |
|------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards           |      |        |        |        |          |       |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.448  | 5.448  | 1.000  | 421327   | 4.00  | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136  | 7.237  | 7.237  | 1.000  | 1325711  | 4.00  | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164  | 9.573  | 9.573  | 1.000  | 584621   | 4.00  | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188  | 11.457 | 11.457 | 1.000  | 1033083  | 4.00  | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240  | 14.963 | 14.963 | 1.000  | 468782   | 4.00  | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264  | 18.231 | 18.231 | 1.000  | 239758   | 4.00  | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.448  | 5.448  | 1.000  | 421327   | 4.00  | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136  | 7.237  | 7.237  | 1.000  | 1325711  | 4.00  | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188  | 11.457 | 11.457 | 1.000  | 1033083  | 4.00  | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240  | 14.963 | 14.963 | 1.000  | 468782   | 4.00  | ng/uL | 0.00      |
| System Monitoring Compounds  |      |        |        |        |          |       |       | Dev (Min) |
| 17) 5-alpha-Androstane       | 245  | 12.731 | 12.731 | 1.111  | 167371   | 5.18  | ng/uL | 0.00      |
| Target Compounds             |      |        |        |        |          |       |       |           |
|                              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | QValue    |
| 2) N-Methyl-N-nitrosometh... | 74   | 2.428  | 2.428  | 0.446  | 360345   | 4.73  | ng/uL | 92        |
| 3) bis(2-Chloroethyl) ether  | 93   | 5.072  | 5.072  | 0.931  | 617538   | 4.79  | ng/uL | 98        |
| 4) N-Nitrosodipropylamine    | 70   | 6.016  | 6.016  | 1.104  | 411137   | 4.85  | ng/uL | 96        |
| 6) Naphthalene               | 128  | 7.268  | 7.268  | 1.004  | 1867801  | 5.06  | ng/uL | 100       |
| 7) 2-Methylnaphthalene       | 142  | 8.212  | 8.212  | 1.135  | 1295317  | 5.23  | ng/uL | 100       |
| 8) 1-Methylnaphthalene       | 142  | 8.342  | 8.342  | 1.153  | 1112906  | 5.26  | ng/uL | 100       |
| 10) 2-Chloronaphthalene      | 162  | 8.853  | 8.853  | 0.925  | 1285505  | 4.70  | ng/uL | 100       |
| 11) Acenaphthylene           | 152  | 9.391  | 9.391  | 0.981  | 1913145  | 4.96  | ng/uL | 100       |
| 12) Acenaphthene             | 154  | 9.615  | 9.615  | 1.004  | 1084644  | 5.21  | ng/uL | 100       |
| 13) Fluorene                 | 166  | 10.277 | 10.277 | 1.074  | 1209671  | 4.99  | ng/uL | 100       |
| 15) Phenanthrene             | 178  | 11.489 | 11.489 | 1.003  | 1786300  | 5.03  | ng/uL | 100       |
| 16) Anthracene               | 178  | 11.553 | 11.553 | 1.008  | 1757108  | 5.33  | ng/uL | 100       |
| 18) Fluoranthene             | 202  | 12.981 | 12.981 | 1.133  | 1667242  | 5.08  | ng/uL | 100       |
| 20) Pyrene                   | 202  | 13.262 | 13.262 | 0.886  | 1584106  | 5.07  | ng/uL | 100       |
| 21) Benzo(a)anthracene       | 228  | 14.943 | 14.943 | 0.999  | 949436   | 5.04  | ng/uL | 98        |
| 22) Chrysene                 | 228  | 15.007 | 15.007 | 1.003  | 873122   | 4.89  | ng/uL | 100       |
| 24) Benzo(b)fluoranthene     | 252  | 17.213 | 17.213 | 0.944  | 595884   | 5.53  | ng/uL | 100       |
| 25) Benzo(k)fluoranthene     | 252  | 17.284 | 17.284 | 0.948  | 598859   | 5.64  | ng/uL | 100       |
| 26) Benzo(a)pyrene           | 252  | 18.072 | 18.072 | 0.991  | 485780   | 5.47  | ng/uL | 100       |
| 27) Indeno(1,2,3-cd)pyrene   | 276  | 21.615 | 21.615 | 1.186  | 254427   | 4.34  | ng/uL | 97        |
| 28) Dibenzo(a,h)anthracene   | 278  | 21.718 | 21.718 | 1.191  | 235971   | 4.76  | ng/uL | 96        |
| 29) Benzo(ghi)perylene       | 276  | 22.289 | 22.289 | 1.223  | 249005   | 4.01  | ng/uL | 96        |
| 31) N-Nitrosodiethylamine    | 102  | 4.040  | 4.040  | 0.742  | 303436   | 4.91  | ng/uL | 93        |
| 32) N-Nitrosopyrrolidine     | 100  | 5.980  | 5.980  | 1.098  | 326006   | 5.13  | ng/uL | 92        |
| 34) N-Nitrosodi-n-butylamine | 84   | 7.816  | 7.816  | 1.080  | 374830   | 5.32  | ng/uL | 94        |
| 36) Benzidine                | 184  | 13.150 | 13.150 | 1.148  | 3479149  | 30.15 | ng/uL | 99        |
| 38) 3,3'-Dichlorobenzidine   | 252  | 14.906 | 14.906 | 0.996  | 351361   | 5.57  | ng/uL | 100       |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0702.D  
Acq On : 07 Nov 2016 08:29  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160804-83.4|CCV|1|SVM|1|S-CCV  
Misc : |MIX[A,B]  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 07 08:53:17 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE





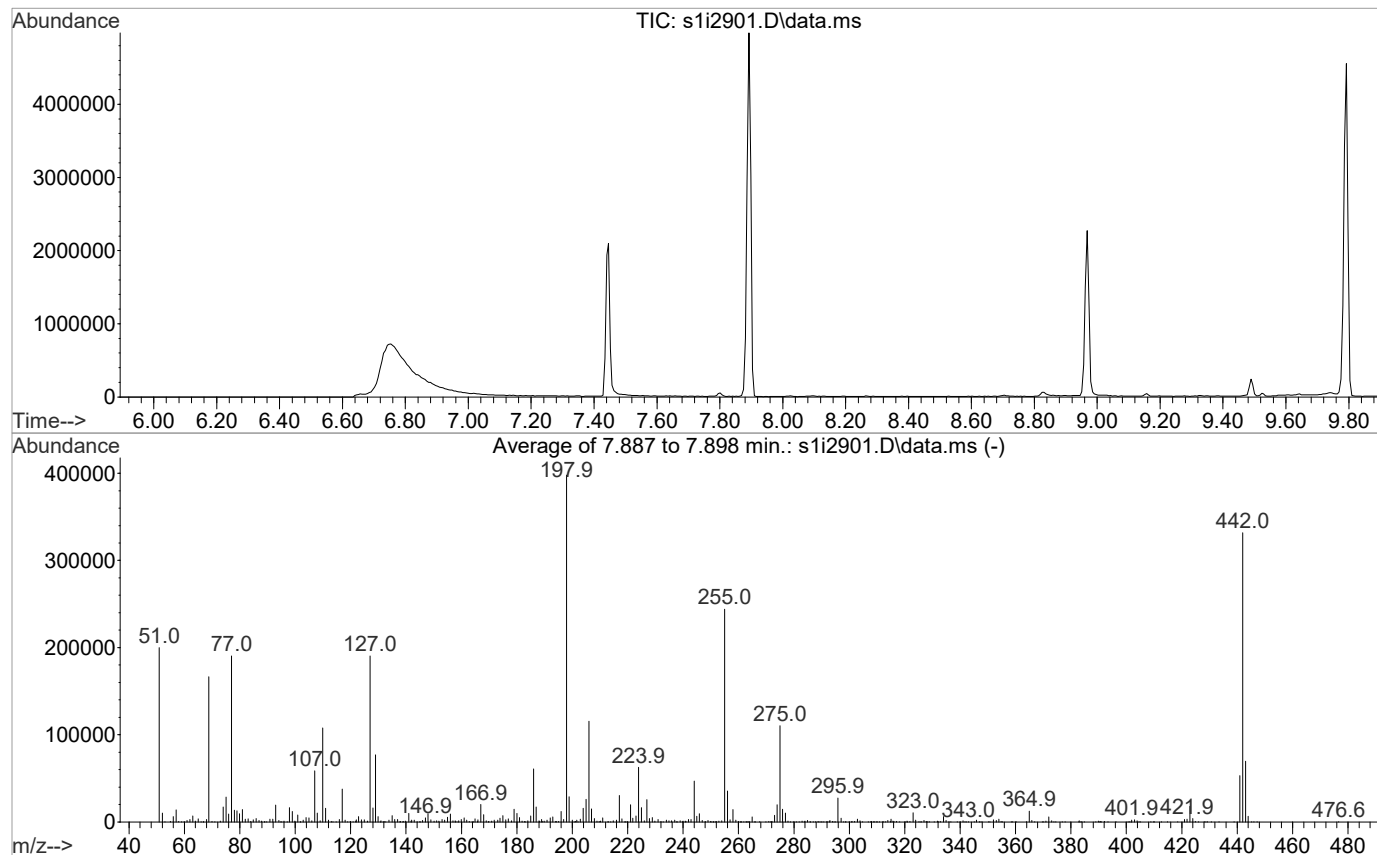
# Quality Control Data

DFTPP Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2901.D  
Acq On : 29 Sep 2016 09:17  
Operator : JLD1  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\DATA\s092916.B\BNABrk Down8270D.m  
Title : dftpp / endrin / ddt SubList :  
Last Update : Tue Dec 04 12:26:44 2012



AutoFind: Scans 1364, 1365, 1366; Background Corrected with Scan 1358

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 51          | 198          | 10           | 80           | 50.2      | 199762  | PASS             |
| 68          | 69           | 0.00         | 2            | 1.7       | 2782    | PASS             |
| 69          | 198          | 0.00         | 100          | 41.9      | 166571  | PASS             |
| 70          | 69           | 0.00         | 2            | 0.3       | 536     | PASS             |
| 127         | 198          | 10           | 80           | 47.8      | 190336  | PASS             |
| 197         | 198          | 0.00         | 2            | 0.7       | 2741    | PASS             |
| 198         | 198          | 50           | 100          | 100.0     | 397952  | PASS             |
| 199         | 198          | 5            | 9            | 7.3       | 28971   | PASS             |
| 275         | 198          | 10           | 60           | 27.7      | 110296  | PASS             |
| 365         | 198          | 1            | 100          | 3.1       | 12329   | PASS             |
| 441         | 442          | 0.01         | 24           | 16.0      | 53259   | PASS             |
| 442         | 198          | 50           | 100          | 83.4      | 331904  | PASS             |
| 443         | 442          | 15           | 24           | 21.0      | 69539   | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2901.D  
Acq On : 29 Sep 2016 09:17  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 30 09:14:05 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Dec 04 12:26:44 2012  
Response via : Initial Calibration  
Integrator: RTE

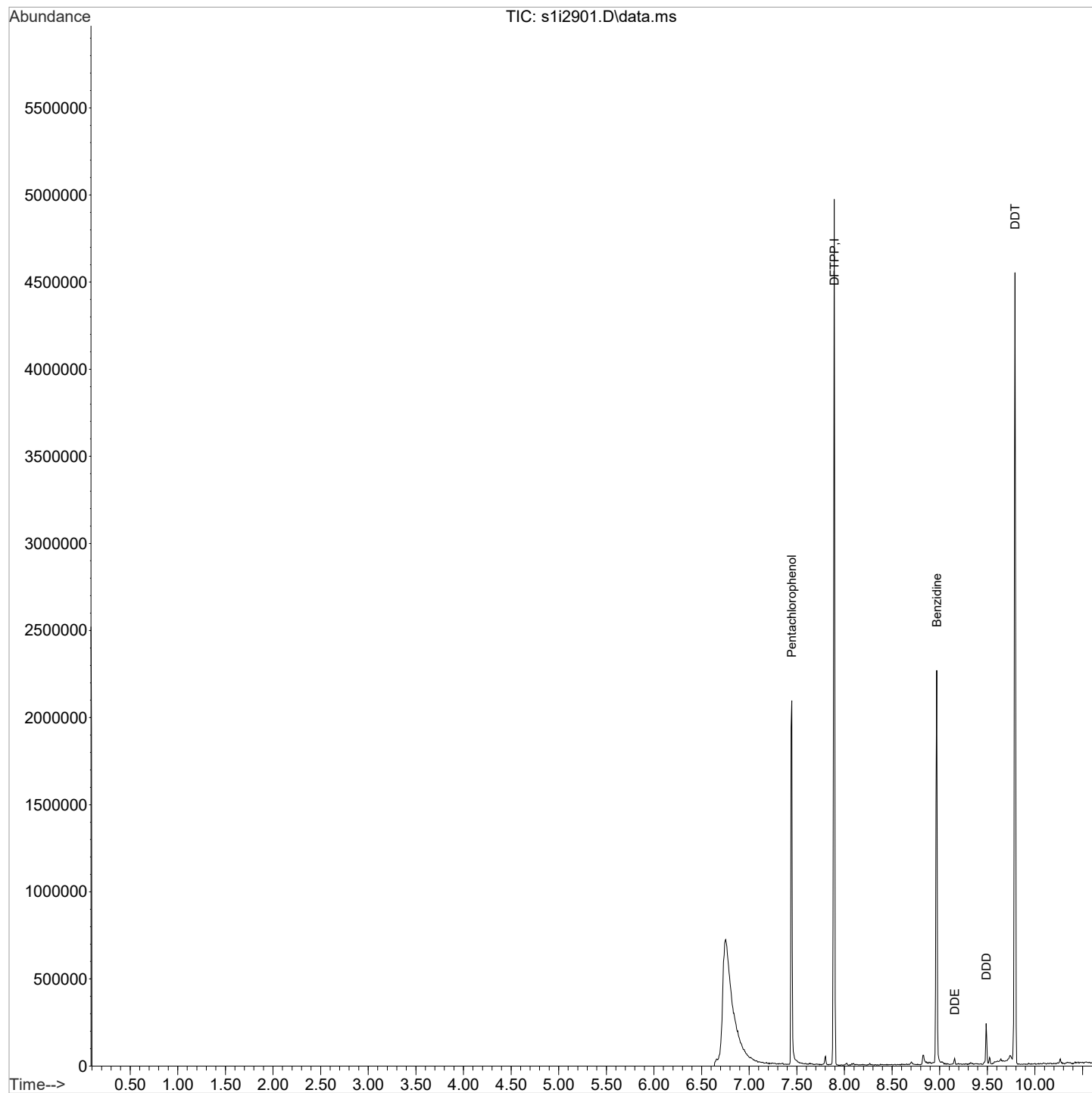
| Compound             | QIon | R.T.  | Exp RT | Rel RT | Response | Conc | Units |           |
|----------------------|------|-------|--------|--------|----------|------|-------|-----------|
| Internal Standards   |      |       |        |        |          |      |       | Dev (Min) |
| 1) DFTPP             | TIC  | 7.892 | 7.893  | 1.000  | 4211725  | 5.00 | ug/l  | # 0.00    |
| Target Compounds     |      |       |        |        |          |      |       | QValue    |
| 3) Pentachlorophenol | 266  | 7.446 | 7.447  | 0.943  | 234010   | 3.10 | ug/l  | 99        |
| 4) Benzidine         | 184  | 8.968 | 8.965  | 1.136  | 777465   | 2.82 | ug/l  | 99        |
| 5) DDE               | 246  | 9.157 | 9.153  | 1.160  | 3348     | 4.75 | ug/l  | 87        |
| 6) DDD               | 235  | 9.489 | 9.484  | 1.202  | 35489    | 6.86 | ug/l  | 98        |
| 7) DDT               | 235  | 9.792 | 9.787  | 1.241  | 752487   | 4.06 | ug/l  | 99        |

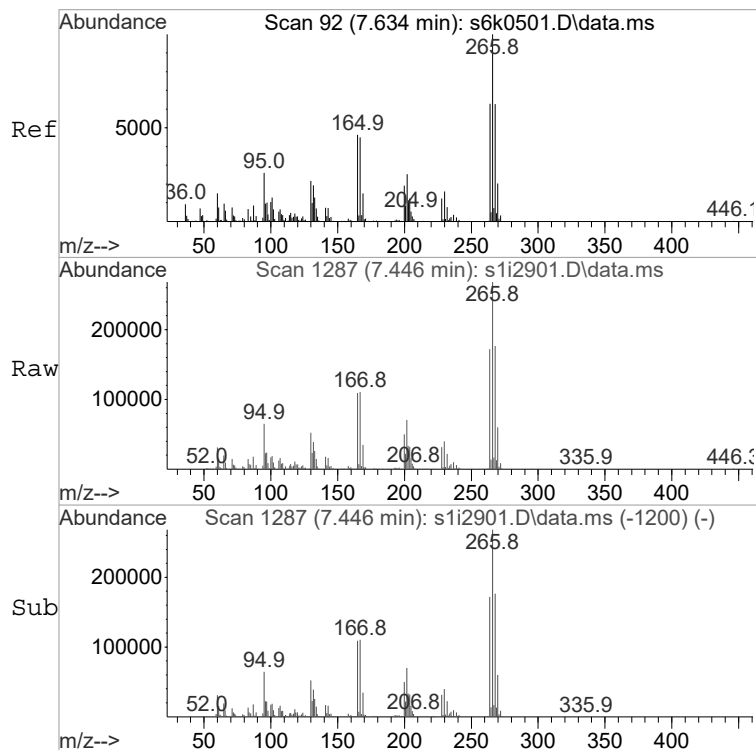
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2901.D  
Acq On : 29 Sep 2016 09:17  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

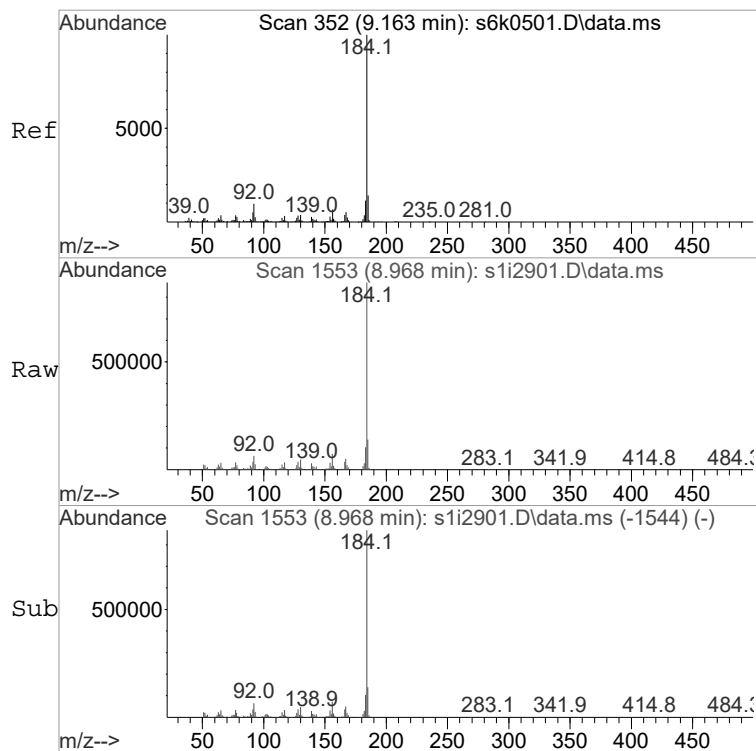
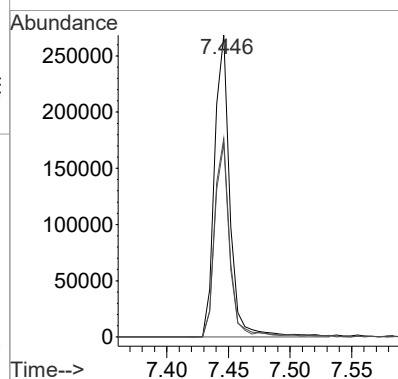
Quant Time: Sep 30 09:14:05 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Dec 04 12:26:44 2012  
Response via : Initial Calibration  
Integrator: RTE





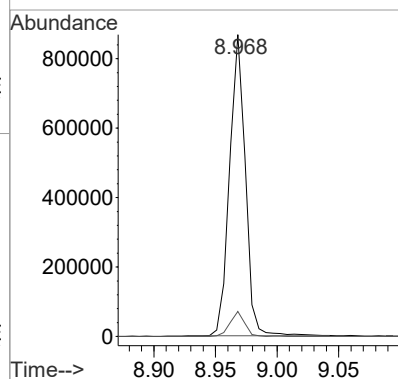
#3  
 Pentachlorophenol  
 Concen: 3.10 ug/l  
 RT: 7.446 min Scan# 1287  
 Delta R.T. -0.001 min  
 Lab File: s1i2901.D  
 Acq: 29 Sep 2016 09:17

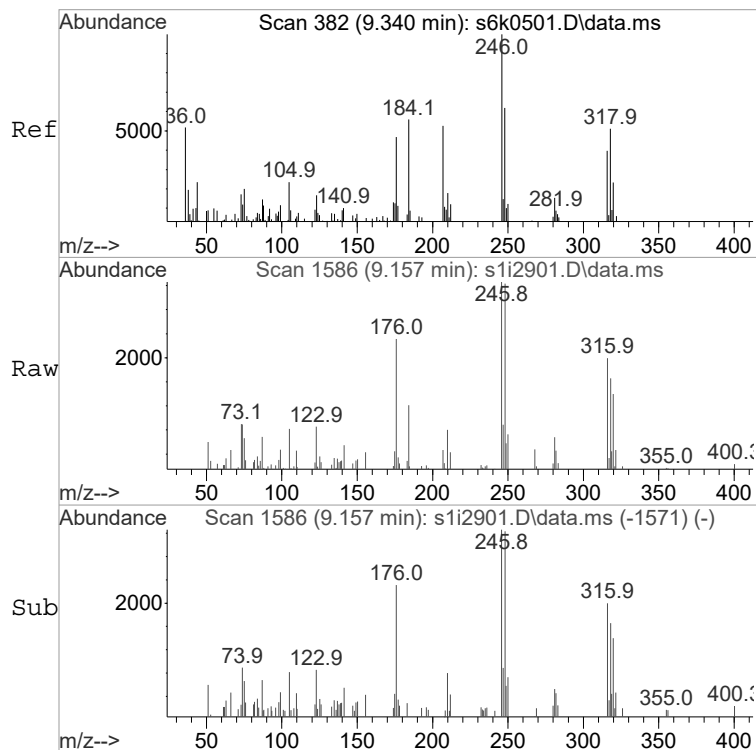
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 266     | 100   |       |       |
| 264     | 62.9  | 0.0   | 163.7 |
| 268     | 64.8  | 0.0   | 164.1 |



#4  
 Benzidine  
 Concen: 2.82 ug/l  
 RT: 8.968 min Scan# 1553  
 Delta R.T. 0.003 min  
 Lab File: s1i2901.D  
 Acq: 29 Sep 2016 09:17

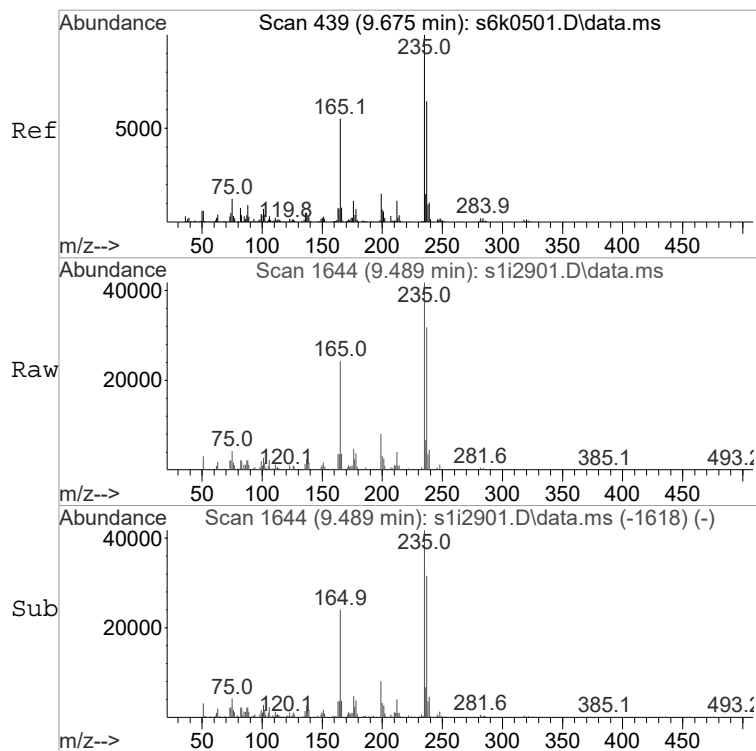
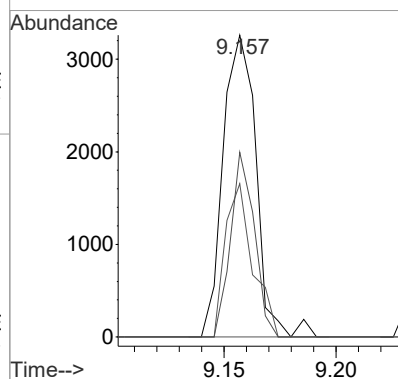
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 184     | 100   |       |       |
| 156     | 7.8   | 0.0   | 108.2 |





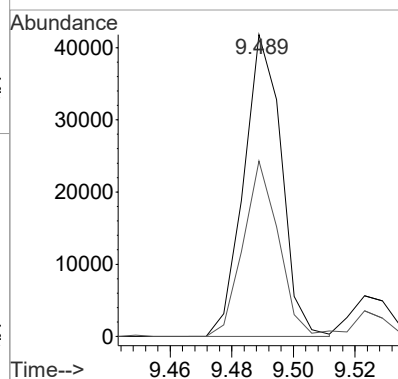
#5  
DDE  
Concen: 4.75 ug/l  
RT: 9.157 min Scan# 1586  
Delta R.T. 0.004 min  
Lab File: s1i2901.D  
Acq: 29 Sep 2016 09:17

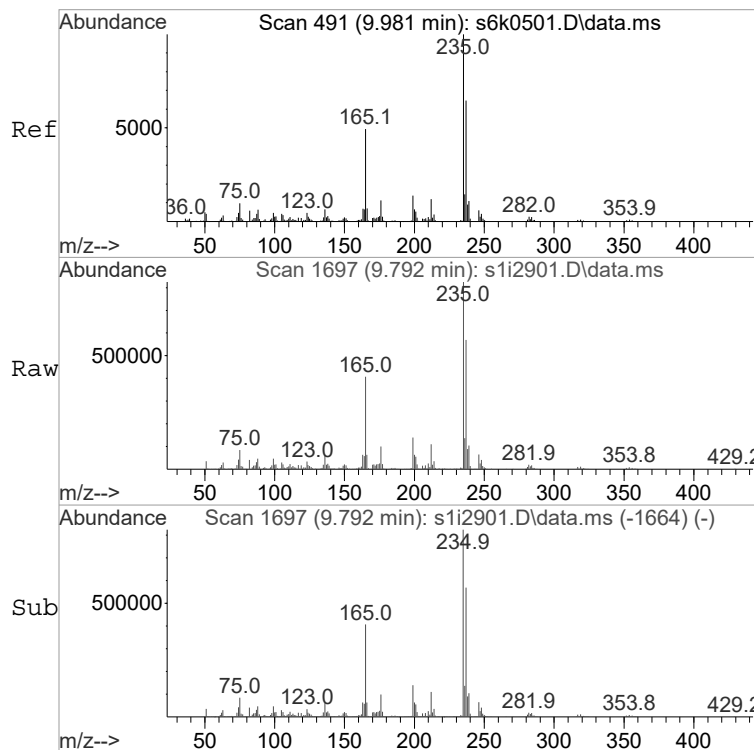
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 246     | 100   |       |       |
| 318     | 42.3  | 0.0   | 151.5 |
| 316     | 43.9  | 0.0   | 136.1 |



#6  
DDD  
Concen: 6.86 ug/l  
RT: 9.489 min Scan# 1644  
Delta R.T. 0.004 min  
Lab File: s1i2901.D  
Acq: 29 Sep 2016 09:17

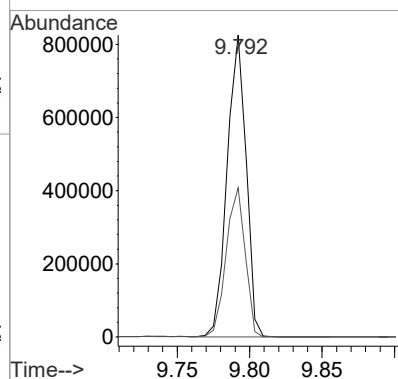
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 235     | 100   |       |       |
| 165     | 55.8  | 0.0   | 154.1 |





#7  
DDT  
Concen: 4.06 ug/l  
RT: 9.792 min Scan# 1697  
Delta R.T. 0.005 min  
Lab File: s1i2901.D  
Acq: 29 Sep 2016 09:17

Tgt Ion: 235 Resp: 752487  
Ion Ratio Lower Upper  
235 100  
165 49.5 0.0 149.9



## 8270 Breakdown Report

|           |   |          |        |
|-----------|---|----------|--------|
| Data File | : C:\msdchem\1\DATA\s092916.B\s1i2901.D | Vial     | : 1    |
| Acq On    | : 29 Sep 2016 09:17                     | Operator | : JLD1 |
| Sample    | :  WBN160728-99 DFTPP 1 SVM 1 DFTPP     | Inst     | : MSD1 |
| Misc      | :                                       | Multiplr | : 1.00 |
| IntFile   | : rteint.p                              |          |        |

| Compounds | Area/%Breakdown | 8270C      | 8270D      |
|-----------|-----------------|------------|------------|
| DDE       | 3348            |            |            |
| DDD       | 35489           |            |            |
| DDT       | 752487          |            |            |
| Breakdown | 4.91%           | Pass (<20) | Pass (<20) |

| Compounds         | Tailing Factor | 8270C     | 8270D     |
|-------------------|----------------|-----------|-----------|
| Benzidine         | 0.83           | Pass (<3) | Pass (<2) |
| Pentachlorophenol | 0.82           | Pass (<5) | Pass (<2) |

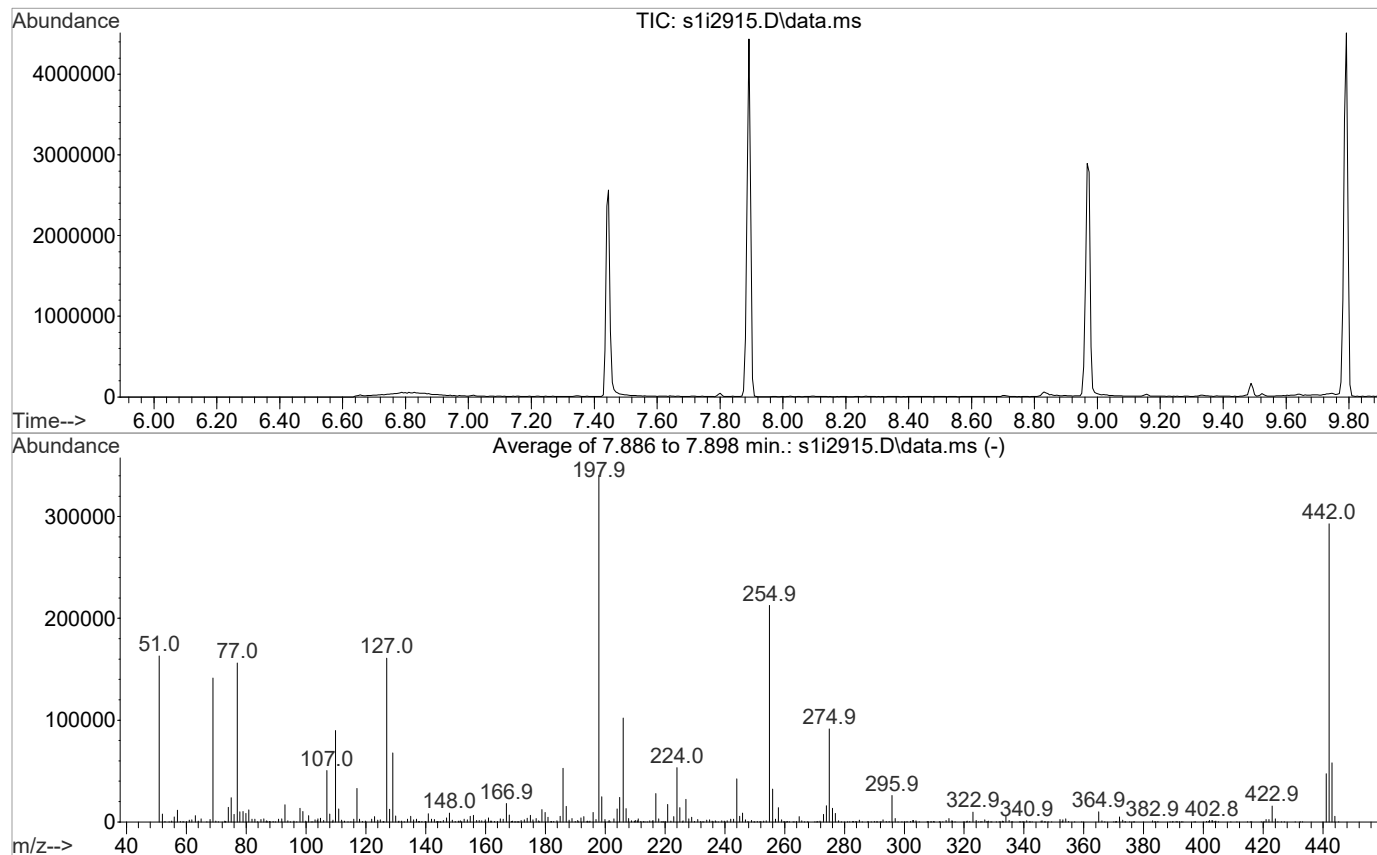


DFTPP Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2915.D  
Acq On : 29 Sep 2016 16:52  
Operator : JLD1  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\DATA\s092916.B\BNABrk Down8270D.m  
Title : dftpp / endrin / ddt SubList :  
Last Update : Tue Dec 04 12:26:44 2012



AutoFind: Scans 1364, 1365, 1366; Background Corrected with Scan 1357

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 51          | 198          | 10           | 80           | 47.8      | 162931  | PASS             |
| 68          | 69           | 0.00         | 2            | 1.7       | 2434    | PASS             |
| 69          | 198          | 0.00         | 100          | 41.5      | 141376  | PASS             |
| 70          | 69           | 0.00         | 2            | 0.5       | 760     | PASS             |
| 127         | 198          | 10           | 80           | 47.2      | 160752  | PASS             |
| 197         | 198          | 0.00         | 2            | 0.7       | 2493    | PASS             |
| 198         | 198          | 50           | 100          | 100.0     | 340800  | PASS             |
| 199         | 198          | 5            | 9            | 7.2       | 24706   | PASS             |
| 275         | 198          | 10           | 60           | 26.8      | 91491   | PASS             |
| 365         | 198          | 1            | 100          | 2.9       | 9907    | PASS             |
| 441         | 442          | 0.01         | 24           | 16.2      | 47387   | PASS             |
| 442         | 198          | 50           | 100          | 86.0      | 293077  | PASS             |
| 443         | 442          | 15           | 24           | 19.8      | 57965   | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2915.D  
Acq On : 29 Sep 2016 16:52  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 30 09:14:17 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Dec 04 12:26:44 2012  
Response via : Initial Calibration  
Integrator: RTE

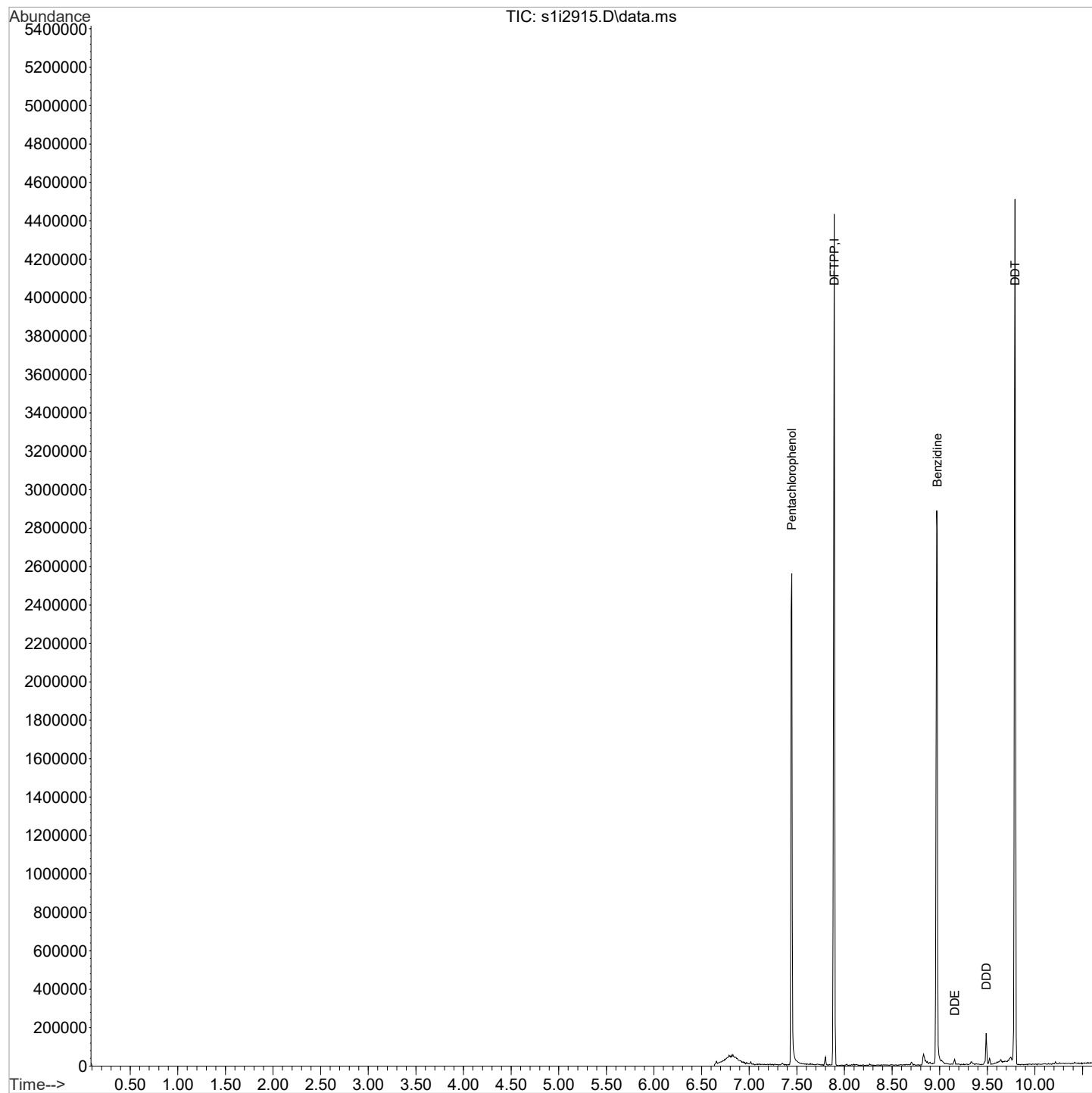
| Compound             | QIon | R.T.  | Exp RT | Rel RT | Response | Conc      | Units |           |
|----------------------|------|-------|--------|--------|----------|-----------|-------|-----------|
| -----                |      |       |        |        |          |           |       |           |
| Internal Standards   |      |       |        |        |          |           |       | Dev (Min) |
| 1) DFTPP             | TIC  | 7.892 | 7.893  | 1.000  | 3592516  | 5.00 ug/l |       | # 0.00    |
| Target Compounds     | QIon | R.T.  | Exp RT | Rel RT | Response | Conc      | Units | QValue    |
| 3) Pentachlorophenol | 266  | 7.446 | 7.447  | 0.943  | 289123   | 4.50 ug/l |       | 97        |
| 4) Benzidine         | 184  | 8.974 | 8.965  | 1.137  | 1096921  | 4.66 ug/l |       | 100       |
| 5) DDE               | 246  | 9.157 | 9.153  | 1.160  | 2785     | 4.63 ug/l |       | 92        |
| 6) DDD               | 235  | 9.489 | 9.484  | 1.202  | 24070    | 5.45 ug/l |       | 99        |
| 7) DDT               | 235  | 9.792 | 9.787  | 1.241  | 708523   | 4.48 ug/l |       | 99        |
| -----                |      |       |        |        |          |           |       |           |

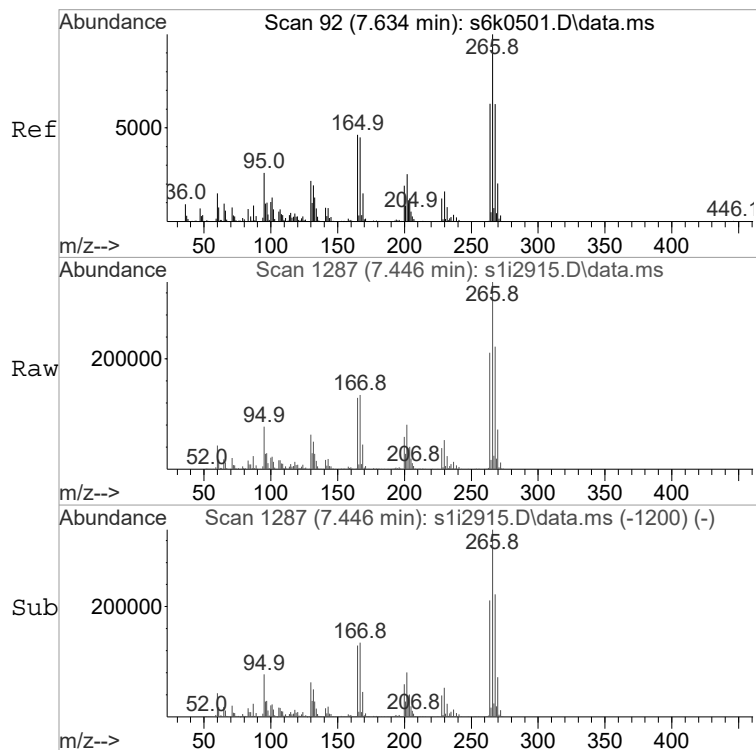
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2915.D  
Acq On : 29 Sep 2016 16:52  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

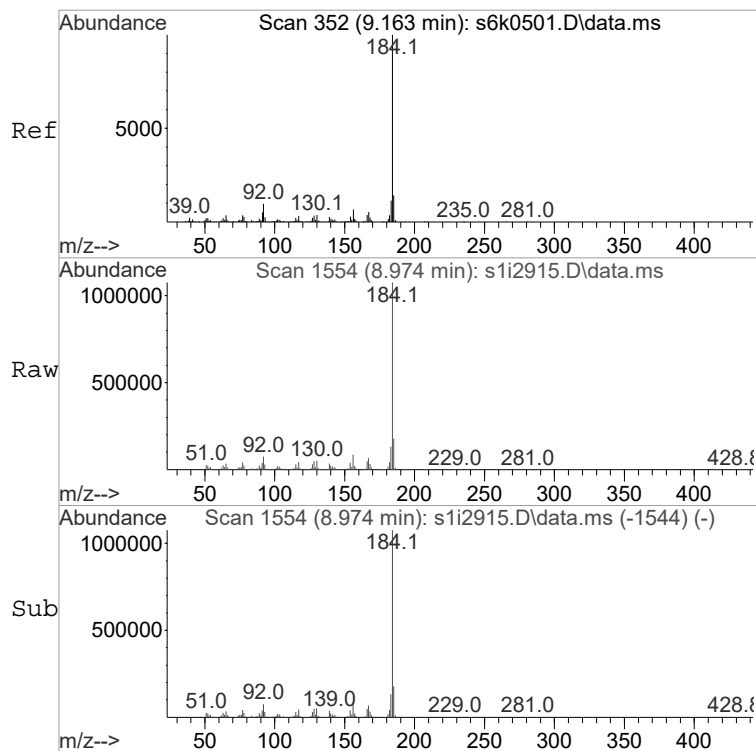
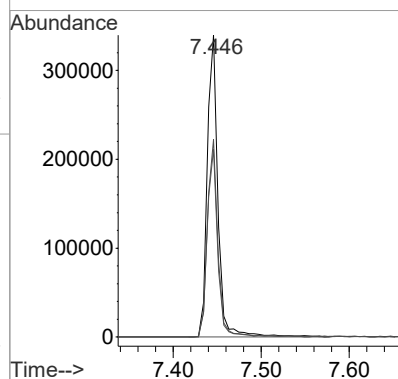
Quant Time: Sep 30 09:14:17 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Dec 04 12:26:44 2012  
Response via : Initial Calibration  
Integrator: RTE





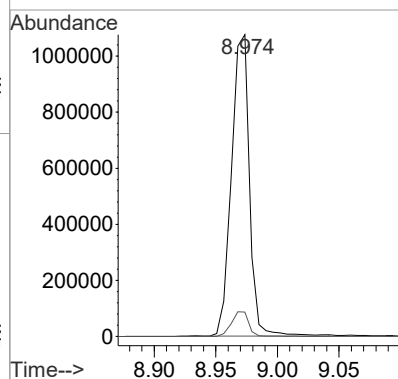
#3  
 Pentachlorophenol  
 Concen: 4.50 ug/l  
 RT: 7.446 min Scan# 1287  
 Delta R.T. -0.002 min  
 Lab File: s1i2915.D  
 Acq: 29 Sep 2016 16:52

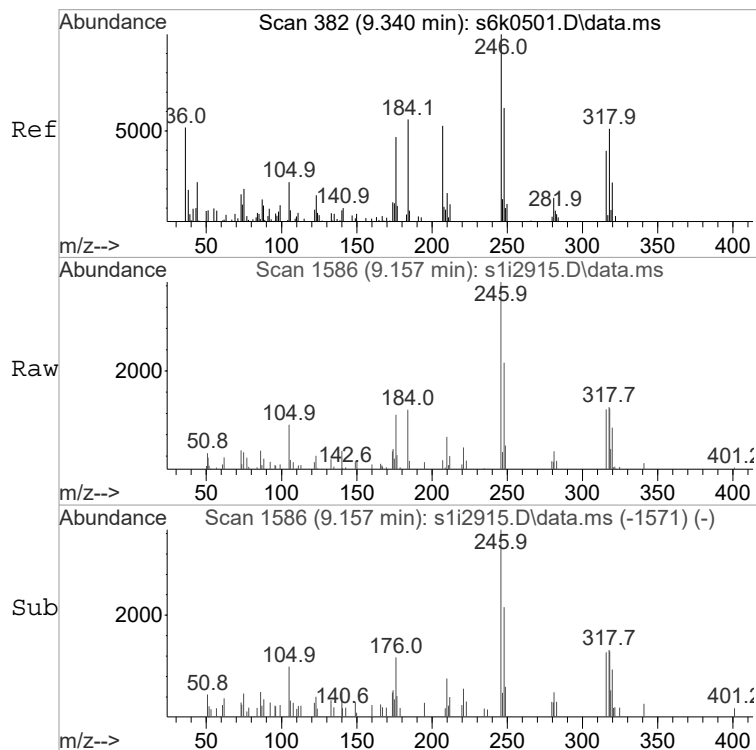
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 266     | 100   |       |       |
| 264     | 59.8  | 0.0   | 163.7 |
| 268     | 64.5  | 0.0   | 164.1 |



#4  
 Benzidine  
 Concen: 4.66 ug/l  
 RT: 8.974 min Scan# 1554  
 Delta R.T. 0.008 min  
 Lab File: s1i2915.D  
 Acq: 29 Sep 2016 16:52

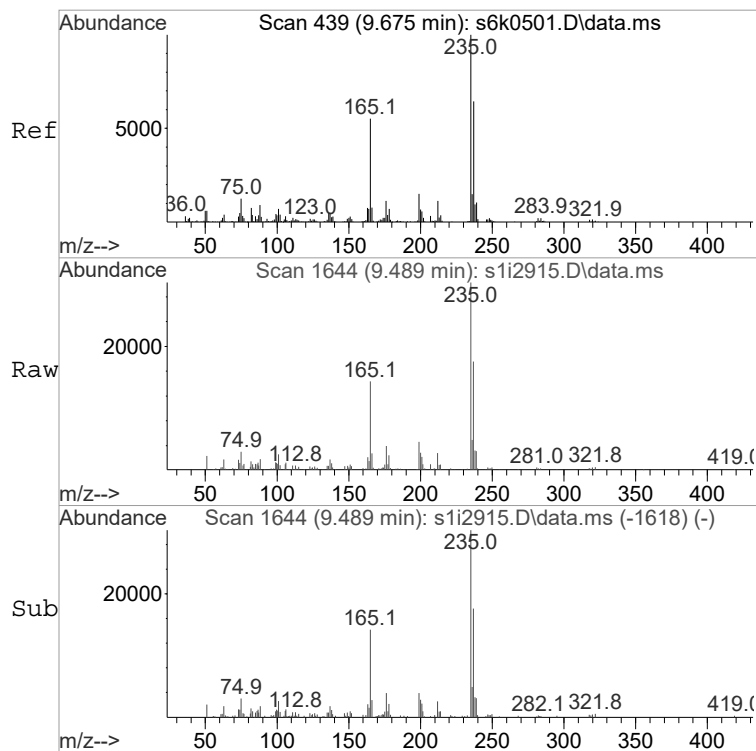
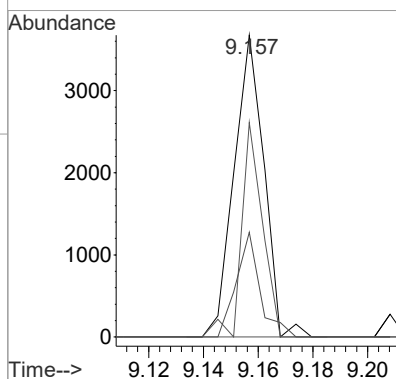
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 184     | 100   |       |       |
| 156     | 8.0   | 0.0   | 108.2 |





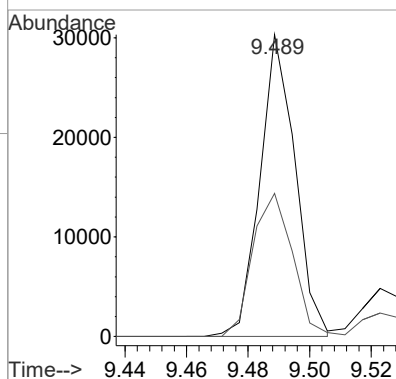
#5  
DDE  
Concen: 4.63 ug/l  
RT: 9.157 min Scan# 1586  
Delta R.T. 0.003 min  
Lab File: s1i2915.D  
Acq: 29 Sep 2016 16:52

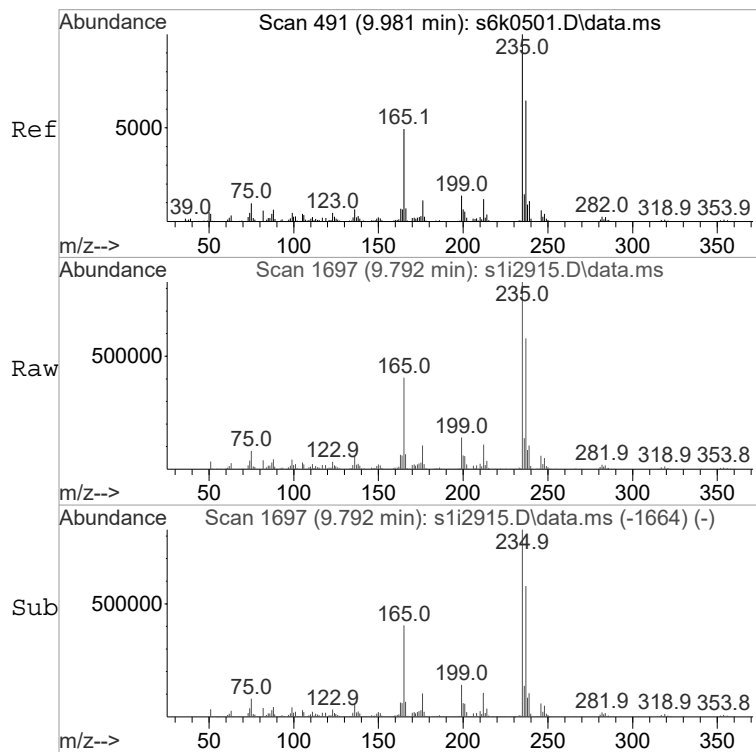
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 246     | 100   |       |       |
| 318     | 49.3  | 0.0   | 151.5 |
| 316     | 27.6  | 0.0   | 136.1 |



#6  
DDD  
Concen: 5.45 ug/l  
RT: 9.489 min Scan# 1644  
Delta R.T. 0.004 min  
Lab File: s1i2915.D  
Acq: 29 Sep 2016 16:52

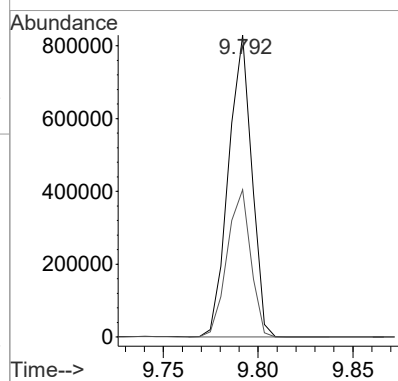
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 235     | 100   |       |       |
| 165     | 53.7  | 0.0   | 154.1 |





#7  
DDT  
Concen: 4.48 ug/l  
RT: 9.792 min Scan# 1697  
Delta R.T. 0.005 min  
Lab File: s1i2915.D  
Acq: 29 Sep 2016 16:52

Tgt Ion: 235 Resp: 708523  
Ion Ratio Lower Upper  
235 100  
165 49.5 0.0 149.9



## 8270 Breakdown Report

|           |   |          |        |
|-----------|---|----------|--------|
| Data File | : C:\msdchem\1\DATA\s092916.B\s1i2915.D | Vial     | : 1    |
| Acq On    | : 29 Sep 2016 16:52                     | Operator | : JLD1 |
| Sample    | :  WBN160728-99 DFTPP 1 SVM 1 DFTPP     | Inst     | : MSD1 |
| Misc      | :                                       | Multiplr | : 1.00 |
| IntFile   | : rteint.p                              |          |        |

| Compounds | Area/%Breakdown | 8270C      | 8270D      |
|-----------|-----------------|------------|------------|
| DDE       | 2785            |            |            |
| DDD       | 24070           |            |            |
| DDT       | 708523          |            |            |
| Breakdown | 3.65%           | Pass (<20) | Pass (<20) |

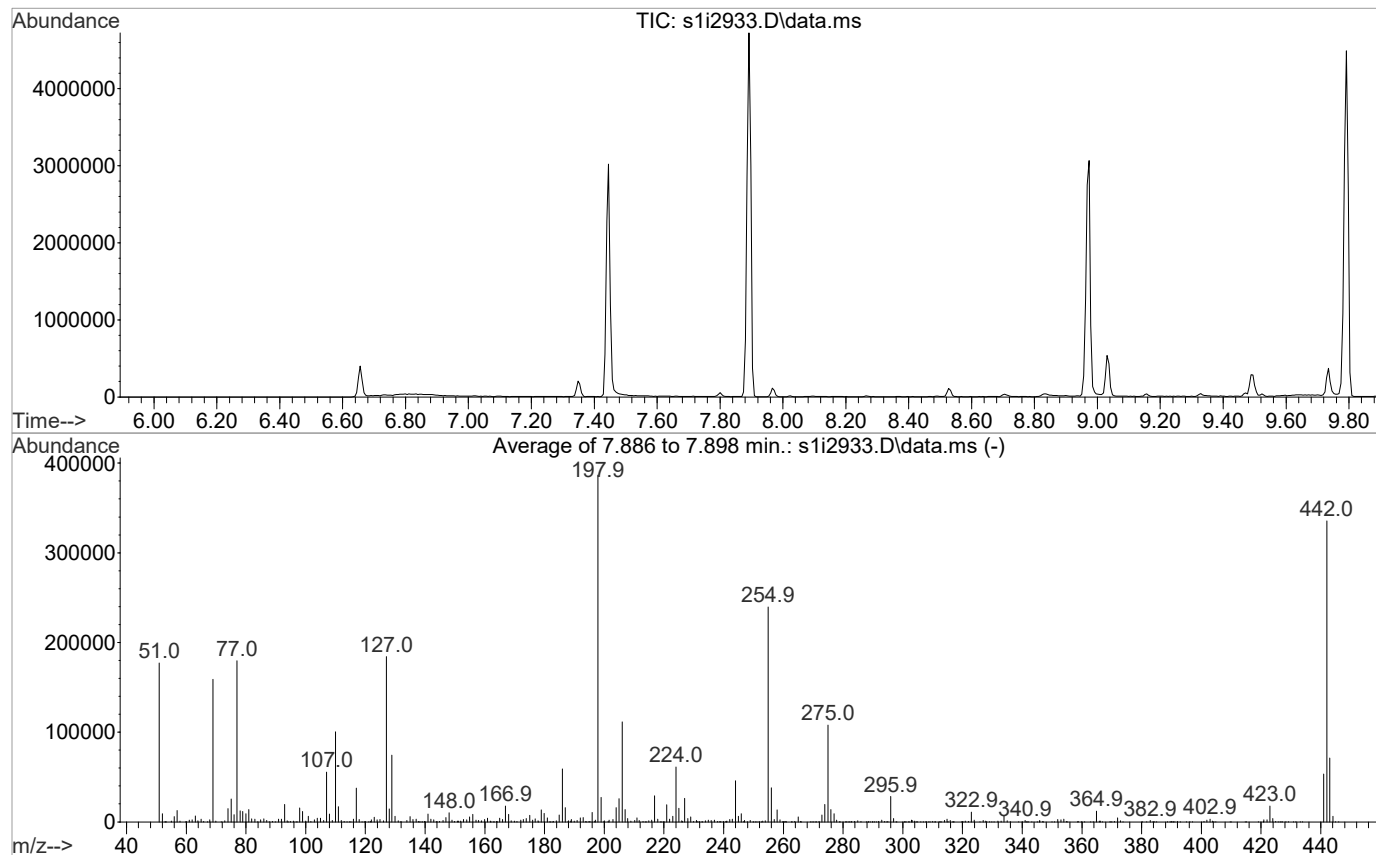
| Compounds         | Tailing Factor | 8270C     | 8270D     |
|-------------------|----------------|-----------|-----------|
| Benzidine         | 0.55           | Pass (<3) | Pass (<2) |
| Pentachlorophenol | 0.89           | Pass (<5) | Pass (<2) |

DFTPP Tune Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2933.D  
Acq On : 30 Sep 2016 01:35  
Operator : JLD1  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\DATA\s092916.B\BNABrk Down8270D.m  
Title : dftpp / endrin / ddt SubList :  
Last Update : Tue Dec 04 12:26:44 2012



AutoFind: Scans 1364, 1365, 1366; Background Corrected with Scan 1359

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 51          | 198          | 10           | 80           | 45.8      | 177286  | PASS             |
| 68          | 69           | 0.00         | 2            | 1.5       | 2350    | PASS             |
| 69          | 198          | 0.00         | 100          | 41.1      | 158973  | PASS             |
| 70          | 69           | 0.00         | 2            | 0.6       | 905     | PASS             |
| 127         | 198          | 10           | 80           | 47.7      | 184315  | PASS             |
| 197         | 198          | 0.00         | 2            | 0.6       | 2159    | PASS             |
| 198         | 198          | 50           | 100          | 100.0     | 386667  | PASS             |
| 199         | 198          | 5            | 9            | 7.1       | 27340   | PASS             |
| 275         | 198          | 10           | 60           | 27.9      | 107899  | PASS             |
| 365         | 198          | 1            | 100          | 3.1       | 12050   | PASS             |
| 441         | 442          | 0.01         | 24           | 15.9      | 53400   | PASS             |
| 442         | 198          | 50           | 100          | 86.8      | 335467  | PASS             |
| 443         | 442          | 15           | 24           | 21.2      | 71128   | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2933.D  
Acq On : 30 Sep 2016 01:35  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 30 09:14:32 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Dec 04 12:26:44 2012  
Response via : Initial Calibration  
Integrator: RTE

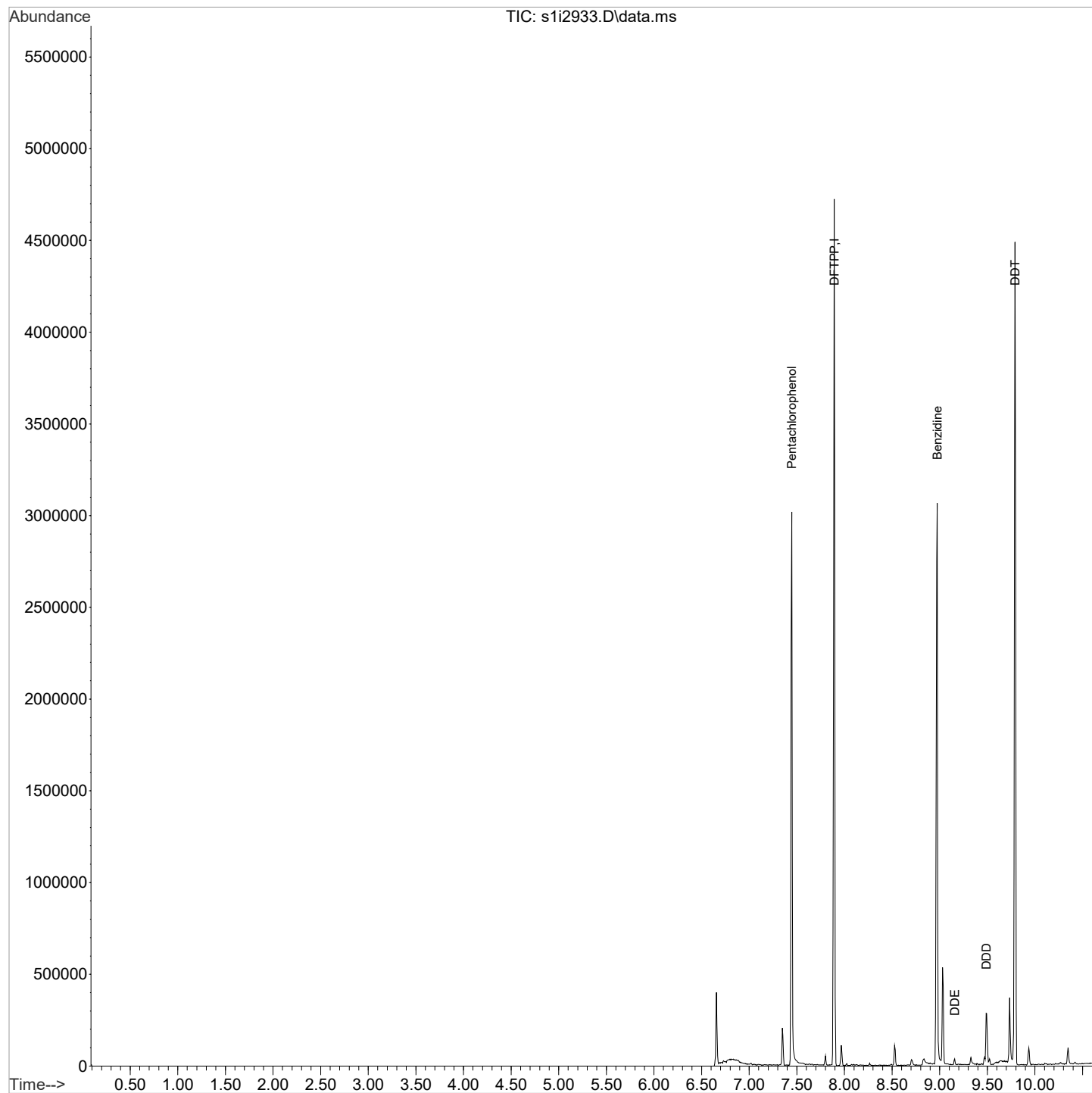
| Compound             | QIon | R.T.  | Exp RT | Rel RT | Response | Conc | Units |           |
|----------------------|------|-------|--------|--------|----------|------|-------|-----------|
| Internal Standards   |      |       |        |        |          |      |       | Dev (Min) |
| 1) DFTPP             | TIC  | 7.892 | 7.893  | 1.000  | 4050950  | 5.00 | ug/l  | # 0.00    |
| Target Compounds     |      |       |        |        |          |      |       | QValue    |
| 3) Pentachlorophenol | 266  | 7.446 | 7.447  | 0.943  | 322026   | 4.44 | ug/l  | 99        |
| 4) Benzidine         | 184  | 8.974 | 8.965  | 1.137  | 1126748  | 4.24 | ug/l  | 100       |
| 5) DDE               | 246  | 9.157 | 9.153  | 1.160  | 3764     | 5.55 | ug/l  | 95        |
| 6) DDD               | 235  | 9.489 | 9.484  | 1.202  | 42153    | 8.47 | ug/l  | 96        |
| 7) DDT               | 235  | 9.792 | 9.787  | 1.241  | 745122   | 4.18 | ug/l  | 98        |

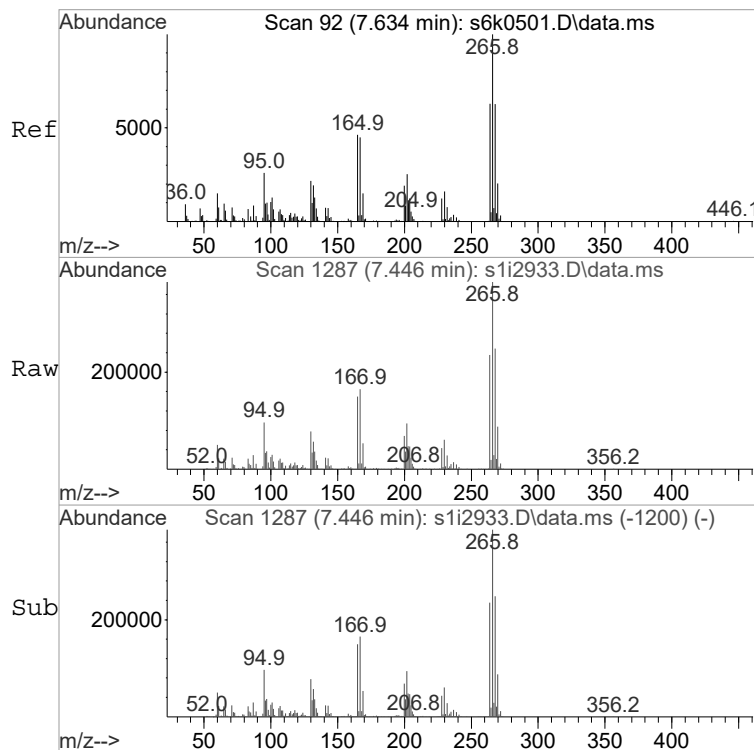
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s092916.B\  
Data File : s1i2933.D  
Acq On : 30 Sep 2016 01:35  
Operator : JLD1  
InstName : MSD1  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

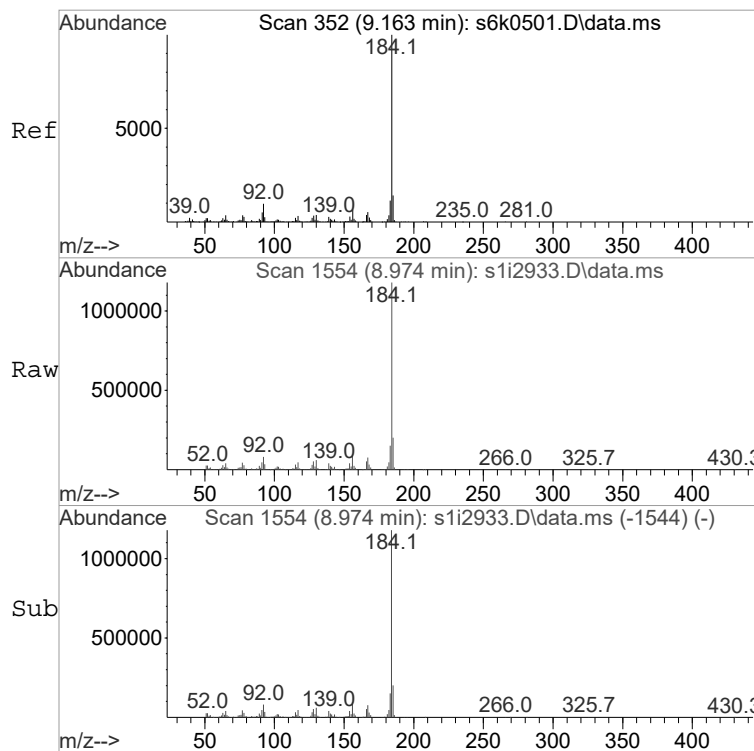
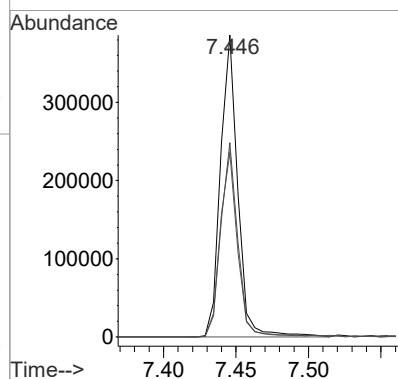
Quant Time: Sep 30 09:14:32 2016  
Quant Method : C:\msdchem\1\DATA\s092916.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Dec 04 12:26:44 2012  
Response via : Initial Calibration  
Integrator: RTE





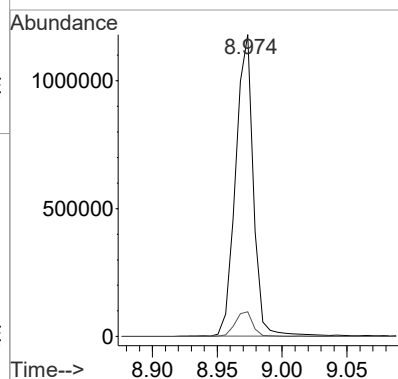
#3  
Pentachlorophenol  
Concen: 4.44 ug/l  
RT: 7.446 min Scan# 1287  
Delta R.T. -0.002 min  
Lab File: s1i2933.D  
Acq: 30 Sep 2016 01:35

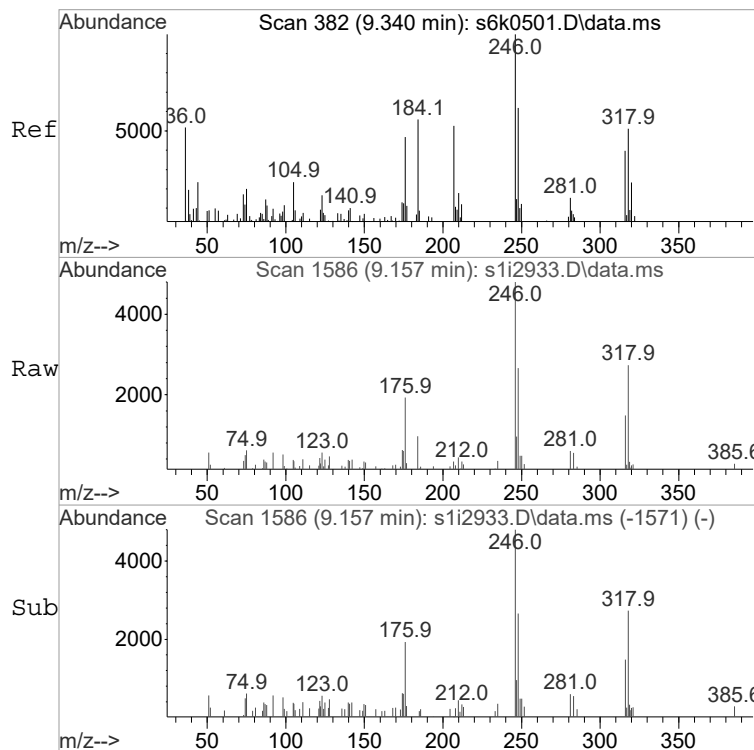
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 266     | 100   |       |       |
| 264     | 62.0  | 0.0   | 163.7 |
| 268     | 64.2  | 0.0   | 164.1 |



#4  
Benzidine  
Concen: 4.24 ug/l  
RT: 8.974 min Scan# 1554  
Delta R.T. 0.008 min  
Lab File: s1i2933.D  
Acq: 30 Sep 2016 01:35

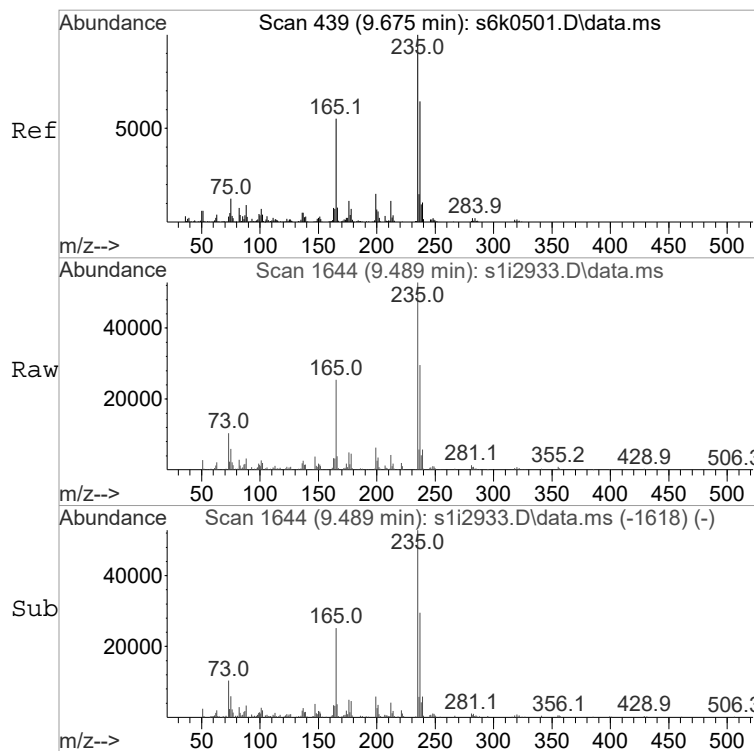
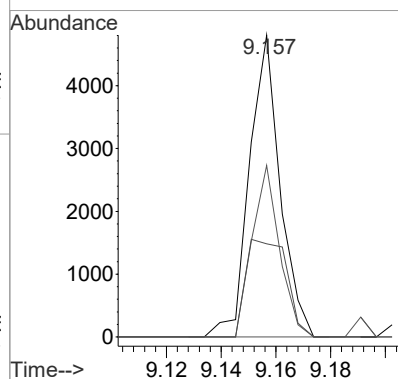
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 184     | 100   |       |       |
| 156     | 8.4   | 0.0   | 108.2 |





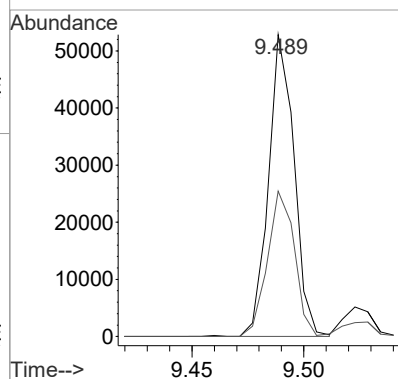
#5  
DDE  
Concen: 5.55 ug/l  
RT: 9.157 min Scan# 1586  
Delta R.T. 0.003 min  
Lab File: s1i2933.D  
Acq: 30 Sep 2016 01:35

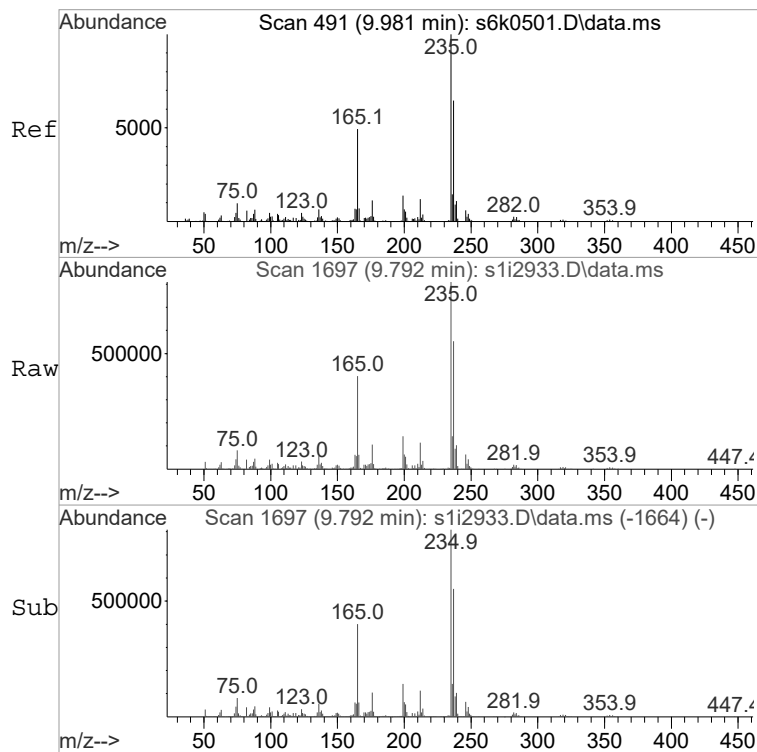
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 246     | 100   |       |       |
| 318     | 50.9  | 0.0   | 151.5 |
| 316     | 42.7  | 0.0   | 136.1 |



#6  
DDD  
Concen: 8.47 ug/l  
RT: 9.489 min Scan# 1644  
Delta R.T. 0.004 min  
Lab File: s1i2933.D  
Acq: 30 Sep 2016 01:35

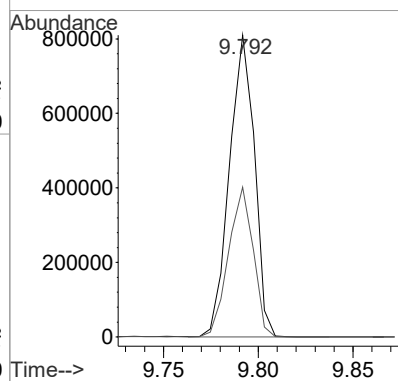
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 235     | 100   |       |       |
| 165     | 51.0  | 0.0   | 154.1 |





#7  
DDT  
Concen: 4.18 ug/l  
RT: 9.792 min Scan# 1697  
Delta R.T. 0.005 min  
Lab File: s1i2933.D  
Acq: 30 Sep 2016 01:35

| Tgt Ion | Ratio | Resp   | Lower | Upper |
|---------|-------|--------|-------|-------|
| 235     | 100   | 745122 |       |       |
| 165     | 48.7  | 0.0    | 149.9 |       |



## 8270 Breakdown Report

|           |   |          |        |
|-----------|---|----------|--------|
| Data File | : C:\msdchem\1\DATA\s092916.B\s1i2933.D | Vial     | : 1    |
| Acq On    | : 30 Sep 2016 01:35                     | Operator | : JLD1 |
| Sample    | :  WBN160728-99 DFTPP 1 SVM 1 DFTPP     | Inst     | : MSD1 |
| Misc      | :                                       | Multiplr | : 1.00 |
| IntFile   | : rteint.p                              |          |        |

| Compounds | Area/%Breakdown | 8270C      | 8270D      |
|-----------|-----------------|------------|------------|
| -----     | -----           | -----      | -----      |
| DDE       | 3764            |            |            |
| DDD       | 42153           |            |            |
| DDT       | 745122          |            |            |
| Breakdown | 5.80%           | Pass (<20) | Pass (<20) |

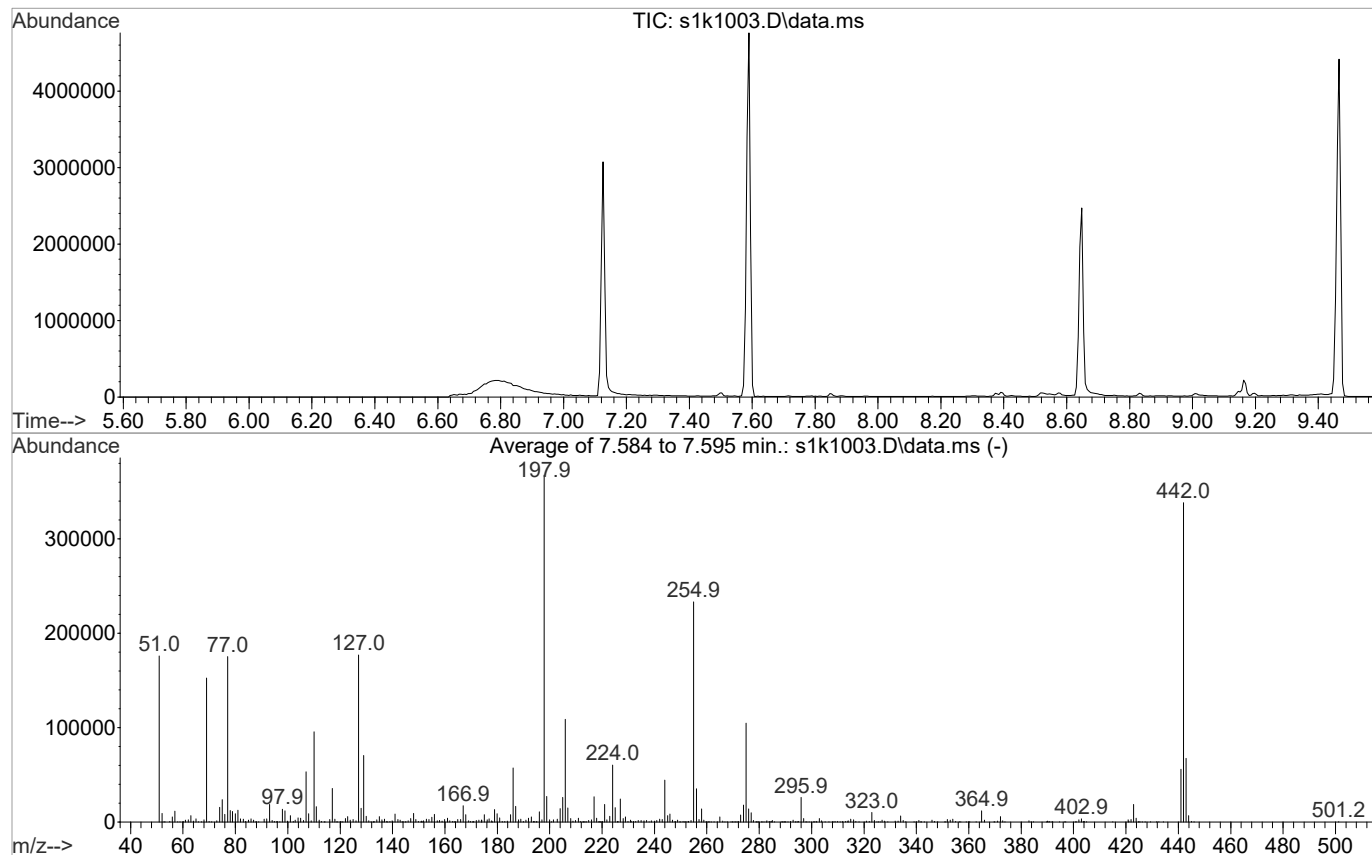
| Compounds         | Tailing Factor | 8270C     | 8270D     |
|-------------------|----------------|-----------|-----------|
| -----             | -----          | -----     | -----     |
| Benzidine         | 0.63           | Pass (<3) | Pass (<2) |
| Pentachlorophenol | 0.91           | Pass (<5) | Pass (<2) |

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1003.D  
Acq On : 10 Nov 2016 11:17  
Operator : JMB3  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

JCB  
11/11/2016

Integration File: rteint.p

Method : C:\msdchem\1\DATA\s111016.B\BNABrk Down8270D.m  
Title : dftpp / endrin / ddt SubList :  
Last Update : Tue Dec 04 12:26:44 2012



AutoFind: Scans 1311, 1312, 1313; Background Corrected with Scan 1305

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 51          | 198          | 10           | 80           | 47.9      | 176029  | PASS             |
| 68          | 69           | 0.00         | 2            | 1.6       | 2363    | PASS             |
| 69          | 198          | 0.00         | 100          | 41.4      | 152335  | PASS             |
| 70          | 69           | 0.00         | 2            | 0.3       | 516     | PASS             |
| 127         | 198          | 10           | 80           | 48.1      | 176901  | PASS             |
| 197         | 198          | 0.00         | 2            | 0.6       | 2064    | PASS             |
| 198         | 198          | 50           | 100          | 100.0     | 367573  | PASS             |
| 199         | 198          | 5            | 9            | 7.3       | 26904   | PASS             |
| 275         | 198          | 10           | 60           | 28.4      | 104568  | PASS             |
| 365         | 198          | 1            | 100          | 3.1       | 11555   | PASS             |
| 441         | 442          | 0.01         | 24           | 16.5      | 55896   | PASS             |
| 442         | 198          | 50           | 100          | 92.1      | 338432  | PASS             |
| 443         | 442          | 15           | 24           | 19.9      | 67259   | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/10/2016

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1003.D  
Acq On : 10 Nov 2016 11:17  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

JCB  
11/11/2016

Quant Time: Nov 10 12:05:46 2016  
Quant Method : C:\msdchem\1\DATA\s110916.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Dec 04 12:26:44 2012  
Response via : Initial Calibration  
Integrator: RTE

| Compound             | QIon | R.T.  | Exp RT | Rel RT | Response | Conc | Units |           |
|----------------------|------|-------|--------|--------|----------|------|-------|-----------|
| -----                |      |       |        |        |          |      |       |           |
| Internal Standards   |      |       |        |        |          |      |       | Dev (Min) |
| 1) DFTPP             | TIC  | 7.589 | 7.589  | 1.000  | 4025180  | 5.00 | ug/l  | # 0.00    |
| Target Compounds     | QIon | R.T.  | Exp RT | Rel RT | Response | Conc | Units | QValue    |
| 3) Pentachlorophenol | 266  | 7.126 | 7.127  | 0.939  | 305400   | 4.24 | ug/l  | 97        |
| 4) Benzidine         | 184  | 8.648 | 8.648  | 1.139  | 880754   | 3.34 | ug/l  | 98        |
| 5) DDE               | 246  | 8.831 | 8.831  | 1.164  | 3661     | 5.44 | ug/l  | 91        |
| 6) DDD               | 235  | 9.163 | 9.163  | 1.207  | 33668    | 6.80 | ug/l  | 92        |
| 7) DDT               | 235  | 9.466 | 9.466  | 1.247  | 718790   | 4.06 | ug/l  | 99        |
| -----                |      |       |        |        |          |      |       |           |

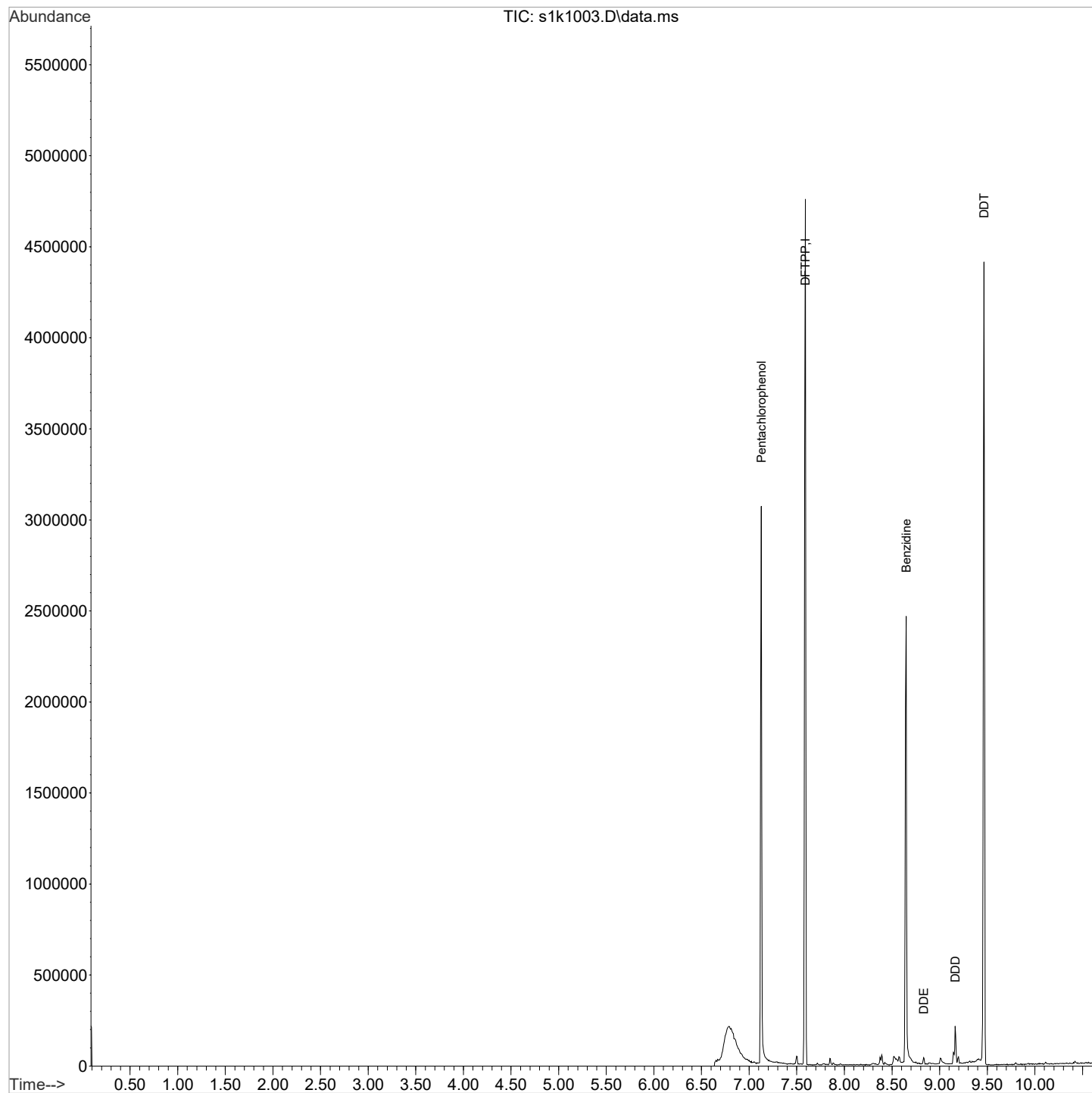
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

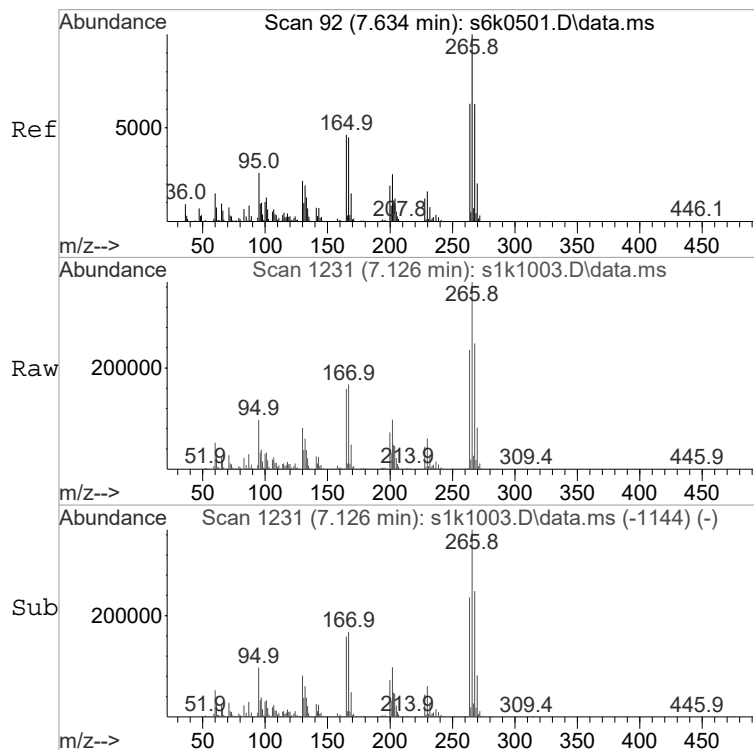


Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1003.D  
Acq On : 10 Nov 2016 11:17  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

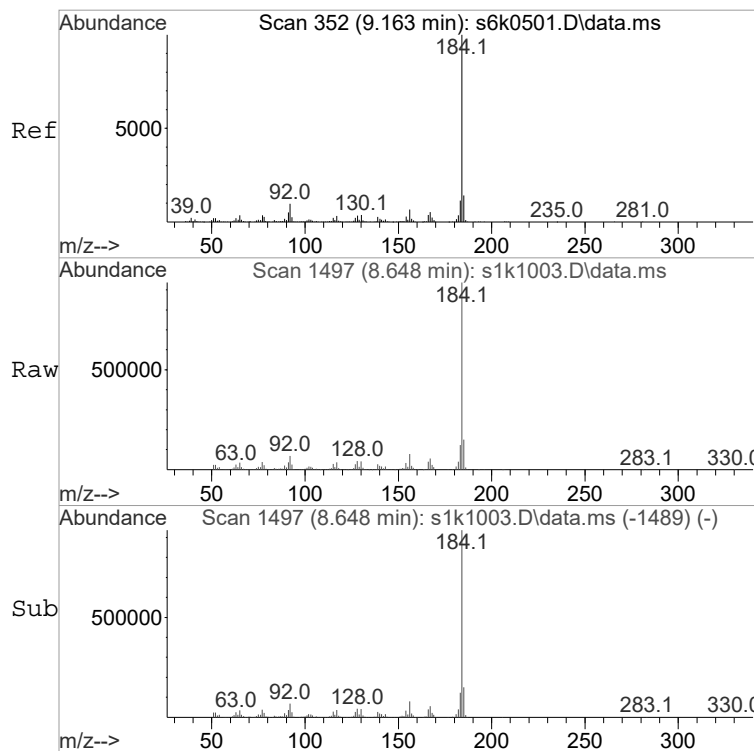
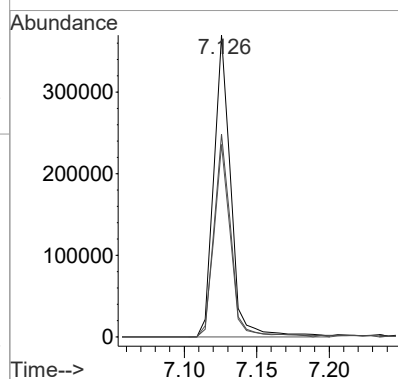
Quant Time: Nov 10 12:05:46 2016  
Quant Method : C:\msdchem\1\DATA\s110916.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Dec 04 12:26:44 2012  
Response via : Initial Calibration  
Integrator: RTE





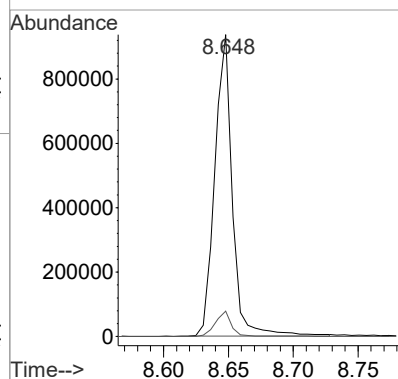
#3  
 Pentachlorophenol  
 Concen: 4.24 ug/l  
 RT: 7.126 min Scan# 1231  
 Delta R.T. -0.001 min  
 Lab File: s1k1003.D  
 Acq: 10 Nov 2016 11:17

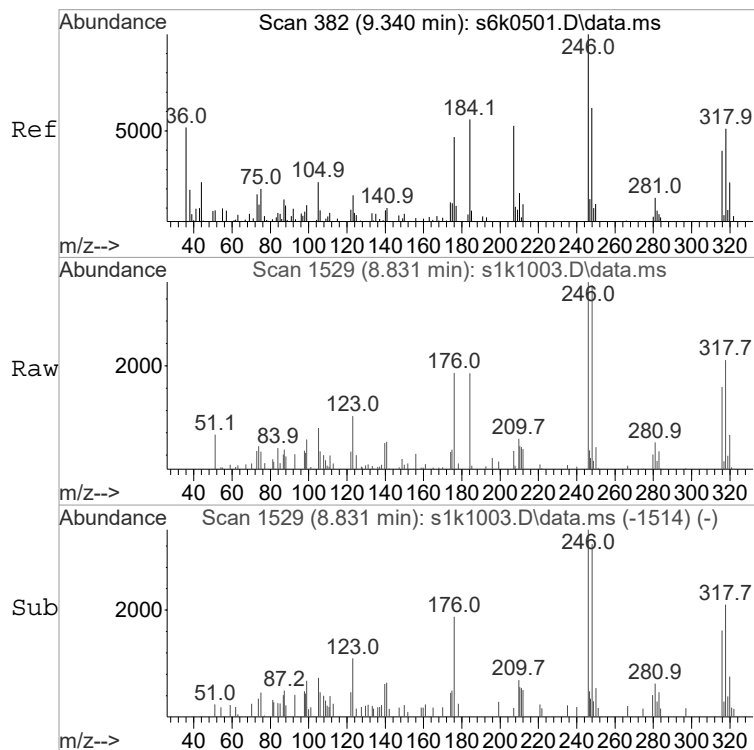
| Tgt Ion | Ratio | Resp   | Lower | Upper |
|---------|-------|--------|-------|-------|
| 266     | 100   | 305400 |       |       |
| 264     | 62.1  | 0.0    | 164.5 |       |
| 268     | 66.5  | 0.0    | 164.3 |       |



#4  
 Benzidine  
 Concen: 3.34 ug/l  
 RT: 8.648 min Scan# 1497  
 Delta R.T. 0.000 min  
 Lab File: s1k1003.D  
 Acq: 10 Nov 2016 11:17

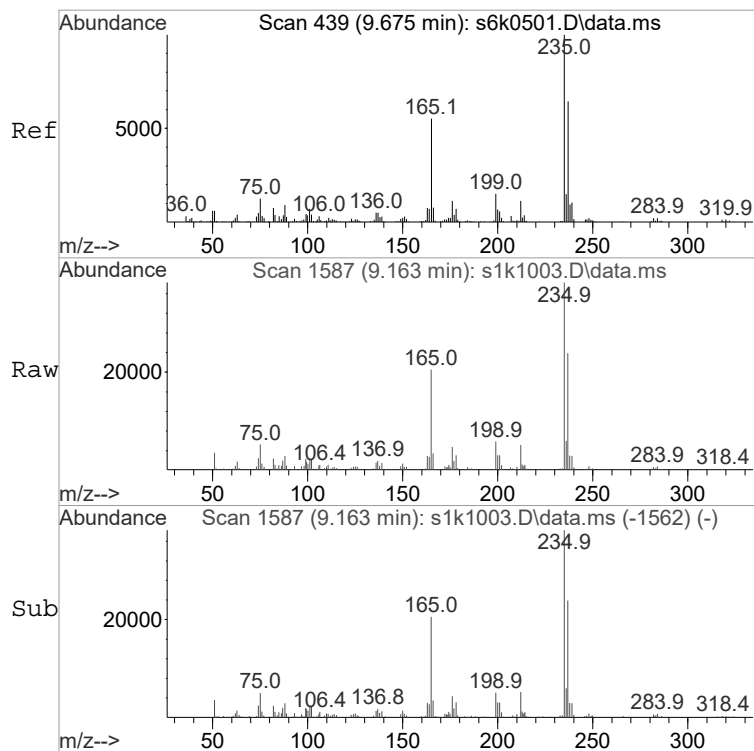
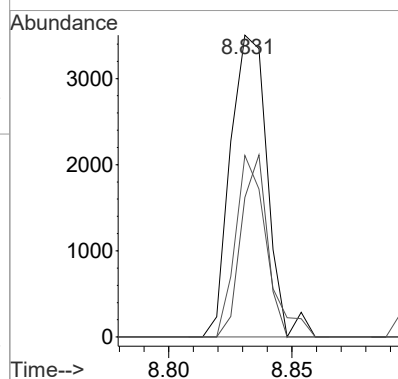
| Tgt Ion | Ratio | Resp   | Lower | Upper |
|---------|-------|--------|-------|-------|
| 184     | 100   | 880754 |       |       |
| 156     | 7.8   | 0.0    | 108.4 |       |





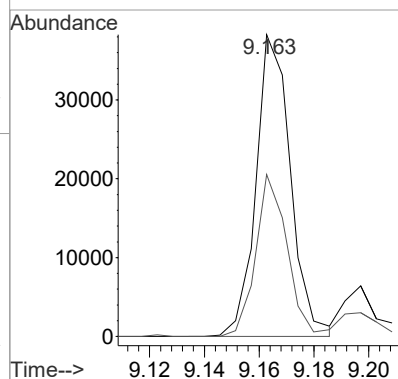
#5  
DDE  
Concen: 5.44 ug/l  
RT: 8.831 min Scan# 1529  
Delta R.T. 0.000 min  
Lab File: s1k1003.D  
Acq: 10 Nov 2016 11:17

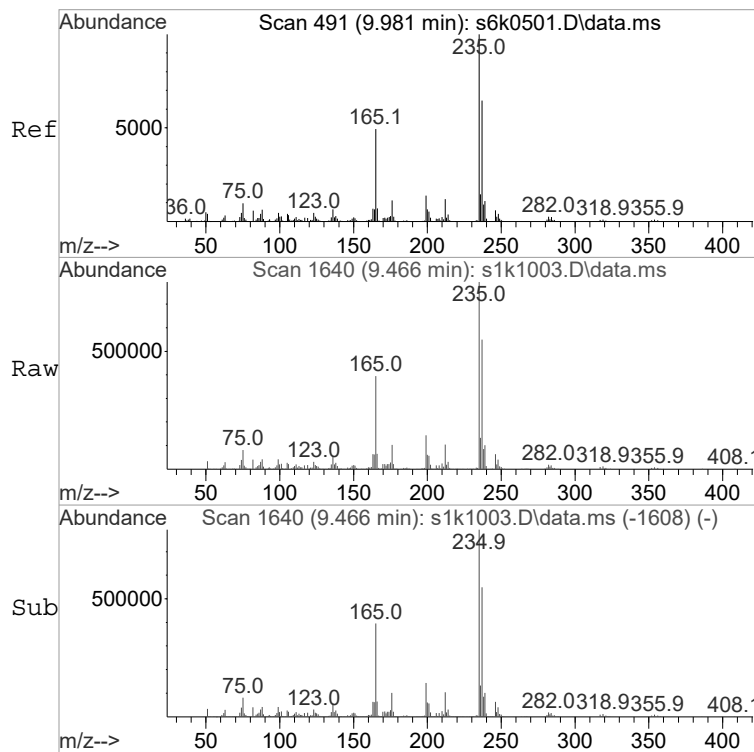
| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 246     | 100   | 3661 |       |       |
| 318     | 51.8  | 0.0  | 160.1 |       |
| 316     | 42.2  | 0.0  | 146.2 |       |



#6  
DDD  
Concen: 6.80 ug/l  
RT: 9.163 min Scan# 1587  
Delta R.T. 0.000 min  
Lab File: s1k1003.D  
Acq: 10 Nov 2016 11:17

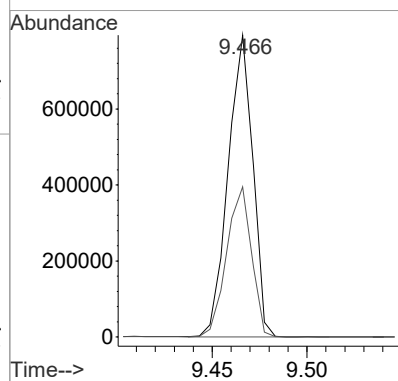
| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 235     | 100   | 33668 |       |       |
| 165     | 48.2  | 0.0   | 153.7 |       |





#7  
DDT  
Concen: 4.06 ug/l  
RT: 9.466 min Scan# 1640  
Delta R.T. 0.000 min  
Lab File: s1k1003.D  
Acq: 10 Nov 2016 11:17

Tgt Ion:235 Resp: 718790  
Ion Ratio Lower Upper  
235 100  
165 50.2 0.0 149.7



## 8270 Breakdown Report

JMB  
11/10/2016

Data File : C:\msdchem\1\DATA\s111016.B\s1k1003.D  
Acq On : 10 Nov 2016 11:17  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
IntFile : rteint.p

Vial: 1  
Operator: JMB3  
Inst : MSD1  
Multiplr: 1.00

JCB  
11/11/2016

| Compounds | Area/%Breakdown | 8270C      | 8270D      |
|-----------|-----------------|------------|------------|
| DDE       | 3661            |            |            |
| DDD       | 33668           |            |            |
| DDT       | 718790          |            |            |
| Breakdown | 4.94%           | Pass (<20) | Pass (<20) |

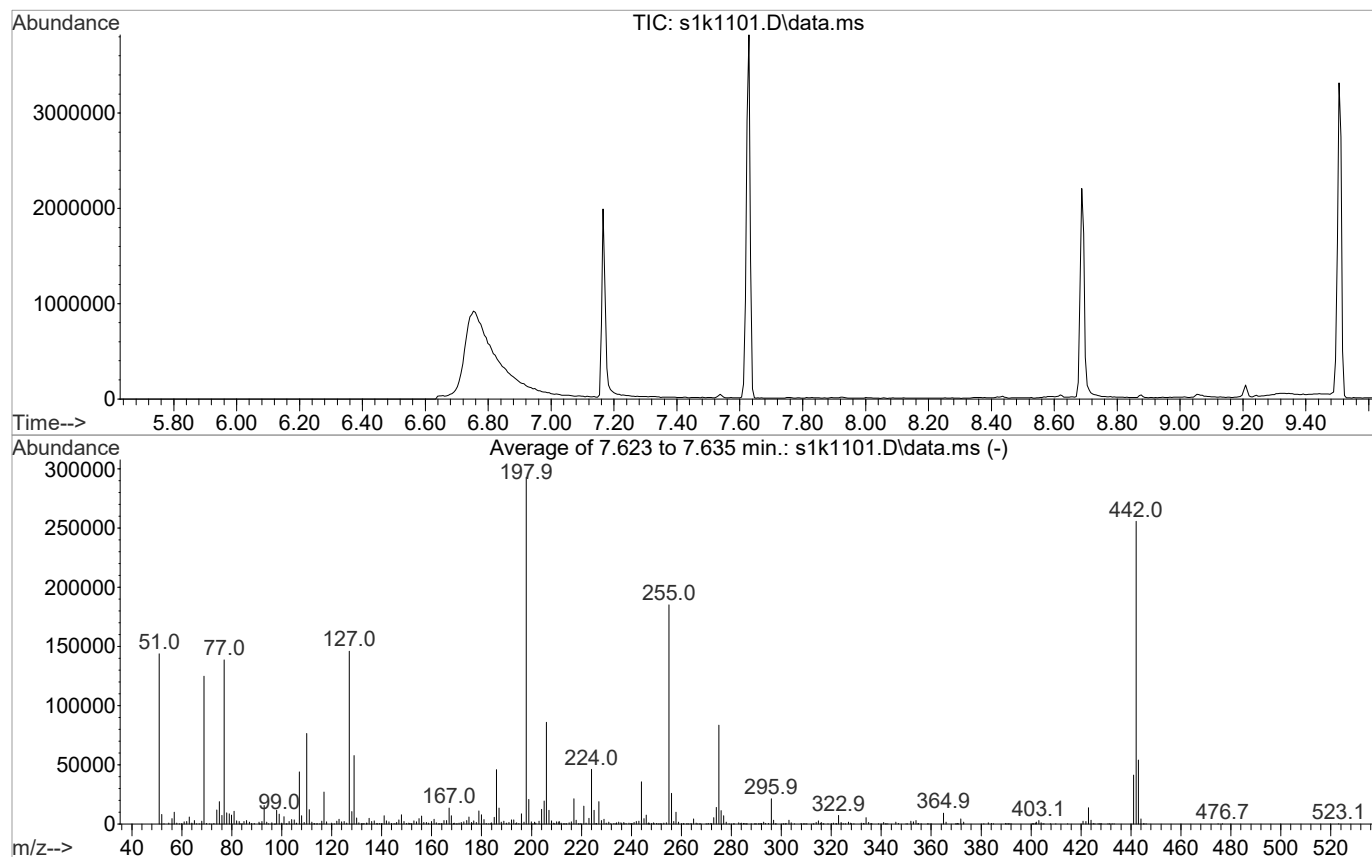
| Compounds         | Tailing Factor | 8270C     | 8270D     |
|-------------------|----------------|-----------|-----------|
| Benzidine         | 0.70           | Pass (<3) | Pass (<2) |
| Pentachlorophenol | 1.04           | Pass (<5) | Pass (<2) |

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1101.D  
Acq On : 11 Nov 2016 10:33  
Operator : JMB3  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

H.M.M.  
11/14/2016

Integration File:

Method : C:\msdchem\1\DATA\s111116.B\BNABrk Down8270D.m  
Title : dftpp / endrin / ddt SubList :  
Last Update : Tue Dec 04 12:26:44 2012



AutoFind: Scans 1318, 1319, 1320; Background Corrected with Scan 1312

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 51          | 198          | 10           | 80           | 49.1      | 143827  | PASS             |
| 68          | 69           | 0.00         | 2            | 1.8       | 2231    | PASS             |
| 69          | 198          | 0.00         | 100          | 42.6      | 124933  | PASS             |
| 70          | 69           | 0.00         | 2            | 0.3       | 351     | PASS             |
| 127         | 198          | 10           | 80           | 49.8      | 145901  | PASS             |
| 197         | 198          | 0.00         | 2            | 0.5       | 1394    | PASS             |
| 198         | 198          | 50           | 100          | 100.0     | 293163  | PASS             |
| 199         | 198          | 5            | 9            | 7.1       | 20763   | PASS             |
| 275         | 198          | 10           | 60           | 28.5      | 83480   | PASS             |
| 365         | 198          | 1            | 100          | 3.1       | 9068    | PASS             |
| 441         | 442          | 0.01         | 24           | 16.2      | 41392   | PASS             |
| 442         | 198          | 50           | 100          | 87.2      | 255701  | PASS             |
| 443         | 442          | 15           | 24           | 21.1      | 54011   | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/11/2016

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1101.D  
Acq On : 11 Nov 2016 10:33  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 14:13:52 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Dec 04 12:26:44 2012  
Response via : Initial Calibration  
Integrator: RTE

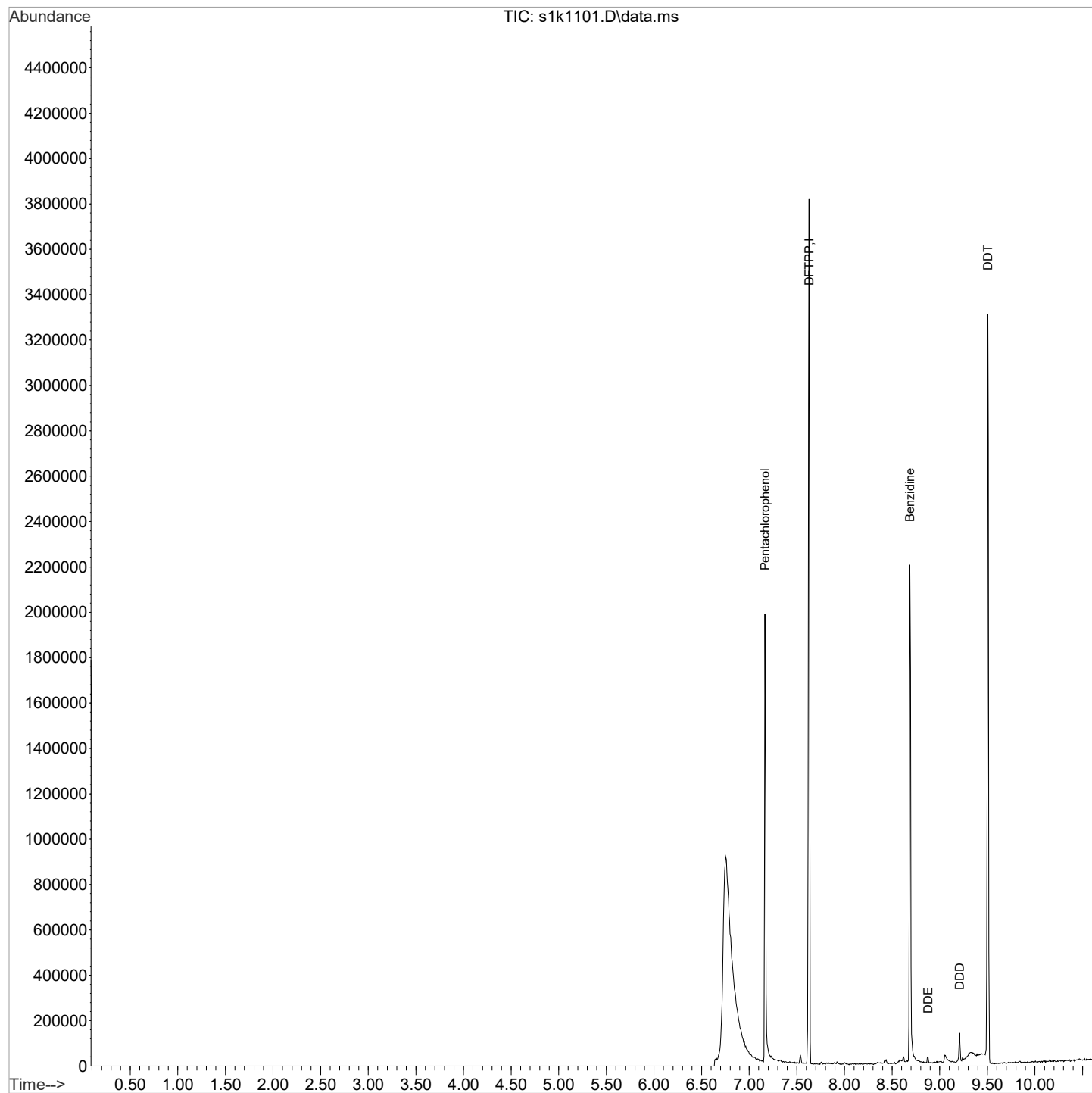
| Compound             | QIon | R.T.  | Exp RT | Rel RT | Response | Conc | Units |           |
|----------------------|------|-------|--------|--------|----------|------|-------|-----------|
| Internal Standards   |      |       |        |        |          |      |       | Dev (Min) |
| 1) DFTPP             | TIC  | 7.629 | 7.606  | 1.000  | 3242307  | 5.00 | ug/l  | # 0.02    |
| Target Compounds     |      |       |        |        |          |      |       | QValue    |
| 3) Pentachlorophenol | 266  | 7.165 | 7.142  | 0.939  | 192578   | 3.32 | ug/l  | 97        |
| 4) Benzidine         | 184  | 8.687 | 8.670  | 1.139  | 780136   | 3.67 | ug/l  | 99        |
| 5) DDE               | 246  | 8.876 | 8.853  | 1.164  | 2382     | 4.39 | ug/l  | 78        |
| 6) DDD               | 235  | 9.208 | 9.185  | 1.207  | 19463    | 4.88 | ug/l  | 100       |
| 7) DDT               | 235  | 9.506 | 9.489  | 1.246  | 536915   | 3.76 | ug/l  | 96        |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

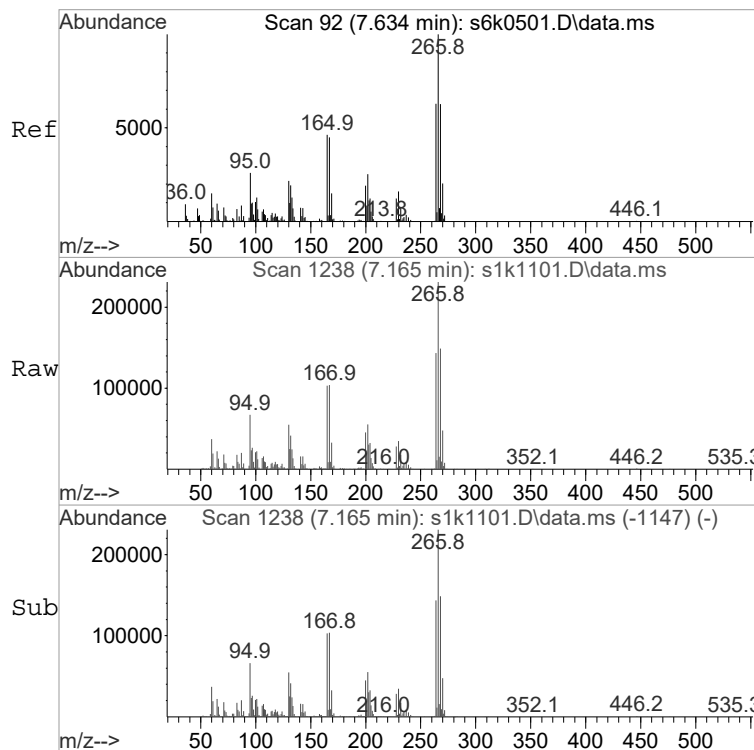
Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111116.B\  
Data File : s1k1101.D  
Acq On : 11 Nov 2016 10:33  
Operator : JMB3  
InstName : MSD1  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 11 14:13:52 2016  
Quant Method : C:\msdchem\1\DATA\s111116.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Tue Dec 04 12:26:44 2012  
Response via : Initial Calibration  
Integrator: RTE

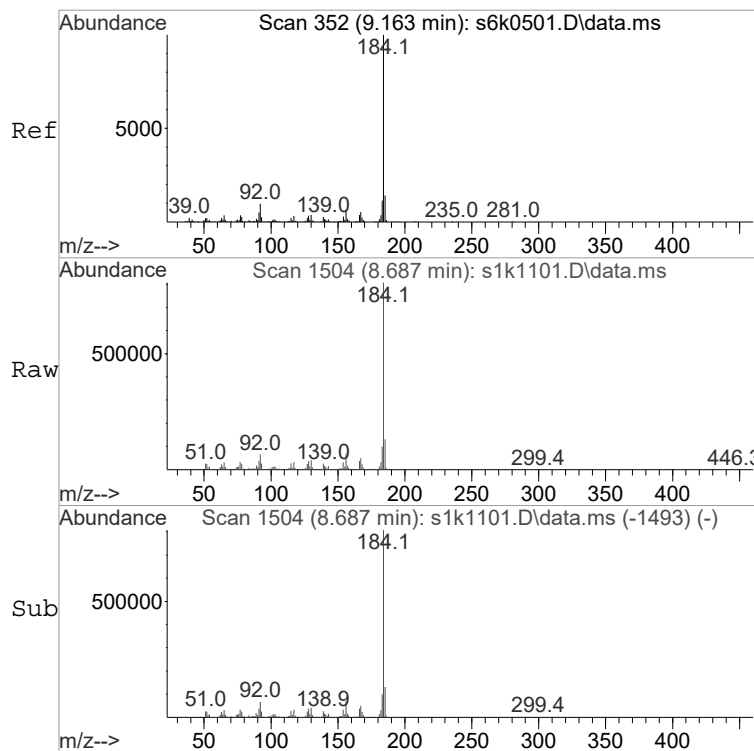
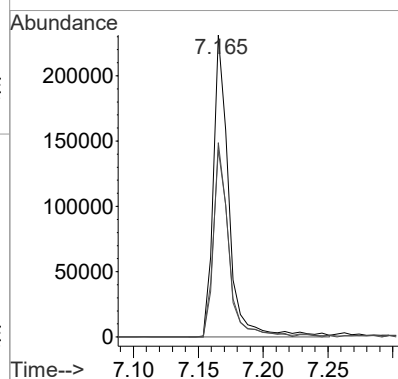






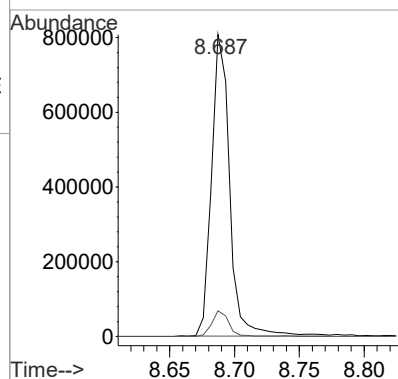
#3  
 Pentachlorophenol  
 Concen: 3.32 ug/l  
 RT: 7.165 min Scan# 1238  
 Delta R.T. 0.023 min  
 Lab File: s1k1101.D  
 Acq: 11 Nov 2016 10:33

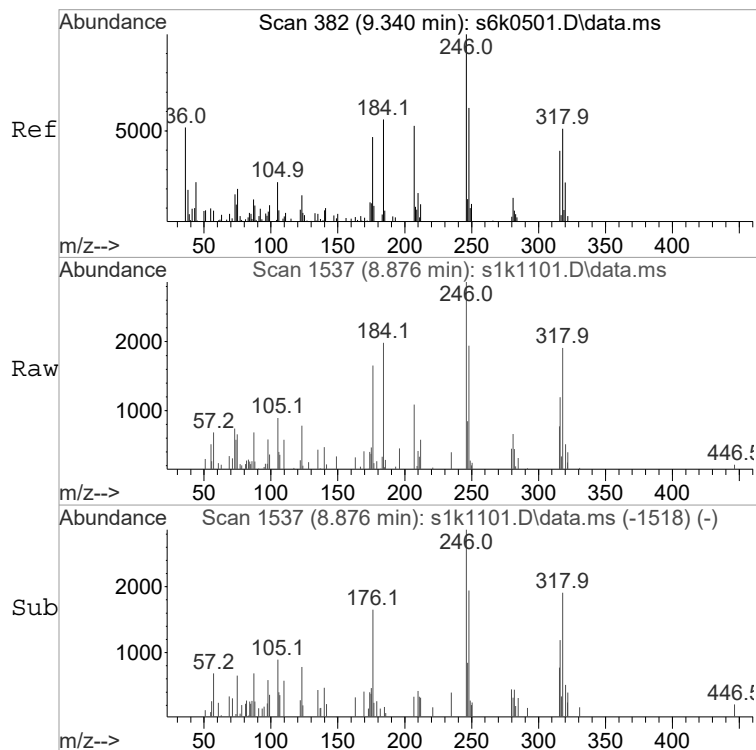
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 266     | 100   |       |       |
| 264     | 62.0  | 0.0   | 164.5 |
| 268     | 62.2  | 0.0   | 164.3 |



#4  
 Benzidine  
 Concen: 3.67 ug/l  
 RT: 8.687 min Scan# 1504  
 Delta R.T. 0.017 min  
 Lab File: s1k1101.D  
 Acq: 11 Nov 2016 10:33

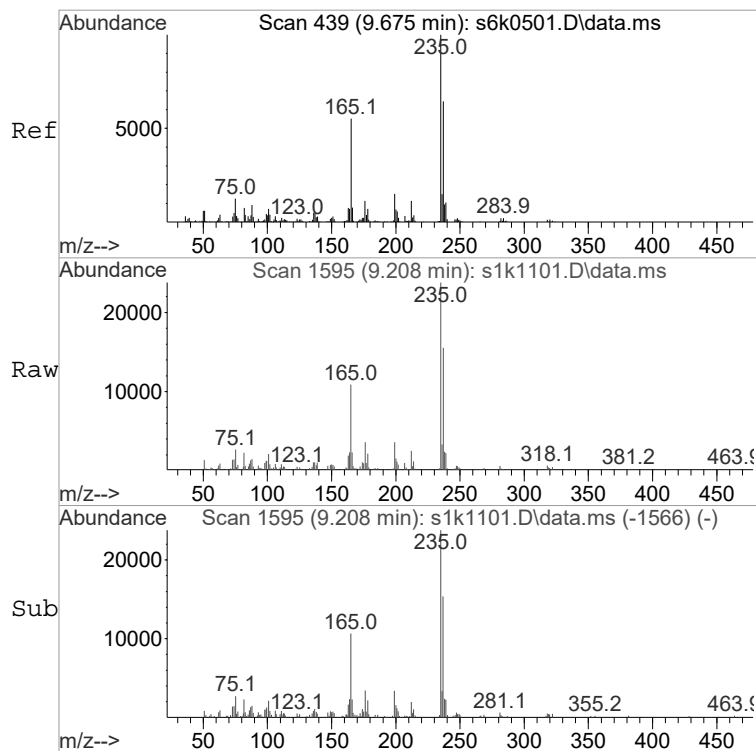
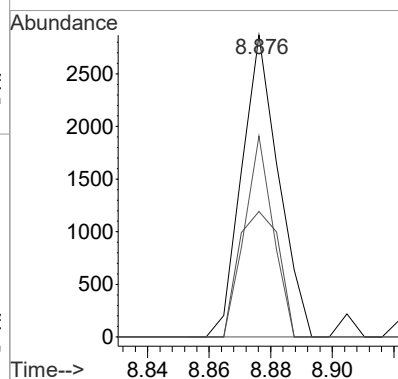
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 184     | 100   |       |       |
| 156     | 7.8   | 0.0   | 108.1 |





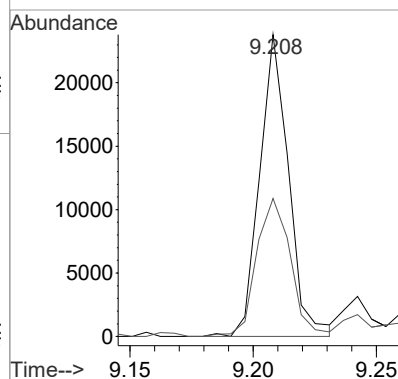
#5  
DDE  
Concen: 4.39 ug/l  
RT: 8.876 min Scan# 1537  
Delta R.T. 0.023 min  
Lab File: s1k1101.D  
Acq: 11 Nov 2016 10:33

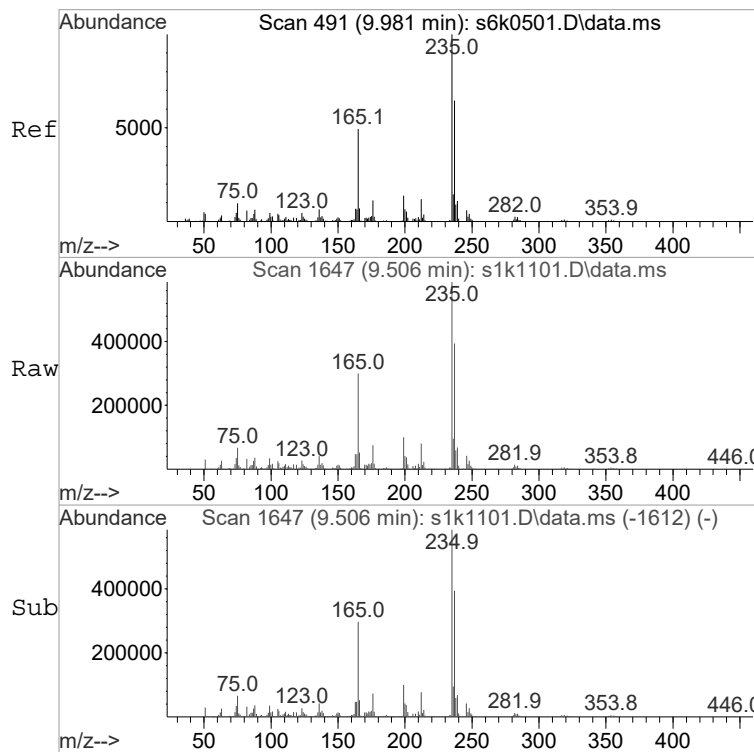
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 246     | 100   |       |       |
| 318     | 51.7  | 0.0   | 138.7 |
| 316     | 45.8  | 0.0   | 132.9 |



#6  
DDD  
Concen: 4.88 ug/l  
RT: 9.208 min Scan# 1595  
Delta R.T. 0.023 min  
Lab File: s1k1101.D  
Acq: 11 Nov 2016 10:33

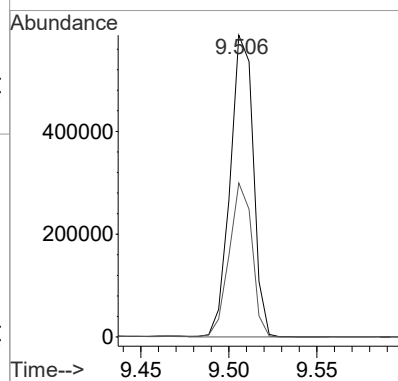
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 235     | 100   |       |       |
| 165     | 53.8  | 0.0   | 153.6 |





#7  
DDT  
Concen: 3.76 ug/l  
RT: 9.506 min Scan# 1647  
Delta R.T. 0.017 min  
Lab File: s1k1101.D  
Acq: 11 Nov 2016 10:33

Tgt Ion:235 Resp: 536915  
Ion Ratio Lower Upper  
235 100  
165 50.4 0.0 148.0



## 8270 Breakdown Report

JMB  
11/11/2016

Data File : C:\msdchem\1\DATA\s111116.B\s1k1101.D  
Acq On : 11 Nov 2016 10:33  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
IntFile : rteint.p

Vial: 1  
Operator: JMB3  
Inst : MSD1  
Multiplr: 1.00

H.M.M.  
11/14/2016

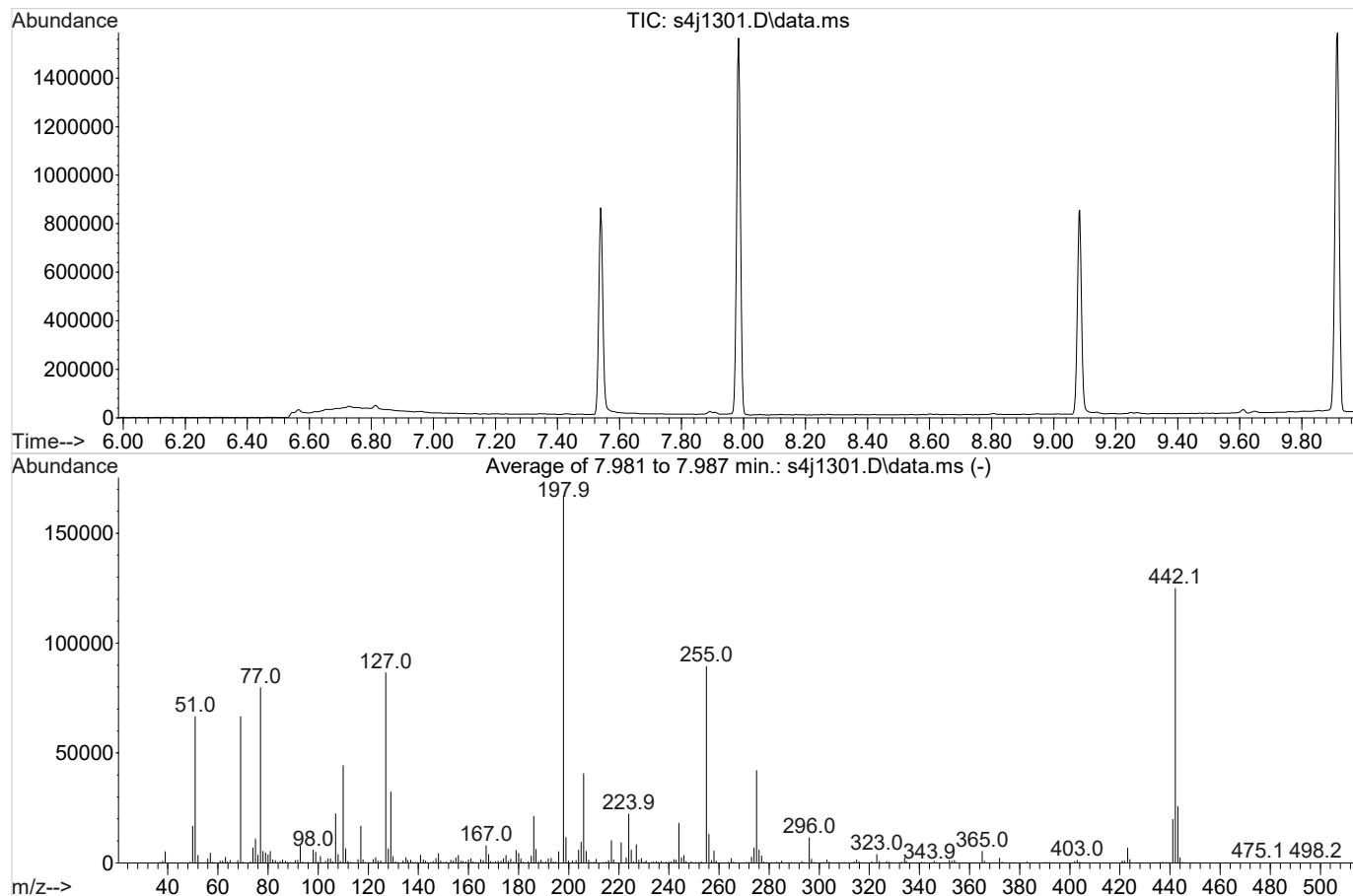
| Compounds | Area/%Breakdown | 8270C      | 8270D      |
|-----------|-----------------|------------|------------|
| DDE       | 2382            |            |            |
| DDD       | 19463           |            |            |
| DDT       | 536915          |            |            |
| Breakdown | 3.91%           | Pass (<20) | Pass (<20) |

| Compounds         | Tailing Factor | 8270C     | 8270D     |
|-------------------|----------------|-----------|-----------|
| Benzidine         | 1.46           | Pass (<3) | Pass (<2) |
| Pentachlorophenol | 1.70           | Pass (<5) | Pass (<2) |

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1301.D  
Acq On : 13 Oct 2016 10:14  
Operator : JMB3  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\DATA\s101316.B\BNABrk Down8270D.m  
Title : dftpp / endrin / ddt SubList :  
Last Update : Mon Jun 30 12:01:50 2014



AutoFind: Scans 2664, 2665, 2666; Background Corrected with Scan 2653

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 51          | 198          | 10           | 80           | 39.8      | 66515   | PASS             |
| 68          | 69           | 0.00         | 2            | 1.6       | 1039    | PASS             |
| 69          | 198          | 0.00         | 100          | 39.9      | 66616   | PASS             |
| 70          | 69           | 0.00         | 2            | 0.5       | 306     | PASS             |
| 127         | 198          | 10           | 80           | 51.8      | 86485   | PASS             |
| 197         | 198          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 198         | 198          | 50           | 100          | 100.0     | 166951  | PASS             |
| 199         | 198          | 5            | 9            | 6.9       | 11532   | PASS             |
| 275         | 198          | 10           | 60           | 25.1      | 41940   | PASS             |
| 365         | 198          | 1            | 100          | 3.1       | 5230    | PASS             |
| 441         | 442          | 0.01         | 24           | 15.8      | 19688   | PASS             |
| 442         | 198          | 50           | 100          | 74.8      | 124841  | PASS             |
| 443         | 442          | 15           | 24           | 20.5      | 25623   | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1301.D  
Acq On : 13 Oct 2016 10:14  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 13 10:26:33 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Mon Jun 30 12:01:50 2014  
Response via : Initial Calibration  
Integrator: RTE

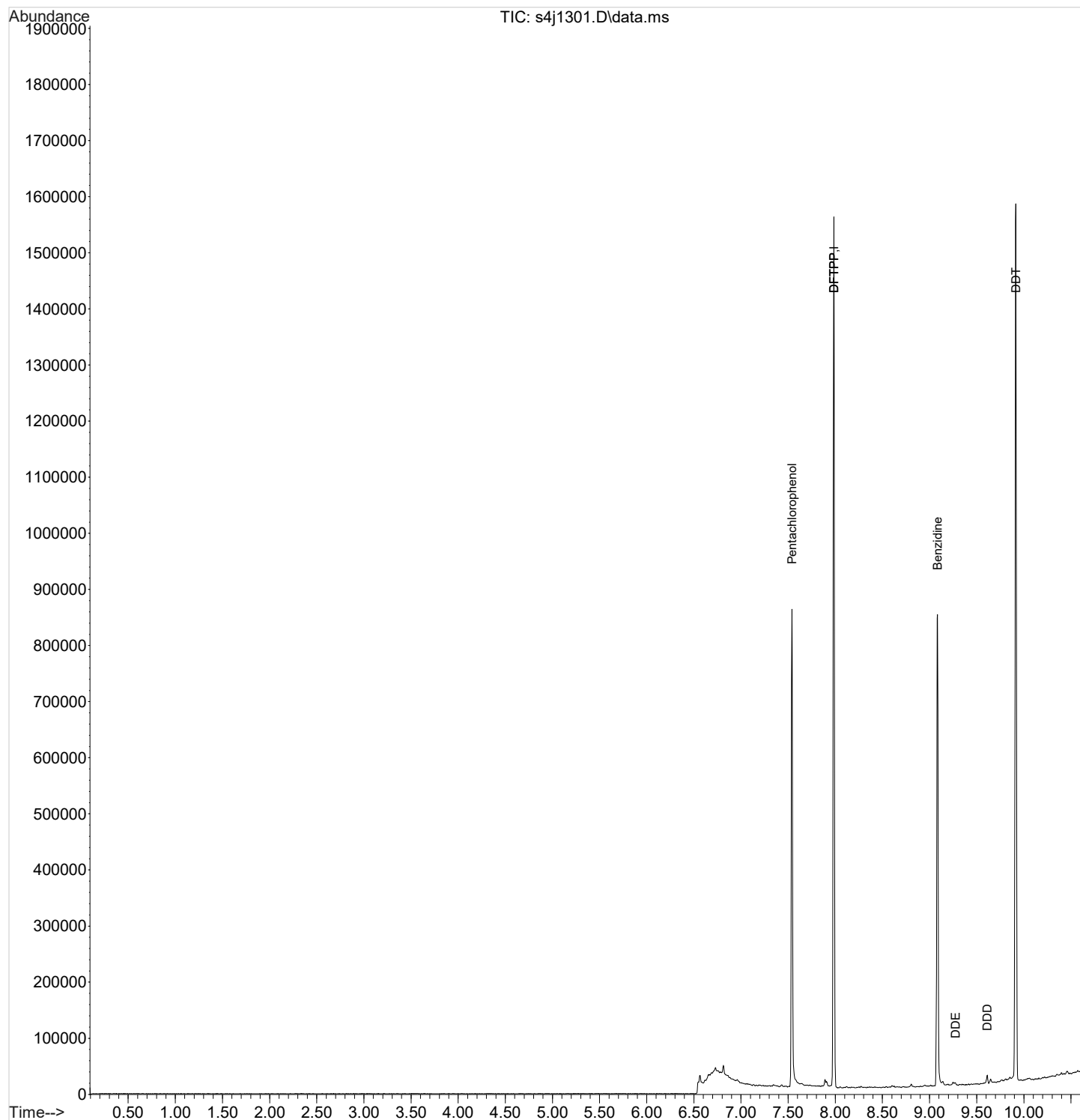
| Compound             | QIon | R.T.  | Exp RT | Rel RT | Response | Conc | Units |          |
|----------------------|------|-------|--------|--------|----------|------|-------|----------|
| Internal Standards   |      |       |        |        |          |      |       | Dev(Min) |
| 1) DFTPP             | TIC  | 7.984 | 7.984  | 1.000  | 1379695  | 5.00 | ug/ml | # 0.00   |
| Target Compounds     |      |       |        |        |          |      |       |          |
| 2) DFTPP             | TIC  | 7.984 | 7.984  | 1.000  | 1379695  | 5.00 | ug/ml | # 1      |
| 3) Pentachlorophenol | 266  | 7.539 | 7.539  | 0.944  | 98831    | 4.27 | ug/ml | 100      |
| 4) Benzidine         | 184  | 9.085 | 9.085  | 1.138  | 342421   | 5.40 | ug/ml | 100      |
| 5) DDE               | 246  | 9.274 | 9.274  | 1.162  | 418      | 3.31 | ug/ml | 93       |
| 6) DDD               | 235  | 9.613 | 9.613  | 1.204  | 2469     | 1.05 | ug/ml | 97       |
| 7) DDT               | 235  | 9.915 | 9.915  | 1.242  | 286585   | 5.48 | ug/ml | 100      |

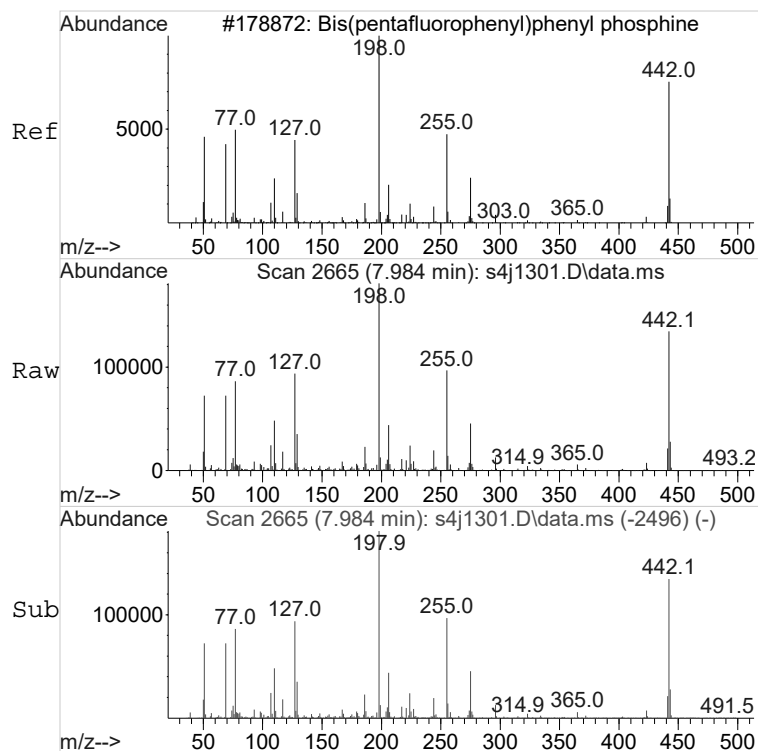
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s101316.B\  
Data File : s4j1301.D  
Acq On : 13 Oct 2016 10:14  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN160728-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

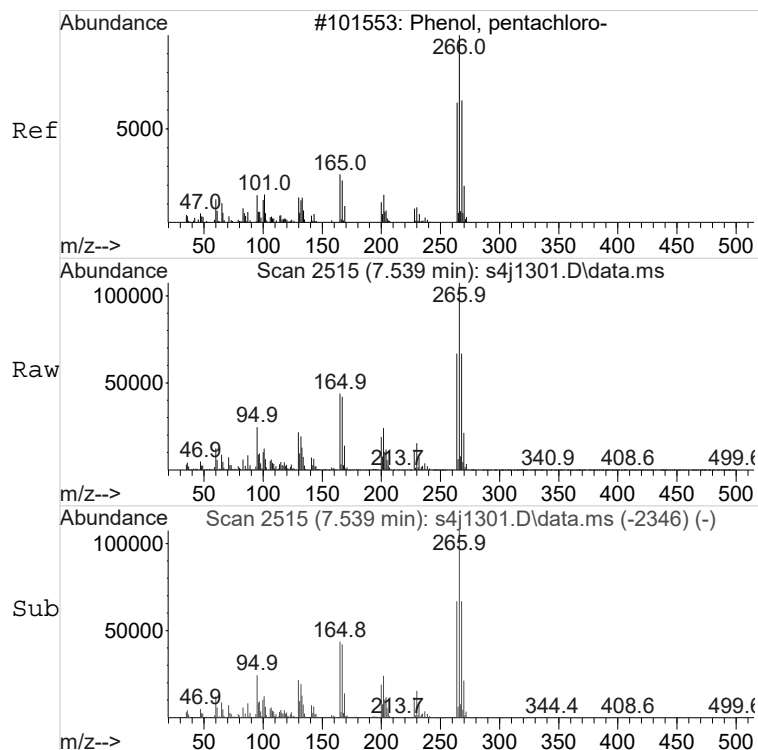
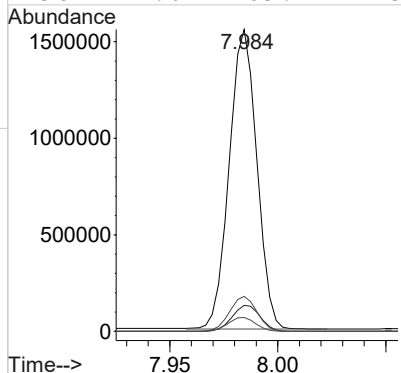
Quant Time: Oct 13 10:26:33 2016  
Quant Method : C:\msdchem\1\DATA\s101316.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Mon Jun 30 12:01:50 2014  
Response via : Initial Calibration  
Integrator: RTE





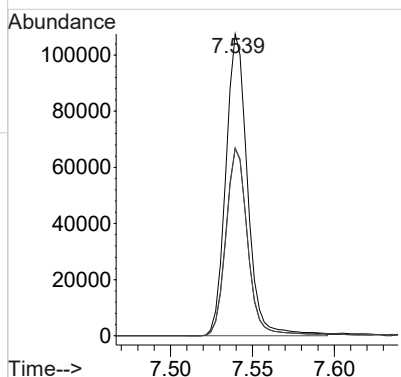
#2  
DFTPP  
Concen: 5.00 ug/ml  
RT: 7.984 min Scan# 2665  
Delta R.T. 0.000 min  
Lab File: s4j1301.D  
Acq: 13 Oct 2016 10:14

Tgt Ion:TIC Resp: 1379695  
Ion Ratio Lower Upper  
TIC 100  
442 8.8 840.5 880.5#  
69 4.7 443.4 483.4#  
198 11.6 1139.2 1179.2#

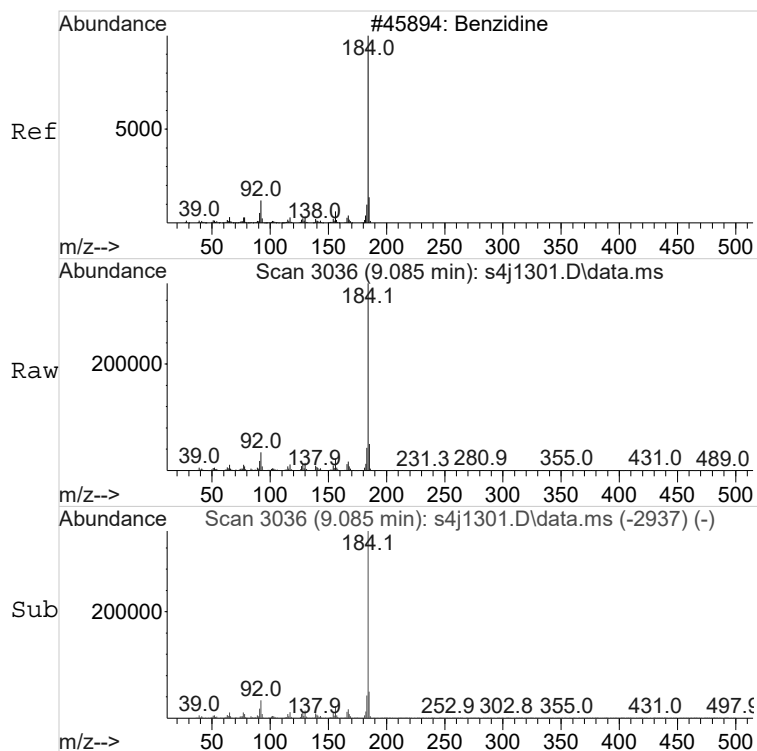


#3  
Pentachlorophenol  
Concen: 4.27 ug/ml  
RT: 7.539 min Scan# 2515  
Delta R.T. 0.000 min  
Lab File: s4j1301.D  
Acq: 13 Oct 2016 10:14

Tgt Ion:266 Resp: 98831  
Ion Ratio Lower Upper  
266 100  
264 61.9 0.0 162.1  
268 61.9 0.0 162.1

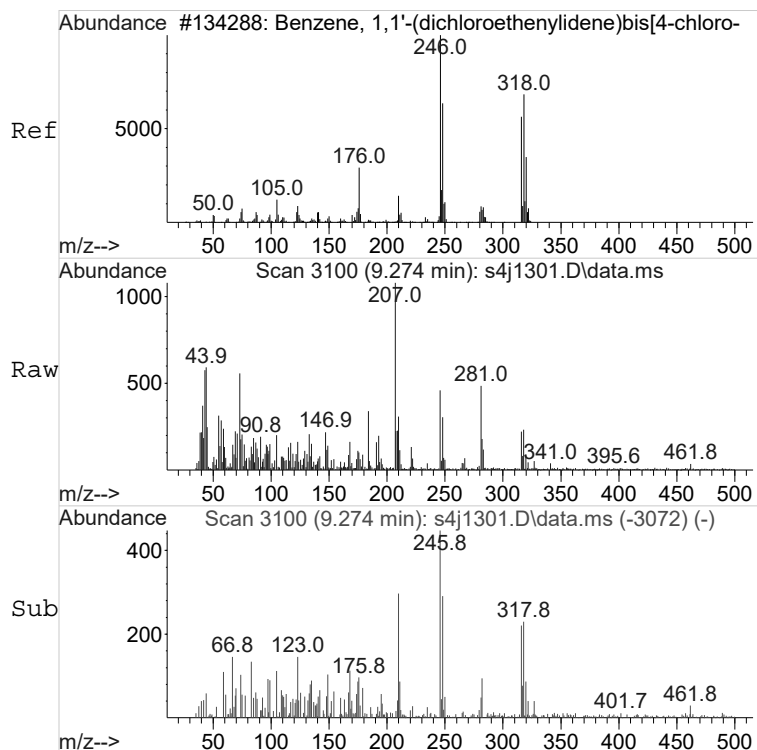
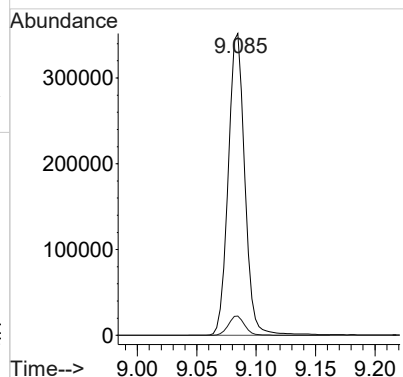






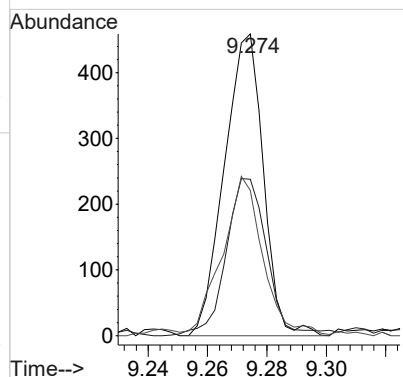
#4  
Benzidine  
Concen: 5.40 ug/ml  
RT: 9.085 min Scan# 3036  
Delta R.T. 0.000 min  
Lab File: s4j1301.D  
Acq: 13 Oct 2016 10:14

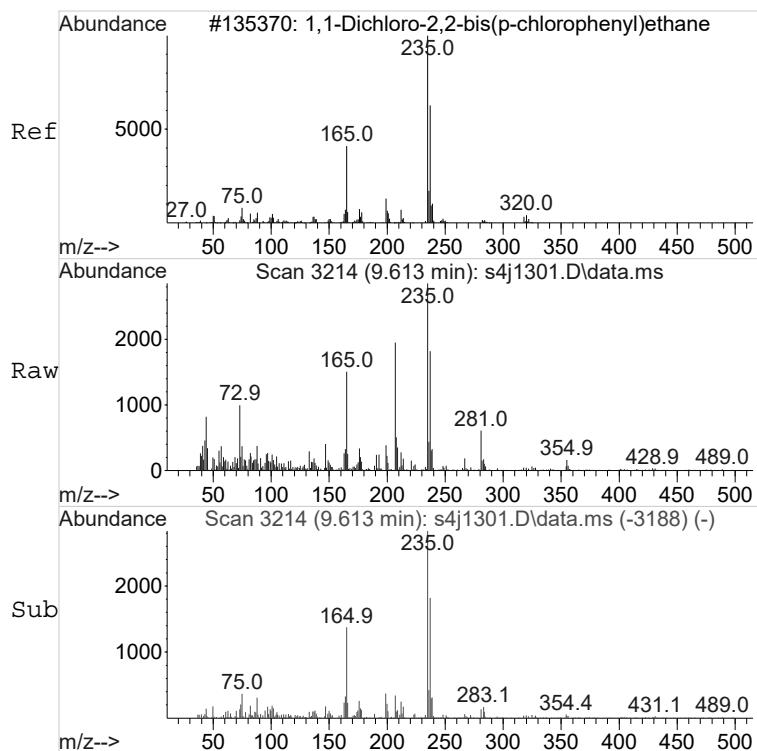
Tgt Ion:184 Resp: 342421  
Ion Ratio Lower Upper  
184 100  
156 6.3 0.0 106.4



#5  
DDE  
Concen: 3.31 ug/ml  
RT: 9.274 min Scan# 3100  
Delta R.T. 0.000 min  
Lab File: s4j1301.D  
Acq: 13 Oct 2016 10:14

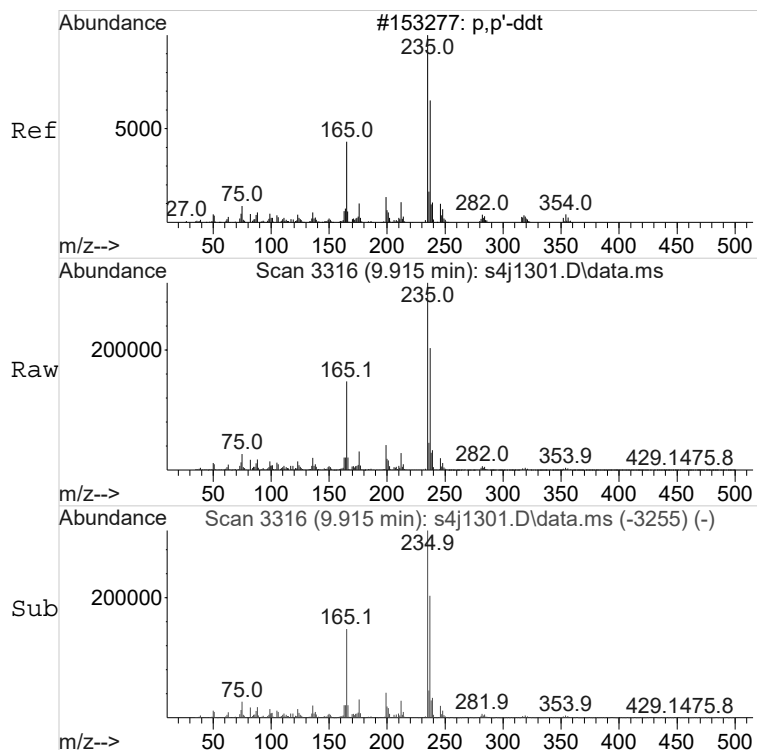
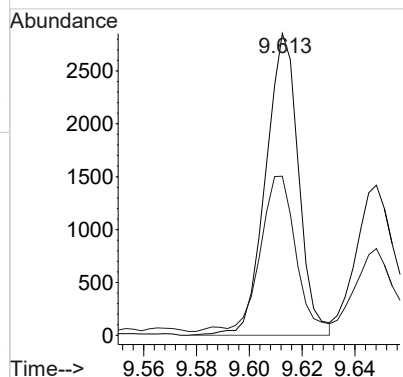
Tgt Ion:246 Resp: 418  
Ion Ratio Lower Upper  
246 100  
318 54.5 0.0 150.5  
316 54.1 0.0 148.1





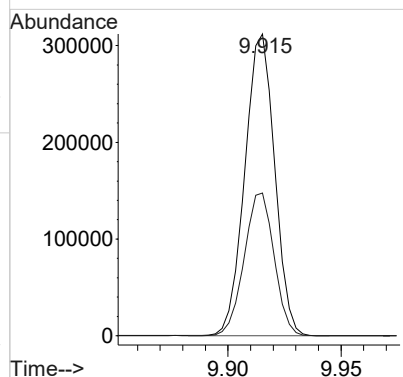
#6  
DDD  
Concen: 1.05 ug/ml  
RT: 9.613 min Scan# 3214  
Delta R.T. 0.000 min  
Lab File: s4j1301.D  
Acq: 13 Oct 2016 10:14

Tgt Ion:235 Resp: 2469  
Ion Ratio Lower Upper  
235 100  
165 55.1 0.0 152.7



#7  
DDT  
Concen: 5.48 ug/ml  
RT: 9.915 min Scan# 3316  
Delta R.T. 0.000 min  
Lab File: s4j1301.D  
Acq: 13 Oct 2016 10:14

Tgt Ion:235 Resp: 286585  
Ion Ratio Lower Upper  
235 100  
165 47.4 0.0 147.3



## 8270 Breakdown Report

|           |   |          |        |
|-----------|---|----------|--------|
| Data File | : C:\msdchem\1\DATA\s101316.B\s4j1301.D | Vial     | : 1    |
| Acq On    | : 13 Oct 2016 10:14                     | Operator | : JMB3 |
| Sample    | :  WBN160728-99 DFTPP 1 SVM 1 DFTPP     | Inst     | : MSD4 |
| Misc      | :                                       | Multiplr | : 1.00 |
| IntFile   | : rteint.p                              |          |        |

| Compounds | Area/%Breakdown | 8270C      | 8270D      |
|-----------|-----------------|------------|------------|
| -----     | -----           | -----      | -----      |
| DDE       | 418             |            |            |
| DDD       | 2469            |            |            |
| DDT       | 286585          |            |            |
| Breakdown | 1.00%           | Pass (<20) | Pass (<20) |

| Compounds         | Tailing Factor | 8270C     | 8270D     |
|-------------------|----------------|-----------|-----------|
| -----             | -----          | -----     | -----     |
| Benzidine         | 0.88           | Pass (<3) | Pass (<2) |
| Pentachlorophenol | 1.25           | Pass (<5) | Pass (<2) |

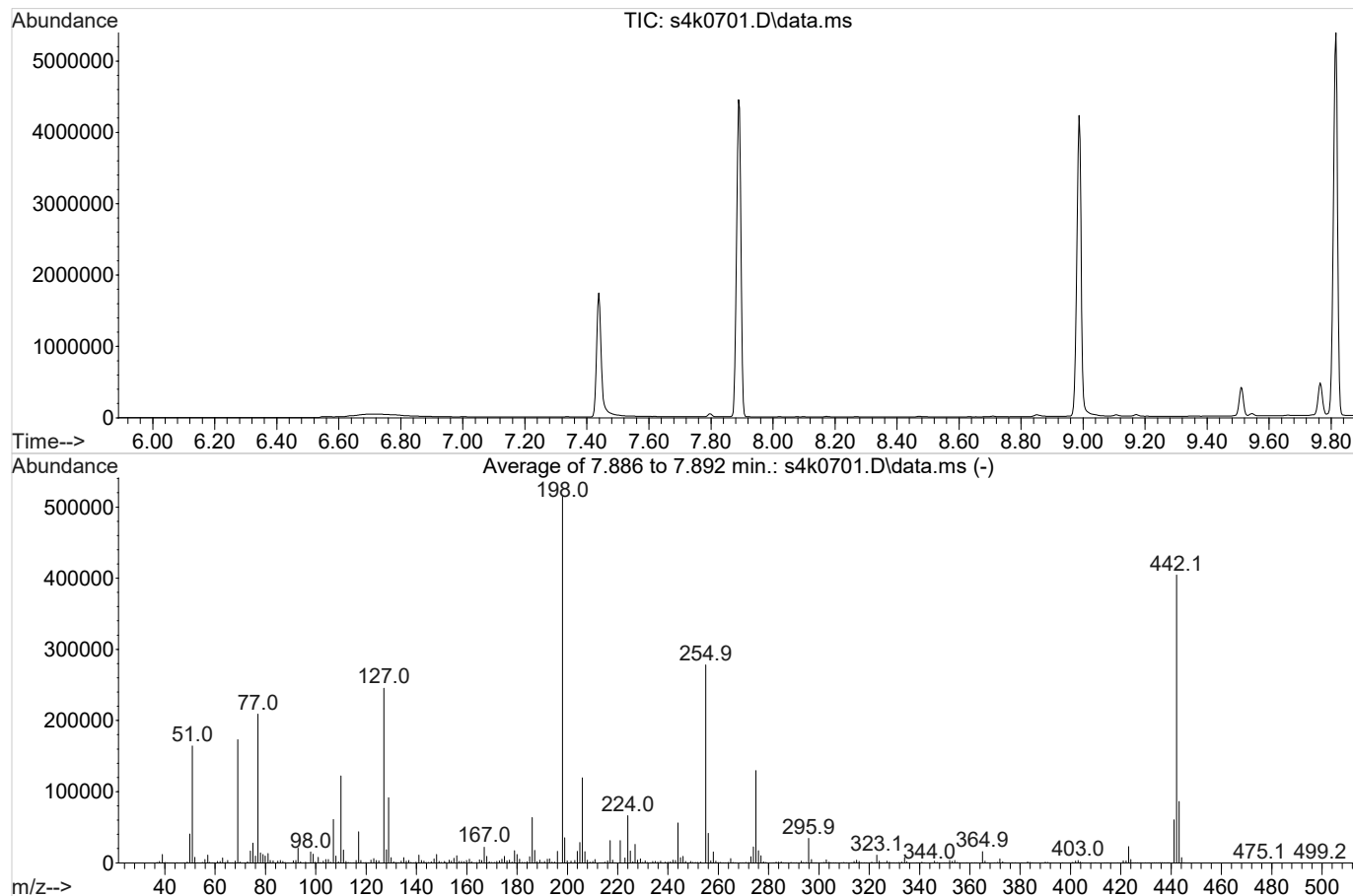
JMB  
11/07/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0701.D  
Acq On : 07 Nov 2016 08:14  
Operator : JMB3  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

JCB  
11/08/2016

Integration File: rteint.p

Method : C:\msdchem\1\DATA\s110716.B\BNABrk Down8270D.m  
Title : dftpp / endrin / ddt SubList :  
Last Update : Mon Jun 30 12:01:50 2014



AutoFind: Scans 2633, 2634, 2635; Background Corrected with Scan 2610

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|-------------|--------------|--------------|--------------|-----------|---------|------------------|
| 51          | 198          | 10           | 80           | 31.9      | 164400  | PASS             |
| 68          | 69           | 0.00         | 2            | 1.5       | 2674    | PASS             |
| 69          | 198          | 0.00         | 100          | 33.6      | 173270  | PASS             |
| 70          | 69           | 0.00         | 2            | 0.5       | 931     | PASS             |
| 127         | 198          | 10           | 80           | 47.6      | 245248  | PASS             |
| 197         | 198          | 0.00         | 2            | 0.0       | 0       | PASS             |
| 198         | 198          | 50           | 100          | 100.0     | 515473  | PASS             |
| 199         | 198          | 5            | 9            | 6.8       | 35163   | PASS             |
| 275         | 198          | 10           | 60           | 25.2      | 129757  | PASS             |
| 365         | 198          | 1            | 100          | 3.1       | 15785   | PASS             |
| 441         | 442          | 0.01         | 24           | 14.9      | 60461   | PASS             |
| 442         | 198          | 50           | 100          | 78.5      | 404480  | PASS             |
| 443         | 442          | 15           | 24           | 21.3      | 86272   | PASS             |

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

JMB  
11/07/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0701.D  
Acq On : 07 Nov 2016 08:14  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

JCB  
11/08/2016

Quant Time: Nov 07 08:25:04 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Mon Jun 30 12:01:50 2014  
Response via : Initial Calibration  
Integrator: RTE

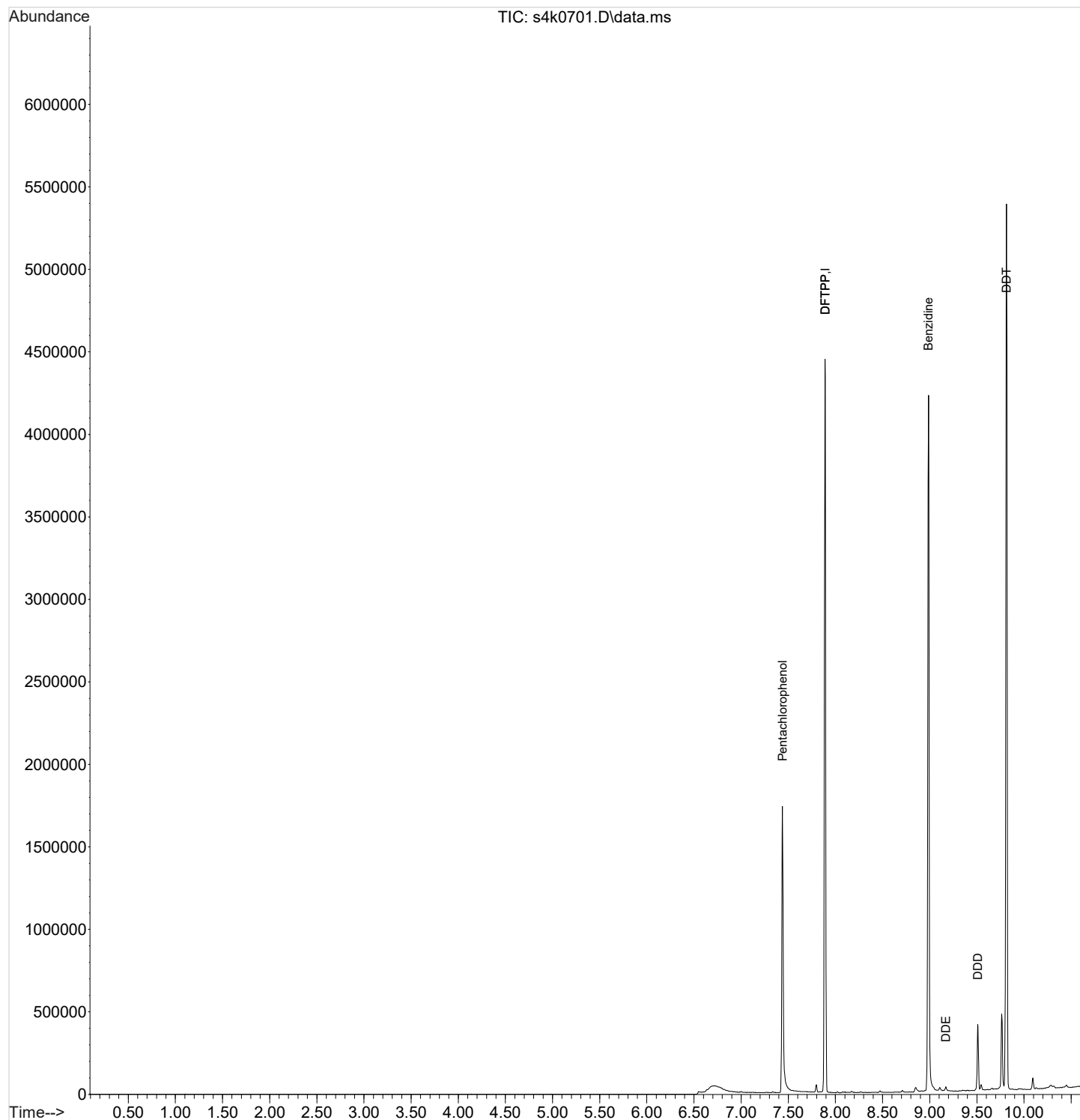
| Compound             | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units |           |
|----------------------|------|-------|--------|--------|----------|-------|-------|-----------|
| -----                |      |       |        |        |          |       |       |           |
| Internal Standards   |      |       |        |        |          |       |       | Dev (Min) |
| 1) DFTPP             | TIC  | 7.889 | 7.888  | 1.000  | 4258214  | 5.00  | ug/ml | # 0.00    |
| Target Compounds     | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue    |
| 2) DFTPP             | TIC  | 7.889 | 7.888  | 1.000  | 4258214  | 5.00  | ug/ml | # 1       |
| 3) Pentachlorophenol | 266  | 7.438 | 7.437  | 0.943  | 254767   | 3.56  | ug/ml | 99        |
| 4) Benzidine         | 184  | 8.987 | 8.982  | 1.139  | 1825398  | 9.33  | ug/ml | 99        |
| 5) DDE               | 246  | 9.171 | 9.169  | 1.162  | 2563     | 6.58  | ug/ml | 93        |
| 6) DDD               | 235  | 9.509 | 9.507  | 1.205  | 80396    | 11.03 | ug/ml | 89        |
| 7) DDT               | 235  | 9.815 | 9.812  | 1.244  | 1078413  | 6.69  | ug/ml | 97        |
| -----                |      |       |        |        |          |       |       |           |

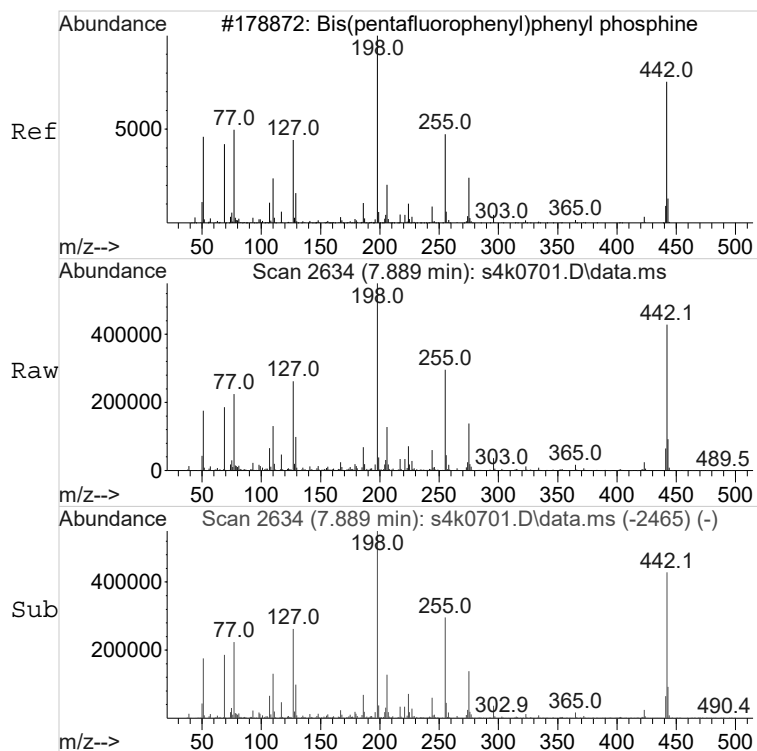
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0701.D  
Acq On : 07 Nov 2016 08:14  
Operator : JMB3  
InstName : MSD4  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
ALS Vial : 1 Sample Multiplier: 1

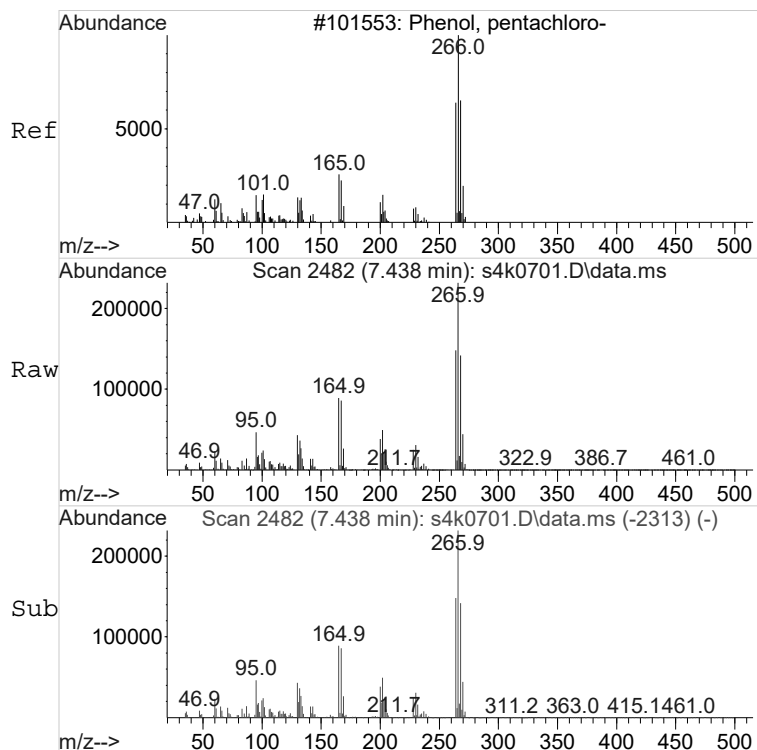
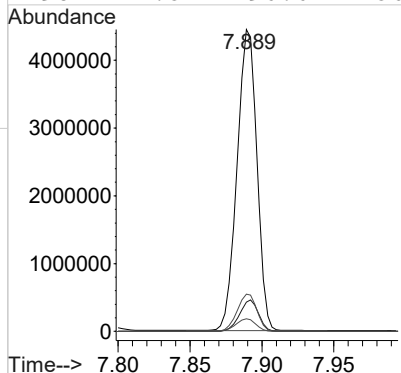
Quant Time: Nov 07 08:25:04 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\BNABrk Down8270D.m  
Quant Title : dftpp / endrin / ddt SubList :  
QLast Update : Mon Jun 30 12:01:50 2014  
Response via : Initial Calibration  
Integrator: RTE





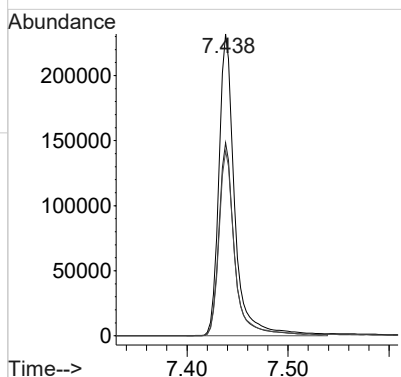
#2  
DFTPP  
Concen: 5.00 ug/ml  
RT: 7.889 min Scan# 2634  
Delta R.T. 0.001 min  
Lab File: s4k0701.D  
Acq: 07 Nov 2016 08:14

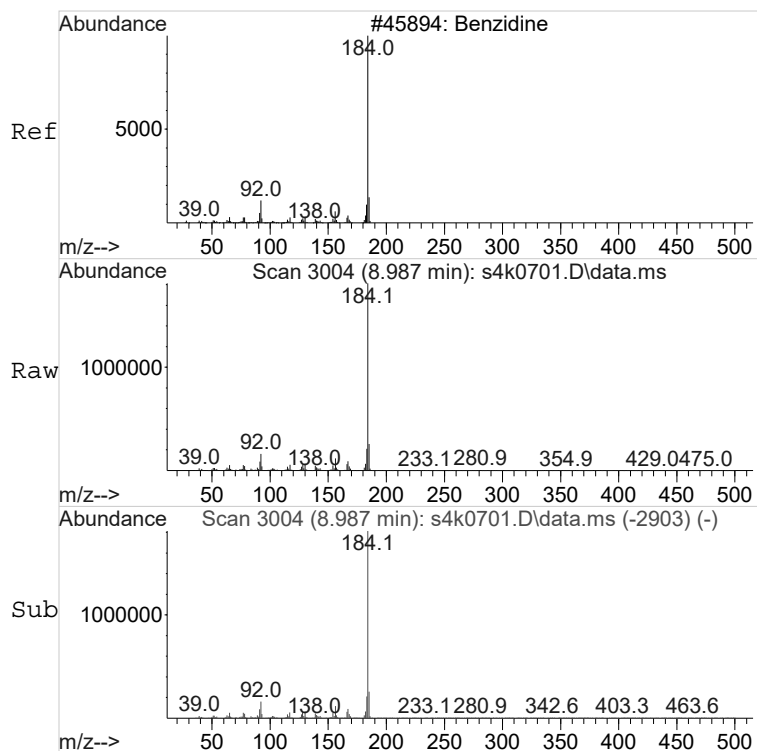
Tgt Ion:TIC Resp: 4258214  
Ion Ratio Lower Upper  
TIC 100  
442 9.9 970.3 1010.3#  
69 4.2 403.0 443.0#  
198 12.3 1196.6 1236.6#



#3  
Pentachlorophenol  
Concen: 3.56 ug/ml  
RT: 7.438 min Scan# 2482  
Delta R.T. 0.001 min  
Lab File: s4k0701.D  
Acq: 07 Nov 2016 08:14

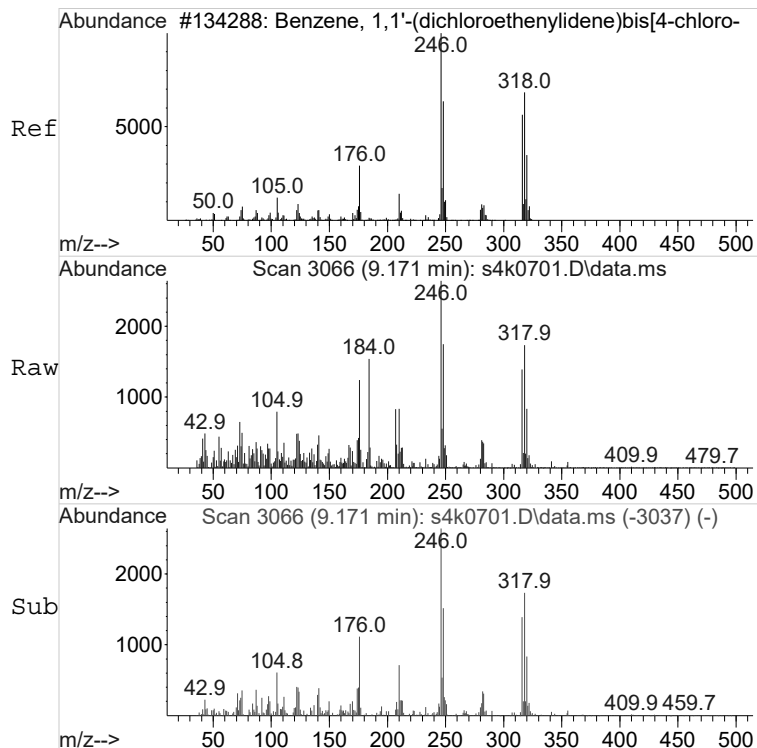
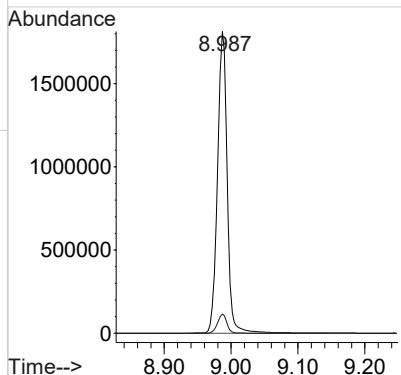
Tgt Ion:266 Resp: 254767  
Ion Ratio Lower Upper  
266 100  
264 62.6 0.0 164.3  
268 61.2 0.0 161.7





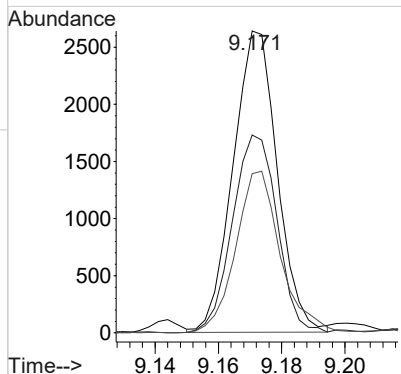
#4  
Benzidine  
Concen: 9.33 ug/ml  
RT: 8.987 min Scan# 3004  
Delta R.T. 0.005 min  
Lab File: s4k0701.D  
Acq: 07 Nov 2016 08:14

Tgt Ion:184 Resp: 1825398  
Ion Ratio Lower Upper  
184 100  
156 6.2 0.0 106.7

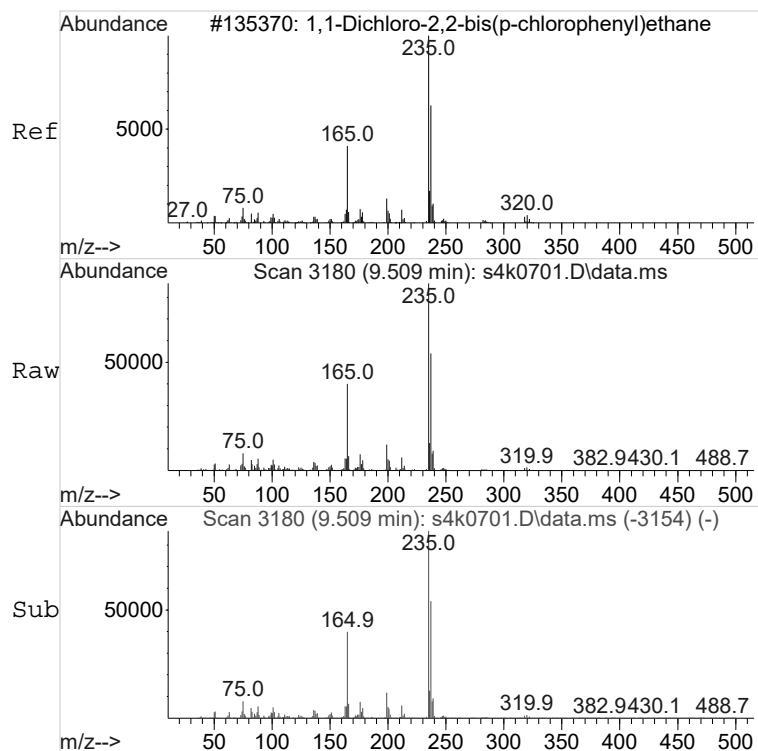


#5  
DDE  
Concen: 6.58 ug/ml  
RT: 9.171 min Scan# 3066  
Delta R.T. 0.002 min  
Lab File: s4k0701.D  
Acq: 07 Nov 2016 08:14

Tgt Ion:246 Resp: 2563  
Ion Ratio Lower Upper  
246 100  
318 66.7 0.0 160.5  
316 54.0 0.0 150.3

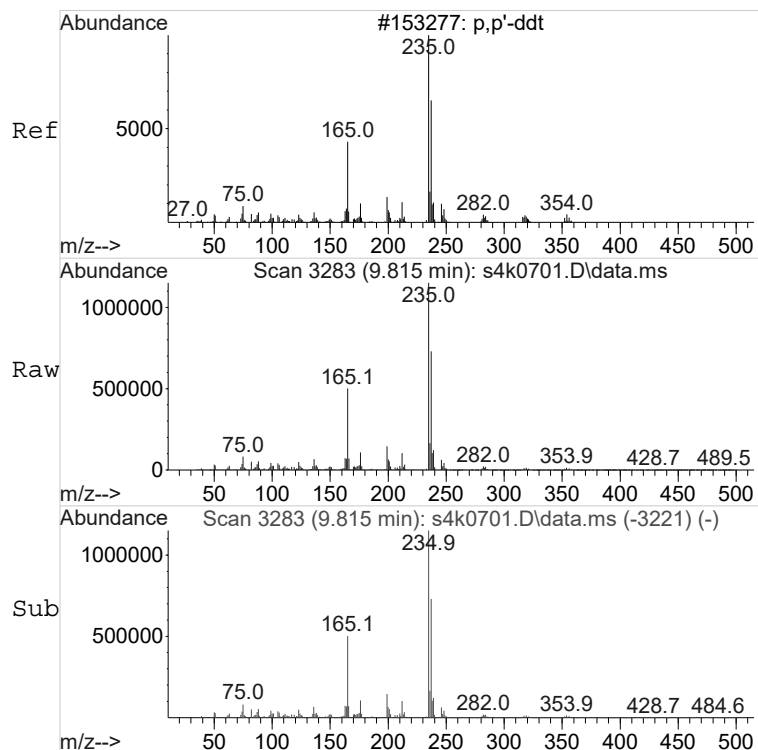
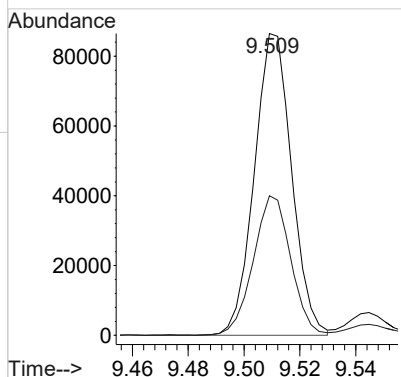






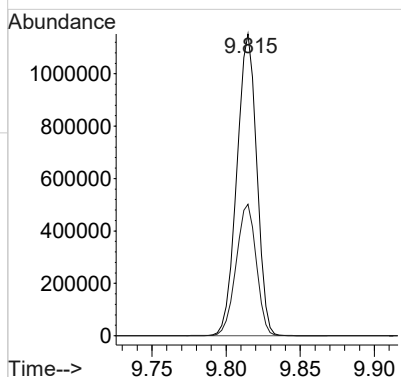
#6  
DDD  
Concen: 11.03 ug/ml  
RT: 9.509 min Scan# 3180  
Delta R.T. 0.002 min  
Lab File: s4k0701.D  
Acq: 07 Nov 2016 08:14

Tgt Ion:235 Resp: 80396  
Ion Ratio Lower Upper  
235 100  
165 46.3 0.0 154.0



#7  
DDT  
Concen: 6.69 ug/ml  
RT: 9.815 min Scan# 3283  
Delta R.T. 0.003 min  
Lab File: s4k0701.D  
Acq: 07 Nov 2016 08:14

Tgt Ion:235 Resp: 1078413  
Ion Ratio Lower Upper  
235 100  
165 44.1 0.0 145.8



## 8270 Breakdown Report

Data File : C:\msdchem\1\DATA\s110716.B\s4k0701.D  
Acq On : 07 Nov 2016 08:14  
Sample : |WBN161104-99|DFTPP|1|SVM|1|DFTPP  
Misc :  
IntFile : rteint.p

Vial: 1  
Operator: JMB3  
Inst : MSD4  
Multiplr: 1.00

JMB  
11/07/2016

JCB  
11/08/2016

| Compounds | Area/%Breakdown | 8270C      | 8270D      |
|-----------|-----------------|------------|------------|
| DDE       | 2563            |            |            |
| DDD       | 80396           |            |            |
| DDT       | 1078413         |            |            |
| Breakdown | 7.14%           | Pass (<20) | Pass (<20) |

| Compounds         | Tailing Factor | 8270C     | 8270D     |
|-------------------|----------------|-----------|-----------|
| Benzidine         | 0.96           | Pass (<3) | Pass (<2) |
| Pentachlorophenol | 1.42           | Pass (<5) | Pass (<2) |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

|  |                                 |                             |
|--|---------------------------------|-----------------------------|
| <b>SDG Number:</b> 409254                  |                                 | <b>Matrix:</b> SOIL         |
| <b>Lab Sample ID:</b> 1203665318           |                                 |                             |
| <b>Client Sample:</b> QC for batch 1614269 | <b>Client:</b> HAAL002          | <b>Project:</b> QC          |
| <b>Client ID:</b> MB for batch 1614269     | <b>Method:</b> SW846 3541/8270D | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1614270                   | <b>Inst:</b> MSD1.I             | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/10/2016 17:58          | <b>Analyst:</b> JMB3            | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 11/08/2016 12:02         | <b>Aliquot:</b> 30.007 g        | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s111016.B\1k1016.D       | <b>Column:</b> 25x.20x.33       |                             |

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              | U         | 333    | ug/kg | 100     | 333     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene | U         | 333    | ug/kg | 100     | 333     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  | U         | 333    | ug/kg | 100     | 333     |
| 95-95-4   | 2,4,5-Trichlorophenol      | U         | 333    | ug/kg | 100     | 333     |
| 88-06-2   | 2,4,6-Trichlorophenol      | U         | 333    | ug/kg | 100     | 333     |
| 120-83-2  | 2,4-Dichlorophenol         | U         | 333    | ug/kg | 100     | 333     |
| 105-67-9  | 2,4-Dimethylphenol         | U         | 333    | ug/kg | 100     | 333     |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 667    | ug/kg | 100     | 667     |
| 121-14-2  | 2,4-Dinitrotoluene         | U         | 333    | ug/kg | 100     | 333     |
| 606-20-2  | 2,6-Dinitrotoluene         | U         | 333    | ug/kg | 100     | 333     |
| 91-58-7   | 2-Chloronaphthalene        | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 95-57-8   | 2-Chlorophenol             | U         | 333    | ug/kg | 100     | 333     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 333    | ug/kg | 100     | 333     |
| 91-57-6   | 2-Methylnaphthalene        | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 88-75-5   | 2-Nitrophenol              | U         | 333    | ug/kg | 100     | 333     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | U         | 333    | ug/kg | 100     | 333     |
| 101-55-3  | 4-Bromophenylphenylether   | U         | 333    | ug/kg | 100     | 333     |
| 59-50-7   | 4-Chloro-3-methylphenol    | U         | 333    | ug/kg | 133     | 333     |
| 106-47-8  | 4-Chloroaniline            | U         | 333    | ug/kg | 100     | 333     |
| 7005-72-3 | 4-Chlorophenylphenylether  | U         | 333    | ug/kg | 100     | 333     |
| 100-02-7  | 4-Nitrophenol              | U         | 333    | ug/kg | 100     | 333     |
| 83-32-9   | Acenaphthene               | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 208-96-8  | Acenaphthylene             | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 98-86-2   | Acetophenone               | U         | 333    | ug/kg | 100     | 333     |
| 120-12-7  | Anthracene                 | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 1912-24-9 | Atrazine                   | U         | 333    | ug/kg | 133     | 333     |
| 100-52-7  | Benzaldehyde               | U         | 333    | ug/kg | 100     | 333     |
| 56-55-3   | Benzo(a)anthracene         | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 50-32-8   | Benzo(a)pyrene             | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 205-99-2  | Benzo(b)fluoranthene       | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 191-24-2  | Benzo(ghi)perylene         | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 207-08-9  | Benzo(k)fluoranthene       | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 85-68-7   | Butylbenzylphthalate       | U         | 333    | ug/kg | 100     | 333     |
| 105-60-2  | Caprolactam                | U         | 333    | ug/kg | 100     | 333     |
| 86-74-8   | Carbazole                  | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 218-01-9  | Chrysene                   | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 84-74-2   | Di-n-butylphthalate        | U         | 333    | ug/kg | 100     | 333     |
| 117-84-0  | Di-n-octylphthalate        | U         | 333    | ug/kg | 100     | 333     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

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|  |                                 |                             |
|--|---------------------------------|-----------------------------|
| <b>SDG Number:</b> 409254                  |                                 | <b>Matrix:</b> SOIL         |
| <b>Lab Sample ID:</b> 1203665318           |                                 |                             |
| <b>Client Sample:</b> QC for batch 1614269 | <b>Client:</b> HAAL002          | <b>Project:</b> QC          |
| <b>Client ID:</b> MB for batch 1614269     | <b>Method:</b> SW846 3541/8270D | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1614270                   | <b>Inst:</b> MSD1.I             | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/10/2016 17:58          | <b>Analyst:</b> JMB3            | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 11/08/2016 12:02         | <b>Aliquot:</b> 30.007 g        | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s111016.B\1k1016.D       | <b>Column:</b> 25x.20x.33       |                             |

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 132-64-9   | Dibenzofuran                     | U         | 333    | ug/kg | 100     | 333     |
| 84-66-2    | Diethylphthalate                 | U         | 333    | ug/kg | 100     | 333     |
| 131-11-3   | Dimethylphthalate                | U         | 333    | ug/kg | 100     | 333     |
| 122-39-4   | Diphenylamine                    | U         | 333    | ug/kg | 100     | 333     |
| 206-44-0   | Fluoranthene                     | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 86-73-7    | Fluorene                         | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 118-74-1   | Hexachlorobenzene                | U         | 333    | ug/kg | 100     | 333     |
| 87-68-3    | Hexachlorobutadiene              | U         | 333    | ug/kg | 100     | 333     |
| 77-47-4    | Hexachlorocyclopentadiene        | U         | 333    | ug/kg | 100     | 333     |
| 67-72-1    | Hexachloroethane                 | U         | 333    | ug/kg | 100     | 333     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 78-59-1    | Isophorone                       | U         | 333    | ug/kg | 100     | 333     |
| 621-64-7   | N-Nitrosodipropylamine           | U         | 333    | ug/kg | 100     | 333     |
| 91-20-3    | Naphthalene                      | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 98-95-3    | Nitrobenzene                     | U         | 333    | ug/kg | 100     | 333     |
| 87-86-5    | Pentachlorophenol                | U         | 333    | ug/kg | 100     | 333     |
| 85-01-8    | Phenanthrene                     | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 108-95-2   | Phenol                           | U         | 333    | ug/kg | 100     | 333     |
| 129-00-0   | Pyrene                           | U         | 33.3   | ug/kg | 10.0    | 33.3    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether | U         | 333    | ug/kg | 100     | 333     |
| 111-91-1   | bis(2-Chloroethoxy)methane       | U         | 333    | ug/kg | 100     | 333     |
| 111-44-4   | bis(2-Chloroethyl) ether         | U         | 333    | ug/kg | 100     | 333     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       | U         | 333    | ug/kg | 100     | 333     |
| 65794-96-9 | m,p-Cresols                      | U         | 333    | ug/kg | 100     | 333     |
| 99-09-2    | m-Nitroaniline                   | U         | 333    | ug/kg | 100     | 333     |
| 95-48-7    | o-Cresol                         | U         | 333    | ug/kg | 100     | 333     |
| 88-74-4    | o-Nitroaniline                   | U         | 333    | ug/kg | 110     | 333     |
| 100-01-6   | p-Nitroaniline                   | U         | 333    | ug/kg | 100     | 333     |

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/11/2016

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1016.D  
Acq On : 10 Nov 2016 17:58  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665318|1614270|1|SVM|1|MB  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 13 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 07:46:33 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon    | R.T.     | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|--------------------------------|---------|----------|--------|--------|----------|-------|-------|-----------|
| Internal Standards             |         |          |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4    | 152     | 5.324    | 5.324  | 1.000  | 225235   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8           | 136     | 7.100    | 7.105  | 1.000  | 798475   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10         | 164     | 9.405    | 9.415  | 1.000  | 444209   | 40.00 | ng/uL | -0.01     |
| 67) A Phenanthrene-d10         | 188     | 11.266   | 11.271 | 1.000  | 844651   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12             | 240     | 14.657   | 14.662 | 1.000  | 784241   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12             | 264     | 17.663   | 17.668 | 1.000  | 728585   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4   | 152     | 5.324    | 5.324  | 1.000  | 225229   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8          | 136     | 7.100    | 7.105  | 1.000  | 798475   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10        | 164     | 9.405    | 9.415  | 1.000  | 444209   | 40.00 | ng/uL | -0.01     |
| 132) B Phenanthrene-d10        | 188     | 11.266   | 11.271 | 1.000  | 844651   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12            | 240     | 14.657   | 14.662 | 1.000  | 784241   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12            | 264     | 17.663   | 17.668 | 1.000  | 728585   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8          | 136     | 7.100    | 7.105  | 1.000  | 798475   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10        | 164     | 9.405    | 9.415  | 1.000  | 444209   | 40.00 | ng/uL | -0.01     |
| 160) D Phenanthrene-d10        | 188     | 11.266   | 11.271 | 1.000  | 844651   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12            | 240     | 14.657   | 14.662 | 1.000  | 784241   | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8          | 136     | 7.100    | 7.105  | 1.000  | 798475   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12            | 264     | 17.663   | 17.668 | 1.000  | 728585   | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4  | 152     | 5.324    | 5.324  | 1.000  | 225229   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10        | 188     | 11.266   | 11.271 | 1.000  | 844651   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12            | 240     | 14.657   | 14.662 | 1.000  | 784241   | 40.00 | ng/uL | 0.00      |
| System Monitoring Compounds    |         |          |        |        |          |       |       |           |
| 5) 2-Fluorophenol              | 112     | 3.682    | 3.660  | 0.692  | 463443   | 55.44 | ng/uL | 0.02      |
| 8) Phenol-d5                   | 99      | 4.821    | 4.810  | 0.906  | 629736   | 61.52 | ng/uL | 0.01      |
| 25) Nitrobenzene-d5            | 82      | 6.105    | 6.110  | 0.860  | 374881   | 40.11 | ng/uL | 0.00      |
| 47) 2-Fluorobiphenyl           | 172     | 8.549    | 8.554  | 0.909  | 651305   | 41.60 | ng/uL | 0.00      |
| 66) 2,4,6-Tribromophenol       | 330     | 10.400   | 10.405 | 1.106  | 191088   | 65.95 | ng/uL | 0.00      |
| 83) p-Terphenyl-d14            | 244     | 13.245   | 13.245 | 0.904  | 777572   | 37.13 | ng/uL | 0.00      |
| Compound Amount Range Recovery |         |          |        |        |          |       |       |           |
| 5) 2-Fluorophenol              | 100.000 | 36 - 104 | 55%    |        |          |       |       |           |
| 8) Phenol-d5                   | 100.000 | 39 - 106 | 62%    |        |          |       |       |           |
| 25) Nitrobenzene-d5            | 50.000  | 34 - 109 | 80%    |        |          |       |       |           |
| 47) 2-Fluorobiphenyl           | 50.000  | 35 - 107 | 83%    |        |          |       |       |           |
| 66) 2,4,6-Tribromophenol       | 100.000 | 39 - 115 | 66%    |        |          |       |       |           |
| 83) p-Terphenyl-d14            | 50.000  | 45 - 119 | 74%    |        |          |       |       |           |

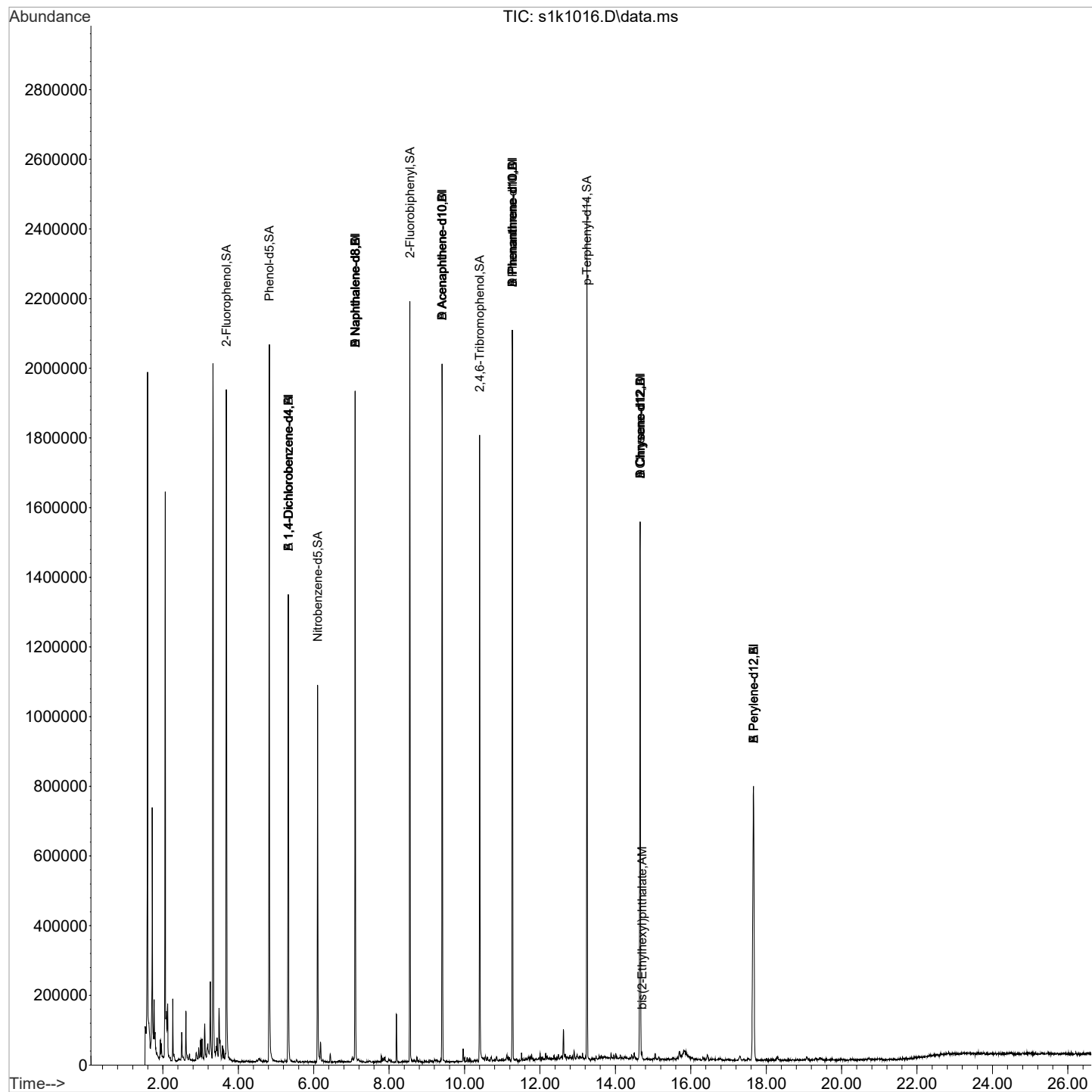
| Target Compounds              | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | QValue |
|-------------------------------|------|--------|--------|--------|----------|------|-------|--------|
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.705 | 14.711 | 1.003  | 5195     | 0.31 | ng/uL | 96     |

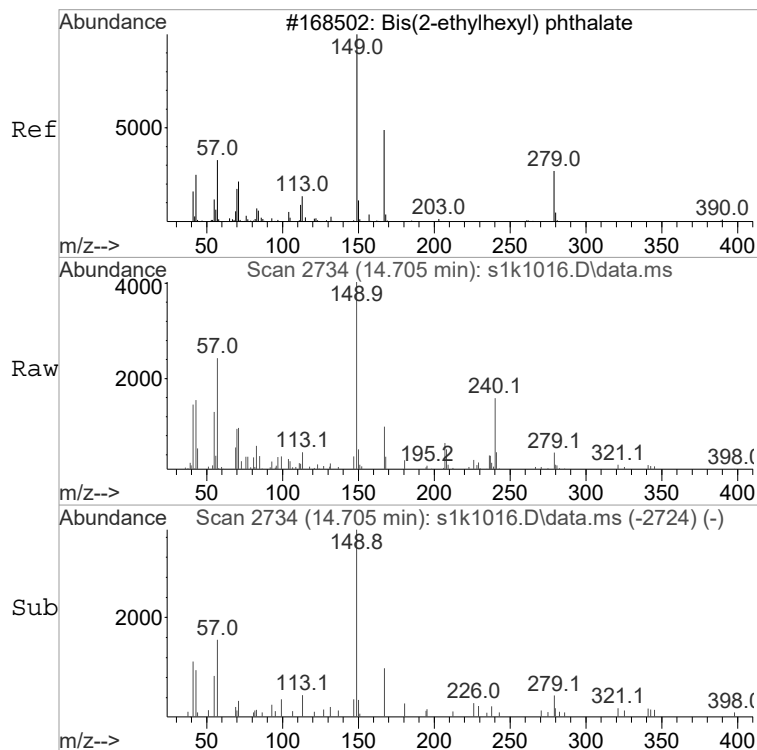
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1016.D  
Acq On : 10 Nov 2016 17:58  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665318|1614270|1|SVM|1|MB  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 13 Sample Multiplier: 1

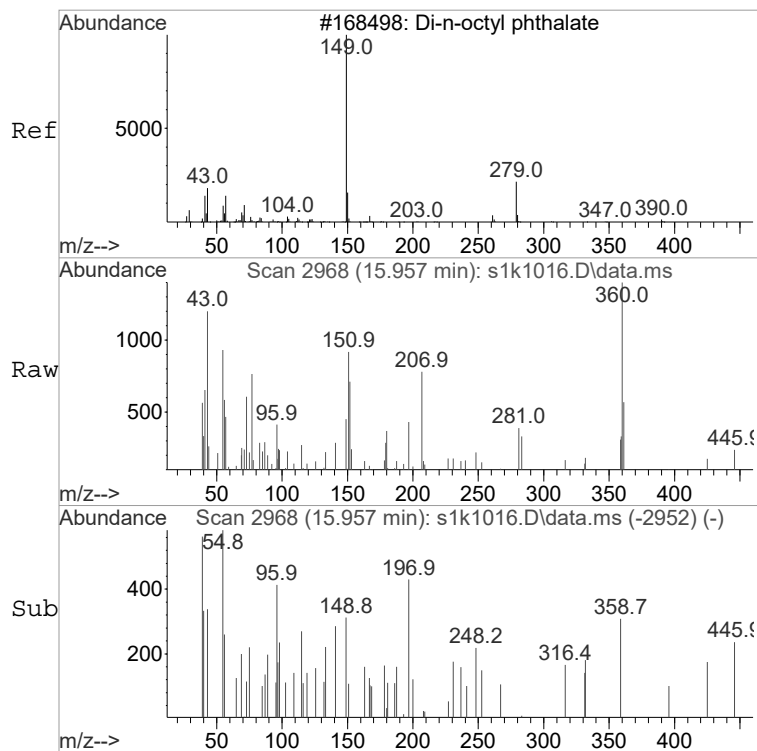
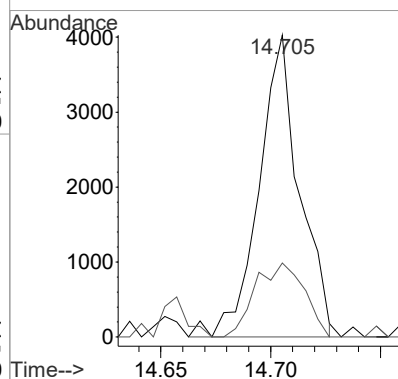
Quant Time: Nov 11 07:46:33 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE





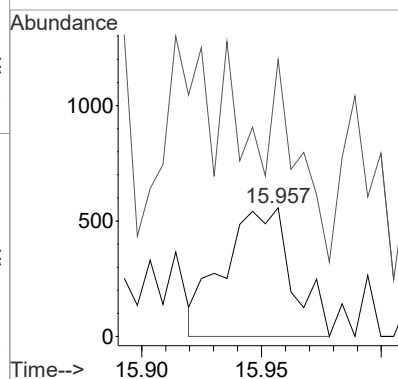
#85  
bis(2-Ethylhexyl)phthalate  
Concen: 0.31 ng/uL  
RT: 14.705 min Scan# 2734  
Delta R.T. -0.005 min  
Lab File: s1k1016.D  
Acq: 10 Nov 2016 17:58

| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 149     | 100   | 5195 |       |       |
| 167     | 29.5  | 1.8  | 61.8  |       |



#90 BEFORE analyst DELETION  
Di-n-octylphthalate  
Concen: 0.51 ng/uL  
RT: 15.957 min Scan# 2968  
Delta R.T. 0.006 min  
Lab File: s1k1016.D  
Acq: 10 Nov 2016 17:58

| Tgt Ion | Ratio | Resp | Lower | Upper |
|---------|-------|------|-------|-------|
| 149     | 100   | 1097 |       |       |
| 43      | 59.9  | 0.0  | 43.5# |       |



**Semi-Volatile  
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|  |  |                      |             |
|--|--|----------------------|-------------|
| <b>SDG Number:</b> 409254                  |  | <b>Matrix:</b>       | SOIL        |
| <b>Lab Sample ID:</b> 1203661742           |  |                      |             |
| <b>Client Sample:</b> QC for batch 1612776 | <b>Client:</b> HAAL002                 | <b>Project:</b>      | QC          |
| <b>Client ID:</b> MB for batch 1612776     | <b>Method:</b> SW846 3541/8270D SIM P. | <b>SOP Ref:</b>      | GL-OA-E-009 |
| <b>Batch ID:</b> 1612777                   | <b>Inst:</b> MSD4.I                    | <b>Dilution:</b>     | 1           |
| <b>Run Date:</b> 11/07/2016 09:01          | <b>Analyst:</b> JMB3                   | <b>Inj. Vol:</b>     | 1 uL        |
| <b>Prep Date:</b> 11/04/2016 08:33         | <b>Aliquot:</b> 30.011 g               | <b>Final Volume:</b> | 1 mL        |
| <b>Data File:</b> s110716.B\4k0703.D       | <b>Column:</b> DB-5ms                  |                      |             |

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 91-58-7  | 2-Chloronaphthalene    | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 91-57-6  | 2-Methylnaphthalene    | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 83-32-9  | Acenaphthene           | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 208-96-8 | Acenaphthylene         | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 120-12-7 | Anthracene             | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 56-55-3  | Benzo(a)anthracene     | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 50-32-8  | Benzo(a)pyrene         | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 205-99-2 | Benzo(b)fluoranthene   | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 191-24-2 | Benzo(ghi)perylene     | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 207-08-9 | Benzo(k)fluoranthene   | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 218-01-9 | Chrysene               | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 53-70-3  | Dibenzo(a,h)anthracene | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 206-44-0 | Fluoranthene           | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 86-73-7  | Fluorene               | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 91-20-3  | Naphthalene            | U         | 3.33   | ug/kg | 1.00    | 3.33    |
| 85-01-8  | Phenanthrene           | U         | 3.33   | ug/kg | 1.67    | 3.33    |
| 129-00-0 | Pyrene                 | U         | 3.33   | ug/kg | 1.67    | 3.33    |



JMB  
11/07/2016

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0703.D  
Acq On : 07 Nov 2016 09:01  
Operator : JMB3  
InstName : MSD4  
Sample : |1203661742|1612777|1|SVM|1|MB||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

JCB  
11/08/2016

Quant Time: Nov 07 09:32:30 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |           |
|------------------------------|------|--------|--------|--------|----------|------|-------|-----------|
| Internal Standards           |      |        |        |        |          |      |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.453  | 5.448  | 1.000  | 342443   | 4.00 | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136  | 7.237  | 7.237  | 1.000  | 1122428  | 4.00 | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164  | 9.568  | 9.573  | 1.000  | 441282   | 4.00 | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188  | 11.456 | 11.457 | 1.000  | 805342   | 4.00 | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240  | 14.962 | 14.963 | 1.000  | 434627   | 4.00 | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264  | 18.230 | 18.231 | 1.000  | 205839   | 4.00 | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.453  | 5.448  | 1.000  | 342443   | 4.00 | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136  | 7.237  | 7.237  | 1.000  | 1122428  | 4.00 | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188  | 11.456 | 11.457 | 1.000  | 805342   | 4.00 | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240  | 14.962 | 14.963 | 1.000  | 434627   | 4.00 | ng/uL | 0.00      |

|                             |     |        |        |       |        |      |       |           |
|-----------------------------|-----|--------|--------|-------|--------|------|-------|-----------|
| System Monitoring Compounds |     |        |        |       |        |      |       | Dev (Min) |
| 17) 5-alpha-Androstane      | 245 | 12.730 | 12.731 | 1.111 | 129521 | 5.14 | ng/uL | 0.00      |

| Compound               | Amount | Range    | Recovery |
|------------------------|--------|----------|----------|
| 17) 5-alpha-Androstane | 5.000  | 30 - 115 | 103%     |

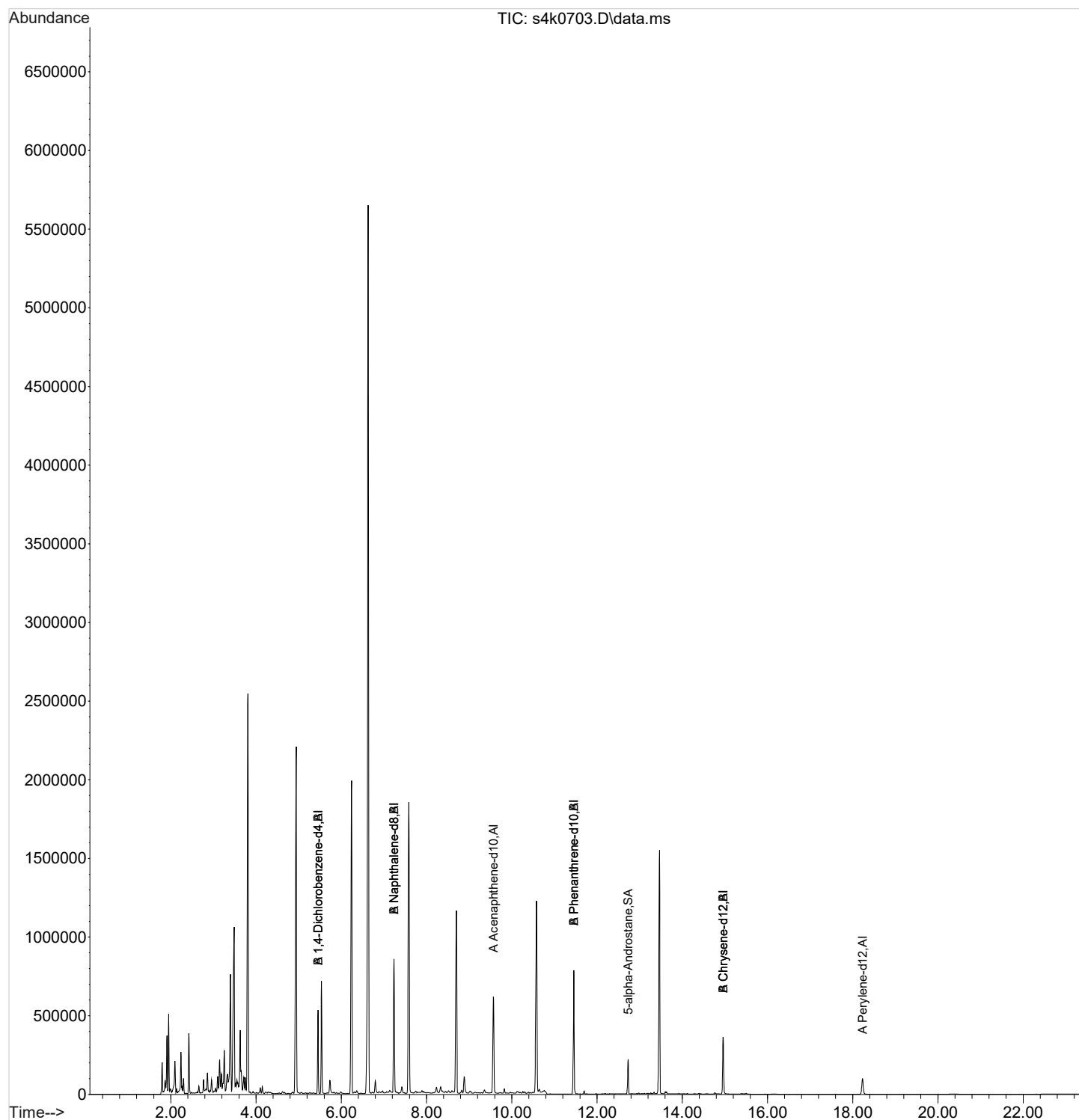
| Target Compounds | QIon | R.T. | Exp RT | Rel RT | Response | Conc | Units | QValue |
|------------------|------|------|--------|--------|----------|------|-------|--------|
|------------------|------|------|--------|--------|----------|------|-------|--------|

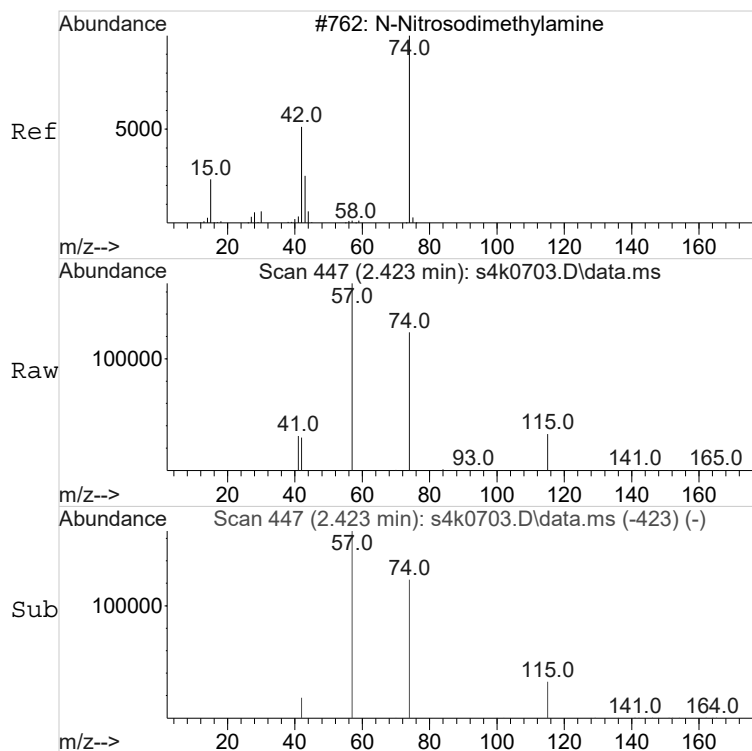
(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0703.D  
Acq On : 07 Nov 2016 09:01  
Operator : JMB3  
InstName : MSD4  
Sample : |1203661742|1612777|1|SVM|1|MB|||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

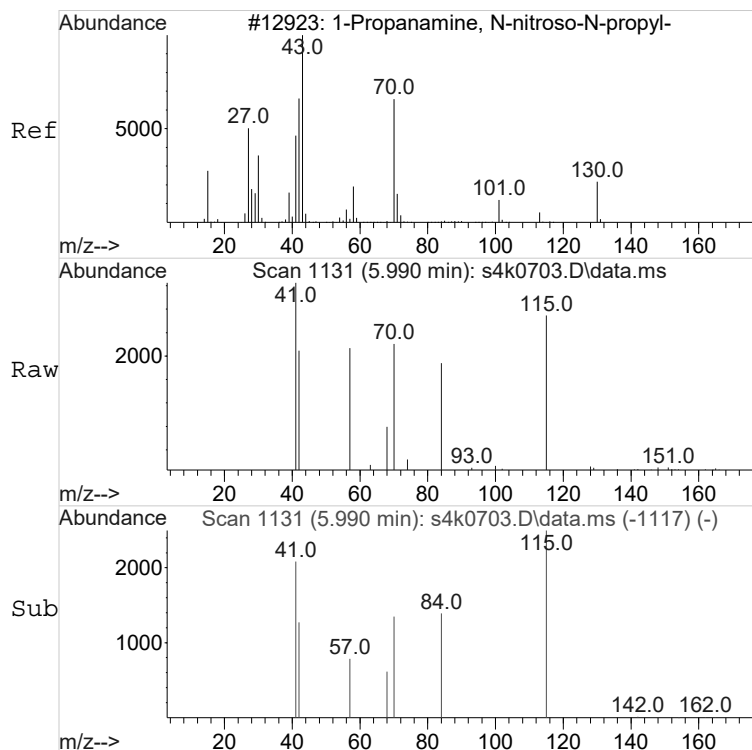
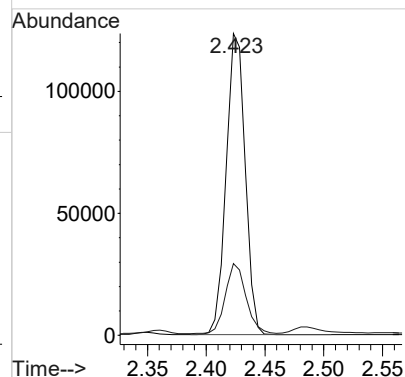
Quant Time: Nov 07 09:32:30 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE





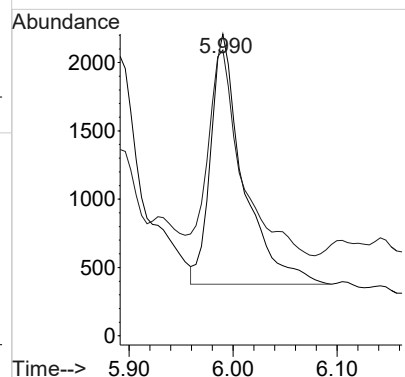
#2 BEFORE analyst DELETION  
N-Methyl-N-nitrosomethylamine  
Concen: 2.25 ng/uL  
RT: 2.423 min Scan# 447  
Delta R.T. -0.005 min  
Lab File: s4k0703.D  
Acq: 07 Nov 2016 09:01

Tgt Ion: 74 Resp: 139519  
Ion Ratio Lower Upper  
74 100  
42 25.3 39.1 99.1#



#4 BEFORE analyst DELETION  
N-Nitrosodipropylamine  
Concen: 0.06 ng/uL  
RT: 5.990 min Scan# 1131  
Delta R.T. -0.026 min  
Lab File: s4k0703.D  
Acq: 07 Nov 2016 09:01

Tgt Ion: 70 Resp: 3983  
Ion Ratio Lower Upper  
70 100  
42 84.6 22.5 82.5#



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Sample Summary**

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|  |                                 |                             |
|--|---------------------------------|-----------------------------|
| <b>SDG Number:</b> 409254                  |                                 | <b>Matrix:</b> SOIL         |
| <b>Lab Sample ID:</b> 1203665319           |                                 |                             |
| <b>Client Sample:</b> QC for batch 1614269 | <b>Client:</b> HAAL002          | <b>Project:</b> QC          |
| <b>Client ID:</b> LCS for batch 1614269    | <b>Method:</b> SW846 3541/8270D | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1614270                   | <b>Inst:</b> MSD1.I             | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/10/2016 18:32          | <b>Analyst:</b> JMB3            | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 11/08/2016 12:02         | <b>Aliquot:</b> 30.028 g        | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s111016.B\1k1017.D       | <b>Column:</b> 25x.20x.33       |                             |

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              |           | 1870   | ug/kg | 99.9    | 333     |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene |           | 1460   | ug/kg | 99.9    | 333     |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  |           | 1550   | ug/kg | 99.9    | 333     |
| 95-95-4   | 2,4,5-Trichlorophenol      |           | 1550   | ug/kg | 99.9    | 333     |
| 88-06-2   | 2,4,6-Trichlorophenol      |           | 1420   | ug/kg | 99.9    | 333     |
| 120-83-2  | 2,4-Dichlorophenol         |           | 1530   | ug/kg | 99.9    | 333     |
| 105-67-9  | 2,4-Dimethylphenol         |           | 1390   | ug/kg | 99.9    | 333     |
| 51-28-5   | 2,4-Dinitrophenol          |           | 871    | ug/kg | 99.9    | 666     |
| 121-14-2  | 2,4-Dinitrotoluene         |           | 1590   | ug/kg | 99.9    | 333     |
| 606-20-2  | 2,6-Dinitrotoluene         |           | 1660   | ug/kg | 99.9    | 333     |
| 91-58-7   | 2-Chloronaphthalene        |           | 1280   | ug/kg | 9.99    | 33.3    |
| 95-57-8   | 2-Chlorophenol             |           | 1440   | ug/kg | 99.9    | 333     |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol |           | 906    | ug/kg | 99.9    | 333     |
| 91-57-6   | 2-Methylnaphthalene        |           | 1380   | ug/kg | 9.99    | 33.3    |
| 88-75-5   | 2-Nitrophenol              |           | 1470   | ug/kg | 99.9    | 333     |
| 91-94-1   | 3,3'-Dichlorobenzidine     |           | 1390   | ug/kg | 99.9    | 333     |
| 101-55-3  | 4-Bromophenylphenylether   |           | 1390   | ug/kg | 99.9    | 333     |
| 59-50-7   | 4-Chloro-3-methylphenol    |           | 1450   | ug/kg | 133     | 333     |
| 106-47-8  | 4-Chloroaniline            |           | 1180   | ug/kg | 99.9    | 333     |
| 7005-72-3 | 4-Chlorophenylphenylether  |           | 1510   | ug/kg | 99.9    | 333     |
| 100-02-7  | 4-Nitrophenol              |           | 1370   | ug/kg | 99.9    | 333     |
| 83-32-9   | Acenaphthene               |           | 1560   | ug/kg | 9.99    | 33.3    |
| 208-96-8  | Acenaphthylene             |           | 1550   | ug/kg | 9.99    | 33.3    |
| 98-86-2   | Acetophenone               |           | 1600   | ug/kg | 99.9    | 333     |
| 120-12-7  | Anthracene                 |           | 1490   | ug/kg | 9.99    | 33.3    |
| 1912-24-9 | Atrazine                   |           | 1500   | ug/kg | 133     | 333     |
| 100-52-7  | Benzaldehyde               |           | 433    | ug/kg | 99.9    | 333     |
| 56-55-3   | Benzo(a)anthracene         |           | 1540   | ug/kg | 9.99    | 33.3    |
| 50-32-8   | Benzo(a)pyrene             |           | 1490   | ug/kg | 9.99    | 33.3    |
| 205-99-2  | Benzo(b)fluoranthene       |           | 1410   | ug/kg | 9.99    | 33.3    |
| 191-24-2  | Benzo(ghi)perylene         |           | 1510   | ug/kg | 9.99    | 33.3    |
| 207-08-9  | Benzo(k)fluoranthene       |           | 1400   | ug/kg | 9.99    | 33.3    |
| 85-68-7   | Butylbenzylphthalate       |           | 1480   | ug/kg | 99.9    | 333     |
| 105-60-2  | Caprolactam                |           | 1720   | ug/kg | 99.9    | 333     |
| 86-74-8   | Carbazole                  |           | 1580   | ug/kg | 9.99    | 33.3    |
| 218-01-9  | Chrysene                   |           | 1590   | ug/kg | 9.99    | 33.3    |
| 84-74-2   | Di-n-butylphthalate        |           | 1410   | ug/kg | 99.9    | 333     |
| 117-84-0  | Di-n-octylphthalate        |           | 1500   | ug/kg | 99.9    | 333     |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

|  |                                 |                             |
|--|---------------------------------|-----------------------------|
| <b>SDG Number:</b> 409254                  |                                 | <b>Matrix:</b> SOIL         |
| <b>Lab Sample ID:</b> 1203665319           |                                 |                             |
| <b>Client Sample:</b> QC for batch 1614269 | <b>Client:</b> HAAL002          | <b>Project:</b> QC          |
| <b>Client ID:</b> LCS for batch 1614269    | <b>Method:</b> SW846 3541/8270D | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1614270                   | <b>Inst:</b> MSD1.I             | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/10/2016 18:32          | <b>Analyst:</b> JMB3            | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 11/08/2016 12:02         | <b>Aliquot:</b> 30.028 g        | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s111016.B\1k1017.D       | <b>Column:</b> 25x.20x.33       |                             |

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           |           | 1570   | ug/kg | 9.99    | 33.3    |
| 132-64-9   | Dibenzofuran                     |           | 1500   | ug/kg | 99.9    | 333     |
| 84-66-2    | Diethylphthalate                 |           | 1470   | ug/kg | 99.9    | 333     |
| 131-11-3   | Dimethylphthalate                |           | 1510   | ug/kg | 99.9    | 333     |
| 122-39-4   | Diphenylamine                    |           | 1440   | ug/kg | 99.9    | 333     |
| 206-44-0   | Fluoranthene                     |           | 1430   | ug/kg | 9.99    | 33.3    |
| 86-73-7    | Fluorene                         |           | 1530   | ug/kg | 9.99    | 33.3    |
| 118-74-1   | Hexachlorobenzene                |           | 1340   | ug/kg | 99.9    | 333     |
| 87-68-3    | Hexachlorobutadiene              |           | 1420   | ug/kg | 99.9    | 333     |
| 77-47-4    | Hexachlorocyclopentadiene        |           | 1090   | ug/kg | 99.9    | 333     |
| 67-72-1    | Hexachloroethane                 |           | 1420   | ug/kg | 99.9    | 333     |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           |           | 1340   | ug/kg | 9.99    | 33.3    |
| 78-59-1    | Isophorone                       |           | 1520   | ug/kg | 99.9    | 333     |
| 621-64-7   | N-Nitrosodipropylamine           |           | 1460   | ug/kg | 99.9    | 333     |
| 91-20-3    | Naphthalene                      |           | 1430   | ug/kg | 9.99    | 33.3    |
| 98-95-3    | Nitrobenzene                     |           | 1590   | ug/kg | 99.9    | 333     |
| 87-86-5    | Pentachlorophenol                |           | 1120   | ug/kg | 99.9    | 333     |
| 85-01-8    | Phenanthrene                     |           | 1470   | ug/kg | 9.99    | 33.3    |
| 108-95-2   | Phenol                           |           | 1350   | ug/kg | 99.9    | 333     |
| 129-00-0   | Pyrene                           |           | 1310   | ug/kg | 9.99    | 33.3    |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether |           | 1650   | ug/kg | 99.9    | 333     |
| 111-91-1   | bis(2-Chloroethoxy)methane       |           | 1490   | ug/kg | 99.9    | 333     |
| 111-44-4   | bis(2-Chloroethyl) ether         |           | 1450   | ug/kg | 99.9    | 333     |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       |           | 1490   | ug/kg | 99.9    | 333     |
| 65794-96-9 | m,p-Cresols                      |           | 1440   | ug/kg | 99.9    | 333     |
| 99-09-2    | m-Nitroaniline                   |           | 1510   | ug/kg | 99.9    | 333     |
| 95-48-7    | o-Cresol                         |           | 1450   | ug/kg | 99.9    | 333     |
| 88-74-4    | o-Nitroaniline                   |           | 1640   | ug/kg | 110     | 333     |
| 100-01-6   | p-Nitroaniline                   |           | 1720   | ug/kg | 99.9    | 333     |

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1017.D  
Acq On : 10 Nov 2016 18:32  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665319|1614270|1|SVM|1|LCS  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 14 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 07:46:37 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.324  | 5.324  | 1.000  | 219792   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.105  | 7.105  | 1.000  | 754302   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.410  | 9.415  | 1.000  | 423808   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.277 | 11.271 | 1.000  | 880518   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.668 | 14.662 | 1.000  | 795464   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.679 | 17.668 | 1.000  | 820502   | 40.00 | ng/uL | 0.01      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.324  | 5.324  | 1.000  | 219136   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 754302   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.410  | 9.415  | 1.000  | 423808   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.277 | 11.271 | 1.000  | 880518   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.668 | 14.662 | 1.000  | 795464   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.679 | 17.668 | 1.000  | 820502   | 40.00 | ng/uL | 0.01      |
| 155) D Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 754302   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.410  | 9.415  | 1.000  | 423808   | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.277 | 11.271 | 1.000  | 880518   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.668 | 14.662 | 1.000  | 794608   | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 754302   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.679 | 17.668 | 1.000  | 820502   | 40.00 | ng/uL | 0.01      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.324  | 5.324  | 1.000  | 219136   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.277 | 11.271 | 1.000  | 880518   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.668 | 14.662 | 1.000  | 795464   | 40.00 | ng/uL | 0.00      |

|                             |     |        |        |       |        |       |       |           |
|-----------------------------|-----|--------|--------|-------|--------|-------|-------|-----------|
| System Monitoring Compounds |     |        |        |       |        |       |       | Dev (Min) |
| 5) 2-Fluorophenol           | 112 | 3.682  | 3.660  | 0.692 | 559943 | 68.64 | ng/uL | 0.02      |
| 8) Phenol-d5                | 99  | 4.826  | 4.810  | 0.907 | 752276 | 75.32 | ng/uL | 0.02      |
| 25) Nitrobenzene-d5         | 82  | 6.110  | 6.110  | 0.860 | 377420 | 42.74 | ng/uL | 0.00      |
| 47) 2-Fluorobiphenyl        | 172 | 8.554  | 8.554  | 0.909 | 613746 | 41.09 | ng/uL | 0.00      |
| 66) 2,4,6-Tribromophenol    | 330 | 10.410 | 10.405 | 1.106 | 225915 | 81.73 | ng/uL | 0.00      |
| 83) p-Terphenyl-d14         | 244 | 13.250 | 13.245 | 0.903 | 846182 | 39.84 | ng/uL | 0.00      |

| Compound                 | Amount  | Range    | Recovery |
|--------------------------|---------|----------|----------|
| 5) 2-Fluorophenol        | 100.000 | 36 - 104 | 69%      |
| 8) Phenol-d5             | 100.000 | 39 - 106 | 75%      |
| 25) Nitrobenzene-d5      | 50.000  | 34 - 109 | 85%      |
| 47) 2-Fluorobiphenyl     | 50.000  | 35 - 107 | 82%      |
| 66) 2,4,6-Tribromophenol | 100.000 | 39 - 115 | 82%      |
| 83) p-Terphenyl-d14      | 50.000  | 45 - 119 | 80%      |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.350 | 2.334  | 0.441  | 184584   | 35.72 | ng/uL | 91     |
| 4) Pyridine                   | 79   | 2.387 | 2.366  | 0.448  | 213290   | 25.21 | ng/uL | 92     |
| 7) Aniline                    | 93   | 4.880 | 4.874  | 0.917  | 374626   | 36.15 | ng/uL | 99     |
| 9) Phenol                     | 94   | 4.848 | 4.832  | 0.911  | 361441   | 40.43 | ng/uL | 91     |
| 10) bis(2-Chloroethyl) ether  | 93   | 4.965 | 4.960  | 0.933  | 315478   | 43.56 | ng/uL | 98     |
| 11) 2-Chlorophenol            | 128  | 5.040 | 5.035  | 0.947  | 302270   | 43.32 | ng/uL | 97     |
| 12) n-Decane                  | 43   | 5.104 | 5.099  | 0.959  | 434357   | 39.41 | ng/uL | 91     |
| 13) 1,3-Dichlorobenzene       | 146  | 5.249 | 5.243  | 0.986  | 315701   | 40.87 | ng/uL | 100    |
| 14) 1,4-Dichlorobenzene       | 146  | 5.350 | 5.345  | 1.005  | 287082   | 40.68 | ng/uL | 98     |
| 15) 1,2-Dichlorobenzene       | 146  | 5.559 | 5.559  | 1.044  | 300183   | 42.52 | ng/uL | 98     |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.719 | 5.719  | 1.074  | 699287   | 49.47 | ng/uL | 83     |
| 17) Benzyl alcohol            | 108  | 5.522 | 5.516  | 1.037  | 212687   | 44.04 | ng/uL | 98     |
| 18) o-Cresol                  | 107  | 5.687 | 5.671  | 1.068  | 244918   | 43.44 | ng/uL | 88     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1017.D  
Acq On : 10 Nov 2016 18:32  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665319|1614270|1|SVM|1|LCS  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 11 07:46:37 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 19) m,p-Cresols               | 107  | 5.907  | 5.907  | 1.110  | 317107   | 43.28 | ng/uL# | 34  |
| 20) N-Nitrosodipropylamine    | 70   | 5.917  | 5.907  | 1.112  | 242684   | 43.81 | ng/uL  | 99  |
| 23) Hexachloroethane          | 117  | 6.035  | 6.035  | 1.134  | 138307   | 42.59 | ng/uL  | 100 |
| 26) Nitrobenzene              | 77   | 6.142  | 6.137  | 0.864  | 384652   | 47.61 | ng/uL  | 99  |
| 27) Isophorone                | 82   | 6.479  | 6.474  | 0.912  | 779443   | 45.53 | ng/uL  | 98  |
| 28) 2-Nitrophenol             | 139  | 6.581  | 6.581  | 0.926  | 165631   | 44.02 | ng/uL  | 95  |
| 29) 2,4-Dimethylphenol        | 122  | 6.655  | 6.650  | 0.937  | 255169   | 41.81 | ng/uL  | 97  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.789  | 6.784  | 0.956  | 406879   | 44.84 | ng/uL  | 98  |
| 31) 2,4-Dichlorophenol        | 162  | 6.923  | 6.918  | 0.974  | 277225   | 45.86 | ng/uL  | 99  |
| 32) Benzoic acid              | 105  | 6.848  | 6.816  | 0.964  | 196773   | 53.59 | ng/uL  | 85  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.030  | 7.030  | 0.989  | 308638   | 41.83 | ng/uL  | 99  |
| 34) alpha-Terpineol           | 59   | 7.164  | 7.158  | 1.008  | 344073   | 44.52 | ng/uL  | 98  |
| 35) Naphthalene               | 128  | 7.137  | 7.131  | 1.005  | 765201   | 42.87 | ng/uL  | 99  |
| 36) 4-Chloroaniline           | 127  | 7.217  | 7.212  | 1.016  | 231072   | 35.33 | ng/uL  | 98  |
| 37) Hexachlorobutadiene       | 225  | 7.308  | 7.308  | 1.029  | 216939   | 42.57 | ng/uL  | 100 |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.891  | 7.880  | 1.111  | 338514   | 43.68 | ng/uL  | 99  |
| 39) 2-Methylnaphthalene       | 142  | 8.068  | 8.062  | 1.136  | 571427   | 41.44 | ng/uL  | 100 |
| 41) 1-Methylnaphthalene       | 142  | 8.196  | 8.191  | 1.154  | 544424   | 43.66 | ng/uL  | 96  |
| 43) Hexachlorocyclopentadiene | 237  | 8.276  | 8.271  | 0.879  | 163919   | 32.88 | ng/uL  | 99  |
| 44) 2,3-Dichloroaniline       | 161  | 8.437  | 8.431  | 0.897  | 295852   | 44.02 | ng/uL  | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.442  | 8.442  | 0.897  | 201577   | 42.54 | ng/uL  | 100 |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.495  | 8.490  | 0.903  | 213040   | 46.58 | ng/uL  | 99  |
| 48) 2-Chloronaphthalene       | 162  | 8.704  | 8.699  | 0.925  | 513431   | 38.51 | ng/uL  | 95  |
| 49) o-Nitroaniline            | 65   | 8.838  | 8.838  | 0.939  | 259349   | 49.25 | ng/uL  | 100 |
| 51) m-Nitroaniline            | 138  | 9.367  | 9.367  | 0.995  | 139736   | 45.39 | ng/uL  | 98  |
| 52) Dimethylphthalate         | 163  | 9.089  | 9.089  | 0.966  | 734791   | 45.27 | ng/uL  | 99  |
| 54) 2,6-Dinitrotoluene        | 165  | 9.159  | 9.159  | 0.973  | 173438   | 49.75 | ng/uL  | 100 |
| 55) 2,4-Dinitrotoluene        | 165  | 9.667  | 9.667  | 1.027  | 229060   | 47.80 | ng/uL  | 97  |
| 56) Acenaphthylene            | 152  | 9.228  | 9.228  | 0.981  | 926592   | 46.49 | ng/uL  | 100 |
| 57) Acenaphthene              | 154  | 9.453  | 9.453  | 1.005  | 536473   | 46.84 | ng/uL  | 99  |
| 58) 2,4-Dinitrophenol         | 184  | 9.506  | 9.501  | 1.010  | 34326    | 26.15 | ng/uL  | 74  |
| 59) Dibenzofuran              | 168  | 9.672  | 9.672  | 1.028  | 785401   | 45.05 | ng/uL  | 93  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.833  | 9.833  | 1.045  | 193072   | 46.55 | ng/uL  | 99  |
| 61) Diethylphthalate          | 149  | 9.982  | 9.977  | 1.061  | 804099   | 44.02 | ng/uL  | 98  |
| 62) 4-Nitrophenol             | 139  | 9.608  | 9.603  | 1.021  | 97558    | 41.12 | ng/uL  | 96  |
| 63) Fluorene                  | 166  | 10.105 | 10.105 | 1.074  | 696794   | 45.81 | ng/uL  | 99  |
| 64) 4-Chlorophenylphenylether | 204  | 10.111 | 10.111 | 1.074  | 387516   | 45.44 | ng/uL  | 99  |
| 65) p-Nitroaniline            | 138  | 10.148 | 10.137 | 1.078  | 148926   | 51.68 | ng/uL  | 91  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.180 | 10.180 | 0.903  | 67917    | 27.22 | ng/uL  | 96  |
| 69) Diphenylamine             | 169  | 10.266 | 10.260 | 0.910  | 608640   | 43.26 | ng/uL  | 97  |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.309 | 10.309 | 0.914  | 728754   | 41.86 | ng/uL  | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 10.720 | 10.720 | 0.951  | 263960   | 41.82 | ng/uL  | 97  |
| 72) Hexachlorobenzene         | 284  | 10.795 | 10.790 | 0.957  | 255463   | 40.13 | ng/uL  | 98  |
| 73) Pentachlorophenol         | 266  | 11.047 | 11.041 | 0.980  | 121700   | 33.70 | ng/uL  | 97  |
| 74) n-Octadecane              | 57   | 11.159 | 11.159 | 0.990  | 680169   | 42.28 | ng/uL  | 98  |
| 76) Phenanthrene              | 178  | 11.303 | 11.303 | 1.002  | 899026   | 44.29 | ng/uL  | 99  |
| 77) Anthracene                | 178  | 11.368 | 11.368 | 1.008  | 947914   | 44.62 | ng/uL  | 99  |
| 78) Carbazole                 | 167  | 11.571 | 11.566 | 1.026  | 962842   | 47.58 | ng/uL  | 98  |
| 79) Di-n-butylphthalate       | 149  | 12.009 | 12.009 | 1.065  | 1375143  | 42.37 | ng/uL  | 99  |
| 80) Fluoranthene              | 202  | 12.774 | 12.774 | 1.133  | 1279561  | 42.83 | ng/uL  | 98  |
| 82) Pyrene                    | 202  | 13.052 | 13.052 | 0.890  | 1268157  | 39.39 | ng/uL  | 99  |
| 84) Butylbenzylphthalate      | 149  | 13.860 | 13.860 | 0.945  | 683310   | 44.31 | ng/uL  | 100 |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.711 | 14.711 | 1.003  | 766711   | 44.63 | ng/uL  | 99  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1017.D  
Acq On : 10 Nov 2016 18:32  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665319|1614270|1|SVM|1|LCS  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 11 07:46:37 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 86) Benzo(a)anthracene         | 228  | 14.646 | 14.646 | 0.999  | 1149893  | 46.37 | ng/uL  | 95  |
| 87) Chrysene                   | 228  | 14.711 | 14.705 | 1.003  | 985467   | 47.75 | ng/uL  | 99  |
| 90) Di-n-octylphthalate        | 149  | 15.951 | 15.951 | 1.088  | 1548058  | 44.95 | ng/uL  | 96  |
| 92) Benzo(b)fluoranthene       | 252  | 16.743 | 16.727 | 0.947  | 1232201  | 42.45 | ng/uL  | 99  |
| 93) Benzo(k)fluoranthene       | 252  | 16.807 | 16.796 | 0.951  | 1057770  | 42.11 | ng/uL  | 99  |
| 94) Benzo(a)pyrene             | 252  | 17.529 | 17.519 | 0.992  | 1126868  | 44.89 | ng/uL  | 98  |
| 95) Indeno(1,2,3-cd)pyrene     | 276  | 20.856 | 20.851 | 1.180  | 770225   | 40.12 | ng/uL  | 96  |
| 96) Dibenzo(a,h)anthracene     | 278  | 20.974 | 20.958 | 1.186  | 845373   | 47.28 | ng/uL  | 100 |
| 97) Benzo(ghi)perylene         | 276  | 21.685 | 21.674 | 1.227  | 889340   | 45.39 | ng/uL  | 98  |
| 100) 1,4-Dioxane               | 88   | 2.093  | 2.077  | 0.393  | 61690    | 21.01 | ng/uL  | 90  |
| 109) Benzaldehyde              | 77   | 4.741  | 4.735  | 0.890  | 82151    | 13.00 | ng/uL  | 93  |
| 111) N-Nitrosopyrrolidine      | 100  | 5.885  | 5.869  | 1.105  | 172774   | 47.53 | ng/uL  | 85  |
| 112) Acetophenone              | 105  | 5.901  | 5.896  | 1.109  | 431439   | 48.13 | ng/uL  | 69  |
| 118) 2,6-Dichlorophenol        | 162  | 7.228  | 7.222  | 1.017  | 240663   | 49.77 | ng/uL  | 96  |
| 120) Caprolactam               | 113  | 7.725  | 7.677  | 1.087  | 108582   | 51.69 | ng/uL# | 67  |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.287  | 8.281  | 0.881  | 322593   | 43.72 | ng/uL  | 100 |
| 125) 1,1-Biphenyl              | 154  | 8.683  | 8.683  | 0.923  | 726957   | 56.15 | ng/uL  | 97  |
| 138) Atrazine                  | 200  | 10.940 | 10.934 | 0.970  | 243183   | 45.12 | ng/uL  | 99  |
| 159) Tributylphosphate         | 99   | 10.266 | 10.245 | 1.091  | 892768   | 46.70 | ng/uL  | 96  |
| 176) Benzidine                 | 184  | 12.940 | 12.940 | 1.148  | 430916   | 33.03 | ng/uL  | 98  |
| 178) 3,3'-Dichlorobenzidine    | 252  | 14.614 | 14.604 | 0.996  | 417165   | 41.73 | ng/uL  | 98  |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted





**Semi-Volatile  
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Sample Summary**

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|  |  |                      |             |
|--|--|----------------------|-------------|
| <b>SDG Number:</b> 409254                  |  | <b>Matrix:</b>       | SOIL        |
| <b>Lab Sample ID:</b> 1203661743           |  |                      |             |
| <b>Client Sample:</b> QC for batch 1612776 | <b>Client:</b> HAAL002                 | <b>Project:</b>      | QC          |
| <b>Client ID:</b> LCS for batch 1612776    | <b>Method:</b> SW846 3541/8270D SIM P. | <b>SOP Ref:</b>      | GL-OA-E-009 |
| <b>Batch ID:</b> 1612777                   | <b>Inst:</b> MSD4.I                    | <b>Dilution:</b>     | 1           |
| <b>Run Date:</b> 11/07/2016 09:29          | <b>Analyst:</b> JMB3                   | <b>Inj. Vol:</b>     | 1 uL        |
| <b>Prep Date:</b> 11/04/2016 08:33         | <b>Aliquot:</b> 30.027 g               | <b>Final Volume:</b> | 1 mL        |
| <b>Data File:</b> s110716.B\4k0704.D       | <b>Column:</b> DB-5ms                  |                      |             |

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    |           | 318    | ug/kg | 1.67    | 3.33    |
| 91-58-7  | 2-Chloronaphthalene    |           | 241    | ug/kg | 1.67    | 3.33    |
| 91-57-6  | 2-Methylnaphthalene    |           | 287    | ug/kg | 1.67    | 3.33    |
| 83-32-9  | Acenaphthene           |           | 293    | ug/kg | 1.67    | 3.33    |
| 208-96-8 | Acenaphthylene         |           | 272    | ug/kg | 1.67    | 3.33    |
| 120-12-7 | Anthracene             |           | 280    | ug/kg | 1.67    | 3.33    |
| 56-55-3  | Benzo(a)anthracene     |           | 316    | ug/kg | 1.67    | 3.33    |
| 50-32-8  | Benzo(a)pyrene         |           | 333    | ug/kg | 1.67    | 3.33    |
| 205-99-2 | Benzo(b)fluoranthene   |           | 343    | ug/kg | 1.67    | 3.33    |
| 191-24-2 | Benzo(ghi)perylene     |           | 230    | ug/kg | 1.67    | 3.33    |
| 207-08-9 | Benzo(k)fluoranthene   |           | 348    | ug/kg | 1.67    | 3.33    |
| 218-01-9 | Chrysene               |           | 312    | ug/kg | 1.67    | 3.33    |
| 53-70-3  | Dibenzo(a,h)anthracene |           | 266    | ug/kg | 1.67    | 3.33    |
| 206-44-0 | Fluoranthene           |           | 331    | ug/kg | 1.67    | 3.33    |
| 86-73-7  | Fluorene               |           | 295    | ug/kg | 1.67    | 3.33    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene |           | 250    | ug/kg | 1.67    | 3.33    |
| 91-20-3  | Naphthalene            |           | 277    | ug/kg | 0.999   | 3.33    |
| 85-01-8  | Phenanthrene           |           | 273    | ug/kg | 1.67    | 3.33    |
| 129-00-0 | Pyrene                 |           | 284    | ug/kg | 1.67    | 3.33    |

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0704.D  
Acq On : 07 Nov 2016 09:29  
Operator : JMB3  
InstName : MSD4  
Sample : |1203661743|1612777|1|SVM|1|LCS|||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

JMB  
11/07/2016

JCB  
11/08/2016

Quant Time: Nov 07 10:14:57 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |           |
|------------------------------|------|--------|--------|--------|----------|------|-------|-----------|
| Internal Standards           |      |        |        |        |          |      |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.453  | 5.448  | 1.000  | 319246   | 4.00 | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136  | 7.237  | 7.237  | 1.000  | 1050794  | 4.00 | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164  | 9.568  | 9.573  | 1.000  | 415224   | 4.00 | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188  | 11.455 | 11.457 | 1.000  | 807359   | 4.00 | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240  | 14.960 | 14.963 | 1.000  | 468698   | 4.00 | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264  | 18.229 | 18.231 | 1.000  | 277767   | 4.00 | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.453  | 5.448  | 1.000  | 319246   | 4.00 | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136  | 7.237  | 7.237  | 1.000  | 1050794  | 4.00 | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188  | 11.455 | 11.457 | 1.000  | 807359   | 4.00 | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240  | 14.960 | 14.963 | 1.000  | 468698   | 4.00 | ng/uL | 0.00      |

|                             |     |        |        |       |        |      |       |           |
|-----------------------------|-----|--------|--------|-------|--------|------|-------|-----------|
| System Monitoring Compounds |     |        |        |       |        |      |       | Dev (Min) |
| 17) 5-alpha-Androstane      | 245 | 12.729 | 12.731 | 1.111 | 122910 | 4.86 | ng/uL | 0.00      |

| Compound               | Amount | Range    | Recovery |
|------------------------|--------|----------|----------|
| 17) 5-alpha-Androstane | 5.000  | 30 - 115 | 97%      |

| Target Compounds           | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|----------------------------|------|--------|--------|--------|----------|-------|-------|--------|
| 6) Naphthalene             | 128  | 7.263  | 7.268  | 1.004  | 2431696  | 8.31  | ng/uL | 100    |
| 7) 2-Methylnaphthalene     | 142  | 8.207  | 8.212  | 1.134  | 1693235  | 8.62  | ng/uL | 100    |
| 8) 1-Methylnaphthalene     | 142  | 8.337  | 8.342  | 1.152  | 1600921  | 9.54  | ng/uL | 100    |
| 10) 2-Chloronaphthalene    | 162  | 8.848  | 8.853  | 0.925  | 1404736  | 7.23  | ng/uL | 100    |
| 11) Acenaphthylene         | 152  | 9.385  | 9.391  | 0.981  | 2236588  | 8.16  | ng/uL | 100    |
| 12) Acenaphthene           | 154  | 9.610  | 9.615  | 1.004  | 1302920  | 8.81  | ng/uL | 100    |
| 13) Fluorene               | 166  | 10.272 | 10.277 | 1.074  | 1526864  | 8.87  | ng/uL | 100    |
| 15) Phenanthrene           | 178  | 11.487 | 11.489 | 1.003  | 2275326  | 8.19  | ng/uL | 100    |
| 16) Anthracene             | 178  | 11.551 | 11.553 | 1.008  | 2171064  | 8.42  | ng/uL | 100    |
| 18) Fluoranthene           | 202  | 12.978 | 12.981 | 1.133  | 2545069  | 9.93  | ng/uL | 99     |
| 20) Pyrene                 | 202  | 13.264 | 13.262 | 0.887  | 2668466  | 8.54  | ng/uL | 99     |
| 21) Benzo(a)anthracene     | 228  | 14.944 | 14.943 | 0.999  | 1785551  | 9.48  | ng/uL | 98     |
| 22) Chrysene               | 228  | 15.009 | 15.007 | 1.003  | 1671124  | 9.36  | ng/uL | 99     |
| 24) Benzo(b)fluoranthene   | 252  | 17.217 | 17.213 | 0.944  | 1284054  | 10.29 | ng/uL | 99     |
| 25) Benzo(k)fluoranthene   | 252  | 17.285 | 17.284 | 0.948  | 1284338  | 10.45 | ng/uL | 100    |
| 26) Benzo(a)pyrene         | 252  | 18.073 | 18.072 | 0.991  | 1030365  | 10.01 | ng/uL | 100    |
| 27) Indeno(1,2,3-cd)pyrene | 276  | 21.613 | 21.615 | 1.186  | 510449   | 7.51  | ng/uL | 98     |
| 28) Dibenzo(a,h)anthracene | 278  | 21.713 | 21.718 | 1.191  | 458775   | 7.99  | ng/uL | 97     |
| 29) Benzo(ghi)perylene     | 276  | 22.287 | 22.289 | 1.223  | 497607   | 6.91  | ng/uL | 97     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```

Data Path : C:\msdchem\1\DATA\s110716.B\
Data File : s4k0704.D
Acq On    : 07 Nov 2016   09:29
Operator  : JMB3
InstName  : MSD4
Sample    : |1203661743|1612777|1|SVM|1|LCS|||
Misc      : |MSDS417D S| SOIL MIX[A]
ALS Vial  : 4      Sample Multiplier: 1

```

Abundance

TIC: s4k0704.D\data.ms

Time-->

6000000

5500000

5000000

4500000

4000000

3500000

3000000

2500000

2000000

1500000

1000000

500000

0

2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00

1,4-Dichlorobenzene-d4, RI

Naphthalene, AM

1-Methyl-naphthalene, AM

2-Chloronaphthalene, AM

Acenaphthylene, AM

Acenaphthene, AM

Fluorene, AM

Phenanthrene, AM

5-alpha-Androstane, SA

Fluoranthene, AM

Pyrene, AM

Chrysene, AM

Benzo(a)fluoranthene, AM

A Perylene, AM

Benzo(a)anthracene, AM

Benzo(b)fluoranthene, AM

Benzo(g,h,i)perylene, AM

**Semi-Volatile  
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|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 409254                  | <b>Date Collected:</b> 10/26/2016 09:00 | <b>Matrix:</b> SO           |
| <b>Lab Sample ID:</b> 1203665320           | <b>Date Received:</b> 10/28/2016 09:15  | <b>%Moisture:</b> 84.5      |
| <b>Client Sample:</b> QC for batch 1614269 | <b>Client:</b> HAAL002                  | <b>Project:</b> QC          |
| <b>Client ID:</b> WST03-17-127184MS        | <b>Method:</b> SW846 3541/8270D         | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1614270                   | <b>Inst:</b> MSD1.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/10/2016 19:41          | <b>Analyst:</b> JMB3                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 11/08/2016 12:02         | <b>Aliquot:</b> 30.018 g                | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s111016.B\1k1019.D       | <b>Column:</b> 25x.20x.33               |                             |

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              |           | 10100  | ug/kg | 643     | 2140    |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene |           | 7920   | ug/kg | 643     | 2140    |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  |           | 3210   | ug/kg | 643     | 2140    |
| 95-95-4   | 2,4,5-Trichlorophenol      |           | 3750   | ug/kg | 643     | 2140    |
| 88-06-2   | 2,4,6-Trichlorophenol      |           | 2730   | ug/kg | 643     | 2140    |
| 120-83-2  | 2,4-Dichlorophenol         |           | 5300   | ug/kg | 643     | 2140    |
| 105-67-9  | 2,4-Dimethylphenol         |           | 8060   | ug/kg | 643     | 2140    |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 4290   | ug/kg | 643     | 4290    |
| 121-14-2  | 2,4-Dinitrotoluene         |           | 9610   | ug/kg | 643     | 2140    |
| 606-20-2  | 2,6-Dinitrotoluene         |           | 9750   | ug/kg | 643     | 2140    |
| 91-58-7   | 2-Chloronaphthalene        |           | 6920   | ug/kg | 64.3    | 214     |
| 95-57-8   | 2-Chlorophenol             |           | 5910   | ug/kg | 643     | 2140    |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol | U         | 2140   | ug/kg | 643     | 2140    |
| 91-57-6   | 2-Methylnaphthalene        |           | 7720   | ug/kg | 64.3    | 214     |
| 88-75-5   | 2-Nitrophenol              | J         | 1530   | ug/kg | 643     | 2140    |
| 91-94-1   | 3,3'-Dichlorobenzidine     |           | 8160   | ug/kg | 643     | 2140    |
| 101-55-3  | 4-Bromophenylphenylether   |           | 8020   | ug/kg | 643     | 2140    |
| 59-50-7   | 4-Chloro-3-methylphenol    |           | 7680   | ug/kg | 858     | 2140    |
| 106-47-8  | 4-Chloroaniline            |           | 9110   | ug/kg | 643     | 2140    |
| 7005-72-3 | 4-Chlorophenylphenylether  |           | 8320   | ug/kg | 643     | 2140    |
| 100-02-7  | 4-Nitrophenol              | U         | 2140   | ug/kg | 643     | 2140    |
| 83-32-9   | Acenaphthene               |           | 8490   | ug/kg | 64.3    | 214     |
| 208-96-8  | Acenaphthylene             |           | 8450   | ug/kg | 64.3    | 214     |
| 98-86-2   | Acetophenone               |           | 8440   | ug/kg | 643     | 2140    |
| 120-12-7  | Anthracene                 |           | 8670   | ug/kg | 64.3    | 214     |
| 1912-24-9 | Atrazine                   |           | 8880   | ug/kg | 858     | 2140    |
| 100-52-7  | Benzaldehyde               | J         | 1060   | ug/kg | 643     | 2140    |
| 56-55-3   | Benzo(a)anthracene         |           | 8870   | ug/kg | 64.3    | 214     |
| 50-32-8   | Benzo(a)pyrene             |           | 8160   | ug/kg | 64.3    | 214     |
| 205-99-2  | Benzo(b)fluoranthene       |           | 7600   | ug/kg | 64.3    | 214     |
| 191-24-2  | Benzo(ghi)perylene         |           | 7530   | ug/kg | 64.3    | 214     |
| 207-08-9  | Benzo(k)fluoranthene       |           | 8040   | ug/kg | 64.3    | 214     |
| 85-68-7   | Butylbenzylphthalate       |           | 8720   | ug/kg | 643     | 2140    |
| 105-60-2  | Caprolactam                |           | 10000  | ug/kg | 643     | 2140    |
| 86-74-8   | Carbazole                  |           | 9300   | ug/kg | 64.3    | 214     |
| 218-01-9  | Chrysene                   |           | 9240   | ug/kg | 64.3    | 214     |
| 84-74-2   | Di-n-butylphthalate        |           | 8310   | ug/kg | 643     | 2140    |
| 117-84-0  | Di-n-octylphthalate        |           | 8840   | ug/kg | 643     | 2140    |

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|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 409254                  | <b>Date Collected:</b> 10/26/2016 09:00 | <b>Matrix:</b> SO           |
| <b>Lab Sample ID:</b> 1203665320           | <b>Date Received:</b> 10/28/2016 09:15  | <b>%Moisture:</b> 84.5      |
| <b>Client Sample:</b> QC for batch 1614269 | <b>Client:</b> HAAL002                  | <b>Project:</b> QC          |
| <b>Client ID:</b> WST03-17-127184MS        | <b>Method:</b> SW846 3541/8270D         | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1614270                   | <b>Inst:</b> MSD1.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/10/2016 19:41          | <b>Analyst:</b> JMB3                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 11/08/2016 12:02         | <b>Aliquot:</b> 30.018 g                | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s111016.B\1k1019.D       | <b>Column:</b> 25x.20x.33               |                             |

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           |           | 7960   | ug/kg | 64.3    | 214     |
| 132-64-9   | Dibenzofuran                     |           | 8630   | ug/kg | 643     | 2140    |
| 84-66-2    | Diethylphthalate                 |           | 8720   | ug/kg | 643     | 2140    |
| 131-11-3   | Dimethylphthalate                |           | 8900   | ug/kg | 643     | 2140    |
| 122-39-4   | Diphenylamine                    |           | 8080   | ug/kg | 643     | 2140    |
| 206-44-0   | Fluoranthene                     |           | 8550   | ug/kg | 64.3    | 214     |
| 86-73-7    | Fluorene                         |           | 8760   | ug/kg | 64.3    | 214     |
| 118-74-1   | Hexachlorobenzene                |           | 7840   | ug/kg | 643     | 2140    |
| 87-68-3    | Hexachlorobutadiene              |           | 6750   | ug/kg | 643     | 2140    |
| 77-47-4    | Hexachlorocyclopentadiene        |           | 3020   | ug/kg | 643     | 2140    |
| 67-72-1    | Hexachloroethane                 |           | 6410   | ug/kg | 643     | 2140    |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           |           | 6740   | ug/kg | 64.3    | 214     |
| 78-59-1    | Isophorone                       |           | 8000   | ug/kg | 643     | 2140    |
| 621-64-7   | N-Nitrosodipropylamine           |           | 7720   | ug/kg | 643     | 2140    |
| 91-20-3    | Naphthalene                      |           | 7450   | ug/kg | 64.3    | 214     |
| 98-95-3    | Nitrobenzene                     |           | 8230   | ug/kg | 643     | 2140    |
| 87-86-5    | Pentachlorophenol                | J         | 1550   | ug/kg | 643     | 2140    |
| 85-01-8    | Phenanthrene                     |           | 8670   | ug/kg | 64.3    | 214     |
| 108-95-2   | Phenol                           |           | 7090   | ug/kg | 643     | 2140    |
| 129-00-0   | Pyrene                           |           | 7700   | ug/kg | 64.3    | 214     |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether |           | 8560   | ug/kg | 643     | 2140    |
| 111-91-1   | bis(2-Chloroethoxy)methane       |           | 7940   | ug/kg | 643     | 2140    |
| 111-44-4   | bis(2-Chloroethyl) ether         |           | 7650   | ug/kg | 643     | 2140    |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       |           | 8850   | ug/kg | 643     | 2140    |
| 65794-96-9 | m,p-Cresols                      |           | 7730   | ug/kg | 643     | 2140    |
| 99-09-2    | m-Nitroaniline                   |           | 10300  | ug/kg | 643     | 2140    |
| 95-48-7    | o-Cresol                         |           | 7720   | ug/kg | 643     | 2140    |
| 88-74-4    | o-Nitroaniline                   |           | 9500   | ug/kg | 708     | 2140    |
| 100-01-6   | p-Nitroaniline                   |           | 9480   | ug/kg | 643     | 2140    |

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1019.D  
Acq On : 10 Nov 2016 19:41  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665320|1614270|1|SVM|1|MS  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 16 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 07:46:45 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.329  | 5.324  | 1.000  | 231195   | 40.00 | ng/uL | 0.00      |
| 24) A Naphthalene-d8          | 136  | 7.105  | 7.105  | 1.000  | 794961   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.410  | 9.415  | 1.000  | 443659   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.271 | 11.271 | 1.000  | 905306   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.668 | 14.662 | 1.000  | 818019   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.674 | 17.668 | 1.000  | 831746   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.329  | 5.324  | 1.000  | 230917   | 40.00 | ng/uL | 0.00      |
| 115) B Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 794961   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.410  | 9.415  | 1.000  | 443659   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 905306   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.668 | 14.662 | 1.000  | 818019   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.674 | 17.668 | 1.000  | 831746   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 794961   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.410  | 9.415  | 1.000  | 443659   | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 905306   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.668 | 14.662 | 1.000  | 818019   | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 794961   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.674 | 17.668 | 1.000  | 831746   | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.329  | 5.324  | 1.000  | 230917   | 40.00 | ng/uL | 0.00      |
| 175) J Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 905306   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.668 | 14.662 | 1.000  | 818019   | 40.00 | ng/uL | 0.00      |

|                             |     |        |        |       |        |       |       |           |
|-----------------------------|-----|--------|--------|-------|--------|-------|-------|-----------|
| System Monitoring Compounds |     |        |        |       |        |       |       | Dev (Min) |
| 5) 2-Fluorophenol           | 112 | 3.719  | 3.660  | 0.698 | 373888 | 43.57 | ng/uL | 0.06      |
| 8) Phenol-d5                | 99  | 4.832  | 4.810  | 0.907 | 666022 | 63.39 | ng/uL | 0.02      |
| 25) Nitrobenzene-d5         | 82  | 6.115  | 6.110  | 0.861 | 322394 | 34.64 | ng/uL | 0.00      |
| 47) 2-Fluorobiphenyl        | 172 | 8.554  | 8.554  | 0.909 | 546010 | 34.92 | ng/uL | 0.00      |
| 66) 2,4,6-Tribromophenol    | 330 | 10.410 | 10.405 | 1.106 | 92810  | 32.07 | ng/uL | 0.00      |
| 83) p-Terphenyl-d14         | 244 | 13.250 | 13.245 | 0.903 | 817411 | 37.43 | ng/uL | 0.00      |

| Compound                 | Amount  | Range    | Recovery |
|--------------------------|---------|----------|----------|
| 5) 2-Fluorophenol        | 100.000 | 36 - 104 | 44%      |
| 8) Phenol-d5             | 100.000 | 39 - 106 | 63%      |
| 25) Nitrobenzene-d5      | 50.000  | 34 - 109 | 69%      |
| 47) 2-Fluorobiphenyl     | 50.000  | 35 - 107 | 70%      |
| 66) 2,4,6-Tribromophenol | 100.000 | 39 - 115 | 32%#     |
| 83) p-Terphenyl-d14      | 50.000  | 45 - 119 | 75%      |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|-------------------------------|------|-------|--------|--------|----------|-------|-------|--------|
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.355 | 2.334  | 0.442  | 157477   | 28.97 | ng/uL | 97     |
| 4) Pyridine                   | 79   | 2.393 | 2.366  | 0.449  | 196575   | 22.09 | ng/uL | 97     |
| 7) Aniline                    | 93   | 4.890 | 4.874  | 0.918  | 357894   | 32.83 | ng/uL | 97     |
| 9) Phenol                     | 94   | 4.853 | 4.832  | 0.911  | 310964   | 33.07 | ng/uL | 93     |
| 10) bis(2-Chloroethyl) ether  | 93   | 4.971 | 4.960  | 0.933  | 271902   | 35.69 | ng/uL | 99     |
| 11) 2-Chlorophenol            | 128  | 5.051 | 5.035  | 0.948  | 202133   | 27.54 | ng/uL | 97     |
| 12) n-Decane                  | 43   | 5.104 | 5.099  | 0.958  | 200003   | 17.25 | ng/uL | 92     |
| 13) 1,3-Dichlorobenzene       | 146  | 5.254 | 5.243  | 0.986  | 243515   | 29.97 | ng/uL | 98     |
| 14) 1,4-Dichlorobenzene       | 146  | 5.356 | 5.345  | 1.005  | 225089   | 30.32 | ng/uL | 99     |
| 15) 1,2-Dichlorobenzene       | 146  | 5.564 | 5.559  | 1.044  | 233236   | 31.41 | ng/uL | 100    |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.720 | 5.719  | 1.073  | 593257   | 39.90 | ng/uL | 85     |
| 17) Benzyl alcohol            | 108  | 5.527 | 5.516  | 1.037  | 185411   | 36.50 | ng/uL | 96     |
| 18) o-Cresol                  | 107  | 5.693 | 5.671  | 1.068  | 213576   | 36.02 | ng/uL | 87     |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1019.D  
Acq On : 10 Nov 2016 19:41  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665320|1614270|1|SVM|1|MS  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 11 07:46:45 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 19) m,p-Cresols               | 107  | 5.907  | 5.907  | 1.108  | 277727   | 36.04 | ng/uL# | 37  |
| 20) N-Nitrosodipropylamine    | 70   | 5.912  | 5.907  | 1.109  | 209840   | 36.01 | ng/uL  | 93  |
| 23) Hexachloroethane          | 117  | 6.040  | 6.035  | 1.133  | 102166   | 29.91 | ng/uL  | 98  |
| 26) Nitrobenzene              | 77   | 6.142  | 6.137  | 0.864  | 326943   | 38.39 | ng/uL  | 98  |
| 27) Isophorone                | 82   | 6.479  | 6.474  | 0.912  | 673245   | 37.31 | ng/uL  | 97  |
| 28) 2-Nitrophenol             | 139  | 6.581  | 6.581  | 0.926  | 28227    | 7.12  | ng/uL  | 98  |
| 29) 2,4-Dimethylphenol        | 122  | 6.656  | 6.650  | 0.937  | 241850   | 37.60 | ng/uL  | 96  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.789  | 6.784  | 0.956  | 354120   | 37.03 | ng/uL  | 98  |
| 31) 2,4-Dichlorophenol        | 162  | 6.923  | 6.918  | 0.974  | 157457   | 24.72 | ng/uL  | 99  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.030  | 7.030  | 0.989  | 261396   | 33.62 | ng/uL  | 99  |
| 34) alpha-Terpineol           | 59   | 7.158  | 7.158  | 1.008  | 295091   | 36.23 | ng/uL  | 97  |
| 35) Naphthalene               | 128  | 7.132  | 7.131  | 1.004  | 653373   | 34.73 | ng/uL  | 100 |
| 36) 4-Chloroaniline           | 127  | 7.217  | 7.212  | 1.016  | 292881   | 42.49 | ng/uL  | 100 |
| 37) Hexachlorobutadiene       | 225  | 7.308  | 7.308  | 1.029  | 169078   | 31.48 | ng/uL  | 99  |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.891  | 7.880  | 1.111  | 292597   | 35.82 | ng/uL  | 99  |
| 39) 2-Methylnaphthalene       | 142  | 8.068  | 8.062  | 1.136  | 523405   | 36.02 | ng/uL  | 99  |
| 41) 1-Methylnaphthalene       | 142  | 8.191  | 8.191  | 1.153  | 479265   | 36.47 | ng/uL  | 98  |
| 43) Hexachlorocyclopentadiene | 237  | 8.276  | 8.271  | 0.879  | 73499    | 14.08 | ng/uL  | 98  |
| 44) 2,3-Dichloroaniline       | 161  | 8.437  | 8.431  | 0.897  | 293938   | 41.78 | ng/uL  | 99  |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.442  | 8.442  | 0.897  | 63135    | 12.73 | ng/uL  | 96  |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.501  | 8.490  | 0.903  | 83675    | 17.48 | ng/uL  | 100 |
| 48) 2-Chloronaphthalene       | 162  | 8.699  | 8.699  | 0.924  | 450425   | 32.27 | ng/uL  | 95  |
| 49) o-Nitroaniline            | 65   | 8.838  | 8.838  | 0.939  | 244240   | 44.31 | ng/uL  | 97  |
| 51) m-Nitroaniline            | 138  | 9.367  | 9.367  | 0.995  | 154033   | 47.80 | ng/uL  | 98  |
| 52) Dimethylphthalate         | 163  | 9.084  | 9.089  | 0.965  | 705498   | 41.52 | ng/uL  | 99  |
| 54) 2,6-Dinitrotoluene        | 165  | 9.159  | 9.159  | 0.973  | 165976   | 45.48 | ng/uL  | 95  |
| 55) 2,4-Dinitrotoluene        | 165  | 9.667  | 9.667  | 1.027  | 224820   | 44.82 | ng/uL  | 95  |
| 56) Acenaphthylene            | 152  | 9.228  | 9.228  | 0.981  | 822518   | 39.42 | ng/uL  | 99  |
| 57) Acenaphthene              | 154  | 9.453  | 9.453  | 1.005  | 474564   | 39.58 | ng/uL  | 99  |
| 59) Dibenzofuran              | 168  | 9.672  | 9.672  | 1.028  | 734517   | 40.25 | ng/uL  | 98  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.833  | 9.833  | 1.045  | 65093    | 14.99 | ng/uL  | 97  |
| 61) Diethylphthalate          | 149  | 9.977  | 9.977  | 1.060  | 777415   | 40.66 | ng/uL  | 99  |
| 63) Fluorene                  | 166  | 10.105 | 10.105 | 1.074  | 650623   | 40.86 | ng/uL  | 100 |
| 64) 4-Chlorophenylphenylether | 204  | 10.111 | 10.111 | 1.074  | 346410   | 38.80 | ng/uL  | 98  |
| 65) p-Nitroaniline            | 138  | 10.143 | 10.137 | 1.078  | 133288   | 44.19 | ng/uL  | 93  |
| 69) Diphenylamine             | 169  | 10.261 | 10.260 | 0.910  | 545248   | 37.69 | ng/uL  | 97  |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.309 | 10.309 | 0.915  | 670962   | 37.48 | ng/uL  | 99  |
| 71) 4-Bromophenylphenylether  | 248  | 10.720 | 10.720 | 0.951  | 242553   | 37.38 | ng/uL  | 98  |
| 72) Hexachlorobenzene         | 284  | 10.790 | 10.790 | 0.957  | 239272   | 36.56 | ng/uL  | 97  |
| 73) Pentachlorophenol         | 266  | 11.047 | 11.041 | 0.980  | 16344    | 7.25  | ng/uL  | 95  |
| 74) n-Octadecane              | 57   | 11.159 | 11.159 | 0.990  | 631390   | 38.18 | ng/uL  | 96  |
| 76) Phenanthrene              | 178  | 11.303 | 11.303 | 1.003  | 843846   | 40.43 | ng/uL  | 99  |
| 77) Anthracene                | 178  | 11.368 | 11.368 | 1.009  | 883456   | 40.45 | ng/uL  | 99  |
| 78) Carbazole                 | 167  | 11.571 | 11.566 | 1.027  | 902136   | 43.36 | ng/uL  | 98  |
| 79) Di-n-butylphthalate       | 149  | 12.009 | 12.009 | 1.065  | 1292548  | 38.73 | ng/uL  | 99  |
| 80) Fluoranthene              | 202  | 12.774 | 12.774 | 1.133  | 1225070  | 39.89 | ng/uL  | 99  |
| 82) Pyrene                    | 202  | 13.052 | 13.052 | 0.890  | 1188724  | 35.90 | ng/uL  | 98  |
| 84) Butylbenzylphthalate      | 149  | 13.860 | 13.860 | 0.945  | 645034   | 40.68 | ng/uL  | 99  |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.711 | 14.711 | 1.003  | 729410   | 41.29 | ng/uL  | 99  |
| 86) Benzo(a)anthracene        | 228  | 14.646 | 14.646 | 0.999  | 1055084  | 41.38 | ng/uL  | 95  |
| 87) Chrysene                  | 228  | 14.711 | 14.705 | 1.003  | 914686   | 43.10 | ng/uL  | 100 |
| 90) Di-n-octylphthalate       | 149  | 15.951 | 15.951 | 1.088  | 1458113  | 41.21 | ng/uL  | 95  |
| 92) Benzo(b)fluoranthene      | 252  | 16.738 | 16.727 | 0.947  | 1042163  | 35.42 | ng/uL  | 99  |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1019.D  
Acq On : 10 Nov 2016 19:41  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665320|1614270|1|SVM|1|MS  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 11 07:46:45 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

|      | Compound                  | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |    |
|------|---------------------------|------|--------|--------|--------|----------|-------|--------|----|
| 93)  | Benzo(k)fluoranthene      | 252  | 16.807 | 16.796 | 0.951  | 954349   | 37.48 | ng/uL  | 99 |
| 94)  | Benzo(a)pyrene            | 252  | 17.529 | 17.519 | 0.992  | 967760   | 38.03 | ng/uL  | 99 |
| 95)  | Indeno(1,2,3-cd)pyrene    | 276  | 20.851 | 20.851 | 1.180  | 611745   | 31.43 | ng/uL  | 99 |
| 96)  | Dibenzo(a,h)anthracene    | 278  | 20.958 | 20.958 | 1.186  | 672954   | 37.13 | ng/uL  | 88 |
| 97)  | Benzo(ghi)perylene        | 276  | 21.674 | 21.674 | 1.226  | 697160   | 35.10 | ng/uL  | 97 |
| 100) | 1,4-Dioxane               | 88   | 2.098  | 2.077  | 0.394  | 47267    | 15.27 | ng/uL  | 83 |
| 109) | Benzaldehyde              | 77   | 4.751  | 4.735  | 0.892  | 32812    | 4.93  | ng/uL  | 94 |
| 111) | N-Nitrosopyrrolidine      | 100  | 5.880  | 5.869  | 1.103  | 151182   | 39.47 | ng/uL  | 86 |
| 112) | Acetophenone              | 105  | 5.901  | 5.896  | 1.107  | 371672   | 39.34 | ng/uL  | 71 |
| 118) | 2,6-Dichlorophenol        | 162  | 7.228  | 7.222  | 1.017  | 49867    | 9.79  | ng/uL  | 99 |
| 120) | Caprolactam               | 113  | 7.688  | 7.677  | 1.082  | 103320   | 46.67 | ng/uL# | 63 |
| 124) | 1,2,4,5-Tetrachloroben... | 216  | 8.287  | 8.281  | 0.881  | 285232   | 36.93 | ng/uL  | 97 |
| 125) | 1,1-Biphenyl              | 154  | 8.677  | 8.683  | 0.922  | 650172   | 47.14 | ng/uL  | 98 |
| 138) | Atrazine                  | 200  | 10.940 | 10.934 | 0.971  | 229376   | 41.40 | ng/uL  | 99 |
| 159) | Tributylphosphate         | 99   | 10.255 | 10.245 | 1.090  | 881059   | 44.02 | ng/uL  | 96 |
| 176) | Benzidine                 | 184  | 12.940 | 12.940 | 1.148  | 427789   | 31.89 | ng/uL  | 99 |
| 178) | 3,3'-Dichlorobenzidine    | 252  | 14.609 | 14.604 | 0.996  | 391048   | 38.04 | ng/uL  | 98 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

```
Data Path : C:\msdchem\1\DATA\s111016.B\
Data File : s1k1019.D
Acq On    : 10 Nov 2016   19:41
Operator  : JMB3
InstName  : MSD1
Sample    : |1203665320|1614270|1|SVM|1|MS
Misc      : |MSD827D4 S|SOIL MIX[A,B,D,E,J]
ALS Vial  : 16   Sample Multiplier: 1
```

[illegible]

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 409254                  | <b>Date Collected:</b> 10/24/2016 11:43 | <b>Matrix:</b> SOIL         |
| <b>Lab Sample ID:</b> 1203661744           | <b>Date Received:</b> 10/27/2016 09:00  | <b>%Moisture:</b> 36.6      |
| <b>Client Sample:</b> QC for batch 1612776 | <b>Client:</b> HAAL002                  | <b>Project:</b> QC          |
| <b>Client ID:</b> SD140300MS               | <b>Method:</b> SW846 3541/8270D SIM P.  | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1612777                   | <b>Inst:</b> MSD4.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/07/2016 10:26          | <b>Analyst:</b> JMB3                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 11/04/2016 08:33         | <b>Aliquot:</b> 30.041 g                | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s110716.B\4k0706.D       | <b>Column:</b> DB-5ms                   |                             |

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    |           | 524    | ug/kg | 2.63    | 5.25    |
| 91-58-7  | 2-Chloronaphthalene    |           | 407    | ug/kg | 2.63    | 5.25    |
| 91-57-6  | 2-Methylnaphthalene    |           | 471    | ug/kg | 2.63    | 5.25    |
| 83-32-9  | Acenaphthene           |           | 487    | ug/kg | 2.63    | 5.25    |
| 208-96-8 | Acenaphthylene         |           | 448    | ug/kg | 2.63    | 5.25    |
| 120-12-7 | Anthracene             |           | 470    | ug/kg | 2.63    | 5.25    |
| 56-55-3  | Benzo(a)anthracene     |           | 507    | ug/kg | 2.63    | 5.25    |
| 50-32-8  | Benzo(a)pyrene         |           | 535    | ug/kg | 2.63    | 5.25    |
| 205-99-2 | Benzo(b)fluoranthene   |           | 534    | ug/kg | 2.63    | 5.25    |
| 191-24-2 | Benzo(ghi)perylene     |           | 360    | ug/kg | 2.63    | 5.25    |
| 207-08-9 | Benzo(k)fluoranthene   |           | 552    | ug/kg | 2.63    | 5.25    |
| 218-01-9 | Chrysene               |           | 499    | ug/kg | 2.63    | 5.25    |
| 53-70-3  | Dibenzo(a,h)anthracene |           | 435    | ug/kg | 2.63    | 5.25    |
| 206-44-0 | Fluoranthene           |           | 486    | ug/kg | 2.63    | 5.25    |
| 86-73-7  | Fluorene               |           | 489    | ug/kg | 2.63    | 5.25    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene |           | 390    | ug/kg | 2.63    | 5.25    |
| 91-20-3  | Naphthalene            |           | 454    | ug/kg | 1.58    | 5.25    |
| 85-01-8  | Phenanthrene           |           | 459    | ug/kg | 2.63    | 5.25    |
| 129-00-0 | Pyrene                 |           | 445    | ug/kg | 2.63    | 5.25    |

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0706.D  
Acq On : 07 Nov 2016 10:26  
Operator : JMB3  
InstName : MSD4  
Sample : |1203661744|1612777|1|SVM|1|MS||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

JMB  
11/07/2016

JCB  
11/08/2016

Quant Time: Nov 07 11:22:44 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units |           |
|------------------------------|------|--------|--------|--------|----------|------|-------|-----------|
| Internal Standards           |      |        |        |        |          |      |       | Dev (Min) |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.453  | 5.448  | 1.000  | 330993   | 4.00 | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136  | 7.237  | 7.237  | 1.000  | 1117152  | 4.00 | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164  | 9.573  | 9.573  | 1.000  | 432811   | 4.00 | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188  | 11.456 | 11.457 | 1.000  | 840484   | 4.00 | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240  | 14.962 | 14.963 | 1.000  | 442660   | 4.00 | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264  | 18.233 | 18.231 | 1.000  | 273119   | 4.00 | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.453  | 5.448  | 1.000  | 330993   | 4.00 | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136  | 7.237  | 7.237  | 1.000  | 1117152  | 4.00 | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188  | 11.456 | 11.457 | 1.000  | 840484   | 4.00 | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240  | 14.962 | 14.963 | 1.000  | 442660   | 4.00 | ng/uL | 0.00      |

|                             |     |        |        |       |        |      |       |           |
|-----------------------------|-----|--------|--------|-------|--------|------|-------|-----------|
| System Monitoring Compounds |     |        |        |       |        |      |       | Dev (Min) |
| 17) 5-alpha-Androstane      | 245 | 12.730 | 12.731 | 1.111 | 115404 | 4.39 | ng/uL | 0.00      |

| Compound               | Amount | Range    | Recovery |
|------------------------|--------|----------|----------|
| 17) 5-alpha-Androstane | 5.000  | 30 - 115 | 88%      |

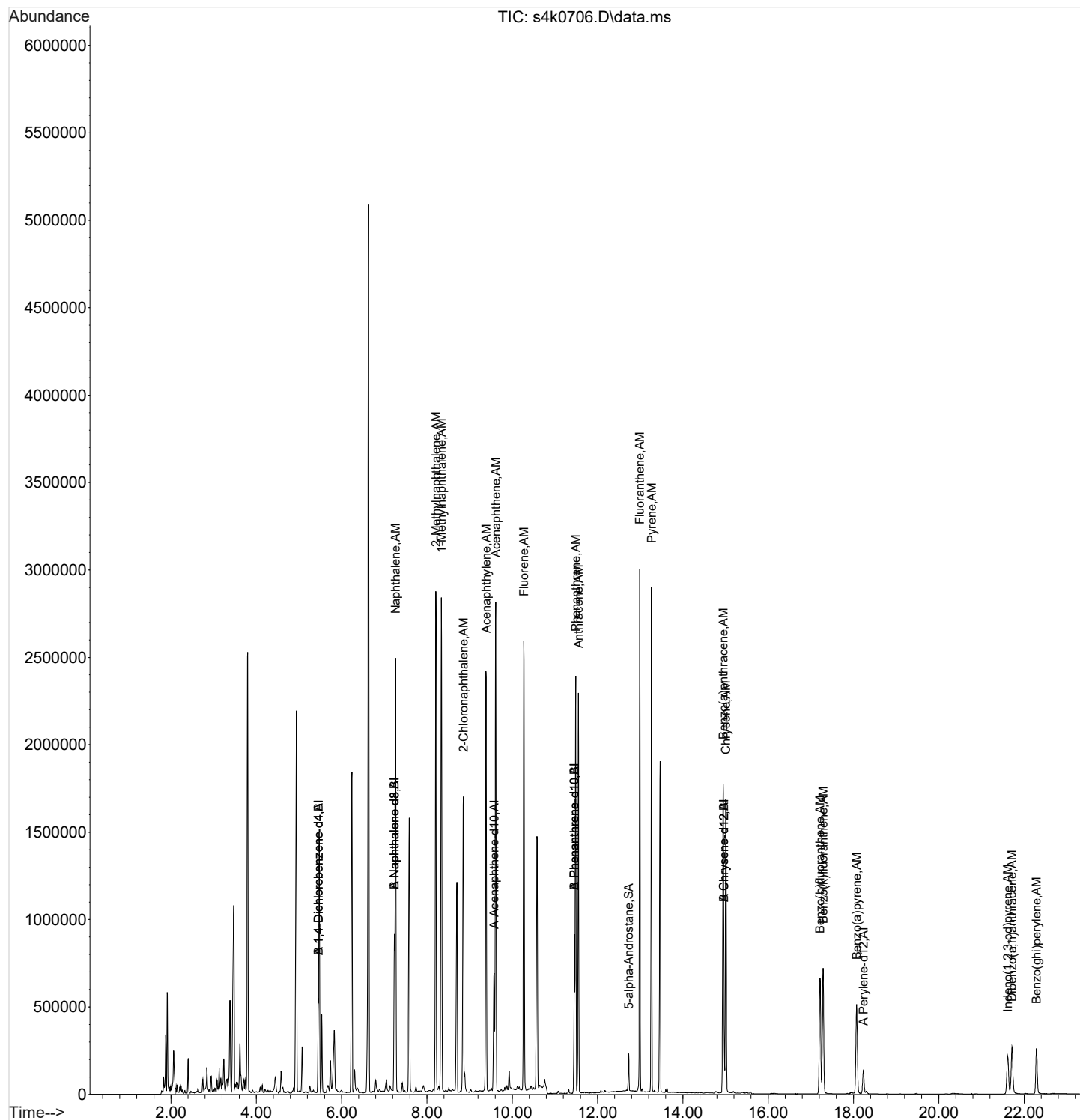
| Target Compounds           | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|----------------------------|------|--------|--------|--------|----------|-------|-------|--------|
| 6) Naphthalene             | 128  | 7.268  | 7.268  | 1.004  | 2688894  | 8.65  | ng/uL | 100    |
| 7) 2-Methylnaphthalene     | 142  | 8.207  | 8.212  | 1.134  | 1871252  | 8.96  | ng/uL | 100    |
| 8) 1-Methylnaphthalene     | 142  | 8.337  | 8.342  | 1.152  | 1778242  | 9.97  | ng/uL | 100    |
| 10) 2-Chloronaphthalene    | 162  | 8.853  | 8.853  | 0.925  | 1572169  | 7.76  | ng/uL | 100    |
| 11) Acenaphthylene         | 152  | 9.391  | 9.391  | 0.981  | 2438794  | 8.53  | ng/uL | 100    |
| 12) Acenaphthene           | 154  | 9.615  | 9.615  | 1.004  | 1427905  | 9.27  | ng/uL | 100    |
| 13) Fluorene               | 166  | 10.272 | 10.277 | 1.073  | 1670943  | 9.31  | ng/uL | 100    |
| 15) Phenanthrene           | 178  | 11.488 | 11.489 | 1.003  | 2526226  | 8.74  | ng/uL | 100    |
| 16) Anthracene             | 178  | 11.552 | 11.553 | 1.008  | 2401269  | 8.95  | ng/uL | 100    |
| 18) Fluoranthene           | 202  | 12.992 | 12.981 | 1.134  | 2469905  | 9.26  | ng/uL | 99     |
| 20) Pyrene                 | 202  | 13.265 | 13.262 | 0.887  | 2504251  | 8.48  | ng/uL | 100    |
| 21) Benzo(a)anthracene     | 228  | 14.945 | 14.943 | 0.999  | 1716638  | 9.65  | ng/uL | 99     |
| 22) Chrysene               | 228  | 15.010 | 15.007 | 1.003  | 1603172  | 9.51  | ng/uL | 99     |
| 24) Benzo(b)fluoranthene   | 252  | 17.218 | 17.213 | 0.944  | 1248583  | 10.17 | ng/uL | 99     |
| 25) Benzo(k)fluoranthene   | 252  | 17.289 | 17.284 | 0.948  | 1270111  | 10.51 | ng/uL | 100    |
| 26) Benzo(a)pyrene         | 252  | 18.074 | 18.072 | 0.991  | 1031180  | 10.19 | ng/uL | 100    |
| 27) Indeno(1,2,3-cd)pyrene | 276  | 21.617 | 21.615 | 1.186  | 495830   | 7.42  | ng/uL | 97     |
| 28) Dibenzo(a,h)anthracene | 278  | 21.717 | 21.718 | 1.191  | 468015   | 8.29  | ng/uL | 97     |
| 29) Benzo(ghi)perylene     | 276  | 22.291 | 22.289 | 1.223  | 485616   | 6.86  | ng/uL | 96     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0706.D  
Acq On : 07 Nov 2016 10:26  
Operator : JMB3  
InstName : MSD4  
Sample : |1203661744|1612777|1|SVM|1|MS|||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 07 11:22:44 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

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|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 409254                  | <b>Date Collected:</b> 10/26/2016 09:00 | <b>Matrix:</b> SO           |
| <b>Lab Sample ID:</b> 1203665321           | <b>Date Received:</b> 10/28/2016 09:15  | <b>%Moisture:</b> 84.5      |
| <b>Client Sample:</b> QC for batch 1614269 | <b>Client:</b> HAAL002                  | <b>Project:</b> QC          |
| <b>Client ID:</b> WST03-17-127184MSD       | <b>Method:</b> SW846 3541/8270D         | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1614270                   | <b>Inst:</b> MSD1.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/10/2016 20:15          | <b>Analyst:</b> JMB3                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 11/08/2016 12:02         | <b>Aliquot:</b> 30.011 g                | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s111016.B\1k1020.D       | <b>Column:</b> 25x.20x.33               |                             |

| CAS No.   | Parmname                   | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|-----------|----------------------------|-----------|--------|-------|---------|---------|
| 92-52-4   | 1,1'-Biphenyl              |           | 10700  | ug/kg | 644     | 2150    |
| 95-94-3   | 1,2,4,5-Tetrachlorobenzene |           | 8250   | ug/kg | 644     | 2150    |
| 58-90-2   | 2,3,4,6-Tetrachlorophenol  |           | 6980   | ug/kg | 644     | 2150    |
| 95-95-4   | 2,4,5-Trichlorophenol      |           | 6650   | ug/kg | 644     | 2150    |
| 88-06-2   | 2,4,6-Trichlorophenol      |           | 5150   | ug/kg | 644     | 2150    |
| 120-83-2  | 2,4-Dichlorophenol         |           | 6960   | ug/kg | 644     | 2150    |
| 105-67-9  | 2,4-Dimethylphenol         |           | 8270   | ug/kg | 644     | 2150    |
| 51-28-5   | 2,4-Dinitrophenol          | U         | 4290   | ug/kg | 644     | 4290    |
| 121-14-2  | 2,4-Dinitrotoluene         |           | 10300  | ug/kg | 644     | 2150    |
| 606-20-2  | 2,6-Dinitrotoluene         |           | 10200  | ug/kg | 644     | 2150    |
| 91-58-7   | 2-Chloronaphthalene        |           | 7320   | ug/kg | 64.4    | 215     |
| 95-57-8   | 2-Chlorophenol             |           | 6790   | ug/kg | 644     | 2150    |
| 534-52-1  | 2-Methyl-4,6-dinitrophenol |           | 2980   | ug/kg | 644     | 2150    |
| 91-57-6   | 2-Methylnaphthalene        |           | 7830   | ug/kg | 64.4    | 215     |
| 88-75-5   | 2-Nitrophenol              | J         | 1910   | ug/kg | 644     | 2150    |
| 91-94-1   | 3,3'-Dichlorobenzidine     |           | 8810   | ug/kg | 644     | 2150    |
| 101-55-3  | 4-Bromophenylphenylether   |           | 8710   | ug/kg | 644     | 2150    |
| 59-50-7   | 4-Chloro-3-methylphenol    |           | 8790   | ug/kg | 858     | 2150    |
| 106-47-8  | 4-Chloroaniline            |           | 8570   | ug/kg | 644     | 2150    |
| 7005-72-3 | 4-Chlorophenylphenylether  |           | 9070   | ug/kg | 644     | 2150    |
| 100-02-7  | 4-Nitrophenol              | U         | 2150   | ug/kg | 644     | 2150    |
| 83-32-9   | Acenaphthene               |           | 9230   | ug/kg | 64.4    | 215     |
| 208-96-8  | Acenaphthylene             |           | 9040   | ug/kg | 64.4    | 215     |
| 98-86-2   | Acetophenone               |           | 8510   | ug/kg | 644     | 2150    |
| 120-12-7  | Anthracene                 |           | 9500   | ug/kg | 64.4    | 215     |
| 1912-24-9 | Atrazine                   |           | 9840   | ug/kg | 858     | 2150    |
| 100-52-7  | Benzaldehyde               | J         | 1290   | ug/kg | 644     | 2150    |
| 56-55-3   | Benzo(a)anthracene         |           | 10100  | ug/kg | 64.4    | 215     |
| 50-32-8   | Benzo(a)pyrene             |           | 9460   | ug/kg | 64.4    | 215     |
| 205-99-2  | Benzo(b)fluoranthene       |           | 9230   | ug/kg | 64.4    | 215     |
| 191-24-2  | Benzo(ghi)perylene         |           | 8770   | ug/kg | 64.4    | 215     |
| 207-08-9  | Benzo(k)fluoranthene       |           | 9280   | ug/kg | 64.4    | 215     |
| 85-68-7   | Butylbenzylphthalate       |           | 10200  | ug/kg | 644     | 2150    |
| 105-60-2  | Caprolactam                |           | 10900  | ug/kg | 644     | 2150    |
| 86-74-8   | Carbazole                  |           | 9890   | ug/kg | 64.4    | 215     |
| 218-01-9  | Chrysene                   |           | 10400  | ug/kg | 64.4    | 215     |
| 84-74-2   | Di-n-butylphthalate        |           | 9220   | ug/kg | 644     | 2150    |
| 117-84-0  | Di-n-octylphthalate        |           | 9760   | ug/kg | 644     | 2150    |

**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

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|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 409254                  | <b>Date Collected:</b> 10/26/2016 09:00 | <b>Matrix:</b> SO           |
| <b>Lab Sample ID:</b> 1203665321           | <b>Date Received:</b> 10/28/2016 09:15  | <b>%Moisture:</b> 84.5      |
| <b>Client Sample:</b> QC for batch 1614269 | <b>Client:</b> HAAL002                  | <b>Project:</b> QC          |
| <b>Client ID:</b> WST03-17-127184MSD       | <b>Method:</b> SW846 3541/8270D         | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1614270                   | <b>Inst:</b> MSD1.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/10/2016 20:15          | <b>Analyst:</b> JMB3                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 11/08/2016 12:02         | <b>Aliquot:</b> 30.011 g                | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s111016.B\1k1020.D       | <b>Column:</b> 25x.20x.33               |                             |

| CAS No.    | Parmname                         | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|------------|----------------------------------|-----------|--------|-------|---------|---------|
| 53-70-3    | Dibenzo(a,h)anthracene           |           | 9260   | ug/kg | 64.4    | 215     |
| 132-64-9   | Dibenzofuran                     |           | 9160   | ug/kg | 644     | 2150    |
| 84-66-2    | Diethylphthalate                 |           | 9500   | ug/kg | 644     | 2150    |
| 131-11-3   | Dimethylphthalate                |           | 9710   | ug/kg | 644     | 2150    |
| 122-39-4   | Diphenylamine                    |           | 8880   | ug/kg | 644     | 2150    |
| 206-44-0   | Fluoranthene                     |           | 9290   | ug/kg | 64.4    | 215     |
| 86-73-7    | Fluorene                         |           | 9380   | ug/kg | 64.4    | 215     |
| 118-74-1   | Hexachlorobenzene                |           | 8710   | ug/kg | 644     | 2150    |
| 87-68-3    | Hexachlorobutadiene              |           | 7130   | ug/kg | 644     | 2150    |
| 77-47-4    | Hexachlorocyclopentadiene        | J         | 2090   | ug/kg | 644     | 2150    |
| 67-72-1    | Hexachloroethane                 |           | 6140   | ug/kg | 644     | 2150    |
| 193-39-5   | Indeno(1,2,3-cd)pyrene           |           | 7970   | ug/kg | 64.4    | 215     |
| 78-59-1    | Isophorone                       |           | 8450   | ug/kg | 644     | 2150    |
| 621-64-7   | N-Nitrosodipropylamine           |           | 7790   | ug/kg | 644     | 2150    |
| 91-20-3    | Naphthalene                      |           | 7610   | ug/kg | 64.4    | 215     |
| 98-95-3    | Nitrobenzene                     |           | 8300   | ug/kg | 644     | 2150    |
| 87-86-5    | Pentachlorophenol                |           | 3570   | ug/kg | 644     | 2150    |
| 85-01-8    | Phenanthrene                     |           | 9500   | ug/kg | 64.4    | 215     |
| 108-95-2   | Phenol                           |           | 7290   | ug/kg | 644     | 2150    |
| 129-00-0   | Pyrene                           |           | 9020   | ug/kg | 64.4    | 215     |
| 108-60-1   | bis(2-Chloro-1-methylethyl)ether |           | 8600   | ug/kg | 644     | 2150    |
| 111-91-1   | bis(2-Chloroethoxy)methane       |           | 8320   | ug/kg | 644     | 2150    |
| 111-44-4   | bis(2-Chloroethyl) ether         |           | 7510   | ug/kg | 644     | 2150    |
| 117-81-7   | bis(2-Ethylhexyl)phthalate       |           | 10500  | ug/kg | 644     | 2150    |
| 65794-96-9 | m,p-Cresols                      |           | 8020   | ug/kg | 644     | 2150    |
| 99-09-2    | m-Nitroaniline                   |           | 10700  | ug/kg | 644     | 2150    |
| 95-48-7    | o-Cresol                         |           | 8120   | ug/kg | 644     | 2150    |
| 88-74-4    | o-Nitroaniline                   |           | 9870   | ug/kg | 708     | 2150    |
| 100-01-6   | p-Nitroaniline                   |           | 9840   | ug/kg | 644     | 2150    |

Quantitation Report  
GEL Laboratories, LLC

JMB  
11/11/2016

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1020.D  
Acq On : 10 Nov 2016 20:15  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665321|1614270|1|SVM|1|MSD  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 17 Sample Multiplier: 1

H.M.M.  
11/14/2016

Quant Time: Nov 11 07:46:49 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | Dev (Min) |
|-------------------------------|------|--------|--------|--------|----------|-------|-------|-----------|
| Internal Standards            |      |        |        |        |          |       |       |           |
| 1) A 1,4-Dichlorobenzene-d4   | 152  | 5.334  | 5.324  | 1.000  | 237491   | 40.00 | ng/uL | 0.01      |
| 24) A Naphthalene-d8          | 136  | 7.105  | 7.105  | 1.000  | 809011   | 40.00 | ng/uL | 0.00      |
| 42) A Acenaphthene-d10        | 164  | 9.410  | 9.415  | 1.000  | 453005   | 40.00 | ng/uL | 0.00      |
| 67) A Phenanthrene-d10        | 188  | 11.271 | 11.271 | 1.000  | 911961   | 40.00 | ng/uL | 0.00      |
| 81) A Chrysene-d12            | 240  | 14.668 | 14.662 | 1.000  | 767409   | 40.00 | ng/uL | 0.00      |
| 91) A Perylene-d12            | 264  | 17.674 | 17.668 | 1.000  | 732770   | 40.00 | ng/uL | 0.00      |
| 99) B 1,4-Dichlorobenzene-d4  | 152  | 5.334  | 5.324  | 1.000  | 237042   | 40.00 | ng/uL | 0.01      |
| 115) B Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 809011   | 40.00 | ng/uL | 0.00      |
| 123) B Acenaphthene-d10       | 164  | 9.410  | 9.415  | 1.000  | 453005   | 40.00 | ng/uL | 0.00      |
| 132) B Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 911961   | 40.00 | ng/uL | 0.00      |
| 145) B Chrysene-d12           | 240  | 14.668 | 14.662 | 1.000  | 767409   | 40.00 | ng/uL | 0.00      |
| 152) B Perylene-d12           | 264  | 17.674 | 17.668 | 1.000  | 732770   | 40.00 | ng/uL | 0.00      |
| 155) D Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 809011   | 40.00 | ng/uL | 0.00      |
| 157) D Acenaphthene-d10       | 164  | 9.410  | 9.415  | 1.000  | 453005   | 40.00 | ng/uL | 0.00      |
| 160) D Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 911961   | 40.00 | ng/uL | 0.00      |
| 167) D Chrysene-d12           | 240  | 14.668 | 14.662 | 1.000  | 767244   | 40.00 | ng/uL | 0.00      |
| 169) E Naphthalene-d8         | 136  | 7.105  | 7.105  | 1.000  | 809011   | 40.00 | ng/uL | 0.00      |
| 171) E Perylene-d12           | 264  | 17.674 | 17.668 | 1.000  | 732770   | 40.00 | ng/uL | 0.00      |
| 173) F 1,4-Dichlorobenzene-d4 | 152  | 5.334  | 5.324  | 1.000  | 237042   | 40.00 | ng/uL | 0.01      |
| 175) J Phenanthrene-d10       | 188  | 11.271 | 11.271 | 1.000  | 911961   | 40.00 | ng/uL | 0.00      |
| 177) J Chrysene-d12           | 240  | 14.668 | 14.662 | 1.000  | 767409   | 40.00 | ng/uL | 0.00      |

|                             |     |        |        |       |        |       |       |      |
|-----------------------------|-----|--------|--------|-------|--------|-------|-------|------|
| System Monitoring Compounds |     |        |        |       |        |       |       |      |
| 5) 2-Fluorophenol           | 112 | 3.740  | 3.660  | 0.701 | 394354 | 44.74 | ng/uL | 0.08 |
| 8) Phenol-d5                | 99  | 4.837  | 4.810  | 0.907 | 699973 | 64.86 | ng/uL | 0.03 |
| 25) Nitrobenzene-d5         | 82  | 6.115  | 6.110  | 0.861 | 323014 | 34.11 | ng/uL | 0.00 |
| 47) 2-Fluorobiphenyl        | 172 | 8.554  | 8.554  | 0.909 | 561495 | 35.17 | ng/uL | 0.00 |
| 66) 2,4,6-Tribromophenol    | 330 | 10.410 | 10.405 | 1.106 | 188806 | 63.90 | ng/uL | 0.00 |
| 83) p-Terphenyl-d14         | 244 | 13.250 | 13.245 | 0.903 | 885275 | 43.21 | ng/uL | 0.00 |

| Compound                 | Amount  | Range    | Recovery |
|--------------------------|---------|----------|----------|
| 5) 2-Fluorophenol        | 100.000 | 36 - 104 | 45%      |
| 8) Phenol-d5             | 100.000 | 39 - 106 | 65%      |
| 25) Nitrobenzene-d5      | 50.000  | 34 - 109 | 68%      |
| 47) 2-Fluorobiphenyl     | 50.000  | 35 - 107 | 70%      |
| 66) 2,4,6-Tribromophenol | 100.000 | 39 - 115 | 64%      |
| 83) p-Terphenyl-d14      | 50.000  | 45 - 119 | 86%      |

| Target Compounds              | QIon | R.T.  | Exp RT | Rel RT | Response | Conc  | Units  | QValue |
|-------------------------------|------|-------|--------|--------|----------|-------|--------|--------|
| 3) N-Methyl-N-nitrosometh...  | 74   | 2.355 | 2.334  | 0.442  | 158093   | 28.31 | ng/uL  | 93     |
| 4) Pyridine                   | 79   | 2.393 | 2.366  | 0.449  | 208028   | 22.76 | ng/uL  | 93     |
| 7) Aniline                    | 93   | 4.896 | 4.874  | 0.918  | 365737   | 32.66 | ng/uL  | 95     |
| 9) Phenol                     | 94   | 4.858 | 4.832  | 0.911  | 328457   | 34.00 | ng/uL  | 94     |
| 10) bis(2-Chloroethyl) ether  | 93   | 4.976 | 4.960  | 0.933  | 274045   | 35.02 | ng/uL  | 99     |
| 11) 2-Chlorophenol            | 128  | 5.056 | 5.035  | 0.948  | 238715   | 31.67 | ng/uL  | 99     |
| 12) n-Decane                  | 43   | 5.104 | 5.099  | 0.957  | 228222   | 19.17 | ng/uL  | 93     |
| 13) 1,3-Dichlorobenzene       | 146  | 5.254 | 5.243  | 0.985  | 249965   | 29.95 | ng/uL  | 100    |
| 14) 1,4-Dichlorobenzene       | 146  | 5.356 | 5.345  | 1.004  | 228672   | 29.99 | ng/uL  | 98     |
| 15) 1,2-Dichlorobenzene       | 146  | 5.570 | 5.559  | 1.044  | 239759   | 31.43 | ng/uL  | 99     |
| 16) bis(2-Chloro-1-methyle... | 45   | 5.725 | 5.719  | 1.073  | 612617   | 40.11 | ng/uL# | 89     |
| 17) Benzyl alcohol            | 108  | 5.532 | 5.516  | 1.037  | 194611   | 37.30 | ng/uL  | 97     |
| 18) o-Cresol                  | 107  | 5.693 | 5.671  | 1.067  | 230652   | 37.86 | ng/uL  | 90     |



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1020.D  
Acq On : 10 Nov 2016 20:15  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665321|1614270|1|SVM|1|MSD  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 11 07:46:49 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                      | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |     |
|-------------------------------|------|--------|--------|--------|----------|-------|--------|-----|
| 19) m,p-Cresols               | 107  | 5.912  | 5.907  | 1.108  | 296137   | 37.41 | ng/uL# | 40  |
| 20) N-Nitrosodipropylamine    | 70   | 5.917  | 5.907  | 1.109  | 217349   | 36.31 | ng/uL  | 95  |
| 23) Hexachloroethane          | 117  | 6.040  | 6.035  | 1.132  | 100434   | 28.62 | ng/uL  | 95  |
| 26) Nitrobenzene              | 77   | 6.142  | 6.137  | 0.864  | 335430   | 38.71 | ng/uL  | 98  |
| 27) Isophorone                | 82   | 6.479  | 6.474  | 0.912  | 723604   | 39.41 | ng/uL  | 96  |
| 28) 2-Nitrophenol             | 139  | 6.586  | 6.581  | 0.927  | 35994    | 8.92  | ng/uL  | 99  |
| 29) 2,4-Dimethylphenol        | 122  | 6.656  | 6.650  | 0.937  | 252452   | 38.57 | ng/uL  | 95  |
| 30) bis(2-Chloroethoxy)met... | 93   | 6.789  | 6.784  | 0.956  | 377532   | 38.79 | ng/uL  | 97  |
| 31) 2,4-Dichlorophenol        | 162  | 6.923  | 6.918  | 0.974  | 210286   | 32.44 | ng/uL  | 99  |
| 33) 1,2,4-Trichlorobenzene    | 180  | 7.030  | 7.030  | 0.989  | 268578   | 33.94 | ng/uL  | 99  |
| 34) alpha-Terpeneol           | 59   | 7.164  | 7.158  | 1.008  | 315471   | 38.05 | ng/uL  | 97  |
| 35) Naphthalene               | 128  | 7.137  | 7.131  | 1.005  | 679340   | 35.48 | ng/uL  | 100 |
| 36) 4-Chloroaniline           | 127  | 7.217  | 7.212  | 1.016  | 280115   | 39.94 | ng/uL  | 99  |
| 37) Hexachlorobutadiene       | 225  | 7.308  | 7.308  | 1.029  | 181611   | 33.23 | ng/uL  | 99  |
| 38) 4-Chloro-3-methylphenol   | 107  | 7.891  | 7.880  | 1.111  | 340637   | 40.98 | ng/uL  | 98  |
| 39) 2-Methylnaphthalene       | 142  | 8.068  | 8.062  | 1.136  | 540068   | 36.52 | ng/uL  | 99  |
| 41) 1-Methylnaphthalene       | 142  | 8.196  | 8.191  | 1.154  | 513627   | 38.41 | ng/uL  | 99  |
| 43) Hexachlorocyclopentadiene | 237  | 8.276  | 8.271  | 0.879  | 51935    | 9.75  | ng/uL  | 99  |
| 44) 2,3-Dichloroaniline       | 161  | 8.437  | 8.431  | 0.897  | 322546   | 44.90 | ng/uL  | 100 |
| 45) 2,4,6-Trichlorophenol     | 196  | 8.442  | 8.442  | 0.897  | 121718   | 24.03 | ng/uL  | 99  |
| 46) 2,4,5-Trichlorophenol     | 196  | 8.501  | 8.490  | 0.903  | 151471   | 30.98 | ng/uL  | 99  |
| 48) 2-Chloronaphthalene       | 162  | 8.699  | 8.699  | 0.924  | 486113   | 34.11 | ng/uL  | 95  |
| 49) o-Nitroaniline            | 65   | 8.838  | 8.838  | 0.939  | 259014   | 46.02 | ng/uL  | 98  |
| 51) m-Nitroaniline            | 138  | 9.367  | 9.367  | 0.995  | 163653   | 49.74 | ng/uL  | 100 |
| 52) Dimethylphthalate         | 163  | 9.089  | 9.089  | 0.966  | 785530   | 45.28 | ng/uL  | 98  |
| 54) 2,6-Dinitrotoluene        | 165  | 9.164  | 9.159  | 0.974  | 176656   | 47.41 | ng/uL  | 99  |
| 55) 2,4-Dinitrotoluene        | 165  | 9.667  | 9.667  | 1.027  | 246774   | 48.18 | ng/uL  | 95  |
| 56) Acenaphthylene            | 152  | 9.228  | 9.228  | 0.981  | 897937   | 42.15 | ng/uL  | 99  |
| 57) Acenaphthene              | 154  | 9.453  | 9.453  | 1.005  | 526491   | 43.01 | ng/uL  | 96  |
| 59) Dibenzofuran              | 168  | 9.672  | 9.672  | 1.028  | 795358   | 42.68 | ng/uL  | 96  |
| 60) 2,3,4,6-Tetrachlorophenol | 232  | 9.833  | 9.833  | 1.045  | 144226   | 32.53 | ng/uL  | 99  |
| 61) Diethylphthalate          | 149  | 9.977  | 9.977  | 1.060  | 864721   | 44.29 | ng/uL  | 99  |
| 63) Fluorene                  | 166  | 10.105 | 10.105 | 1.074  | 711199   | 43.74 | ng/uL  | 99  |
| 64) 4-Chlorophenylphenylether | 204  | 10.111 | 10.111 | 1.074  | 385236   | 42.26 | ng/uL  | 100 |
| 65) p-Nitroaniline            | 138  | 10.143 | 10.137 | 1.078  | 141271   | 45.87 | ng/uL  | 94  |
| 68) 2-Methyl-4,6-dinitroph... | 198  | 10.186 | 10.180 | 0.904  | 27871    | 13.88 | ng/uL  | 97  |
| 69) Diphenylamine             | 169  | 10.261 | 10.260 | 0.910  | 603462   | 41.41 | ng/uL  | 98  |
| 70) 1,2-Diphenylhydrazine     | 77   | 10.309 | 10.309 | 0.915  | 735845   | 40.81 | ng/uL  | 98  |
| 71) 4-Bromophenylphenylether  | 248  | 10.720 | 10.720 | 0.951  | 265430   | 40.60 | ng/uL  | 98  |
| 72) Hexachlorobenzene         | 284  | 10.790 | 10.790 | 0.957  | 267699   | 40.60 | ng/uL  | 99  |
| 73) Pentachlorophenol         | 266  | 11.047 | 11.041 | 0.980  | 55301    | 16.62 | ng/uL  | 97  |
| 74) n-Octadecane              | 57   | 11.159 | 11.159 | 0.990  | 704006   | 42.26 | ng/uL  | 97  |
| 76) Phenanthrene              | 178  | 11.303 | 11.303 | 1.003  | 931222   | 44.29 | ng/uL  | 97  |
| 77) Anthracene                | 178  | 11.368 | 11.368 | 1.009  | 974215   | 44.28 | ng/uL  | 99  |
| 78) Carbazole                 | 167  | 11.571 | 11.566 | 1.027  | 966014   | 46.09 | ng/uL  | 98  |
| 79) Di-n-butylphthalate       | 149  | 12.009 | 12.009 | 1.065  | 1444853  | 42.98 | ng/uL  | 99  |
| 80) Fluoranthene              | 202  | 12.774 | 12.774 | 1.133  | 1339394  | 43.29 | ng/uL  | 98  |
| 82) Pyrene                    | 202  | 13.052 | 13.052 | 0.890  | 1305914  | 42.04 | ng/uL  | 99  |
| 84) Butylbenzylphthalate      | 149  | 13.860 | 13.860 | 0.945  | 704758   | 47.38 | ng/uL  | 100 |
| 85) bis(2-Ethylhexyl)phtha... | 149  | 14.711 | 14.711 | 1.003  | 809397   | 48.84 | ng/uL  | 99  |
| 86) Benzo(a)anthracene        | 228  | 14.646 | 14.646 | 0.999  | 1130302  | 47.25 | ng/uL  | 95  |
| 87) Chrysene                  | 228  | 14.711 | 14.705 | 1.003  | 962763   | 48.36 | ng/uL  | 98  |
| 90) Di-n-octylphthalate       | 149  | 15.951 | 15.951 | 1.088  | 1512036  | 45.50 | ng/uL  | 96  |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s111016.B\  
Data File : s1k1020.D  
Acq On : 10 Nov 2016 20:15  
Operator : JMB3  
InstName : MSD1  
Sample : |1203665321|1614270|1|SVM|1|MSD  
Misc : |MSD827D4 S| SOIL MIX[A,B,D,E,J]  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 11 07:46:49 2016  
Quant Method : C:\msdchem\1\DATA\s111016.B\MSD1 8270C 8270D 092916.M  
Quant Title : BNA01 SubList :  
QLast Update : Fri Sep 30 09:55:56 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                       | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units  |    |
|--------------------------------|------|--------|--------|--------|----------|-------|--------|----|
| 92) Benzo(b)fluoranthene       | 252  | 16.738 | 16.727 | 0.947  | 1114916  | 43.01 | ng/uL  | 99 |
| 93) Benzo(k)fluoranthene       | 252  | 16.807 | 16.796 | 0.951  | 969985   | 43.24 | ng/uL  | 99 |
| 94) Benzo(a)pyrene             | 252  | 17.529 | 17.519 | 0.992  | 988643   | 44.10 | ng/uL  | 99 |
| 95) Indeno(1,2,3-cd)pyrene     | 276  | 20.851 | 20.851 | 1.180  | 636771   | 37.14 | ng/uL  | 97 |
| 96) Dibenzo(a,h)anthracene     | 278  | 20.958 | 20.958 | 1.186  | 689284   | 43.17 | ng/uL  | 99 |
| 97) Benzo(ghi)perylene         | 276  | 21.674 | 21.674 | 1.226  | 715027   | 40.87 | ng/uL  | 99 |
| 100) 1,4-Dioxane               | 88   | 2.104  | 2.077  | 0.394  | 51058    | 16.07 | ng/uL  | 97 |
| 109) Benzaldehyde              | 77   | 4.757  | 4.735  | 0.892  | 41230    | 6.03  | ng/uL  | 99 |
| 111) N-Nitrosopyrrolidine      | 100  | 5.885  | 5.869  | 1.103  | 159354   | 40.52 | ng/uL  | 92 |
| 112) Acetophenone              | 105  | 5.907  | 5.896  | 1.107  | 384821   | 39.68 | ng/uL  | 69 |
| 118) 2,6-Dichlorophenol        | 162  | 7.228  | 7.222  | 1.017  | 65726    | 12.67 | ng/uL  | 93 |
| 120) Caprolactam               | 113  | 7.704  | 7.677  | 1.084  | 114571   | 50.85 | ng/uL# | 71 |
| 124) 1,2,4,5-Tetrachloroben... | 216  | 8.287  | 8.281  | 0.881  | 303458   | 38.47 | ng/uL  | 97 |
| 125) 1,1-Biphenyl              | 154  | 8.683  | 8.683  | 0.923  | 695675   | 49.68 | ng/uL  | 97 |
| 138) Atrazine                  | 200  | 10.940 | 10.934 | 0.971  | 256131   | 45.89 | ng/uL  | 99 |
| 159) Tributylphosphate         | 99   | 10.261 | 10.245 | 1.090  | 984948   | 48.20 | ng/uL  | 96 |
| 176) Benzidine                 | 184  | 12.940 | 12.940 | 1.148  | 479137   | 35.46 | ng/uL  | 98 |
| 178) 3,3'-Dichlorobenzidine    | 252  | 14.609 | 14.604 | 0.996  | 395910   | 41.05 | ng/uL  | 97 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted



**Semi-Volatile  
Certificate of Analysis  
Sample Summary**

|  |   |                             |
|--|---|-----------------------------|
| <b>SDG Number:</b> 409254                  | <b>Date Collected:</b> 10/24/2016 11:43 | <b>Matrix:</b> SOIL         |
| <b>Lab Sample ID:</b> 1203661745           | <b>Date Received:</b> 10/27/2016 09:00  | <b>%Moisture:</b> 36.6      |
| <b>Client Sample:</b> QC for batch 1612776 | <b>Client:</b> HAAL002                  | <b>Project:</b> QC          |
| <b>Client ID:</b> SD140300MSD              | <b>Method:</b> SW846 3541/8270D SIM P.  | <b>SOP Ref:</b> GL-OA-E-009 |
| <b>Batch ID:</b> 1612777                   | <b>Inst:</b> MSD4.I                     | <b>Dilution:</b> 1          |
| <b>Run Date:</b> 11/07/2016 11:22          | <b>Analyst:</b> JMB3                    | <b>Inj. Vol:</b> 1 uL       |
| <b>Prep Date:</b> 11/04/2016 08:33         | <b>Aliquot:</b> 30.03 g                 | <b>Final Volume:</b> 1 mL   |
| <b>Data File:</b> s110716.B\4k0708.D       | <b>Column:</b> DB-5ms                   |                             |

| CAS No.  | Parmname               | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|----------|------------------------|-----------|--------|-------|---------|---------|
| 90-12-0  | 1-Methylnaphthalene    |           | 508    | ug/kg | 2.63    | 5.25    |
| 91-58-7  | 2-Chloronaphthalene    |           | 387    | ug/kg | 2.63    | 5.25    |
| 91-57-6  | 2-Methylnaphthalene    |           | 458    | ug/kg | 2.63    | 5.25    |
| 83-32-9  | Acenaphthene           |           | 468    | ug/kg | 2.63    | 5.25    |
| 208-96-8 | Acenaphthylene         |           | 435    | ug/kg | 2.63    | 5.25    |
| 120-12-7 | Anthracene             |           | 451    | ug/kg | 2.63    | 5.25    |
| 56-55-3  | Benzo(a)anthracene     |           | 507    | ug/kg | 2.63    | 5.25    |
| 50-32-8  | Benzo(a)pyrene         |           | 532    | ug/kg | 2.63    | 5.25    |
| 205-99-2 | Benzo(b)fluoranthene   |           | 554    | ug/kg | 2.63    | 5.25    |
| 191-24-2 | Benzo(ghi)perylene     |           | 381    | ug/kg | 2.63    | 5.25    |
| 207-08-9 | Benzo(k)fluoranthene   |           | 533    | ug/kg | 2.63    | 5.25    |
| 218-01-9 | Chrysene               |           | 497    | ug/kg | 2.63    | 5.25    |
| 53-70-3  | Dibenzo(a,h)anthracene |           | 459    | ug/kg | 2.63    | 5.25    |
| 206-44-0 | Fluoranthene           |           | 462    | ug/kg | 2.63    | 5.25    |
| 86-73-7  | Fluorene               |           | 474    | ug/kg | 2.63    | 5.25    |
| 193-39-5 | Indeno(1,2,3-cd)pyrene |           | 412    | ug/kg | 2.63    | 5.25    |
| 91-20-3  | Naphthalene            |           | 434    | ug/kg | 1.58    | 5.25    |
| 85-01-8  | Phenanthrene           |           | 435    | ug/kg | 2.63    | 5.25    |
| 129-00-0 | Pyrene                 |           | 513    | ug/kg | 2.63    | 5.25    |

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0708.D  
Acq On : 07 Nov 2016 11:22  
Operator : JMB3  
InstName : MSD4  
Sample : |1203661745|1612777|1|SVM|1|MSD| ||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

JMB  
11/07/2016

JCB  
11/08/2016

Quant Time: Nov 07 12:00:32 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE

| Compound                     | QIon | R.T.   | Exp RT | Rel RT | Response | Conc | Units | Dev (Min) |
|------------------------------|------|--------|--------|--------|----------|------|-------|-----------|
| Internal Standards           |      |        |        |        |          |      |       |           |
| 1) A 1,4-Dichlorobenzene-d4  | 152  | 5.453  | 5.448  | 1.000  | 344975   | 4.00 | ng/uL | 0.00      |
| 5) A Naphthalene-d8          | 136  | 7.237  | 7.237  | 1.000  | 1162413  | 4.00 | ng/uL | 0.00      |
| 9) A Acenaphthene-d10        | 164  | 9.568  | 9.573  | 1.000  | 460210   | 4.00 | ng/uL | 0.00      |
| 14) A Phenanthrene-d10       | 188  | 11.456 | 11.457 | 1.000  | 905432   | 4.00 | ng/uL | 0.00      |
| 19) A Chrysene-d12           | 240  | 14.962 | 14.963 | 1.000  | 385937   | 4.00 | ng/uL | 0.00      |
| 23) A Perylene-d12           | 264  | 18.233 | 18.231 | 1.000  | 222718   | 4.00 | ng/uL | 0.00      |
| 30) B 1,4-Dichlorobenzene-d4 | 152  | 5.453  | 5.448  | 1.000  | 344975   | 4.00 | ng/uL | 0.00      |
| 33) B Naphthalene-d8         | 136  | 7.237  | 7.237  | 1.000  | 1162413  | 4.00 | ng/uL | 0.00      |
| 35) B Phenanthrene-d10       | 188  | 11.456 | 11.457 | 1.000  | 905432   | 4.00 | ng/uL | 0.00      |
| 37) B Chrysene-d12           | 240  | 14.962 | 14.963 | 1.000  | 385937   | 4.00 | ng/uL | 0.00      |

|                             |     |        |        |       |        |      |       |      |
|-----------------------------|-----|--------|--------|-------|--------|------|-------|------|
| System Monitoring Compounds |     |        |        |       |        |      |       |      |
| 17) 5-alpha-Androstane      | 245 | 12.730 | 12.731 | 1.111 | 115810 | 4.09 | ng/uL | 0.00 |

| Compound               | Amount | Range    | Recovery |
|------------------------|--------|----------|----------|
| 17) 5-alpha-Androstane | 5.000  | 30 - 115 | 82%      |

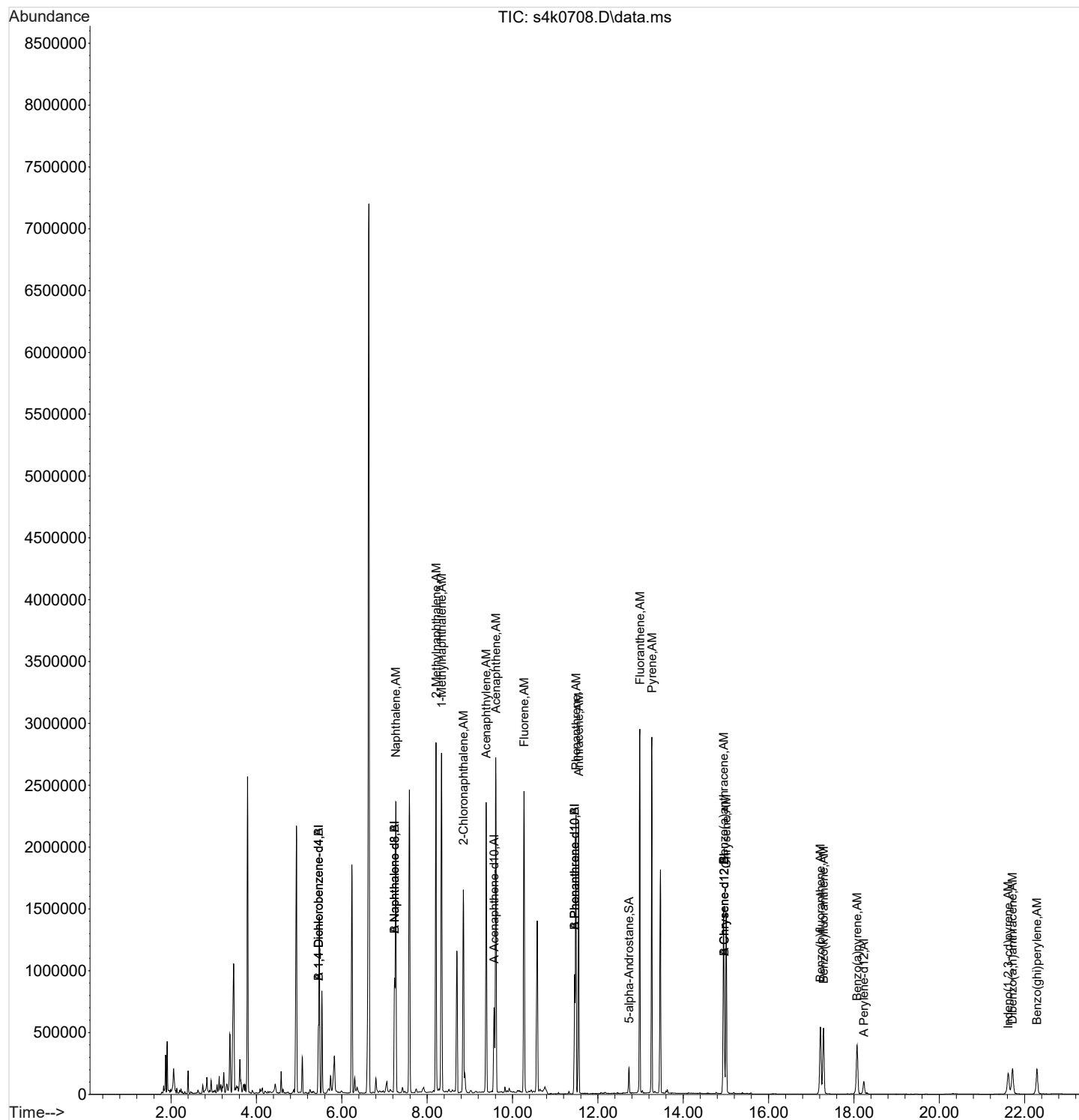
| Target Compounds           | QIon | R.T.   | Exp RT | Rel RT | Response | Conc  | Units | QValue |
|----------------------------|------|--------|--------|--------|----------|-------|-------|--------|
| 6) Naphthalene             | 128  | 7.268  | 7.268  | 1.004  | 2675752  | 8.27  | ng/uL | 100    |
| 7) 2-Methylnaphthalene     | 142  | 8.207  | 8.212  | 1.134  | 1894060  | 8.72  | ng/uL | 100    |
| 8) 1-Methylnaphthalene     | 142  | 8.337  | 8.342  | 1.152  | 1795334  | 9.67  | ng/uL | 100    |
| 10) 2-Chloronaphthalene    | 162  | 8.848  | 8.853  | 0.925  | 1587549  | 7.37  | ng/uL | 100    |
| 11) Acenaphthylene         | 152  | 9.385  | 9.391  | 0.981  | 2518456  | 8.29  | ng/uL | 100    |
| 12) Acenaphthene           | 154  | 9.610  | 9.615  | 1.004  | 1459082  | 8.91  | ng/uL | 100    |
| 13) Fluorene               | 166  | 10.272 | 10.277 | 1.074  | 1722768  | 9.03  | ng/uL | 100    |
| 15) Phenanthrene           | 178  | 11.488 | 11.489 | 1.003  | 2579725  | 8.28  | ng/uL | 100    |
| 16) Anthracene             | 178  | 11.552 | 11.553 | 1.008  | 2485198  | 8.59  | ng/uL | 100    |
| 18) Fluoranthene           | 202  | 12.984 | 12.981 | 1.133  | 2528426  | 8.79  | ng/uL | 100    |
| 20) Pyrene                 | 202  | 13.265 | 13.262 | 0.887  | 2511771  | 9.76  | ng/uL | 100    |
| 21) Benzo(a)anthracene     | 228  | 14.945 | 14.943 | 0.999  | 1498809  | 9.66  | ng/uL | 99     |
| 22) Chrysene               | 228  | 15.010 | 15.007 | 1.003  | 1391054  | 9.46  | ng/uL | 99     |
| 24) Benzo(b)fluoranthene   | 252  | 17.215 | 17.213 | 0.944  | 1056064  | 10.55 | ng/uL | 99     |
| 25) Benzo(k)fluoranthene   | 252  | 17.289 | 17.284 | 0.948  | 1000439  | 10.15 | ng/uL | 100    |
| 26) Benzo(a)pyrene         | 252  | 18.074 | 18.072 | 0.991  | 834709   | 10.12 | ng/uL | 100    |
| 27) Indeno(1,2,3-cd)pyrene | 276  | 21.617 | 21.615 | 1.186  | 428026   | 7.85  | ng/uL | 98     |
| 28) Dibenzo(a,h)anthracene | 278  | 21.717 | 21.718 | 1.191  | 401730   | 8.73  | ng/uL | 97     |
| 29) Benzo(ghi)perylene     | 276  | 22.291 | 22.289 | 1.223  | 418934   | 7.25  | ng/uL | 97     |

(#) = qualifier out of range (m) = manual integration (+) = signals summed  
(A) = Over the calibration range (d) = deleted

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\s110716.B\  
Data File : s4k0708.D  
Acq On : 07 Nov 2016 11:22  
Operator : JMB3  
InstName : MSD4  
Sample : |1203661745|1612777|1|SVM|1|MSD|||  
Misc : |MSDS417D S| SOIL MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 07 12:00:32 2016  
Quant Method : C:\msdchem\1\DATA\s110716.B\MSD4 SIMPAHPLUS 8270d 101316.m  
Quant Title : BNA01 SubList :  
QLast Update : Thu Oct 13 14:32:32 2016  
Response via : Initial Calibration  
Integrator: RTE



# Miscellaneous

# Prep Logbook

## Automated Soxhlet Extraction

**Batch ID:** 1612776      **Verified by:** \_\_\_\_\_  
**Analyst:** Mia DeLee  
**Method:** SW846 3541

**Lab SOP:** GL-OA-E-066 REV# 7  
**Instrument:** Semi-Volatiles Manual

| Sample ID                  | Prep Date            | Aliquot (g) | Prepped Aliquot (mL) | Prepped Factor (mL/g) |
|----------------------------|----------------------|-------------|----------------------|-----------------------|
| 1203661742 MB              | 04-NOV-2016 08:33:00 | 30.011      | 1                    | 0.03332               |
| 1203661743 LCS             | 04-NOV-2016 08:33:00 | 30.027      | 1                    | 0.0333                |
| 409254013                  | 04-NOV-2016 08:33:00 | 30.007      | 1                    | 0.03333               |
| 1203661744 MS (409254013)  | 04-NOV-2016 08:33:00 | 30.041      | 1                    | 0.03329               |
| 1203661745 MSD (409254013) | 04-NOV-2016 08:33:00 | 30.03       | 1                    | 0.0333                |
| 409254014                  | 04-NOV-2016 08:33:00 | 30.102      | 1                    | 0.03322               |
| 409254015                  | 04-NOV-2016 08:33:00 | 30.049      | 1                    | 0.03328               |
| 409254016                  | 04-NOV-2016 08:33:00 | 30.078      | 1                    | 0.03325               |
| 409254017                  | 04-NOV-2016 08:33:00 | 30.038      | 1                    | 0.03329               |
| 409254018                  | 04-NOV-2016 08:33:00 | 30.015      | 1                    | 0.03332               |
| 409254019                  | 04-NOV-2016 08:33:00 | 30.055      | 1                    | 0.03327               |
| 409254026                  | 04-NOV-2016 08:33:00 | 30.057      | 1                    | 0.03327               |
| 409254027                  | 04-NOV-2016 08:33:00 | 30.005      | 1                    | 0.03333               |
| 409254028                  | 04-NOV-2016 08:33:00 | 30.055      | 1.4                  | 0.04658               |

| Type  | Sample Id  | Description           | Serial Number | Spike Amt | Units | Comments:  |
|-------|------------|-----------------------|---------------|-----------|-------|--|
| LCS   | 1203661743 | PAH SIM LCS 10 mg/L   | UE160912-20   | 1         | mL    | Final Solvent: CH <sub>2</sub> Cl <sub>2</sub>   |
| MS    | 1203661744 | PAH SIM LCS 10 mg/L   | UE160912-20   | 1         | mL    | Verified by: SJW   |
| MSD   | 1203661745 | PAH SIM LCS 10 mg/L   | UE160912-20   | 1         | mL    | Samples 409254013--4018 were slightly muddy. Sample 409254019 was very wet.  |
| SURR  | All        | BNA for all Surrogate | UE160912-12   | 1         | mL    |  |
| REGNT | All        | Sand pure 40-100 mesh | 160712-A      | 30        | g     | Samples 409254026--4028 contained moist soil. Sample 409254028 appeared greasy while concentrating on the TurboVap and did not concentrate to 1mL; the final volume is recorded above. |
| REGNT | All        | Acetone               | 160913-B4     | 60        | mL    |  |
| REGNT | All        | Methylene Chloride    | 2470801       | 60        | mL    |  |



# Prep Logbook

## Automated Soxhlet Extraction

**Batch ID:** 1614269      **Verified by:** \_\_\_\_\_  
**Analyst:** Mia DeLee  
**Method:** SW846 3541

**Lab SOP:** GL-OA-E-066 REV# 7  
**Instrument:** Semi-Volatiles Manual

| Sample ID                  | Prep Date            | Aliquot (g) | Prepped Aliquot (mL) | Prepped Factor (mL/g) |
|----------------------------|----------------------|-------------|----------------------|-----------------------|
| 1203665318 MB              | 08-NOV-2016 12:02:00 | 30.007      | 1                    | 0.03333               |
| 1203665319 LCS             | 08-NOV-2016 12:02:00 | 30.028      | 1                    | 0.0333                |
| 409239005                  | 08-NOV-2016 12:02:00 | 10.002      | 1                    | 0.09998               |
| 409239007                  | 08-NOV-2016 12:02:00 | 10.053      | 1                    | 0.09947               |
| 409239009                  | 08-NOV-2016 12:02:00 | 10.046      | 1                    | 0.09954               |
| 409239011                  | 08-NOV-2016 12:02:00 | 10.025      | 1                    | 0.09975               |
| 409239024                  | 08-NOV-2016 12:02:00 | 10.045      | 1                    | 0.09955               |
| 409239026                  | 08-NOV-2016 12:02:00 | 10.019      | 1                    | 0.09981               |
| 409254029                  | 08-NOV-2016 12:02:00 | 30.046      | 1                    | 0.03328               |
| 409254032                  | 08-NOV-2016 12:02:00 | 30.104      | 1                    | 0.03322               |
| 409254034                  | 08-NOV-2016 12:02:00 | 30.015      | 1                    | 0.03332               |
| 409254036                  | 08-NOV-2016 12:02:00 | 30.032      | 1                    | 0.0333                |
| 409254038                  | 08-NOV-2016 12:02:00 | 30.041      | 1                    | 0.03329               |
| 409286001                  | 08-NOV-2016 12:02:00 | 30.026      | 1                    | 0.0333                |
| 1203665320 MS (409286001)  | 08-NOV-2016 12:02:00 | 30.018      | 1                    | 0.03331               |
| 1203665321 MSD (409286001) | 08-NOV-2016 12:02:00 | 30.011      | 1                    | 0.03332               |
| 409831001                  | 08-NOV-2016 12:02:00 | 30.13       | 1                    | 0.03319               |
| 409833001                  | 08-NOV-2016 12:02:00 | 30.19       | 1                    | 0.03312               |
| 409833002                  | 08-NOV-2016 12:02:00 | 30.12       | 1                    | 0.0332                |

| Type  | Sample Id  | Description                          | Serial Number | Spike Amt | Units | Comments:   |
|-------|------------|--------------------------------------|---------------|-----------|-------|---|
| LCS   | 1203665319 | BNA LCS w/o Benzidine/Atrazine 50ppm | WE161026-40   | 1         | mL    | Final Solvent: CH2Cl2<br>Verified by: SR  |
| LCS   | 1203665319 | BENZIDINE/Atrazine LCS               | WE161026-48   | 1         | mL    |   |
| MS    | 1203665320 | BNA LCS w/o Benzidine/Atrazine 50ppm | WE161026-40   | 1         | mL    | Samples 409239005--9026 contained pieces of rock/powder. Due to the limited volume of these samples, a 10g aliquot was used (per group leader). |
| MS    | 1203665320 | BENZIDINE/Atrazine LCS               | WE161026-48   | 1         | mL    |   |
| MSD   | 1203665321 | BNA LCS w/o Benzidine/Atrazine 50ppm | WE161026-40   | 1         | mL    | Sample 409286001 contained a moist, clumpy solid.   |
| MSD   | 1203665321 | BENZIDINE/Atrazine LCS               | WE161026-48   | 1         | mL    |   |
| SURR  | All        | BNA for all Surrogate                | UE161108-06   | 1         | mL    |   |
| REGNT | All        | Sand pure 40-100 mesh                | 160712-A      | 30        | g     |   |
| REGNT | All        | Acetone                              | 160913-B4     | 60        | mL    |   |
| REGNT | All        | Methylene Chloride                   | 2474087       | 60        | mL    |   |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD1

## GEL ORGANIC RUN LOG

DATE: 29-Sep-16METHOD: See DataOPERATOR: JLD1Sequence Number: S092916.BMultiplier Voltage: 1553

Calibration Information:

Internal Std ID: UBN150908-01.4

Initial Calibration Dates: See Calibration History

Internal Std ID: WBN160602-99 (SIM)

Initial Calibration Std ID's: See Associated Data and Run Log

Solvent Reference ID: 2403002

GEL SOP: GL-OA-E-009

| Analysis   |       | Data File | Lab Sample ID  | Client | Batch # | Dil.   | AS     | Analyst |                | Comments |
|------------|-------|-----------|----------------|--------|---------|--------|--------|---------|----------------|----------|
| Date       | Time  |           |                |        |         | Factor | Slot # |         |                |          |
| 09/29/2016 | 09:17 | s1i2901.D | WBN160728-99   | DFTPP  | DFTPP   | 1      | 1      | JLD1    | USE            |          |
| 09/29/2016 | 09:35 | s1i2902.D | INSTRUMENTBLA  |        |         | 1      | 2      | JLD1    | IB             |          |
| 09/29/2016 | 10:05 | s1i2903.D | WBN160920-08   | M1     | ICAL    | 1      | 3      | JLD1    | USE            |          |
| 09/29/2016 | 10:35 | s1i2904.D | WBN160920-07   | M2     | ICAL    | 1      | 4      | JLD1    | USE            |          |
| 09/29/2016 | 11:09 | s1i2905.D | WBN160920-06   | M3     | ICAL    | 1      | 5      | JLD1    | USE            |          |
| 09/29/2016 | 11:43 | s1i2906.D | WBN160920-05.1 | M4DUSE | ICAL    | 1      | 6      | JLD1    | DUSE           |          |
| 09/29/2016 | 12:18 | s1i2907.D | WBN160920-04   | M5     | ICAL    | 1      | 7      | JLD1    | USE            |          |
| 09/29/2016 | 12:52 | s1i2908.D | WBN160920-03   | M6     | ICAL    | 1      | 8      | JLD1    | USE            |          |
| 09/29/2016 | 13:26 | s1i2909.D | WBN160920-02   | M7     | ICAL    | 1      | 9      | JLD1    | USE            |          |
| 09/29/2016 | 14:01 | s1i2910.D | WBN160920-01   | M8     | ICAL    | 1      | 10     | JLD1    | USE            |          |
| 09/29/2016 | 14:35 | s1i2911.D | WBN160920-05.1 | M4     | ICAL    | 1      | 6      | JLD1    | DUSE           |          |
| 09/29/2016 | 15:10 | s1i2912.D | WBN160920-09.1 | MICV   | ICV     | 1      | 11     | JLD1    | DUSE           |          |
| 09/29/2016 | 15:44 | s1i2913.D | WBN160920-05.1 | M4     | ICAL    | 1      | 6      | JLD1    | USE            |          |
| 09/29/2016 | 16:19 | s1i2914.D | WBN160920-09.1 | MICV   | ICV     | 1      | 11     | JLD1    | USE            |          |
| 09/29/2016 | 16:52 | s1i2915.D | WBN160728-99   | DFTPP  | DFTPP   | 1      | 1      | JLD1    | USE            |          |
| 09/29/2016 | 17:10 | s1i2916.D | INSTRUMENTBLA  |        |         | 1      | 2      | JLD1    | IB             |          |
| 09/29/2016 | 17:40 | s1i2917.D | WBN160921-17   | A2     | ICAL    | 1      | 12     | JLD1    | USE            |          |
| 09/29/2016 | 18:09 | s1i2918.D | WBN160921-16   | A3     | ICAL    | 1      | 13     | JLD1    | USE            |          |
| 09/29/2016 | 18:39 | s1i2919.D | WBN160921-15.1 | A4     | ICAL    | 1      | 14     | JLD1    | USE            |          |
| 09/29/2016 | 19:09 | s1i2920.D | WBN160921-14   | A5     | ICAL    | 1      | 15     | JLD1    | USE            |          |
| 09/29/2016 | 19:38 | s1i2921.D | WBN160921-13   | A6     | ICAL    | 1      | 16     | JLD1    | USE            |          |
| 09/29/2016 | 20:08 | s1i2922.D | WBN160921-12.1 | A7     | ICAL    | 1      | 17     | JLD1    | USE            |          |
| 09/29/2016 | 20:38 | s1i2923.D | WBN160921-11   | A8     | ICAL    | 1      | 18     | JLD1    | USE            |          |
| 09/29/2016 | 21:08 | s1i2924.D | WBN160730-18.1 | AICV   | ICV     | 1      | 19     | JLD1    | DUSE; SEE 2948 |          |
| 09/29/2016 | 21:38 | s1i2925.D | WBN160731-25   | P2     | ICAL    | 1      | 20     | JLD1    | USE            |          |
| 09/29/2016 | 22:07 | s1i2926.D | WBN160731-24   | P3     | ICAL    | 1      | 21     | JLD1    | USE            |          |
| 09/29/2016 | 22:37 | s1i2927.D | WBN160731-23.1 | P4     | ICAL    | 1      | 22     | JLD1    | USE            |          |
| 09/29/2016 | 23:07 | s1i2928.D | WBN160731-22   | P5     | ICAL    | 1      | 23     | JLD1    | USE            |          |
| 09/29/2016 | 23:37 | s1i2929.D | WBN160731-21   | P6     | ICAL    | 1      | 24     | JLD1    | USE            |          |
| 09/30/2016 | 00:06 | s1i2930.D | WBN160731-20   | P7     | ICAL    | 1      | 25     | JLD1    | USE            |          |
| 09/30/2016 | 00:36 | s1i2931.D | WBN160731-19   | P8     | ICAL    | 1      | 26     | JLD1    | USE            |          |
| 09/30/2016 | 01:05 | s1i2932.D | WBN160731-26.3 | PICV   | ICV     | 1      | 27     | JLD1    | USE            |          |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD1

## GEL ORGANIC RUN LOG

|                  |           |                |       |       |   |    |      |                               |
|------------------|-----------|----------------|-------|-------|---|----|------|-------------------------------|
| 09/30/2016 01:35 | s1i2933.D | WBN160728-99   | DFTPP | DFTPP | 1 | 1  | JLD1 | USE                           |
| 09/30/2016 01:52 | s1i2934.D | INSTRUMENTBLA  |       |       | 1 | 2  | JLD1 | IB                            |
| 09/30/2016 02:22 | s1i2935.D | WBN160906-31   | H2    | ICAL  | 1 | 28 | JLD1 | USE                           |
| 09/30/2016 02:52 | s1i2936.D | WBN160906-32   | H3    | ICAL  | 1 | 29 | JLD1 | USE                           |
| 09/30/2016 03:21 | s1i2937.D | WBN160906-33.1 | H4    | ICAL  | 1 | 30 | JLD1 | USE                           |
| 09/30/2016 03:51 | s1i2938.D | WBN160906-34   | H5    | ICAL  | 1 | 31 | JLD1 | USE                           |
| 09/30/2016 04:21 | s1i2939.D | WBN160913-35   | H6    | ICAL  | 1 | 32 | JLD1 | USE                           |
| 09/30/2016 04:51 | s1i2940.D | WBN160809-38   | HICV  | ICV   | 1 | 33 | JLD1 | USE                           |
| 09/30/2016 05:21 | s1i2941.D | WBN160801-43   | B2    | ICAL  | 1 | 34 | JLD1 | USE                           |
| 09/30/2016 05:51 | s1i2942.D | WBN160801-44   | B3    | ICAL  | 1 | 35 | JLD1 | USE                           |
| 09/30/2016 06:20 | s1i2943.D | WBN160801-45.1 | B4    | ICAL  | 1 | 36 | JLD1 | USE                           |
| 09/30/2016 06:50 | s1i2944.D | WBN160801-46   | B5    | ICAL  | 1 | 37 | JLD1 | USE; NO LEVEL 6 FOR BENZ ICAL |
| 09/30/2016 07:20 | s1i2945.D | WBN160801-48   | B7    | ICAL  | 1 | 38 | JLD1 | USE                           |
| 09/30/2016 07:50 | s1i2946.D | WBN160801-49   | B8    | ICAL  | 1 | 39 | JLD1 | USE                           |
| 09/30/2016 08:20 | s1i2947.D | WBN160801-50.2 | BICV  | ICV   | 1 | 40 | JLD1 | DUSE; TIME GAP                |
| 09/30/2016 09:49 | s1i2948.D | WBN160922-18.2 | AICV  | ICV   | 1 | 41 | JLD1 | USE                           |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD1

## GEL ORGANIC RUN LOG

DATE: 10-Nov-16

METHOD: See Data

OPERATOR: JMB3

Sequence Number: S111016.B

Multiplier Voltage: 1576

Calibration Information:

Internal Std ID: UBN160520-01.2

Initial Calibration Dates: See Calibration History

Internal Std ID: WBN160804-99 (SIM)

Initial Calibration Std ID's: See Associated Data and Run Log

Solvent Reference ID: 2403002

GEL SOP: GL-OA-E-009

| Analysis   |       |           |                |        |         | Dil.   | AS     | Analyst | Comments  |
|------------|-------|-----------|----------------|--------|---------|--------|--------|---------|---|
| Date       | Time  | Data File | Lab Sample ID  | Client | Batch # | Factor | Slot # |         |   |
| 11/10/2016 | 09:34 | s1k1001.D | WBN161104-99   | DFTPP  | duse    | 1      | 1      | JMB3    | DUSE: passed  |
| 11/10/2016 | 09:51 | s1k1002.D | WBN161025-05.4 | M-CCV  | duse    | 1      | 2      | JMB3    | DUSE: outliers - performed maintenance                |
| 11/10/2016 | 11:17 | s1k1003.D | WBN161104-99   | DFTPP  | DFTPP   | 1      | 1      | JMB3    | √   |
| 11/10/2016 | 11:34 | s1k1004.D | WBN161025-05.4 | M-CCV  | duse    | 1      | 2      | JMB3    | DUSE: see s1k1006                                     |
| 11/10/2016 | 12:09 | s1k1005.D | WBN161004-18.4 | A-CCV  | CCV     | 1      | 3      | JMB3    | √   |
| 11/10/2016 | 12:40 | s1k1006.D | WBN161025-05.4 | M-CCV  | CCV     | 1      | 2      | JMB3    | √ IS1: 192132   |
| 11/10/2016 | 13:14 | s1k1007.D | WBN160731-23.2 | P-CCV  | CCV     | 1      | 4      | JMB3    | √   |
| 11/10/2016 | 13:40 | s1k1008.D | WBN161021-38   | H-CCV  | CCV     | 1      | 5      | JMB3    | √   |
| 11/10/2016 | 14:07 | s1k1009.D | WBN160801-45.2 | B-CCV  | CCV     | 1      | 6      | JMB3    | √   |
| 11/10/2016 | 14:33 | s1k1010.D | 409519002      | BETT   | 1613520 | 1      | 7      | JMB3    | Report  |
| 11/10/2016 | 15:07 | s1k1011.D | 409519005      | BETT   | 1613520 | 1      | 8      | JMB3    | Report  |
| 11/10/2016 | 15:41 | s1k1012.D | 409519008      | BETT   | 1613520 | 1      | 9      | JMB3    | Report  |
| 11/10/2016 | 16:16 | s1k1013.D | 409519012      | BETT   | 1613520 | 1      | 10     | JMB3    | Report  |
| 11/10/2016 | 16:50 | s1k1014.D | 1203663472     | MS     | 1613520 | 1      | 11     | JMB3    | Report  |
| 11/10/2016 | 17:24 | s1k1015.D | 1203663473     | MSD    | 1613520 | 1      | 12     | JMB3    | Report  |
| 11/10/2016 | 17:58 | s1k1016.D | 1203665318     | MB     | 1614270 | 1      | 13     | JMB3    | Report  |
| 11/10/2016 | 18:32 | s1k1017.D | 1203665319     | LCS    | 1614270 | 1      | 14     | JMB3    | Report  |
| 11/10/2016 | 19:06 | s1k1018.D | 409286001      | ARSL   | 1614270 | 1      | 15     | JMB3    | Report  |
| 11/10/2016 | 19:41 | s1k1019.D | 1203665320     | MS     | 1614270 | 1      | 16     | JMB3    | Report  |
| 11/10/2016 | 20:15 | s1k1020.D | 1203665321     | MSD    | 1614270 | 1      | 17     | JMB3    | Report  |
| 11/10/2016 | 20:48 | s1k1021.D | 409833001      | CARE   | 1614270 | 1      | 18     | JMB3    | Report  |
| 11/10/2016 | 21:22 | s1k1022.D | 409833002      | CARE   | 1614270 | 1      | 19     | JMB3    | Report  |
| 11/10/2016 | 21:57 | s1k1023.D | 409831001      | CARE   | 1614270 | 1      | 20     | JMB3    | DUSE: ISTD's 3-6 <10% or 0% - see dilutions on 111116 |
| 11/10/2016 | 22:30 | s1k1024.D | WBN161104-99   | DFTPP  | DFTPP   | 1      | 1      | JMB3    | DUSE: post sequence screen - PCP low                  |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD1

## GEL ORGANIC RUN LOG

DATE: 11-Nov-16

METHOD: See Data

OPERATOR: JMB3

Sequence Number: S111116.B

Multiplier Voltage: 1576

Calibration Information:

Internal Std ID: UBN160520-01.2

Initial Calibration Dates: See Calibration History

Internal Std ID: WBN160804-99 (SIM)

Initial Calibration Std ID's: See Associated Data and Run Log

Solvent Reference ID: 2403002

GEL SOP: GL-OA-E-009

| Analysis   |       | Data File | Lab Sample ID  | Client    | Batch # | Dil.   | AS     | Analyst | Comments  |
|------------|-------|-----------|----------------|-----------|---------|--------|--------|---------|---|
| Date       | Time  |           |                |           |         | Factor | Slot # |         |   |
| 11/11/2016 | 10:33 | s1k1101.D | WBN161104-99   | DFTPP     | DFTPP   | 1      | 1      | JMB3    | √   |
| 11/11/2016 | 10:50 | s1k1102.D | WBN161025-05.4 | M-CCV     | duse    | 1      | 2      | JMB3    | DUSE: see s1k1107   |
| 11/11/2016 | 11:27 | s1k1103.D | WBN161004-18.4 | A-CCV     | CCV     | 1      | 3      | JMB3    | √   |
| 11/11/2016 | 11:57 | s1k1104.D | WBN160731-23.2 | P-CCV     | CCV     | 1      | 4      | JMB3    | √   |
| 11/11/2016 | 12:23 | s1k1105.D | WBN161021-38   | H-CCV     | CCV     | 1      | 5      | JMB3    | √   |
| 11/11/2016 | 12:50 | s1k1106.D | WBN160801-45.2 | B-CCV     | CCV     | 1      | 6      | JMB3    | √   |
| 11/11/2016 | 13:48 | s1k1107.D | WBN161025-05.4 | M-CCV     | CCV     | 1      | 2      | JMB3    | √ IS1: 241123   |
| 11/11/2016 | 14:23 | s1k1108.D | WBN160921-17   | A/B-10ppm | CRDL    | 1      | 7      | JMB3    | √   |
| 11/11/2016 | 14:51 | s1k1109.D | 409254029      | HAAL      | 1614270 | 1      | 8      | JMB3    | Report  |
| 11/11/2016 | 15:21 | s1k1110.D | 409254032      | HAAL      | 1614270 | 1      | 9      | JMB3    | Report  |
| 11/11/2016 | 15:51 | s1k1111.D | 409254034      | HAAL      | 1614270 | 1      | 10     | JMB3    | Report  |
| 11/11/2016 | 16:21 | s1k1112.D | 409254036      | HAAL      | 1614270 | 1      | 11     | JMB3    | Report  |
| 11/11/2016 | 16:51 | s1k1113.D | 409254038      | HAAL      | 1614270 | 1      | 12     | JMB3    | Report  |
| 11/11/2016 | 17:21 | s1k1114.D | 409239005      | UCOR      | 1614270 | 1      | 13     | JMB3    | Report  |
| 11/11/2016 | 17:51 | s1k1115.D | 409239007      | UCOR      | 1614270 | 1      | 14     | JMB3    | Report  |
| 11/11/2016 | 18:21 | s1k1116.D | 409239009      | UCOR      | 1614270 | 10     | 15     | JMB3    | Report  |
| 11/11/2016 | 18:51 | s1k1117.D | 409239011      | UCOR      | 1614270 | 1      | 16     | JMB3    | Report: all except OR hits - see s1k1405 for 4x results   |
| 11/11/2016 | 19:21 | s1k1118.D | 409239024      | UCOR      | 1614270 | 10     | 17     | JMB3    | DUSE: possible carryover - rerun - see s1k1406            |
| 11/11/2016 | 19:50 | s1k1119.D | 409239026      | UCOR      | 1614270 | 10     | 18     | JMB3    | Report  |
| 11/11/2016 | 20:20 | s1k1120.D | 409831001      | CARE      | 1614270 | 2000   | 19     | JMB3    | DUSE: rr @ 500x - see s1k1122                             |
| 11/11/2016 | 20:54 | s1k1121.D | 409831001      | CARE      | 1614270 | 1000   | 20     | JMB3    | DUSE: rr @ 500x - see s1k1122                             |
| 11/11/2016 | 21:28 | s1k1122.D | 409831001      | CARE      | 1614270 | 500    | 21     | JMB3    | Report: per PM - no ISTD6, do not report higher dilutions |
| 11/11/2016 | 22:02 | s1k1123.D | WBN161104-99   | DFTPP     | DFTPP   | 1      | 1      | JMB3    | DUSE: post sequence screen - passed                       |
| 11/11/2016 | 22:19 | s1k1124.D | WBN161025-05.4 | M-CCV     | CCV     | 1      | 2      | JMB3    | DUSE: ok  |
| 11/11/2016 | 22:54 | s1k1125.D | WBN161004-18.4 | A/B-CCV   | CCV     | 1      | 3      | JMB3    | DUSE: ok  |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD4

## GEL ORGANIC RUN LOG

DATE: 13-Oct-16METHOD: See DataOPERATOR: JMB3Sequence Number: S101316.BMultiplier Voltage: 1812

Calibration Information:

Internal Std ID: UBN160520-01.1

Initial Calibration Dates: See Calibration History

Internal Std ID: WBN160602-99 (SIM)

Initial Calibration Std ID's: See Associated Data and Run Log

Solvent Reference ID: 2403002

GEL SOP: GL-OA-E-009

| Analysis   |       |           |                |                |         | Dil.   | AS     | Analyst | Comments |
|------------|-------|-----------|----------------|----------------|---------|--------|--------|---------|----------|
| Date       | Time  | Data File | Lab Sample ID  | Client         | Batch # | Factor | Slot # |         |          |
| 10/13/2016 | 10:14 | s4j1301.D | WBN160728-99   | DFTPP          | DFTPP   | 1      | 1      | JMB3    | √        |
| 10/13/2016 | 10:29 | s4j1302.D | WBN160804-83.1 | S-6            | ICAL    | 1      | 2      | JMB3    | √        |
| 10/13/2016 | 11:06 | s4j1303.D | WBN160804-88   | S-1            | ICAL    | 1      | 3      | JMB3    | √        |
| 10/13/2016 | 11:34 | s4j1304.D | WBN160804-87   | S-2            | ICAL    | 1      | 4      | JMB3    | √        |
| 10/13/2016 | 12:02 | s4j1305.D | WBN160804-86   | S-3            | ICAL    | 1      | 5      | JMB3    | √        |
| 10/13/2016 | 12:31 | s4j1306.D | WBN160804-85   | S-4            | ICAL    | 1      | 6      | JMB3    | √        |
| 10/13/2016 | 12:59 | s4j1307.D | WBN160804-84   | S-5            | ICAL    | 1      | 7      | JMB3    | √        |
| 10/13/2016 | 13:27 | s4j1308.D | WBN160804-82   | S-7            | ICAL    | 1      | 8      | JMB3    | √        |
| 10/13/2016 | 13:56 | s4j1309.D | WBN160804-81   | S-8            | ICAL    | 1      | 9      | JMB3    | √        |
| 10/13/2016 | 14:24 | s4j1310.D | WBN160804-89.1 | S-ICV          | ICV     | 1      | 10     | JMB3    | √        |
| 10/13/2016 | 14:52 | s4j1311.D | 1203644335     | MB             | 1605717 | 1      | 11     | JMB3    |          |
| 10/13/2016 | 15:21 | s4j1312.D | 1203644336     | LCS            | 1605717 | 1      | 12     | JMB3    |          |
| 10/13/2016 | 15:49 | s4j1313.D | 407306001      | QCQA_LOD(3510) | 1605717 | 1      | 13     | JMB3    |          |
| 10/13/2016 | 16:18 | s4j1314.D | 407306002      | QCQA_LOQ(3510) | 1605717 | 1      | 14     | JMB3    |          |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD4

## GEL ORGANIC RUN LOG

DATE: 7-Nov-16

METHOD: See Data

OPERATOR: JMB3

Sequence Number: S110716.B

Multiplier Voltage: 1812

Calibration Information:

Internal Std ID: UBN160520-01.2

Initial Calibration Dates: See Calibration History

Internal Std ID: WBN161106-99 (SIM)

Initial Calibration Std ID's: See Associated Data and Run Log

Solvent Reference ID: 2403002

GEL SOP: GL-OA-E-009

| Analysis   |       |           |                |        |         | Dil.   | AS     | Analyst | Comments   |
|------------|-------|-----------|----------------|--------|---------|--------|--------|---------|--|
| Date       | Time  | Data File | Lab Sample ID  | Client | Batch # | Factor | Slot # |         |  |
| 11/07/2016 | 08:14 | s4k0701.D | WBN161104-99   | DFTPP  | DFTPP   | 1      | 1      | JMB3    | ✓  |
| 11/07/2016 | 08:29 | s4k0702.D | WBN160804-83.4 | S-CCV  | CCV     | 1      | 2      | JMB3    | ✓ IS1: 421327  |
| 11/07/2016 | 09:01 | s4k0703.D | 1203661742     | MB     | 1612777 | 1      | 3      | JMB3    | Report   |
| 11/07/2016 | 09:29 | s4k0704.D | 1203661743     | LCS    | 1612777 | 1      | 4      | JMB3    | Report   |
| 11/07/2016 | 09:57 | s4k0705.D | 409254028      | HAAL   | 1612777 | 20     | 5      | JMB3    | DUSE: matrix, ISTD failure - rr @ 200x - see s4k0717             |
| 11/07/2016 | 10:26 | s4k0706.D | 1203661744     | MS     | 1612777 | 1      | 6      | JMB3    | Report   |
| 11/07/2016 | 10:54 | s4k0707.D | 409254013      | HAAL   | 1612777 | 1      | 7      | JMB3    | Report   |
| 11/07/2016 | 11:22 | s4k0708.D | 1203661745     | MSD    | 1612777 | 1      | 8      | JMB3    | Report   |
| 11/07/2016 | 11:51 | s4k0709.D | 409254014      | HAAL   | 1612777 | 1      | 9      | JMB3    | Report   |
| 11/07/2016 | 12:19 | s4k0710.D | 409254015      | HAAL   | 1612777 | 1      | 10     | JMB3    | Report   |
| 11/07/2016 | 12:47 | s4k0711.D | 409254016      | HAAL   | 1612777 | 1      | 11     | JMB3    | Report   |
| 11/07/2016 | 13:16 | s4k0712.D | 409254017      | HAAL   | 1612777 | 1      | 12     | JMB3    | Report   |
| 11/07/2016 | 13:44 | s4k0713.D | 409254018      | HAAL   | 1612777 | 1      | 13     | JMB3    | Report   |
| 11/07/2016 | 14:12 | s4k0714.D | 409254019      | HAAL   | 1612777 | 1      | 14     | JMB3    | Report   |
| 11/07/2016 | 14:41 | s4k0715.D | 409254026      | HAAL   | 1612777 | 1      | 15     | JMB3    | Report   |
| 11/07/2016 | 15:09 | s4k0716.D | 409254027      | HAAL   | 1612777 | 1      | 16     | JMB3    | Report   |
| 11/07/2016 | 15:38 | s4k0717.D | 409254028      | HAAL   | 1612777 | 200    | 17     | JMB3    | Report   |
| 11/07/2016 | 16:06 | s4k0718.D | 1203662815     | MB     | 1613211 | 1      | 18     | JMB3    | Report   |
| 11/07/2016 | 16:34 | s4k0719.D | 1203662816     | LCS    | 1613211 | 1      | 19     | JMB3    | Report: 3 spikes high - not hits in ERM C samples                |
| 11/07/2016 | 17:03 | s4k0720.D | 409766001      | ERM C  | 1613211 | 1      | 20     | JMB3    | Report   |
| 11/07/2016 | 17:31 | s4k0721.D | 1203662817     | MS     | 1613211 | 1      | 21     | JMB3    | Report   |
| 11/07/2016 | 17:59 | s4k0722.D | 1203662818     | MSD    | 1613211 | 1      | 22     | JMB3    | Report   |
| 11/07/2016 | 18:28 | s4k0723.D | 409766002      | ERM C  | 1613211 | 1      | 23     | JMB3    | DUSE: failed ISTD - see rr s4k0814                               |
| 11/07/2016 | 18:56 | s4k0724.D | 409766003      | ERM C  | 1613211 | 1      | 24     | JMB3    | Report   |
| 11/07/2016 | 19:24 | s4k0725.D | 409766004      | ERM C  | 1613211 | 1      | 25     | JMB3    | Report   |
| 11/07/2016 | 19:52 | s4k0726.D | 409766005      | ERM C  | 1613211 | 1      | 26     | JMB3    | Report   |
| 11/07/2016 | 20:20 | s4k0727.D | 409766006      | ERM C  | 1613211 | 1      | 27     | JMB3    | DUSE: outside tune - see rr s4k0815                              |
| 11/07/2016 | 20:49 | s4k0728.D | 409766007      | ERM C  | 1613211 | 1      | 28     | JMB3    | DUSE: outside tune - see rr s4k0816                              |
| 11/07/2016 | 21:17 | s4k0729.D | 409766008      | ERM C  | 1613211 | 1      | 29     | JMB3    | DUSE: outside tune - see rr s4k0817                              |
| 11/07/2016 | 21:45 | s4k0730.D | WBN161104-99   | DFTPP  | DFTPP   | 1      | 1      | JMB3    | DUSE: breakdown > 20% - file not printed/reviewed                |
| 11/07/2016 | 22:00 | s4k0731.D | WBN160804-83.4 | S-CCV  | CCV     | 1      | 2      | JMB3    | DUSE: Tune failed - CCV responded OK - file not printed/reviewed |
| 11/07/2016 | 22:29 | s4k0732.D | 409766006      | ERM C  | 1613211 | 1      | 27     | JMB3    | DUSE: Tune failed - file not printed/reviewed                    |

## ORGANIC RUN LOG - INSTRUMENT ID#MSD4

## GEL ORGANIC RUN LOG

|                  |           |           |      |         |   |    |      |   |
|------------------|-----------|-----------|------|---------|---|----|------|---|
| 11/07/2016 22:57 | s4k0733.D | 409766007 | ERMC | 1613211 | 1 | 28 | JMB3 | DUSE: Tune failed - file not printed/reviewed |
| 11/07/2016 23:25 | s4k0734.D | 409766008 | ERMC | 1613211 | 1 | 29 | JMB3 | DUSE: Tune failed - file not printed/reviewed |



| DATA EXCEPTION REPORT   |   |   |                             |
|---|---|---|-----------------------------|
| <b>Mo.Day Yr.</b><br>08-NOV-16  | <b>Division:</b><br>Industrial                    | <b>Quality Criteria:</b><br>Specifications  | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>SEMIOVA GC/MS  | <b>Test / Method:</b><br>SW846 3541/8270D SIM PAH | <b>Matrix Type:</b><br>Solid  | <b>Client Code:</b><br>HAAL |
| <b>Batch ID:</b><br>1612777   | <b>Sample Numbers:</b><br>See Below               |   |                             |
| <b>Potentially affected work order(s)(SDG): 409254</b><br><b>Application Issues:</b><br>Failed Yield for Surrogates<br>Manual Integration |   |   |                             |
| <b>Specification and Requirements</b>   |   | <b>DER Disposition:</b>   |                             |
| <b>Exception Description:</b>   |   |   |                             |
| 1. Failed Yield for Surrogates:<br><br>409254 028   |   | 1. Sample (See Below) did not meet surrogate recovery acceptance criteria. The sample was analyzed at a dilution. As a result, one or more surrogates were diluted out of the acceptance limits. 409254028 (SS050100) 5-alpha-Androstane [0* (30%-118%)]. |                             |

**Originator's Name:**

Josh Brooks 08-NOV-16

**Data Validator/Group Leader:**

Cameron Bearden 08-NOV-16

# DATA EXCEPTION REPORT

|  |   |  |  |
|--|---|--|--|
| <b>Mo.Day Yr.</b><br>14-NOV-16           | <b>Division:</b><br>Industrial            | <b>Quality Criteria:</b><br>Specifications | <b>Type:</b><br>Process                        |
| <b>Instrument Type:</b><br>SEMIVOA GC/MS | <b>Test / Method:</b><br>SW846 3541/8270D | <b>Matrix Type:</b><br>Solid               | <b>Client Code:</b><br>CARE, HAAL, ARSL(LANL), |
| <b>Batch ID:</b><br>1614270              | <b>Sample Numbers:</b><br>See Below       |  |  |

**Potentially affected work order(s)(SDG): 409239,409254,409286(2017-257),409831(EUI-10351),409833(EUI-10352)**

## Application Issues:

Failed Recovery for MS/MSD, or PS/PSD

Failed RPD for MS/MSD, or PS/PSD

Failed Yield for Surrogates

Manual Integration

## Specification and Requirements Exception Description:

1. Sample 409831001 and QC sample 1203665320MS failed surrogate recovery.

2. The 1203665320MS and 1203665321MSD failed spike recovery.

3. The RPD values between the 1203665320MS and 1203665321MSD were not within the acceptance limits.

## DER Disposition:

1. Sample (See Below) did not meet surrogate recovery acceptance criteria. The sample was analyzed at a dilution. As a result, one or more surrogates were diluted out of the acceptance limits.  
409831001 (0680-05-0022 L125220) 2,4,6-Tribromophenol [0\* (39%-115%)], 2-Fluorobiphenyl [170\* (35%-107%)], 2-Fluorophenol [0\* (36%-104%)], Nitrobenzene-d5 [0\* (34%-109%)], Phenol-d5 [0\* (39%-106%)] and p-Terphenyl-d14 [130\* (45%-119%)].

Sample (See Below) did not meet surrogate recovery acceptance criteria. Since the parent sample and associated MS/MSD pair displayed similar recoveries, the failures were attributed to matrix interference and the data results are reported.  
1203665320 (WST03-17-127184MS) 2,4,6-Tribromophenol [32\* (39%-115%)].

2. The MS or MSD (See Below) recovered spiked analytes outside of the established acceptance limits. As similar recoveries were displayed in the MS and MSD, the failures were attributed to sample matrix interference and the data were reported.  
1203665320 (WST03-17-127184MS) Several [See applicable report].  
1203665321 (WST03-17-127184MSD) Several [See applicable report].

3. The relative percent differences (RPD) for the MS and MSD, (See Below), were not within the acceptance limits. The failures were attributed to matrix interference. The data were reported.  
1203665320MS and 1203665321MSD (WST03-17-127184) 2,3,4,6-Tetrachlorophenol [74\* (0%-30%)], 2,4,5-Trichlorophenol [56\* (0%-30%)], 2,4,6-Trichlorophenol [62\* (0%-30%)], 2-Methyl-4,6-dinitrophenol [200\* (0%-30%)], Hexachlorocyclopentadiene [36\* (0%-30%)] and Pentachlorophenol [79\* (0%-30%)].

## Originator's Name:

Josh Brooks

14-NOV-16

## Data Validator/Group Leader:

Herbert Maier

14-NOV-16

# **FID Diesel Range Organics Analysis**

# Case Narrative

**Diesel Range Organics  
Technical Case Narrative  
Haley & Aldrich, Inc. (HAAL)  
SDG #: 409254**

**Product:** Analysis of Diesel Range Organics by Flame Ionization Detector

**Analytical Method:** SW846 3541/8015C

**Analytical Procedure:** GL-OA-E-003 REV# 28

**Analytical Batch:** 1612127

**Preparation Method:** SW846 3541

**Preparation Procedure:** GL-OA-E-010 REV# 26

**Preparation Batch:** 1612126

The following samples were analyzed using the above methods and analytical procedure(s).

| <b><u>GEL Sample ID#</u></b> | <b><u>Client Sample Identification</u></b>       |
|------------------------------|--|
| 409254040                    | DP060321   |
| 409254041                    | DP060113   |
| 409254042                    | DP060212   |
| 409254043                    | DP060212DUP                                      |
| 1203659992                   | Method Blank (MB)                                |
| 1203659993                   | Laboratory Control Sample (LCS)                  |
| 1203659994                   | 409254040(DP060321) Matrix Spike (MS)            |
| 1203659995                   | 409254040(DP060321) Matrix Spike Duplicate (MSD) |

The samples in this SDG were analyzed on a "dry weight" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Quality Control (QC) Information**

**Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria; however, the MB contained low level (below the PQL) of hydrocarbons.

**Miscellaneous Information**

**Manual Integrations**

Samples 1203659993 (LCS), 1203659994 (DP060321MS) and 1203659995 (DP060321MSD) required manual integration to correctly position the baseline as set in the calibration standard injections.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Qualifier Definition Report for

HAAL002 Haley & Aldrich, Inc.

Client SDG: 409254 GEL Work Order: 409254

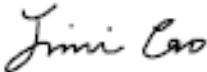
#### The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- J Value is estimated
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

#### Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Jimin Cao

Date: 18 NOV 2016

Title: Data Validator

# Sample Data Summary

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**FID Diesel Range Organics  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

**SDG Number:** 409254  
**Lab Sample ID:** 409254040**Date Collected:** 10/26/2016 12:31  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8015C  
**Inst:** FID7.1  
**Analyst:** LXA1  
**Aliquot:** 30.062 g  
**Column:** DB-5ms**Matrix:** SOIL  
**%Moisture:** 15.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-003  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

---

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | BJ        | 7640   | ug/Kg | 2550    | 7830    |

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**FID Diesel Range Organics  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

**SDG Number:** 409254  
**Lab Sample ID:** 409254041**Date Collected:** 10/26/2016 12:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8015C  
**Inst:** FID7.1  
**Analyst:** LXA1  
**Aliquot:** 30.025 g  
**Column:** DB-5ms**Matrix:** SOIL  
**%Moisture:** 7.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-003  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

---

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | BJ        | 6850   | ug/Kg | 2340    | 7210    |

---

## FID Diesel Range Organics

Page 1 of 1

## Certificate of Analysis

## Sample Summary

SDG Number: 409254  
Lab Sample ID: 409254042

Date Collected: 10/26/2016 13:22  
Date Received: 10/27/2016 09:00  
Client: HAAL002  
Method: SW846 3541/8015C  
Inst: FID7.1  
Analyst: LXA1  
Aliquot: 30.004 g  
Column: DB-5ms

Matrix: SOIL  
%Moisture: 16.9  
Project: HAAL00201  
SOP Ref: GL-OA-E-003  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL

Client ID: DP060212  
Batch ID: 1612127  
Run Date: 11/04/2016 04:12  
Prep Date: 11/02/2016 12:26  
Data File: 110316\_DRO\F7K0328.D

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | BJ        | 6840   | ug/Kg | 2610    | 8020    |

## FID Diesel Range Organics

Page 1 of 1

## Certificate of Analysis

## Sample Summary

SDG Number: 409254  
Lab Sample ID: 409254043

Date Collected: 10/26/2016 13:22  
Date Received: 10/27/2016 09:00  
Client: HAAL002  
Method: SW846 3541/8015C  
Inst: FID7.1  
Analyst: LXA1  
Aliquot: 30.015 g  
Column: DB-5ms

Matrix: SOIL  
%Moisture: 24.2  
Project: HAAL00201  
SOP Ref: GL-OA-E-003  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL

Client ID: DP060212DUP  
Batch ID: 1612127  
Run Date: 11/04/2016 04:51  
Prep Date: 11/02/2016 12:26  
Data File: 110316\_DRO\F7K0329.D

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | B         | 9100   | ug/Kg | 2860    | 8790    |

# **Quality Control Summary**

SDG Number: 409254  
Matrix Type: SOLID

| Sample ID  | Client ID             | OTP<br>%REC |
|------------|-----------------------|-------------|
| 1203659992 | MB for batch 1612126  | 70          |
| 1203659993 | LCS for batch 1612126 | 75          |
| 409254040  | DP060321              | 79          |
| 1203659994 | DP060321MS            | 85          |
| 1203659995 | DP060321MSD           | 70          |
| 409254041  | DP060113              | 80          |
| 409254042  | DP060212              | 75          |
| 409254043  | DP060212DUP           | 83          |

Surrogate

OTP = o-Terphenyl

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

Acceptance Limits

(40%-109%)

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**FID Diesel Range Organics**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 1 of 1

**SDG Number:** 409254**Sample Type:** Laboratory Control Sample**Client ID:** LCS for batch 1612126**Matrix:** SOIL**Lab Sample ID** 1203659993**Instrument:** FID7.I**Analysis Date:** 11/04/2016 00:58**Dilution:** 1**Analyst:** LXA1**Prep Batch ID:**1612126**Inj. Vol:** 1 uL**Batch ID:** 1612127

---

| CAS No     | Parmname                  | Amount<br>Added<br>ug/Kg | Sample<br>Conc.<br>ug/Kg | Spike<br>Conc.<br>ug/Kg | Recovery<br>% | Acceptance<br>Limits |
|------------|---------------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|
| 68334-30-5 | LCS Diesel Range Organics | 33300                    | 0.0                      | 25900                   | 78            | 56-110               |

---

FID Diesel Range Organics  
Quality Control Summary  
Spike Recovery Report

|               |            |                |                  |
|---------------|------------|----------------|------------------|
| SDG Number:   | 409254     | Sample Type:   | Matrix Spike     |
| Client ID:    | DP060321MS | Matrix:        | SOIL             |
| Lab Sample ID | 1203659994 | %Moisture:     | 15.1             |
| Instrument:   | FID7.I     | Analysis Date: | 11/04/2016 02:15 |
| Analvst:      | LXA1       | Prep Batch ID: | 1612126          |
| Inj. Vol:     | 1 uL       | Batch ID:      | 1612127          |

| CAS No     | Parmname                 | Amount Added<br>ug/Kg | Sample Conc.<br>ug/Kg | Spike Conc.<br>ug/Kg | Recovery % | Acceptance Limits |
|------------|--------------------------|-----------------------|-----------------------|----------------------|------------|-------------------|
| 68334-30-5 | MS Diesel Range Organics | 39300                 | 7640 BJ               | 45600                | 97         | 32-127            |

FID Diesel Range Organics  
Quality Control Summary  
Spike Recovery Report

SDG Number: 409254

Client ID: DP060321MSD

Lab Sample ID 1203659995

Instrument: FID7.I

Analvst: LXA1

Inj. Vol: 1 uL

Sample Type: Matrix Spike Duplicate

Matrix: SOIL

%Moisture: 15.1

Analysis Date: 11/04/2016 02:54

Prep Batch ID:1612126

Batch ID: 1612127

Dilution: 1

| CAS No     | Parmname                  | Amount Added<br>ug/Kg | Sample Conc.<br>ug/Kg | Spike Conc.<br>ug/Kg | Recovery % | Acceptance Limits | RPD % | Acceptance Limits |
|------------|---------------------------|-----------------------|-----------------------|----------------------|------------|-------------------|-------|-------------------|
| 68334-30-5 | MSD Diesel Range Organics | 39200                 | 7640 BJ               | 33100                | 65         | 32-127            | 32    | 0-72              |



## Method Blank Summary

Page 1 of 1

|                |                      |                |                  |            |                      |
|----------------|----------------------|----------------|------------------|------------|----------------------|
| SDG Number:    | 409254               | Client:        | HAAL002          | Matrix:    | SOIL                 |
| Client ID:     | MB for batch 1612126 | Instrument ID: | FID7.I           | Data File: | 110316_DRO\F7K0322.D |
| Lab Sample ID: | 1203659992           | Prep Date:     | 11/02/2016 12:26 | Analyzed:  | 11/04/16 00:19       |
| Column:        | DB-5ms               |                |                  |            |                      |

This method blank applies to the following samples and quality control samples:

| Client Sample ID         | Lab Sample ID | File ID              | Date Analyzed | Time Analyzed |
|--------------------------|---------------|----------------------|---------------|---------------|
| 01 LCS for batch 1612126 | 1203659993    | 110316_DRO\F7K0323.D | 11/04/16      | 0058          |
| 02 DP060321              | 409254040     | 110316_DRO\F7K0324.D | 11/04/16      | 0136          |
| 03 DP060321MS            | 1203659994    | 110316_DRO\F7K0325.D | 11/04/16      | 0215          |
| 04 DP060321MSD           | 1203659995    | 110316_DRO\F7K0326.D | 11/04/16      | 0254          |
| 05 DP060113              | 409254041     | 110316_DRO\F7K0327.D | 11/04/16      | 0333          |
| 06 DP060212              | 409254042     | 110316_DRO\F7K0328.D | 11/04/16      | 0412          |
| 07 DP060212DUP           | 409254043     | 110316_DRO\F7K0329.D | 11/04/16      | 0451          |

# Sample Data

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**FID Diesel Range Organics  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

**SDG Number:** 409254  
**Lab Sample ID:** 409254040**Date Collected:** 10/26/2016 12:31  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8015C  
**Inst:** FID7.1  
**Analyst:** LXA1  
**Aliquot:** 30.062 g  
**Column:** DB-5ms**Matrix:** SOIL  
**%Moisture:** 15.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-003  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

---

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | BJ        | 7640   | ug/Kg | 2550    | 7830    |

---

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110316 DRO\  
Data File : F7K0324.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 01:36  
Operator : LXA1 InstName : FID7  
Sample : |409254040|1612127|1|DROQ|1|HAAL|||  
Misc : |FIDDROC4 S|SOIL|DP060321|MIX[A]|||  
ALS Vial : 24 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:38 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta     | Response | Conc   | Units |
|-----------------------------|--------|----------------|-----------|----------|--------|-------|
| -----                       |        |                |           |          |        |       |
| System Monitoring Compounds |        |                |           |          |        |       |
| 2) SA o-Terphenyl           | 14.169 | 14.166         | -0.003    | 29758794 | 15.763 | mg/L  |
| Compound                    | Amount | Range          | Recovery  |          |        |       |
| 2) o-Terphenyl              | 20.000 | No Limits      | 79%       |          |        |       |
| Target Compounds            |        |                |           |          |        |       |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 | 314124265 | 194.981  | mg/L   |       |
| -----                       |        |                |           |          |        |       |

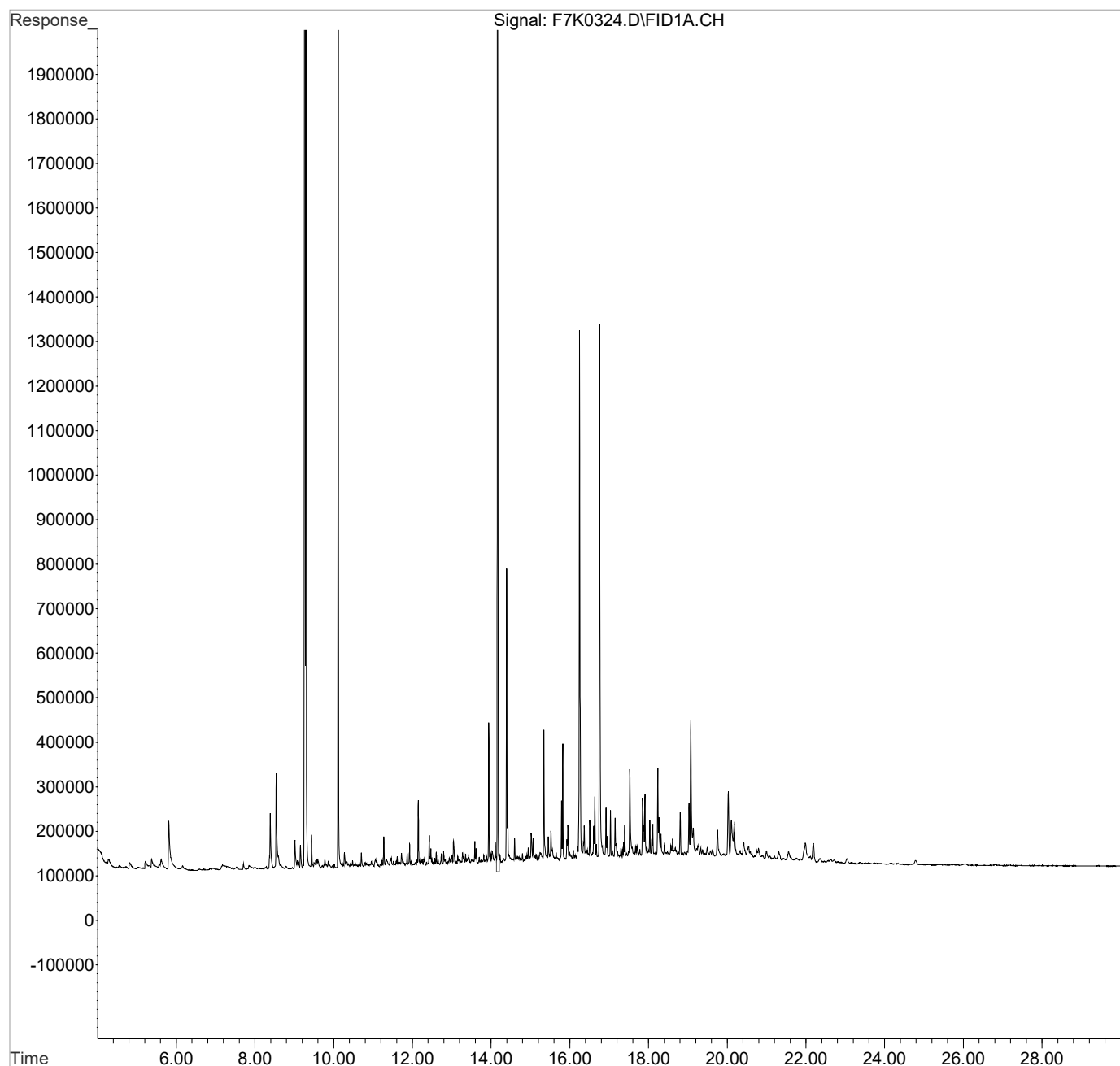
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

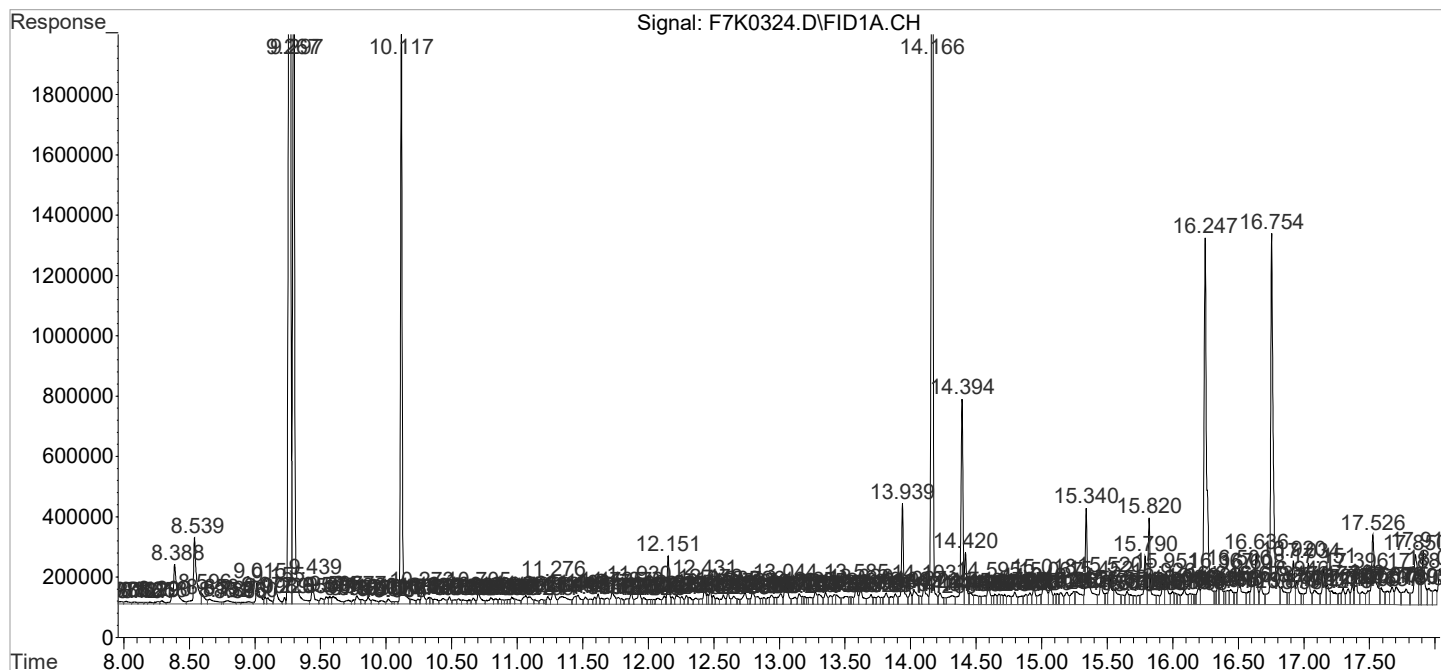
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\110316\_DRO\  
DaData File : F7K0324.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 01:36  
Operator : LXA1 InstName : FID7  
Sample : |409254040|1612127|1|DROQ|1|HAAL|||  
Misc : |FIDDROC4 S|SOIL|DP060321|MIX[A]|||  
ALS Vial : 24 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:38 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

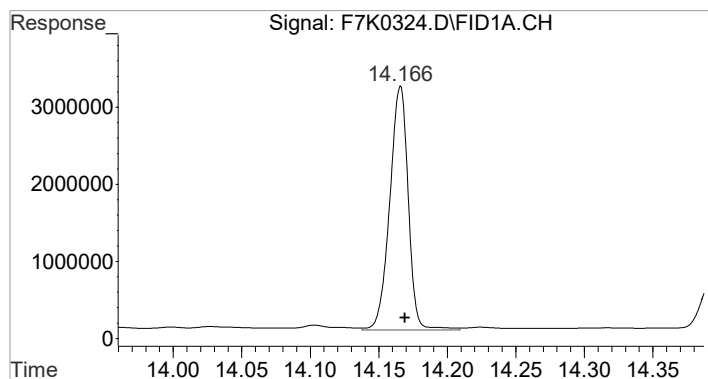
Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um





Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 343883059  
 Total SMC/ISTD Resp: 29758794  
 Final Resp: 314124265



#2  
 o-Terphenyl  
 R.T.: 14.166 min  
 Delta R.T.: -0.003 min  
 Response: 29758794  
 Conc: 15.76 mg/L

## FID Diesel Range Organics

Page 1 of 1

## Certificate of Analysis

## Sample Summary

SDG Number: 409254  
Lab Sample ID: 409254041

Date Collected: 10/26/2016 12:53  
Date Received: 10/27/2016 09:00  
Client: HAAL002  
Method: SW846 3541/8015C  
Inst: FID7.1  
Analyst: LXA1  
Aliquot: 30.025 g  
Column: DB-5ms

Matrix: SOIL  
%Moisture: 7.6  
Project: HAAL00201  
SOP Ref: GL-OA-E-003  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL

Client ID: DP060113  
Batch ID: 1612127  
Run Date: 11/04/2016 03:33  
Prep Date: 11/02/2016 12:26  
Data File: 110316\_DRO\F7K0327.D

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | BJ        | 6850   | ug/Kg | 2340    | 7210    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110316 DRO\  
Data File : F7K0327.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 03:33  
Operator : LXA1 InstName : FID7  
Sample : |409254041|1612127|1|DROQ|1|HAAL|||  
Misc : |FIDDROC4 S|SOIL|DP060113|MIX[A]|||  
ALS Vial : 27 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:44 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta     | Response | Conc   | Units |
|-----------------------------|--------|----------------|-----------|----------|--------|-------|
| -----                       |        |                |           |          |        |       |
| System Monitoring Compounds |        |                |           |          |        |       |
| 2) SA o-Terphenyl           | 14.169 | 14.165         | -0.004    | 30309328 | 16.055 | mg/L  |
| Compound                    | Amount | Range          | Recovery  |          |        |       |
| 2) o-Terphenyl              | 20.000 | No Limits      | 80%       |          |        |       |
| Target Compounds            |        |                |           |          |        |       |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 | 305986898 | 189.930  | mg/L   |       |
| -----                       |        |                |           |          |        |       |

(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

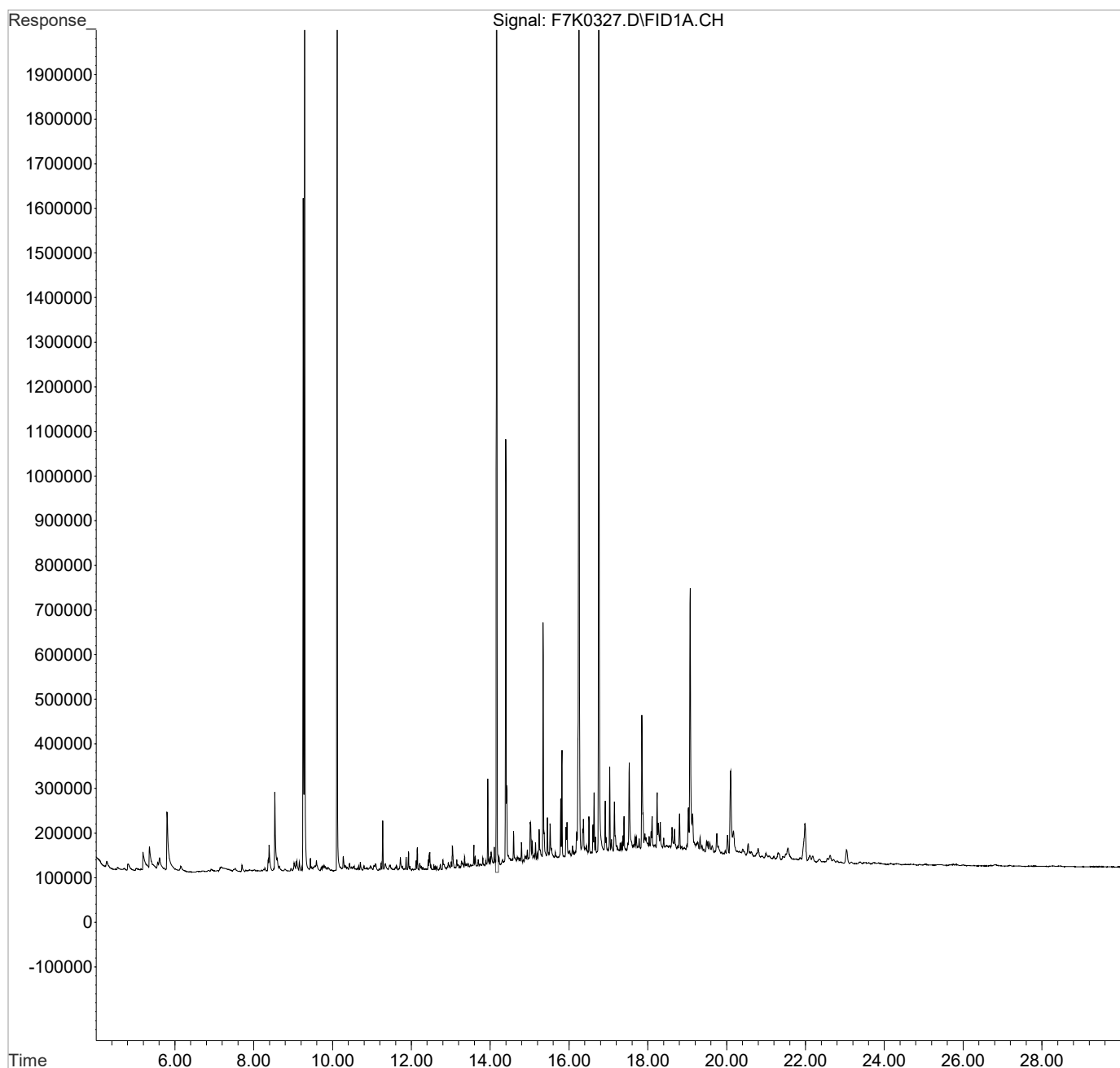


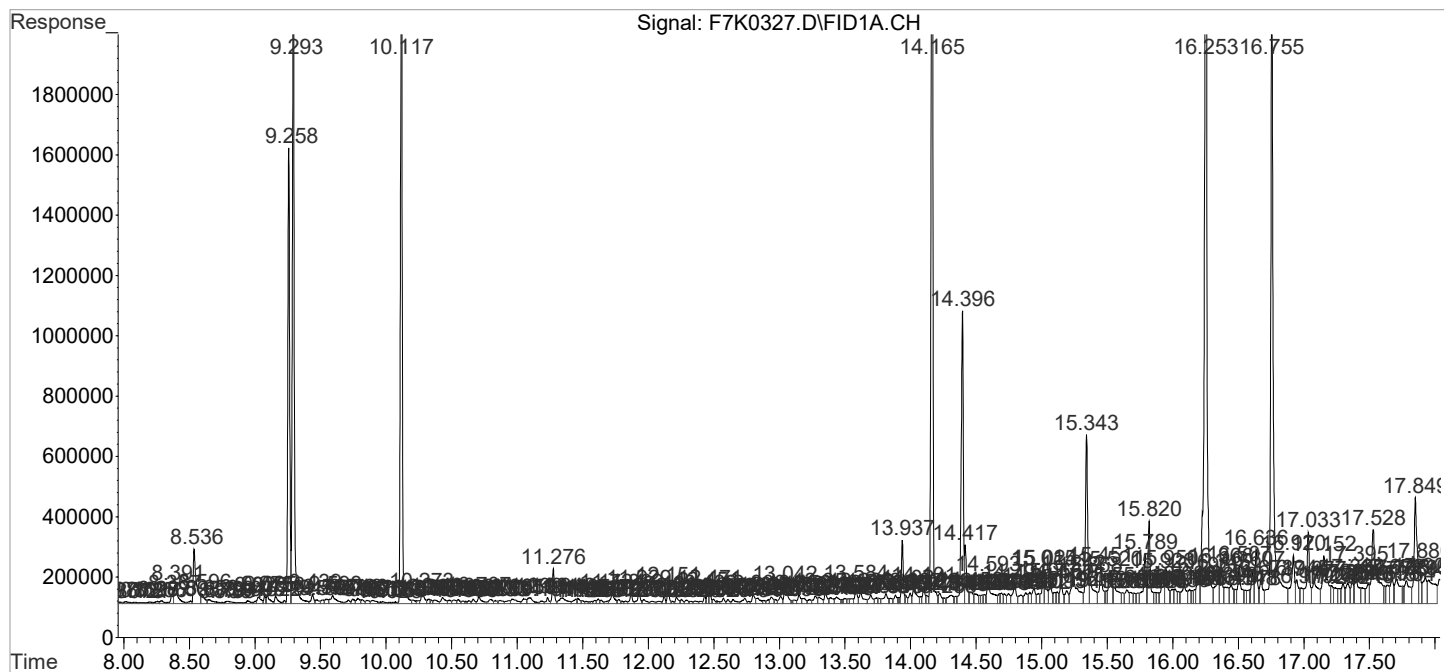
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\110316\_DRO\  
DaData File : F7K0327.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 03:33  
Operator : LXA1 InstName : FID7  
Sample : |409254041|1612127|1|DROQ|1|HAAL|||  
Misc : |FIDROC4 S|SOIL|DP060113|MIX[A]|||  
ALS Vial : 27 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:44 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

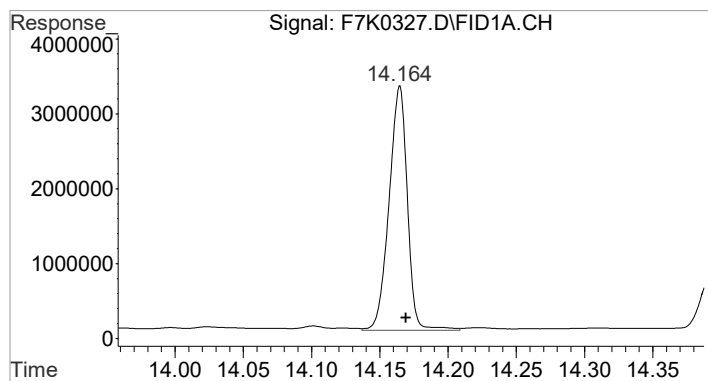
Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um





Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 336296227  
 Total SMC/ISTD Resp: 30309328  
 Final Resp: 305986898



#2  
 o-Terphenyl  
 R.T.: 14.165 min  
 Delta R.T.: -0.004 min  
 Response: 30309328  
 Conc: 16.06 mg/L

## FID Diesel Range Organics

Page 1 of 1

## Certificate of Analysis

## Sample Summary

SDG Number: 409254  
Lab Sample ID: 409254042

Date Collected: 10/26/2016 13:22  
Date Received: 10/27/2016 09:00  
Client: HAAL002  
Method: SW846 3541/8015C  
Inst: FID7.1  
Analyst: LXA1  
Aliquot: 30.004 g  
Column: DB-5ms

Matrix: SOIL  
%Moisture: 16.9  
Project: HAAL00201  
SOP Ref: GL-OA-E-003  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL

Client ID: DP060212  
Batch ID: 1612127  
Run Date: 11/04/2016 04:12  
Prep Date: 11/02/2016 12:26  
Data File: 110316\_DRO\F7K0328.D

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | BJ        | 6840   | ug/Kg | 2610    | 8020    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110316 DRO\  
Data File : F7K0328.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 04:12  
Operator : LXA1 InstName : FID7  
Sample : |409254042|1612127|1|DROQ|1|HAAL|||  
Misc : |FIDDROC4 S|SOIL|DP060212|MIX[A]|||  
ALS Vial : 28 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:46 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta     | Response | Conc   | Units |
|-----------------------------|--------|----------------|-----------|----------|--------|-------|
| -----                       |        |                |           |          |        |       |
| System Monitoring Compounds |        |                |           |          |        |       |
| 2) SA o-Terphenyl           | 14.169 | 14.167         | -0.002    | 28368034 | 15.027 | mg/L  |
| Compound                    | Amount | Range          | Recovery  |          |        |       |
| 2) o-Terphenyl              | 20.000 | No Limits      | 75%       |          |        |       |
| Target Compounds            |        |                |           |          |        |       |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 | 274759252 | 170.546  | mg/L   |       |
| -----                       |        |                |           |          |        |       |

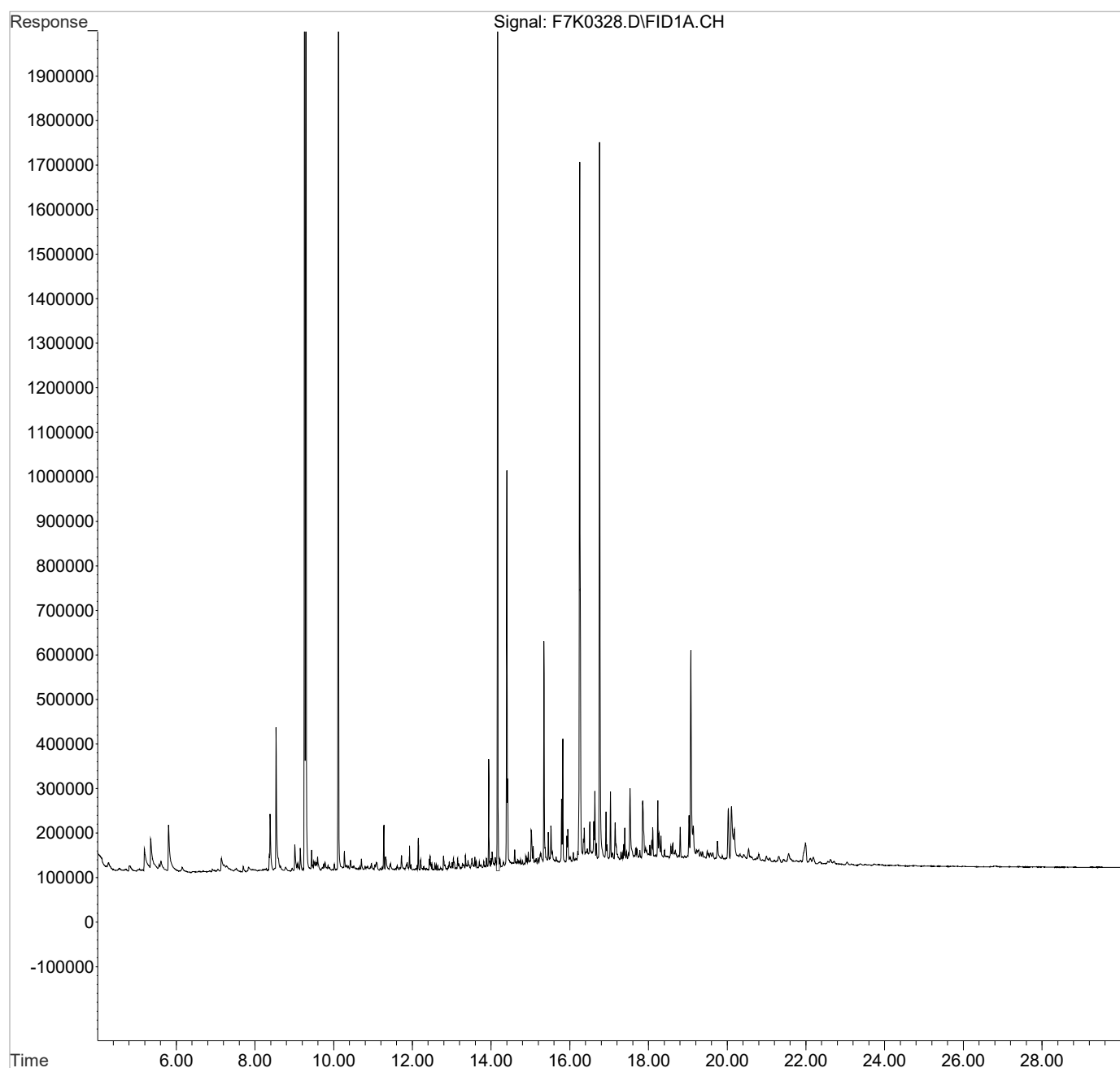
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

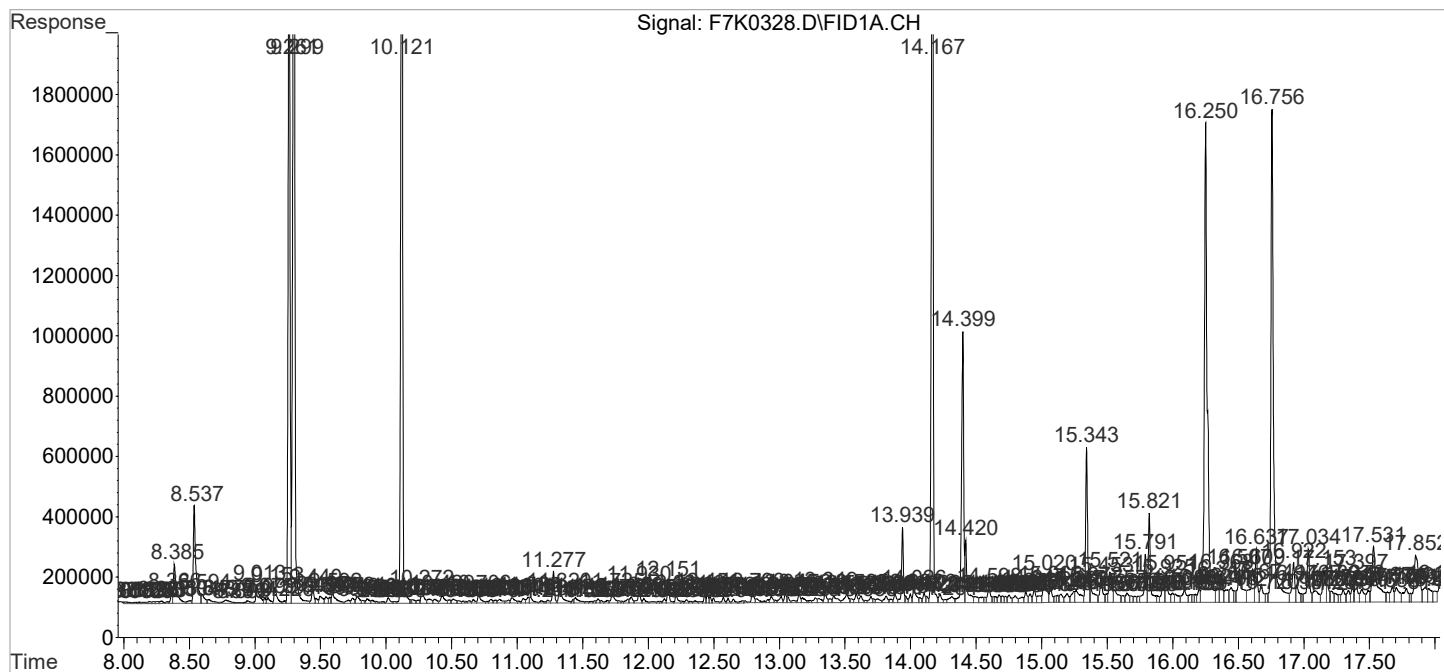
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\110316\_DRO\  
DaData File : F7K0328.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 04:12  
Operator : LXA1 InstName : FID7  
Sample : |409254042|1612127|1|DROQ|1|HAAL|||  
Misc : |FIDDROC4 S|SOIL|DP060212|MIX[A]|||  
ALS Vial : 28 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:46 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

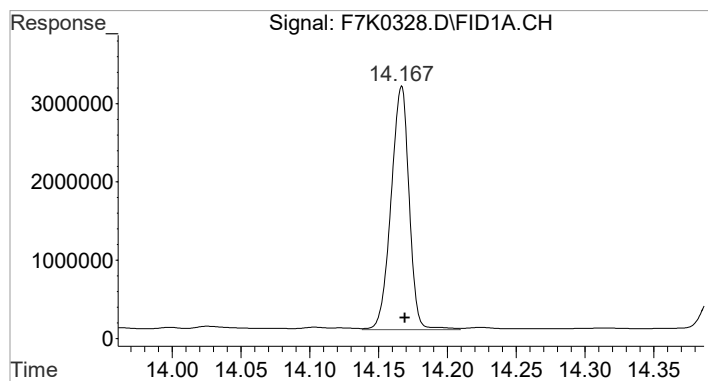
Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um





Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 303127286  
 Total SMC/ISTD Resp: 28368034  
 Final Resp: 274759252



#2  
 o-Terphenyl  
 R.T.: 14.167 min  
 Delta R.T.: -0.002 min  
 Response: 28368034  
 Conc: 15.03 mg/L

## FID Diesel Range Organics

Page 1 of 1

## Certificate of Analysis

## Sample Summary

SDG Number: 409254  
Lab Sample ID: 409254043

Date Collected: 10/26/2016 13:22  
Date Received: 10/27/2016 09:00  
Client: HAAL002  
Method: SW846 3541/8015C  
Inst: FID7.1  
Analyst: LXA1  
Aliquot: 30.015 g  
Column: DB-5ms

Matrix: SOIL  
%Moisture: 24.2  
Project: HAAL00201  
SOP Ref: GL-OA-E-003  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL

Client ID: DP060212DUP  
Batch ID: 1612127  
Run Date: 11/04/2016 04:51  
Prep Date: 11/02/2016 12:26  
Data File: 110316\_DRO\F7K0329.D

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | B         | 9100   | ug/Kg | 2860    | 8790    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110316 DRO\  
Data File : F7K0329.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 04:51  
Operator : LXA1 InstName : FID7  
Sample : |409254043|1612127|1|DROQ|1|HAAL|||  
Misc : |FIDDROC4 S|SOIL|DP060212DUP|MIX[A]||  
ALS Vial : 29 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:48 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta  | Response  | Conc    | Units |
|-----------------------------|--------|----------------|--------|-----------|---------|-------|
| -----                       |        |                |        |           |         |       |
| System Monitoring Compounds |        |                |        |           |         |       |
| 2) SA o-Terphenyl           | 14.169 | 14.167         | -0.002 | 31359138  | 16.611  | mg/L  |
| Compound                    | Amount | Range          |        | Recovery  |         |       |
| 2) o-Terphenyl              | 20.000 | No Limits      |        | 83%       |         |       |
| Target Compounds            |        |                |        |           |         |       |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 |        | 333616679 | 207.080 | mg/L  |
| -----                       |        |                |        |           |         |       |

(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

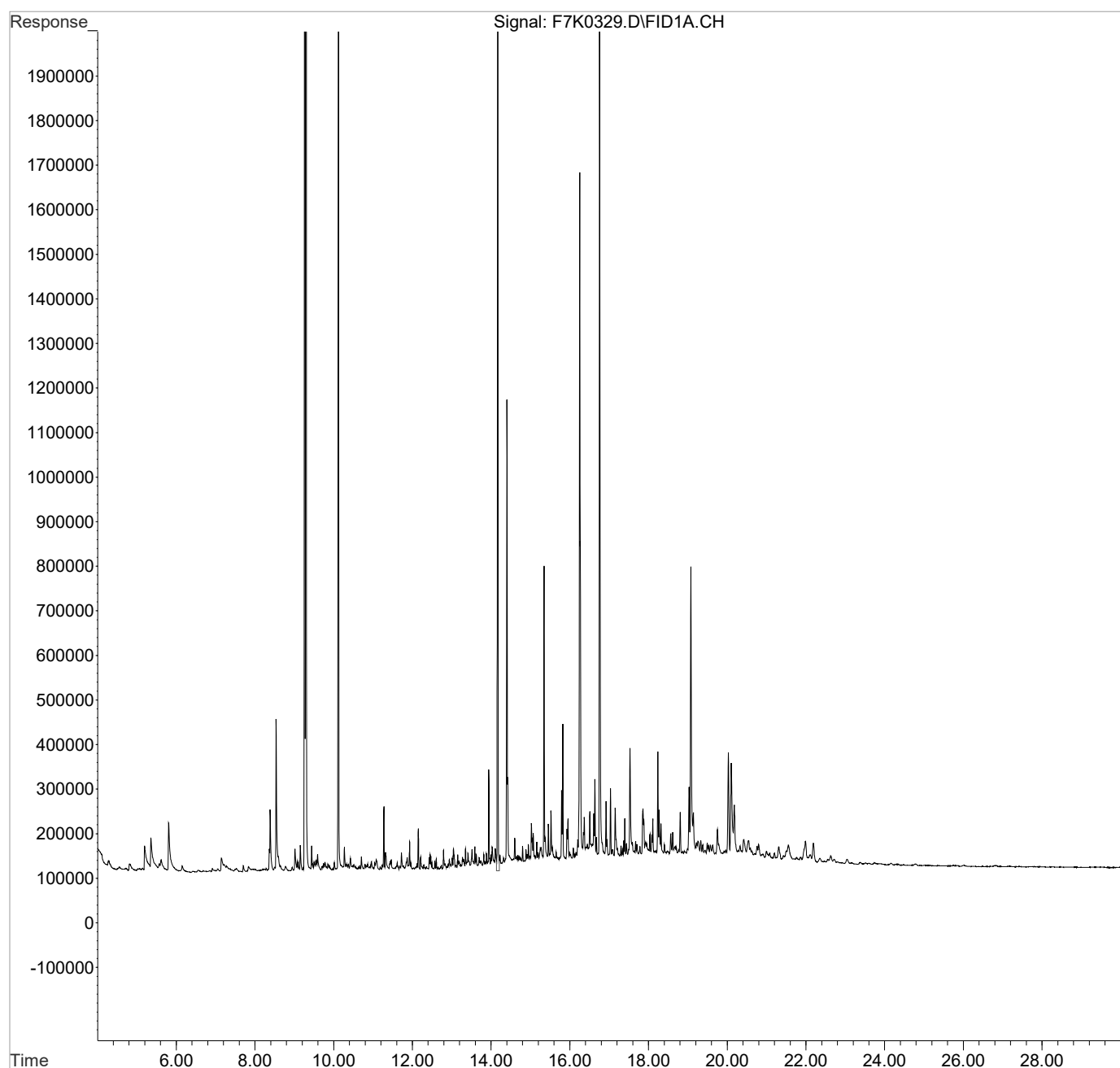


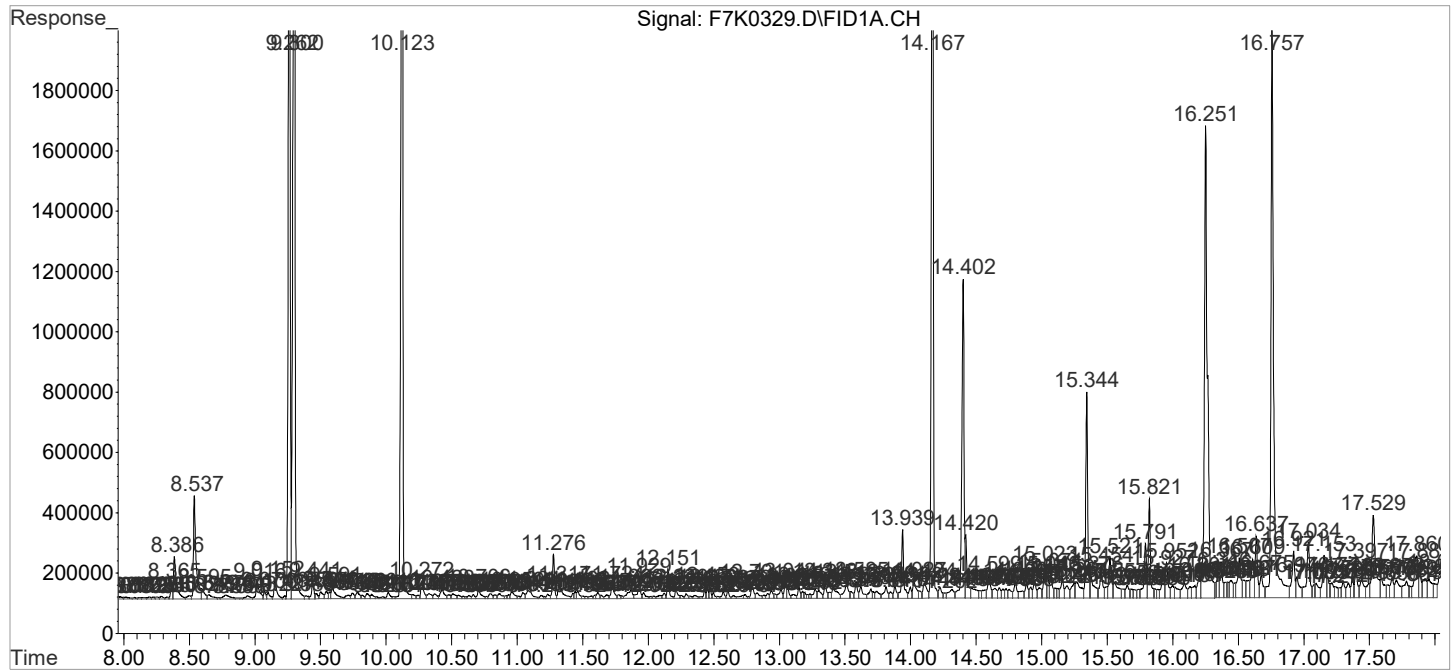
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\110316\_DRO\  
DaData File : F7K0329.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 04:51  
Operator : LXA1 InstName : FID7  
Sample : |409254043|1612127|1|DROQ|1|HAAL|||  
Misc : |FIDROC4 S|SOIL|DP060212DUP|MIX[A]||  
ALS Vial : 29 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:48 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

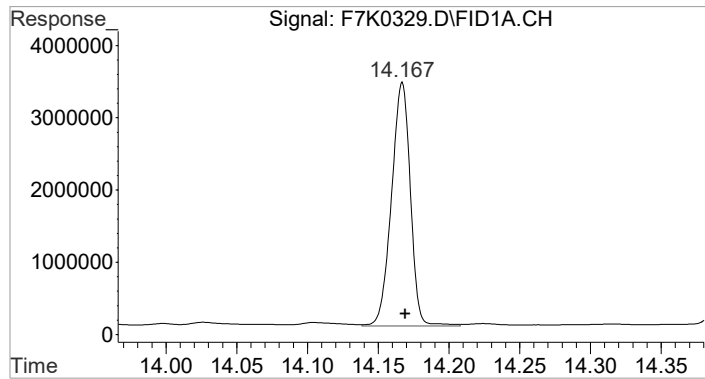
Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um





Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 364975817  
 Total SMC/ISTD Resp: 31359138  
 Final Resp: 333616679



#2  
 o-Terphenyl  
 R.T.: 14.167 min  
 Delta R.T.: -0.002 min  
 Response: 31359138  
 Conc: 16.61 mg/L

# Standards

## Calibration History Report FID7

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110316 DRO\FID7\_DRO\_102516.m

Last Update : Tue Oct 25 14:51:13 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

Cal Lvl:1 Amt:200.00 Last Updated with: C:\msdchem\1\DATA\102516DRO\f7j2503.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 25 Oct 2016 11:33 | A   | C:\msdchem\1\DATA\102516DRO\f7j2503.D |

Cal Lvl:2 Amt:500.00 Last Updated with: C:\msdchem\1\DATA\102516DRO\f7j2504.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 25 Oct 2016 12:12 | A   | C:\msdchem\1\DATA\102516DRO\f7j2504.D |

Cal Lvl:3 Amt:1000.00 Last Updated with: C:\msdchem\1\DATA\102516DRO\f7j2505.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 25 Oct 2016 12:51 | A   | C:\msdchem\1\DATA\102516DRO\f7j2505.D |

Cal Lvl:4 Amt:2000.00 Last Updated with: C:\msdchem\1\DATA\102516DRO\f7j2506.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 25 Oct 2016 13:30 | A   | C:\msdchem\1\DATA\102516DRO\f7j2506.D |

Cal Lvl:5 Amt:5000.00 Last Updated with: C:\msdchem\1\DATA\102516DRO\f7j2507.D

| Injection Date    | Mix | Calibration File                      |
|-------------------|-----|---------------------------------------|
| 25 Oct 2016 14:09 | A   | C:\msdchem\1\DATA\102516DRO\f7j2507.D |

FID7\_DRO\_102516.m Fri Nov 04 08:24:40 2016

## Response Factor Report FID7

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110316 DRO\FID7\_DRO\_102516.m

Last Update : Tue Oct 25 14:51:13 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b    | Compound<br>m1        | m2 | 1         | 2         | 3         | 4         | 5         |  | Avg    | Curve | Exp | %RSD/r2 |
|------|-----------------------|----|-----------|-----------|-----------|-----------|-----------|--|--------|-------|-----|---------|
| 1)HA | Diesel Range Organics |    | 1.3264409 | 1.6161006 | 1.6650818 | 1.7461489 | 1.7014884 |  | 1.6111 | AVRG  | E6  | 10.3110 |
| 2)SA | o-Terphenyl           |    | 1.6499587 | 1.8584381 | 1.9318371 | 2.0407463 | 1.9581870 |  | 1.8878 | AVRG  | E6  | 7.8442  |
| 3)B  | n-Decane              |    |           |           |           |           |           |  | 0.0000 | AVRG  |     | -1.0000 |
| 4)B  | n-Octacosane          |    |           |           |           |           |           |  | 0.0000 | AVRG  |     | -1.0000 |

(#) = Out of Range (\$) = Individual RF Out of Range ### Number of calibration levels exceeded format ###

AVRG = Average, LINR = Linear Regression,  $1/x$  = the inverse of concentration,  $1/x^2$  = the inverse square of concentration

COMPOUND LISTING  
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110316 DRO\FID7\_DRO\_102516.m

Last Update : Tue Oct 25 14:51:13 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

Integration Parameter File: autoint1.e

\*\*\* Integrator Events \*\*\*

Initial Threshold 5.0  
Initial Peak Width 0.020  
Initial Area Reject 0.0  
Shoulders OFF

| Compound                   | RT     | RT Window     |
|----------------------------|--------|---------------|
| 1)HA Diesel Range Organics | 12.996 | 8.055-17.937  |
| 2)SA o-Terphenyl           | 14.169 | 14.139-14.199 |
| 3)B n-Decane               | 8.085  | 8.055- 8.115  |
| 4)B n-Octacosane           | 17.907 | 17.877-17.937 |

FID7\_DRO\_102516.m Fri Nov 04 08:24:38 2016

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\102516DRO\  
Data File : f7j2503.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 11:33  
Operator : LXA1 InstName : FID7  
Sample : |UFI160222-11.1|ICAL|1|DROQ|1|DRO-ICAL-1  
Misc : |MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 25 14:49:45 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:49:07 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.   | Delta    | Response  | Conc    | Units  |
|-----------------------------|--------|--------|----------|-----------|---------|--------|
| -----                       |        |        |          |           |         |        |
| System Monitoring Compounds |        |        |          |           |         |        |
| 2) SA o-Terphenyl           | 14.181 | 14.172 | -0.009   | 8249793   | 4.374   | mg/L m |
| Target Compounds            |        |        |          |           |         |        |
| 1) HA Diesel Range Organics | Range  | 8.055  | - 17.937 | 265288178 | 164.662 | mg/L m |
| -----                       |        |        |          |           |         |        |

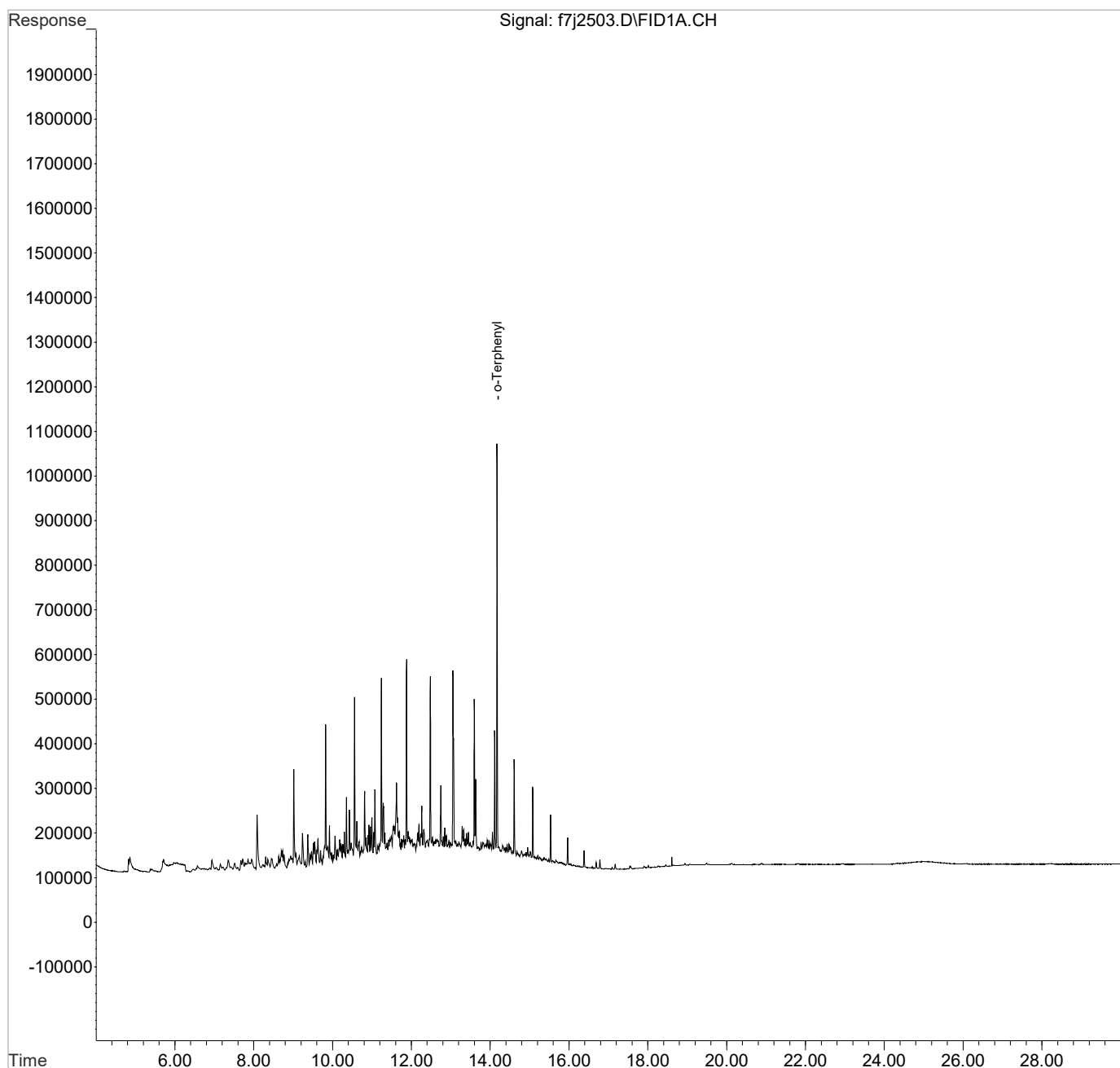
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

Quantitation Report  
GEL Laboratories, LLC

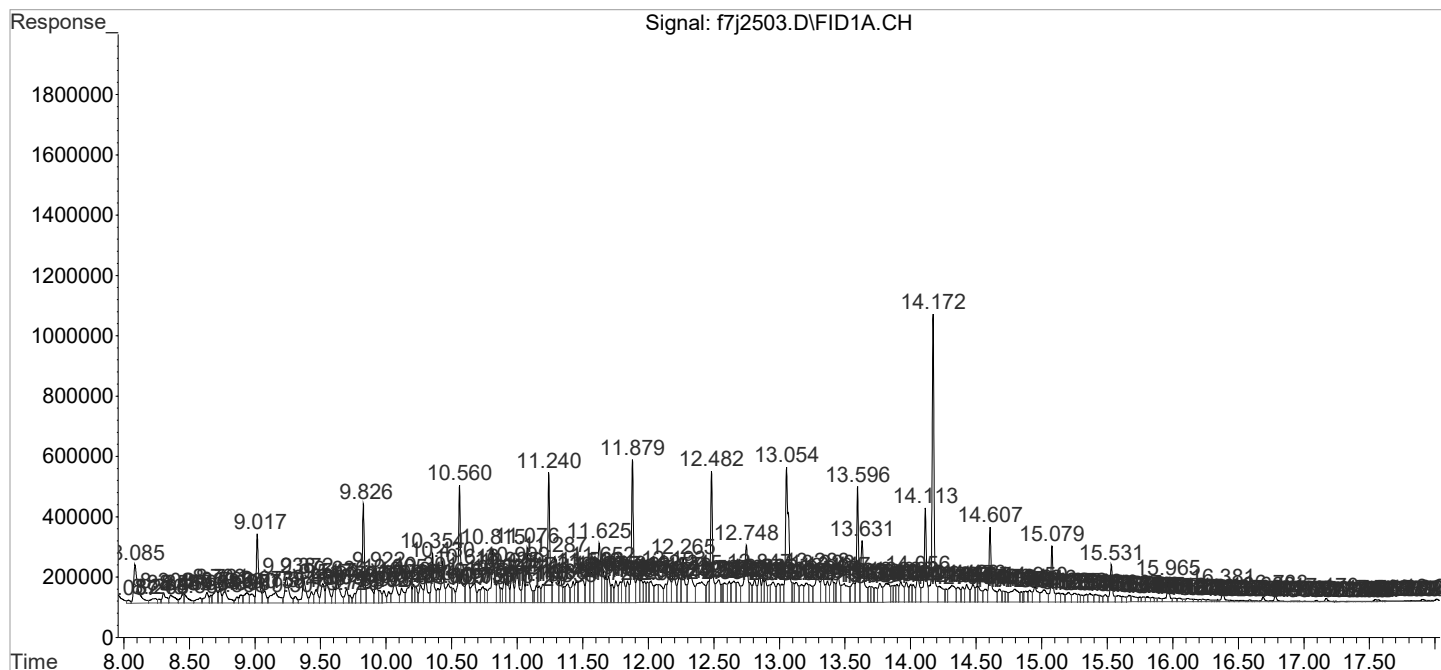
DaData Path : C:\msdchem\1\DATA\102516DRO\  
DaData File : f7j2503.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 11:33  
Operator : LXA1 InstName : FID7  
Sample : |UFI160222-11.1|ICAL|1|DROQ|1|DRO-ICAL-1  
Misc : |MIX[A]  
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 25 14:49:45 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:49:07 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

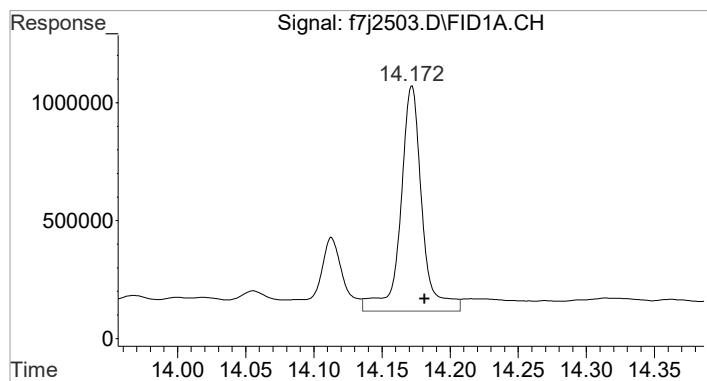




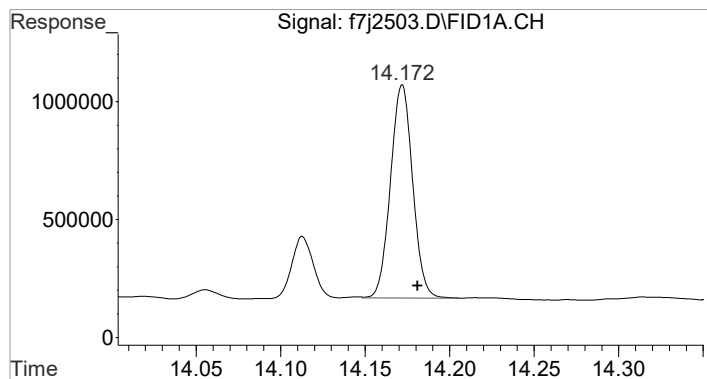


Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 273537971  
 Total SMC/ISTD Resp: 8249793  
 Final Resp: 265288178



#2 BEFORE analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.172 min  
 Delta R.T.: -0.009 min  
 Response: 10452060  
 Conc: 5.54 mg/L



#2 AFTER analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.172 min  
 Delta R.T.: -0.009 min  
 Response: 8249793  
 Conc: 4.37 mg/L MANUALLY INTEGRATED

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\102516DRO\  
Data File : f7j2504.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 12:12  
Operator : LXA1 InstName : FID7  
Sample : |UFI160222-12.1|ICAL|1|DROQ|1|DRO-ICAL-2  
Misc : |MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 25 14:49:47 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:49:07 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.   | Delta    | Response  | Conc    | Units  |
|-----------------------------|--------|--------|----------|-----------|---------|--------|
| -----                       |        |        |          |           |         |        |
| System Monitoring Compounds |        |        |          |           |         |        |
| 2) SA o-Terphenyl           | 14.181 | 14.171 | -0.010   | 18584381  | 9.854   | mg/L m |
| Target Compounds            |        |        |          |           |         |        |
| 1) HA Diesel Range Organics | Range  | 8.055  | - 17.937 | 808050323 | 501.549 | mg/L m |
| -----                       |        |        |          |           |         |        |

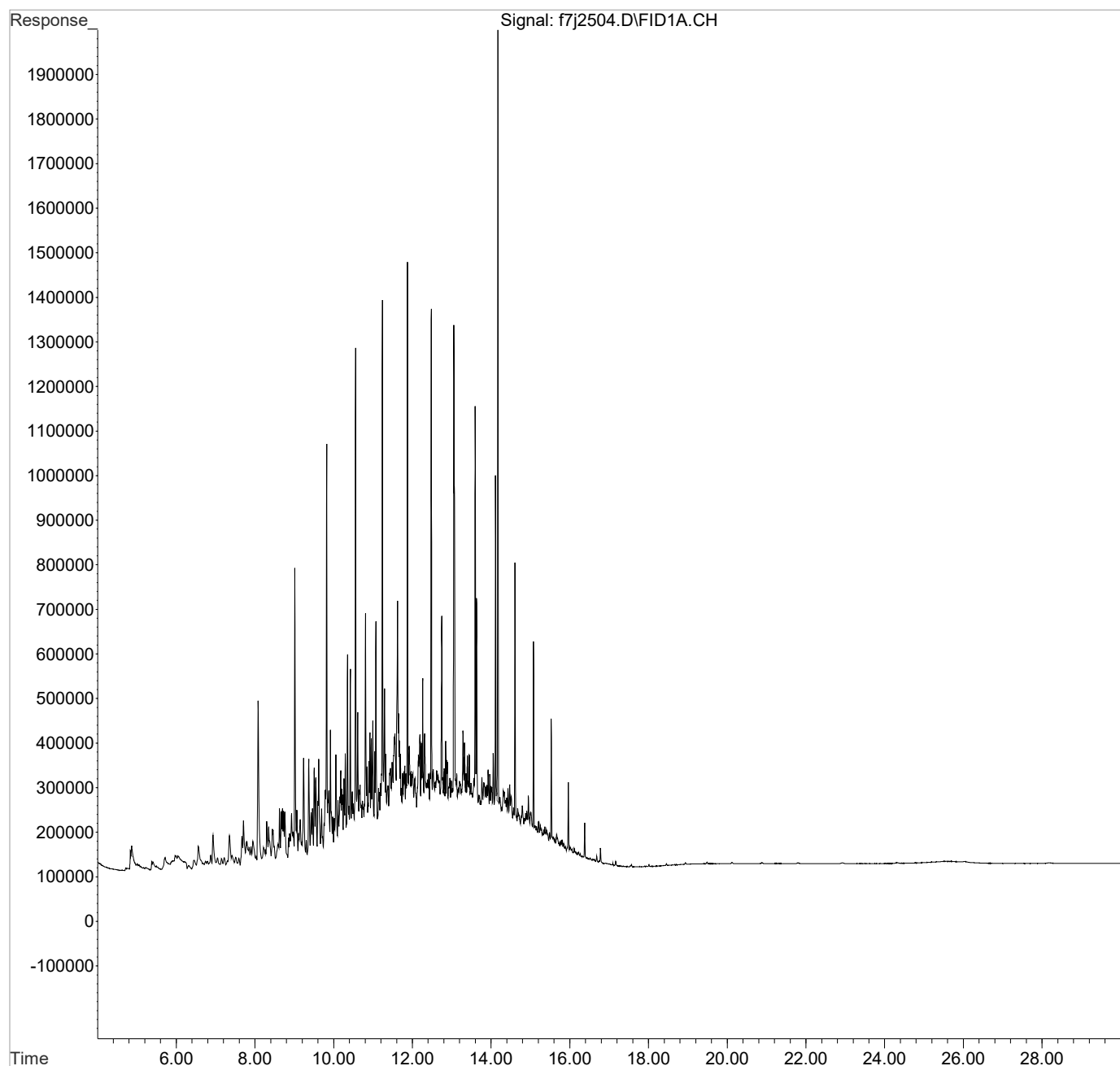
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

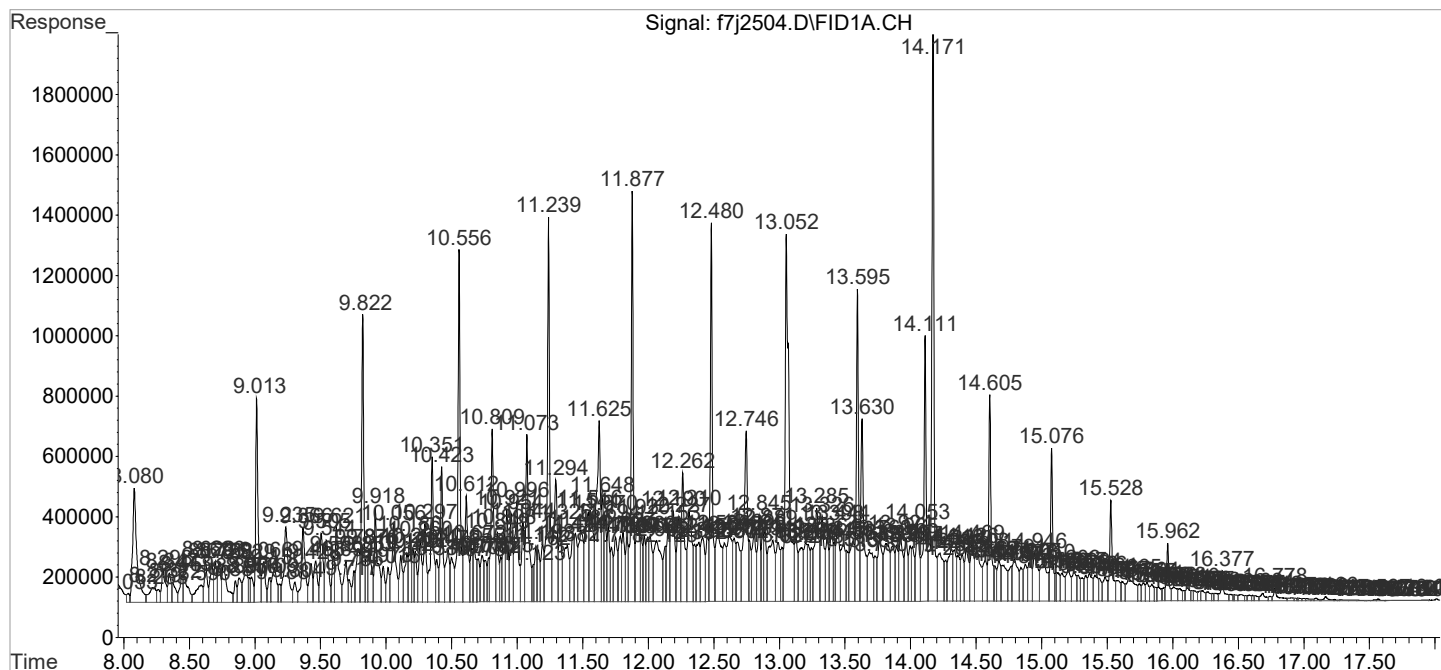
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\102516DRO\  
DaData File : f7j2504.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 12:12  
Operator : LXA1 InstName : FID7  
Sample : |UFI160222-12.1|ICAL|1|DROQ|1|DRO-ICAL-2  
Misc : |MIX[A]  
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 25 14:49:47 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:49:07 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

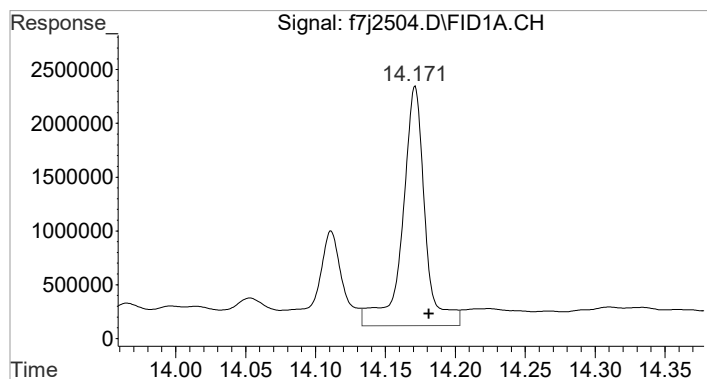
Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um



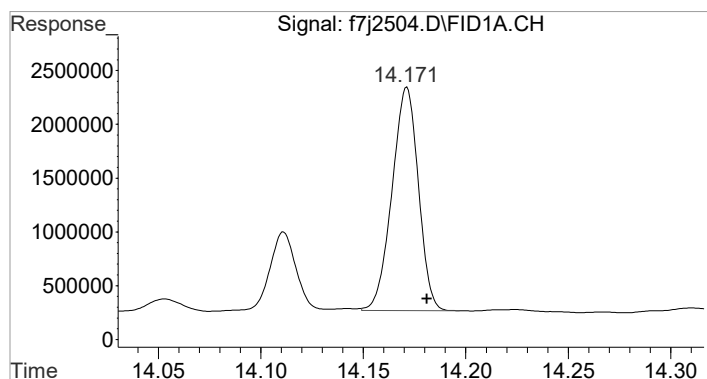


Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 826634704  
 Total SMC/ISTD Resp: 18584381  
 Final Resp: 808050323



#2 BEFORE analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.171 min  
 Delta R.T.: -0.010 min  
 Response: 25003564  
 Conc: 13.26 mg/L



#2 AFTER analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.171 min  
 Delta R.T.: -0.010 min  
 Response: 18584381  
 Conc: 9.85 mg/L MANUALLY INTEGRATED

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\102516DRO\  
Data File : f7j2505.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 12:51  
Operator : LXA1 InstName : FID7  
Sample : |UFI160222-13.1|ICAL|1|DROQ|1|DRO-ICAL-3  
Misc : |MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 25 14:49:49 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:49:07 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.   | Delta    | Response   | Conc     | Units  |
|-----------------------------|--------|--------|----------|------------|----------|--------|
| -----                       |        |        |          |            |          |        |
| System Monitoring Compounds |        |        |          |            |          |        |
| 2) SA o-Terphenyl           | 14.181 | 14.176 | -0.005   | 48295928   | 25.609   | mg/L m |
| Target Compounds            |        |        |          |            |          |        |
| 1) HA Diesel Range Organics | Range  | 8.055  | - 17.937 | 1665081848 | 1033.501 | mg/L m |
| -----                       |        |        |          |            |          |        |

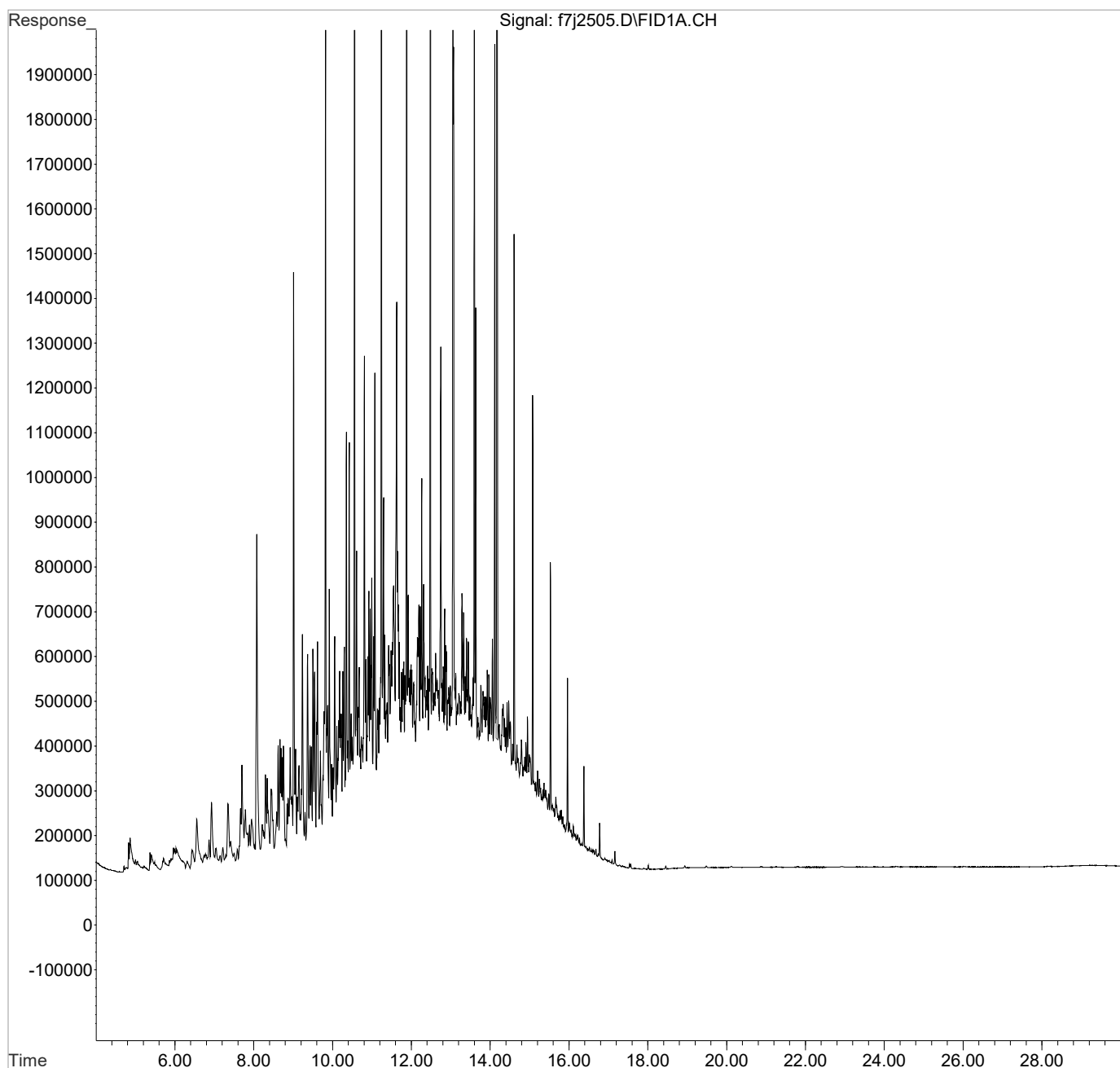
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

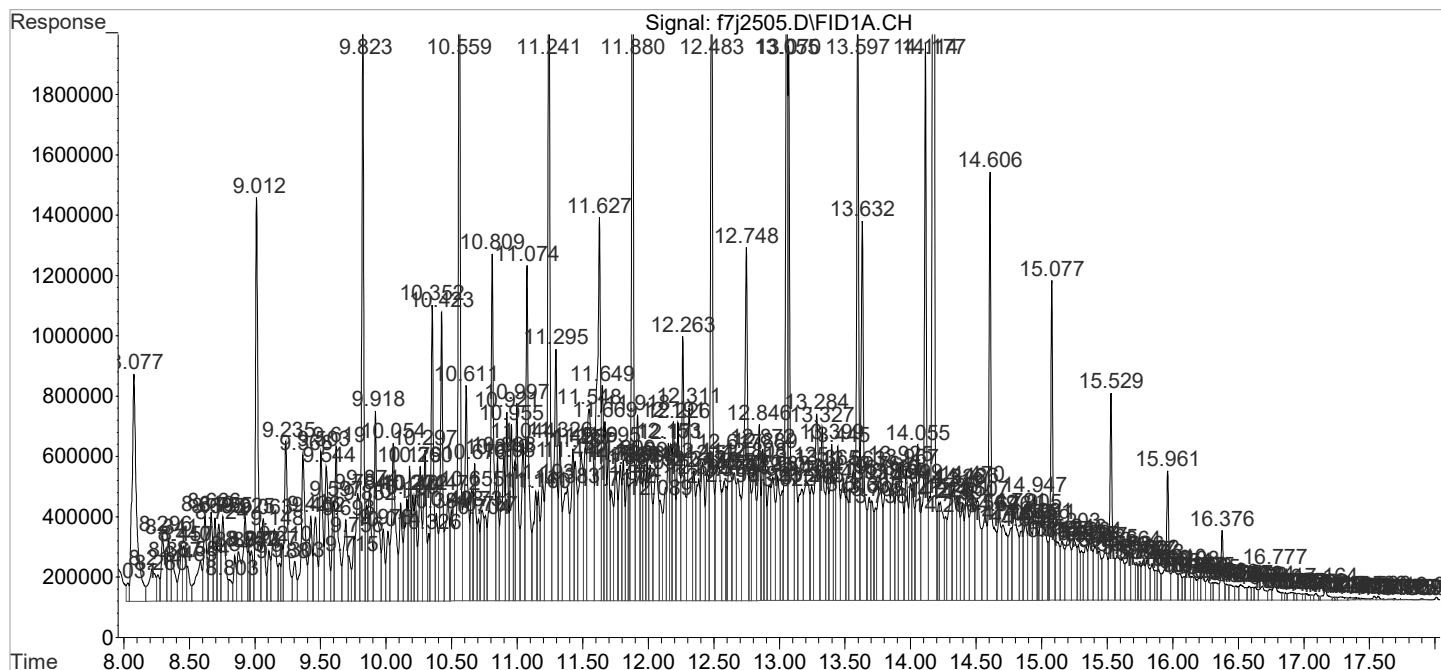
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\102516DRO\  
DaData File : f7j2505.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 12:51  
Operator : LXA1 InstName : FID7  
Sample : |UFI160222-13.1|ICAL|1|DROQ|1|DRO-ICAL-3  
Misc : |MIX[A]  
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 25 14:49:49 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:49:07 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

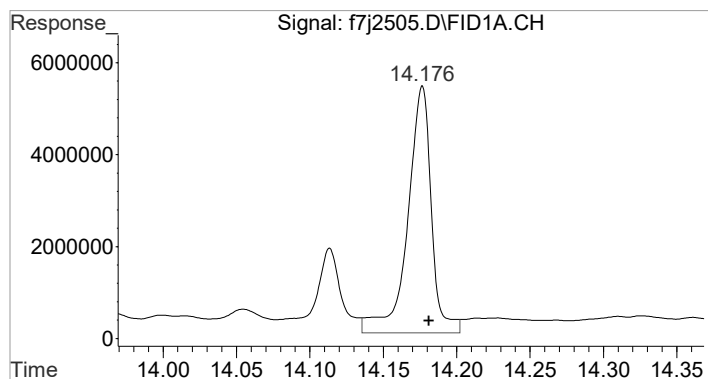
Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um



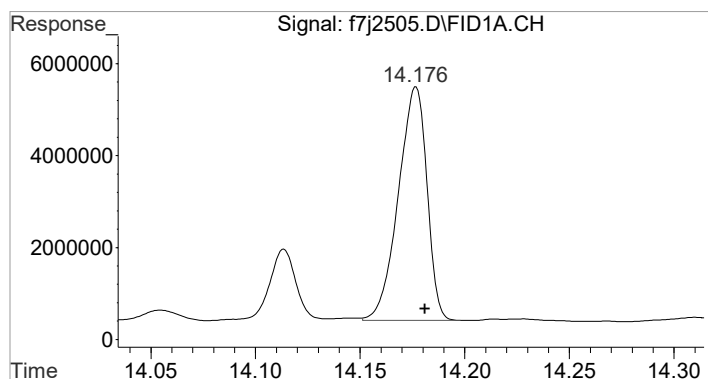


Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 1713377776  
 Total SMC/ISTD Resp: 48295928  
 Final Resp: 1665081848



#2 BEFORE analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.177 min  
 Delta R.T.: -0.004 min  
 Response: 60461722  
 Conc: 32.06 mg/L



#2 AFTER analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.176 min  
 Delta R.T.: -0.005 min  
 Response: 48295928  
 Conc: 25.61 mg/L MANUALLY INTEGRATED

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\102516DRO\  
Data File : f7j2506.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 13:30  
Operator : LXA1 InstName : FID7  
Sample : |UFI160222-14.1|ICAL|1|DROQ|1|DRO-ICAL-4  
Misc : |MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 25 14:49:51 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:49:07 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta | Response   | Conc     | Units  |
|-----------------------------|--------|----------------|-------|------------|----------|--------|
| -----                       |        |                |       |            |          |        |
| System Monitoring Compounds |        |                |       |            |          |        |
| 2) SA o-Terphenyl           | 14.181 | 14.186         | 0.005 | 102037313  | 54.105   | mg/L m |
| Target Compounds            |        |                |       |            |          |        |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 |       | 3492297820 | 2167.637 | mg/L m |
| -----                       |        |                |       |            |          |        |

(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

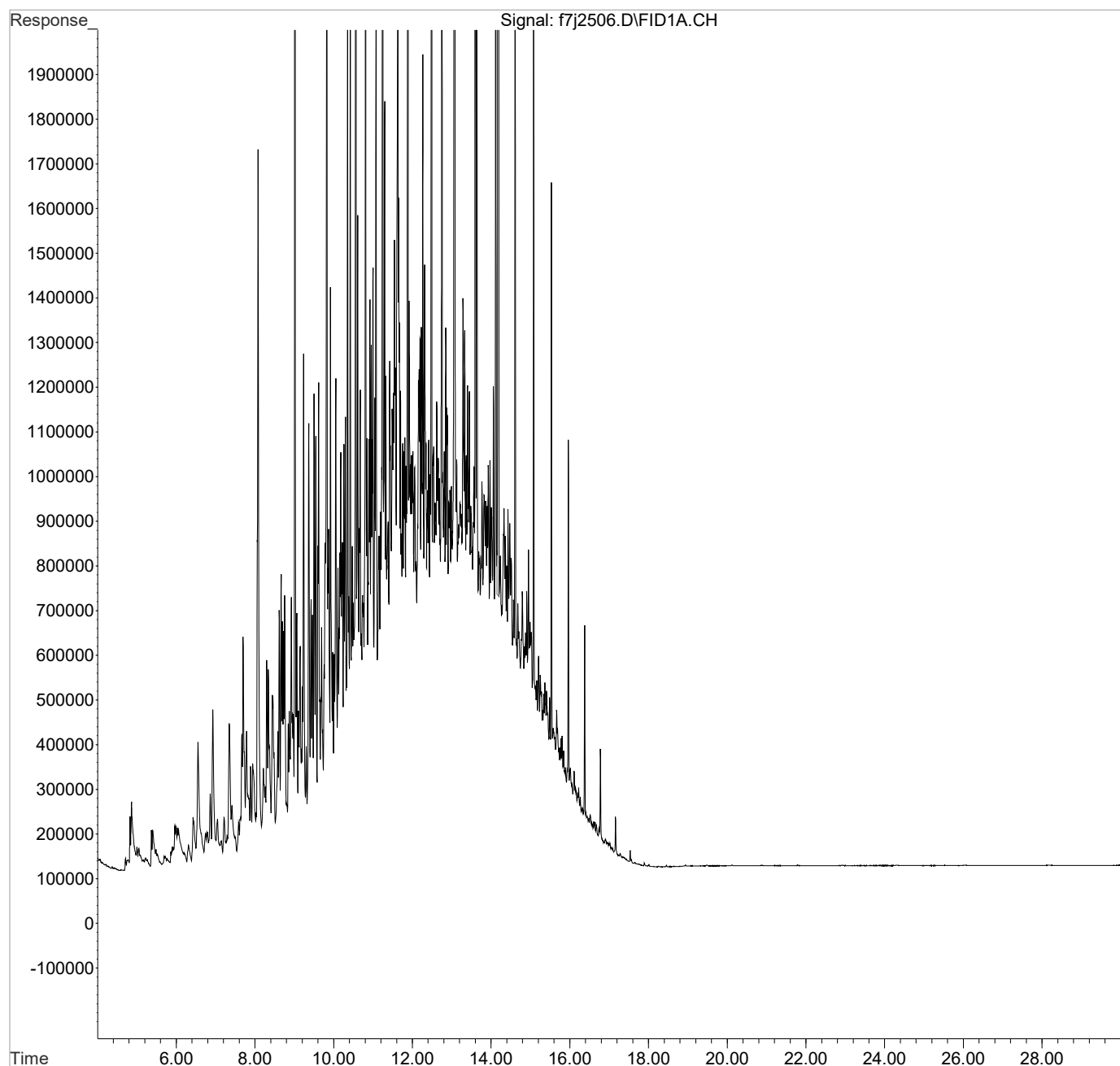


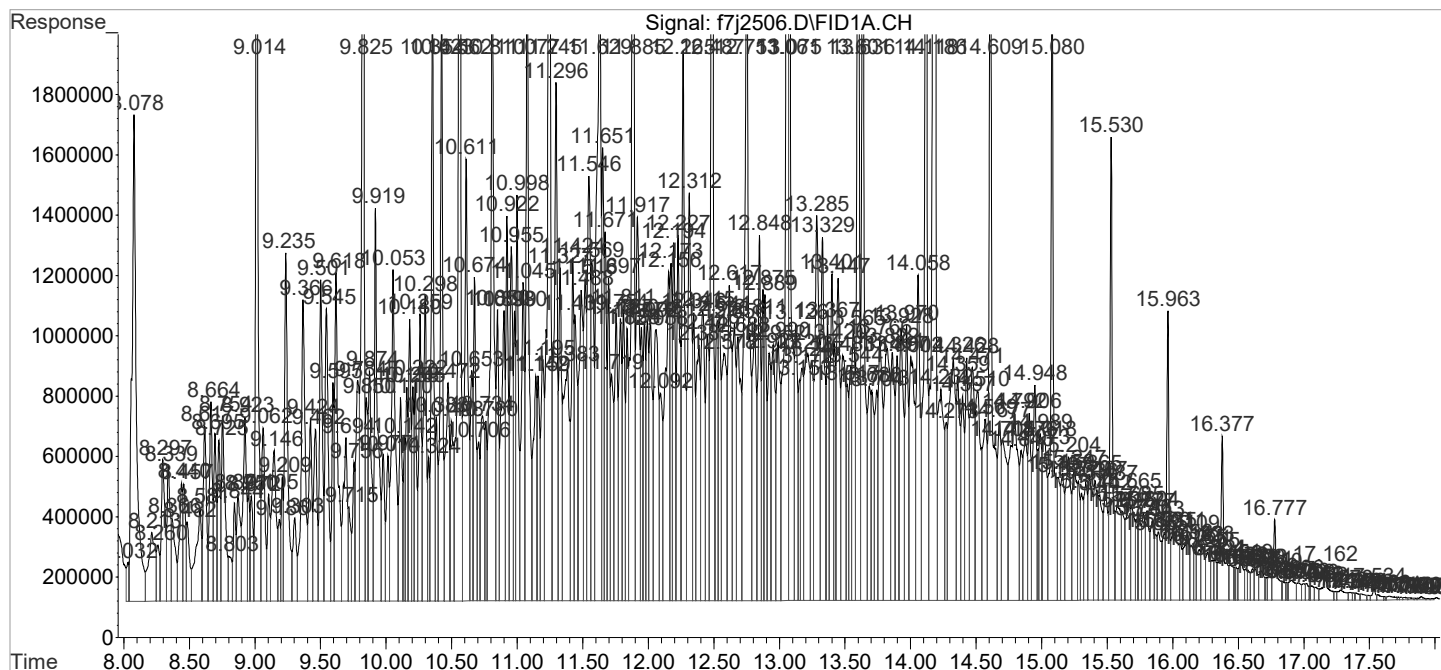
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\102516DRO\  
DaData File : f7j2506.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 13:30  
Operator : LXA1 InstName : FID7  
Sample : |UFI160222-14.1|ICAL|1|DROQ|1|DRO-ICAL-4  
Misc : |MIX[A]  
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 25 14:49:51 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:49:07 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um





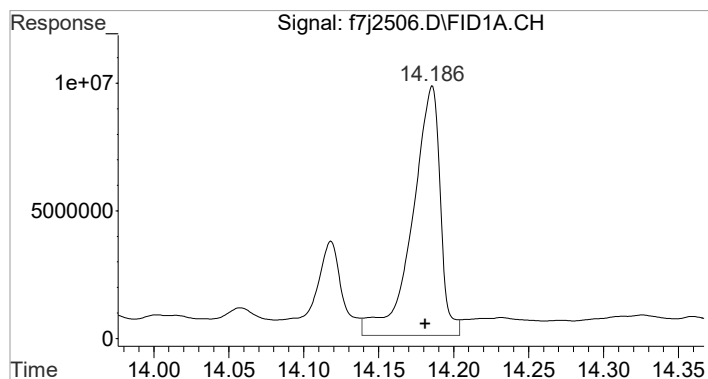
Compound: Diesel Range Organics

RT Range: 8.055: 17.937

Total TPH Resp: 3594335134

Total SMC/ISTD Resp: 102037313

Final Resp: 3492297820



#2 BEFORE analyst INTEGRATION

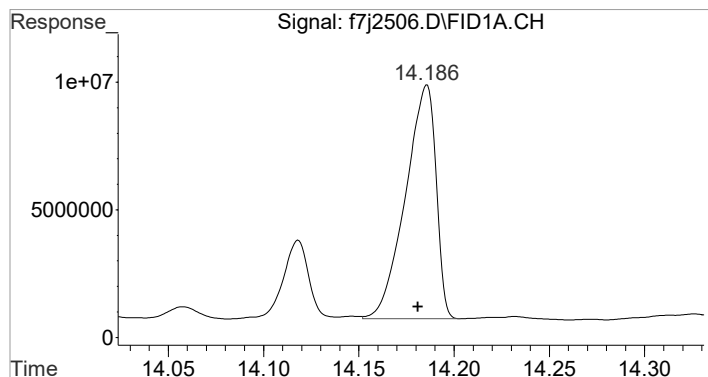
o-Terphenyl

R.T.: 14.186 min

Delta R.T.: 0.005 min

Response: 126681642

Conc: 67.17 mg/L



#2 AFTER analyst INTEGRATION

o-Terphenyl

R.T.: 14.186 min

Delta R.T.: 0.005 min

Response: 102037313

Conc: 54.11 mg/L MANUALLY INTEGRATED

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\102516DRO\  
Data File : f7j2507.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 14:09  
Operator : LXA1 InstName : FID7  
Sample : |UFI160222-15.1|ICAL|1|DROQ|1|DRO-ICAL-5  
Misc : |MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 25 14:49:53 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:49:07 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta  | Response   | Conc     | Units    |
|-----------------------------|--------|----------------|--------|------------|----------|----------|
| -----                       |        |                |        |            |          |          |
| System Monitoring Compounds |        |                |        |            |          |          |
| 2) SA o-Terphenyl           | 14.181 | 14.199         | 0.018f | 195818705  | 103.833  | mg/L m A |
| Target Compounds            |        |                |        |            |          |          |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 |        | 8507441929 | 5280.492 | mg/L m A |
| -----                       |        |                |        |            |          |          |

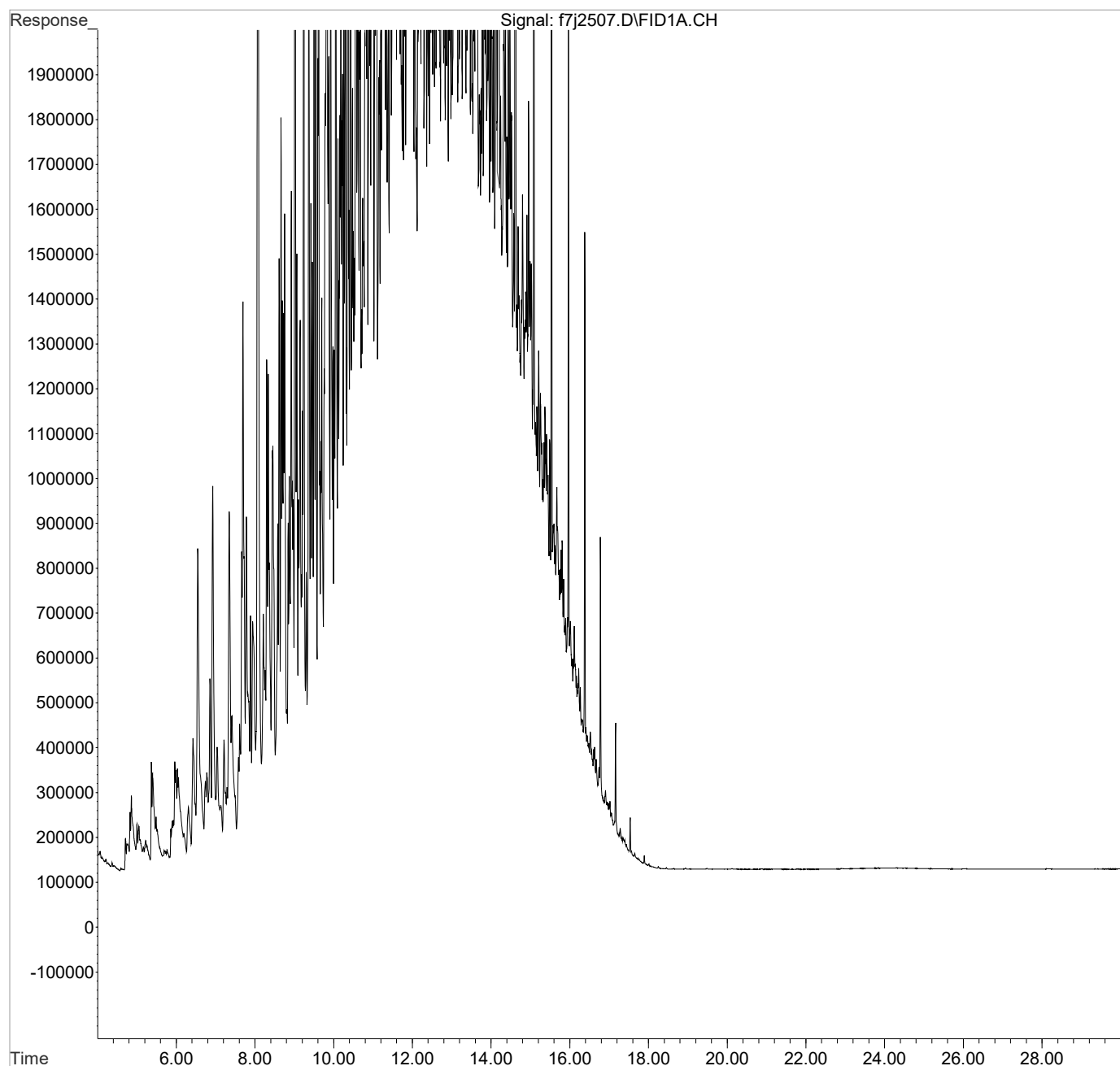
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\102516DRO\  
DaData File : f7j2507.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 14:09  
Operator : LXA1 InstName : FID7  
Sample : |UFI160222-15.1|ICAL|1|DROQ|1|DRO-ICAL-5  
Misc : |MIX[A]  
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 25 14:49:53 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:49:07 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um





Continuing Calibration Summary

**Instrument ID:** FID7.I

**Data File:** 102516DRO\F7j2508.D

**Lab Sample ID** UFI150820-26.3

**Column ID:** DB-5ms

**Client SDG:** 409254

**Injection Date:** 25-OCT-16 14:48

**Init. Cal. Date(s):**NA

**Method:** 102516DRO\FID7\_DRO\_102516.m

**Quant Type:** ESTD

| Compound              | AVECF / Amount | CF CCV     | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|-----------------------|----------------|------------|-------------|-------------|-----|---------|------------|
| Diesel Range Organics | 1611052.14     | 1625009.36 | 1000000     | 0.87        | 20  |         | Averaged   |
| o-Terphenyl(Surr)     | 1887833.44     | 2012956.8  | 25000       | 6.63        | 20  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\102516DRO\  
Data File : f7j2508.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 14:48  
Operator : LXA1 InstName : FID7  
Sample : |UFI150820-26.3|ICV|1|DROQ|1|DRO\_ICV  
Misc : |MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 26 08:24:52 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.   | Delta    | Response   | Conc     | Units  |
|-----------------------------|--------|--------|----------|------------|----------|--------|
| -----                       |        |        |          |            |          |        |
| System Monitoring Compounds |        |        |          |            |          |        |
| 2) SA o-Terphenyl           | 14.181 | 14.177 | -0.004   | 50323920   | 26.657   | mg/L m |
| Target Compounds            |        |        |          |            |          |        |
| 1) HA Diesel Range Organics | Range  | 8.055  | - 17.937 | 1625009356 | 1008.663 | mg/L m |
| -----                       |        |        |          |            |          |        |

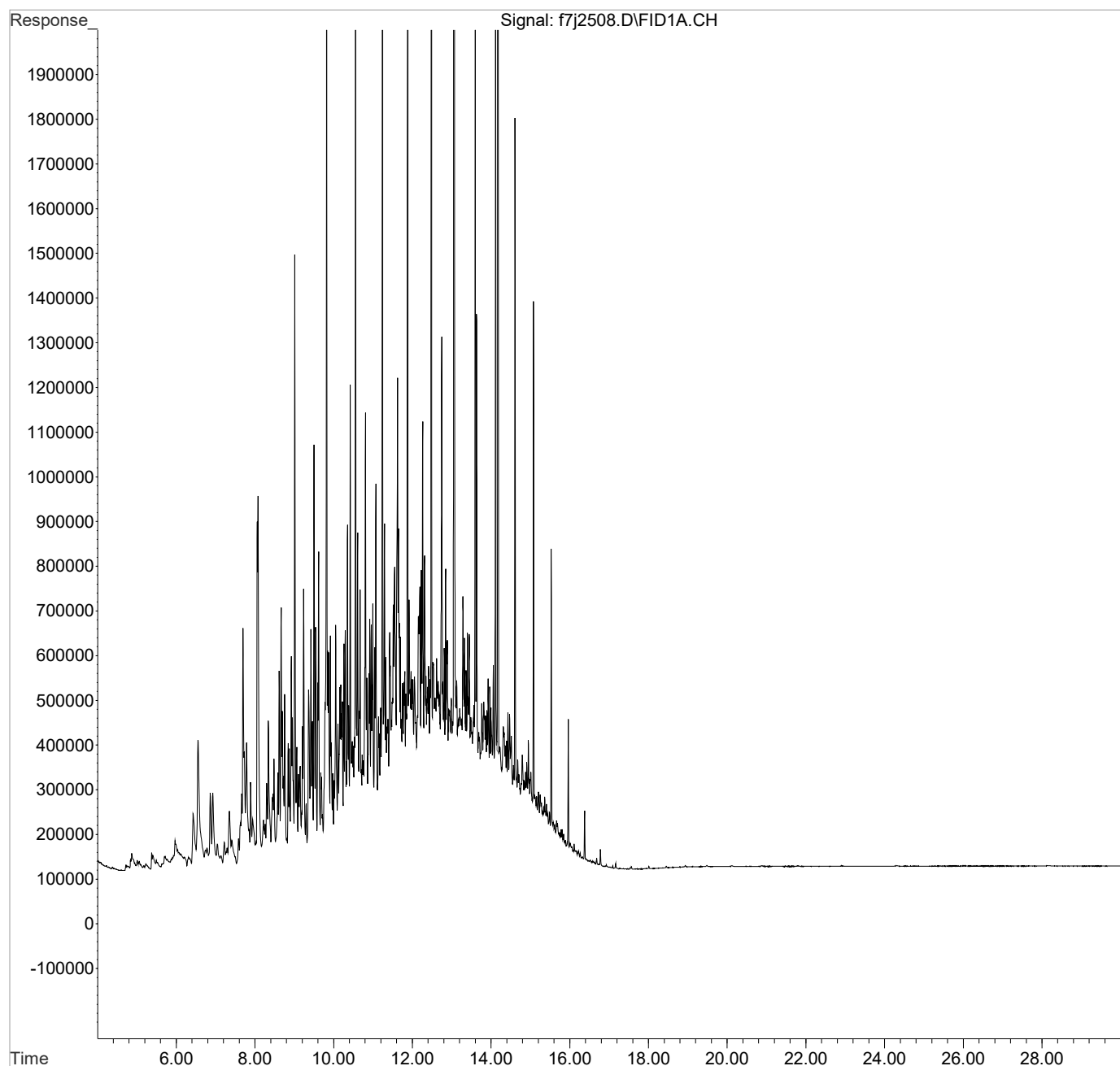
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

Quantitation Report  
GEL Laboratories, LLC

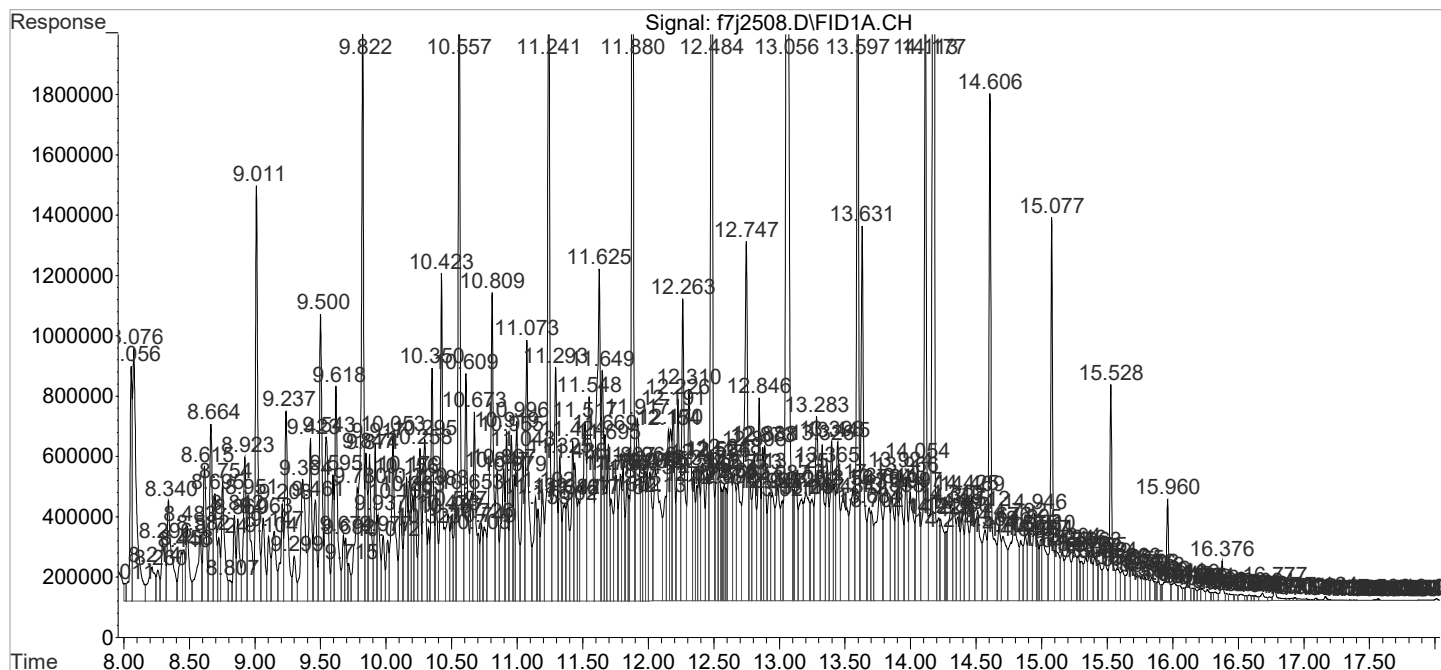
DaData Path : C:\msdchem\1\DATA\102516DRO\  
DaData File : f7j2508.D  
Signal(s) : FID1A.CH  
Acq On : 25 Oct 2016 14:48  
Operator : LXA1 InstName : FID7  
Sample : |UFI150820-26.3|ICV|1|DROQ|1|DRO\_ICV  
Misc : |MIX[A]  
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Oct 26 08:24:52 2016  
Quant Method : C:\msdchem\1\DATA\102516DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um







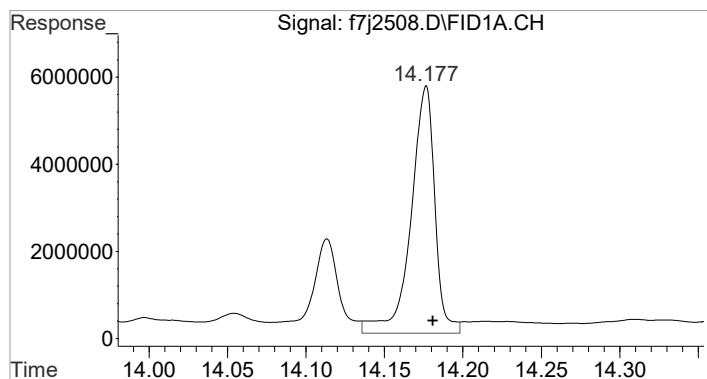
Compound: Diesel Range Organics

RT Range: 8.055: 17.937

Total TPH Resp: 1675333276

Total SMC/ISTD Resp: 50323920

Final Resp: 1625009356



#2 BEFORE analyst INTEGRATION

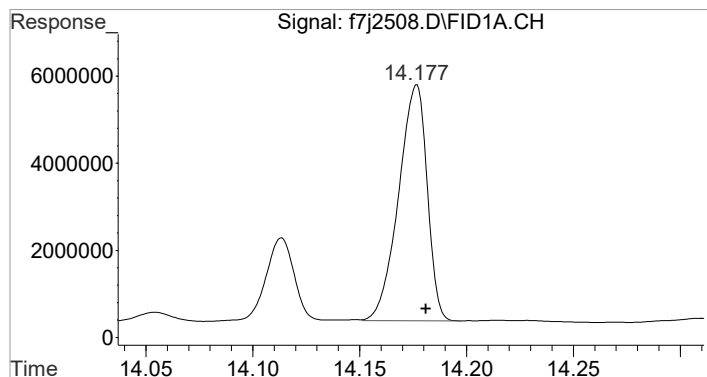
o-Terphenyl

R.T.: 14.177 min

Delta R.T.: -0.004 min

Response: 60401744

Conc: 32.00 mg/L



#2 AFTER analyst INTEGRATION

o-Terphenyl

R.T.: 14.177 min

Delta R.T.: -0.004 min

Response: 50323920

Conc: 26.66 mg/L MANUALLY INTEGRATED

Continuing Calibration Summary

**Instrument ID:** FID7.I

**Data File:** 110316\_DRO\F7K0320.D

**Lab Sample ID** UFI150820-26.3

**Column ID:** DB-5ms

**Client SDG:** 409254

**Injection Date:** 03-NOV-16 23:01

**Init. Cal. Date(s):**NA

**Method:** 110316\_DRO\FID7\_DRO\_102516.m

**Quant Type:** ESTD

| Compound              | AVECF / Amount | CF CCV     | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|-----------------------|----------------|------------|-------------|-------------|-----|---------|------------|
| Diesel Range Organics | 1611052.14     | 1565065.57 | 1000000     | -2.85       | 20  |         | Averaged   |
| o-Terphenyl(Surr)     | 1887833.44     | 1891124.32 | 25000       | 0.17        | 20  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110316 DRO\  
Data File : F7K0320.D  
Signal(s) : FID1A.CH  
Acq On : 03 Nov 2016 23:01  
Operator : LXA1 InstName : FID7  
Sample : |UFI150820-26.3|CCV|1|DROQ|1|DRO\_CCV  
Misc : |MIX[A,D]  
ALS Vial : 20 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:11 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta | Response   | Conc    | Units  |
|-----------------------------|--------|----------------|-------|------------|---------|--------|
| -----                       |        |                |       |            |         |        |
| System Monitoring Compounds |        |                |       |            |         |        |
| 2) SA o-Terphenyl           | 14.169 | 14.169         | 0.000 | 47278108   | 25.044  | mg/L m |
| Target Compounds            |        |                |       |            |         |        |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 |       | 1565065573 | 971.456 | mg/L m |
| -----                       |        |                |       |            |         |        |

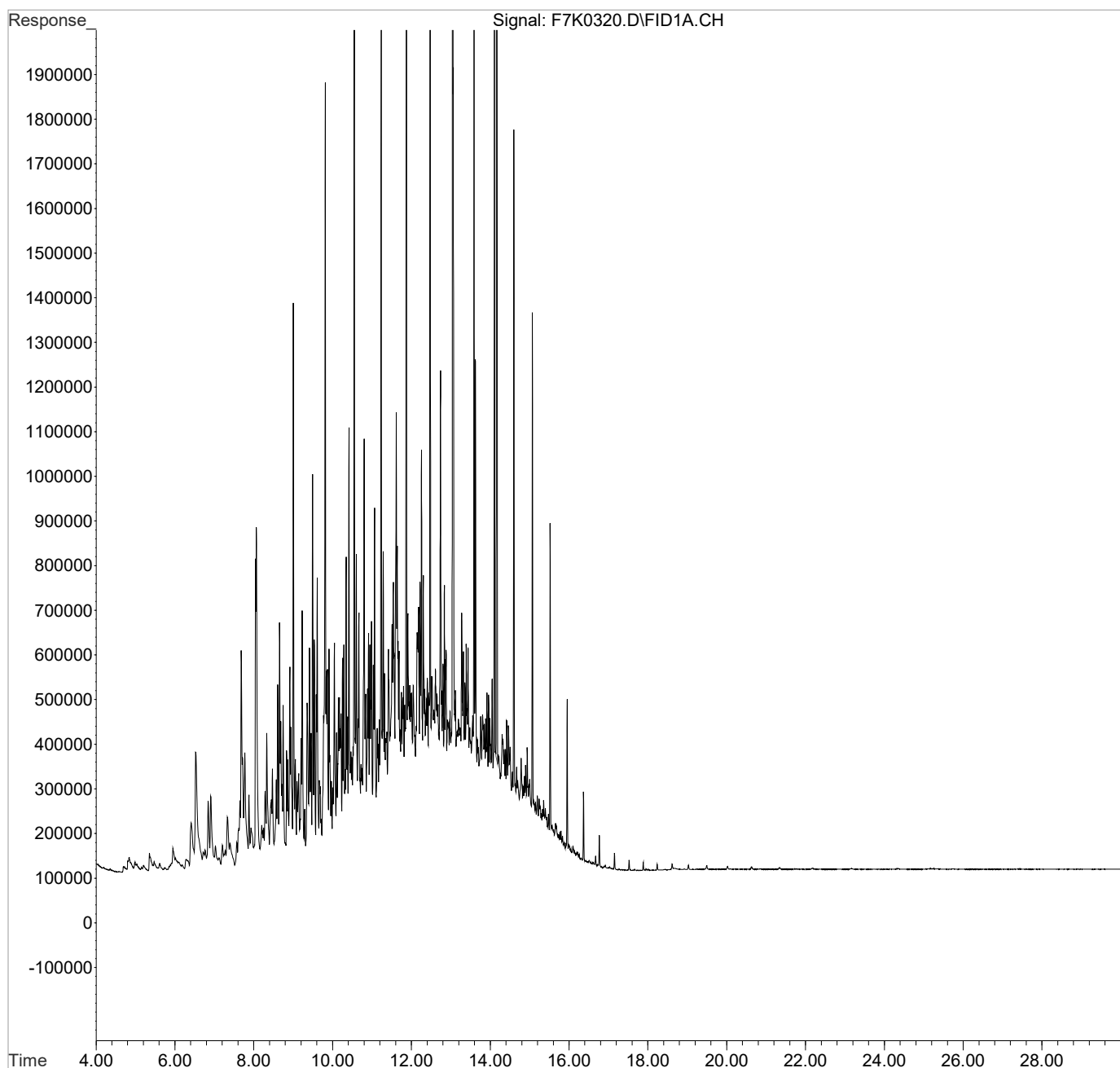
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

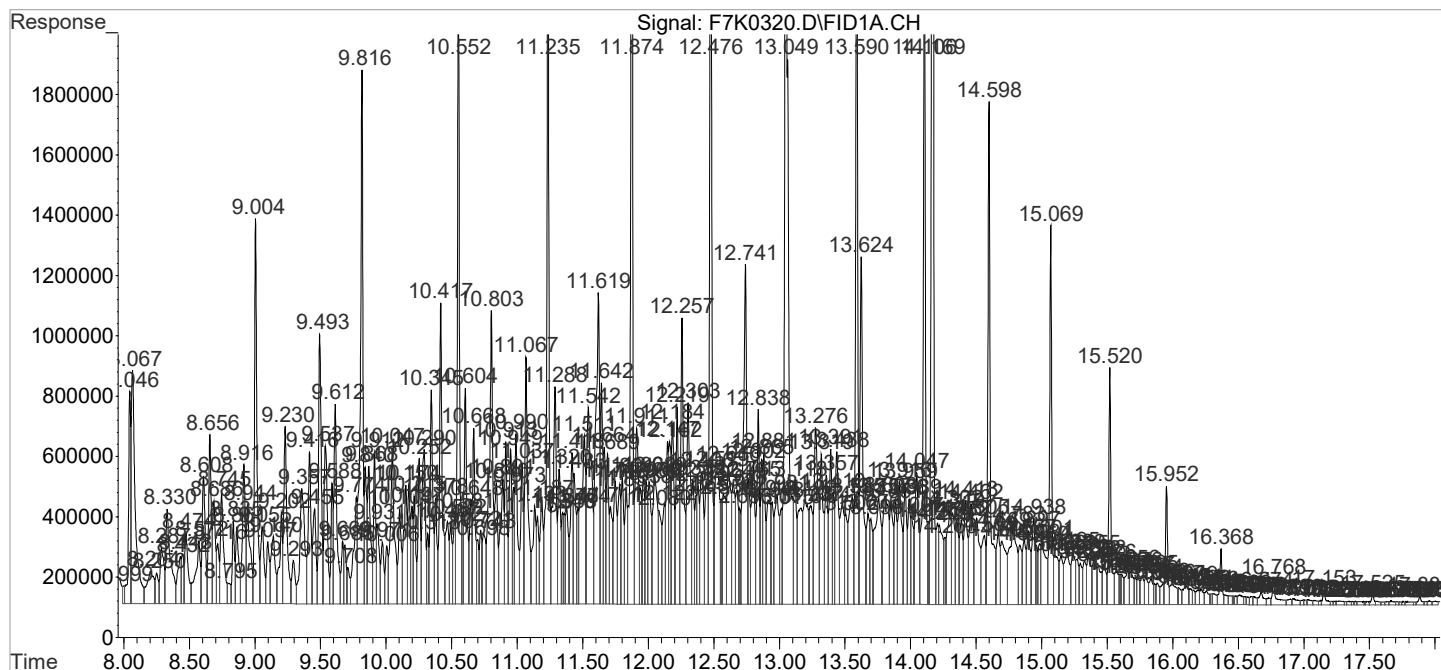
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\110316\_DRO\  
DaData File : F7K0320.D  
Signal(s) : FID1A.CH  
Acq On : 03 Nov 2016 23:01  
Operator : LXA1 InstName : FID7  
Sample : |UFI150820-26.3|CCV|1|DROQ|1|DRO\_CCV  
Misc : |MIX[A,D]  
ALS Vial : 20 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:11 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

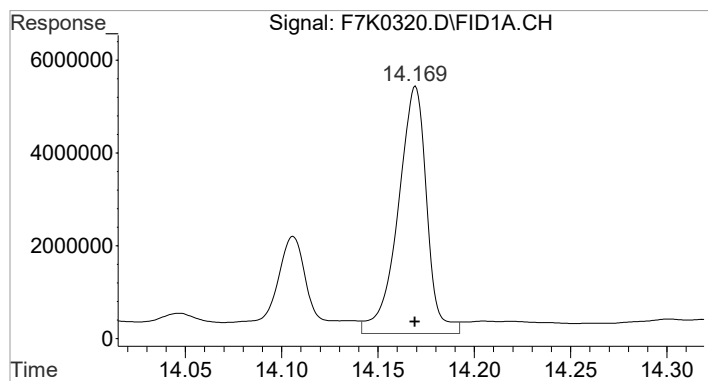
Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um



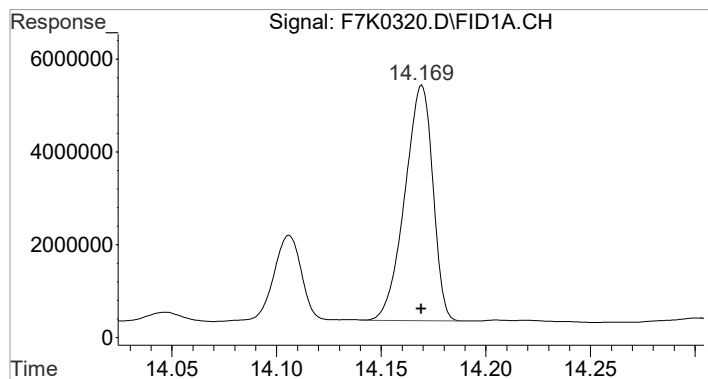


Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 1612343681  
 Total SMC/ISTD Resp: 47278108  
 Final Resp: 1565065573



#2 BEFORE analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.169 min  
 Delta R.T.: 0.000 min  
 Response: 55041728  
 Conc: 29.16 mg/L



#2 AFTER analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.169 min  
 Delta R.T.: 0.000 min  
 Response: 47278108  
 Conc: 25.04 mg/L MANUALLY INTEGRATED

Continuing Calibration Summary

Instrument ID: FID7.I

Data File: 110316\_DRO\F7K0331.D

Lab Sample ID UFI150820-26.3

Column ID: DB-5ms

Client SDG: 409254

Injection Date: 04-NOV-16 06:08

Init. Cal. Date(s):NA

Method: 110316\_DRO\FID7\_DRO\_102516.m

Quant Type: ESTD

| Compound              | AVECF / Amount | CF CCV     | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|-----------------------|----------------|------------|-------------|-------------|-----|---------|------------|
| Diesel Range Organics | 1611052.14     | 1812472.69 | 1000000     | 12.5        | 20  |         | Averaged   |
| o-Terphenyl(Surr)     | 1887833.44     | 2246392    | 25000       | 18.99       | 20  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110316 DRO\  
Data File : F7K0331.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 06:08  
Operator : LXA1 InstName : FID7  
Sample : |UFI150820-26.3|CCV|1|DROQ|1|DRO\_CCV  
Misc : |MIX[A,D]  
ALS Vial : 31 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:52 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta | Response   | Conc     | Units  |
|-----------------------------|--------|----------------|-------|------------|----------|--------|
| -----                       |        |                |       |            |          |        |
| System Monitoring Compounds |        |                |       |            |          |        |
| 2) SA o-Terphenyl           | 14.169 | 14.171         | 0.002 | 56159800   | 29.748   | mg/L m |
| Target Compounds            |        |                |       |            |          |        |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 |       | 1812472693 | 1125.024 | mg/L m |
| -----                       |        |                |       |            |          |        |

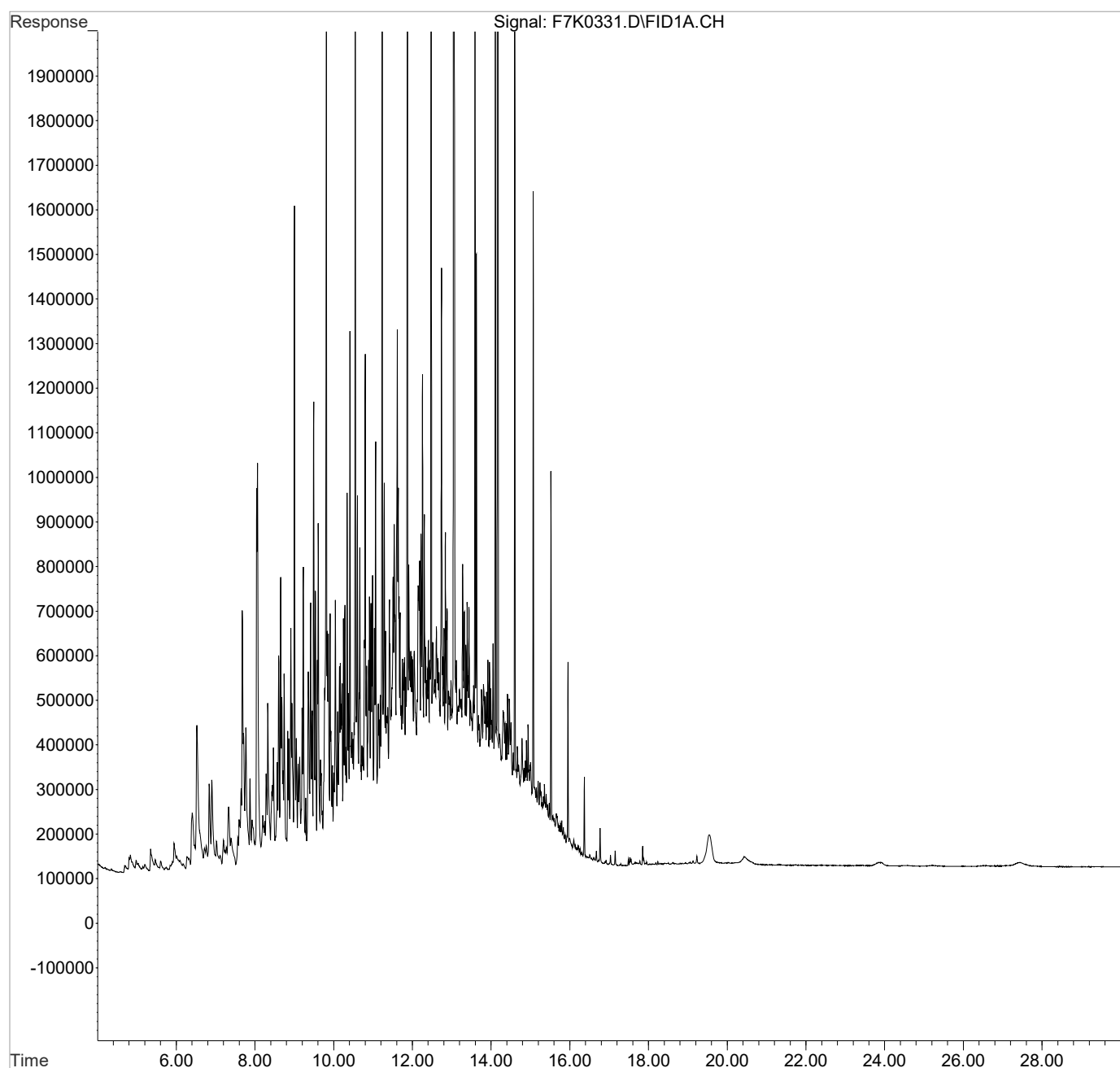
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

Quantitation Report  
GEL Laboratories, LLC

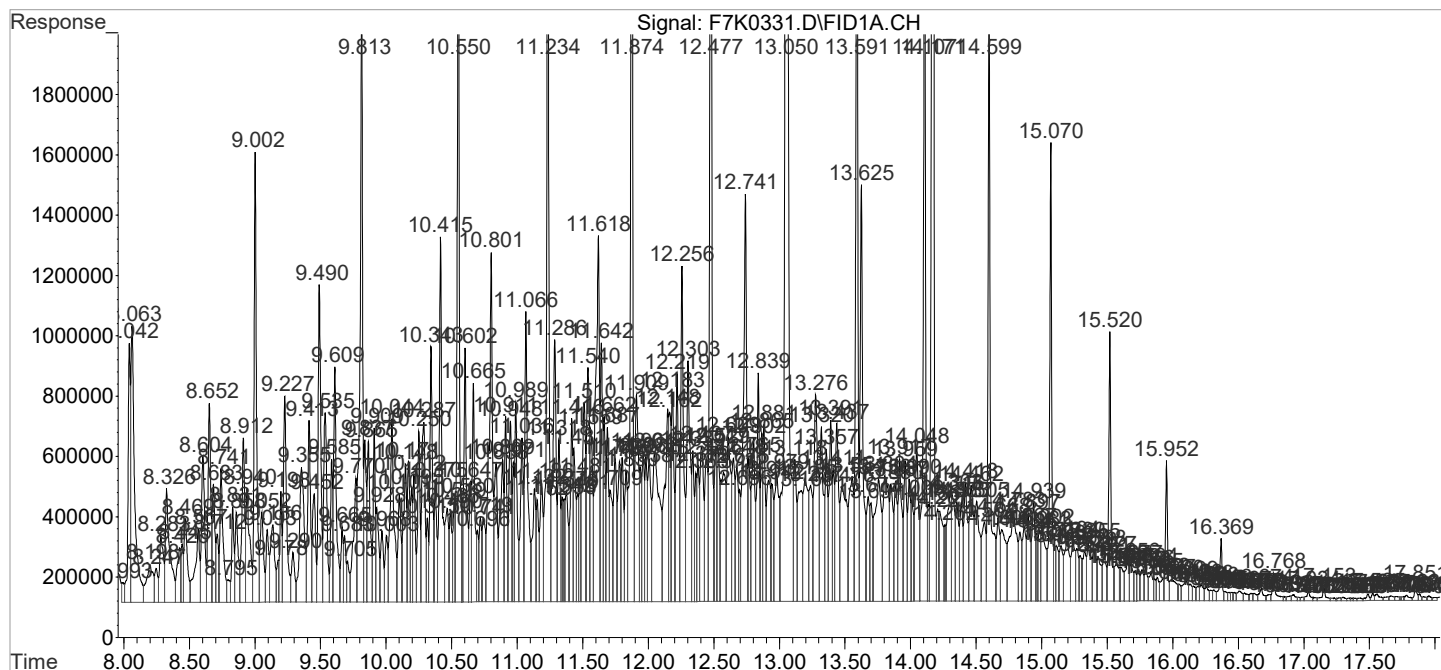
DaData Path : C:\msdchem\1\DATA\110316\_DRO\  
DaData File : F7K0331.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 06:08  
Operator : LXA1 InstName : FID7  
Sample : |UFI150820-26.3|CCV|1|DROQ|1|DRO\_CCV  
Misc : |MIX[A,D]  
ALS Vial : 31 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:52 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

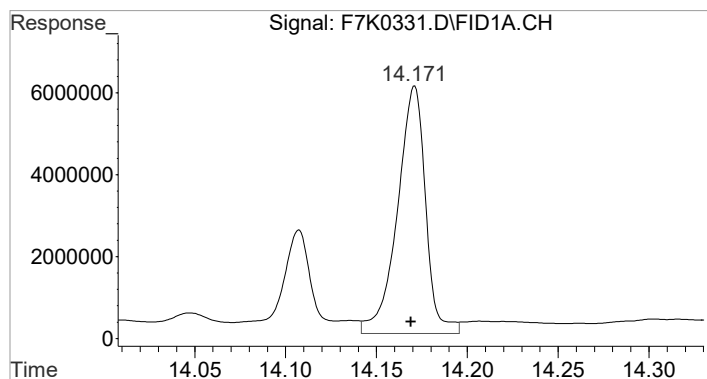




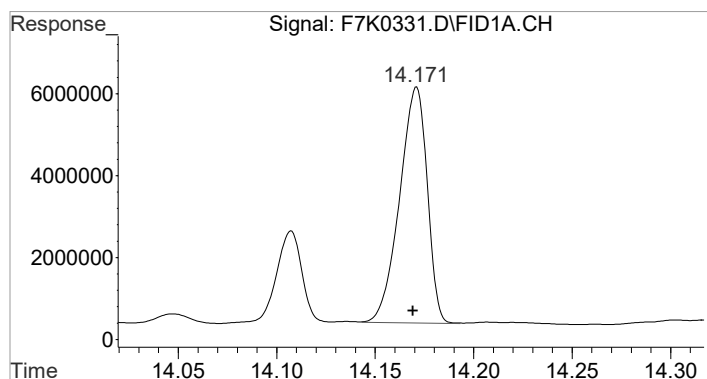


Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 1868632493  
 Total SMC/ISTD Resp: 56159800  
 Final Resp: 1812472693



#2 BEFORE analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.171 min  
 Delta R.T.: 0.002 min  
 Response: 65474149  
 Conc: 34.68 mg/L



#2 AFTER analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.171 min  
 Delta R.T.: 0.002 min  
 Response: 56159800  
 Conc: 29.75 mg/L MANUALLY INTEGRATED

## Analytical Sequence

Page 1 of 1

Lab Name: GEL Laboratories LLC

Client SDG: 409254

GC Column: DB-5ms

Instrument ID: FID7.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                |                 | 14.18<br>14.15 14.21 # |
|--|---------------|----------------|-----------------|------------------------|
| File   | Sample Number | Lab Sample ID  | Analysis Date   | o-Terphenyl            |
| f7j2503.D  | ICAL          | UFI160222-11.1 | 25-OCT-16 11:33 | 14.17                  |
| f7j2504.D  | ICAL          | UFI160222-12.1 | 25-OCT-16 12:12 | 14.17                  |
| f7j2505.D  | ICAL          | UFI160222-13.1 | 25-OCT-16 12:51 | 14.18                  |
| f7j2506.D  | ICAL          | UFI160222-14.1 | 25-OCT-16 13:30 | 14.19                  |
| f7j2507.D  | ICAL          | UFI160222-15.1 | 25-OCT-16 14:09 | 14.2                   |
| f7j2508.D  | ICV           | UFI150820-26.3 | 25-OCT-16 14:48 | 14.18                  |

# Column used to flag retention time values with an  
asterisk.

## Analytical Sequence

Page 1 of 1

Lab Name: GEL Laboratories LLC

Client SDG: 409254

GC Column: DB-5ms

Instrument ID: FID7.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |                |                 | 14.17<br>14.14 14.2 # |
|--|---------------|----------------|-----------------|-----------------------|
| File   | Sample Number | Lab Sample ID  | Analysis Date   | o-Terphenyl           |
| F7K0318.D  | CCB           | ZZZZZZ         | 03-NOV-16 21:43 | 14.17                 |
| F7K0319.D  | ZZZZZZ        | ZZZZZZ         | 03-NOV-16 22:22 | NA                    |
| F7K0320.D  | CCV           | UFI150820-26.3 | 03-NOV-16 23:01 | 14.17                 |
| F7K0321.D  | CCB           | WFI161004-99   | 03-NOV-16 23:40 | 14.17                 |
| F7K0322.D  | MB            | 1203659992     | 04-NOV-16 00:19 | 14.17                 |
| F7K0323.D  | BLK01LCS      | 1203659993     | 04-NOV-16 00:58 | 14.17                 |
| F7K0324.D  | DP060321      | 409254040      | 04-NOV-16 01:36 | 14.17                 |
| F7K0325.D  | DP060321MS    | 1203659994     | 04-NOV-16 02:15 | 14.17                 |
| F7K0326.D  | DP060321MSD   | 1203659995     | 04-NOV-16 02:54 | 14.17                 |
| F7K0327.D  | DP060113      | 409254041      | 04-NOV-16 03:33 | 14.17                 |
| F7K0328.D  | DP060212      | 409254042      | 04-NOV-16 04:12 | 14.17                 |
| F7K0329.D  | DP060212DUP   | 409254043      | 04-NOV-16 04:51 | 14.17                 |
| F7K0330.D  | ZZZZZZ        | ZZZZZZ         | 04-NOV-16 05:29 | 14.17                 |
| F7K0331.D  | CCV           | UFI150820-26.3 | 04-NOV-16 06:08 | 14.17                 |
| F7K0332.D  | CCB           | WFI161004-99   | 04-NOV-16 06:47 | 14.17                 |

# Column used to flag retention time values with an asterisk.

# Quality Control Data

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**FID Diesel Range Organics  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

|                       |                      |                      |             |
|-----------------------|----------------------|----------------------|-------------|
| <b>SDG Number:</b>    | 409254               | <b>Matrix:</b>       | SOIL        |
| <b>Lab Sample ID:</b> | 1203659992           |                      |             |
| <b>Client Sample:</b> | QC for batch 1612126 | <b>Project:</b>      | QC          |
| <b>Client ID:</b>     | MB for batch 1612126 | <b>SOP Ref:</b>      | GL-OA-E-003 |
| <b>Batch ID:</b>      | 1612127              | <b>Dilution:</b>     | 1           |
| <b>Run Date:</b>      | 11/04/2016 00:19     | <b>Inj. Vol:</b>     | 1 uL        |
| <b>Prep Date:</b>     | 11/02/2016 12:26     | <b>Final Volume:</b> | 1 mL        |
| <b>Data File:</b>     | 110316_DRO\F7K0322.D | <b>Column:</b>       | DB-5ms      |

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | J         | 3190   | ug/Kg | 2160    | 6660    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110316 DRO\  
Data File : F7K0322.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 00:19  
Operator : LXA1 InstName : FID7  
Sample : |1203659992|1612127|1|DROQ|1|MB|||  
Misc : |FIDDROC4 S|SOIL|QC A|MIX[A]||  
ALS Vial : 22 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:34 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta     | Response | Conc   | Units |
|-----------------------------|--------|----------------|-----------|----------|--------|-------|
| -----                       |        |                |           |          |        |       |
| System Monitoring Compounds |        |                |           |          |        |       |
| 2) SA o-Terphenyl           | 14.169 | 14.165         | -0.004    | 26568641 | 14.074 | mg/L  |
| Compound                    | Amount | Range          | Recovery  |          |        |       |
| 2) o-Terphenyl              | 20.000 | No Limits      | 70%       |          |        |       |
| Target Compounds            |        |                |           |          |        |       |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 | 154549788 | 95.931   | mg/L   |       |
| -----                       |        |                |           |          |        |       |

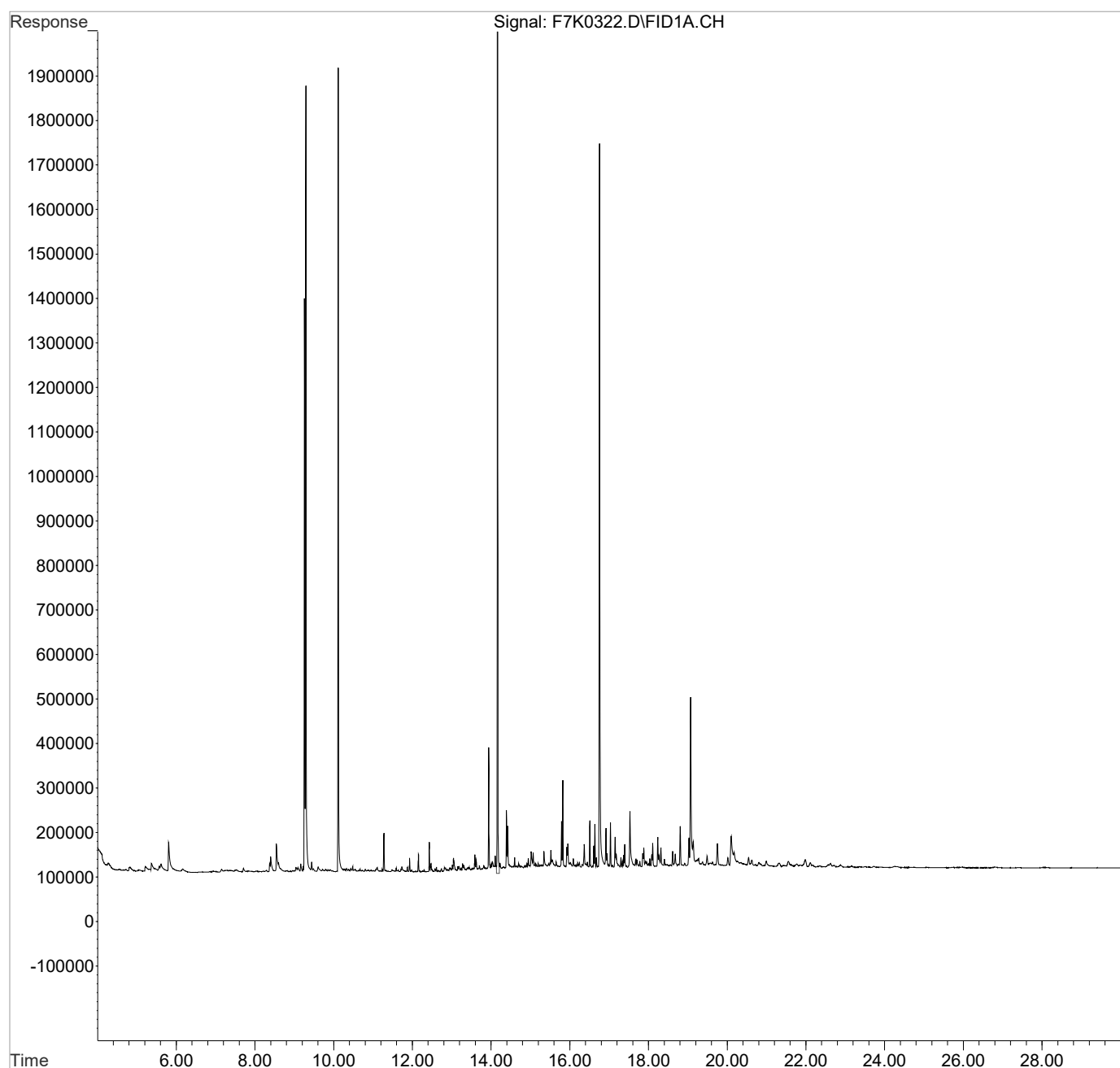
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

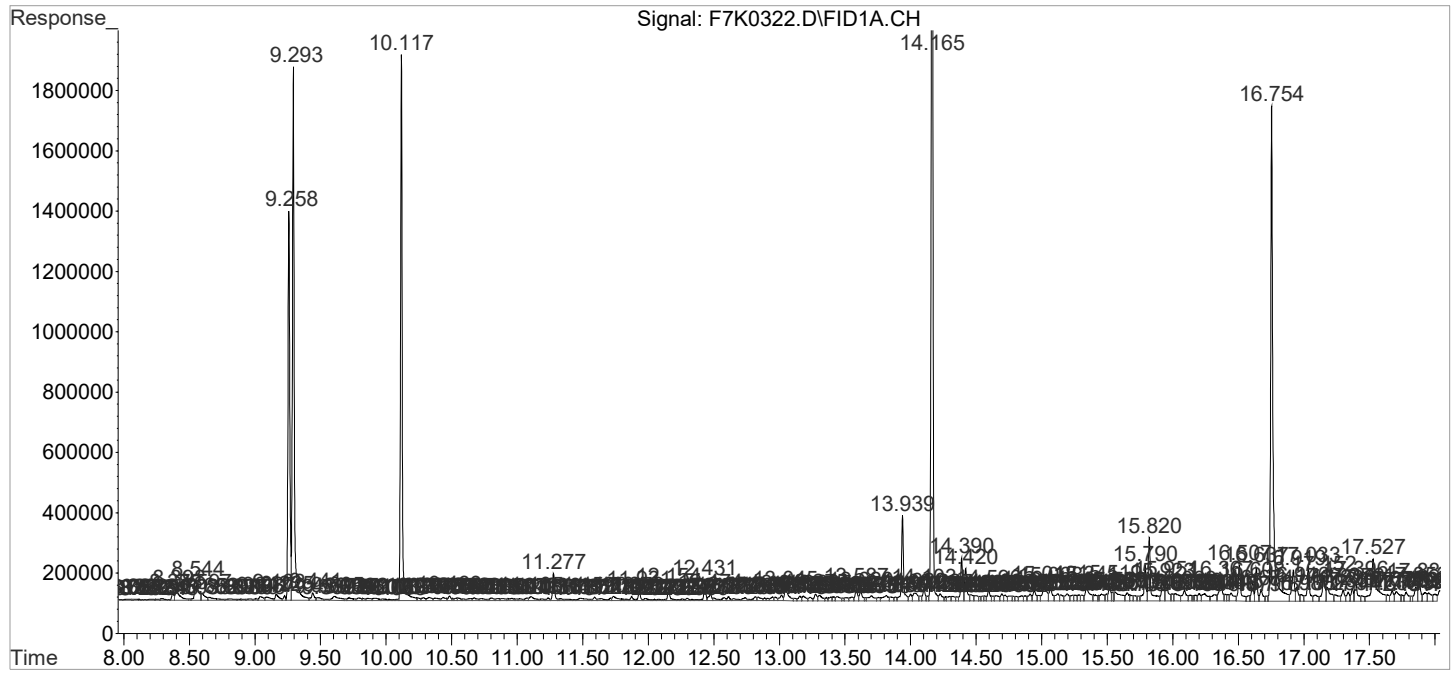
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\110316\_DRO\  
DaData File : F7K0322.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 00:19  
Operator : LXA1 InstName : FID7  
Sample : |1203659992|1612127|1|DROQ|1|MB|||  
Misc : |FIDDROC4 S|SOIL|QC A|MIX[A]||  
ALS Vial : 22 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:34 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

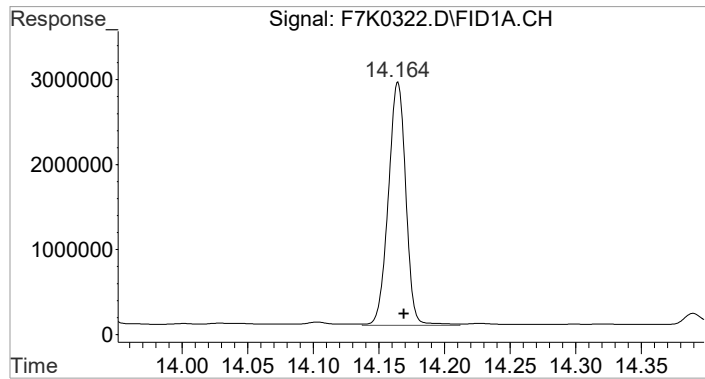
Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um





Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 181118429  
 Total SMC/ISTD Resp: 26568641  
 Final Resp: 154549788



#2  
 o-Terphenyl  
 R.T.: 14.165 min  
 Delta R.T.: -0.005 min  
 Response: 26568641  
 Conc: 14.07 mg/L



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**FID Diesel Range Organics  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

|                       |                              |                      |                    |
|-----------------------|------------------------------|----------------------|--------------------|
| <b>SDG Number:</b>    | <b>409254</b>                | <b>Matrix:</b>       | <b>SOIL</b>        |
| <b>Lab Sample ID:</b> | <b>1203659993</b>            |                      |                    |
| <b>Client Sample:</b> | <b>QC for batch 1612126</b>  | <b>Project:</b>      | <b>QC</b>          |
| <b>Client ID:</b>     | <b>LCS for batch 1612126</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-003</b> |
| <b>Batch ID:</b>      | <b>1612127</b>               | <b>Dilution:</b>     | <b>1</b>           |
| <b>Run Date:</b>      | <b>11/04/2016 00:58</b>      | <b>Inj. Vol:</b>     | <b>1 uL</b>        |
| <b>Prep Date:</b>     | <b>11/02/2016 12:26</b>      | <b>Final Volume:</b> | <b>1 mL</b>        |
| <b>Data File:</b>     | <b>110316_DRO\F7K0323.D</b>  | <b>Column:</b>       | <b>DB-5ms</b>      |

| <b>CAS No.</b>            | <b>Parmname</b>       | <b>Qualifier</b> | <b>Result</b> | <b>Units</b> | <b>MDL/LOD</b> | <b>PQL/LOQ</b> |
|---------------------------|-----------------------|------------------|---------------|--------------|----------------|----------------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | B                | 25900         | ug/Kg        | 2160           | 6660           |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110316 DRO\  
Data File : F7K0323.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 00:58  
Operator : LXA1 InstName : FID7  
Sample : |1203659993|1612127|1|DROQ|1|LCS|||  
Misc : |FIDROC4 S|SOIL|QC A|MIX[A]||  
ALS Vial : 23 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:36 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta      | Response | Conc   | Units  |
|-----------------------------|--------|----------------|------------|----------|--------|--------|
| -----                       |        |                |            |          |        |        |
| System Monitoring Compounds |        |                |            |          |        |        |
| 2) SA o-Terphenyl           | 14.169 | 14.166         | -0.003     | 28172366 | 14.923 | mg/L m |
| Compound                    | Amount | Range          | Recovery   |          |        |        |
| 2) o-Terphenyl              | 20.000 | No Limits      | 75%        |          |        |        |
| Target Compounds            |        |                |            |          |        |        |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 | 1254918135 | 778.943  | mg/L m |        |
| -----                       |        |                |            |          |        |        |

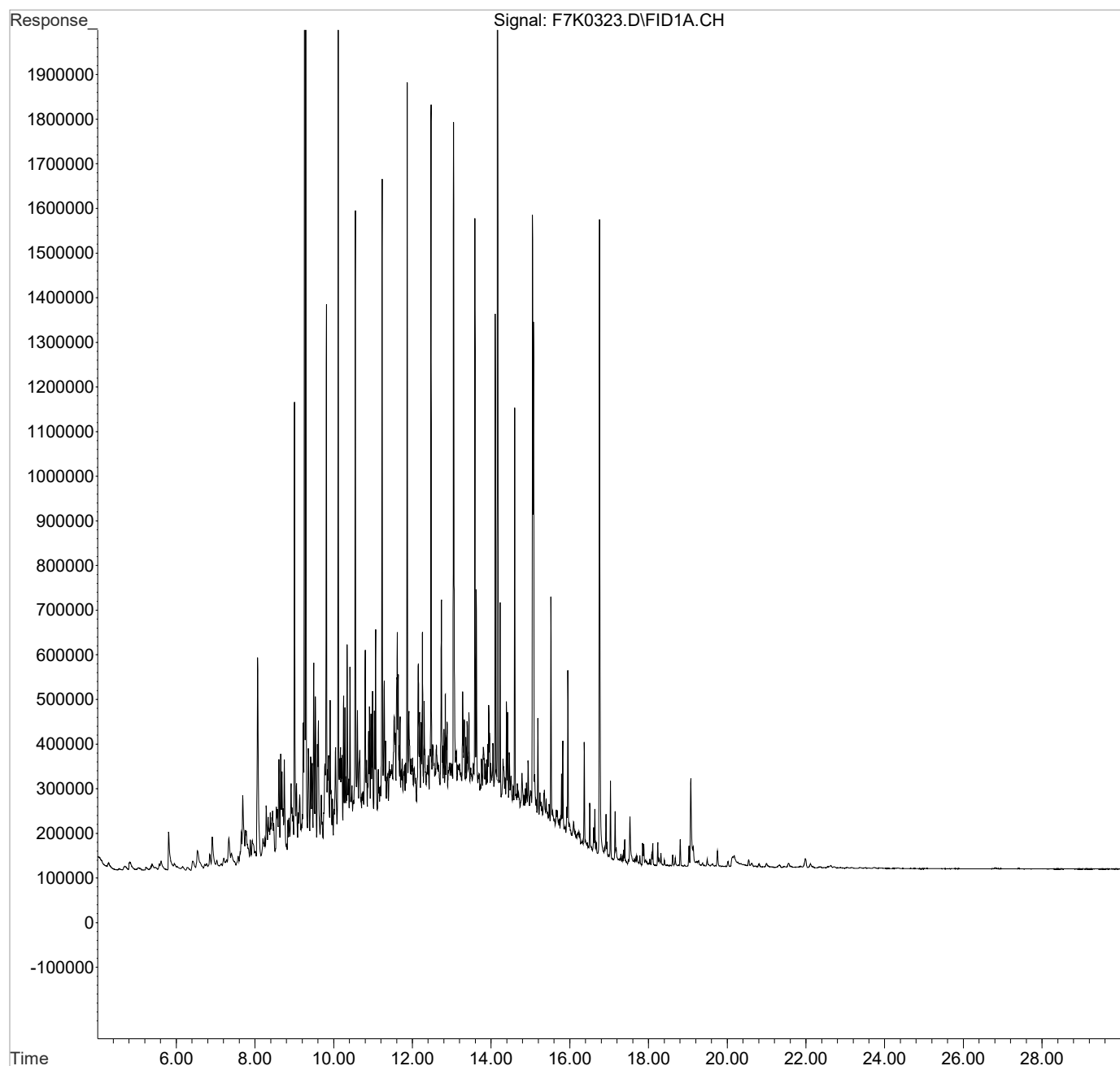
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

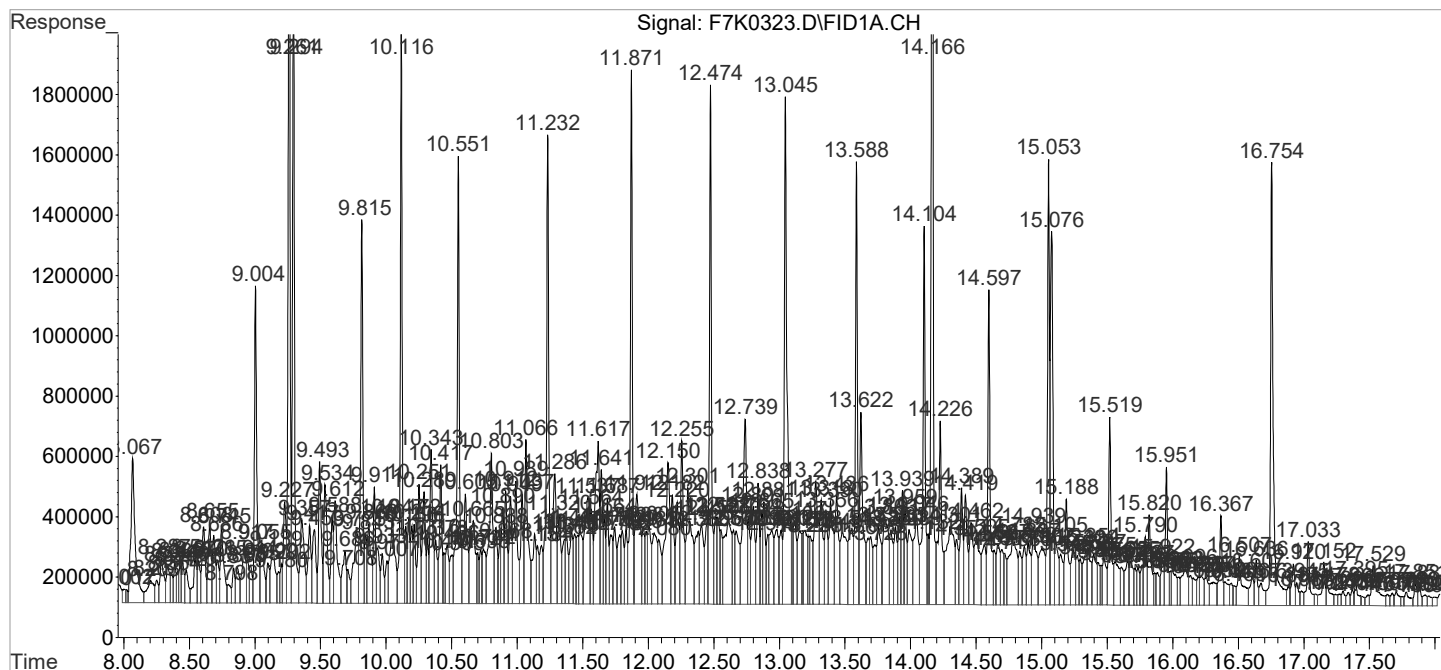
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\110316\_DRO\  
DaData File : F7K0323.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 00:58  
Operator : LXA1 InstName : FID7  
Sample : |1203659993|1612127|1|DROQ|1|LCS|||  
Misc : |FIDDROC4 S|SOIL|QC A|MIX[A]||  
ALS Vial : 23 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:36 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um





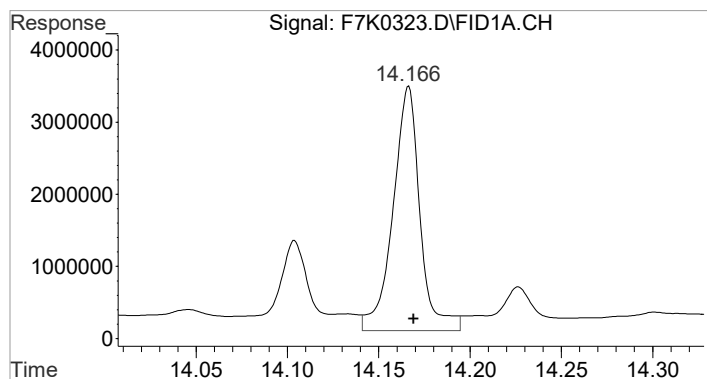
Compound: Diesel Range Organics

RT Range: 8.055: 17.937

Total TPH Resp: 1283090500

Total SMC/ISTD Resp: 28172366

Final Resp: 1254918135



#2 BEFORE analyst INTEGRATION

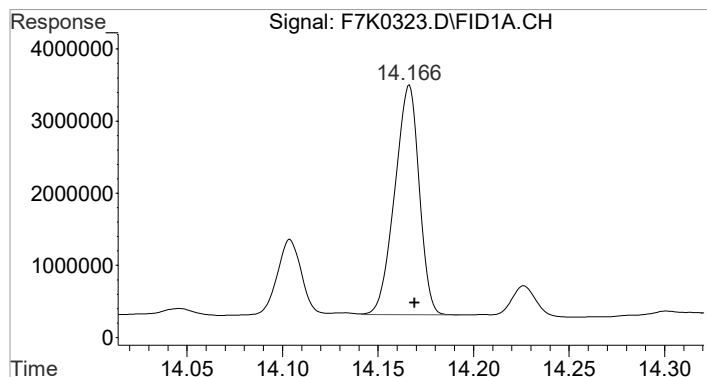
o-Terphenyl

R.T.: 14.166 min

Delta R.T.: -0.003 min

Response: 34905130

Conc: 18.49 mg/L



#2 AFTER analyst INTEGRATION

o-Terphenyl

R.T.: 14.166 min

Delta R.T.: -0.003 min

Response: 28172366

Conc: 14.92 mg/L MANUALLY INTEGRATED

## FID Diesel Range Organics

Page 1 of 1

## Certificate of Analysis

## Sample Summary

|                |                      |                 |                  |               |             |
|----------------|----------------------|-----------------|------------------|---------------|-------------|
| SDG Number:    | 409254               | Date Collected: | 10/26/2016 12:31 | Matrix:       | SOIL        |
| Lab Sample ID: | 1203659994           | Date Received:  | 10/27/2016 09:00 | %Moisture:    | 15.1        |
| Client Sample: | QC for batch 1612126 | Client:         | HAAL002          | Project:      | QC          |
| Client ID:     | DP060321MS           | Method:         | SW846 3541/8015C | SOP Ref:      | GL-OA-E-003 |
| Batch ID:      | 1612127              | Inst:           | FID7.1           | Dilution:     | 1           |
| Run Date:      | 11/04/2016 02:15     | Analyst:        | LXA1             | Inj. Vol:     | 1 uL        |
| Prep Date:     | 11/02/2016 12:26     | Aliquot:        | 30.002 g         | Final Volume: | 1 mL        |
| Data File:     | 110316_DRO\F7K0325.D | Column:         | DB-5ms           |               |             |

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | B         | 45600  | ug/Kg | 2550    | 7850    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110316 DRO\  
Data File : F7K0325.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 02:15  
Operator : LXA1 InstName : FID7  
Sample : |1203659994|1612127|1|DROQ|1|MS|||  
Misc : |FIDDROC4 S|SOIL|QC A|MIX[A]||  
ALS Vial : 25 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:40 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    |                       | Exp    | R.T.      | Delta    | Response   | Conc     | Units  |
|-----------------------------|-----------------------|--------|-----------|----------|------------|----------|--------|
| -----                       |                       |        |           |          |            |          |        |
| System Monitoring Compounds |                       |        |           |          |            |          |        |
| 2) SA                       | o-Terphenyl           | 14.169 | 14.167    | -0.002   | 32013867   | 16.958   | mg/L m |
| Compound                    |                       | Amount | Range     |          | Recovery   |          |        |
| 2) o-Terphenyl              |                       | 20.000 | No Limits |          | 85%        |          |        |
| Target Compounds            |                       |        |           |          |            |          |        |
| 1) HA                       | Diesel Range Organics | Range  | 8.055     | - 17.937 | 1869980575 | 1160.720 | mg/L m |
| -----                       |                       |        |           |          |            |          |        |

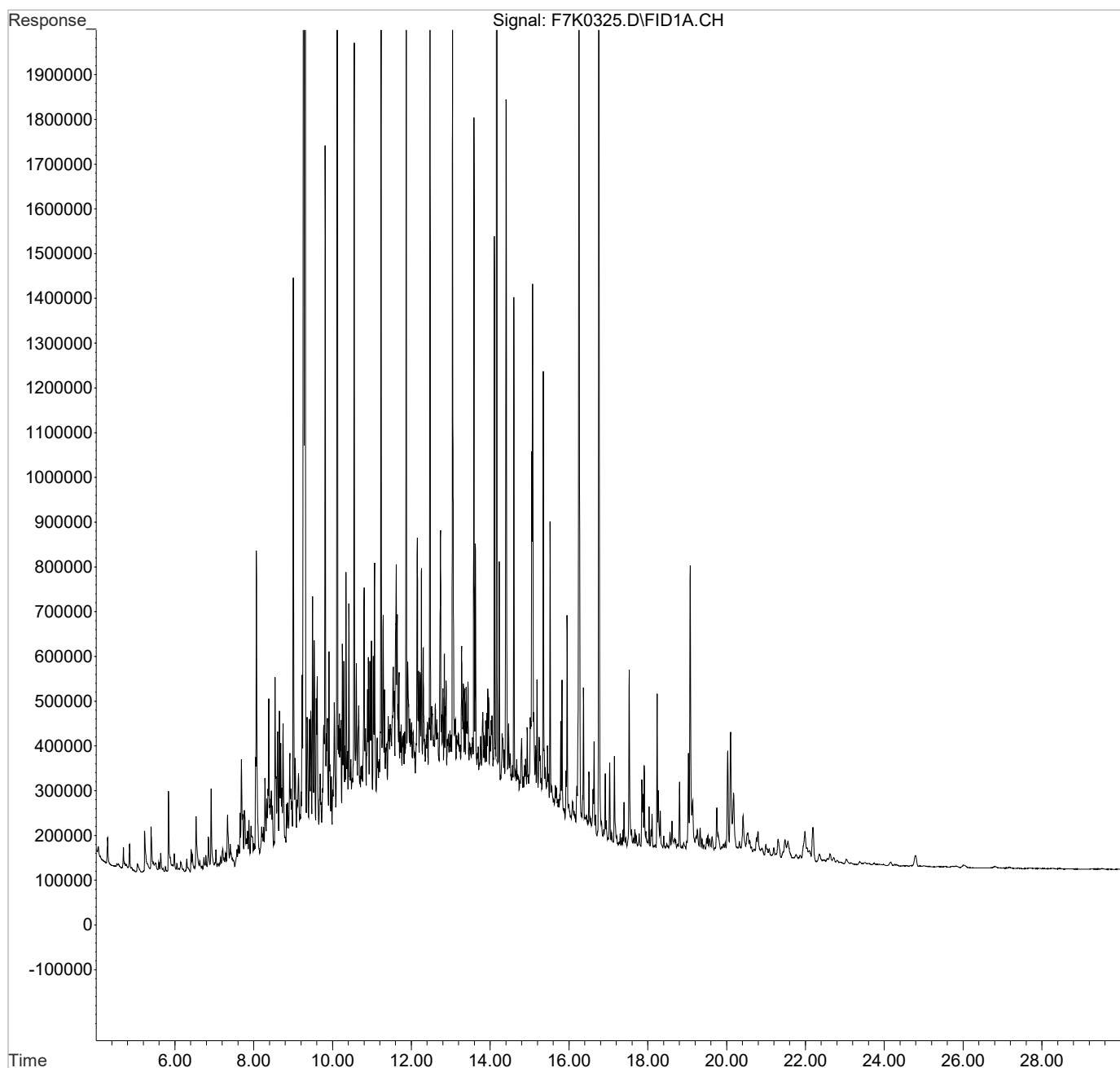
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

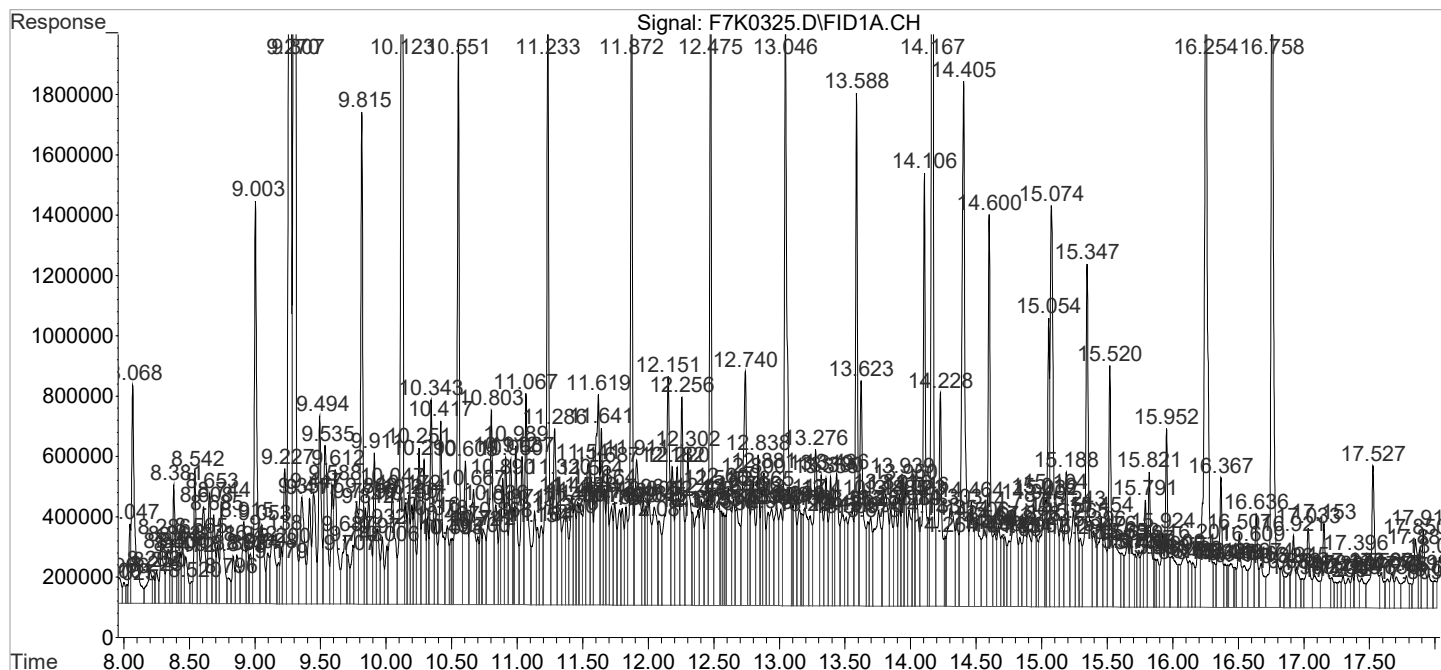
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\110316\_DRO\  
DaData File : F7K0325.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 02:15  
Operator : LXA1 InstName : FID7  
Sample : |1203659994|1612127|1|DROQ|1|MS|||  
Misc : |FIDDROC4 S|SOIL|QC A|MIX[A]||  
ALS Vial : 25 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:40 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

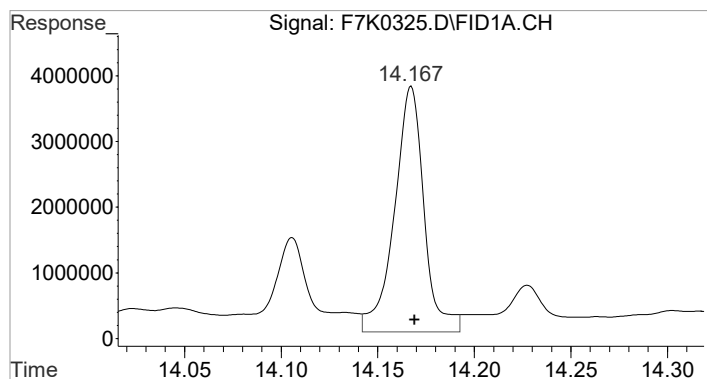
Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um



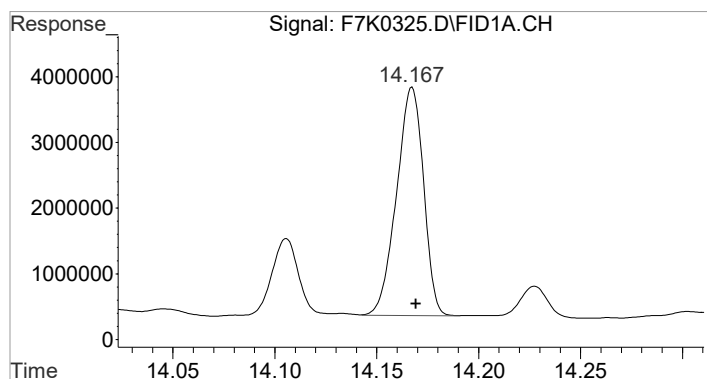


Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 1901994441  
 Total SMC/ISTD Resp: 32013867  
 Final Resp: 1869980575



#2 BEFORE analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.167 min  
 Delta R.T.: -0.002 min  
 Response: 40009009  
 Conc: 21.19 mg/L



#2 AFTER analyst INTEGRATION  
 o-Terphenyl  
 R.T.: 14.167 min  
 Delta R.T.: -0.002 min  
 Response: 32013867  
 Conc: 16.96 mg/L MANUALLY INTEGRATED



## FID Diesel Range Organics

Page 1 of 1

## Certificate of Analysis

## Sample Summary

|                |                      |                 |                  |               |             |
|----------------|----------------------|-----------------|------------------|---------------|-------------|
| SDG Number:    | 409254               | Date Collected: | 10/26/2016 12:31 | Matrix:       | SOIL        |
| Lab Sample ID: | 1203659995           | Date Received:  | 10/27/2016 09:00 | %Moisture:    | 15.1        |
| Client Sample: | QC for batch 1612126 | Client:         | HAAL002          | Project:      | QC          |
| Client ID:     | DP060321MSD          | Method:         | SW846 3541/8015C | SOP Ref:      | GL-OA-E-003 |
| Batch ID:      | 1612127              | Inst:           | FID7.1           | Dilution:     | 1           |
| Run Date:      | 11/04/2016 02:54     | Analyst:        | LXA1             | Inj. Vol:     | 1 uL        |
| Prep Date:     | 11/02/2016 12:26     | Aliquot:        | 30.015 g         | Final Volume: | 1 mL        |
| Data File:     | 110316_DRO\F7K0326.D | Column:         | DB-5ms           |               |             |

| CAS No.                   | Parmname              | Qualifier | Result | Units | MDL/LOD | PQL/LOQ |
|---------------------------|-----------------------|-----------|--------|-------|---------|---------|
| PHCG1020DRO<br>68334-30-5 | Diesel Range Organics | B         | 33100  | ug/Kg | 2550    | 7850    |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110316 DRO\  
Data File : F7K0326.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 02:54  
Operator : LXA1 InstName : FID7  
Sample : |1203659995|1612127|1|DROQ|1|MSD|||  
Misc : |FIDROC4 S|SOIL|QC A|MIX[A]||  
ALS Vial : 26 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:42 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um

| Compound                    | Exp    | R.T.           | Delta      | Response | Conc   | Units  |
|-----------------------------|--------|----------------|------------|----------|--------|--------|
| -----                       |        |                |            |          |        |        |
| System Monitoring Compounds |        |                |            |          |        |        |
| 2) SA o-Terphenyl           | 14.169 | 14.166         | -0.003     | 26567932 | 14.073 | mg/L m |
| Compound                    | Amount | Range          | Recovery   |          |        |        |
| 2) o-Terphenyl              | 20.000 | No Limits      | 70%        |          |        |        |
| Target Compounds            |        |                |            |          |        |        |
| 1) HA Diesel Range Organics | Range  | 8.055 - 17.937 | 1359646801 | 843.950  | mg/L m |        |
| -----                       |        |                |            |          |        |        |

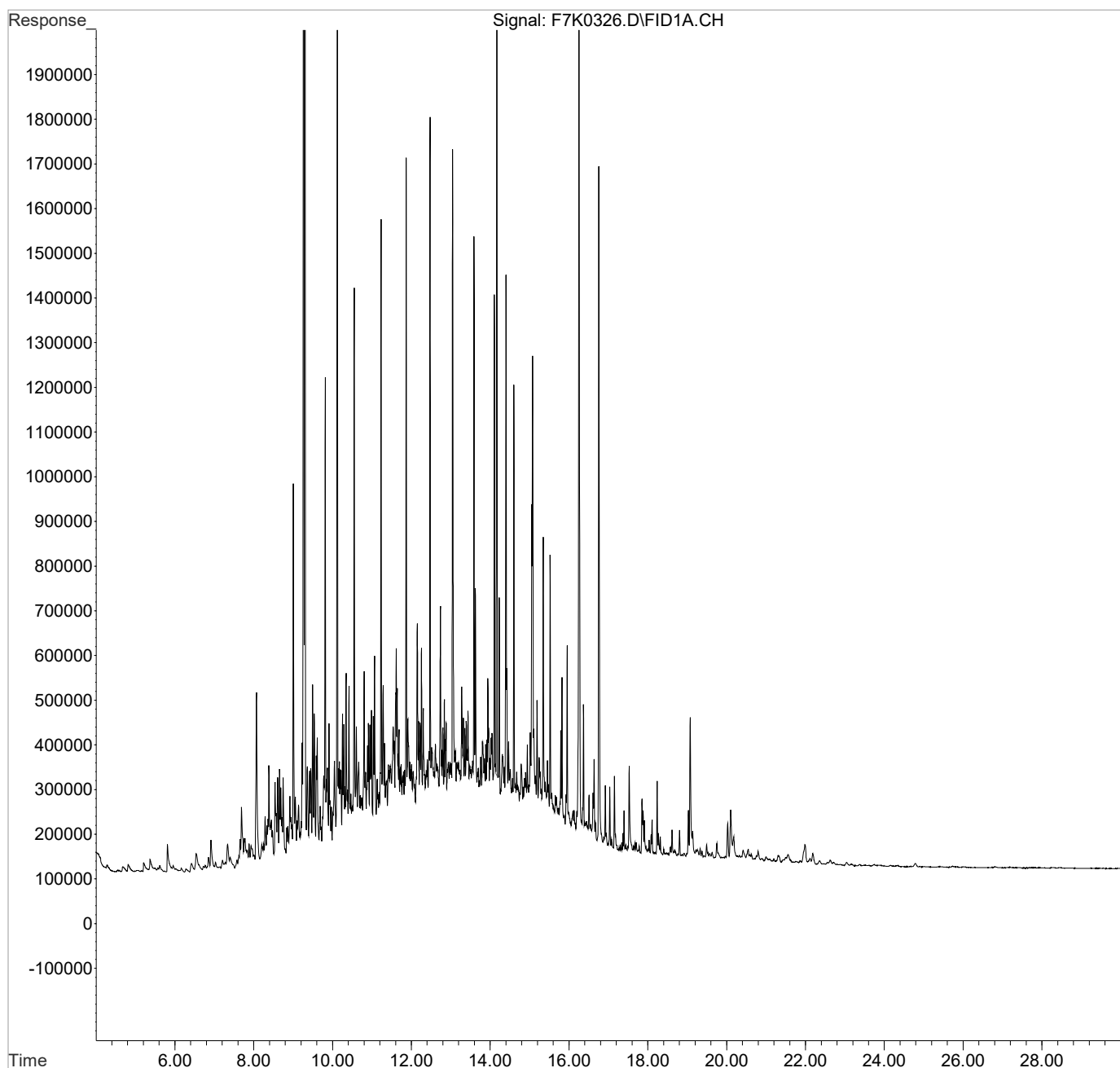
(f)=RT Delta > 1/2 Window (A) = Over the calibration range (d) = deleted (m)=manual int.

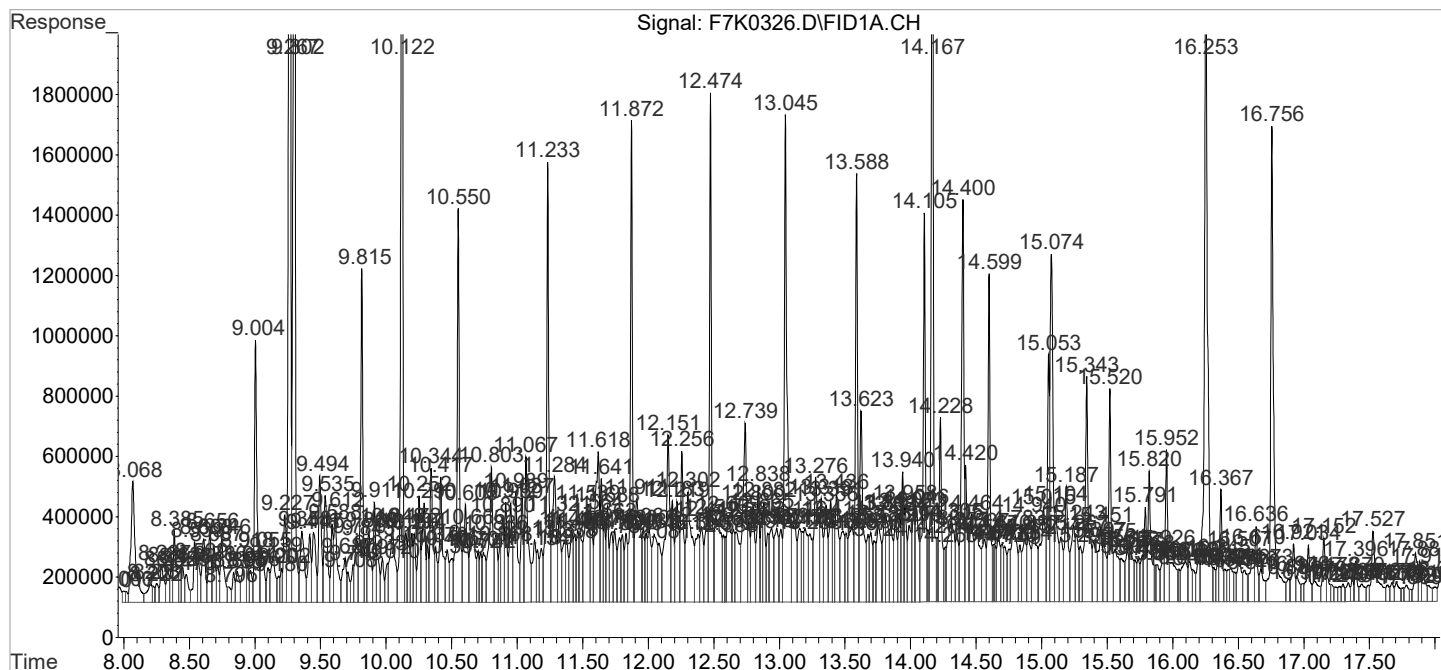
Quantitation Report  
GEL Laboratories, LLC

DaData Path : C:\msdchem\1\DATA\110316\_DRO\  
DaData File : F7K0326.D  
Signal(s) : FID1A.CH  
Acq On : 04 Nov 2016 02:54  
Operator : LXA1 InstName : FID7  
Sample : |1203659995|1612127|1|DROQ|1|MSD|||  
Misc : |FIDDROC4 S|SOIL|QC A|MIX[A]||  
ALS Vial : 26 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Nov 04 08:23:42 2016  
Quant Method : C:\msdchem\1\DATA\110316 DRO\FID7 DRO 102516.m  
Quant Title : DRO TPH SubList :  
QLast Update : Tue Oct 25 14:51:13 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

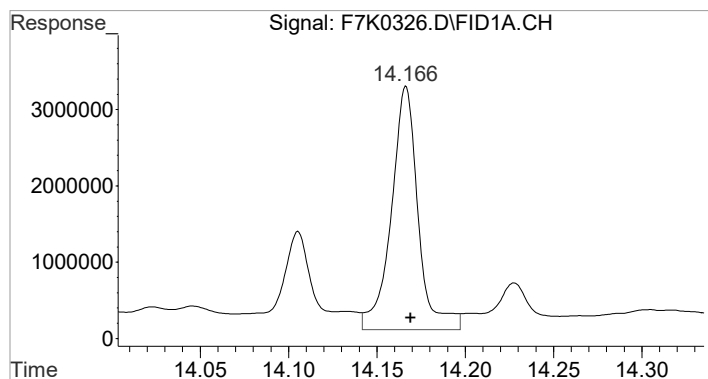
Volume Inj. : 1 ul  
Signal Phase : DB-5MS  
Signal Info : 30m x 250um x 0.25um





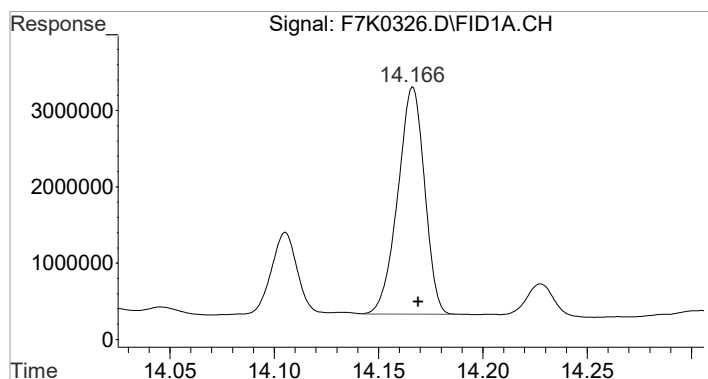
Compound: Diesel Range Organics

RT Range: 8.055: 17.937  
 Total TPH Resp: 1386214733  
 Total SMC/ISTD Resp: 26567932  
 Final Resp: 1359646801



#2 BEFORE analyst INTEGRATION

o-Terphenyl  
 R.T.: 14.167 min  
 Delta R.T.: -0.003 min  
 Response: 33701515  
 Conc: 17.85 mg/L



#2 AFTER analyst INTEGRATION

o-Terphenyl  
 R.T.: 14.166 min  
 Delta R.T.: -0.003 min  
 Response: 26567932  
 Conc: 14.07 mg/L MANUALLY INTEGRATED

# Miscellaneous

# Prep Logbook

## Extraction of Semivolatile and Nonvolatile Organic Compounds from Soil, Sludge, and Other Miscellaneous Solid Samples

Batch ID: 1612126  
 Analyst: Mia DeLee  
 Method: SW846 3541

Verified by: \_\_\_\_\_

Lab SOP: GL-OA-E-010 REV# 26  
 Instrument: Semi-Volatiles Manual

| Sample ID                  | Prep Date            | Aliquot (g) | Prepped Aliquot (mL) | Prepped Factor (mL/g) |
|----------------------------|----------------------|-------------|----------------------|-----------------------|
| 1203659992 MB              | 02-NOV-2016 12:26:00 | 30.048      | 1                    | 0.03328               |
| 1203659993 LCS             | 02-NOV-2016 12:26:00 | 30.032      | 1                    | 0.0333                |
| 409254040                  | 02-NOV-2016 12:26:00 | 30.062      | 1                    | 0.03326               |
| 1203659994 MS (409254040)  | 02-NOV-2016 12:26:00 | 30.002      | 1                    | 0.03333               |
| 1203659995 MSD (409254040) | 02-NOV-2016 12:26:00 | 30.015      | 1                    | 0.03332               |
| 409254041                  | 02-NOV-2016 12:26:00 | 30.025      | 1                    | 0.03331               |
| 409254042                  | 02-NOV-2016 12:26:00 | 30.004      | 1                    | 0.03333               |
| 409254043                  | 02-NOV-2016 12:26:00 | 30.015      | 1                    | 0.03332               |
| 409411001                  | 02-NOV-2016 12:26:00 | 30.042      | 1                    | 0.03329               |

| Type  | Sample Id  | Description           | Serial Number | Spike Amt | Units | Comments:                                 |
|-------|------------|-----------------------|---------------|-----------|-------|---|
| LCS   | 1203659993 | TPH DRO LCS           | UE160804-01   | 1         | mL    | Final Solvent: CH2Cl2<br>Verified by: SJW |
| MS    | 1203659994 | TPH DRO LCS           | UE160804-01   | 1         | mL    |   |
| MSD   | 1203659995 | TPH DRO LCS           | UE160804-01   | 1         | mL    |   |
| SURR  | All        | 20 ppm surrogate      | WE161012-06   | 1         | mL    |   |
| REGNT | All        | Sand pure 40-100 mesh | 160712-A      | 30        | g     |   |
| REGNT | All        | Methylene Chloride    | 2470801       | 120       | mL    |   |

## ORGANIC RUN LOG - INSTRUMENT ID#FID7

## GEL ORGANIC RUN LOG

INSTRUMENT BATCH: 102516DRO

DATE: 25-Oct-16

METHOD: See Data

OPERATOR: LXA1

Solvent Lot: 1784476-D.1

Injection Volume: 1.0 uL

Calibration Information:

Initial Calibration Dates: See Calibration History

Initial Calibration Std ID's: See Associated Data and Run Log

Sequence Number: 102516DRO

FID analysis of GEL SOP: GL-OA-E-003

| Analysis   |       | Data File | Lab Sample ID  | Client     | Batch # | Dil.   | AS     | Analyst |     | Comments |
|------------|-------|-----------|----------------|------------|---------|--------|--------|---------|-----|----------|
| Date       | Time  |           |                |            |         | Factor | Slot # |         |     |          |
| 10/25/2016 | 09:51 | f7j2501.D | WFI161004-99   | IB         | BLANK   | 1      | 1      | LXA1    | USE |          |
| 10/25/2016 | 10:30 | f7j2502.D | WFI160617-99   | FID_RT     | RTCHECK | 1      | 2      | LXA1    | USE |          |
| 10/25/2016 | 11:33 | f7j2503.D | UFI160222-11.2 | DRO-ICAL-1 | ICAL    | 1      | 3      | LXA1    | USE |          |
| 10/25/2016 | 12:12 | f7j2504.D | UFI160222-12.2 | DRO-ICAL-2 | ICAL    | 1      | 4      | LXA1    | USE |          |
| 10/25/2016 | 12:51 | f7j2505.D | UFI160222-13.2 | DRO-ICAL-3 | ICAL    | 1      | 5      | LXA1    | USE |          |
| 10/25/2016 | 13:30 | f7j2506.D | UFI160222-14.2 | DRO-ICAL-4 | ICAL    | 1      | 6      | LXA1    | USE |          |
| 10/25/2016 | 14:09 | f7j2507.D | UFI160222-15.2 | DRO-ICAL-5 | ICAL    | 1      | 7      | LXA1    | USE |          |
| 10/25/2016 | 14:48 | f7j2508.D | UFI150820-26.3 | DRO_ICV    | ICV     | 1      | 8      | LXA1    | USE |          |

## ORGANIC RUN LOG - INSTRUMENT ID#FID7

## GEL ORGANIC RUN LOG

INSTRUMENT BATCH: 110316\_DRO

DATE: 3-Nov-16

METHOD: See Data

OPERATOR: LXA1

Solvent Lot: 1784476-D.1

Injection Volume: 1.0 uL

Calibration Information:

Initial Calibration Dates: See Calibration History

Initial Calibration Std ID's: See Associated Data and Run Log

FID analysis of GEL SOP: GL-OA-E-003

Sequence Number: 110316\_DRO

| Analysis   |       | Data File | Lab Sample ID   | Client  | Batch # | Dil. Factor | AS Slot # | Analyst | Comments |
|------------|-------|-----------|-----------------|---------|---------|-------------|-----------|---------|----------|
| Date       | Time  |           |                 |         |         |             |           |         |          |
| 11/03/2016 | 21:43 | F7K0318.D | WFI160417-99    | IB      | BLANK   | 1           | 18        | LXA1    | USE      |
| 11/03/2016 | 22:22 | F7K0319.D | WFI160617-99    | FID_RT  | RTCHECK | 1           | 19        | LXA1    | USE      |
| 11/03/2016 | 23:01 | F7K0320.D | UFI150820-26.36 | DRO_CCV | CCV     | 1           | 20        | LXA1    | USE      |
| 11/03/2016 | 23:40 | F7K0321.D | WFI161004-99    | IB      | BLANK   | 1           | 21        | LXA1    | USE      |
| 11/04/2016 | 00:19 | F7K0322.D | 1203659992      | MB      | 1612127 | 1           | 22        | LXA1    | USE      |
| 11/04/2016 | 00:58 | F7K0323.D | 1203659993      | LCS     | 1612127 | 1           | 23        | LXA1    | USE      |
| 11/04/2016 | 01:36 | F7K0324.D | 409254040       | HAAL    | 1612127 | 1           | 24        | LXA1    | USE      |
| 11/04/2016 | 02:15 | F7K0325.D | 1203659994      | MS      | 1612127 | 1           | 25        | LXA1    | USE      |
| 11/04/2016 | 02:54 | F7K0326.D | 1203659995      | MSD     | 1612127 | 1           | 26        | LXA1    | USE      |
| 11/04/2016 | 03:33 | F7K0327.D | 409254041       | HAAL    | 1612127 | 1           | 27        | LXA1    | USE      |
| 11/04/2016 | 04:12 | F7K0328.D | 409254042       | HAAL    | 1612127 | 1           | 28        | LXA1    | USE      |
| 11/04/2016 | 04:51 | F7K0329.D | 409254043       | HAAL    | 1612127 | 1           | 29        | LXA1    | USE      |
| 11/04/2016 | 05:29 | F7K0330.D | 409411001       | SDCG    | 1612127 | 1           | 30        | LXA1    | USE      |
| 11/04/2016 | 06:08 | F7K0331.D | UFI150820-26.36 | DRO_CCV | CCV     | 1           | 31        | LXA1    | USE      |
| 11/04/2016 | 06:47 | F7K0332.D | WFI161004-99    | IB      | BLANK   | 1           | 32        | LXA1    | USE      |



# PCB Analysis

# Case Narrative

**GC Semivolatile PCB  
Technical Case Narrative  
Haley & Aldrich, Inc. (HAAL)  
SDG #: 409254**

**Product:** Analysis of Polychlorinated Biphenyls by ECD

**Analytical Method:** SW846 3541/8082A

**Analytical Procedure:** GL-OA-E-040 REV# 23

**Analytical Batch:** 1614293

**Preparation Method:** SW846 3541

**Preparation Procedure:** GL-OA-E-066 REV# 7

**Preparation Batch:** 1614292

The following samples were analyzed using the above methods and analytical procedure(s).

| <b><u>GEL Sample ID#</u></b> | <b><u>Client Sample Identification</u></b>       |
|------------------------------|--|
| 409254026                    | DP050113   |
| 409254027                    | DP050213   |
| 409254028                    | SS050100   |
| 409254029                    | DP020312   |
| 409254031                    | DP020312DUP                                      |
| 409254032                    | DP020413   |
| 409254034                    | DP020207   |
| 409254036                    | DP020209   |
| 409254038                    | DP020114   |
| 1203665373                   | Method Blank (MB)                                |
| 1203665374                   | Laboratory Control Sample (LCS)                  |
| 1203665375                   | 409254026(DP050113) Matrix Spike (MS)            |
| 1203665376                   | 409254026(DP050113) Matrix Spike Duplicate (MSD) |

The samples in this SDG were analyzed on a "dry weight" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Quality Control (QC) Information**

**Surrogate Recoveries**

Samples (See Below) did not meet acceptance criteria for surrogate recovery due to dilution.

| Sample               | Analyte | Value          |
|----------------------|---------|----------------|
| 409254028 (SS050100) | 4cmx    | 25* (30%-120%) |

**Technical Information**

**Preparation/Analytical Method Verification**

All samples and QC in this batch were cleaned using alumina in order to remove oil and other high molecular weight interferences. All samples and QC in this batch were cleaned with activated copper in order to remove sulfur. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns.

**Sample Dilutions**

Sample 409254028 (SS050100) was diluted due to the thickness of the extract.

**Miscellaneous Information****Manual integrations**

Samples 1203665373 (MB), 1203665374 (LCS), 1203665375 (DP050113MS), 1203665376 (DP050113MSD), 409254026 (DP050113), 409254027 (DP050213), 409254028 (SS050100), 409254029 (DP020312), 409254031 (DP020312DUP), 409254032 (DP020413), 409254034 (DP020207), 409254036 (DP020209) and 409254038 (DP020114) required manual integration to correctly position the baseline as set in the calibration standard injections.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Qualifier Definition Report for

HAAL002 Haley & Aldrich, Inc.

Client SDG: 409254 GEL Work Order: 409254

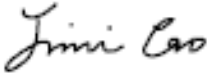
#### The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

#### Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Jimin Cao

Date: 15 NOV 2016

Title: Data Validator

# Sample Data Summary

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

**SDG Number:** 409254  
**Lab Sample ID:** 409254026  
  
**Client ID:** DP050113  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 08:57  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0917.D  
110916.B\8k0917.D

**Date Collected:** 10/25/2016 12:14  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.031 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 19  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254027  
  
**Client ID:** DP050213  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 09:40  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0920.D  
110916.B\8k0920.D

**Date Collected:** 10/25/2016 12:34  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.048 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 27.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254028  
  
**Client ID:** SS050100  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 09:55  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0921.D  
110916.B\8k0921.D

**Date Collected:** 10/25/2016 12:48  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.118 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 10  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 11096-82-5 | Aroclor-1260 |           | 49.0   | ug/kg | 12.4    | 37.3    | 1      |

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254029  
  
**Client ID:** DP020312  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 10:46  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0924.D  
110916.B\8k0924.D

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.12 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 26.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254031  
  
**Client ID:** DP020312DUP  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 11:00  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0925.D  
110916.B\8k0925.D

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.006 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 24.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254032  
  
**Client ID:** DP020413  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 11:14  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0926.D  
110916.B\8k0926.D

**Date Collected:** 10/25/2016 14:00  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.082 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 17.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254034  
  
**Client ID:** DP020207  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 11:29  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0927.D  
110916.B\8k0927.D

**Date Collected:** 10/26/2016 09:46  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.042 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 20.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254036  
  
**Client ID:** DP020209  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 11:43  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0928.D  
110916.B\8k0928.D

**Date Collected:** 10/26/2016 09:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.044 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254038  
  
**Client ID:** DP020114  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 11:57  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0929.D  
110916.B\8k0929.D

**Date Collected:** 10/26/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.089 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |

# **Quality Control Summary**



**PCB**  
**Surrogate Recovery Report**

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**SDG Number: 409254****Matrix Type: SOLID**

| Sample ID  | Client ID             | 4CMX 1<br>%REC # | 4CMX 2<br>%REC # | DCB 1<br>%REC # | DCB 2<br>%REC # |
|------------|-----------------------|------------------|------------------|-----------------|-----------------|
| 1203665373 | MB for batch 1614292  | 70               | 76               | 81              | 81              |
| 1203665374 | LCS for batch 1614292 | 71               | 76               | 82              | 84              |
| 409254026  | DP050113              | 63               | 64               | 58              | 54              |
| 1203665375 | DP050113MS            | 73               | 78               | 71              | 78              |
| 1203665376 | DP050113MSD           | 73               | 80               | 72              | 83              |
| 409254027  | DP050213              | 69               | 77               | 72              | 71              |
| 409254028  | SS050100              | 33 D             | 25 * D           | 46 D            | 42 D            |
| 409254029  | DP020312              | 82               | 91               | 88              | 88              |
| 409254031  | DP020312DUP           | 68               | 74               | 79              | 79              |
| 409254032  | DP020413              | 73               | 80               | 86              | 86              |
| 409254034  | DP020207              | 70               | 77               | 73              | 70              |
| 409254036  | DP020209              | 82               | 88               | 89              | 92              |
| 409254038  | DP020114              | 73               | 80               | 69              | 78              |

**Surrogate****Acceptance Limits**

4CMX = 4cmx

(30%-120%)

DCB = Decachlorobiphenyl

(32%-139%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

**PCB**  
**Quality Control Summary**  
**Spike Recovery Report**

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SDG Number: 409254

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1614292

Matrix: MISC SOLID

Lab Sample ID 1203665374

Instrument: ECD8A.I

Analysis Date: 11/09/2016 08:02

Dilution: 1

Analyst: JXM

Prep Batch ID: 1614292

Inj. Vol: 1 uL

Batch ID: 1614293

| CAS No     | Parmname         | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|------------|------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|
| 12674-11-2 | LCS Aroclor-1016 | 33.3                     | 0.0                      | 22.0                    | 66            | 48-93                |
| 11096-82-5 | LCS Aroclor-1260 | 33.3                     | 0.0                      | 21.2                    | 64            | 58-117               |

## PCB

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Quality Control Summary  
Spike Recovery Report

SDG Number: 409254

Sample Type: Matrix Spike

Client ID: DP050113MS

Matrix: SOIL

Lab Sample ID 1203665375

%Moisture: 19

Instrument: ECD8A.I

Analysis Date: 11/09/2016 09:11

Dilution: 1

Analyst: JXM

Prep Batch ID:1614292

Inj. Vol: 1 uL

Batch ID: 1614293

| CAS No     | Parmname        | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits |
|------------|-----------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|
| 12674-11-2 | MS Aroclor-1016 | 41.2                     | 0.00 U                   | 27.7                    | 67            | 23-121               |
| 11096-82-5 | MS Aroclor-1260 | 41.2                     | 0.00 U                   | 28.3                    | 69            | 35-135               |

**PCB**  
**Quality Control Summary**  
**Spike Recovery Report**

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**SDG Number:** 409254  
**Client ID:** DP050113MSD  
**Lab Sample ID** 1203665376  
**Instrument:** ECD8A.I  
**Analyst:** JXM  
**Inj. Vol:** 1 uL

**Sample Type:** Matrix Spike Duplicate  
**Matrix:** SOIL  
**%Moisture:** 19  
**Analysis Date:** 11/09/2016 09:26 **Dilution:** 1  
**Prep Batch ID:** 1614292  
**Batch ID:** 1614293

| CAS No     | Parmname         | Amount<br>Added<br>ug/kg | Sample<br>Conc.<br>ug/kg | Spike<br>Conc.<br>ug/kg | Recovery<br>% | Acceptance<br>Limits | RPD<br>% | Acceptance<br>Limits |
|------------|------------------|--------------------------|--------------------------|-------------------------|---------------|----------------------|----------|----------------------|
| 12674-11-2 | MSD Aroclor-1016 | 41.1                     | 0.00 U                   | 30.4                    | 74            | 23-121               | 9        | 0-29                 |
| 11096-82-5 | MSD Aroclor-1260 | 41.1                     | 0.00 U                   | 26.8                    | 65            | 35-135               | 5        | 0-33                 |

## Method Blank Summary

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|                       |                      |                       |                  |                   |                   |
|-----------------------|----------------------|-----------------------|------------------|-------------------|-------------------|
| <b>SDG Number:</b>    | 409254               | <b>Client:</b>        | HAAL002          | <b>Matrix:</b>    | MISC SOLID        |
| <b>Client ID:</b>     | MB for batch 1614292 | <b>Instrument ID:</b> | ECD8A.I_1        | <b>Data File:</b> | 110916.B\8k0912.D |
| <b>Lab Sample ID:</b> | 1203665373           |                       | ECD8A.I_2        |                   | 110916.B\8k0912.D |
| <b>Column:</b>        | RTX-CLPEST1          | <b>Prep Date:</b>     | 11/08/2016 10:54 | <b>Analyzed:</b>  | 11/09/16 07:50    |
|                       | RTX-CLPEST2          |                       |                  |                   |                   |

This method blank applies to the following samples and quality control samples:

| Client Sample ID         | Lab Sample ID | File ID           | Date Analyzed | Time Analyzed |
|--------------------------|---------------|-------------------|---------------|---------------|
| 01 LCS for batch 1614292 | 1203665374    | 110916.B\8k0913.D | 11/09/16      | 0802          |
| 02 DP050113              | 409254026     | 110916.B\8k0917.D | 11/09/16      | 0857          |
| 03 DP050113MS            | 1203665375    | 110916.B\8k0918.D | 11/09/16      | 0911          |
| 04 DP050113MSD           | 1203665376    | 110916.B\8k0919.D | 11/09/16      | 0926          |
| 05 DP050213              | 409254027     | 110916.B\8k0920.D | 11/09/16      | 0940          |
| 06 SS050100              | 409254028     | 110916.B\8k0921.D | 11/09/16      | 0955          |
| 07 DP020312              | 409254029     | 110916.B\8k0924.D | 11/09/16      | 1046          |
| 08 DP020312DUP           | 409254031     | 110916.B\8k0925.D | 11/09/16      | 1100          |
| 09 DP020413              | 409254032     | 110916.B\8k0926.D | 11/09/16      | 1114          |
| 10 DP020207              | 409254034     | 110916.B\8k0927.D | 11/09/16      | 1129          |
| 11 DP020209              | 409254036     | 110916.B\8k0928.D | 11/09/16      | 1143          |
| 12 DP020114              | 409254038     | 110916.B\8k0929.D | 11/09/16      | 1157          |

SDG Number: 409254

Client ID: LCS for batch 1614292

Lab Sample ID: 1203665374

Data File: 110916.B\8k0913.D

Inst: ECD8A.I\_1

Column: RTX-CLPEST1

Analyzed: 09-NOV-16 08:02

Data File: 110916.B\8k0913.D

Inst: ECD8A.I\_2

Column: RTX-CLPEST2

Analyzed: 09-NOV-16 08:02

| Analyte      | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------|------|------|-------------|-------|-----------|-------|------|
| Aroclor-1016 |      |      |             |       |           |       | 2.45 |
| Column 1     | 1    | 2.7  | 2.67 - 2.73 | 23.7  | 22        | ug/kg |      |
|              | 2    | 3.14 | 3.11 - 3.17 | 23.6  |           | ug/kg |      |
|              | 3    | 3.18 | 3.15 - 3.21 | 22    |           | ug/kg |      |
|              | 4    | 3.28 | 3.25 - 3.31 | 20.6  |           | ug/kg |      |
|              | 5    | 3.44 | 3.41 - 3.47 | 20.1  |           | ug/kg |      |
| Column 2     | 1    | 3.31 | 3.28 - 3.34 | 22.6  | 22.6      | ug/kg |      |
|              | 2    | 3.76 | 3.73 - 3.79 | 25.6  |           | ug/kg |      |
|              | 3    | 3.84 | 3.81 - 3.87 | 22    |           | ug/kg |      |
|              | 4    | 3.91 | 3.88 - 3.94 | 20.9  |           | ug/kg |      |
|              | 5    | 4.11 | 4.08 - 4.14 | 21.8  |           | ug/kg |      |
| Aroclor-1260 |      |      |             |       |           |       | 10.9 |
| Column 1     | 1    | 4.3  | 4.27 - 4.33 | 20.7  | 21.2      | ug/kg |      |
|              | 2    | 4.5  | 4.47 - 4.53 | 20.3  |           | ug/kg |      |
|              | 3    | 4.77 | 4.74 - 4.8  | 18.8  |           | ug/kg |      |
|              | 4    | 5.15 | 5.13 - 5.19 | 22.6  |           | ug/kg |      |
|              | 5    | 5.35 | 5.32 - 5.38 | 23.7  |           | ug/kg |      |
| Column 2     | 1    | 5.02 | 4.99 - 5.05 | 23.2  | 23.7      | ug/kg |      |
|              | 2    | 5.16 | 5.13 - 5.19 | 22.7  |           | ug/kg |      |
|              | 3    | 5.48 | 5.45 - 5.51 | 24.4  |           | ug/kg |      |
|              | 4    | 5.86 | 5.83 - 5.89 | 23.8  |           | ug/kg |      |
|              | 5    | 6.12 | 6.09 - 6.15 | 24.2  |           | ug/kg |      |

Identification Summary

Page 1 of 1

SDG Number: 409254

Client ID: DP050113MS

Lab Sample ID: 1203665375

Data File: 110916.B\8k0918.D

Data File: 110916.B\8k0918.D

Inst: ECD8A.I\_1

Inst: ECD8A.I\_2

Column: RTX-CLPEST1

Column: RTX-CLPEST2

Analyzed: 09-NOV-16 09:11

Analyzed: 09-NOV-16 09:11

| Analyte      | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------|------|------|-------------|-------|-----------|-------|------|
| Aroclor-1016 |      |      |             |       |           |       | 6.07 |
| Column 1     | 1    | 2.7  | 2.67 - 2.73 | 30.1  | 27.7      | ug/kg |      |
|              | 2    | 3.14 | 3.11 - 3.17 | 27.1  |           | ug/kg |      |
|              | 3    | 3.18 | 3.15 - 3.21 | 26.8  |           | ug/kg |      |
|              | 4    | 3.28 | 3.25 - 3.31 | 26.9  |           | ug/kg |      |
|              | 5    | 3.43 | 3.41 - 3.47 | 27.4  |           | ug/kg |      |
| Column 2     | 1    | 3.31 | 3.28 - 3.34 | 29.2  | 29.4      | ug/kg |      |
|              | 2    | 3.76 | 3.73 - 3.79 | 30.8  |           | ug/kg |      |
|              | 3    | 3.84 | 3.81 - 3.87 | 27.9  |           | ug/kg |      |
|              | 4    | 3.91 | 3.88 - 3.94 | 28    |           | ug/kg |      |
|              | 5    | 4.11 | 4.08 - 4.14 | 31    |           | ug/kg |      |
| Aroclor-1260 |      |      |             |       |           |       | 5.5  |
| Column 1     | 1    | 4.3  | 4.27 - 4.33 | 26.8  | 28.3      | ug/kg |      |
|              | 2    | 4.49 | 4.47 - 4.53 | 27.5  |           | ug/kg |      |
|              | 3    | 4.77 | 4.74 - 4.8  | 25.9  |           | ug/kg |      |
|              | 4    | 5.15 | 5.13 - 5.19 | 30.2  |           | ug/kg |      |
|              | 5    | 5.35 | 5.32 - 5.38 | 31.2  |           | ug/kg |      |
| Column 2     | 1    | 5.02 | 4.99 - 5.05 | 31    | 29.9      | ug/kg |      |
|              | 2    | 5.16 | 5.13 - 5.19 | 29.9  |           | ug/kg |      |
|              | 3    | 5.48 | 5.45 - 5.51 | 28.8  |           | ug/kg |      |
|              | 4    | 5.86 | 5.83 - 5.89 | 30.7  |           | ug/kg |      |
|              | 5    | 6.12 | 6.09 - 6.15 | 29.1  |           | ug/kg |      |

Identification Summary

Page 1 of 1

SDG Number: 409254

Client ID: DP050113MSD

Lab Sample ID: 1203665376

Data File: 110916.B\8k0919.D

Data File: 110916.B\8k0919.D

Inst: ECD8A.I\_1

Inst: ECD8A.I\_2

Column: RTX-CLPEST1

Column: RTX-CLPEST2

Analyzed: 09-NOV-16 09:26

Analyzed: 09-NOV-16 09:26

| Analyte      | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------|------|------|-------------|-------|-----------|-------|------|
| Aroclor-1016 |      |      |             |       |           |       | .667 |
| Column 1     | 1    | 2.7  | 2.67 - 2.73 | 24.5  | 30.4      | ug/kg |      |
|              | 2    | 3.14 | 3.11 - 3.17 | 35.9  |           | ug/kg |      |
|              | 3    | 3.18 | 3.15 - 3.21 | 34.5  |           | ug/kg |      |
|              | 4    | 3.27 | 3.25 - 3.31 | 32.8  |           | ug/kg |      |
|              | 5    | 3.43 | 3.41 - 3.47 | 24    |           | ug/kg |      |
| Column 2     | 1    | 3.31 | 3.28 - 3.34 | 36    | 30.6      | ug/kg |      |
|              | 2    | 3.76 | 3.73 - 3.79 | 31.2  |           | ug/kg |      |
|              | 3    | 3.84 | 3.81 - 3.87 | 28.4  |           | ug/kg |      |
|              | 4    | 3.91 | 3.88 - 3.94 | 26.7  |           | ug/kg |      |
|              | 5    | 4.11 | 4.08 - 4.14 | 30.5  |           | ug/kg |      |
| Aroclor-1260 |      |      |             |       |           |       | 10.5 |
| Column 1     | 1    | 4.3  | 4.27 - 4.33 | 25.6  | 26.8      | ug/kg |      |
|              | 2    | 4.5  | 4.47 - 4.53 | 25.9  |           | ug/kg |      |
|              | 3    | 4.77 | 4.74 - 4.8  | 23.9  |           | ug/kg |      |
|              | 4    | 5.15 | 5.13 - 5.19 | 28.6  |           | ug/kg |      |
|              | 5    | 5.35 | 5.32 - 5.38 | 30    |           | ug/kg |      |
| Column 2     | 1    | 5.02 | 4.99 - 5.05 | 30.3  | 29.8      | ug/kg |      |
|              | 2    | 5.16 | 5.13 - 5.19 | 29.6  |           | ug/kg |      |
|              | 3    | 5.48 | 5.45 - 5.51 | 28    |           | ug/kg |      |
|              | 4    | 5.86 | 5.83 - 5.89 | 31.1  |           | ug/kg |      |
|              | 5    | 6.12 | 6.09 - 6.15 | 29.9  |           | ug/kg |      |



Identification Summary

Page 1 of 1

SDG Number: 409254

Client ID: SS050100

Lab Sample ID: 409254028

Data File: 110916.B\8k0921.D

Data File: 110916.B\8k0921.D

Inst: ECD8A.I\_1

Inst: ECD8A.I\_2

Column: RTX-CLPEST1

Column: RTX-CLPEST2

Analyzed: 09-NOV-16 09:55

Analyzed: 09-NOV-16 09:55

| Analyte      | Peak | RT   | RT Window   | Conc. | Ave Conc. | Units | RPD  |
|--------------|------|------|-------------|-------|-----------|-------|------|
| Aroclor-1260 |      |      |             |       |           |       | 8.68 |
| Column 1     | 1    | 4.38 | 4.27 - 4.33 | 34.2  | 49        | ug/kg |      |
|              | 2    | 4.57 | 4.47 - 4.53 | 56.7  |           | ug/kg |      |
|              | 3    | 4.83 | 4.74 - 4.8  | 40.9  |           | ug/kg |      |
|              | 4    | 5.21 | 5.13 - 5.19 | 60.1  |           | ug/kg |      |
|              | 5    | 5.39 | 5.32 - 5.38 | 53.1  |           | ug/kg |      |
| Column 2     | 1    | 5.06 | 4.99 - 5.05 | 55.5  | 53.5      | ug/kg |      |
|              | 2    | 5.21 | 5.13 - 5.19 | 55.1  |           | ug/kg |      |
|              | 3    | 5.51 | 5.45 - 5.51 | 54.6  |           | ug/kg |      |
|              | 4    | 5.89 | 5.83 - 5.89 | 58.4  |           | ug/kg |      |
|              | 5    | 6.14 | 6.09 - 6.15 | 43.7  |           | ug/kg |      |

# Sample Data

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

**SDG Number:** 409254  
**Lab Sample ID:** 409254026  
  
**Client ID:** DP050113  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 08:57  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0917.D  
110916.B\8k0917.D

**Date Collected:** 10/25/2016 12:14  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.031 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 19  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |

Quantitation (Manual Int.) Report

GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
 Data File : e8k0917.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 09 Nov 2016 08:57 (#1); 09 Nov 2016 8:57 (#2)  
 Operator : JXM InstName : ECD8  
 Sample : |409254026|1614293|1|SVA|1|HAAL|||  
 Misc : |ECD4X2A 1S|SOIL|DP050113|||  
 ALS Vial : 17 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
 Quant Time: Nov 09 10:30:33 2016  
 Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
 Quant Title : ECD8 SubList :  
 QLast Update : Tue Nov 01 04:35:57 2016  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
 Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
 Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2    | ug/L#2   |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|--------|-----------|----------|
| System Monitoring Compounds |       |       |        |            |          |       |       |        |           |          |
| 4CMX                        | 2.150 | 2.140 | -0.010 | 6068616411 | 126.269m | 2.584 | 2.580 | -0.004 | 792141360 | 128.097m |
| DCB                         | 6.104 | 6.101 | -0.003 | 4413371971 | 115.179m | 6.924 | 6.924 | 0.000  | 493731992 | 107.420  |

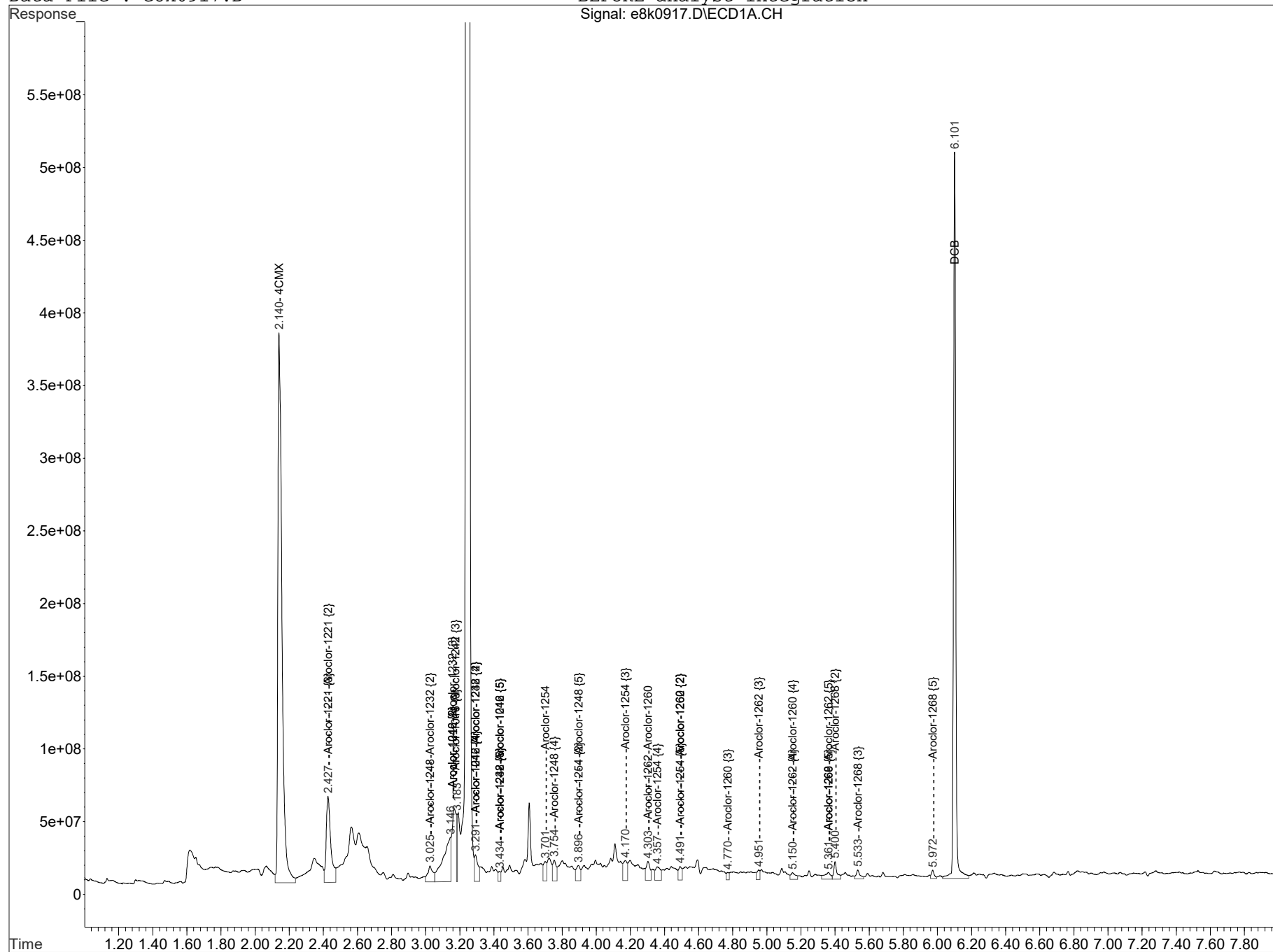
| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 63%       | 64%       |
| DCB      | 200.000 | No Limits | 58%       | 54%       |

Target Compounds

| Compound   | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|--|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted |       |      |       |        |        |       |      |       |        |        |

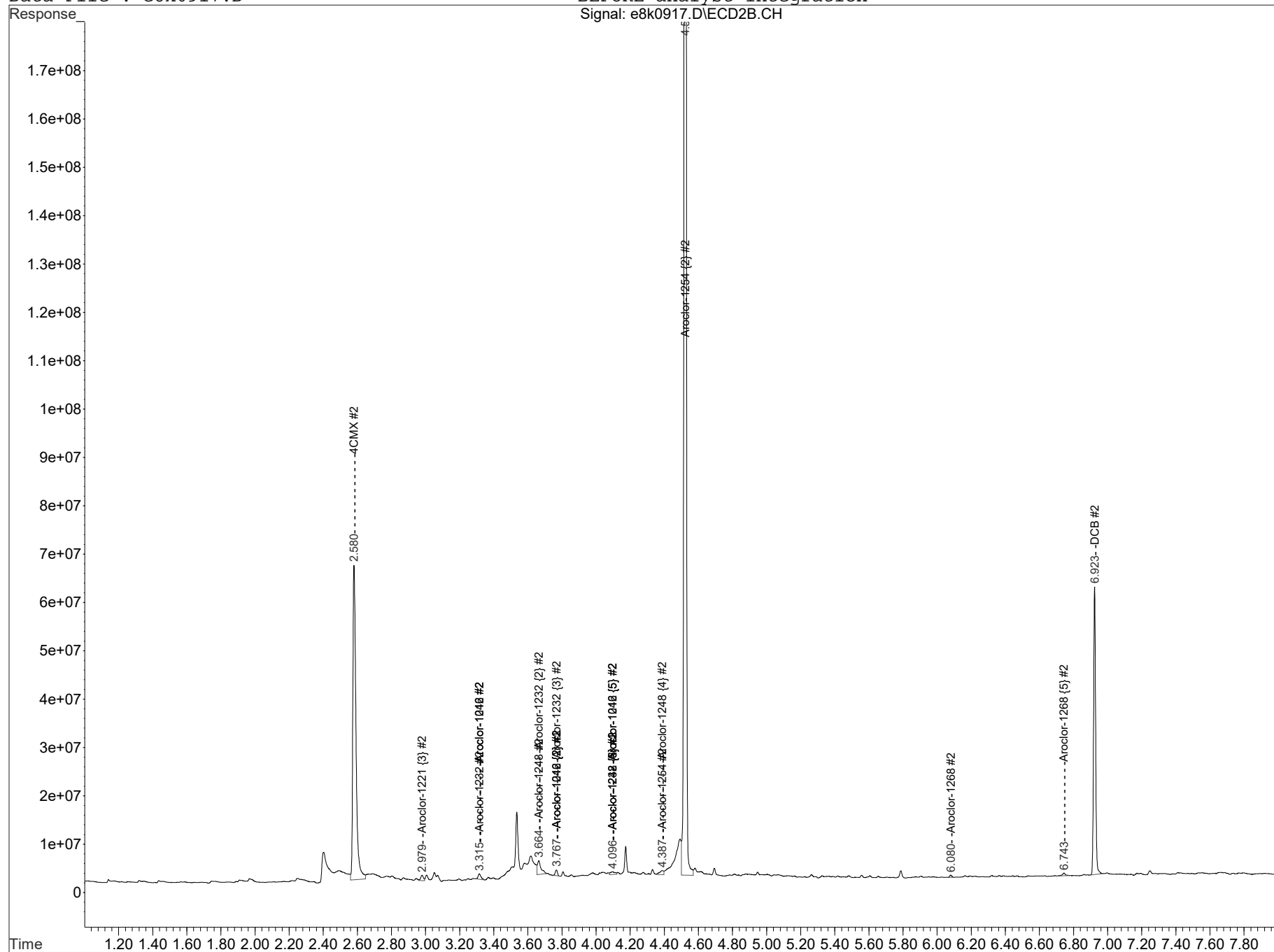
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0917.D

BEFORE analyst integration  
Signal: e8k0917.D\ECD1A.CH



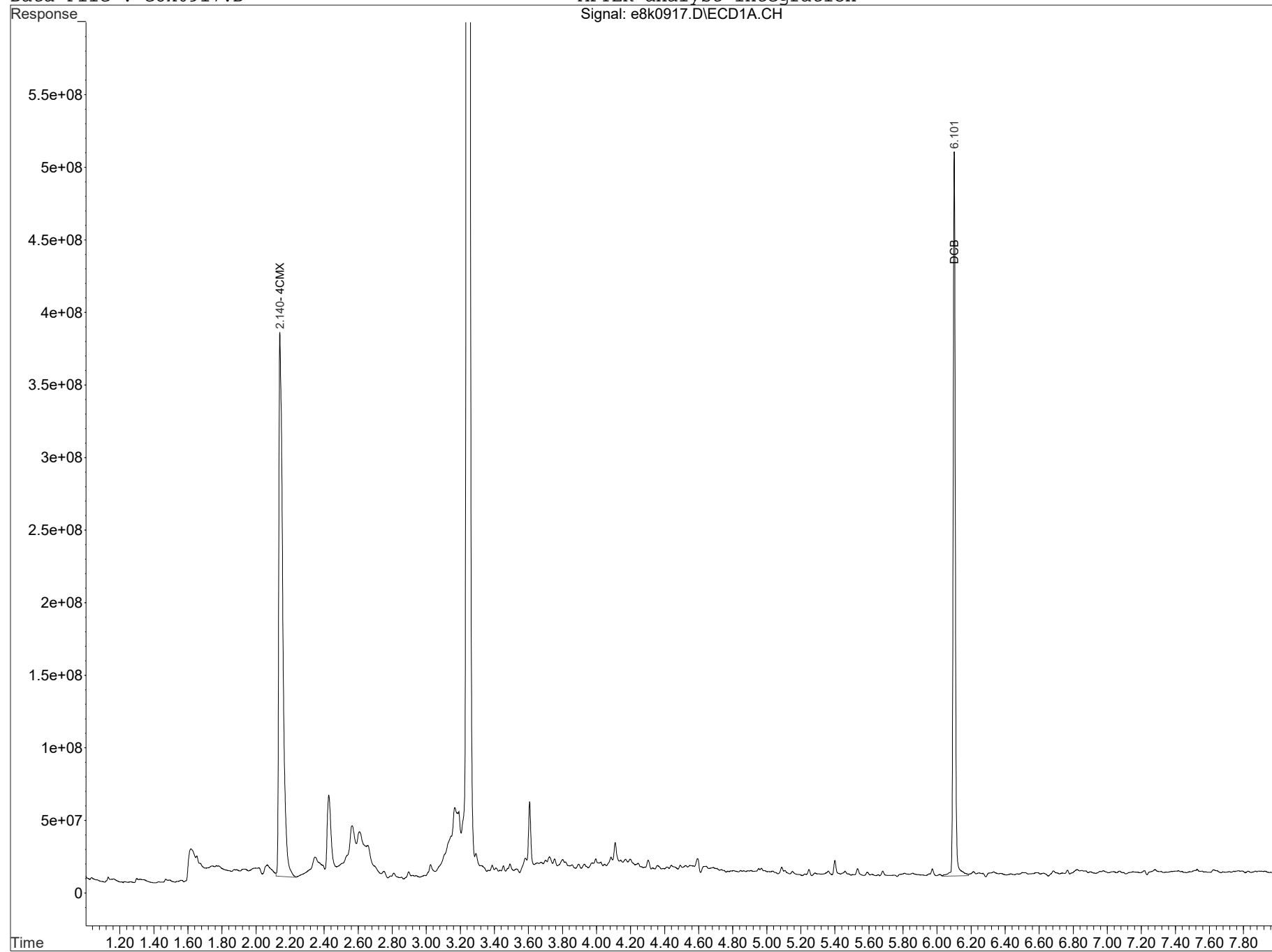
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0917.D

BEFORE analyst integration  
Signal: e8k0917.D\ECD2B.CH



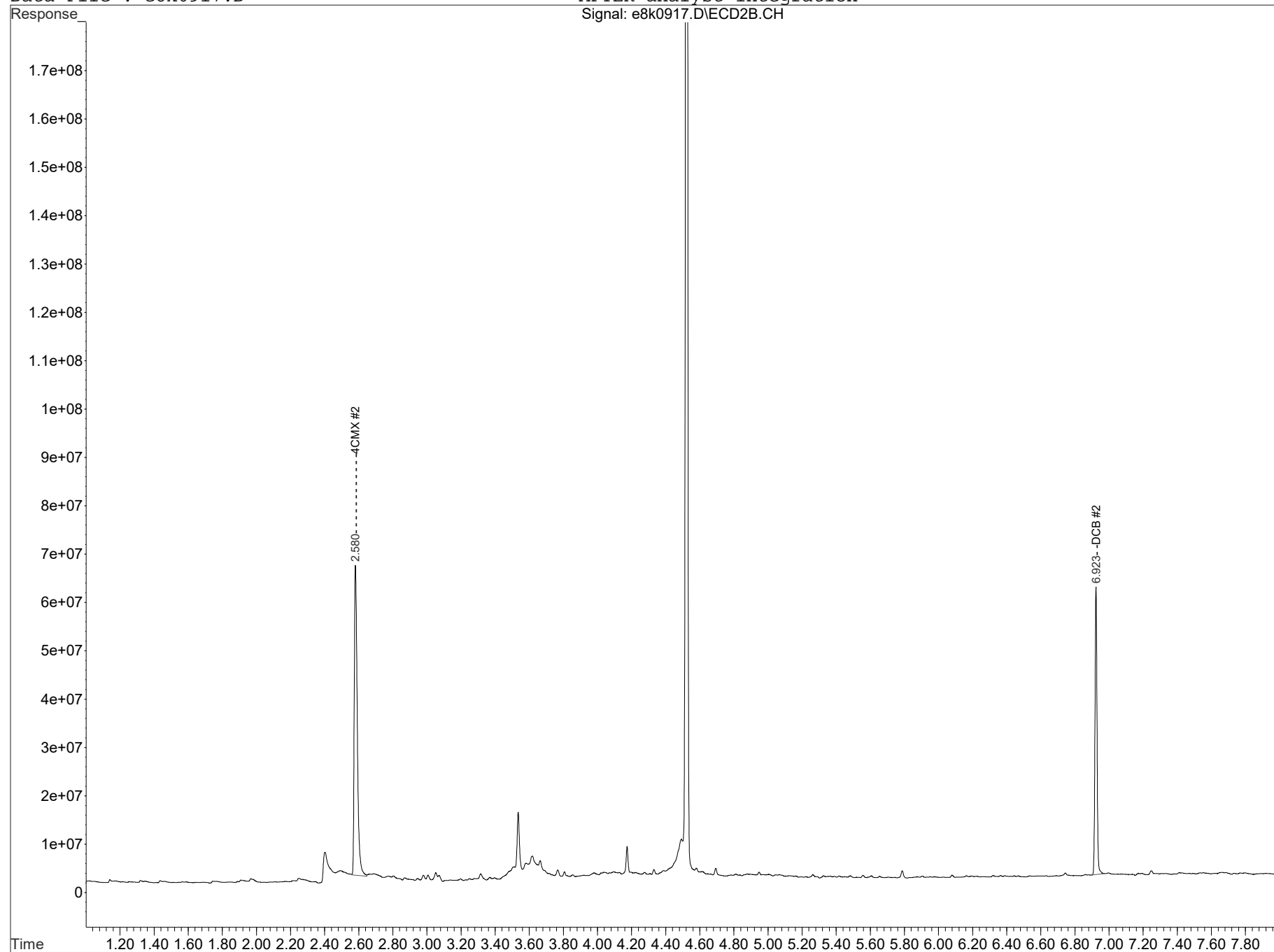
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0917.D

AFTER analyst integration  
Signal: e8k0917.D\ECD1A.CH



Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0917.D

AFTER analyst integration  
Signal: e8k0917.D\ECD2B.CH





**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254027  
  
**Client ID:** DP050213  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 09:40  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0920.D  
110916.B\8k0920.D

**Date Collected:** 10/25/2016 12:34  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.048 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 27.6  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.60   | ug/kg | 1.53    | 4.60    | 1      |

Quantitation (Manual Int.) Report

GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
 Data File : e8k0920.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 09 Nov 2016 09:40 (#1); 09 Nov 2016 9:40 (#2)  
 Operator : JXM InstName : ECD8  
 Sample : |409254027|1614293|1|SVA|1|HAAL|||  
 Misc : |ECD4X2A 1S|SOIL|DP050213|||  
 ALS Vial : 20 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
 Quant Time: Nov 09 10:14:12 2016  
 Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
 Quant Title : ECD8 SubList :  
 QLast Update : Tue Nov 01 04:35:57 2016  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
 Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
 Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2    | ug/L#2   |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|--------|-----------|----------|
| -----                       |       |       |        |            |          |       |       |        |           |          |
| System Monitoring Compounds |       |       |        |            |          |       |       |        |           |          |
| 4CMX                        | 2.150 | 2.149 | -0.001 | 6607411890 | 137.480m | 2.584 | 2.583 | -0.001 | 949515676 | 153.545m |
| DCB                         | 6.104 | 6.102 | -0.002 | 5551618262 | 144.885  | 6.924 | 6.924 | 0.000  | 650182890 | 141.458  |

| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 69%       | 77%       |
| DCB      | 200.000 | No Limits | 72%       | 71%       |

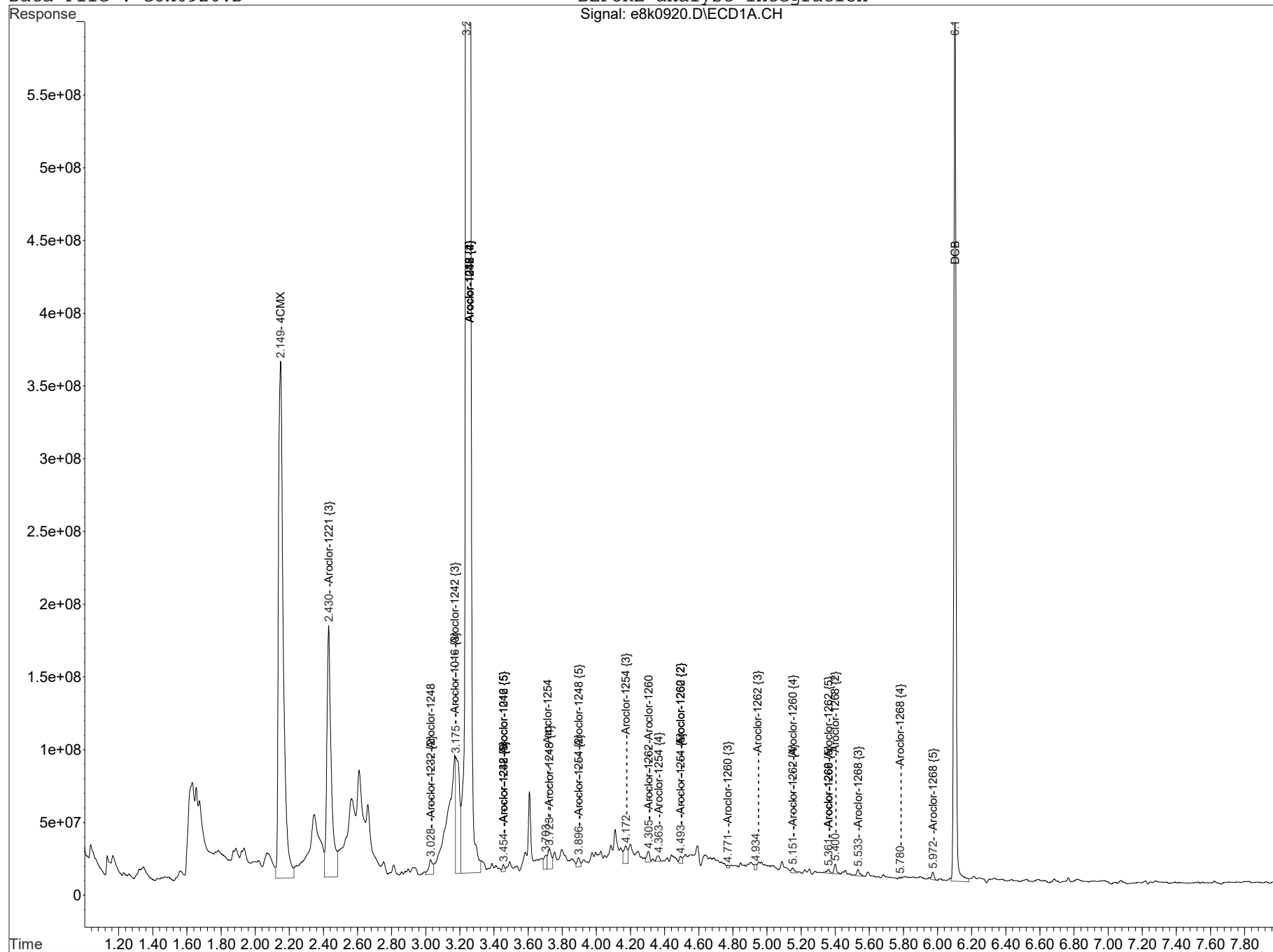
Target Compounds

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| -----    |       |      |       |        |        |       |      |       |        |        |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

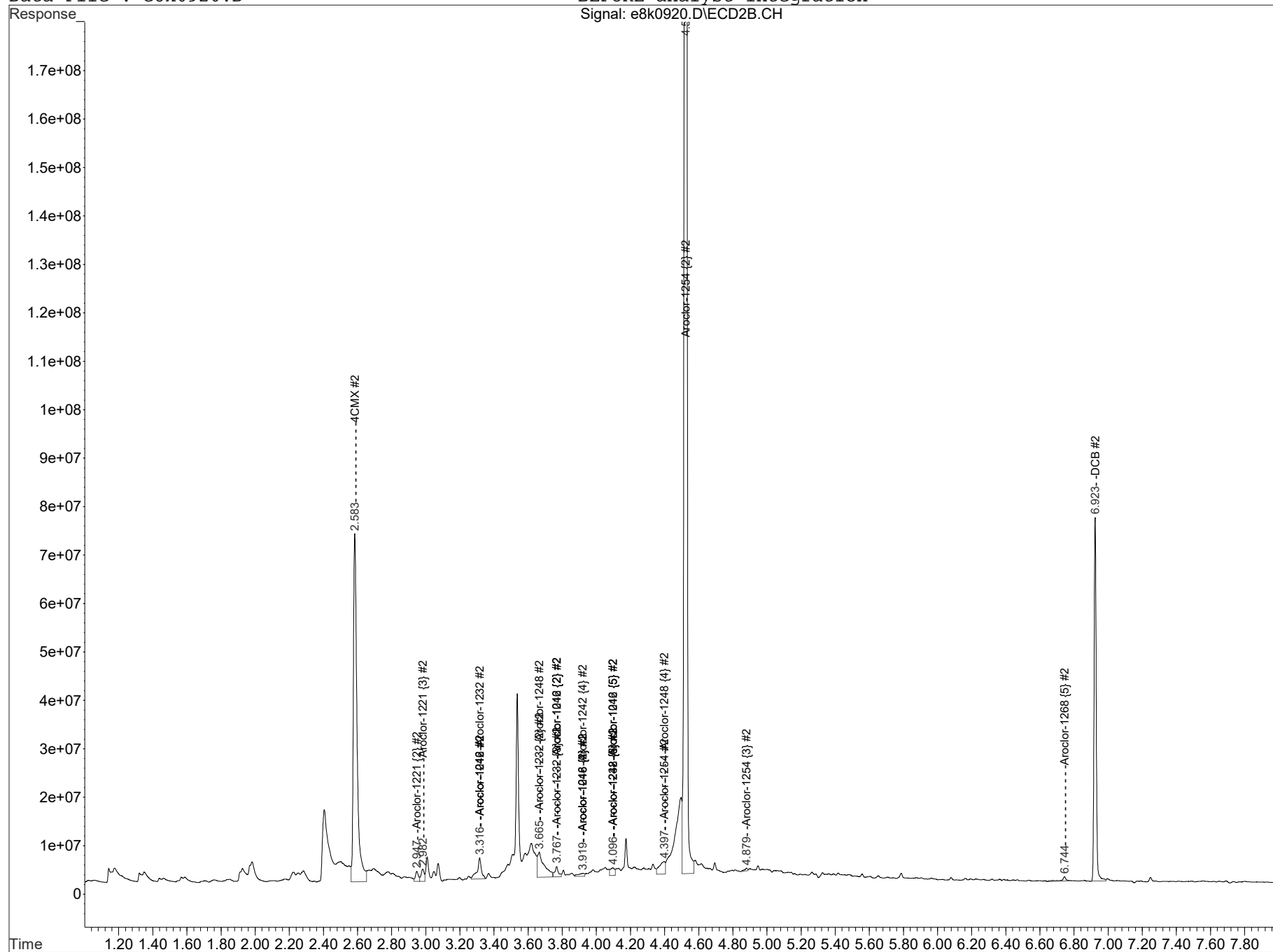
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0920.D

BEFORE analyst integration  
Signal: e8k0920.D\ECD1A.CH



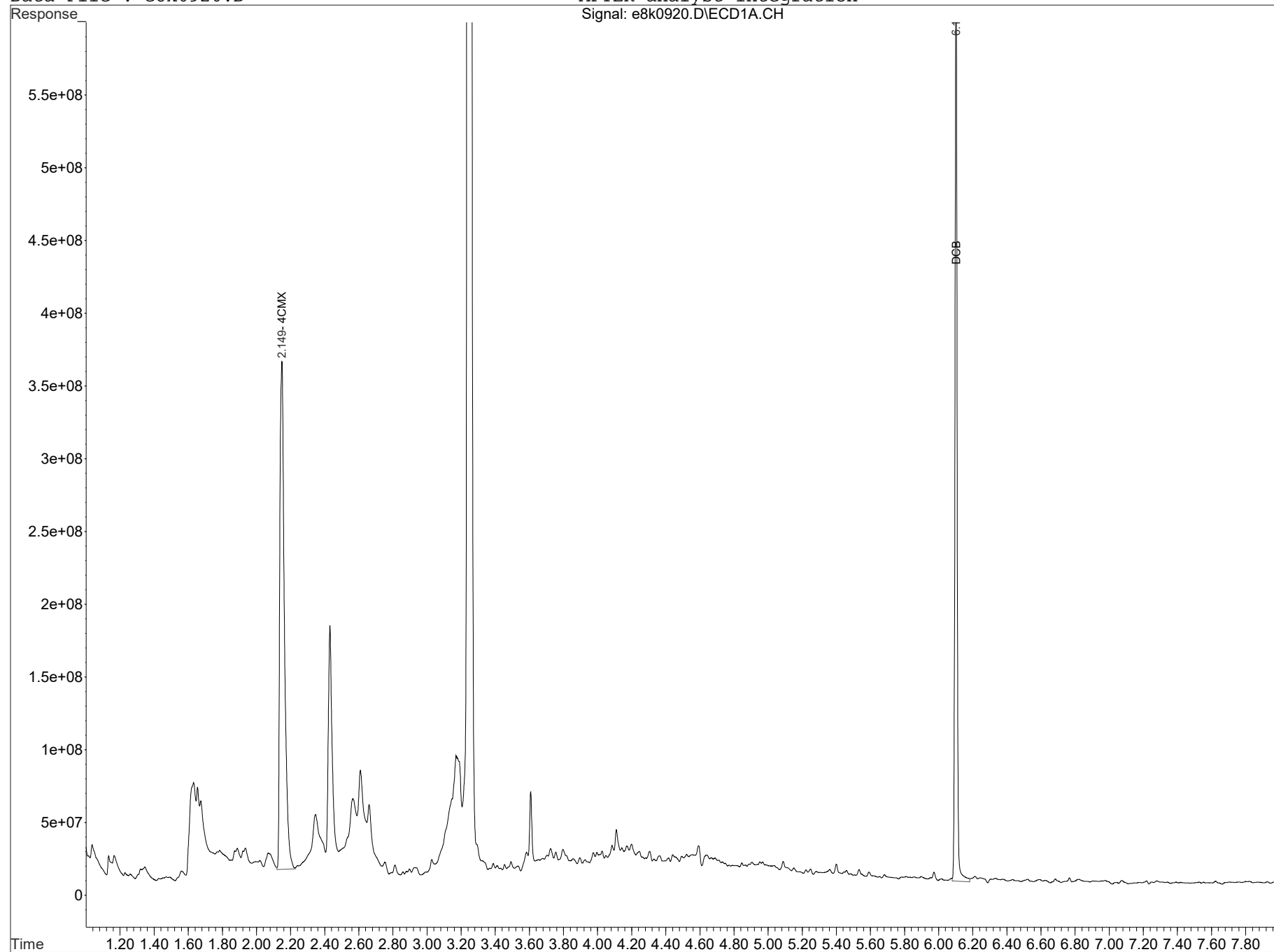
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0920.D

BEFORE analyst integration  
Signal: e8k0920.D\ECD2B.CH



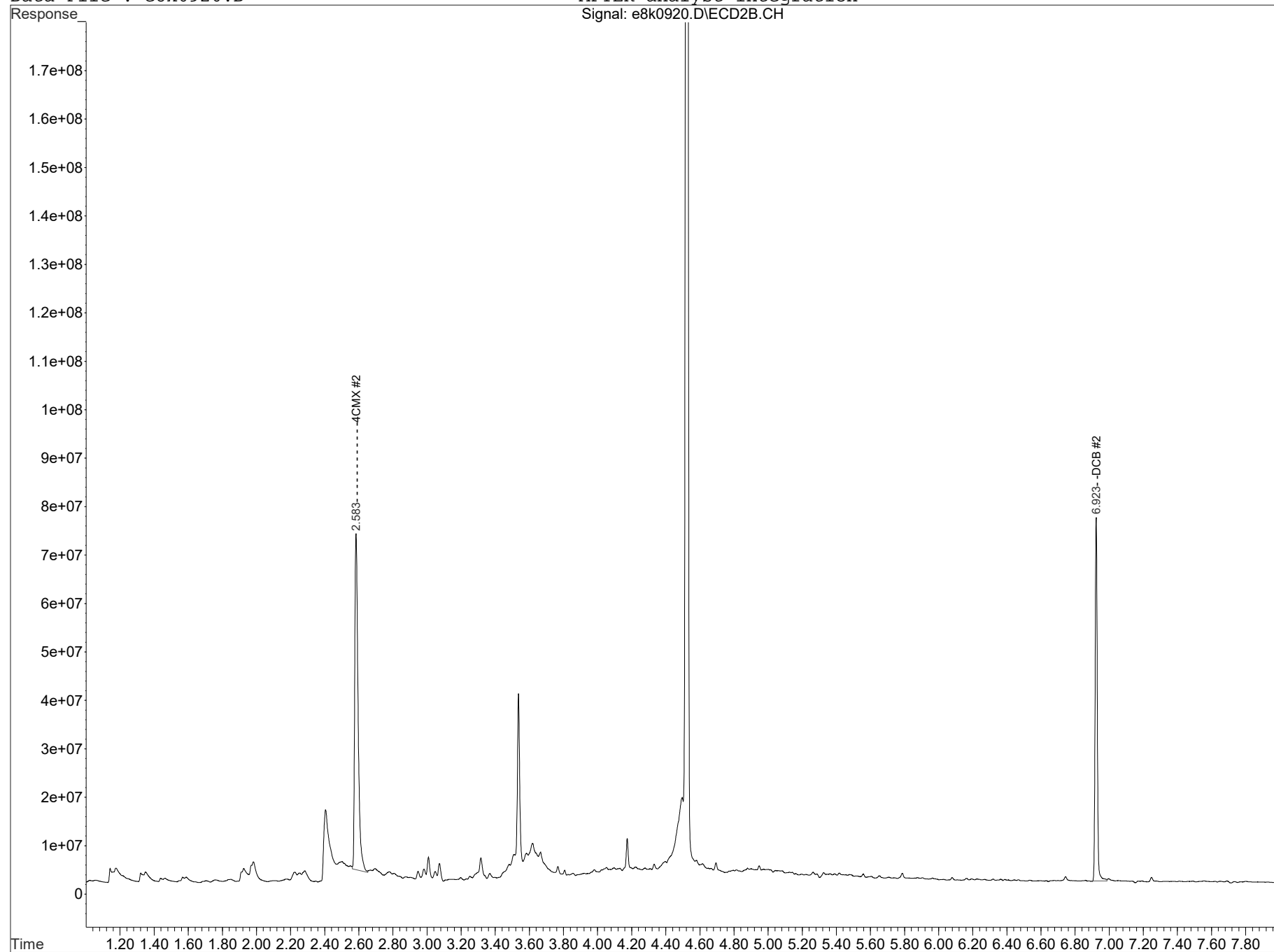
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0920.D

AFTER analyst integration  
Signal: e8k0920.D\ECD1A.CH



Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0920.D

AFTER analyst integration  
Signal: e8k0920.D\ECD2B.CH



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

**SDG Number:** 409254  
**Lab Sample ID:** 409254028  
  
**Client ID:** SS050100  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 09:55  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0921.D  
110916.B\8k0921.D

**Date Collected:** 10/25/2016 12:48  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.118 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 10  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 37.3   | ug/kg | 12.4    | 37.3    | 1      |
| 11096-82-5 | Aroclor-1260 |           | 49.0   | ug/kg | 12.4    | 37.3    | 1      |

Quantitation (Manual Int.) Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0921.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 09:55 (#1); 09 Nov 2016 9:55 (#2)  
Operator : JXM InstName : ECD8  
Sample : |409254028|1614293|10|SVA|1|HAAL|||  
Misc : |ECD4X2A 1S|SOIL|SS050100|||  
ALS Vial : 21 (Sig #1); 0 (Sig #2) Sample Multiplier: 10

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 10:16:12 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1    | ug/L#1  | Exp#2 | RT#2  | Dlt#2  | Resp#2   | ug/L#2  |
|-----------------------------|-------|-------|--------|-----------|---------|-------|-------|--------|----------|---------|
| System Monitoring Compounds |       |       |        |           |         |       |       |        |          |         |
| 4CMX                        | 2.150 | 2.173 | 0.023f | 321332541 | 66.859m | 2.584 | 2.618 | 0.034f | 31313281 | 50.636m |
| DCB                         | 6.104 | 6.126 | 0.022f | 354490180 | 92.514m | 6.924 | 6.935 | 0.011  | 38417441 | 83.584m |

| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 33%       | 25%       |
| DCB      | 200.000 | No Limits | 46%       | 42%       |

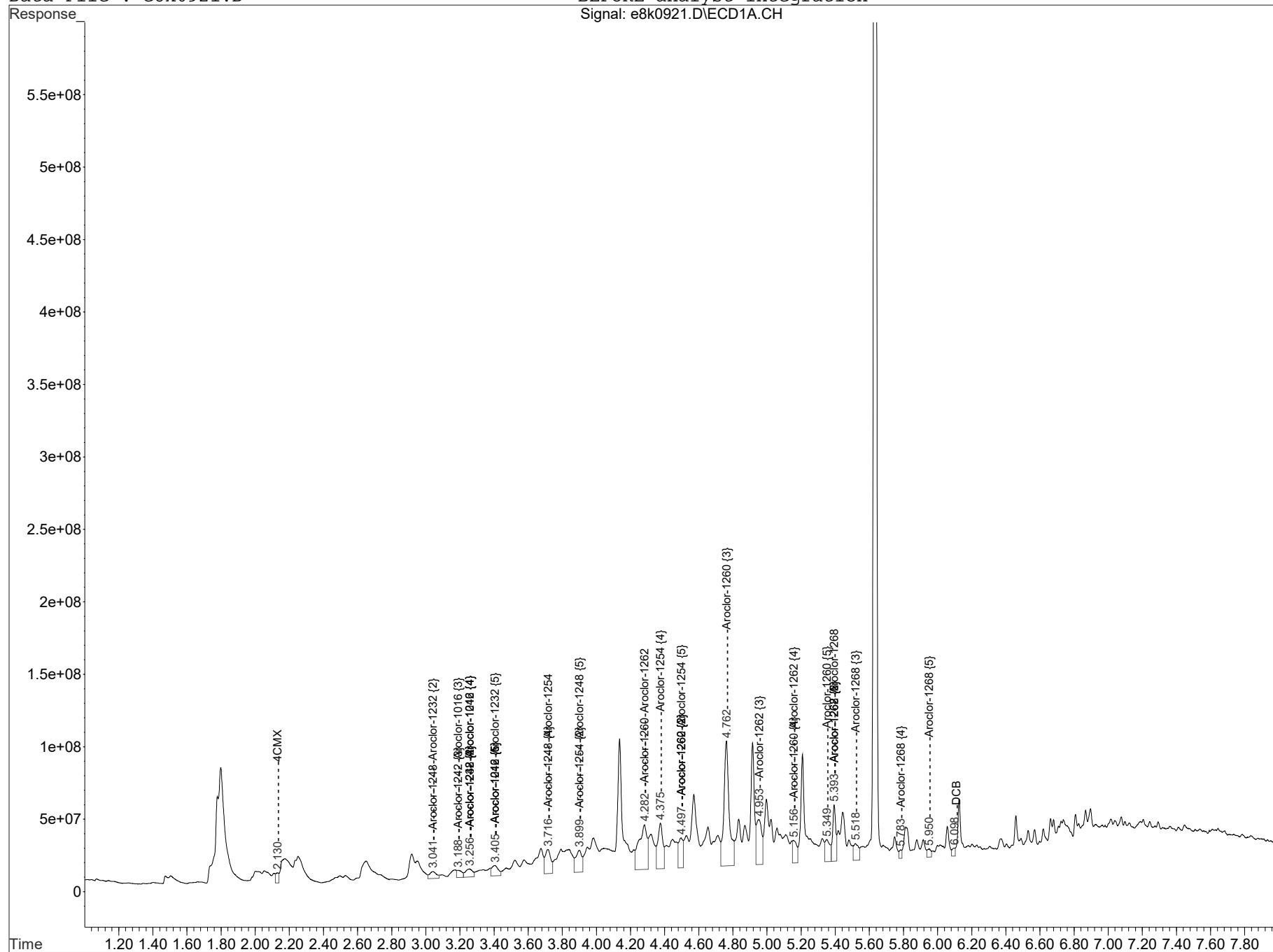
| Target Compounds     |       |       |        |            |          |       |       |        |           |          |
|----------------------|-------|-------|--------|------------|----------|-------|-------|--------|-----------|----------|
| Compound             | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2    | ug/L#2   |
| Aroclor-1260         | 4.301 | 4.375 | 0.074f | 229043022  | 91.788m  | 5.018 | 5.058 | 0.040f | 44694682  | 148.870m |
| Aroclor-1260 {2}     | 4.496 | 4.571 | 0.075f | 571738277  | 152.210m | 5.163 | 5.206 | 0.043f | 55096099  | 147.830m |
| Aroclor-1260 {3}     | 4.770 | 4.834 | 0.064f | 211336749  | 109.804m | 5.479 | 5.513 | 0.034f | 37931554  | 146.563m |
| Aroclor-1260 {4}     | 5.155 | 5.208 | 0.053f | 744242076  | 161.311m | 5.859 | 5.888 | 0.029f | 90481434  | 156.548m |
| Aroclor-1260 {5}     | 5.350 | 5.393 | 0.043f | 349896080  | 142.337m | 6.118 | 6.139 | 0.021f | 47968438  | 117.275m |
| Sum Aroclor-1260     |       |       |        | 2106256204 | 657.450  |       |       |        | 276172208 | 717.087  |
| Average Aroclor-1260 |       |       |        |            | 131.490  |       |       |        |           | 143.417  |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted



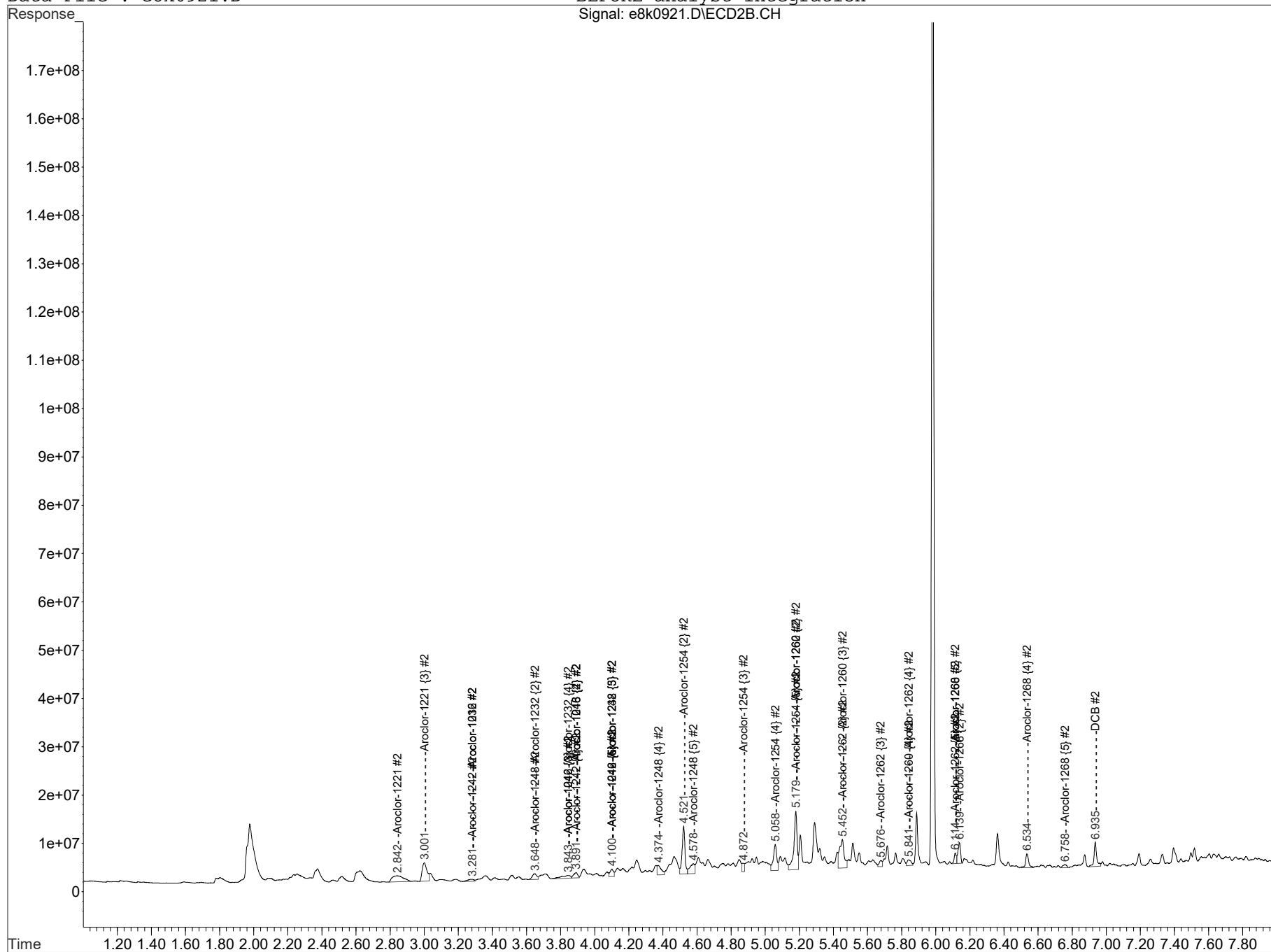
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0921.D

BEFORE analyst integration  
Signal: e8k0921.D\ECD1A.CH



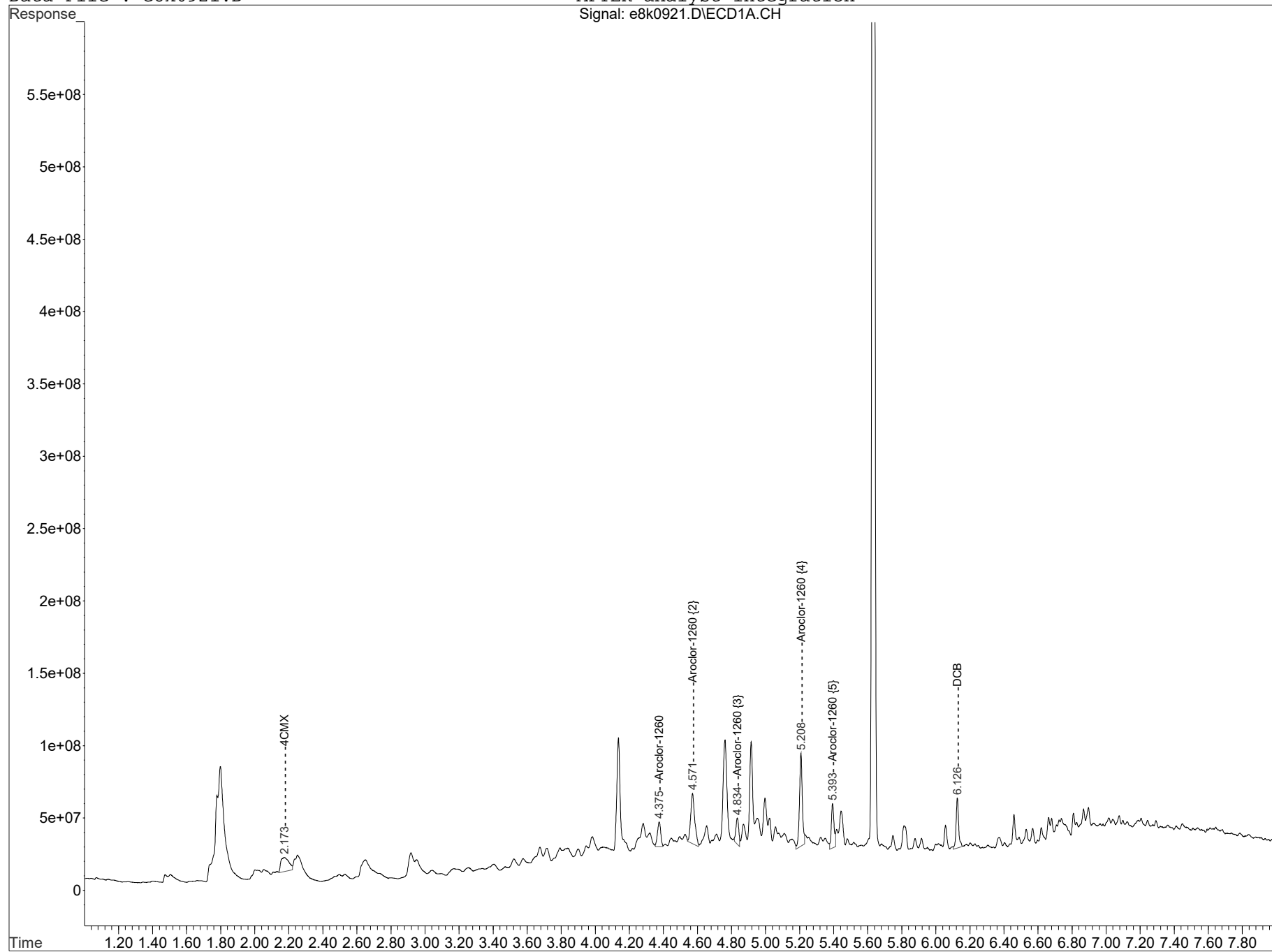
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0921.D

BEFORE analyst integration  
Signal: e8k0921.D\ECD2B.CH



Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0921.D

AFTER analyst integration  
Signal: e8k0921.D\ECD1A.CH

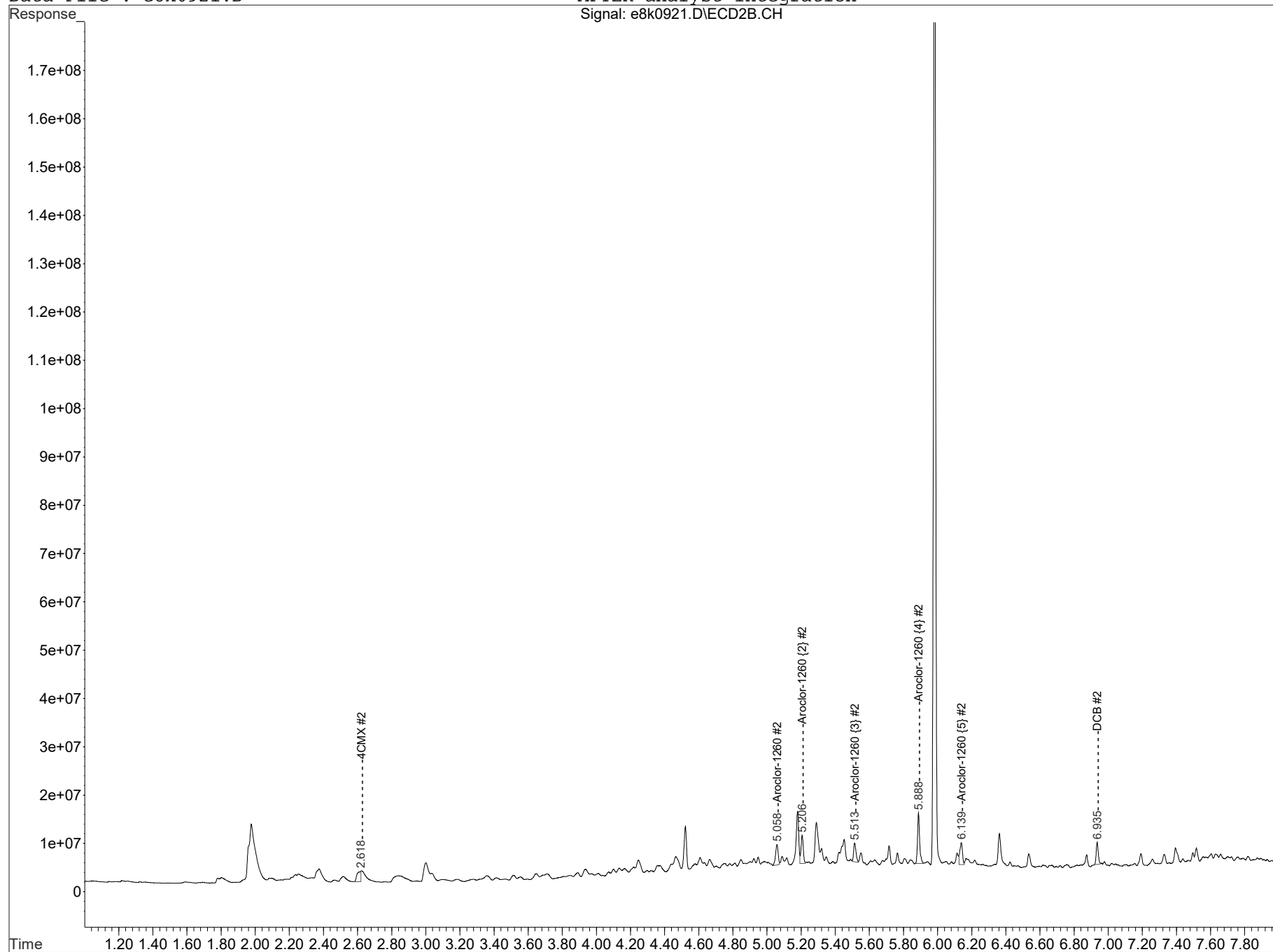


Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0921.D

AFTER analyst integration

Signal: e8k0921.D\ECD2B.CH



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254029  
  
**Client ID:** DP020312  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 10:46  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0924.D  
110916.B\8k0924.D

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.12 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 26.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.49   | ug/kg | 1.50    | 4.49    | 1      |

Quantitation (Manual Int.) Report

GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
 Data File : e8k0924.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 09 Nov 2016 10:46 (#1); 09 Nov 2016 10:46 (#2)  
 Operator : JXM InstName : ECD8  
 Sample : |409254029|1614293|1|SVA|1|HAAL|||  
 Misc : |ECD4X2A 1S|SOIL|DP020312|||  
 ALS Vial : 24 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
 Quant Time: Nov 09 11:42:05 2016  
 Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
 Quant Title : ECD8 SubList :  
 QLast Update : Tue Nov 01 04:35:57 2016  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
 Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
 Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2     | ug/L#2  |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|-------|------------|---------|
| -----                       |       |       |        |            |          |       |       |       |            |         |
| System Monitoring Compounds |       |       |        |            |          |       |       |       |            |         |
| 4CMX                        | 2.150 | 2.151 | 0.001  | 7857955690 | 163.500m | 2.584 | 2.585 | 0.001 | 1123841215 | 181.735 |
| DCB                         | 6.104 | 6.102 | -0.002 | 6742759850 | 175.971m | 6.924 | 6.924 | 0.000 | 808829521  | 175.975 |

| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 82%       | 91%       |
| DCB      | 200.000 | No Limits | 88%       | 88%       |

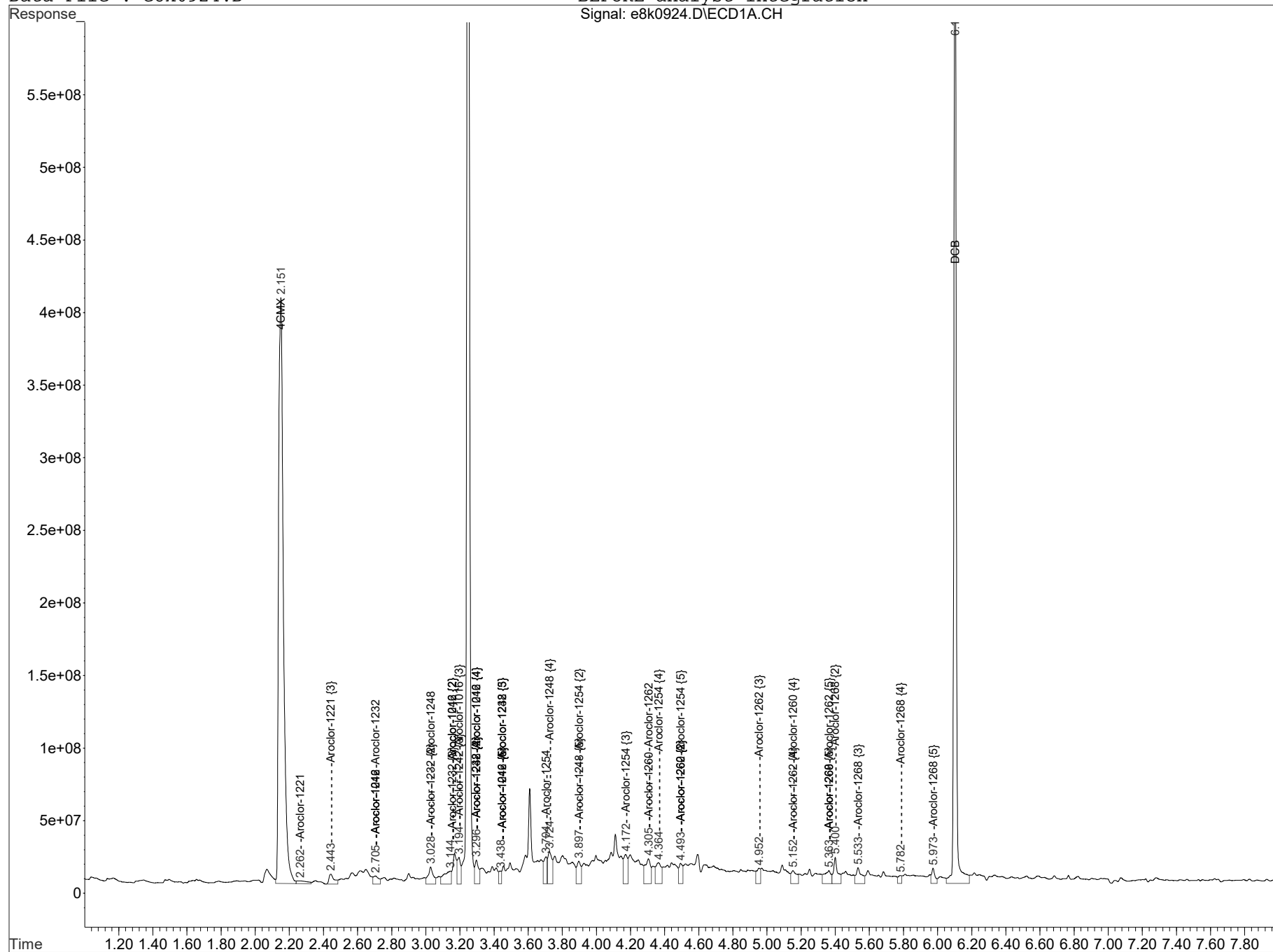
Target Compounds

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| -----    |       |      |       |        |        |       |      |       |        |        |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0924.D

BEFORE analyst integration  
Signal: e8k0924.D\ECD1A.CH

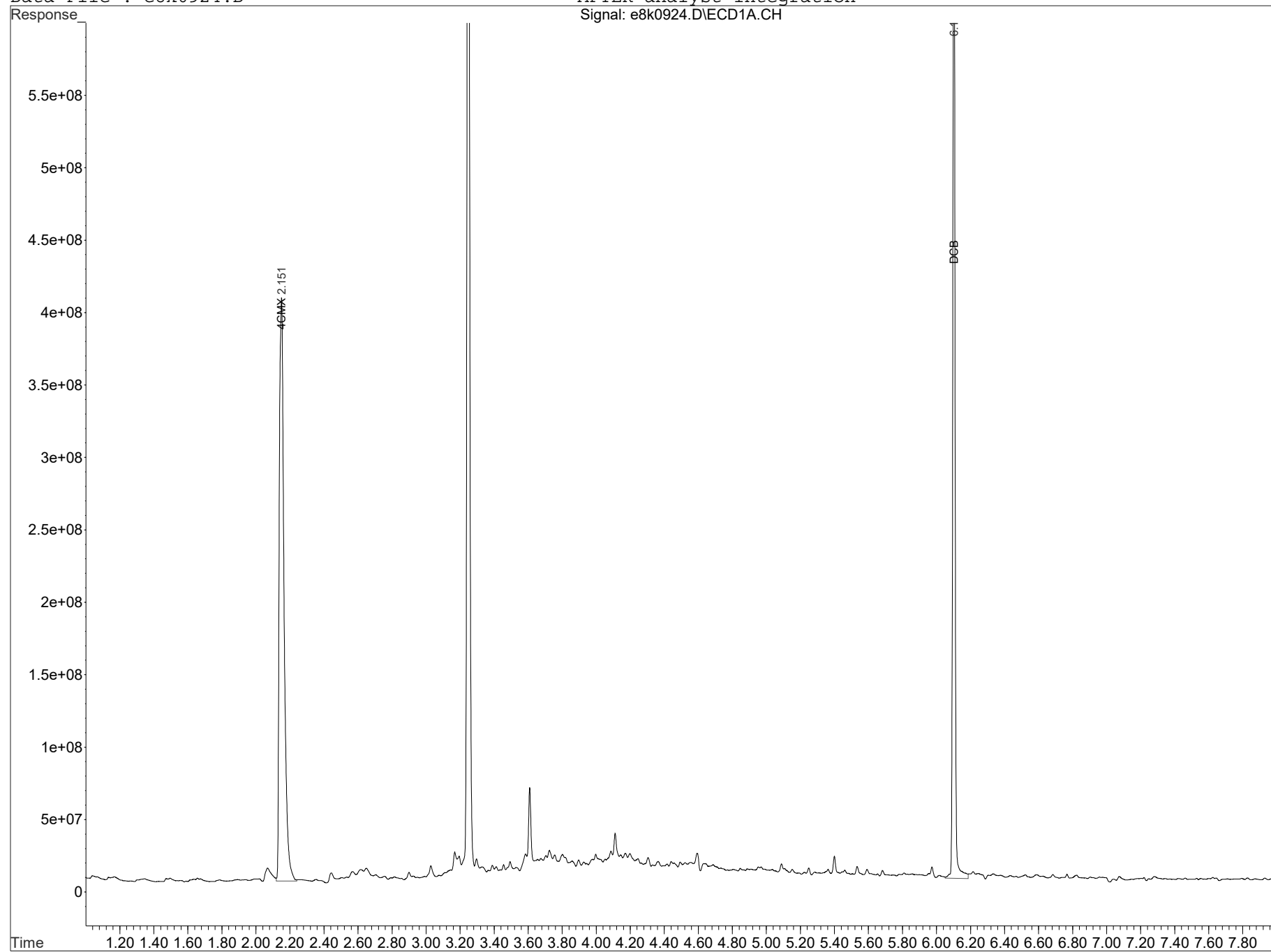


Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0924.D

AFTER analyst integration

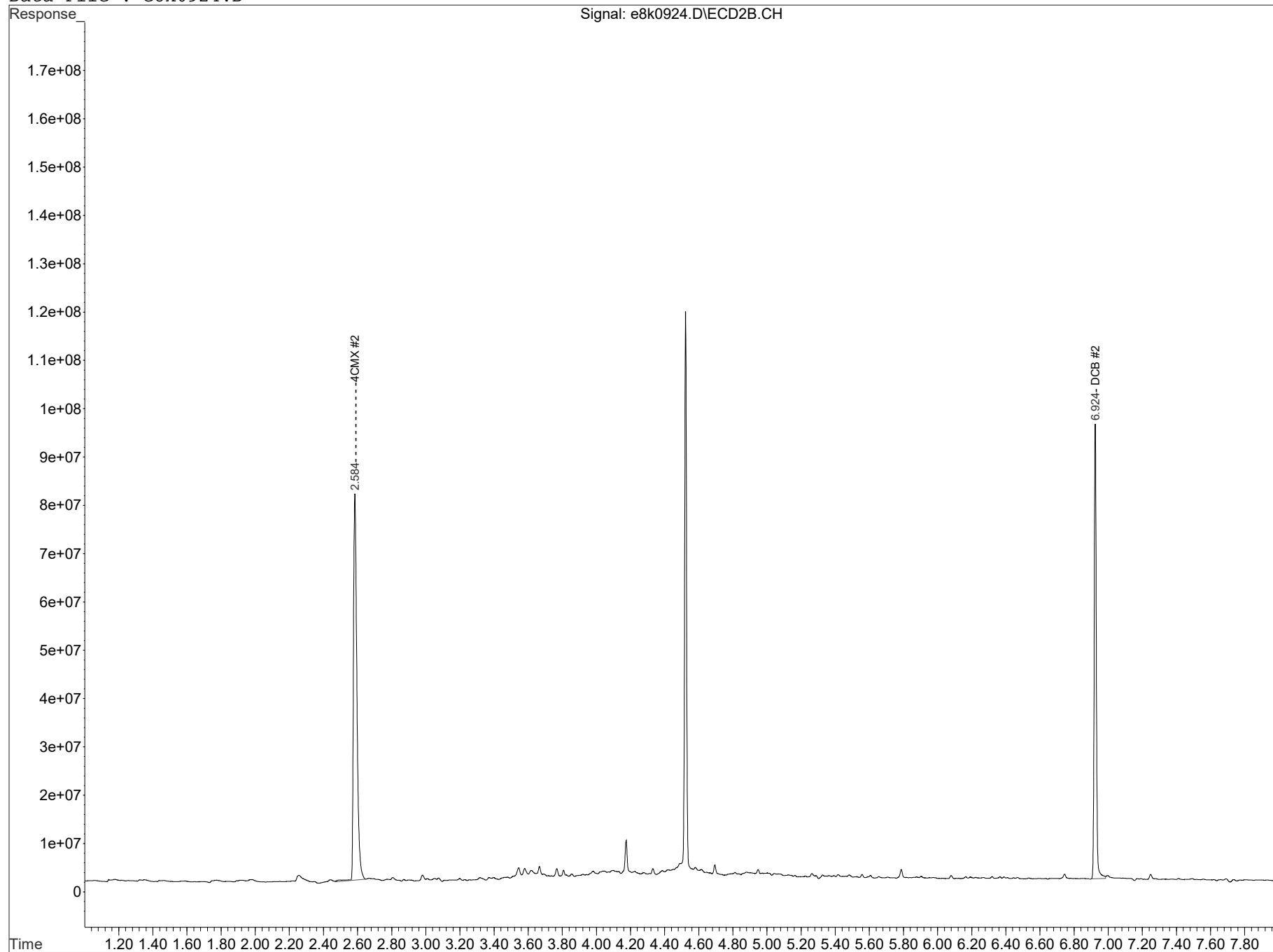
Signal: e8k0924.D\ECD1A.CH





Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0924.D



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254031  
  
**Client ID:** DP020312DUP  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 11:00  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0925.D  
110916.B\8k0925.D

**Date Collected:** 10/25/2016 13:25  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.006 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 24.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.44   | ug/kg | 1.48    | 4.44    | 1      |

Quantitation (Manual Int.) Report

GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
 Data File : e8k0925.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 09 Nov 2016 11:00 (#1); 09 Nov 2016 11:00 (#2)  
 Operator : JXM InstName : ECD8  
 Sample : |409254031|1614293|1|SVA|1|HAAL|||  
 Misc : |ECD4X2A 1S|SOIL|DP020312DUP|||  
 ALS Vial : 25 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
 Quant Time: Nov 09 11:43:54 2016  
 Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
 Quant Title : ECD8 SubList :  
 QLast Update : Tue Nov 01 04:35:57 2016  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
 Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
 Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2  |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|-------|-----------|---------|
| -----                       |       |       |        |            |          |       |       |       |           |         |
| System Monitoring Compounds |       |       |        |            |          |       |       |       |           |         |
| 4CMX                        | 2.150 | 2.149 | -0.001 | 6519535081 | 135.651  | 2.584 | 2.584 | 0.000 | 909115608 | 147.012 |
| DCB                         | 6.104 | 6.102 | -0.002 | 6044789680 | 157.756m | 6.924 | 6.925 | 0.001 | 724310560 | 157.586 |

| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 68%       | 74%       |
| DCB      | 200.000 | No Limits | 79%       | 79%       |

Target Compounds

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| -----    |       |      |       |        |        |       |      |       |        |        |

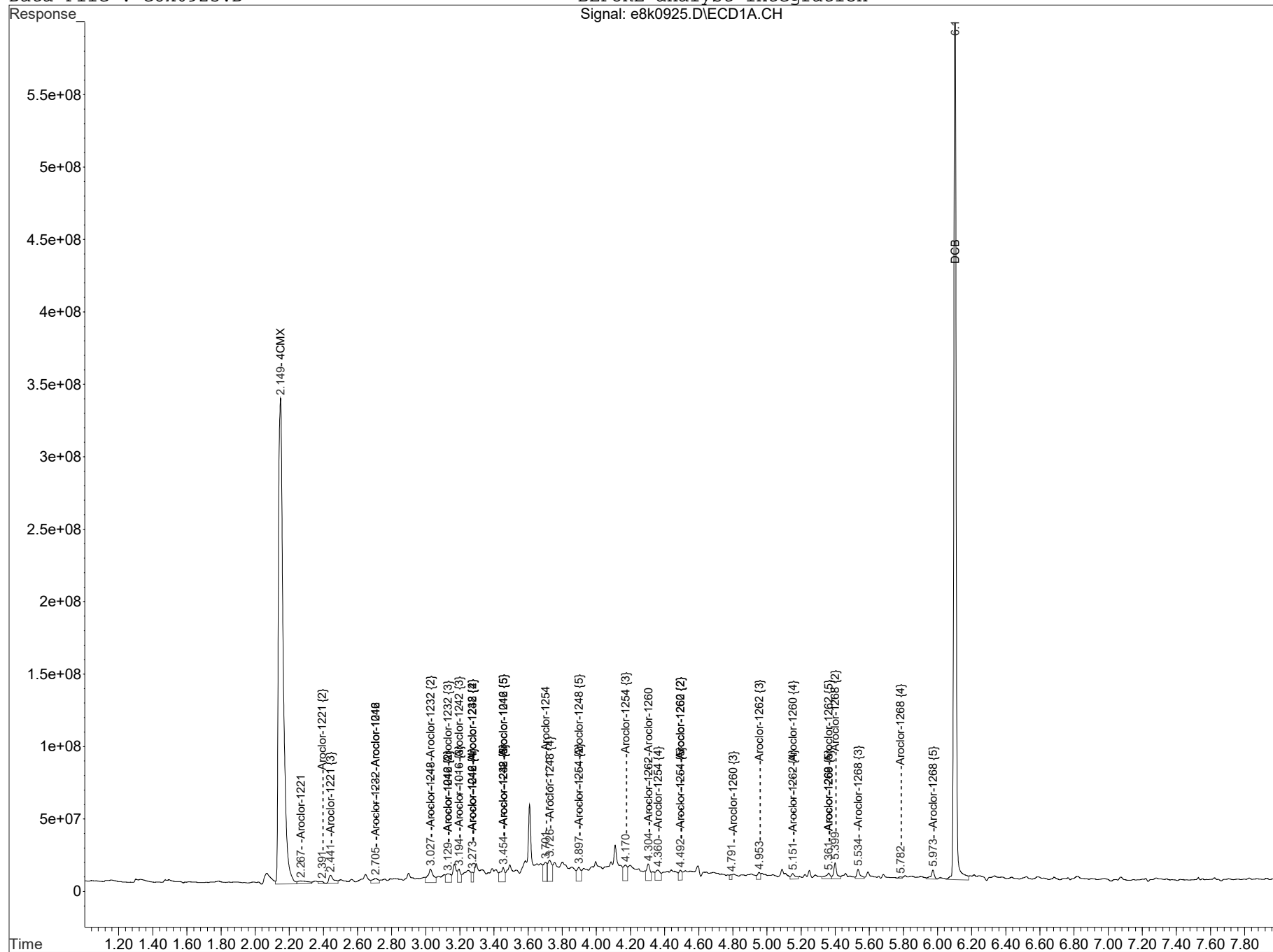
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0925.D

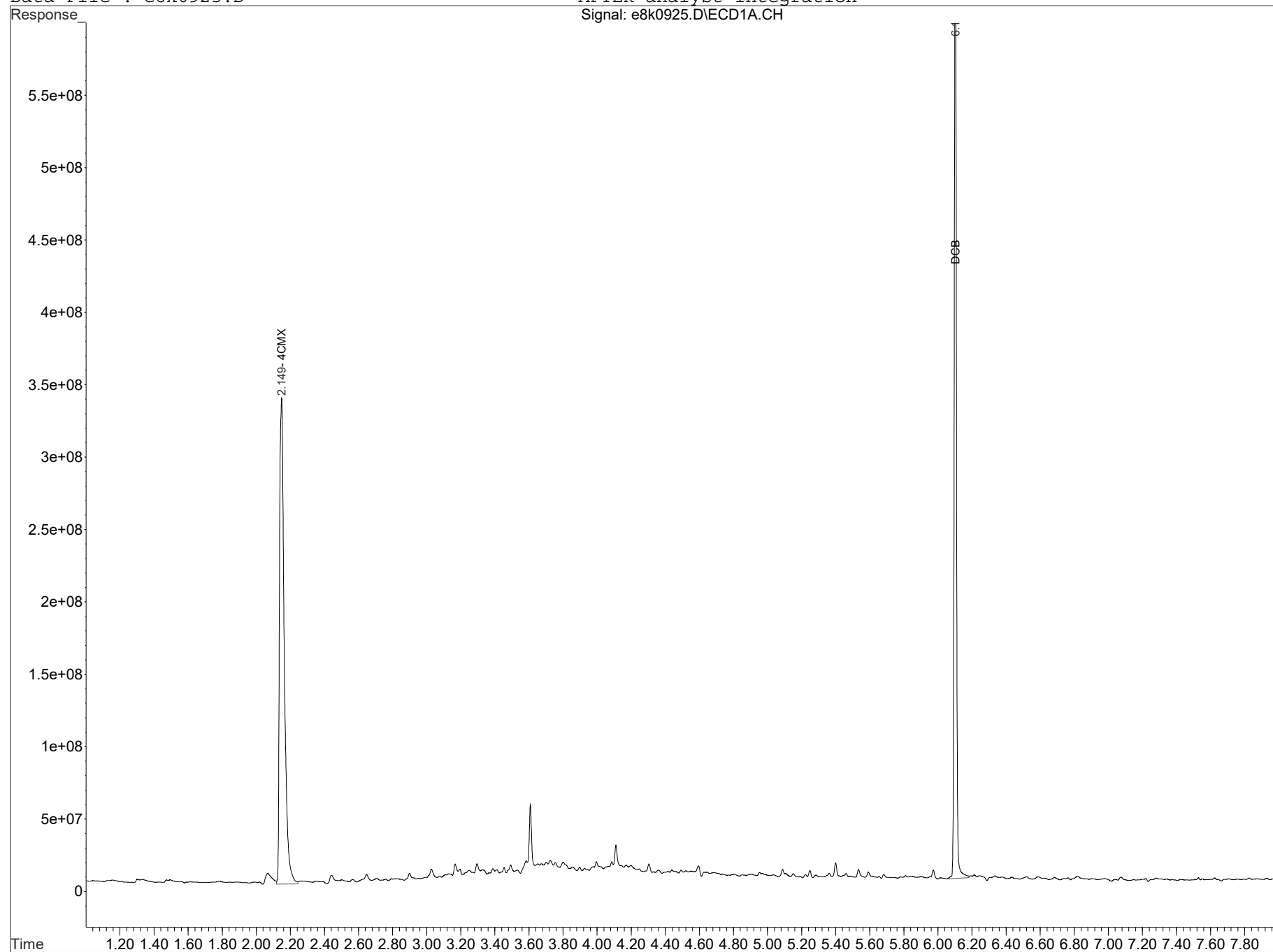
BEFORE analyst integration

Signal: e8k0925.D\ECD1A.CH



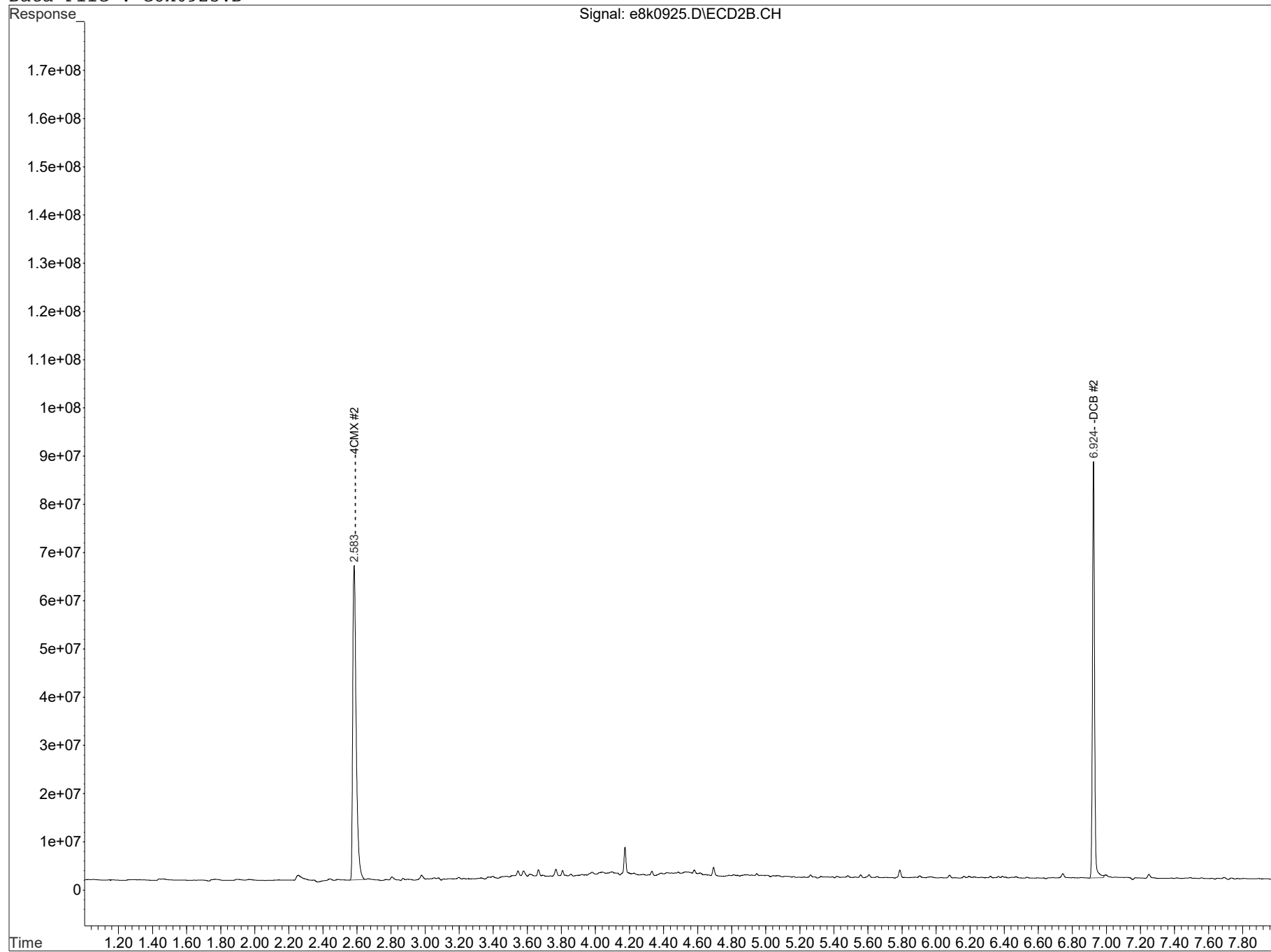
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0925.D

AFTER analyst integration  
Signal: e8k0925.D\ECD1A.CH



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0925.D



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254032  
  
**Client ID:** DP020413  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 11:14  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0926.D  
110916.B\8k0926.D

**Date Collected:** 10/25/2016 14:00  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.082 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 17.7  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.04   | ug/kg | 1.34    | 4.04    | 1      |

Quantitation (Manual Int.) Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0926.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 11:14 (#1); 09 Nov 2016 11:14 (#2)  
Operator : JXM InstName : ECD8  
Sample : |409254032|1614293|1|SVA|1|HAAL|||  
Misc : |ECD4X2A 1S|SOIL|DP020413|||  
ALS Vial : 26 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 11:45:30 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2  |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|-------|-----------|---------|
| -----                       |       |       |        |            |          |       |       |       |           |         |
| System Monitoring Compounds |       |       |        |            |          |       |       |       |           |         |
| 4CMX                        | 2.150 | 2.149 | -0.001 | 7041190697 | 146.506m | 2.584 | 2.584 | 0.000 | 983953171 | 159.114 |
| DCB                         | 6.104 | 6.102 | -0.002 | 6560562708 | 171.216  | 6.924 | 6.924 | 0.000 | 794166972 | 172.785 |

| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 73%       | 80%       |
| DCB      | 200.000 | No Limits | 86%       | 86%       |

Target Compounds

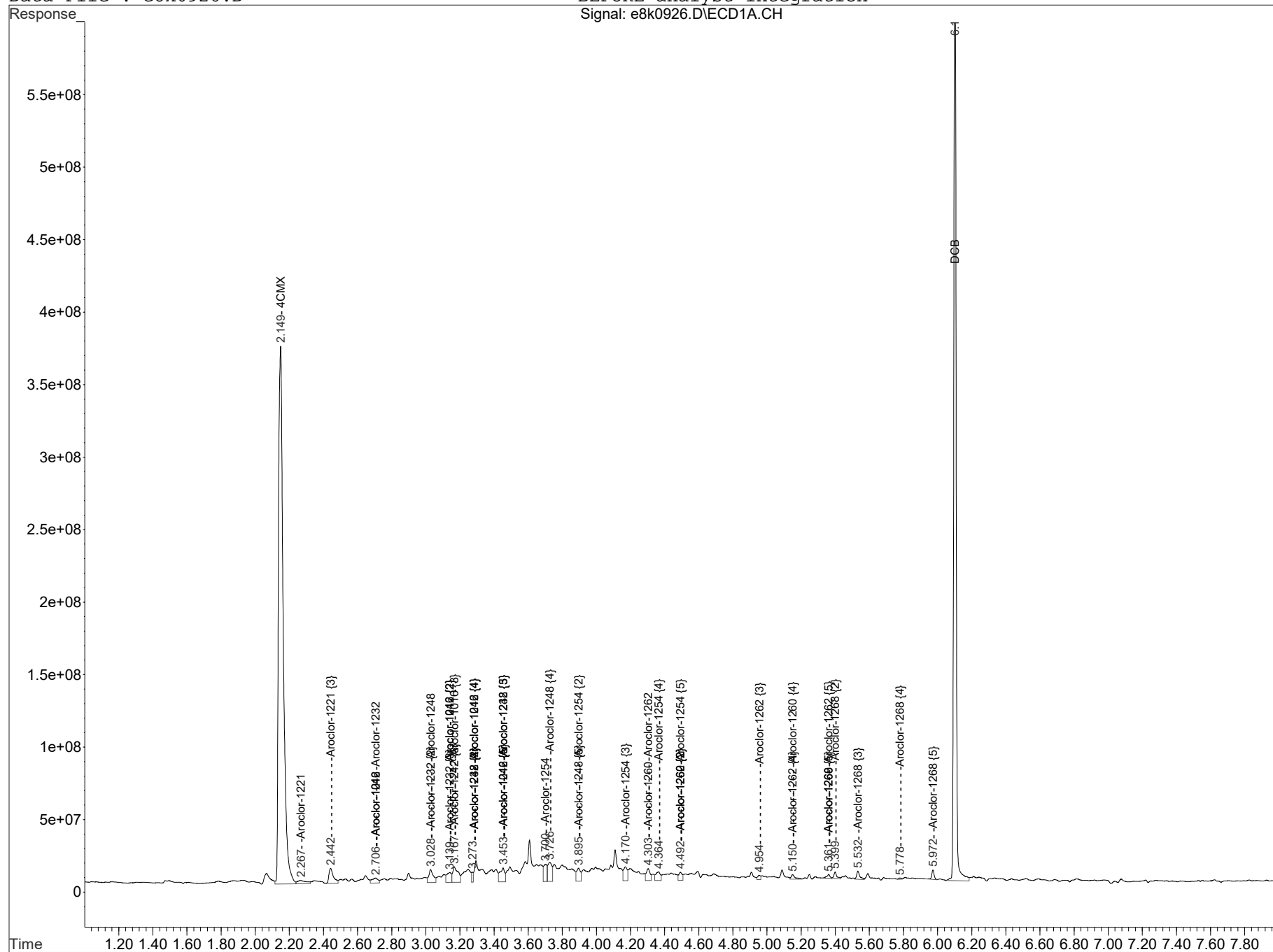
| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| -----    |       |      |       |        |        |       |      |       |        |        |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted



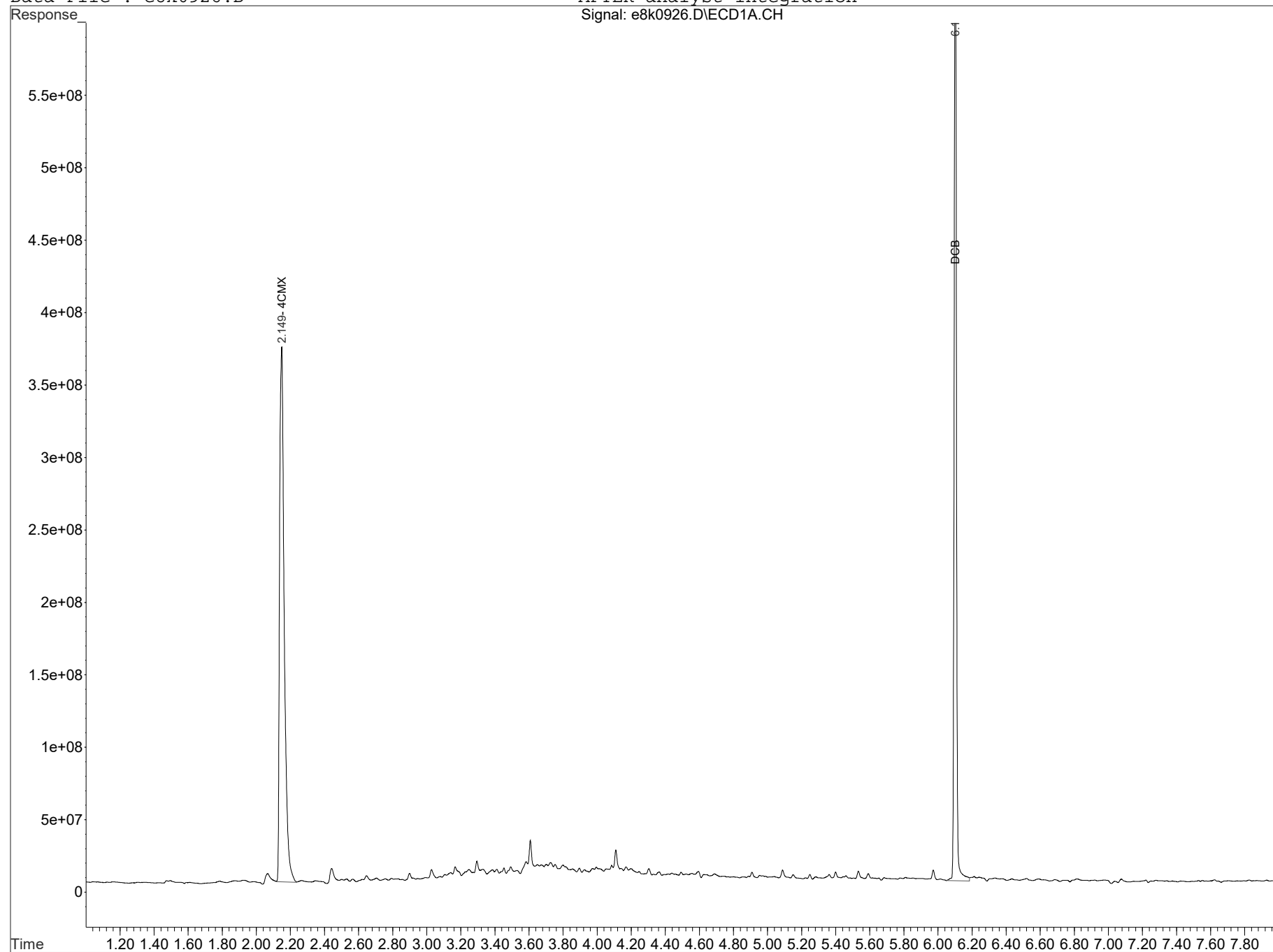
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0926.D

BEFORE analyst integration  
Signal: e8k0926.D\ECD1A.CH



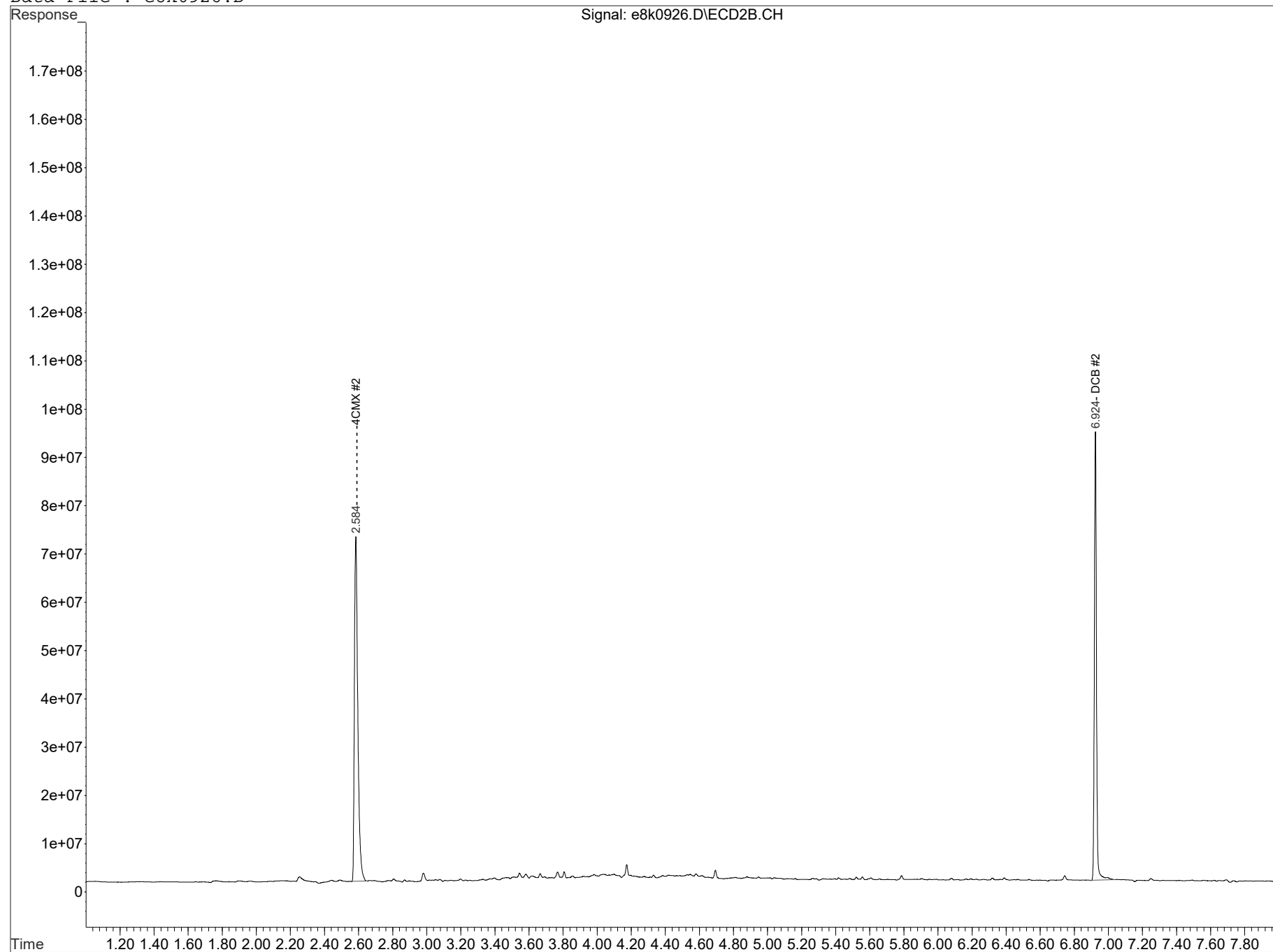
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0926.D

AFTER analyst integration  
Signal: e8k0926.D\ECD1A.CH



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0926.D



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** 409254  
**Lab Sample ID:** 409254034  
  
**Client ID:** DP020207  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 11:29  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0927.D  
110916.B\8k0927.D

**Date Collected:** 10/26/2016 09:46  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.042 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 20.1  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 4.17   | ug/kg | 1.39    | 4.17    | 1      |

Quantitation (Manual Int.) Report

GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
 Data File : e8k0927.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 09 Nov 2016 11:29 (#1); 09 Nov 2016 11:29 (#2)  
 Operator : JXM InstName : ECD8  
 Sample : |409254034|1614293|1|SVA|1|HAAL|||  
 Misc : |ECD4X2A 1S|SOIL|DP020207|||  
 ALS Vial : 27 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
 Quant Time: Nov 09 11:47:04 2016  
 Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
 Quant Title : ECD8 SubList :  
 QLast Update : Tue Nov 01 04:35:57 2016  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
 Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
 Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2  |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|-------|-----------|---------|
| -----                       |       |       |        |            |          |       |       |       |           |         |
| System Monitoring Compounds |       |       |        |            |          |       |       |       |           |         |
| 4CMX                        | 2.150 | 2.149 | -0.001 | 6754700607 | 140.545m | 2.584 | 2.584 | 0.000 | 954591268 | 154.366 |
| DCB                         | 6.104 | 6.101 | -0.003 | 5604043123 | 146.253m | 6.924 | 6.924 | 0.000 | 643526367 | 140.010 |

| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 70%       | 77%       |
| DCB      | 200.000 | No Limits | 73%       | 70%       |

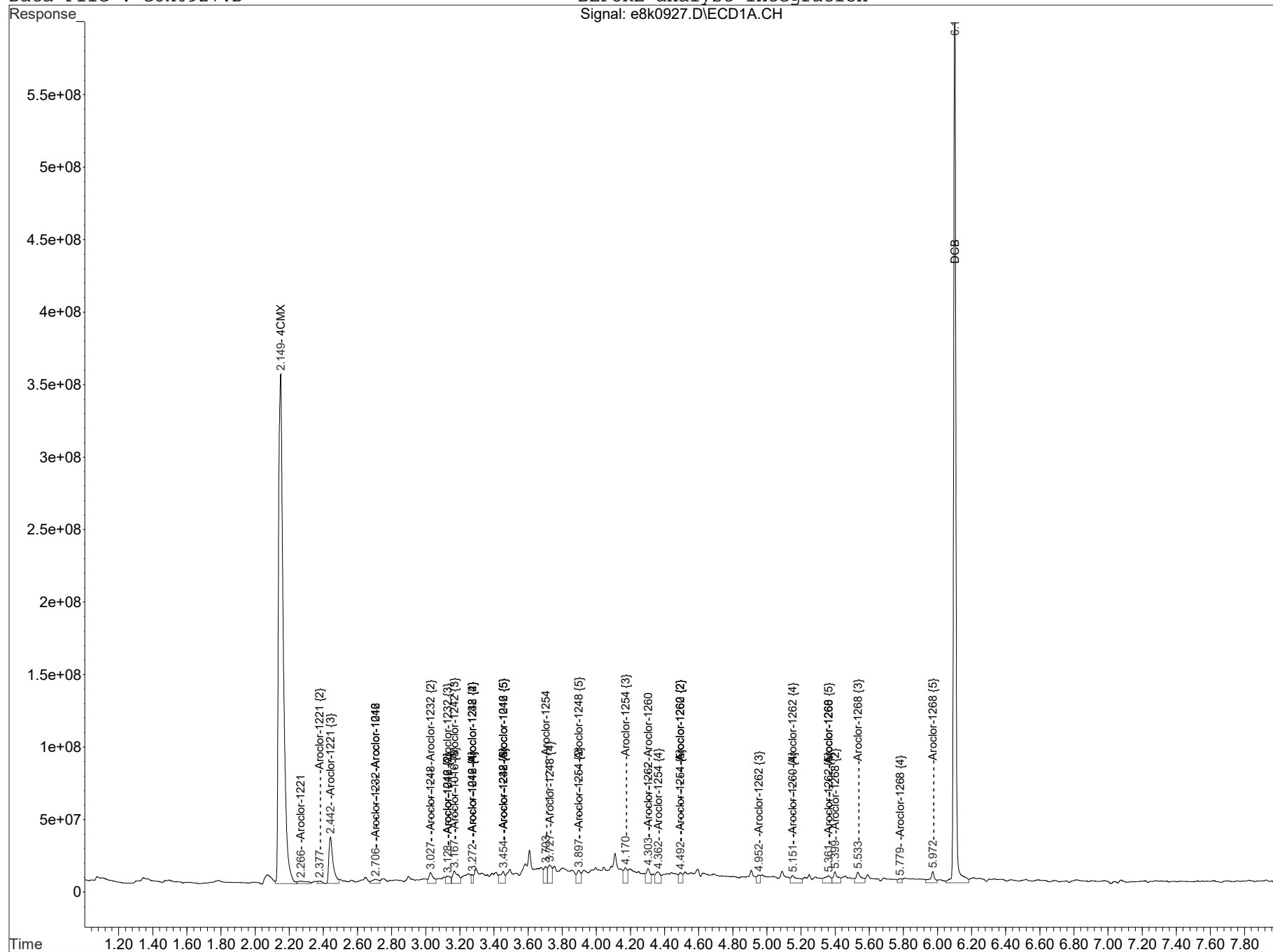
Target Compounds

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| -----    |       |      |       |        |        |       |      |       |        |        |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

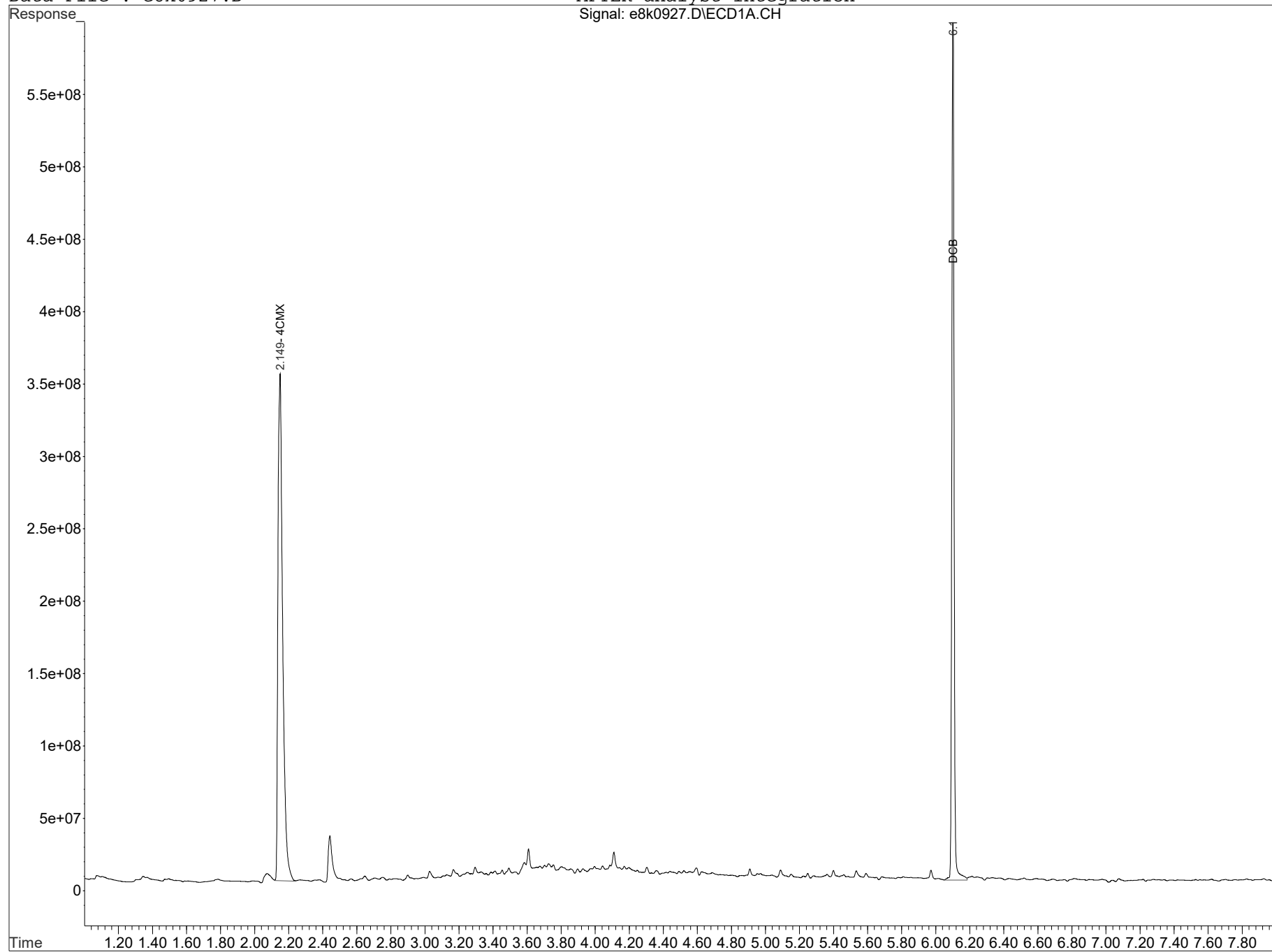
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0927.D

BEFORE analyst integration  
Signal: e8k0927.D\ECD1A.CH



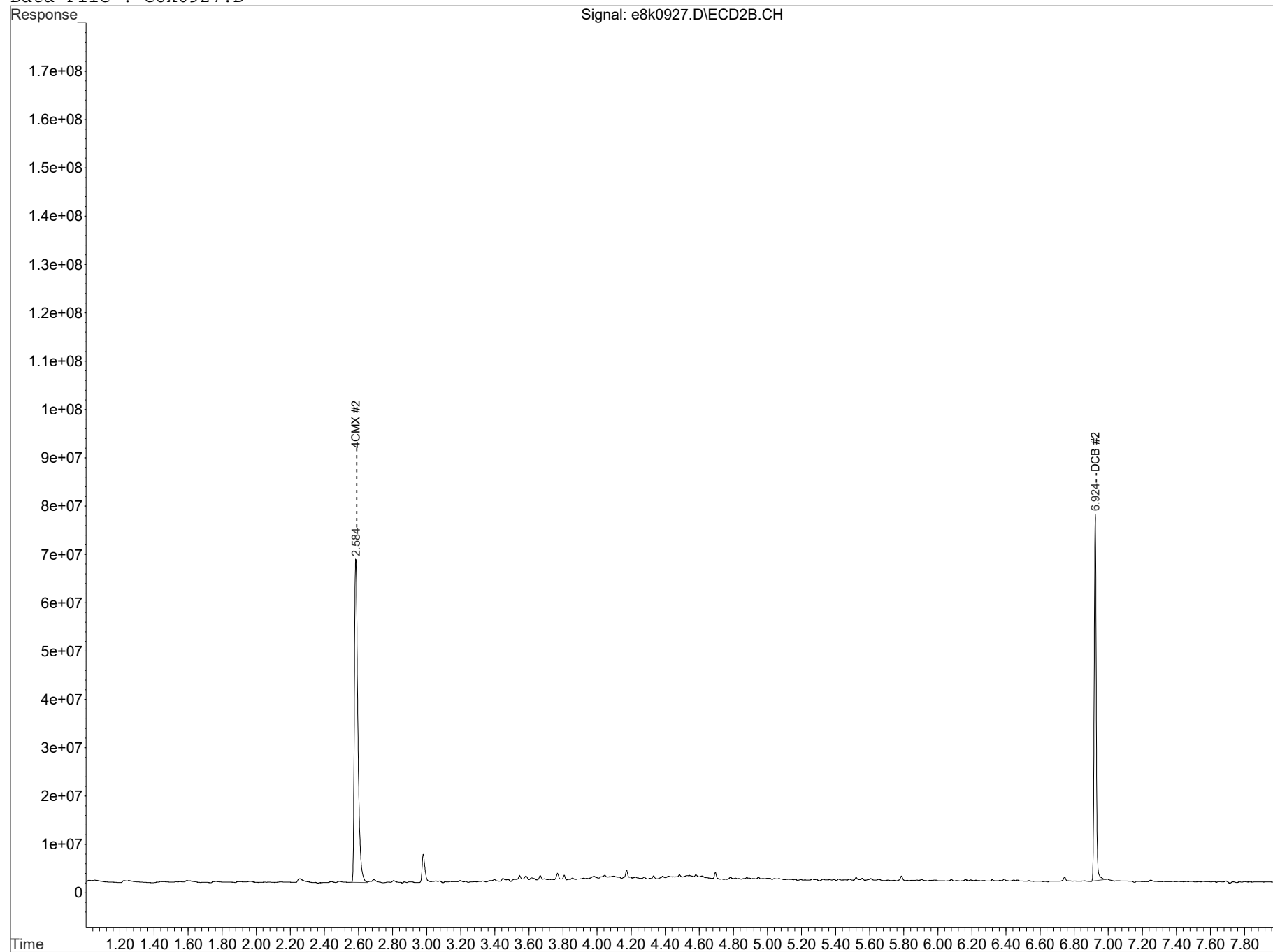
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0927.D

AFTER analyst integration  
Signal: e8k0927.D\ECD1A.CH



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0927.D





**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

**SDG Number:** 409254  
**Lab Sample ID:** 409254036  
  
**Client ID:** DP020209  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 11:43  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0928.D  
110916.B\8k0928.D

**Date Collected:** 10/26/2016 09:53  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.044 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 10.9  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 3.73   | ug/kg | 1.24    | 3.73    | 1      |

Quantitation (Manual Int.) Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0928.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 11:43 (#1); 09 Nov 2016 11:43 (#2)  
Operator : JXM InstName : ECD8  
Sample : |409254036|1614293|1|SVA|1|HAAL|||  
Misc : |ECD4X2A 1S|SOIL|DP020209|||  
ALS Vial : 28 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 12:02:08 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1  | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2  |
|-----------------------------|-------|-------|--------|------------|---------|-------|-------|--------|------------|---------|
| -----                       |       |       |        |            |         |       |       |        |            |         |
| System Monitoring Compounds |       |       |        |            |         |       |       |        |            |         |
| 4CMX                        | 2.150 | 2.148 | -0.002 | 7911612753 | 164.616 | 2.584 | 2.583 | -0.001 | 1089023111 | 176.105 |
| DCB                         | 6.104 | 6.102 | -0.002 | 6854981639 | 178.900 | 6.924 | 6.924 | 0.000  | 843133552  | 183.438 |

| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 82%       | 88%       |
| DCB      | 200.000 | No Limits | 89%       | 92%       |

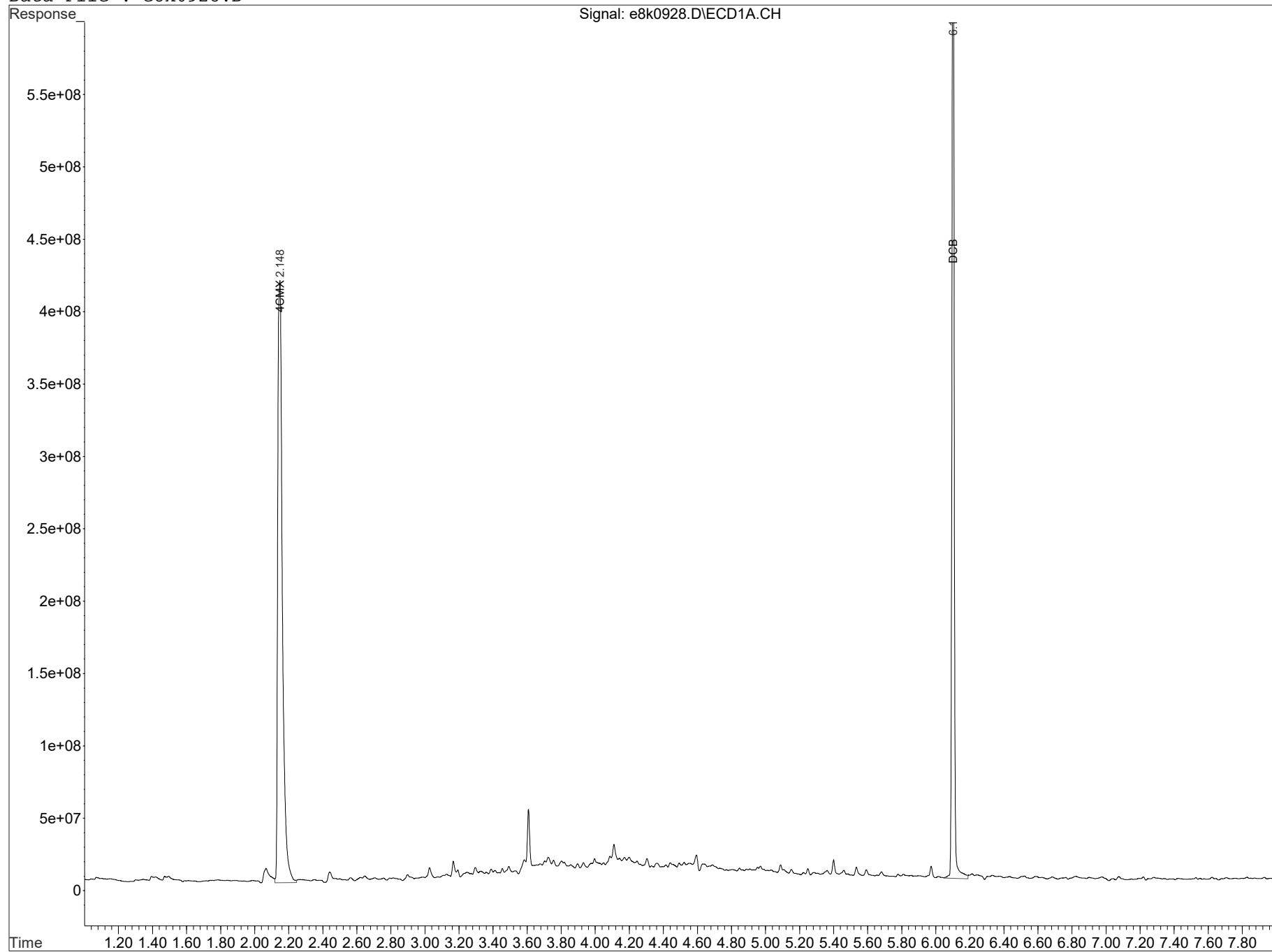
Target Compounds

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| -----    |       |      |       |        |        |       |      |       |        |        |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

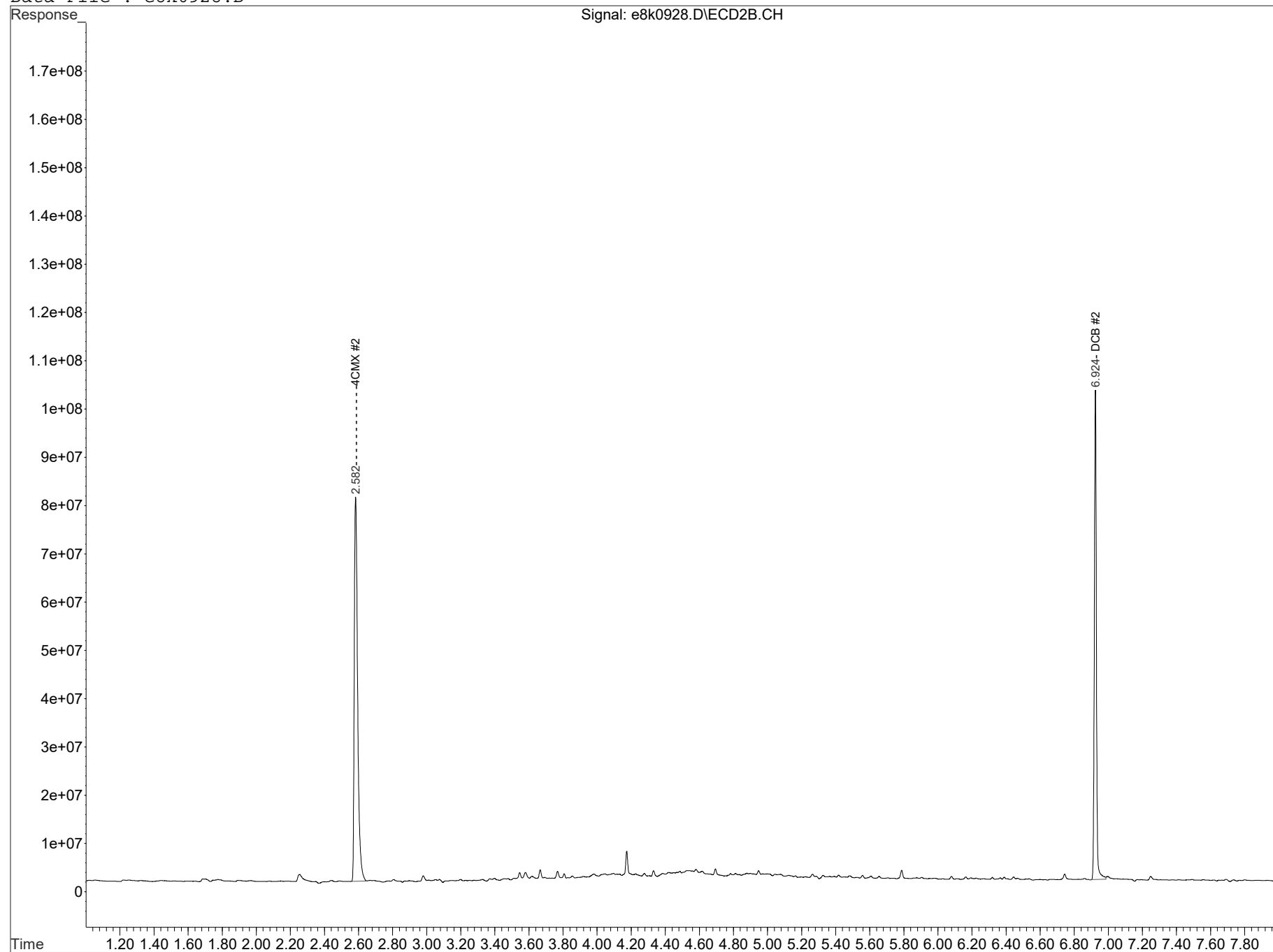
Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0928.D



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0928.D



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

**SDG Number:** 409254  
**Lab Sample ID:** 409254038  
  
**Client ID:** DP020114  
**Batch ID:** 1614293  
**Run Date:** 11/09/2016 11:57  
**Prep Date:** 11/08/2016 10:54  
**Data File:** 110916.B\8k0929.D  
110916.B\8k0929.D

**Date Collected:** 10/26/2016 10:54  
**Date Received:** 10/27/2016 09:00  
**Client:** HAAL002  
**Method:** SW846 3541/8082A  
**Inst:** ECD8A.I  
**Analyst:** JXM  
**Aliquot:** 30.089 g  
**Column:** 1 RTX-CLPEST1  
2 RTX-CLPEST2

**Matrix:** SOIL  
**%Moisture:** 2  
**Project:** HAAL00201  
**SOP Ref:** GL-OA-E-040  
**Dilution:** 1  
**Inj. Vol:** 1 uL  
**Final Volume:** 1 mL

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 3.39   | ug/kg | 1.13    | 3.39    | 1      |

Quantitation (Manual Int.) Report

GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
 Data File : e8k0929.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 09 Nov 2016 11:57 (#1); 09 Nov 2016 11:57 (#2)  
 Operator : JXM InstName : ECD8  
 Sample : |409254038|1614293|1|SVA|1|HAAL|||  
 Misc : |ECD4X2A 1S|SOIL|DP020114|||  
 ALS Vial : 29 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
 Quant Time: Nov 09 12:13:46 2016  
 Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
 Quant Title : ECD8 SubList :  
 QLast Update : Tue Nov 01 04:35:57 2016  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
 Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
 Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2  |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|-------|-----------|---------|
| -----                       |       |       |        |            |          |       |       |       |           |         |
| System Monitoring Compounds |       |       |        |            |          |       |       |       |           |         |
| 4CMX                        | 2.150 | 2.149 | -0.001 | 7042653589 | 146.536m | 2.584 | 2.584 | 0.000 | 992874837 | 160.557 |
| DCB                         | 6.104 | 6.102 | -0.002 | 5318905145 | 138.812m | 6.924 | 6.924 | 0.000 | 721303329 | 156.932 |

| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 73%       | 80%       |
| DCB      | 200.000 | No Limits | 69%       | 78%       |

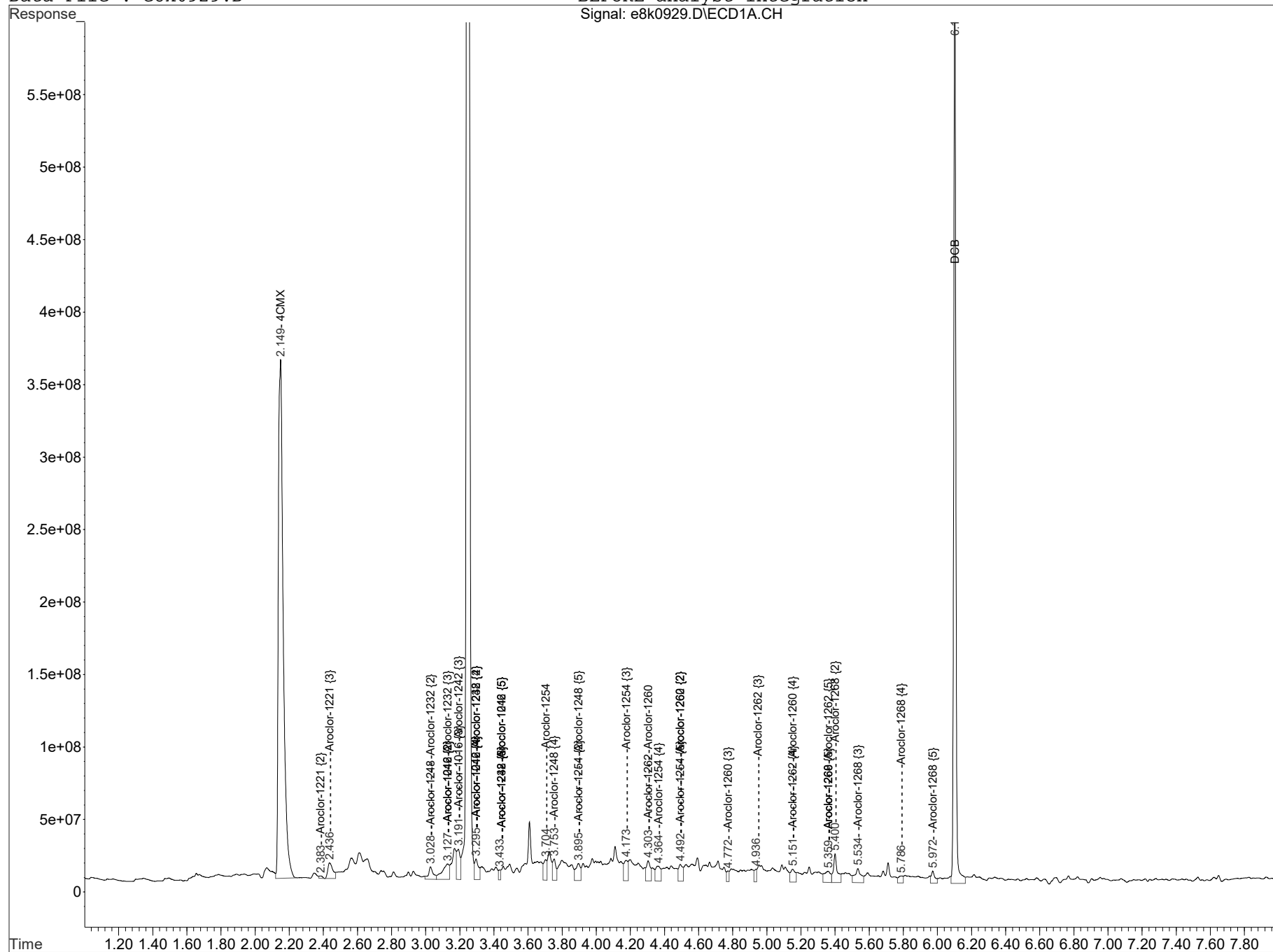
Target Compounds

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| -----    |       |      |       |        |        |       |      |       |        |        |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

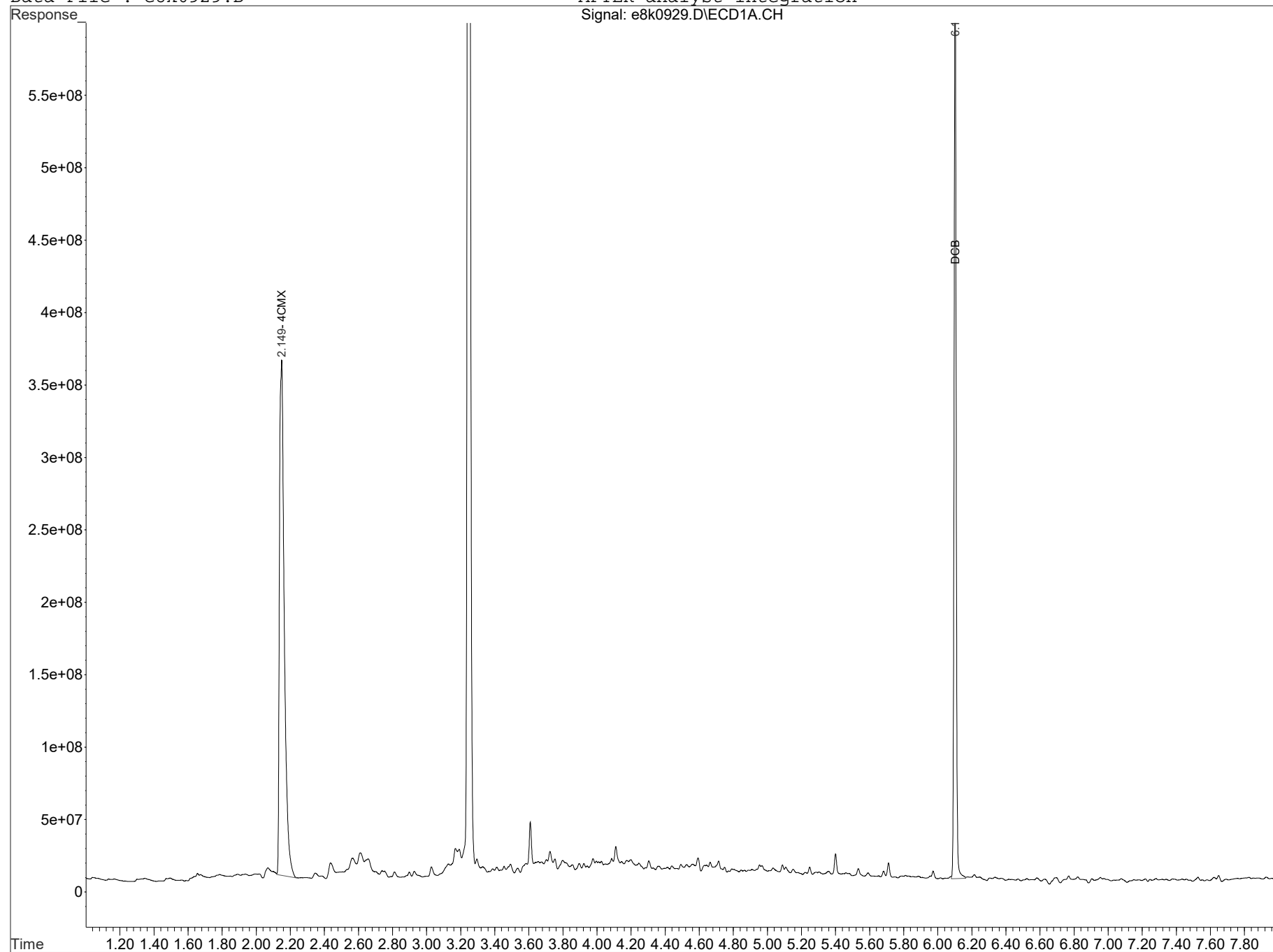
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0929.D

BEFORE analyst integration  
Signal: e8k0929.D\ECD1A.CH



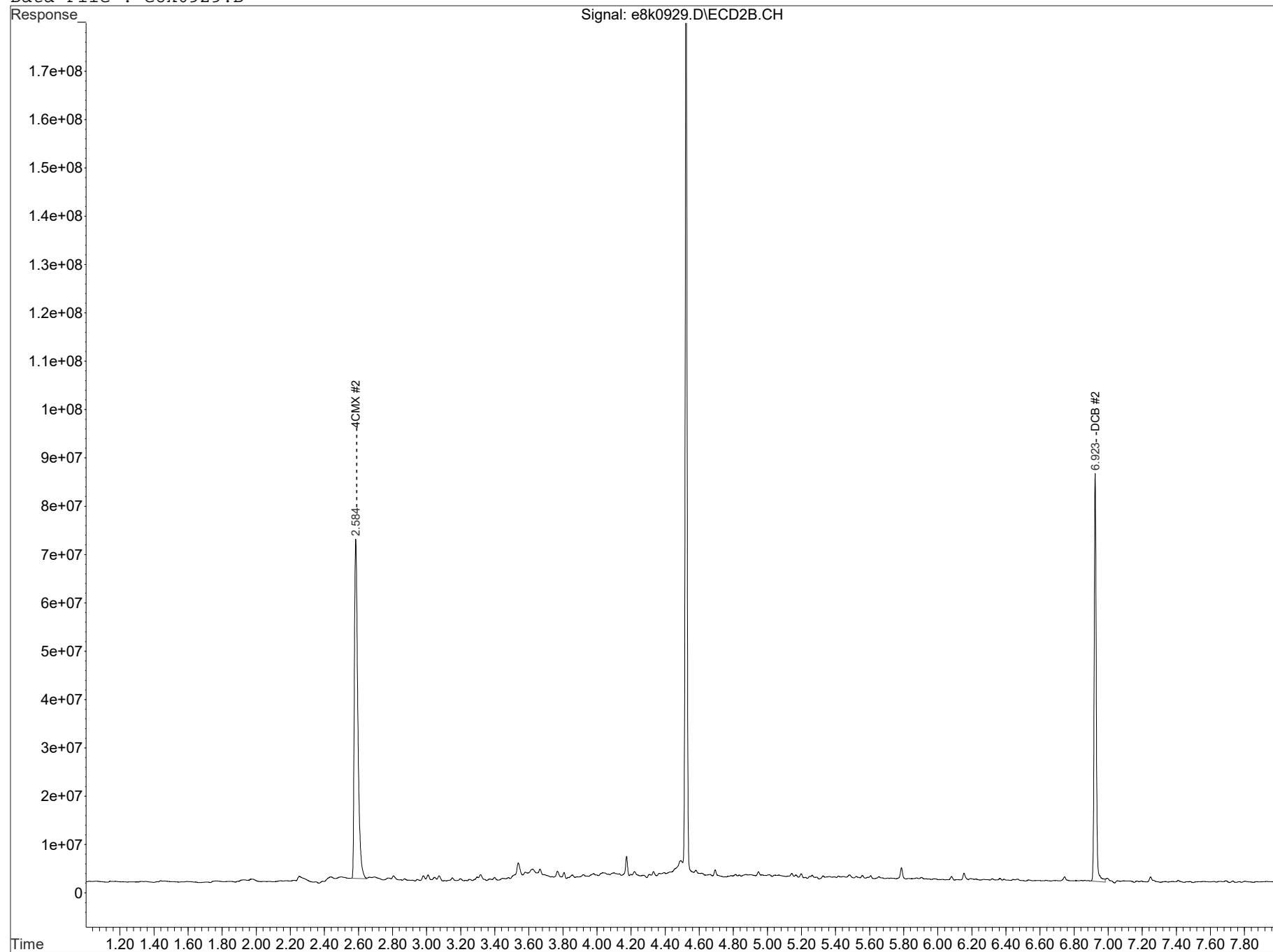
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0929.D

AFTER analyst integration  
Signal: e8k0929.D\ECD1A.CH





Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0929.D



# Standards

## Calibration History Report ECD8

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110916.B\ECD8\_8082\_103116.m

Last Update : Tue Nov 01 04:35:57 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

Cal Lvl:1 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\103116.B\ej3131.D

| Injection Date    | Mix | Calibration File                    |
|-------------------|-----|-------------------------------------|
| 31 Oct 2016 09:17 | A   | C:\msdchem\1\DATA\103116.B\ej3113.D |
| 31 Oct 2016 10:31 | B   | C:\msdchem\1\DATA\103116.B\ej3119.D |
| 31 Oct 2016 11:45 | D   | C:\msdchem\1\DATA\103116.B\ej3125.D |
| 31 Oct 2016 12:58 | E   | C:\msdchem\1\DATA\103116.B\ej3131.D |
| 03 Oct 2016 11:34 | O   | C:\msdchem\1\DATA\100316.B\ej0327.D |
| 03 Oct 2016 10:20 | K   | C:\msdchem\1\DATA\100316.B\ej0321.D |

Cal Lvl:2 Amt:25.00 Last Updated with: C:\msdchem\1\DATA\103116.B\ej3132.D

| Injection Date    | Mix | Calibration File                    |
|-------------------|-----|-------------------------------------|
| 31 Oct 2016 09:30 | A   | C:\msdchem\1\DATA\103116.B\ej3114.D |
| 31 Oct 2016 10:43 | B   | C:\msdchem\1\DATA\103116.B\ej3120.D |
| 31 Oct 2016 11:57 | D   | C:\msdchem\1\DATA\103116.B\ej3126.D |
| 31 Oct 2016 13:11 | E   | C:\msdchem\1\DATA\103116.B\ej3132.D |
| 03 Oct 2016 11:46 | O   | C:\msdchem\1\DATA\100316.B\ej0328.D |
| 03 Oct 2016 10:33 | K   | C:\msdchem\1\DATA\100316.B\ej0322.D |

Cal Lvl:3 Amt:50.00 Last Updated with: C:\msdchem\1\DATA\103116.B\ej3133.D

| Injection Date    | Mix | Calibration File                    |
|-------------------|-----|-------------------------------------|
| 31 Oct 2016 09:42 | A   | C:\msdchem\1\DATA\103116.B\ej3115.D |
| 31 Oct 2016 10:56 | B   | C:\msdchem\1\DATA\103116.B\ej3121.D |
| 31 Oct 2016 12:09 | D   | C:\msdchem\1\DATA\103116.B\ej3127.D |
| 31 Oct 2016 13:23 | E   | C:\msdchem\1\DATA\103116.B\ej3133.D |
| 03 Oct 2016 11:59 | O   | C:\msdchem\1\DATA\100316.B\ej0329.D |
| 03 Oct 2016 10:45 | K   | C:\msdchem\1\DATA\100316.B\ej0323.D |

Cal Lvl:4 Amt:100.00 Last Updated with: C:\msdchem\1\DATA\103116.B\ej3134.D

| Injection Date    | Mix | Calibration File                    |
|-------------------|-----|-------------------------------------|
| 31 Oct 2016 09:54 | A   | C:\msdchem\1\DATA\103116.B\ej3116.D |
| 31 Oct 2016 11:08 | B   | C:\msdchem\1\DATA\103116.B\ej3122.D |
| 31 Oct 2016 12:22 | D   | C:\msdchem\1\DATA\103116.B\ej3128.D |
| 31 Oct 2016 13:35 | E   | C:\msdchem\1\DATA\103116.B\ej3134.D |
| 01 Sep 2016 06:36 | J   | C:\msdchem\1\DATA\090116.B\ej0104.D |
| 03 Oct 2016 12:11 | O   | C:\msdchem\1\DATA\100316.B\ej0330.D |
| 10 Oct 2016 12:28 | X   | C:\msdchem\1\DATA\101016.B\ej1002.D |
| 01 Sep 2016 06:24 | F   | C:\msdchem\1\DATA\090116.B\ej0103.D |
| 03 Oct 2016 10:57 | K   | C:\msdchem\1\DATA\100316.B\ej0324.D |

Cal Lvl:5 Amt:400.00 Last Updated with: C:\msdchem\1\DATA\103116.B\ej3135.D

| Injection Date    | Mix | Calibration File                    |
|-------------------|-----|-------------------------------------|
| 31 Oct 2016 10:07 | A   | C:\msdchem\1\DATA\103116.B\ej3117.D |
| 31 Oct 2016 11:20 | B   | C:\msdchem\1\DATA\103116.B\ej3123.D |
| 31 Oct 2016 12:34 | D   | C:\msdchem\1\DATA\103116.B\ej3129.D |
| 31 Oct 2016 13:47 | E   | C:\msdchem\1\DATA\103116.B\ej3135.D |
| 03 Oct 2016 12:23 | O   | C:\msdchem\1\DATA\100316.B\ej0331.D |
| 03 Oct 2016 11:10 | K   | C:\msdchem\1\DATA\100316.B\ej0325.D |

ECD8\_8082\_103116.m Wed Nov 09 10:09:06 2016

ECD8\_8082\_103116.m Wed Nov 09 10:09:02 2016

## Response Factor Report ECD8

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110916.B\ECD8\_8082\_103116.m

Last Update : Tue Nov 01 04:35:57 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1   | m2 | 1         | 2         | 3         | 4         | 5         |  | Avg    | Curve | Exp | %RSD/r2 |
|--------|------------------|----|-----------|-----------|-----------|-----------|-----------|--|--------|-------|-----|---------|
| 1)SA   | 4CMX             |    | 5.1313104 | 4.8851688 | 4.7339020 | 4.7673689 | 4.5127134 |  | 4.8061 | AVRG  | E7  | 4.7081  |
| 2)MAL1 | Aroclor-1016     |    | 2.1515589 | 1.9597915 | 1.8161984 | 1.7471230 | 1.5165452 |  | 1.8382 | AVRG  | E6  | 12.9083 |
| 3)MAL1 | Aroclor-1016 {2} |    | 1.7646493 | 1.6170643 | 1.5077647 | 1.4864129 | 1.3783751 |  | 1.5509 | AVRG  | E6  | 9.4465  |
| 4)MAL1 | Aroclor-1016 {3} |    | 1.0785420 | 1.0050742 | 0.9304325 | 0.9199038 | 0.8724322 |  | 0.9613 | AVRG  | E6  | 8.4234  |
| 5)MAL1 | Aroclor-1016 {4} |    | 9.4564524 | 8.7087937 | 8.0901493 | 8.0660093 | 7.6796221 |  | 8.4002 | AVRG  | E5  | 8.2861  |
| 6)MAL1 | Aroclor-1016 {5} |    | 1.3091633 | 1.2029954 | 1.1419990 | 1.1350243 | 1.0736053 |  | 1.1726 | AVRG  | E6  | 7.5948  |
| 7)JL2  | Aroclor-1221     |    |           |           |           | 2.2032253 |           |  | 2.2032 | AVRG  | E5  | 0.0000  |
| 8)JL2  | Aroclor-1221 {2} |    |           |           |           | 1.2062478 |           |  | 1.2062 | AVRG  | E5  | 0.0000  |
| 9)JL2  | Aroclor-1221 {3} |    |           |           |           | 5.0111913 |           |  | 5.0112 | AVRG  | E5  | 0.0000  |
| 10)FL3 | Aroclor-1232     |    |           |           |           | 2.8888519 |           |  | 2.8889 | AVRG  | E5  | 0.0000  |
| 11)FL3 | Aroclor-1232 {2} |    |           |           |           | 3.5765750 |           |  | 3.5766 | AVRG  | E5  | 0.0000  |
| 12)FL3 | Aroclor-1232 {3} |    |           |           |           | 2.4340676 |           |  | 2.4341 | AVRG  | E5  | 0.0000  |
| 13)FL3 | Aroclor-1232 {4} |    |           |           |           | 1.1105331 |           |  | 1.1105 | AVRG  | E5  | 0.0000  |
| 14)FL3 | Aroclor-1232 {5} |    |           |           |           | 1.6672514 |           |  | 1.6673 | AVRG  | E5  | 0.0000  |
| 15)DL4 | Aroclor-1242     |    | 1.8300747 | 1.7038356 | 1.5937079 | 1.5139356 | 1.3584208 |  | 1.6000 | AVRG  | E6  | 11.2467 |

## Response Factor Report ECD8

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110916.B\ECD8\_8082\_103116.m

Last Update : Tue Nov 01 04:35:57 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b       | Compound<br>m1   | m2 | 1         | 2         | 3         | 4         | 5         |  | Avg    | Curve | Exp | %RSD/r2 |
|---------|------------------|----|-----------|-----------|-----------|-----------|-----------|--|--------|-------|-----|---------|
| 16)DL4  | Aroclor-1242 {2} |    | 1.4160247 | 1.3047344 | 1.2284038 | 1.1895290 | 1.1351674 |  | 1.2548 | AVRG  | E6  | 8.7080  |
| 17)DL4  | Aroclor-1242 {3} |    | 8.9100294 | 8.1378247 | 7.6073455 | 7.3392241 | 7.2423989 |  | 7.8474 | AVRG  | E5  | 8.7720  |
| 18)DL4  | Aroclor-1242 {4} |    | 7.2576883 | 6.7037916 | 6.3012798 | 6.0414070 | 5.9445562 |  | 6.4497 | AVRG  | E5  | 8.3541  |
| 19)DL4  | Aroclor-1242 {5} |    | 1.0769665 | 1.0009568 | 0.9547220 | 0.9266783 | 0.9138144 |  | 0.9746 | AVRG  | E6  | 6.7982  |
| 20)EL5  | Aroclor-1248     |    | 1.2045615 | 1.0970721 | 1.0471170 | 1.0062530 | 0.9892631 |  | 1.0689 | AVRG  | E6  | 8.0941  |
| 21)EL5  | Aroclor-1248 {2} |    | 1.2901356 | 1.1857907 | 1.1404519 | 1.1254349 | 1.0952552 |  | 1.1674 | AVRG  | E6  | 6.5088  |
| 22)EL5  | Aroclor-1248 {3} |    | 1.6896148 | 1.5701232 | 1.5134900 | 1.4946734 | 1.4096367 |  | 1.5355 | AVRG  | E6  | 6.7478  |
| 23)EL5  | Aroclor-1248 {4} |    | 1.8218872 | 1.7444636 | 1.6923263 | 1.7289754 | 1.7109405 |  | 1.7397 | AVRG  | E6  | 2.8688  |
| 24)EL5  | Aroclor-1248 {5} |    | 1.5312786 | 1.4032824 | 1.3496305 | 1.3614220 | 1.2978986 |  | 1.3887 | AVRG  | E6  | 6.3451  |
| 25)BL6  | Aroclor-1254     |    | 1.7950672 | 1.6918540 | 1.5744579 | 1.6060634 | 1.5123208 |  | 1.6360 | AVRG  | E6  | 6.7241  |
| 26)BL6  | Aroclor-1254 {2} |    | 2.2616877 | 2.2077588 | 2.0267666 | 2.0726699 | 1.7829973 |  | 2.0704 | AVRG  | E6  | 9.0351  |
| 27)BL6  | Aroclor-1254 {3} |    | 2.9915179 | 2.9067705 | 2.7550322 | 2.8744481 | 2.7323449 |  | 2.8520 | AVRG  | E6  | 3.7881  |
| 28)BL6  | Aroclor-1254 {4} |    | 2.1744947 | 2.1278442 | 2.0590375 | 2.0755535 | 1.9230848 |  | 2.0720 | AVRG  | E6  | 4.5773  |
| 29)BL6  | Aroclor-1254 {5} |    | 2.3591020 | 2.2163733 | 2.1422020 | 2.1302528 | 1.9829337 |  | 2.1662 | AVRG  | E6  | 6.3290  |
| 30)MAL7 | Aroclor-1260     |    | 2.7112384 | 2.5649867 | 2.4452837 | 2.4503833 | 2.3048106 |  |        |       |     |         |

## Response Factor Report ECD8

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110916.B\ECD8\_8082\_103116.m

Last Update : Tue Nov 01 04:35:57 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b       | Compound<br>m1   | m2 | 1         | 2         | 3         | 4         | 5         |  | Avg    | Curve | Exp | %RSD/r2 |
|---------|------------------|----|-----------|-----------|-----------|-----------|-----------|--|--------|-------|-----|---------|
|         |                  |    |           |           |           |           |           |  | 2.4953 | AVRG  | E6  | 6.0872  |
| 31)MAL7 | Aroclor-1260 {2} |    | 3.9727187 | 3.8358152 | 3.7230356 | 3.7477586 | 3.5018518 |  | 3.7562 | AVRG  | E6  | 4.5935  |
| 32)MAL7 | Aroclor-1260 {3} |    | 2.0954546 | 1.9849963 | 1.8776078 | 1.8737577 | 1.7915836 |  | 1.9247 | AVRG  | E6  | 6.1105  |
| 33)MAL7 | Aroclor-1260 {4} |    | 4.7850001 | 4.7048453 | 4.5725979 | 4.6158495 | 4.3902769 |  | 4.6137 | AVRG  | E6  | 3.2378  |
| 34)MAL7 | Aroclor-1260 {5} |    | 2.5322945 | 2.5069427 | 2.3983590 | 2.4393155 | 2.4142039 |  | 2.4582 | AVRG  | E6  | 2.3841  |
| 35)KL8  | Aroclor-1262     |    | 1.1743954 | 1.1354930 | 1.0962243 | 1.0350307 | 0.9994003 |  | 1.0881 | AVRG  | E6  | 6.5701  |
| 36)KL8  | Aroclor-1262 {2} |    | 1.5956044 | 1.5051866 | 1.4611054 | 1.4025885 | 1.3763586 |  | 1.4682 | AVRG  | E6  | 5.9369  |
| 37)KL8  | Aroclor-1262 {3} |    | 1.7891372 | 1.7336085 | 1.6807427 | 1.6161778 | 1.5751502 |  | 1.6790 | AVRG  | E6  | 5.1449  |
| 38)KL8  | Aroclor-1262 {4} |    | 3.4757231 | 3.4299054 | 3.3927104 | 3.2725787 | 3.1691819 |  | 3.3480 | AVRG  | E6  | 3.7391  |
| 39)KL8  | Aroclor-1262 {5} |    | 1.5055850 | 1.4182226 | 1.3887630 | 1.3111514 | 1.2991542 |  | 1.3846 | AVRG  | E6  | 6.0944  |
| 40)OL9  | Aroclor-1268     |    | 4.7921162 | 4.6377124 | 4.6077846 | 4.5934612 | 4.3071382 |  | 4.5876 | AVRG  | E6  | 3.8292  |
| 41)OL9  | Aroclor-1268 {2} |    | 4.3678816 | 4.2592601 | 4.1723062 | 4.1568307 | 3.9344961 |  | 4.1782 | AVRG  | E6  | 3.8301  |
| 42)OL9  | Aroclor-1268 {3} |    | 3.3322581 | 3.2092942 | 3.1707669 | 3.1732174 | 2.9972182 |  | 3.1766 | AVRG  | E6  | 3.7751  |
| 43)OL9  | Aroclor-1268 {4} |    | 1.4359122 | 1.3877367 | 1.3539733 | 1.3491263 | 1.3362639 |  | 1.3726 | AVRG  | E6  | 2.9269  |
| 44)OL9  | Aroclor-1268 {5} |    | 9.2443416 | 8.9887597 | 8.9596006 | 8.9656012 | 6.3797488 |  | 8.5076 | AVRG  | E6  | 14.0512 |

## Response Factor Report ECD8

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110916.B\ECD8\_8082\_103116.m

Last Update : Tue Nov 01 04:35:57 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b     | Compound<br>m1 | m2 | 1         | 2         | 3         | 4         | 5         |  | Avg    | Curve | Exp | %RSD/r2 |
|-------|----------------|----|-----------|-----------|-----------|-----------|-----------|--|--------|-------|-----|---------|
| 45)X  | 4,4' DDT       |    |           |           |           | 1.5485573 |           |  | 1.5486 | AVRG  | E7  | 0.0000  |
| 46)X  | 4,4' DDD       |    |           |           |           | 2.4526826 |           |  | 2.4527 | AVRG  | E7  | 0.0000  |
| 47)X  | 4,4' DDE       |    |           |           |           | 2.9073910 |           |  | 2.9074 | AVRG  | E7  | 0.0000  |
| 48)SA | DCB            |    | 4.0486125 | 3.9450541 | 3.7388968 | 3.8084369 | 3.6176778 |  | 3.8317 | AVRG  | E7  | 4.4224  |

## -----COLUMN #2-----

| b      | Compound<br>m1   | m2 | 1         | 2         | 3         | 4         | 5         |  | Avg    | Curve | Exp | %RSD/r2 |
|--------|------------------|----|-----------|-----------|-----------|-----------|-----------|--|--------|-------|-----|---------|
| 1)SA   | 4CMX             |    | 6.5125240 | 6.2440213 | 6.0894229 | 6.1449923 | 5.9287492 |  | 6.1839 | AVRG  | E6  | 3.4978  |
| 2)MAL1 | Aroclor-1016     |    | 3.0609455 | 2.8473598 | 2.6291883 | 2.5031612 | 2.2457574 |  | 2.6573 | AVRG  | E5  | 11.7954 |
| 3)MAL1 | Aroclor-1016 {2} |    | 2.0714190 | 1.8930851 | 1.8819086 | 1.8483273 | 1.7349348 |  | 1.8859 | AVRG  | E5  | 6.4227  |
| 4)MAL1 | Aroclor-1016 {3} |    | 1.2835571 | 1.1934213 | 1.1271988 | 1.1023049 | 1.0698974 |  | 1.1553 | AVRG  | E5  | 7.3442  |
| 5)MAL1 | Aroclor-1016 {4} |    | 1.4541345 | 1.3227122 | 1.2195655 | 1.1904026 | 1.1174577 |  | 1.2609 | AVRG  | E5  | 10.3724 |
| 6)MAL1 | Aroclor-1016 {5} |    | 1.7748171 | 1.6524227 | 1.5423555 | 1.5091715 | 1.4326736 |  | 1.5823 | AVRG  | E5  | 8.4385  |
| 7)JL2  | Aroclor-1221     |    |           |           |           | 6.1487244 |           |  | 6.1487 | AVRG  | E4  | 0.0000  |
| 8)JL2  | Aroclor-1221 {2} |    |           |           |           | 3.9304193 |           |  | 3.9304 | AVRG  | E4  | 0.0000  |
| 9)JL2  | Aroclor-1221 {3} |    |           |           |           | 1.4145160 |           |  |        |       |     |         |

## Response Factor Report ECD8

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110916.B\ECD8\_8082\_103116.m

Last Update : Tue Nov 01 04:35:57 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b       | Compound<br>m1   | m2 | 1         | 2         | 3         | 4         | 5         |  | Avg    | Curve | Exp | %RSD/r2 |
|---------|------------------|----|-----------|-----------|-----------|-----------|-----------|--|--------|-------|-----|---------|
|         |                  |    |           |           |           |           |           |  | 1.4145 | AVRG  | E5  | 0.0000  |
| 10) FL3 | Aroclor-1232     |    |           |           |           | 8.9854291 |           |  | 8.9854 | AVRG  | E4  | 0.0000  |
| 11) FL3 | Aroclor-1232 {2} |    |           |           |           | 9.2069054 |           |  | 9.2069 | AVRG  | E4  | 0.0000  |
| 12) FL3 | Aroclor-1232 {3} |    |           |           |           | 6.3681130 |           |  | 6.3681 | AVRG  | E4  | 0.0000  |
| 13) FL3 | Aroclor-1232 {4} |    |           |           |           | 3.9939633 |           |  | 3.9940 | AVRG  | E4  | 0.0000  |
| 14) FL3 | Aroclor-1232 {5} |    |           |           |           | 4.7575951 |           |  | 4.7576 | AVRG  | E4  | 0.0000  |
| 15) DL4 | Aroclor-1242     |    | 2.5532256 | 2.3863508 | 2.1999846 | 2.0771923 | 1.8889029 |  | 2.2211 | AVRG  | E5  | 11.6781 |
| 16) DL4 | Aroclor-1242 {2} |    | 1.7381236 | 1.5689792 | 1.5692855 | 1.5169314 | 1.4506813 |  | 1.5688 | AVRG  | E5  | 6.7844  |
| 17) DL4 | Aroclor-1242 {3} |    | 1.0546247 | 0.9729525 | 0.9239074 | 0.9010344 | 0.8891574 |  | 0.9483 | AVRG  | E5  | 7.1206  |
| 18) DL4 | Aroclor-1242 {4} |    | 1.1625456 | 1.0534988 | 0.9769973 | 0.9339785 | 0.8937314 |  | 1.0042 | AVRG  | E5  | 10.6070 |
| 19) DL4 | Aroclor-1242 {5} |    | 1.5005875 | 1.3695637 | 1.3033932 | 1.2693949 | 1.2207774 |  | 1.3327 | AVRG  | E5  | 8.1281  |
| 20) EL5 | Aroclor-1248     |    | 1.4585462 | 1.3286663 | 1.2410163 | 1.2325192 | 1.1937557 |  | 1.2909 | AVRG  | E5  | 8.2041  |
| 21) EL5 | Aroclor-1248 {2} |    | 2.0256486 | 1.8214212 | 1.7013872 | 1.6453914 | 1.5479625 |  | 1.7484 | AVRG  | E5  | 10.5152 |
| 22) EL5 | Aroclor-1248 {3} |    | 2.3614569 | 2.1319916 | 2.0118395 | 1.9788445 | 1.8778388 |  | 2.0724 | AVRG  | E5  | 8.9425  |
| 23) EL5 | Aroclor-1248 {4} |    | 2.4709603 | 2.3164496 | 2.2143397 | 2.2059324 | 2.1677228 |  | 2.2751 | AVRG  | E5  | 5.3868  |



Response Factor Report ECD8  
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110916.B\ECD8\_8082\_103116.m

Last Update : Tue Nov 01 04:35:57 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$

| b       | Compound<br>m1   | m2 | 1         | 2         | 3         | 4         | 5         |  | Avg    | Curve | Exp | %RSD/r2 |
|---------|------------------|----|-----------|-----------|-----------|-----------|-----------|--|--------|-------|-----|---------|
| 24)EL5  | Aroclor-1248 {5} |    | 2.5059822 | 2.3057449 | 2.2521557 | 2.1914245 | 2.2703310 |  | 2.3051 | AVRG  | E5  | 5.1917  |
| 25)BL6  | Aroclor-1254     |    | 2.7431401 | 2.6260224 | 2.4697202 | 2.4150185 | 2.2712778 |  | 2.5050 | AVRG  | E5  | 7.3425  |
| 26)BL6  | Aroclor-1254 {2} |    | 2.9690234 | 2.7484398 | 2.5680445 | 2.5975366 | 2.5118942 |  | 2.6790 | AVRG  | E5  | 6.8780  |
| 27)BL6  | Aroclor-1254 {3} |    | 3.8063929 | 3.6908703 | 3.5876232 | 3.6368325 | 3.5211739 |  | 3.6486 | AVRG  | E5  | 2.9640  |
| 28)BL6  | Aroclor-1254 {4} |    | 2.7090604 | 2.5815891 | 2.6140724 | 2.5218891 | 2.4864824 |  | 2.5826 | AVRG  | E5  | 3.3481  |
| 29)BL6  | Aroclor-1254 {5} |    | 1.8623325 | 1.7484016 | 1.6917753 | 1.6882835 | 1.6233151 |  | 1.7228 | AVRG  | E5  | 5.2059  |
| 30)MAL7 | Aroclor-1260     |    | 2.9551701 | 3.1517751 | 2.9961193 | 3.0452529 | 2.8629760 |  | 3.0023 | AVRG  | E5  | 3.5664  |
| 31)MAL7 | Aroclor-1260 {2} |    | 4.0410024 | 3.6704148 | 3.7230775 | 3.6798681 | 3.5205570 |  | 3.7270 | AVRG  | E5  | 5.1376  |
| 32)MAL7 | Aroclor-1260 {3} |    | 2.7954522 | 2.6770693 | 2.5528768 | 2.5285102 | 2.3864259 |  | 2.5881 | AVRG  | E5  | 5.9976  |
| 33)MAL7 | Aroclor-1260 {4} |    | 5.8991764 | 5.9384139 | 5.7354831 | 5.7769092 | 5.5489358 |  | 5.7798 | AVRG  | E5  | 2.6619  |
| 34)MAL7 | Aroclor-1260 {5} |    | 4.4402466 | 4.1456397 | 3.9672999 | 3.9640611 | 3.9340733 |  | 4.0903 | AVRG  | E5  | 5.2006  |
| 35)KL8  | Aroclor-1262     |    | 2.5737152 | 2.3491708 | 2.2967839 | 2.1903452 | 2.2034906 |  | 2.3227 | AVRG  | E5  | 6.6736  |
| 36)KL8  | Aroclor-1262 {2} |    | 3.6980049 | 3.4708152 | 3.4228642 | 3.3634248 | 3.3103302 |  | 3.4531 | AVRG  | E5  | 4.3350  |
| 37)KL8  | Aroclor-1262 {3} |    | 3.3532231 | 3.1390538 | 3.1110262 | 3.0501050 | 2.9978067 |  | 3.1302 | AVRG  | E5  | 4.3490  |
| 38)KL8  | Aroclor-1262 {4} |    | 6.2071804 | 5.9628376 | 6.0331156 | 5.9864738 | 5.9905163 |  | 6.0360 | AVRG  | E5  | 1.6398  |

## Response Factor Report ECD8

GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110916.B\ECD8\_8082\_103116.m

Last Update : Tue Nov 01 04:35:57 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

For Linear Calibration:  $x$  = concentration ratio,  $y$  = response ratio.  $y = b + m1(x) + m2(xE2)$ 

| b      | Compound<br>m1   | m2 | 1         | 2         | 3         | 4         | 5         |  | Avg    | Curve | Exp | %RSD/r2 |
|--------|------------------|----|-----------|-----------|-----------|-----------|-----------|--|--------|-------|-----|---------|
| 39)KL8 | Aroclor-1262 {5} |    | 4.6344219 | 4.3679039 | 4.3267313 | 4.2803334 | 4.1911916 |  | 4.3601 | AVRG  | E5  | 3.8261  |
| 40)OL9 | Aroclor-1268     |    | 8.7425210 | 8.4330129 | 8.3948752 | 8.4717853 | 8.4701980 |  | 8.5025 | AVRG  | E5  | 1.6213  |
| 41)OL9 | Aroclor-1268 {2} |    | 7.6083650 | 7.2703510 | 7.2271715 | 7.3504920 | 7.4628907 |  | 7.3839 | AVRG  | E5  | 2.0893  |
| 42)OL9 | Aroclor-1268 {3} |    | 5.9597957 | 5.7978851 | 5.7761733 | 5.8646730 | 5.9684242 |  | 5.8734 | AVRG  | E5  | 1.5163  |
| 43)OL9 | Aroclor-1268 {4} |    | 2.6451366 | 2.4835789 | 2.3262956 | 2.3419515 | 2.4323409 |  | 2.4459 | AVRG  | E5  | 5.2681  |
| 44)OL9 | Aroclor-1268 {5} |    | 1.6150473 | 1.6065393 | 1.6180702 | 1.6633004 | 1.7192889 |  | 1.6444 | AVRG  | E6  | 2.8771  |
| 45)X   | 4,4' DDT         |    |           |           |           | 1.6641672 |           |  | 1.6642 | AVRG  | E6  | 0.0000  |
| 46)X   | 4,4' DDD         |    |           |           |           | 2.7383781 |           |  | 2.7384 | AVRG  | E6  | 0.0000  |
| 47)X   | 4,4' DDE         |    |           |           |           | 3.7621182 |           |  | 3.7621 | AVRG  | E6  | 0.0000  |
| 48)SA  | DCB              |    | 5.1195834 | 4.6132425 | 4.3339771 | 4.5205898 | 4.3940294 |  | 4.5963 | AVRG  | E6  | 6.7898  |

(#)= Out of Range (\$) = Individual RF Out of Range ### Number of calibration levels exceeded format ###

AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

COMPOUND LISTING  
GEL Laboratories, LLC

Method File : C:\msdchem\1\DATA\110916.B\ECD8\_8082\_103116.m

Last Update : Tue Nov 01 04:35:57 2016

Integrator : (ChemStation Integrator)

Response via : Initial Calibration

Integration Parameter File: autoint1.e

```

*** Integrator Events ***
Initial Threshold      20.0
Initial Peak Width    0.003
Initial Area Reject   0.0
Shoulders OFF
2.600 Peak Width 0.010

```

Integration Parameter File: autoint2.e

```

*** Integrator Events ***
Initial Threshold      20.0
Initial Peak Width    0.005
Initial Area Reject   0.0
Shoulders OFF

```

| Compound                | RT    | RT Window    |
|-------------------------|-------|--------------|
| 1)SA 4CMX               | 2.150 | 2.120- 2.180 |
| 2)MAL1Aroclor-1016      | 2.698 | 2.668- 2.728 |
| 3)MAL1Aroclor-1016 {2}  | 3.138 | 3.108- 3.168 |
| 4)MAL1Aroclor-1016 {3}  | 3.184 | 3.154- 3.214 |
| 5)MAL1Aroclor-1016 {4}  | 3.276 | 3.246- 3.306 |
| 6)MAL1Aroclor-1016 {5}  | 3.436 | 3.406- 3.466 |
| 7)JL2 Aroclor-1221      | 2.290 | 2.260- 2.320 |
| 8)JL2 Aroclor-1221 {2}  | 2.401 | 2.371- 2.431 |
| 9)JL2 Aroclor-1221 {3}  | 2.432 | 2.402- 2.462 |
| 10)FL3 Aroclor-1232     | 2.697 | 2.667- 2.727 |
| 11)FL3 Aroclor-1232 {2} | 3.042 | 3.012- 3.072 |
| 12)FL3 Aroclor-1232 {3} | 3.138 | 3.108- 3.168 |
| 13)FL3 Aroclor-1232 {4} | 3.276 | 3.246- 3.306 |
| 14)FL3 Aroclor-1232 {5} | 3.435 | 3.405- 3.465 |
| 15)DL4 Aroclor-1242     | 2.698 | 2.668- 2.728 |
| 16)DL4 Aroclor-1242 {2} | 3.138 | 3.108- 3.168 |
| 17)DL4 Aroclor-1242 {3} | 3.184 | 3.154- 3.214 |
| 18)DL4 Aroclor-1242 {4} | 3.276 | 3.246- 3.306 |
| 19)DL4 Aroclor-1242 {5} | 3.435 | 3.405- 3.465 |
| 20)EL5 Aroclor-1248     | 3.043 | 3.013- 3.073 |
| 21)EL5 Aroclor-1248 {2} | 3.277 | 3.247- 3.307 |
| 22)EL5 Aroclor-1248 {3} | 3.436 | 3.406- 3.466 |
| 23)EL5 Aroclor-1248 {4} | 3.740 | 3.710- 3.770 |
| 24)EL5 Aroclor-1248 {5} | 3.897 | 3.867- 3.927 |
| 25)BL6 Aroclor-1254     | 3.708 | 3.678- 3.738 |
| 26)BL6 Aroclor-1254 {2} | 3.894 | 3.864- 3.924 |
| 27)BL6 Aroclor-1254 {3} | 4.173 | 4.143- 4.203 |
| 28)BL6 Aroclor-1254 {4} | 4.368 | 4.338- 4.398 |
| 29)BL6 Aroclor-1254 {5} | 4.497 | 4.467- 4.527 |
| 30)MAL7Aroclor-1260     | 4.301 | 4.271- 4.331 |
| 31)MAL7Aroclor-1260 {2} | 4.496 | 4.466- 4.526 |
| 32)MAL7Aroclor-1260 {3} | 4.770 | 4.740- 4.800 |
| 33)MAL7Aroclor-1260 {4} | 5.155 | 5.125- 5.185 |
| 34)MAL7Aroclor-1260 {5} | 5.350 | 5.320- 5.380 |
| 35)KL8 Aroclor-1262     | 4.300 | 4.275- 4.330 |
| 36)KL8 Aroclor-1262 {2} | 4.495 | 4.470- 4.525 |
| 37)KL8 Aroclor-1262 {3} | 4.939 | 4.914- 4.969 |
| 38)KL8 Aroclor-1262 {4} | 5.155 | 5.130- 5.185 |
| 39)KL8 Aroclor-1262 {5} | 5.373 | 5.348- 5.403 |
| 40)OL9 Aroclor-1268     | 5.374 | 5.349- 5.404 |
| 41)OL9 Aroclor-1268 {2} | 5.400 | 5.375- 5.430 |

|                            |       |              |
|----------------------------|-------|--------------|
| 42)OL9 Aroclor-1268 {3}    | 5.533 | 5.508- 5.563 |
| 43)OL9 Aroclor-1268 {4}    | 5.778 | 5.753- 5.808 |
| 44)OL9 Aroclor-1268 {5}    | 5.974 | 5.949- 6.004 |
| 45)X 4,4' DDT              | 4.716 | 4.691- 4.746 |
| 46)X 4,4' DDD              | 4.522 | 4.497- 4.552 |
| 47)X 4,4' DDE              | 4.103 | 4.073- 4.133 |
| 48)SA DCB                  | 6.104 | 6.074- 6.134 |
| 49) Column #2              | 4.816 | 4.786- 4.846 |
| 50)SA 4CMX #2              | 2.584 | 2.554- 2.614 |
| 51)MAL1Aroclor-1016 #2     | 3.309 | 3.279- 3.339 |
| 52)MAL1Aroclor-1016 {2} #2 | 3.762 | 3.732- 3.792 |
| 53)MAL1Aroclor-1016 {3} #2 | 3.838 | 3.808- 3.868 |
| 54)MAL1Aroclor-1016 {4} #2 | 3.910 | 3.880- 3.940 |
| 55)MAL1Aroclor-1016 {5} #2 | 4.109 | 4.079- 4.139 |
| 56)JL2 Aroclor-1221 #2     | 2.828 | 2.798- 2.858 |
| 57)JL2 Aroclor-1221 {2} #2 | 2.943 | 2.913- 2.973 |
| 58)JL2 Aroclor-1221 {3} #2 | 2.991 | 2.961- 3.021 |
| 59)FL3 Aroclor-1232 #2     | 3.308 | 3.278- 3.338 |
| 60)FL3 Aroclor-1232 {2} #2 | 3.661 | 3.631- 3.691 |
| 61)FL3 Aroclor-1232 {3} #2 | 3.761 | 3.731- 3.791 |
| 62)FL3 Aroclor-1232 {4} #2 | 3.839 | 3.809- 3.869 |
| 63)FL3 Aroclor-1232 {5} #2 | 4.109 | 4.079- 4.139 |
| 64)DL4 Aroclor-1242 #2     | 3.309 | 3.279- 3.339 |
| 65)DL4 Aroclor-1242 {2} #2 | 3.761 | 3.731- 3.791 |
| 66)DL4 Aroclor-1242 {3} #2 | 3.839 | 3.809- 3.869 |
| 67)DL4 Aroclor-1242 {4} #2 | 3.910 | 3.880- 3.940 |
| 68)DL4 Aroclor-1242 {5} #2 | 4.109 | 4.079- 4.139 |
| 69)EL5 Aroclor-1248 #2     | 3.648 | 3.618- 3.678 |
| 70)EL5 Aroclor-1248 {2} #2 | 3.911 | 3.881- 3.941 |
| 71)EL5 Aroclor-1248 {3} #2 | 4.109 | 4.079- 4.139 |
| 72)EL5 Aroclor-1248 {4} #2 | 4.384 | 4.354- 4.414 |
| 73)EL5 Aroclor-1248 {5} #2 | 4.582 | 4.552- 4.612 |
| 74)BL6 Aroclor-1254 #2     | 4.414 | 4.384- 4.444 |
| 75)BL6 Aroclor-1254 {2} #2 | 4.550 | 4.520- 4.580 |
| 76)BL6 Aroclor-1254 {3} #2 | 4.880 | 4.850- 4.910 |
| 77)BL6 Aroclor-1254 {4} #2 | 5.039 | 5.009- 5.069 |
| 78)BL6 Aroclor-1254 {5} #2 | 5.162 | 5.132- 5.197 |
| 79)MAL7Aroclor-1260 #2     | 5.018 | 4.988- 5.048 |
| 80)MAL7Aroclor-1260 {2} #2 | 5.163 | 5.133- 5.193 |
| 81)MAL7Aroclor-1260 {3} #2 | 5.479 | 5.449- 5.509 |
| 82)MAL7Aroclor-1260 {4} #2 | 5.859 | 5.830- 5.890 |
| 83)MAL7Aroclor-1260 {5} #2 | 6.118 | 6.088- 6.148 |
| 84)KL8 Aroclor-1262 #2     | 5.162 | 5.132- 5.192 |
| 85)KL8 Aroclor-1262 {2} #2 | 5.478 | 5.448- 5.508 |
| 86)KL8 Aroclor-1262 {3} #2 | 5.686 | 5.656- 5.716 |
| 87)KL8 Aroclor-1262 {4} #2 | 5.859 | 5.829- 5.889 |
| 88)KL8 Aroclor-1262 {5} #2 | 6.111 | 6.081- 6.141 |
| 89)OL9 Aroclor-1268 #2     | 6.110 | 6.080- 6.140 |
| 90)OL9 Aroclor-1268 {2} #2 | 6.142 | 6.112- 6.172 |
| 91)OL9 Aroclor-1268 {3} #2 | 6.320 | 6.290- 6.350 |
| 92)OL9 Aroclor-1268 {4} #2 | 6.516 | 6.486- 6.546 |
| 93)OL9 Aroclor-1268 {5} #2 | 6.744 | 6.714- 6.774 |
| 94)X 4,4' DDT #2           | 5.415 | 5.385- 5.445 |
| 95)X 4,4' DDD #2           | 5.196 | 5.166- 5.226 |
| 96)X 4,4' DDE #2           | 4.783 | 4.483- 5.083 |
| 97)SA DCB #2               | 6.924 | 6.894- 6.954 |

ECD8\_8082\_103116.m Wed Nov 09 10:08:58 2016

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3113.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 31 Oct 2016 09:17 (#1); 31 Oct 2016 9:17 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR161031-01|ICAL|1|SVA|1|1660-1  
Misc : |MIX[A]  
ALS Vial : 13 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

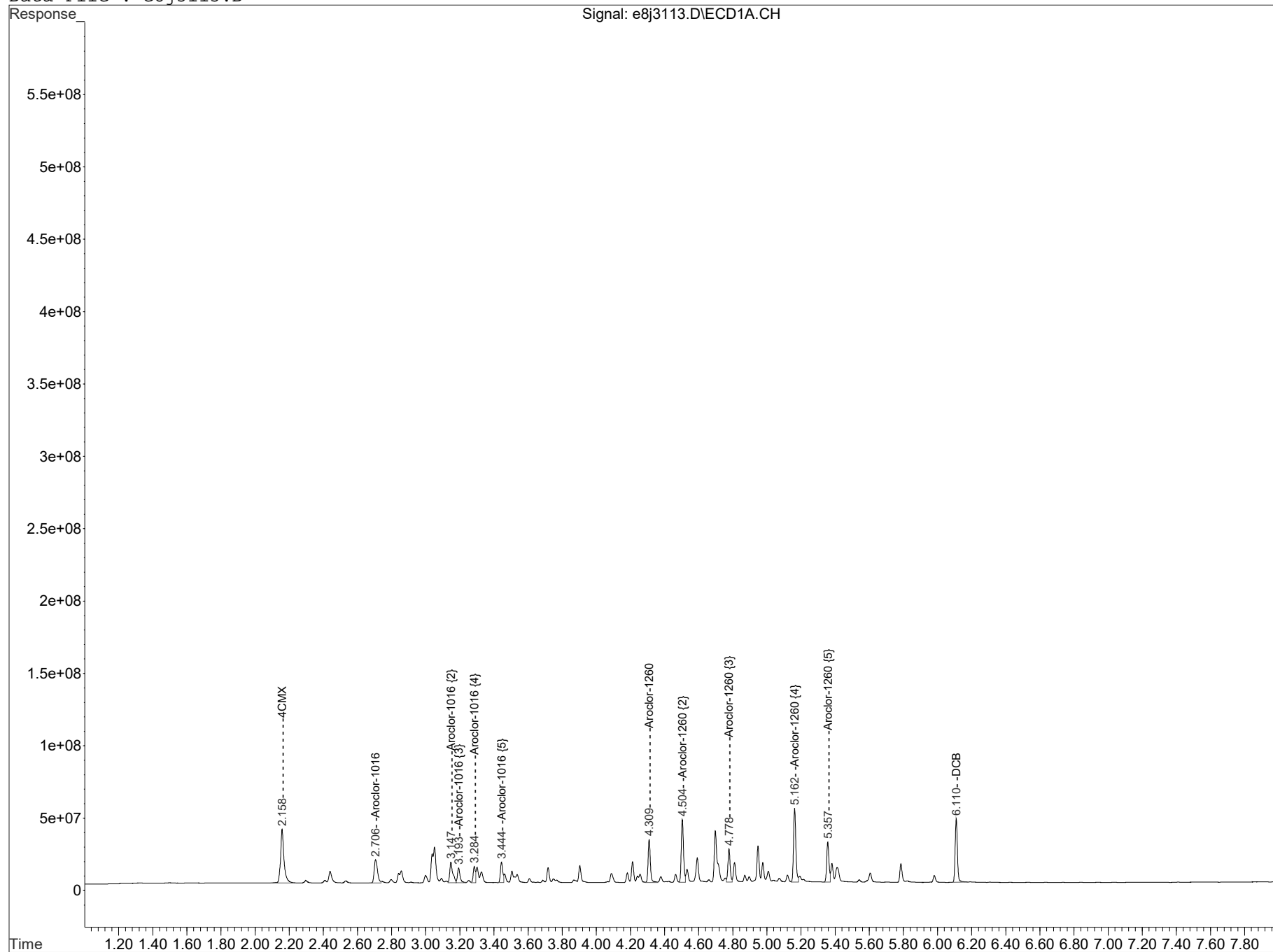
Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 01 04:14:11 2016  
Quant Method : C:\msdchem\1\DATA\103116.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:13:33 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1 | Resp#1     | ug/L#1  | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2  |
|-----------------------------|-------|-------|-------|------------|---------|-------|-------|-------|-----------|---------|
| System Monitoring Compounds |       |       |       |            |         |       |       |       |           |         |
| 4CMX                        | 2.154 | 2.158 | 0.004 | 513131036  | 10.677  | 2.587 | 2.588 | 0.001 | 65125240  | 10.531  |
| DCB                         | 6.103 | 6.110 | 0.007 | 404861249  | 10.566  | 6.923 | 6.926 | 0.003 | 51195834  | 11.139  |
| Target Compounds            |       |       |       |            |         |       |       |       |           |         |
| Compound                    | Exp#1 | RT#1  | Dlt#1 | Resp#1     | ug/L#1  | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2  |
| Aroclor-1016                | 2.700 | 2.706 | 0.006 | 215155886  | 117.044 | 3.310 | 3.312 | 0.002 | 30609455  | 115.191 |
| Aroclor-1016 {2}            | 3.140 | 3.148 | 0.008 | 176464932  | 113.786 | 3.762 | 3.765 | 0.003 | 20714190  | 109.835 |
| Aroclor-1016 {3}            | 3.186 | 3.193 | 0.007 | 107854197  | 112.199 | 3.839 | 3.841 | 0.002 | 12835571  | 111.104 |
| Aroclor-1016 {4}            | 3.278 | 3.285 | 0.007 | 94564524   | 112.574 | 3.911 | 3.913 | 0.002 | 14541345  | 115.329 |
| Aroclor-1016 {5}            | 3.437 | 3.444 | 0.007 | 130916331  | 111.650 | 4.109 | 4.111 | 0.002 | 17748171  | 112.168 |
| Sum Aroclor-1016            |       |       |       | 724955870  | 567.253 |       |       |       | 96448734  | 563.627 |
| Average Aroclor-1016        |       |       |       |            | 113.451 |       |       |       |           | 112.725 |
| Aroclor-1260                | 4.303 | 4.310 | 0.007 | 271123845  | 108.652 | 5.017 | 5.019 | 0.002 | 29551701  | 98.432  |
| Aroclor-1260 {2}            | 4.497 | 4.504 | 0.007 | 397271868  | 105.763 | 5.162 | 5.165 | 0.003 | 40410024  | 108.426 |
| Aroclor-1260 {3}            | 4.770 | 4.778 | 0.008 | 209545459  | 108.873 | 5.478 | 5.480 | 0.002 | 27954522  | 108.013 |
| Aroclor-1260 {4}            | 5.155 | 5.162 | 0.007 | 478500006  | 103.713 | 5.859 | 5.862 | 0.003 | 58991764  | 102.066 |
| Aroclor-1260 {5}            | 5.350 | 5.357 | 0.007 | 253229452  | 103.013 | 6.117 | 6.120 | 0.003 | 44402466  | 108.556 |
| Sum Aroclor-1260            |       |       |       | 1609670630 | 530.014 |       |       |       | 201310478 | 525.492 |
| Average Aroclor-1260        |       |       |       |            | 106.003 |       |       |       |           | 105.098 |

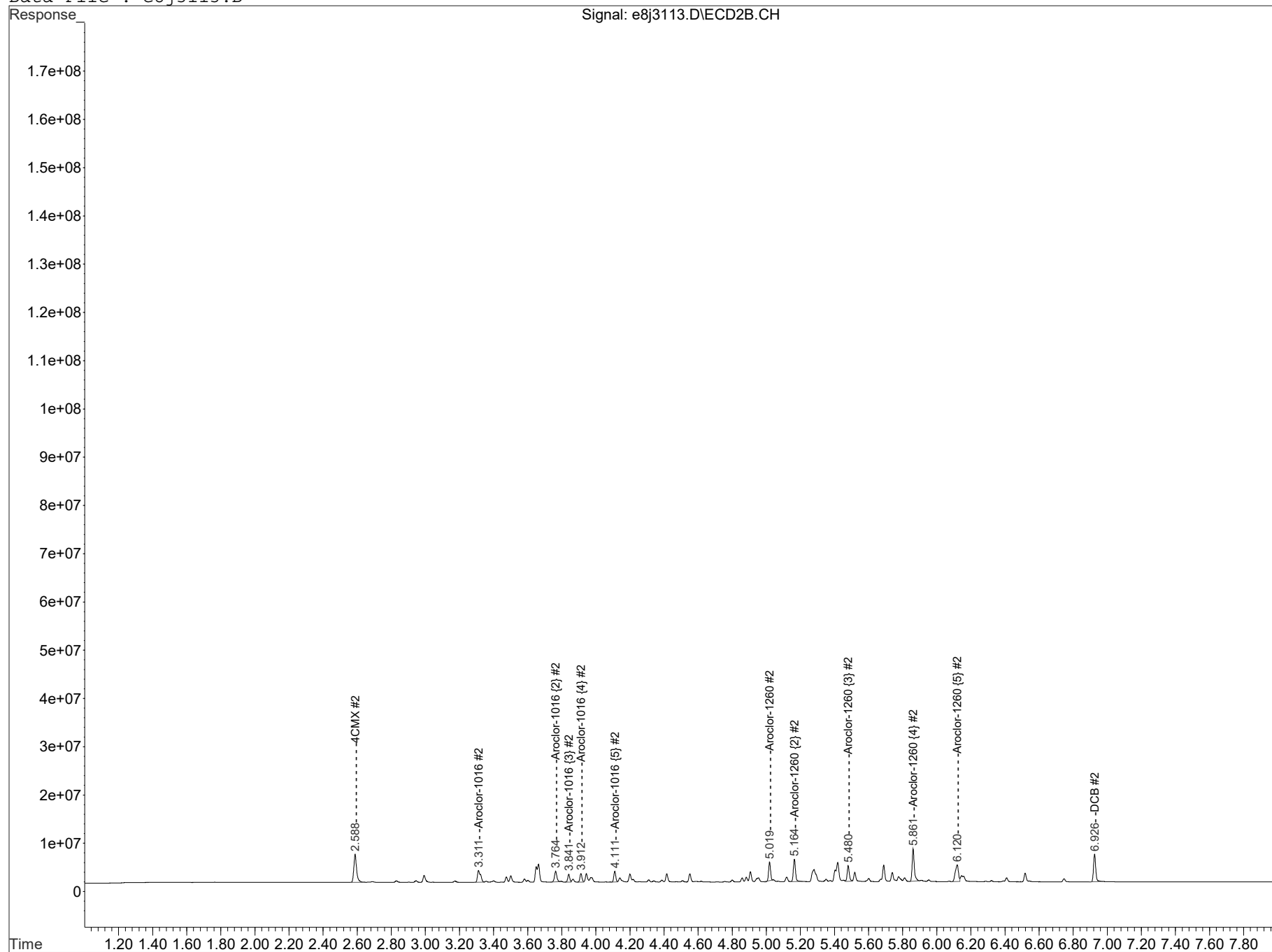
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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3113.D



Data Path : C:\msdchem\1\DATA\103116.B\

Data File : e8j3113.D



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3114.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 31 Oct 2016 09:30 (#1); 31 Oct 2016 9:30 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR161031-02|ICAL|1|SVA|1|1660-2  
Misc : |MIX[A]  
ALS Vial : 14 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 01 04:14:14 2016  
Quant Method : C:\msdchem\1\DATA\103116.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:13:33 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

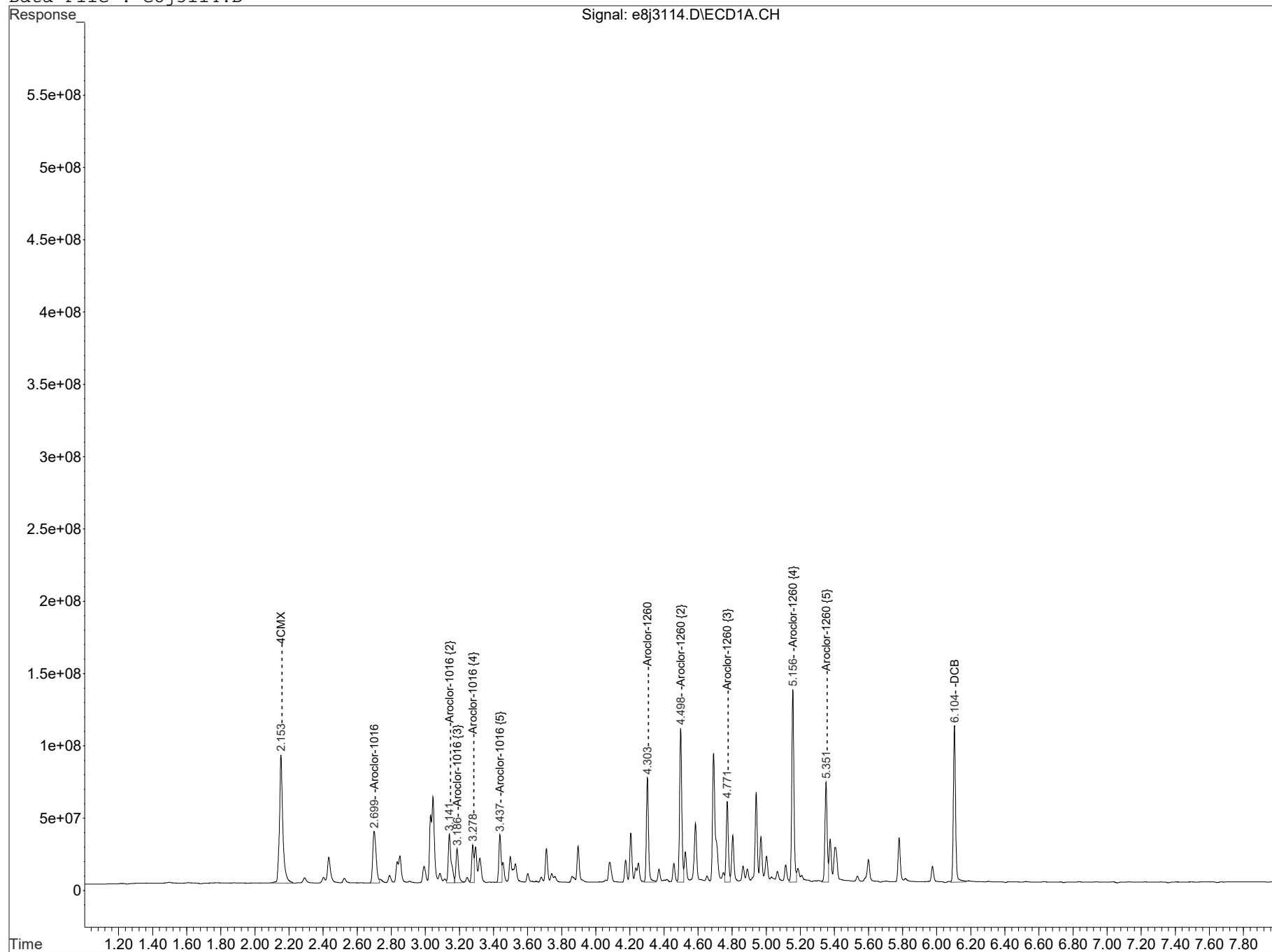
Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2    | ug/L#2   |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|--------|-----------|----------|
| System Monitoring Compounds |       |       |        |            |          |       |       |        |           |          |
| 4CMX                        | 2.154 | 2.153 | -0.001 | 1221292189 | 25.411   | 2.587 | 2.586 | -0.001 | 156100532 | 25.243   |
| DCB                         | 6.103 | 6.105 | 0.002  | 986263525  | 25.739   | 6.923 | 6.923 | 0.000  | 115331061 | 25.092   |
| Target Compounds            |       |       |        |            |          |       |       |        |           |          |
| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2    | ug/L#2   |
| Aroclor-1016                | 2.700 | 2.700 | 0.000  | 489947879  | 266.530  | 3.310 | 3.310 | 0.000  | 71183996  | 267.883  |
| Aroclor-1016 {2}            | 3.140 | 3.141 | 0.001  | 404266063  | 260.673  | 3.762 | 3.762 | 0.000  | 47327128  | 250.948  |
| Aroclor-1016 {3}            | 3.186 | 3.186 | 0.000  | 251268550  | 261.390  | 3.839 | 3.839 | 0.000  | 29835533  | 258.255  |
| Aroclor-1016 {4}            | 3.278 | 3.278 | 0.000  | 217719843  | 259.184  | 3.911 | 3.910 | -0.001 | 33067806  | 262.265  |
| Aroclor-1016 {5}            | 3.437 | 3.438 | 0.001  | 300748844  | 256.490  | 4.109 | 4.109 | 0.000  | 41310566  | 261.081  |
| Sum Aroclor-1016            |       |       |        | 1663951178 | 1304.268 |       |       |        | 222725029 | 1300.431 |
| Average Aroclor-1016        |       |       |        |            | 260.854  |       |       |        |           | 260.086  |
| Aroclor-1260                | 4.303 | 4.303 | 0.000  | 641246669  | 256.978  | 5.017 | 5.017 | 0.000  | 78794376  | 262.450  |
| Aroclor-1260 {2}            | 4.497 | 4.498 | 0.001  | 958953805  | 255.296  | 5.162 | 5.162 | 0.000  | 91760369  | 246.205  |
| Aroclor-1260 {3}            | 4.770 | 4.772 | 0.002  | 496249066  | 257.835  | 5.478 | 5.478 | 0.000  | 66926731  | 258.597  |
| Aroclor-1260 {4}            | 5.155 | 5.156 | 0.001  | 1176211322 | 254.938  | 5.859 | 5.859 | 0.000  | 148460348 | 256.861  |
| Aroclor-1260 {5}            | 5.350 | 5.351 | 0.001  | 626735665  | 254.955  | 6.117 | 6.118 | 0.001  | 103640994 | 253.385  |
| Sum Aroclor-1260            |       |       |        | 3899396527 | 1280.001 |       |       |        | 489582818 | 1277.499 |
| Average Aroclor-1260        |       |       |        |            | 256.000  |       |       |        |           | 255.500  |

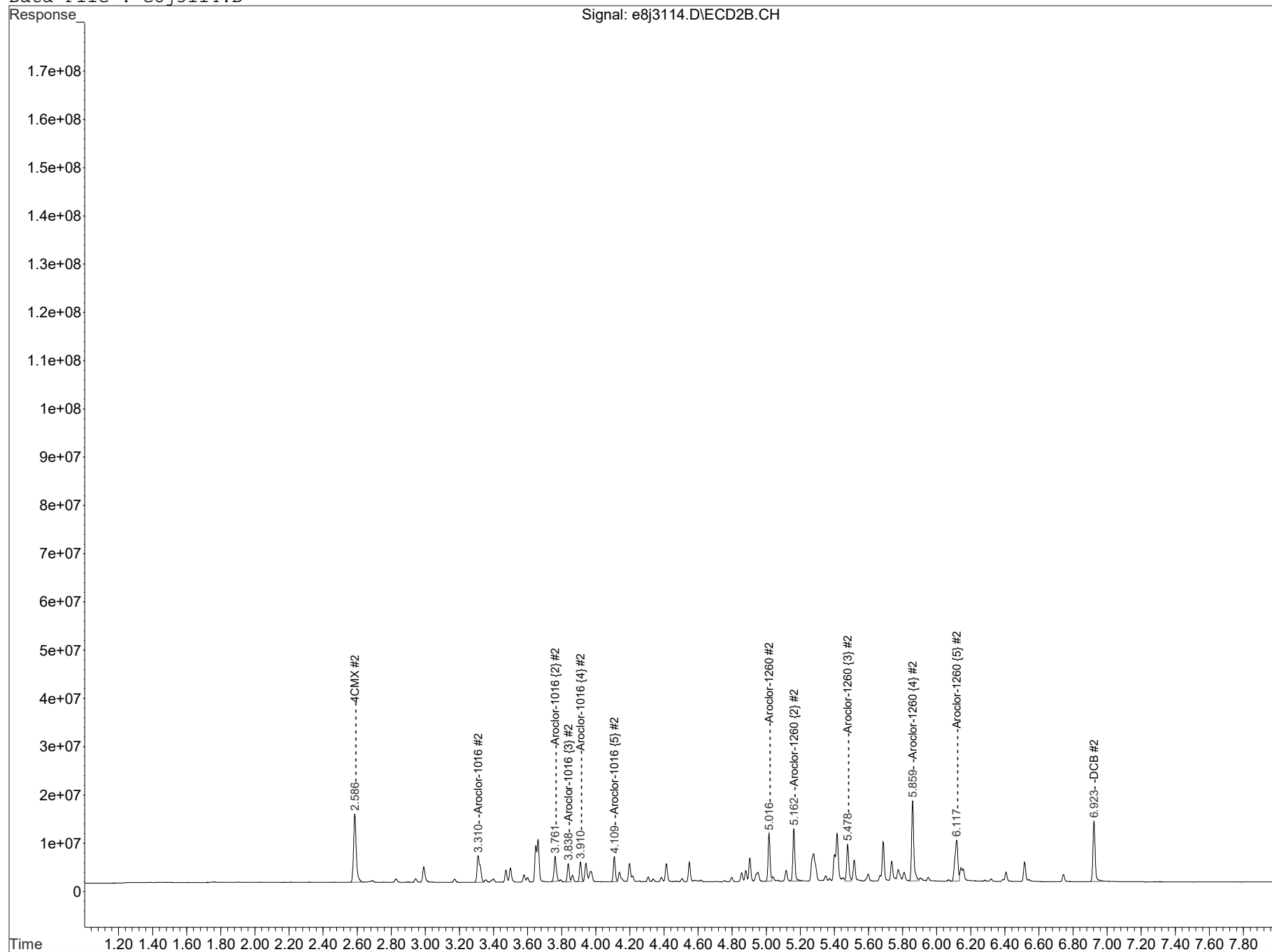
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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted



Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3114.D



Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3114.D



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3115.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 31 Oct 2016 09:42 (#1); 31 Oct 2016 9:42 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR161031-03|ICAL|1|SVA|1|1660-3  
Misc : |MIX[A]  
ALS Vial : 15 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 01 04:14:17 2016  
Quant Method : C:\msdchem\1\DATA\103116.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:13:33 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

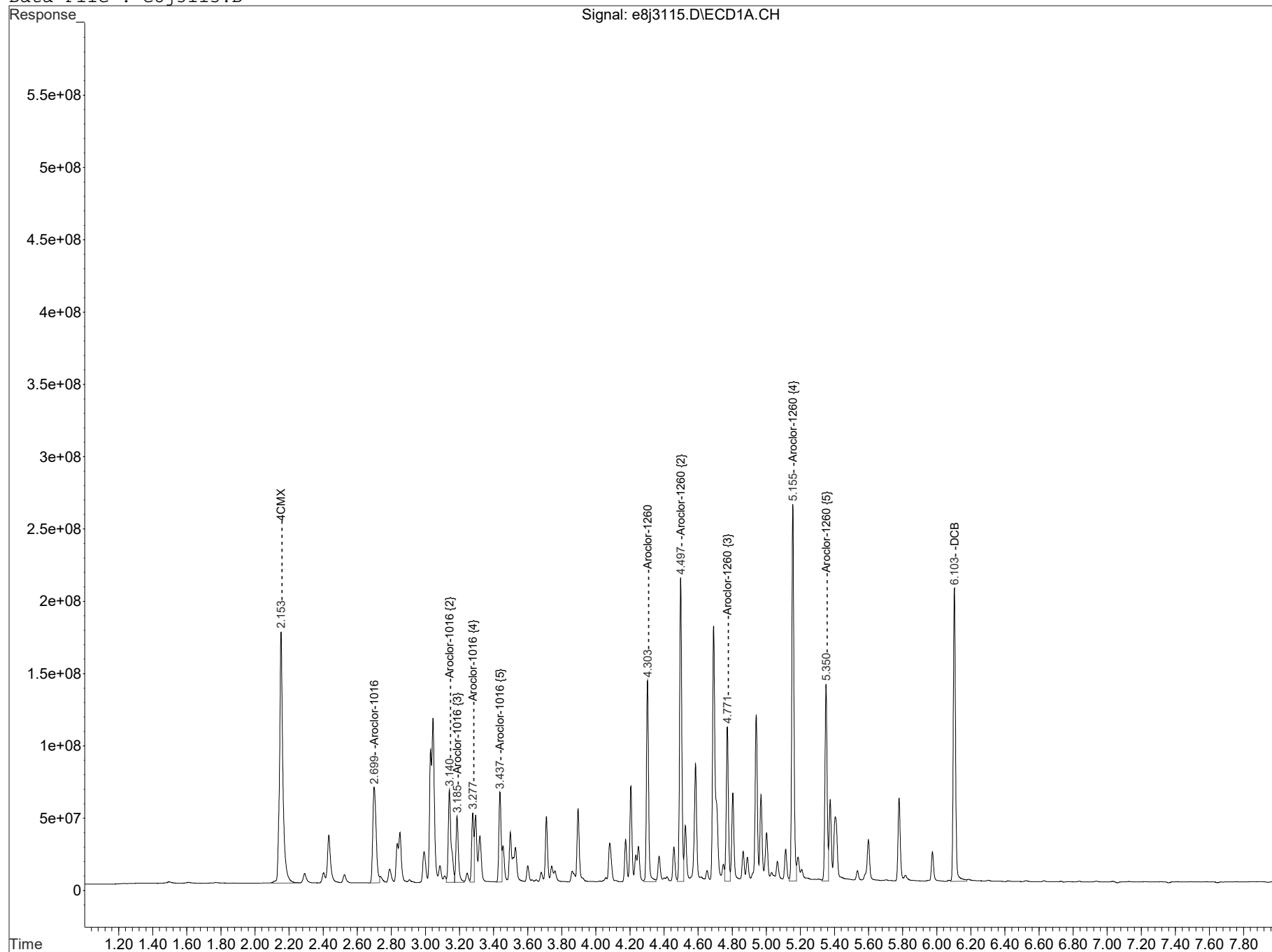
Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2   |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|-------|-----------|----------|
| System Monitoring Compounds |       |       |        |            |          |       |       |       |           |          |
| 4CMX                        | 2.154 | 2.153 | -0.001 | 2366950988 | 49.249   | 2.587 | 2.587 | 0.000 | 304471146 | 49.236   |
| DCB                         | 6.103 | 6.104 | 0.001  | 1869448379 | 48.789   | 6.923 | 6.924 | 0.001 | 216698856 | 47.147   |
| Target Compounds            |       |       |        |            |          |       |       |       |           |          |
| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2   |
| Aroclor-1016                | 2.700 | 2.699 | -0.001 | 908099181  | 494.004  | 3.310 | 3.310 | 0.000 | 131459417 | 494.714  |
| Aroclor-1016 {2}            | 3.140 | 3.141 | 0.001  | 753882329  | 486.108  | 3.762 | 3.762 | 0.000 | 94095428  | 498.933  |
| Aroclor-1016 {3}            | 3.186 | 3.186 | 0.000  | 465216251  | 483.957  | 3.839 | 3.839 | 0.000 | 56359942  | 487.848  |
| Aroclor-1016 {4}            | 3.278 | 3.278 | 0.000  | 404507466  | 481.545  | 3.911 | 3.911 | 0.000 | 60978274  | 483.627  |
| Aroclor-1016 {5}            | 3.437 | 3.437 | 0.000  | 570999519  | 486.969  | 4.109 | 4.109 | 0.000 | 77117776  | 487.381  |
| Sum Aroclor-1016            |       |       |        | 3102704746 | 2432.582 |       |       |       | 420010837 | 2452.503 |
| Average Aroclor-1016        |       |       |        |            | 486.516  |       |       |       |           | 490.501  |
| Aroclor-1260                | 4.303 | 4.303 | 0.000  | 1222641834 | 489.970  | 5.017 | 5.017 | 0.000 | 149805965 | 498.978  |
| Aroclor-1260 {2}            | 4.497 | 4.498 | 0.001  | 1861517824 | 495.581  | 5.162 | 5.163 | 0.001 | 186153877 | 499.476  |
| Aroclor-1260 {3}            | 4.770 | 4.771 | 0.001  | 938803917  | 487.771  | 5.478 | 5.479 | 0.001 | 127643839 | 493.201  |
| Aroclor-1260 {4}            | 5.155 | 5.156 | 0.001  | 2286298961 | 495.544  | 5.859 | 5.860 | 0.001 | 286774157 | 496.168  |
| Aroclor-1260 {5}            | 5.350 | 5.351 | 0.001  | 1199179518 | 487.824  | 6.117 | 6.118 | 0.001 | 198364996 | 484.969  |
| Sum Aroclor-1260            |       |       |        | 7508442053 | 2456.690 |       |       |       | 948742834 | 2472.791 |
| Average Aroclor-1260        |       |       |        |            | 491.338  |       |       |       |           | 494.558  |

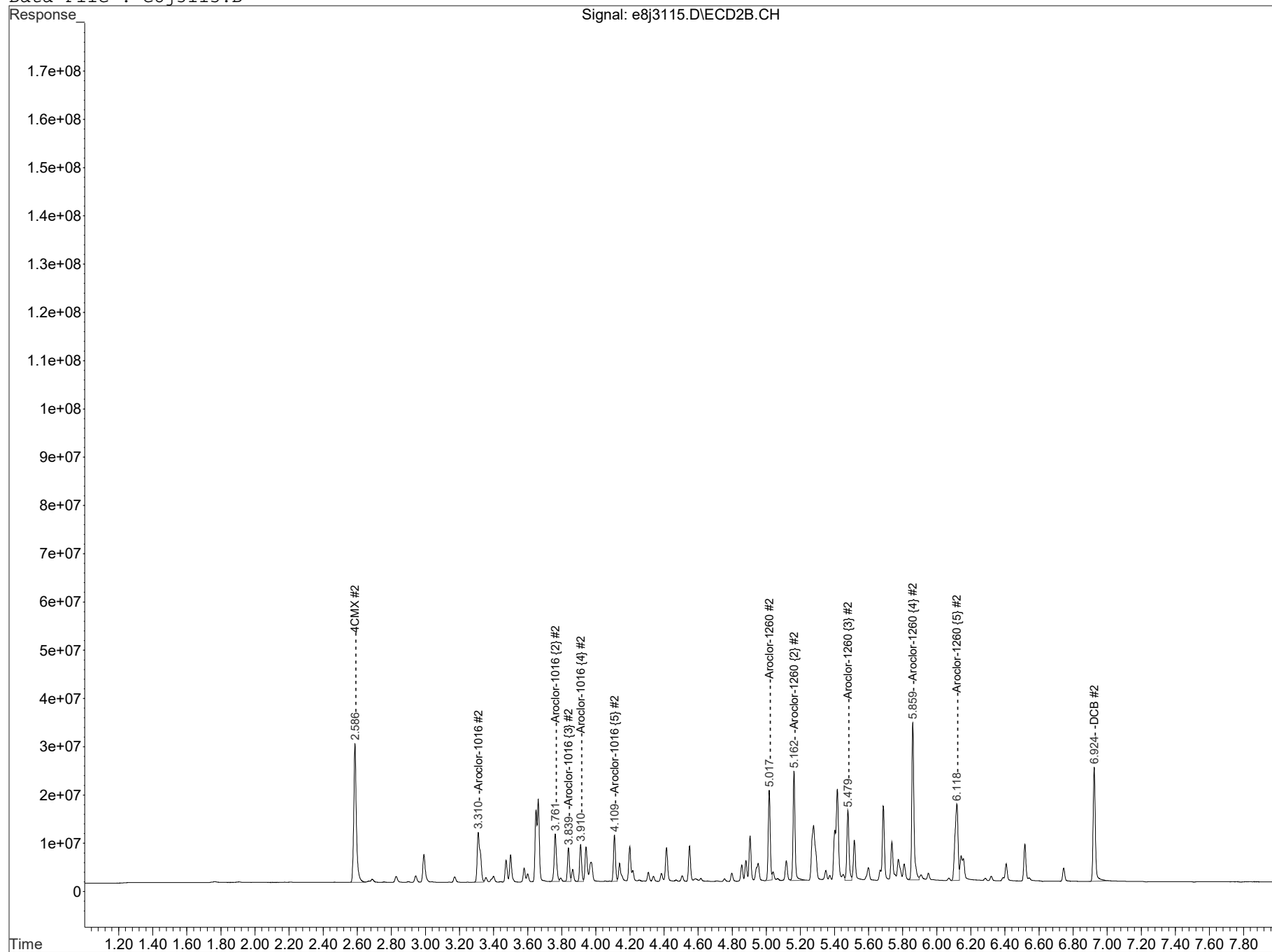
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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\103116.B\

Data File : e8j3115.D



Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3115.D



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3116.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 31 Oct 2016 09:54 (#1); 31 Oct 2016 9:54 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR161031-04|ICAL|1|SVA|1|1660-4  
Misc : |MIX[A]  
ALS Vial : 16 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

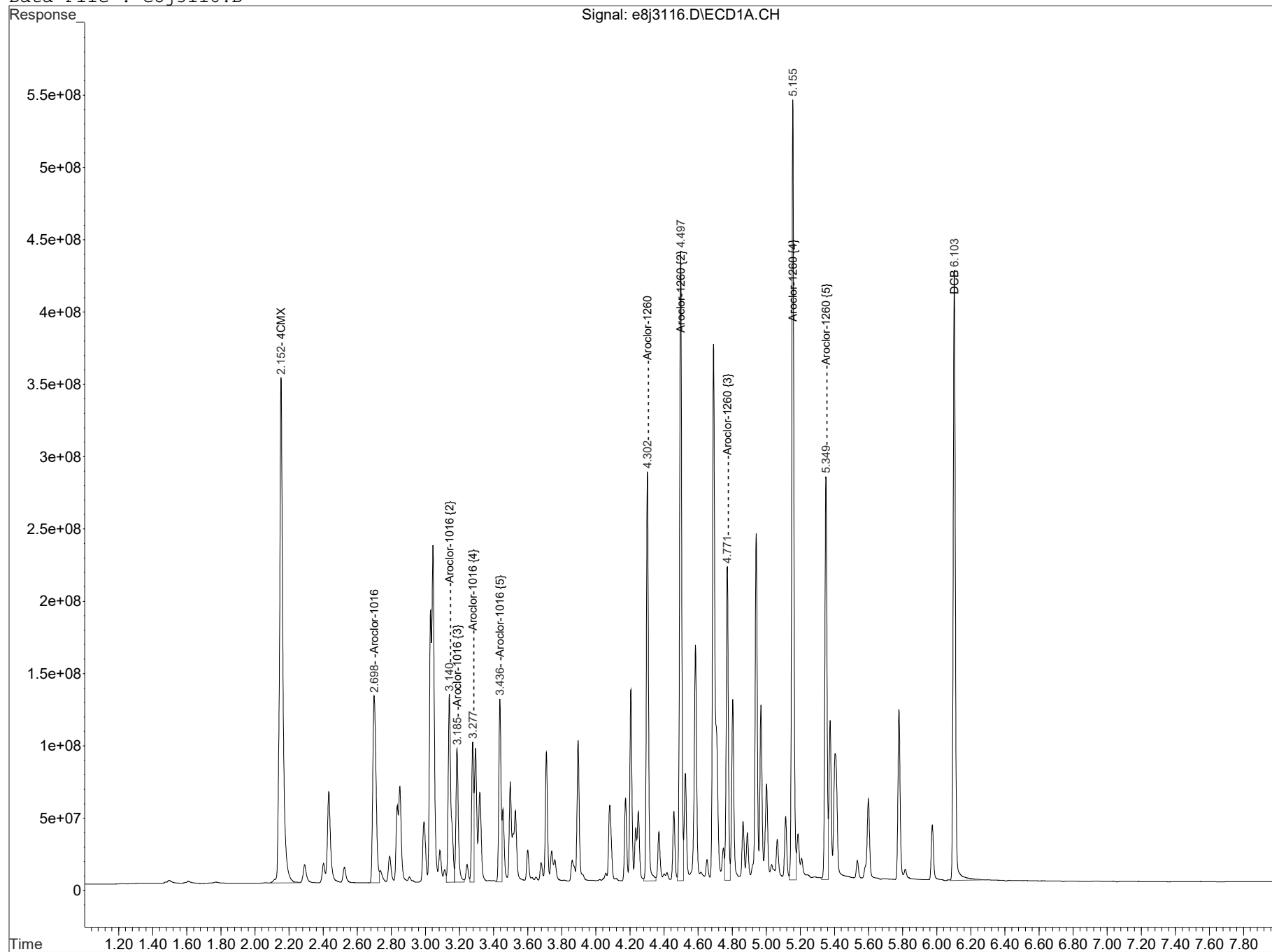
Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 01 04:14:20 2016  
Quant Method : C:\msdchem\1\DATA\103116.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:13:33 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

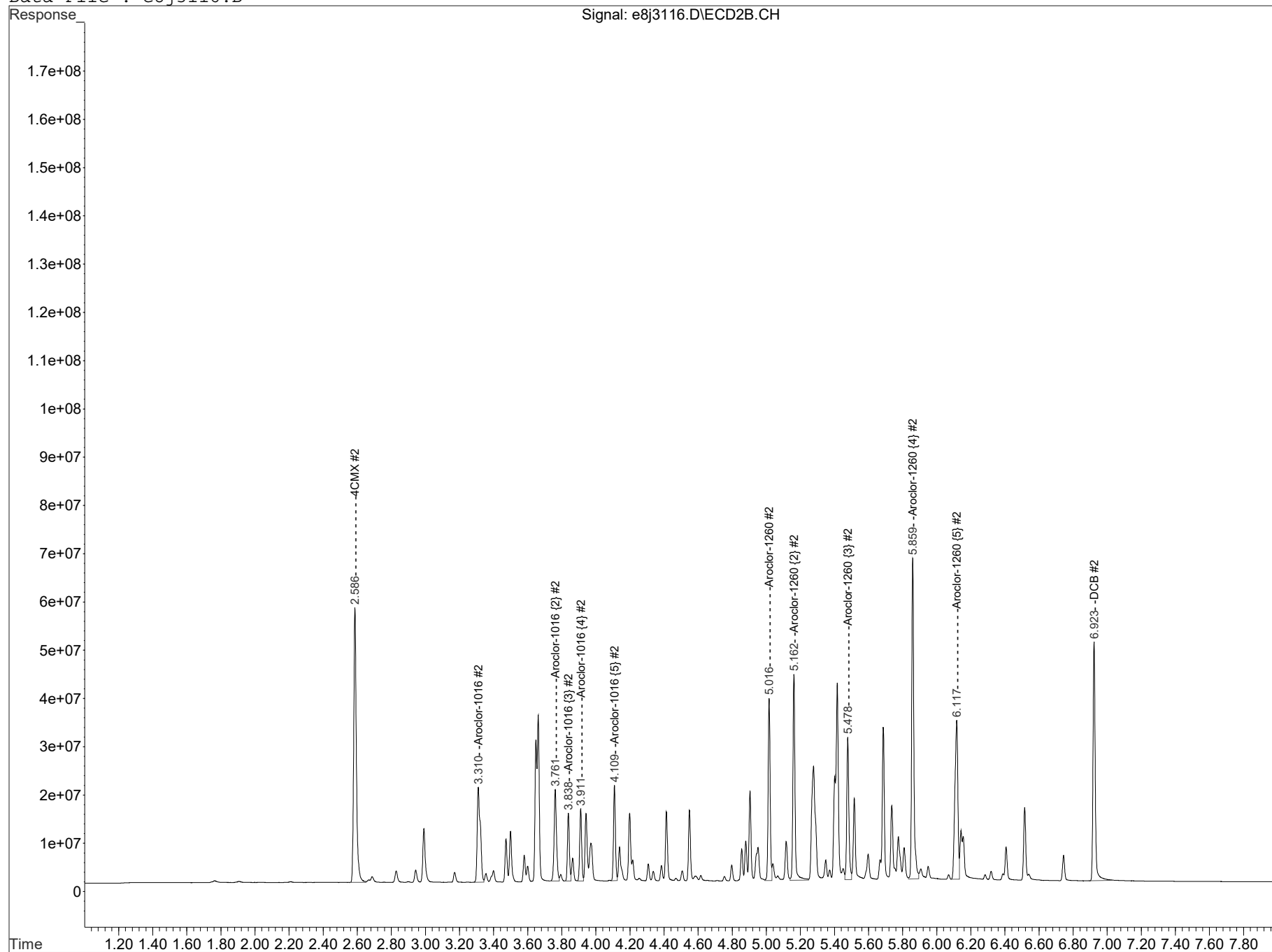
| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2   |
|-----------------------------|-------|-------|--------|-------------|----------|-------|-------|--------|------------|----------|
| System Monitoring Compounds |       |       |        |             |          |       |       |        |            |          |
| 4CMX                        | 2.154 | 2.153 | -0.001 | 4767368924  | 99.194   | 2.587 | 2.586 | -0.001 | 614499229  | 99.370   |
| DCB                         | 6.103 | 6.103 | 0.000  | 3808436867  | 99.392   | 6.923 | 6.923 | 0.000  | 452058979  | 98.353   |
| Target Compounds            |       |       |        |             |          |       |       |        |            |          |
| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2   |
| Aroclor-1016                | 2.700 | 2.699 | -0.001 | 1747122980  | 950.431  | 3.310 | 3.310 | 0.000  | 250316119  | 942.000  |
| Aroclor-1016 {2}            | 3.140 | 3.140 | 0.000  | 1486412935  | 958.448  | 3.762 | 3.762 | 0.000  | 184832731  | 980.059  |
| Aroclor-1016 {3}            | 3.186 | 3.185 | -0.001 | 919903842   | 956.960  | 3.839 | 3.839 | 0.000  | 110230490  | 954.149  |
| Aroclor-1016 {4}            | 3.278 | 3.277 | -0.001 | 806600929   | 960.216  | 3.911 | 3.911 | 0.000  | 119040262  | 944.124  |
| Aroclor-1016 {5}            | 3.437 | 3.437 | 0.000  | 1135024324  | 967.990  | 4.109 | 4.109 | 0.000  | 150917149  | 953.791  |
| Sum Aroclor-1016            |       |       |        | 6095065009  | 4794.046 |       |       |        | 815336752  | 4774.122 |
| Average Aroclor-1016        |       |       |        |             | 958.809  |       |       |        |            | 954.824  |
| Aroclor-1260                | 4.303 | 4.302 | -0.001 | 2450383281  | 981.984  | 5.017 | 5.016 | -0.001 | 304525287  | 1014.321 |
| Aroclor-1260 {2}            | 4.497 | 4.498 | 0.001  | 3747758620  | 997.743  | 5.162 | 5.162 | 0.000  | 367986807  | 987.358  |
| Aroclor-1260 {3}            | 4.770 | 4.771 | 0.001  | 1873757691  | 973.542  | 5.478 | 5.478 | 0.000  | 252851021  | 976.988  |
| Aroclor-1260 {4}            | 5.155 | 5.155 | 0.000  | 4615849535  | 1000.463 | 5.859 | 5.859 | 0.000  | 577690920  | 999.503  |
| Aroclor-1260 {5}            | 5.350 | 5.350 | 0.000  | 2439315522  | 992.308  | 6.117 | 6.117 | 0.000  | 396406107  | 969.146  |
| Sum Aroclor-1260            |       |       |        | 15127064649 | 4946.040 |       |       |        | 1899460142 | 4947.315 |
| Average Aroclor-1260        |       |       |        |             | 989.208  |       |       |        |            | 989.463  |

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3116.D



Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3116.D





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3117.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 31 Oct 2016 10:07 (#1); 31 Oct 2016 10:07 (#2)  
Operator : JXM InstName : ECD8  
Sample : |IAR160926-01|ICAL|1|SVA|1|1660-5  
Misc : |MIX[A]  
ALS Vial : 17 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

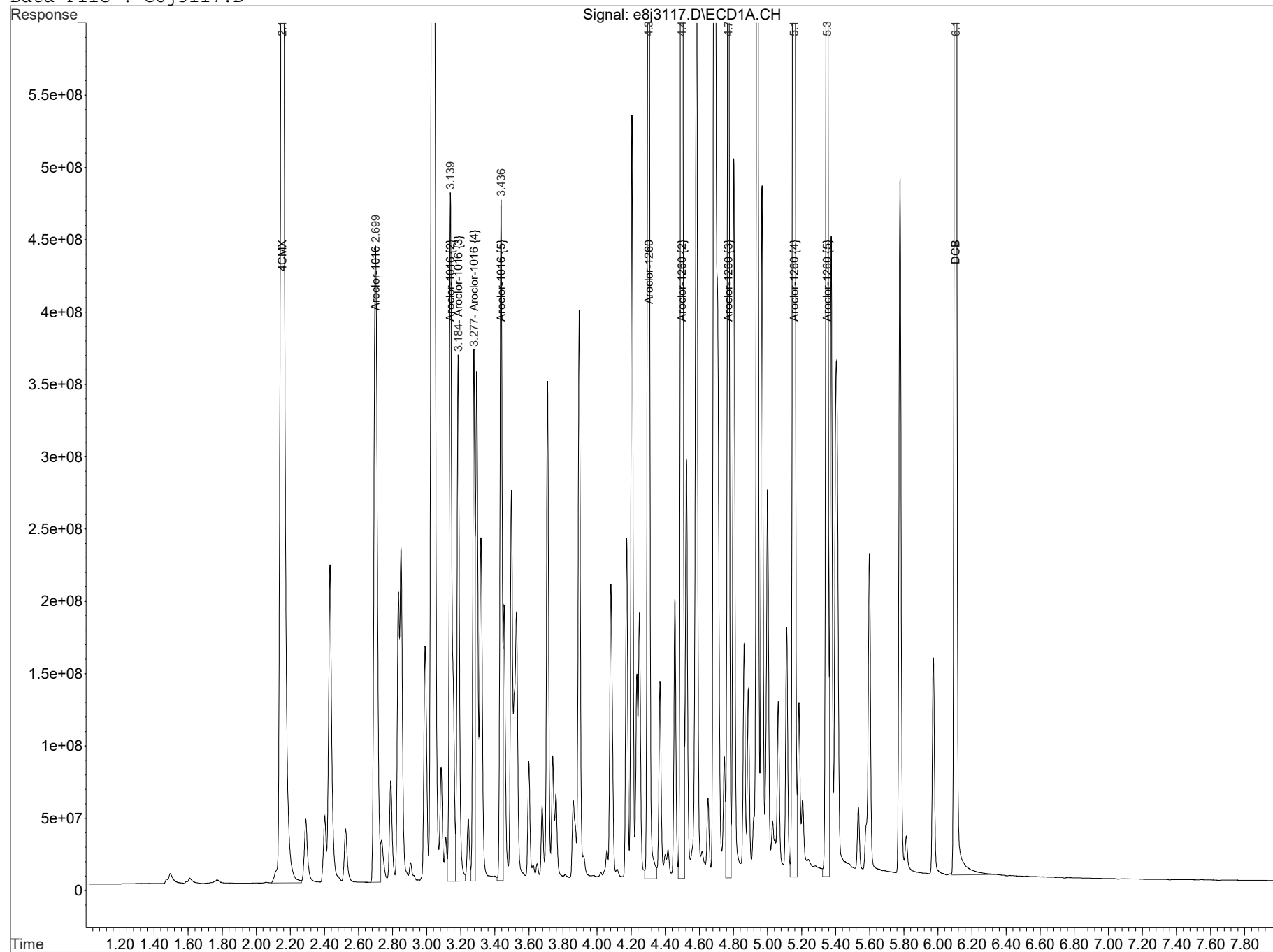
Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 01 04:14:24 2016  
Quant Method : C:\msdchem\1\DATA\103116.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:13:33 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

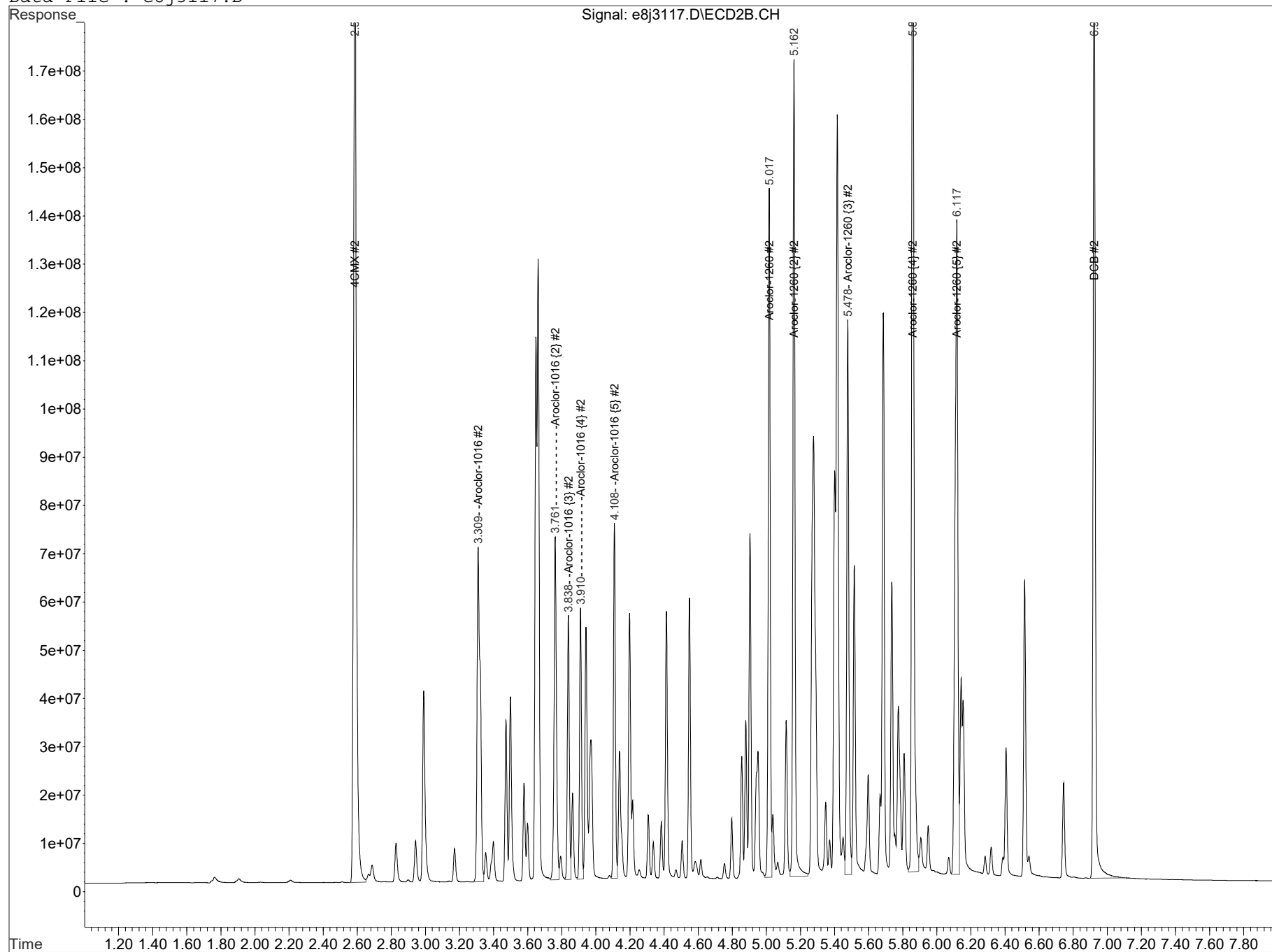
| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1      | ug/L#1    | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2    |
|-----------------------------|-------|-------|--------|-------------|-----------|-------|-------|--------|------------|-----------|
| System Monitoring Compounds |       |       |        |             |           |       |       |        |            |           |
| 4CMX                        | 2.154 | 2.154 | 0.000  | 18050853630 | 375.583   | 2.587 | 2.586 | -0.001 | 2371499679 | 383.493   |
| DCB                         | 6.103 | 6.104 | 0.001  | 14470711163 | 377.654   | 6.923 | 6.923 | 0.000  | 1757611760 | 382.398   |
| Target Compounds            |       |       |        |             |           |       |       |        |            |           |
| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1      | ug/L#1    | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2    |
| Aroclor-1016                | 2.700 | 2.700 | 0.000  | 6066180738  | 3299.988  | 3.310 | 3.309 | -0.001 | 898302949  | 3380.532  |
| Aroclor-1016 {2}            | 3.140 | 3.139 | -0.001 | 5513500297  | 3555.140  | 3.762 | 3.761 | -0.001 | 693973914  | 3679.734  |
| Aroclor-1016 {3}            | 3.186 | 3.185 | -0.001 | 3489728807  | 3630.305  | 3.839 | 3.839 | 0.000  | 427958976  | 3704.388  |
| Aroclor-1016 {4}            | 3.278 | 3.277 | -0.001 | 3071848829  | 3656.873  | 3.911 | 3.910 | -0.001 | 446983074  | 3545.081  |
| Aroclor-1016 {5}            | 3.437 | 3.437 | 0.000  | 4294421128  | 3662.440  | 4.109 | 4.109 | 0.000  | 573069459  | 3621.777  |
| Sum Aroclor-1016            |       |       |        | 22435679799 | 17804.746 |       |       |        | 3040288372 | 17931.512 |
| Average Aroclor-1016        |       |       |        |             | 3560.949  |       |       |        |            | 3586.302  |
| Aroclor-1260                | 4.303 | 4.302 | -0.001 | 9219242366  | 3694.583  | 5.017 | 5.017 | 0.000  | 1145190387 | 3814.429  |
| Aroclor-1260 {2}            | 4.497 | 4.497 | 0.000  | 14007407254 | 3729.107  | 5.162 | 5.162 | 0.000  | 1408222787 | 3778.451  |
| Aroclor-1260 {3}            | 4.770 | 4.771 | 0.001  | 7166334243  | 3723.390  | 5.478 | 5.478 | 0.000  | 954570371  | 3688.353  |
| Aroclor-1260 {4}            | 5.155 | 5.156 | 0.001  | 17561107772 | 3806.284  | 5.859 | 5.859 | 0.000  | 2219574316 | 3840.238  |
| Aroclor-1260 {5}            | 5.350 | 5.349 | -0.001 | 9656815617  | 3928.372  | 6.117 | 6.118 | 0.001  | 1573629306 | 3847.256  |
| Sum Aroclor-1260            |       |       |        | 57610907253 | 18881.737 |       |       |        | 7301187167 | 18968.727 |
| Average Aroclor-1260        |       |       |        |             | 3776.347  |       |       |        |            | 3793.745  |

-----  
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3117.D



Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3117.D



## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_1  
**Data File:** 103116.B\8j3118.D  
**Lab Sample ID** WAR160926-60  
**Column ID:** RTX-CLPEST1

**Client SDG:** 409254  
**Injection Date:** 31-OCT-16 10:19  
**Init. Cal. Date(s):** NA  
**Method:** 103116.B\ECD8\_8082\_103116.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV      | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|-------------|-------------|-------------|-----|---------|------------|
| Aroclor-1016             | 1838243.38     | 1871910.3   | 1000        | 1.83        | 20  |         | Averaged   |
| Aroclor-1016(2)          | 1550853.25     | 1507531.05  | 1000        | -2.79       | 20  |         | Averaged   |
| Aroclor-1016(3)          | 961276.94      | 978912.53   | 1000        | 1.83        | 20  |         | Averaged   |
| Aroclor-1016(4)          | 840020.53      | 810346.74   | 1000        | -3.53       | 20  |         | Averaged   |
| Aroclor-1016(5)          | 1172557.47     | 1160226.17  | 1000        | -1.05       | 20  |         | Averaged   |
| Aroclor-1260             | 2495340.53     | 2361004.57  | 1000        | -5.38       | 20  |         | Averaged   |
| Aroclor-1260(2)          | 3756236        | 3598154.62  | 1000        | -4.21       | 20  |         | Averaged   |
| Aroclor-1260(3)          | 1924679.99     | 1800820.35  | 1000        | -6.44       | 20  |         | Averaged   |
| Aroclor-1260(4)          | 4613713.95     | 4442881.33  | 1000        | -3.7        | 20  |         | Averaged   |
| Aroclor-1260(5)          | 2458223.13     | 2383296.78  | 1000        | -3.05       | 20  |         | Averaged   |
| 4cmx(Surr)               | 48060926.84    | 49418700.97 | 100         | 2.83        | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 38317356.01    | 37870286.89 | 100         | -1.17       | 20  |         | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_2  
**Data File:** 103116.B\8j3118.D  
**Lab Sample ID** WAR160926-60  
**Column ID:** RTX-CLPEST2

**Client SDG:** 409254  
**Injection Date:** 31-OCT-16 10:19  
**Init. Cal. Date(s):** NA  
**Method:** 103116.B\ECD8\_8082\_103116.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV     | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|------------|-------------|-------------|-----|---------|------------|
| Aroclor-1016             | 265728.24      | 253090.52  | 1000        | -4.76       | 20  |         | Averaged   |
| Aroclor-1016(2)          | 188593.5       | 185185.31  | 1000        | -1.81       | 20  |         | Averaged   |
| Aroclor-1016(3)          | 115527.59      | 113002.23  | 1000        | -2.19       | 20  |         | Averaged   |
| Aroclor-1016(4)          | 126085.45      | 121094.81  | 1000        | -3.96       | 20  |         | Averaged   |
| Aroclor-1016(5)          | 158228.81      | 153697.78  | 1000        | -2.86       | 20  |         | Averaged   |
| Aroclor-1260             | 300225.87      | 293982     | 1000        | -2.08       | 20  |         | Averaged   |
| Aroclor-1260(2)          | 372698.4       | 339074.76  | 1000        | -9.02       | 20  |         | Averaged   |
| Aroclor-1260(3)          | 258806.69      | 244748.18  | 1000        | -5.43       | 20  |         | Averaged   |
| Aroclor-1260(4)          | 577978.37      | 559173.42  | 1000        | -3.25       | 20  |         | Averaged   |
| Aroclor-1260(5)          | 409026.41      | 389026.69  | 1000        | -4.89       | 20  |         | Averaged   |
| 4cmx(Surr)               | 6183941.94     | 6443174.16 | 100         | 4.19        | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 4596284.43     | 4269341.04 | 100         | -7.11       | 20  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3118.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 31 Oct 2016 10:19 (#1); 31 Oct 2016 10:19 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR160926-60|ICV|1|SVA|1|1660  
Misc : |MIX[A]  
ALS Vial : 18 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

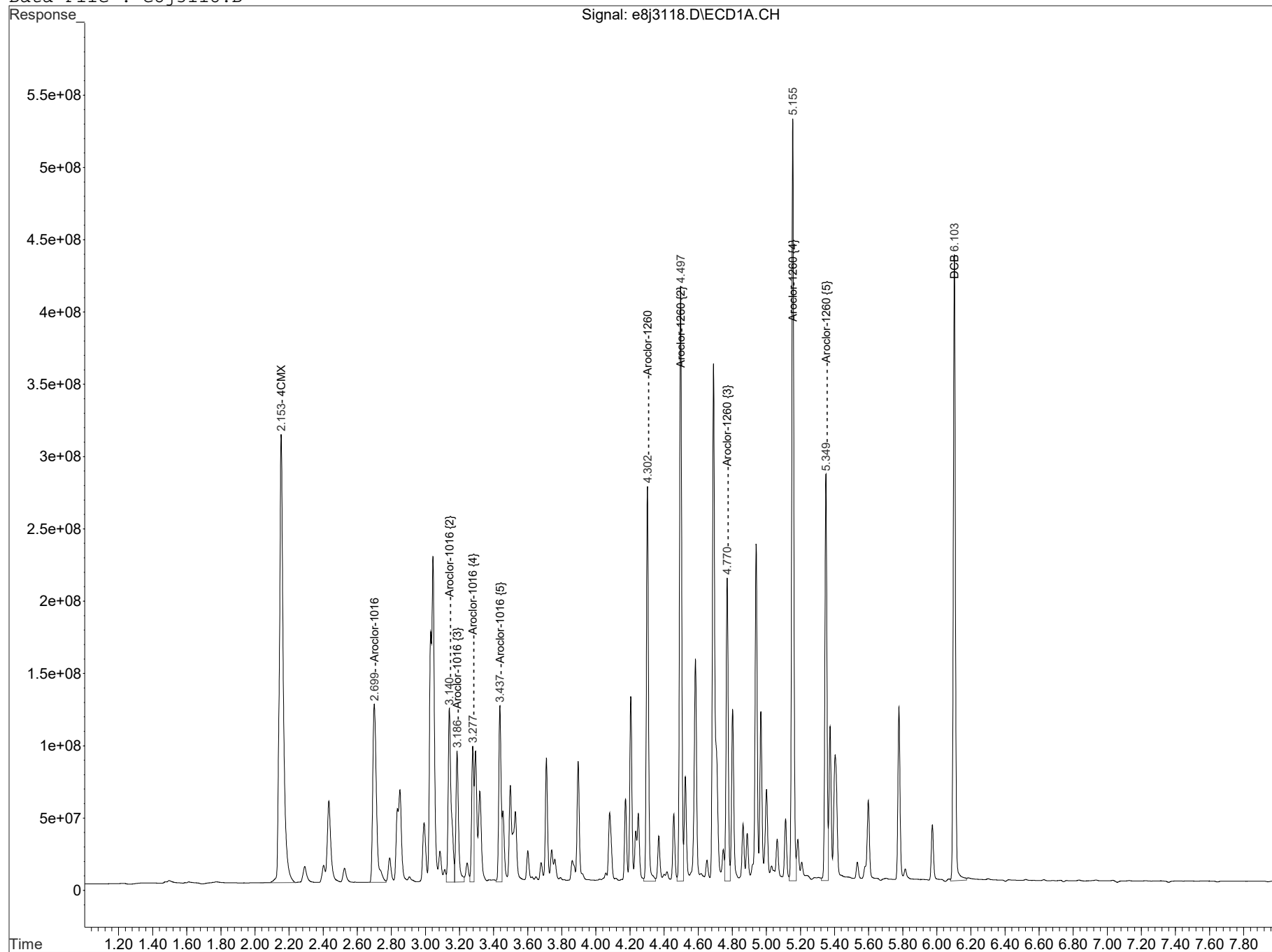
Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 01 04:44:10 2016  
Quant Method : C:\msdchem\1\DATA\103116.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

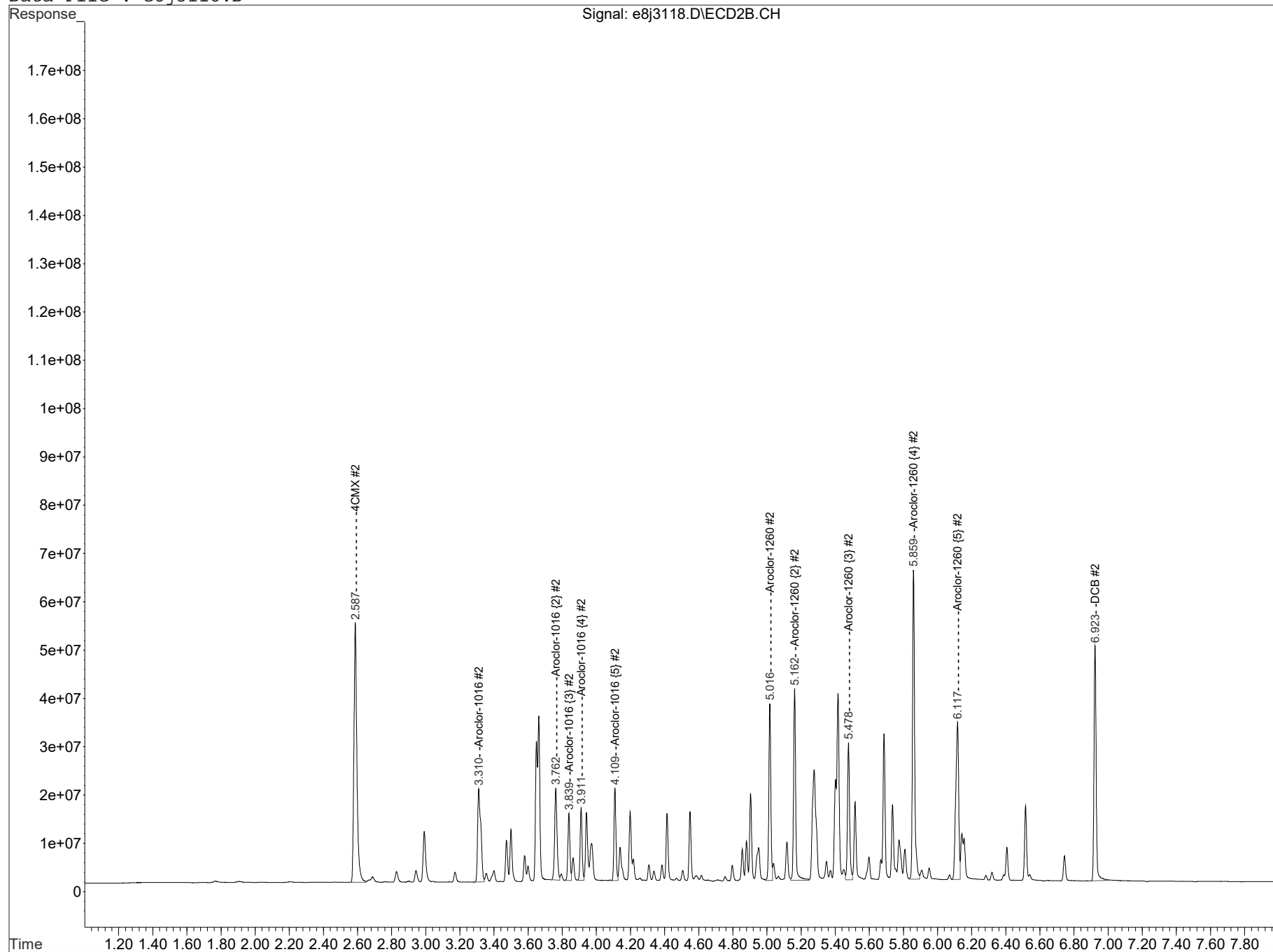
| Compound                    | Exp#1 | RT#1  | Dlt#1 | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2     | ug/L#2   |
|-----------------------------|-------|-------|-------|-------------|----------|-------|-------|-------|------------|----------|
| System Monitoring Compounds |       |       |       |             |          |       |       |       |            |          |
| 4CMX                        | 2.154 | 2.154 | 0.000 | 4941870097  | 102.825  | 2.587 | 2.587 | 0.000 | 644317416  | 104.192  |
| DCB                         | 6.103 | 6.103 | 0.000 | 3787028689  | 98.833   | 6.923 | 6.923 | 0.000 | 426934104  | 92.887   |
| Target Compounds            |       |       |       |             |          |       |       |       |            |          |
| Compound                    | Exp#1 | RT#1  | Dlt#1 | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2     | ug/L#2   |
| Aroclor-1016                | 2.700 | 2.700 | 0.000 | 1871910298  | 1018.315 | 3.310 | 3.310 | 0.000 | 253090520  | 952.441  |
| Aroclor-1016 {2}            | 3.140 | 3.140 | 0.000 | 1507531048  | 972.066  | 3.762 | 3.762 | 0.000 | 185185305  | 981.928  |
| Aroclor-1016 {3}            | 3.186 | 3.186 | 0.000 | 978912527   | 1018.346 | 3.839 | 3.839 | 0.000 | 113002229  | 978.141  |
| Aroclor-1016 {4}            | 3.278 | 3.278 | 0.000 | 810346741   | 964.675  | 3.911 | 3.911 | 0.000 | 121094810  | 960.419  |
| Aroclor-1016 {5}            | 3.437 | 3.437 | 0.000 | 1160226170  | 989.483  | 4.109 | 4.109 | 0.000 | 153697778  | 971.364  |
| Sum Aroclor-1016            |       |       |       | 6328926783  | 4962.885 |       |       |       | 826070642  | 4844.293 |
| Average Aroclor-1016        |       |       |       |             | 992.577  |       |       |       |            | 968.859  |
| Aroclor-1260                | 4.303 | 4.303 | 0.000 | 2361004568  | 946.165  | 5.017 | 5.017 | 0.000 | 293981999  | 979.203  |
| Aroclor-1260 {2}            | 4.497 | 4.497 | 0.000 | 3598154615  | 957.915  | 5.162 | 5.162 | 0.000 | 339074756  | 909.783  |
| Aroclor-1260 {3}            | 4.770 | 4.770 | 0.000 | 1800820346  | 935.647  | 5.478 | 5.478 | 0.000 | 244748182  | 945.680  |
| Aroclor-1260 {4}            | 5.155 | 5.155 | 0.000 | 4442881331  | 962.973  | 5.859 | 5.859 | 0.000 | 559173418  | 967.464  |
| Aroclor-1260 {5}            | 5.350 | 5.350 | 0.000 | 2383296777  | 969.520  | 6.117 | 6.117 | 0.000 | 389026690  | 951.104  |
| Sum Aroclor-1260            |       |       |       | 14586157636 | 4772.220 |       |       |       | 1826005046 | 4753.234 |
| Average Aroclor-1260        |       |       |       |             | 954.444  |       |       |       |            | 950.647  |

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3118.D



Data Path : C:\msdchem\1\DATA\103116.B\  
Data File : e8j3118.D





## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_1  
**Data File:** 110916.B\8k0903.D  
**Lab Sample ID** WAR160926-60  
**Column ID:** RTX-CLPEST1

**Client SDG:** 409254  
**Injection Date:** 09-NOV-16 05:59  
**Init. Cal. Date(s):** NA  
**Method:** 110916.B\ECD8\_8082\_103116.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV      | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|-------------|-------------|-------------|-----|---------|------------|
| Aroclor-1016             | 1838243.38     | 1976573.04  | 1000        | 7.53        | 20  |         | Averaged   |
| Aroclor-1016(2)          | 1550853.25     | 1560841.58  | 1000        | 0.64        | 20  |         | Averaged   |
| Aroclor-1016(3)          | 961276.94      | 949529.02   | 1000        | -1.22       | 20  |         | Averaged   |
| Aroclor-1016(4)          | 840020.53      | 808677.87   | 1000        | -3.73       | 20  |         | Averaged   |
| Aroclor-1016(5)          | 1172557.47     | 1167443.81  | 1000        | -0.44       | 20  |         | Averaged   |
| Aroclor-1260             | 2495340.53     | 2305881.02  | 1000        | -7.59       | 20  |         | Averaged   |
| Aroclor-1260(2)          | 3756236        | 3472037.22  | 1000        | -7.57       | 20  |         | Averaged   |
| Aroclor-1260(3)          | 1924679.99     | 1698862.72  | 1000        | -11.73      | 20  |         | Averaged   |
| Aroclor-1260(4)          | 4613713.95     | 4167227.39  | 1000        | -9.68       | 20  |         | Averaged   |
| Aroclor-1260(5)          | 2458223.13     | 2209599.57  | 1000        | -10.11      | 20  |         | Averaged   |
| 4cmx(Surr)               | 48060926.84    | 53035137.41 | 100         | 10.35       | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 38317356.01    | 37967787.77 | 100         | -0.91       | 20  |         | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_2  
**Data File:** 110916.B\8k0903.D  
**Lab Sample ID** WAR160926-60  
**Column ID:** RTX-CLPEST2

**Client SDG:** 409254  
**Injection Date:** 09-NOV-16 05:59  
**Init. Cal. Date(s):** NA  
**Method:** 110916.B\ECD8\_8082\_103116.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV     | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|------------|-------------|-------------|-----|---------|------------|
| Aroclor-1016             | 265728.24      | 272623.46  | 1000        | 2.59        | 20  |         | Averaged   |
| Aroclor-1016(2)          | 188593.5       | 196798.33  | 1000        | 4.35        | 20  |         | Averaged   |
| Aroclor-1016(3)          | 115527.59      | 116528.71  | 1000        | 0.87        | 20  |         | Averaged   |
| Aroclor-1016(4)          | 126085.45      | 125654.62  | 1000        | -0.34       | 20  |         | Averaged   |
| Aroclor-1016(5)          | 158228.81      | 158417.54  | 1000        | 0.12        | 20  |         | Averaged   |
| Aroclor-1260             | 300225.87      | 297481.13  | 1000        | -0.91       | 20  |         | Averaged   |
| Aroclor-1260(2)          | 372698.4       | 356403.56  | 1000        | -4.37       | 20  |         | Averaged   |
| Aroclor-1260(3)          | 258806.69      | 235608.86  | 1000        | -8.96       | 20  |         | Averaged   |
| Aroclor-1260(4)          | 577978.37      | 528066.6   | 1000        | -8.64       | 20  |         | Averaged   |
| Aroclor-1260(5)          | 409026.41      | 350051.82  | 1000        | -14.42      | 20  |         | Averaged   |
| 4cmx(Surr)               | 6183941.94     | 6984263.02 | 100         | 12.94       | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 4596284.43     | 4263804.56 | 100         | -7.23       | 20  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0903.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 05:59 (#1); 09 Nov 2016 5:59 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR160926-60|CCV|1|SVA|1|1660  
Misc : |MIX[A]  
ALS Vial : 3 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 06:15:13 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

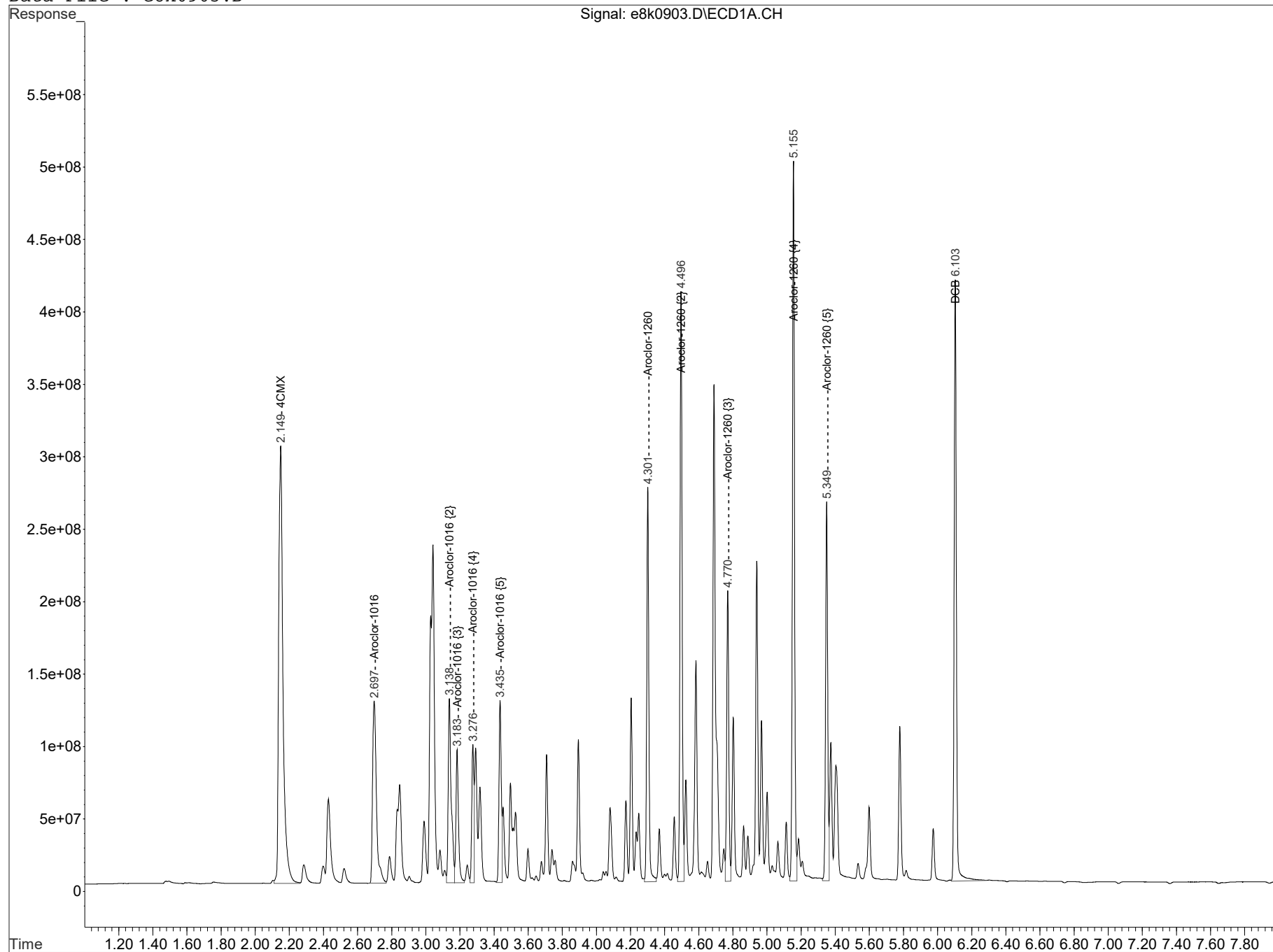
Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1 | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2     | ug/L#2   |
|-----------------------------|-------|-------|-------|-------------|----------|-------|-------|-------|------------|----------|
| System Monitoring Compounds |       |       |       |             |          |       |       |       |            |          |
| 4CMX                        | 2.150 | 2.150 | 0.000 | 5303513741  | 110.350  | 2.584 | 2.584 | 0.000 | 698426302  | 112.942  |
| DCB                         | 6.104 | 6.104 | 0.000 | 3796778777  | 99.088   | 6.924 | 6.924 | 0.000 | 426380456  | 92.766   |
| Target Compounds            |       |       |       |             |          |       |       |       |            |          |
| Compound                    | Exp#1 | RT#1  | Dlt#1 | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2     | ug/L#2   |
| Aroclor-1016                | 2.698 | 2.698 | 0.000 | 1976573044  | 1075.251 | 3.309 | 3.309 | 0.000 | 272623460  | 1025.948 |
| Aroclor-1016 {2}            | 3.138 | 3.138 | 0.000 | 1560841584  | 1006.441 | 3.762 | 3.762 | 0.000 | 196798333  | 1043.505 |
| Aroclor-1016 {3}            | 3.184 | 3.184 | 0.000 | 949529023   | 987.779  | 3.838 | 3.838 | 0.000 | 116528709  | 1008.666 |
| Aroclor-1016 {4}            | 3.276 | 3.276 | 0.000 | 808677870   | 962.688  | 3.910 | 3.910 | 0.000 | 125654621  | 996.583  |
| Aroclor-1016 {5}            | 3.436 | 3.436 | 0.000 | 1167443812  | 995.639  | 4.109 | 4.109 | 0.000 | 158417539  | 1001.193 |
| Sum Aroclor-1016            |       |       |       | 6463065334  | 5027.797 |       |       |       | 870022663  | 5075.895 |
| Average Aroclor-1016        |       |       |       |             | 1005.559 |       |       |       |            | 1015.179 |
| Aroclor-1260                | 4.301 | 4.301 | 0.000 | 2305881017  | 924.075  | 5.018 | 5.018 | 0.000 | 297481128  | 990.858  |
| Aroclor-1260 {2}            | 4.496 | 4.496 | 0.000 | 3472037222  | 924.339  | 5.163 | 5.163 | 0.000 | 356403558  | 956.279  |
| Aroclor-1260 {3}            | 4.770 | 4.770 | 0.000 | 1698862716  | 882.673  | 5.479 | 5.479 | 0.000 | 235608858  | 910.366  |
| Aroclor-1260 {4}            | 5.155 | 5.155 | 0.000 | 4167227390  | 903.226  | 5.859 | 5.859 | 0.000 | 528066600  | 913.644  |
| Aroclor-1260 {5}            | 5.350 | 5.350 | 0.000 | 2209599569  | 898.860  | 6.118 | 6.118 | 0.000 | 350051824  | 855.817  |
| Sum Aroclor-1260            |       |       |       | 13853607915 | 4533.174 |       |       |       | 1767611968 | 4626.964 |
| Average Aroclor-1260        |       |       |       |             | 906.635  |       |       |       |            | 925.393  |

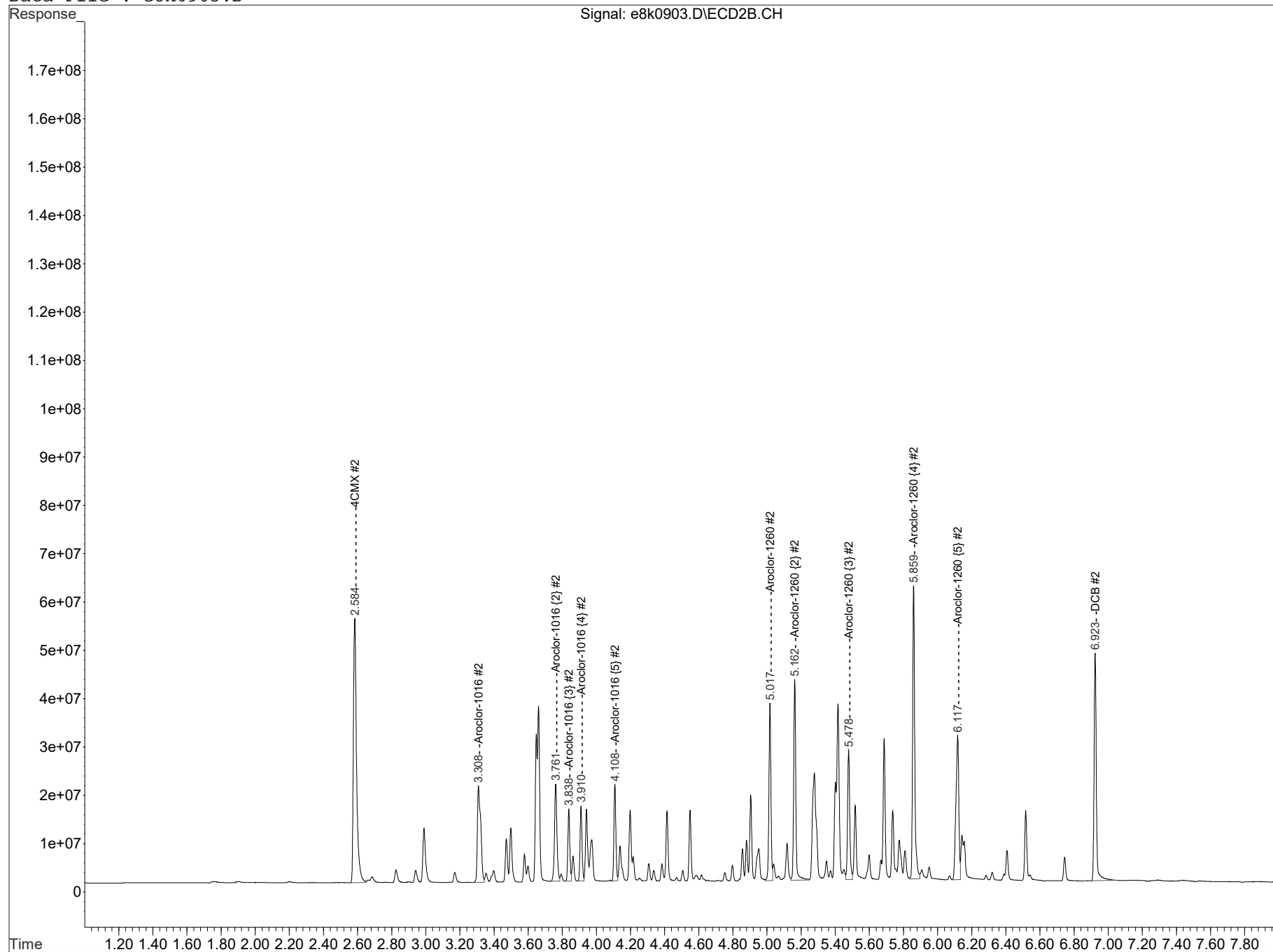
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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0903.D



Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0903.D



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0904.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 06:11 (#1); 09 Nov 2016 6:11 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR160721-54|CCV|1|SVA|1|1254  
Misc : |MIX[B]  
ALS Vial : 4 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 06:21:02 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|

System Monitoring Compounds

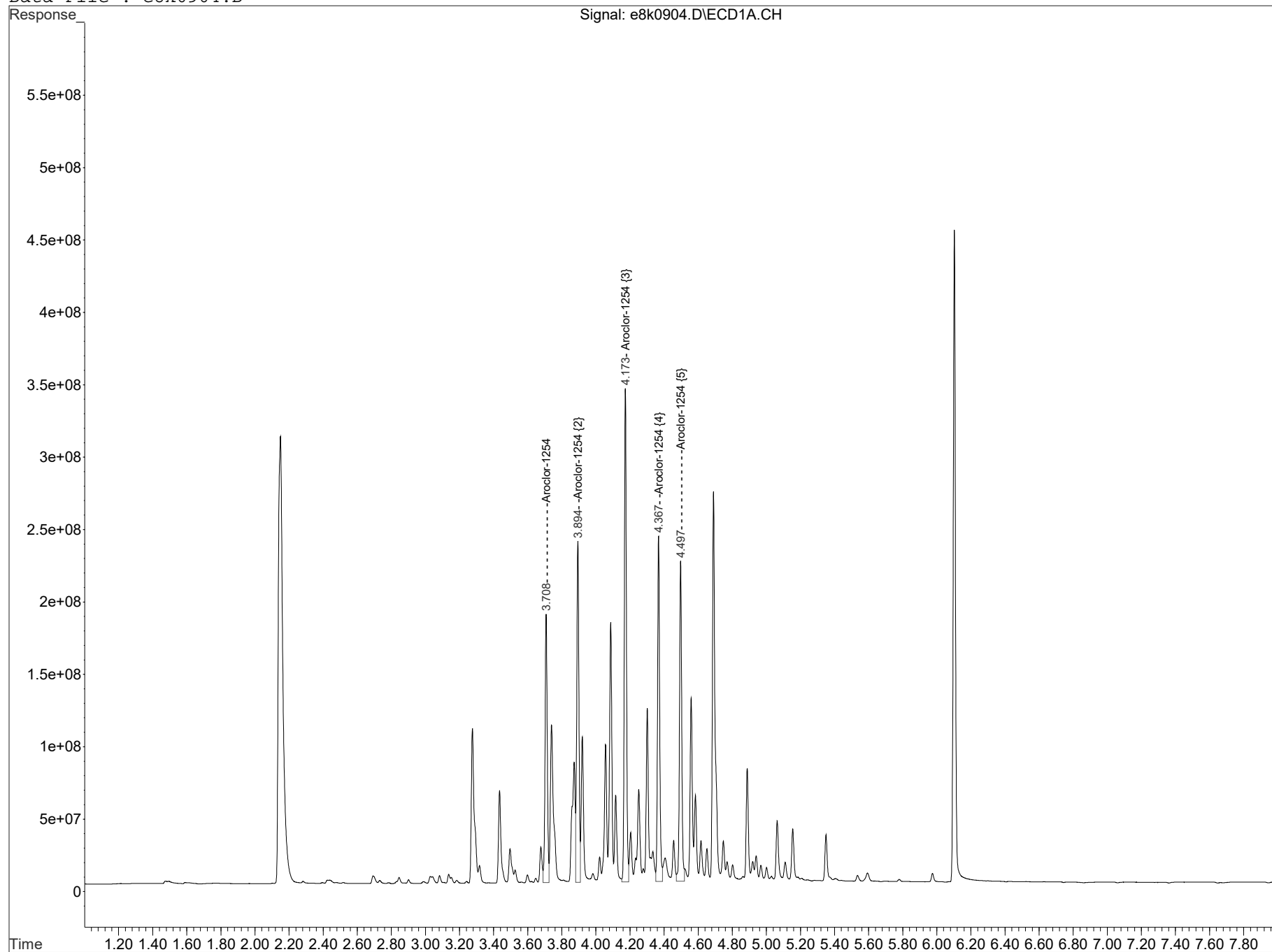
Target Compounds

| Compound             | Exp#1 | RT#1  | Dlt#1 | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2     | ug/L#2   |
|----------------------|-------|-------|-------|-------------|----------|-------|-------|-------|------------|----------|
| Aroclor-1254         | 3.708 | 3.708 | 0.000 | 1659238306  | 1014.234 | 4.414 | 4.414 | 0.000 | 251745172  | 1004.956 |
| Aroclor-1254 {2}     | 3.894 | 3.894 | 0.000 | 2104122886  | 1016.300 | 4.550 | 4.550 | 0.000 | 266593137  | 995.126  |
| Aroclor-1254 {3}     | 4.173 | 4.173 | 0.000 | 2880783453  | 1010.084 | 4.880 | 4.880 | 0.000 | 364262638  | 998.369  |
| Aroclor-1254 {4}     | 4.368 | 4.368 | 0.000 | 2070734528  | 999.388  | 5.039 | 5.039 | 0.000 | 252583117  | 978.012  |
| Aroclor-1254 {5}     | 4.497 | 4.497 | 0.000 | 2005333295  | 925.749  | 5.162 | 5.162 | 0.000 | 169098880  | 981.523  |
| Sum Aroclor-1254     |       |       |       | 10720212468 | 4965.755 |       |       |       | 1304282945 | 4957.986 |
| Average Aroclor-1254 |       |       |       |             | 993.151  |       |       |       |            | 991.597  |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

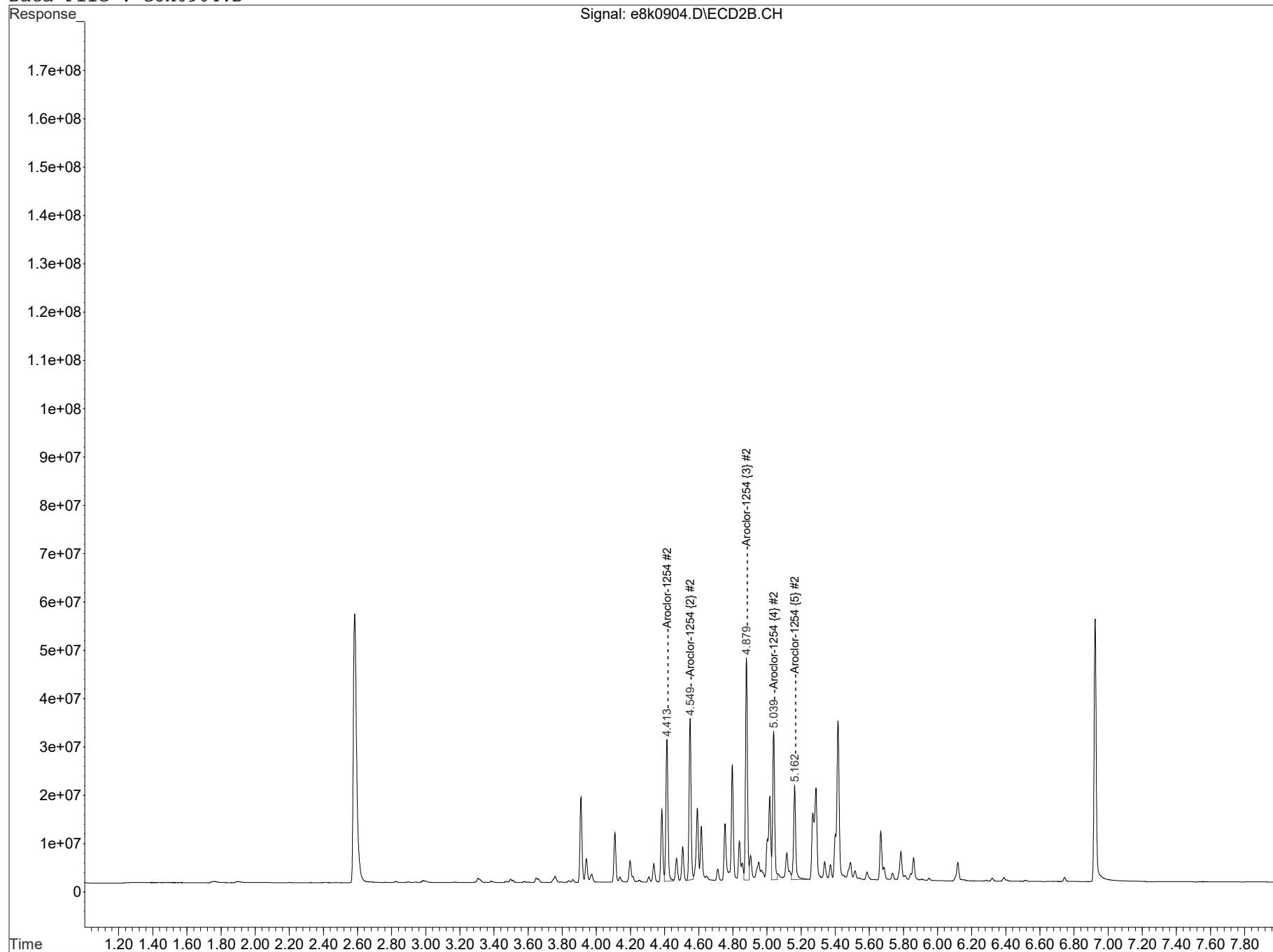
Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0904.D



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0904.D





Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0905.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 06:24 (#1); 09 Nov 2016 6:24 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR160728-42|CCV|1|SVA|1|1242  
Misc : |MIX[D]  
ALS Vial : 5 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 06:56:52 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|

System Monitoring Compounds

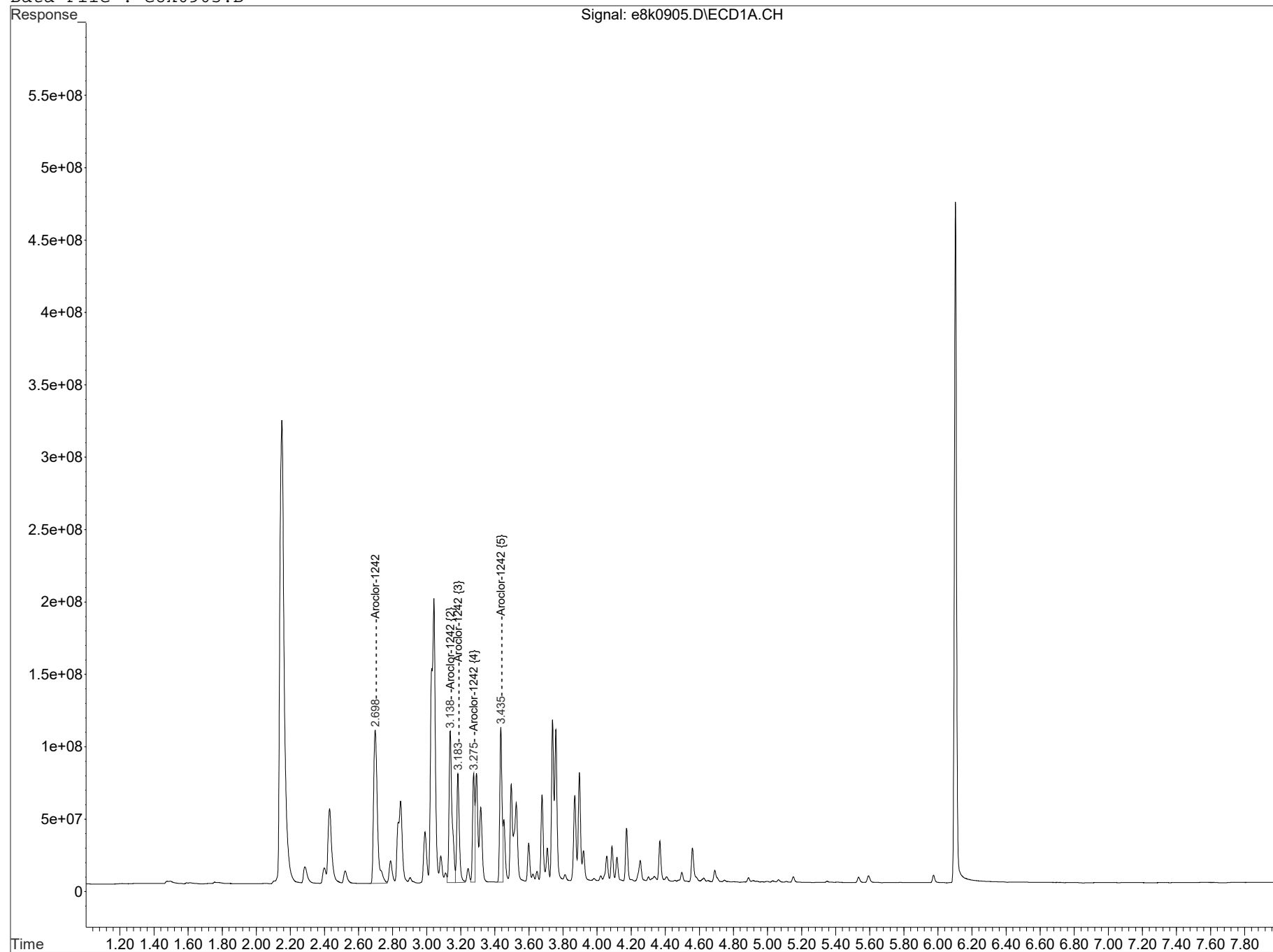
Target Compounds

| Compound             | Exp#1 | RT#1  | Dlt#1 | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2   |
|----------------------|-------|-------|-------|------------|----------|-------|-------|-------|-----------|----------|
| Aroclor-1242         | 2.698 | 2.698 | 0.000 | 1643575206 | 1027.238 | 3.309 | 3.309 | 0.000 | 227656083 | 1024.956 |
| Aroclor-1242 {2}     | 3.138 | 3.138 | 0.000 | 1287422993 | 1026.022 | 3.761 | 3.761 | 0.000 | 165387705 | 1054.231 |
| Aroclor-1242 {3}     | 3.184 | 3.184 | 0.000 | 773885518  | 986.173  | 3.839 | 3.839 | 0.000 | 97218759  | 1025.152 |
| Aroclor-1242 {4}     | 3.276 | 3.276 | 0.000 | 635890706  | 985.916  | 3.910 | 3.910 | 0.000 | 99857406  | 994.447  |
| Aroclor-1242 {5}     | 3.435 | 3.435 | 0.000 | 982926139  | 1008.515 | 4.109 | 4.109 | 0.000 | 135292705 | 1015.144 |
| Sum Aroclor-1242     |       |       |       | 5323700562 | 5033.863 |       |       |       | 725412657 | 5113.929 |
| Average Aroclor-1242 |       |       |       |            | 1006.773 |       |       |       |           | 1022.786 |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

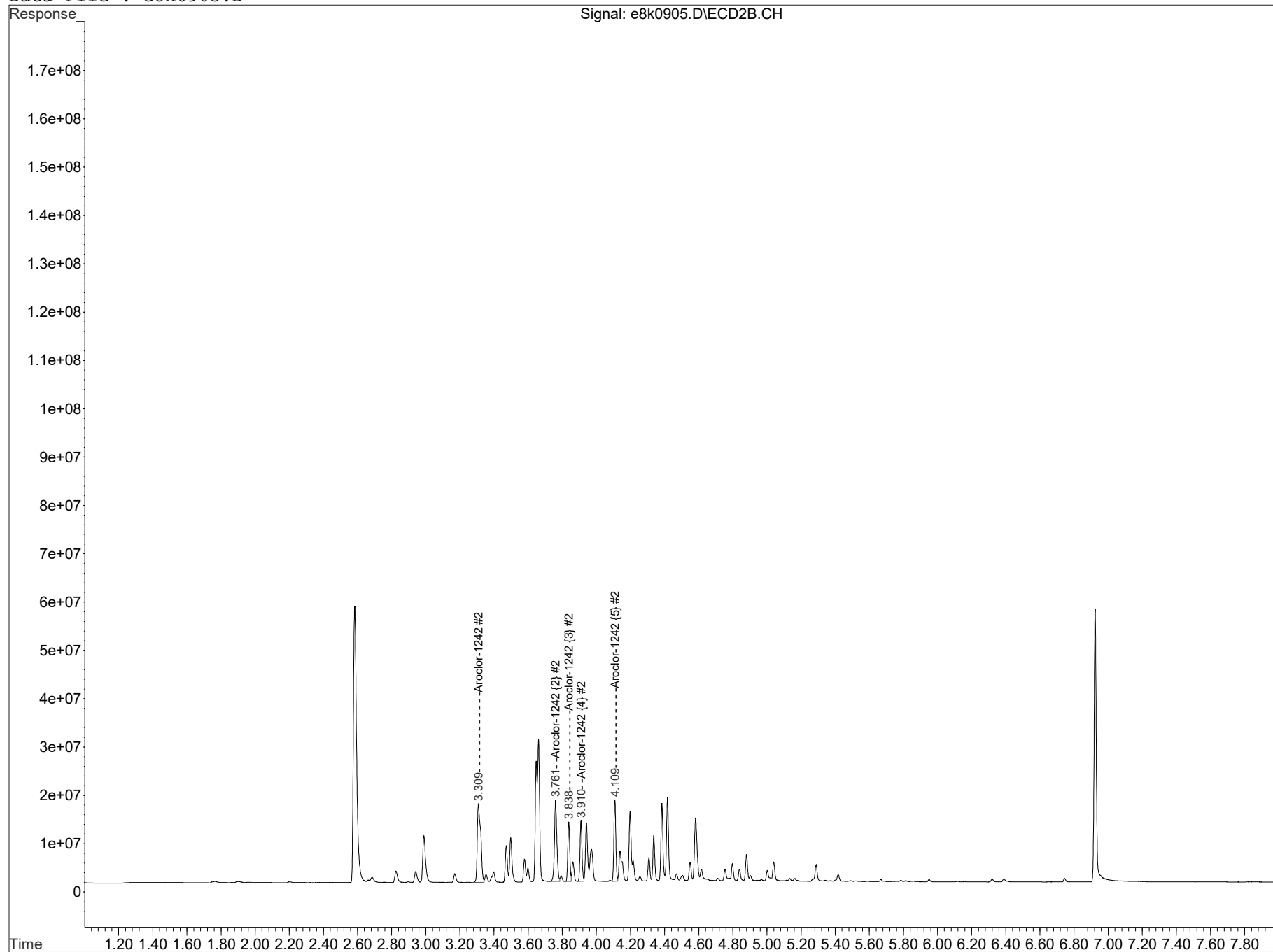
Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0905.D



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0905.D



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0906.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 06:36 (#1); 09 Nov 2016 6:36 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR160728-48|CCV|1|SVA|1|1248  
Misc : |MIX[E]  
ALS Vial : 6 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 06:57:26 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|

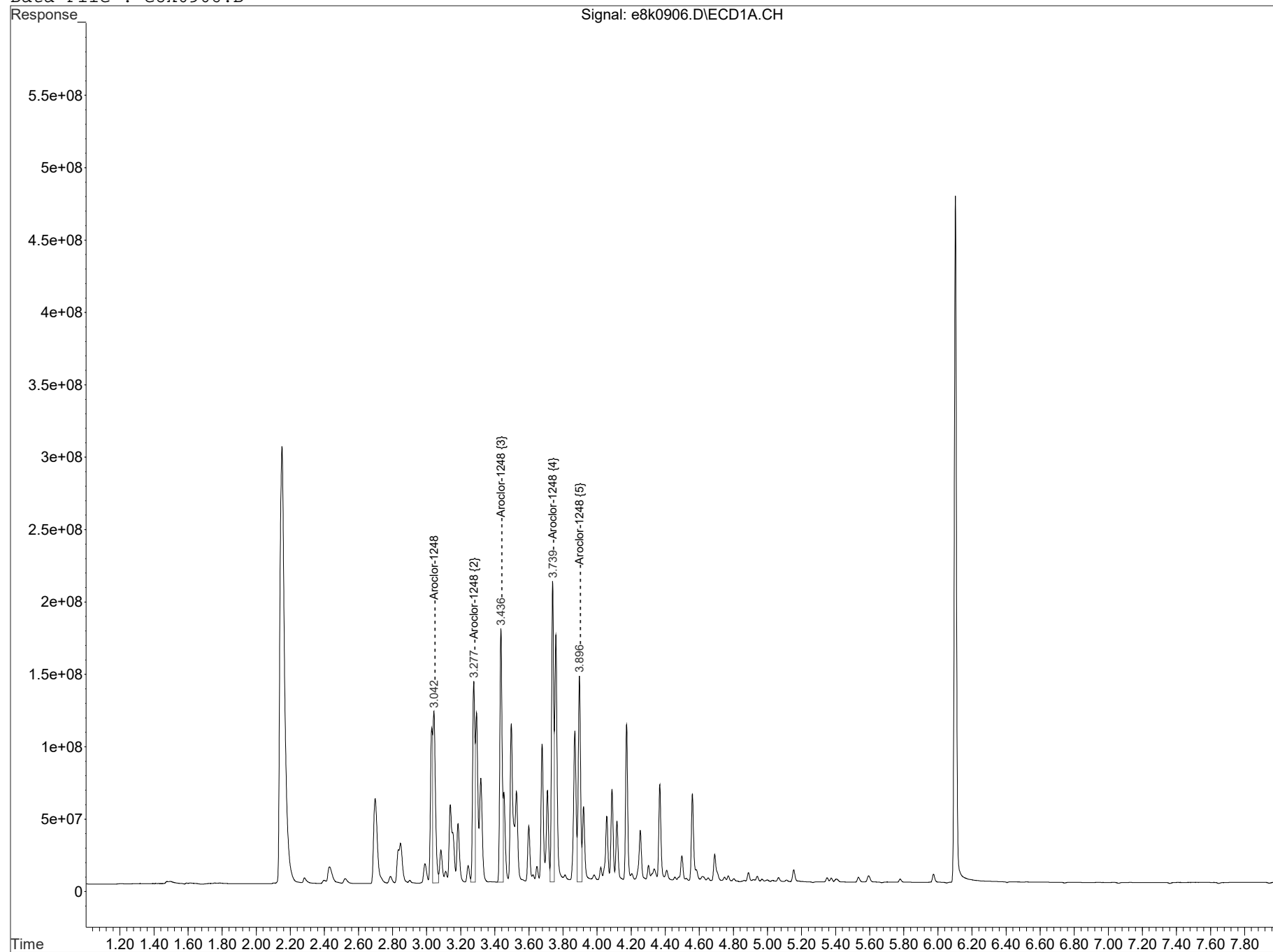
System Monitoring Compounds

Target Compounds

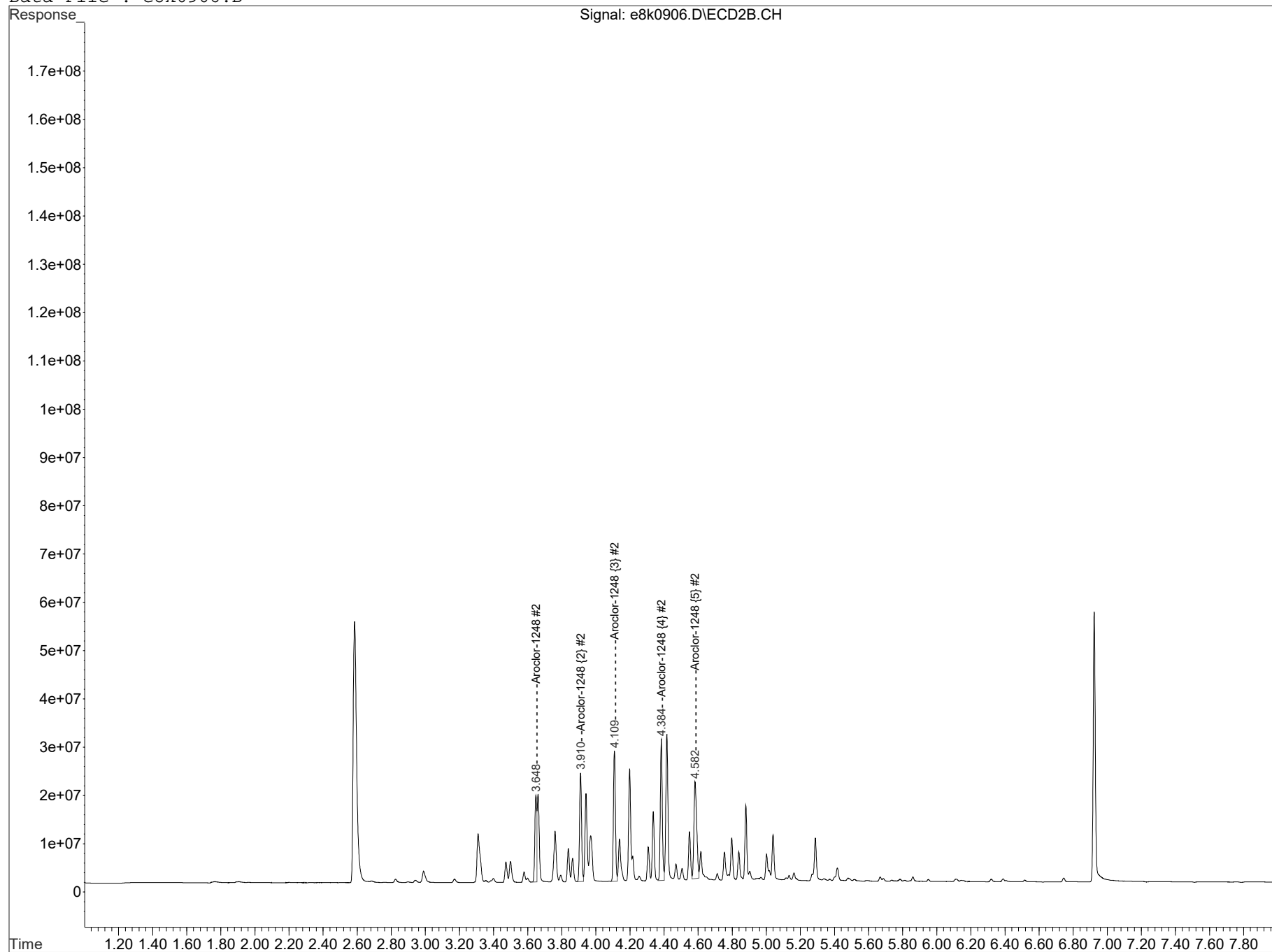
| Compound             | Exp#1 | RT#1  | Dlt#1 | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2     | ug/L#2   |
|----------------------|-------|-------|-------|------------|----------|-------|-------|-------|------------|----------|
| Aroclor-1248         | 3.043 | 3.043 | 0.000 | 1276465976 | 1194.239 | 3.648 | 3.648 | 0.000 | 138748632  | 1074.820 |
| Aroclor-1248 {2}     | 3.277 | 3.277 | 0.000 | 1245355785 | 1066.765 | 3.911 | 3.911 | 0.000 | 186876551  | 1068.866 |
| Aroclor-1248 {3}     | 3.436 | 3.436 | 0.000 | 1642000329 | 1069.353 | 4.109 | 4.109 | 0.000 | 221375337  | 1068.211 |
| Aroclor-1248 {4}     | 3.740 | 3.740 | 0.000 | 1818044380 | 1045.022 | 4.384 | 4.384 | 0.000 | 234232508  | 1029.557 |
| Aroclor-1248 {5}     | 3.897 | 3.897 | 0.000 | 1348320304 | 970.921  | 4.582 | 4.582 | 0.000 | 228485710  | 991.206  |
| Sum Aroclor-1248     |       |       |       | 7330186773 | 5346.300 |       |       |       | 1009718738 | 5232.660 |
| Average Aroclor-1248 |       |       |       |            | 1069.260 |       |       |       |            | 1046.532 |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0906.D



Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0906.D



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0909.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 07:13 (#1); 09 Nov 2016 7:13 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR160809-32|CCV|1|SVA|1|1232  
Misc : |MIX[F]  
ALS Vial : 9 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 10:06:56 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|

System Monitoring Compounds

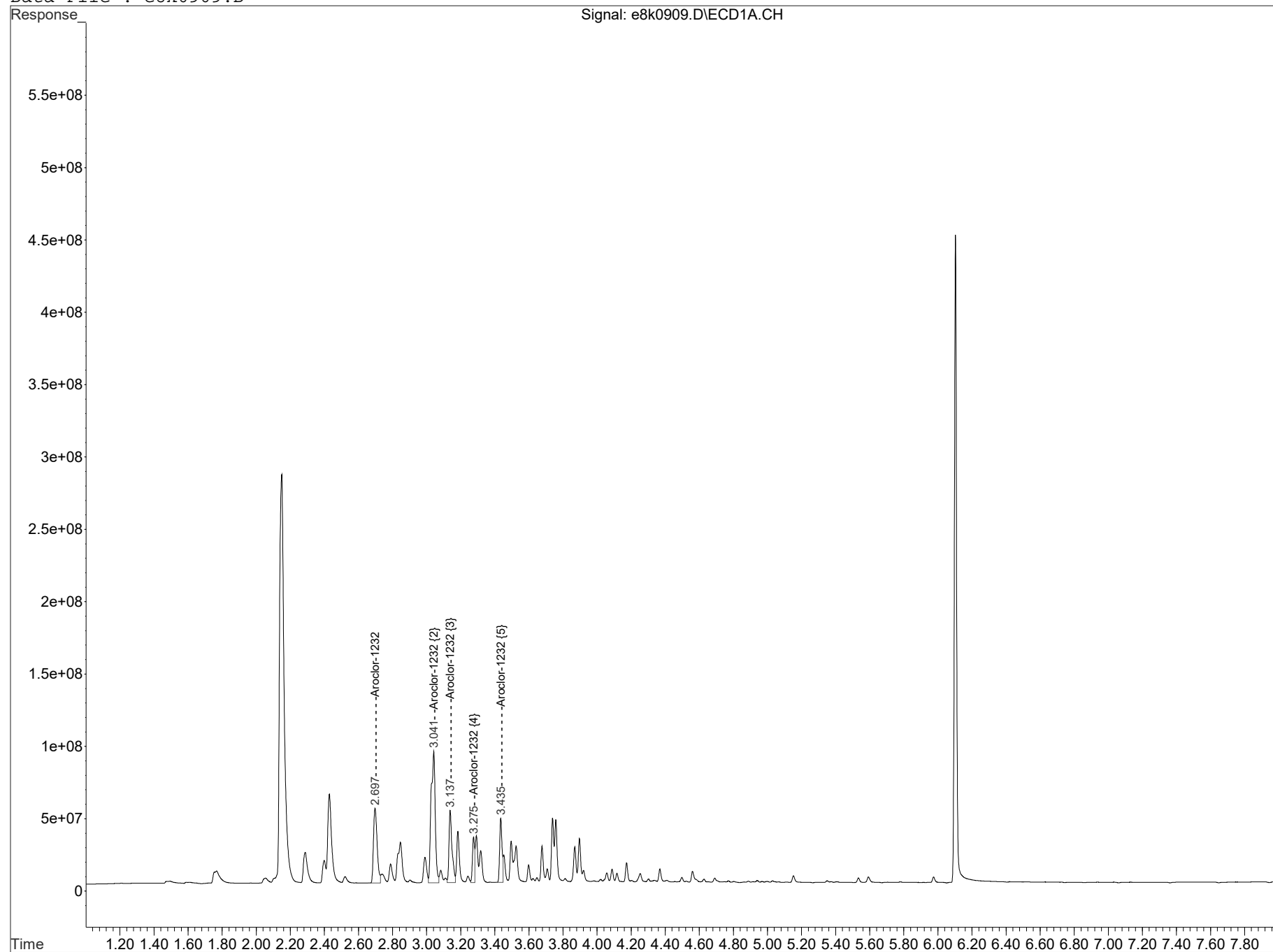
Target Compounds

| Compound             | Exp#1 | RT#1  | Dlt#1 | Resp#1     | ug/L#1     | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2     |
|----------------------|-------|-------|-------|------------|------------|-------|-------|-------|-----------|------------|
| Aroclor-1232         | 2.697 | 2.697 | 0.000 | 765514025  | 2649.890 A | 3.308 | 3.308 | 0.000 | 119601195 | 1331.057 A |
| Aroclor-1232 {2}     | 3.042 | 3.042 | 0.000 | 1530484536 | 4279.190 A | 3.661 | 3.661 | 0.000 | 123273267 | 1338.922 A |
| Aroclor-1232 {3}     | 3.138 | 3.138 | 0.000 | 621450964  | 2553.138 A | 3.761 | 3.761 | 0.000 | 82331121  | 1292.865 A |
| Aroclor-1232 {4}     | 3.276 | 3.276 | 0.000 | 269669187  | 2428.286 A | 3.839 | 3.839 | 0.000 | 48885924  | 1223.995 A |
| Aroclor-1232 {5}     | 3.435 | 3.435 | 0.000 | 425562392  | 2552.479 A | 4.109 | 4.109 | 0.000 | 59432574  | 1249.215 A |
| Sum Aroclor-1232     |       |       |       | 3612681104 | 14462.983  |       |       |       | 433524080 | 6436.054 # |
| Average Aroclor-1232 |       |       |       |            | 2892.597   |       |       |       |           | 1287.211 # |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\110916.B\

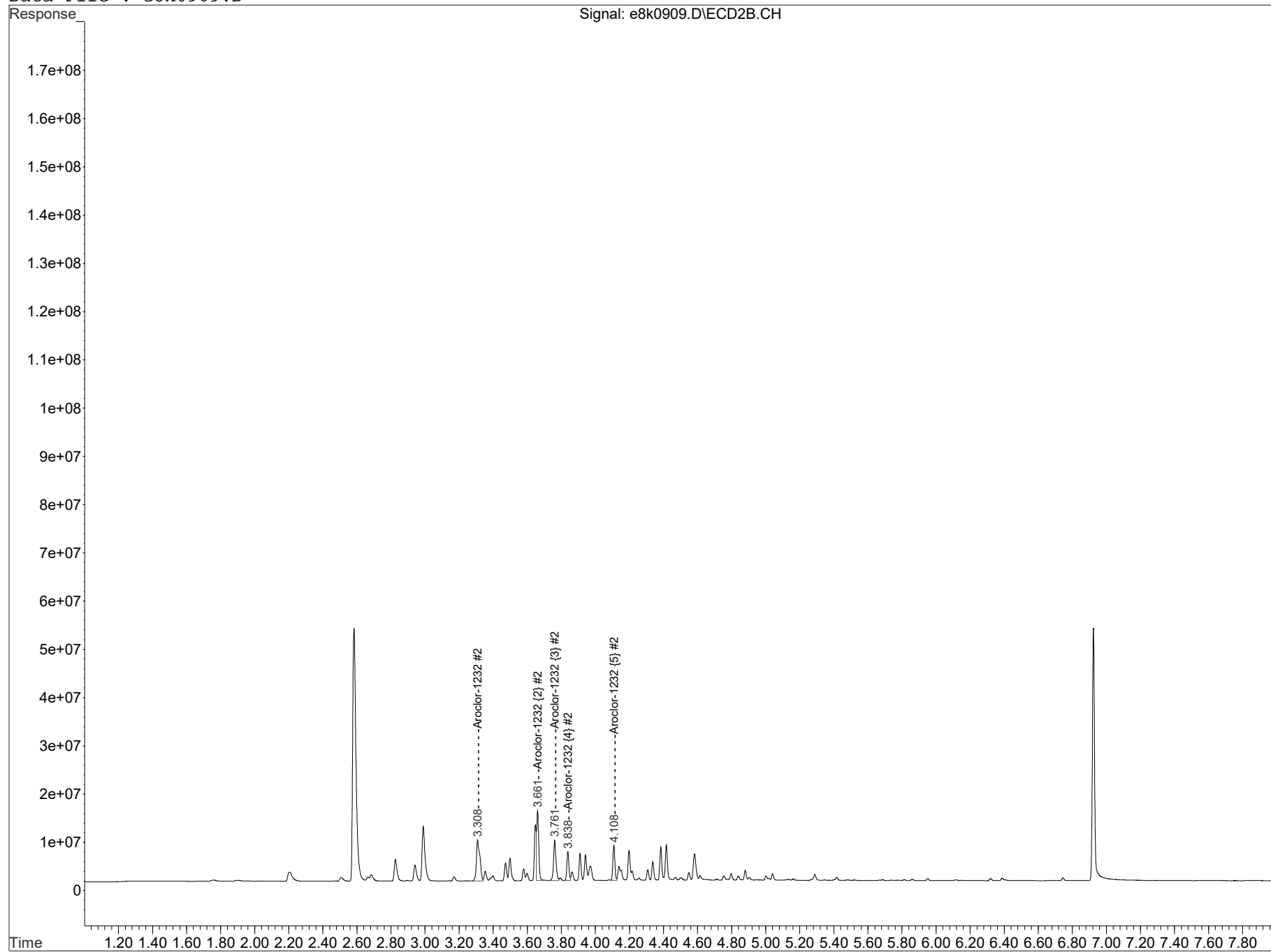
Data File : e8k0909.D





Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0909.D



Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0910.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 07:25 (#1); 09 Nov 2016 7:25 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR160628-21|CCV|1|SVA|1|1221  
Misc : |MIX[J]  
ALS Vial : 10 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 10:07:41 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|

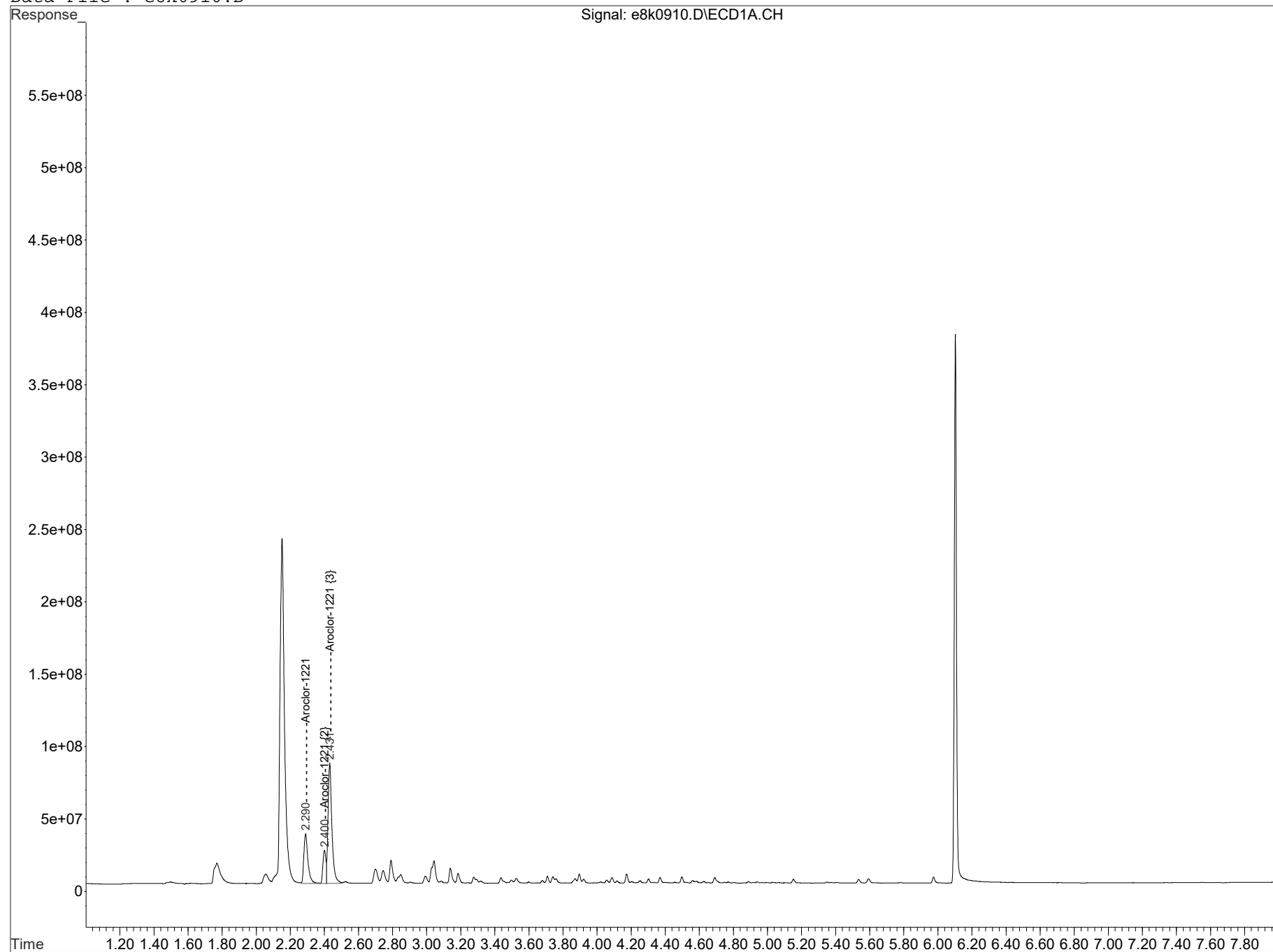
System Monitoring Compounds

Target Compounds

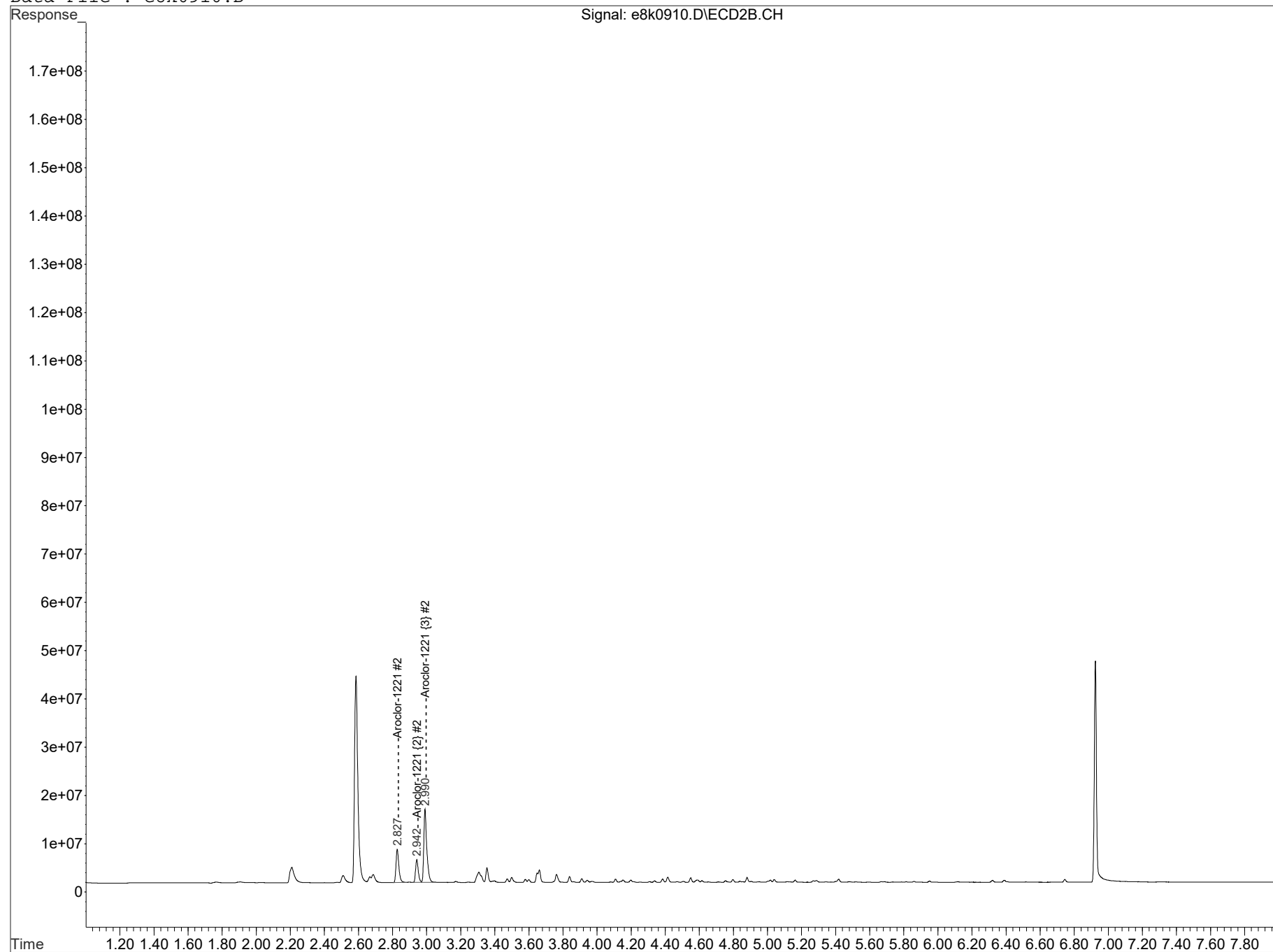
| Compound             | Exp#1 | RT#1  | Dlt#1 | Resp#1     | ug/L#1     | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2     |
|----------------------|-------|-------|-------|------------|------------|-------|-------|-------|-----------|------------|
| Aroclor-1221         | 2.290 | 2.290 | 0.000 | 571085460  | 2592.043 A | 2.828 | 2.828 | 0.000 | 79724600  | 1296.604 A |
| Aroclor-1221 {2}     | 2.401 | 2.401 | 0.000 | 271297240  | 2249.100 A | 2.943 | 2.943 | 0.000 | 51332175  | 1306.023 A |
| Aroclor-1221 {3}     | 2.432 | 2.432 | 0.000 | 1317261914 | 2628.640 A | 2.991 | 2.991 | 0.000 | 181778285 | 1285.092 A |
| Sum Aroclor-1221     |       |       |       | 2159644614 | 7469.784   |       |       |       | 312835060 | 3887.719 # |
| Average Aroclor-1221 |       |       |       |            | 2489.928   |       |       |       |           | 1295.906 # |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0910.D



Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0910.D



## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_1  
**Data File:** 110916.B\8k0922.D  
**Lab Sample ID** WAR160926-60  
**Column ID:** RTX-CLPEST1

**Client SDG:** 409254  
**Injection Date:** 09-NOV-16 10:21  
**Init. Cal. Date(s):** NA  
**Method:** 110916.B\ECD8\_8082\_103116.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV      | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|-------------|-------------|-------------|-----|---------|------------|
| Aroclor-1016             | 1838243.38     | 1966198.11  | 1000        | 6.96        | 20  |         | Averaged   |
| Aroclor-1016(2)          | 1550853.25     | 1580050.46  | 1000        | 1.88        | 20  |         | Averaged   |
| Aroclor-1016(3)          | 961276.94      | 972780.33   | 1000        | 1.2         | 20  |         | Averaged   |
| Aroclor-1016(4)          | 840020.53      | 906781.57   | 1000        | 7.95        | 20  |         | Averaged   |
| Aroclor-1016(5)          | 1172557.47     | 1186254.62  | 1000        | 1.17        | 20  |         | Averaged   |
| Aroclor-1260             | 2495340.53     | 2338202.74  | 1000        | -6.3        | 20  |         | Averaged   |
| Aroclor-1260(2)          | 3756236        | 3594997.55  | 1000        | -4.29       | 20  |         | Averaged   |
| Aroclor-1260(3)          | 1924679.99     | 1743366.07  | 1000        | -9.42       | 20  |         | Averaged   |
| Aroclor-1260(4)          | 4613713.95     | 4322414.67  | 1000        | -6.31       | 20  |         | Averaged   |
| Aroclor-1260(5)          | 2458223.13     | 2324285.64  | 1000        | -5.45       | 20  |         | Averaged   |
| 4cmx(Surr)               | 48060926.84    | 52911032.54 | 100         | 10.09       | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 38317356.01    | 40030142.56 | 100         | 4.47        | 20  |         | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_2  
**Data File:** 110916.B\8k0922.D  
**Lab Sample ID** WAR160926-60  
**Column ID:** RTX-CLPEST2

**Client SDG:** 409254  
**Injection Date:** 09-NOV-16 10:21  
**Init. Cal. Date(s):** NA  
**Method:** 110916.B\ECD8\_8082\_103116.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV     | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|------------|-------------|-------------|-----|---------|------------|
| Aroclor-1016             | 265728.24      | 278015.66  | 1000        | 4.62        | 20  |         | Averaged   |
| Aroclor-1016(2)          | 188593.5       | 204825.48  | 1000        | 8.61        | 20  |         | Averaged   |
| Aroclor-1016(3)          | 115527.59      | 123678.52  | 1000        | 7.06        | 20  |         | Averaged   |
| Aroclor-1016(4)          | 126085.45      | 131519.35  | 1000        | 4.31        | 20  |         | Averaged   |
| Aroclor-1016(5)          | 158228.81      | 167141     | 1000        | 5.63        | 20  |         | Averaged   |
| Aroclor-1260             | 300225.87      | 307466.3   | 1000        | 2.41        | 20  |         | Averaged   |
| Aroclor-1260(2)          | 372698.4       | 367962.25  | 1000        | -1.27       | 20  |         | Averaged   |
| Aroclor-1260(3)          | 258806.69      | 244090.98  | 1000        | -5.69       | 20  |         | Averaged   |
| Aroclor-1260(4)          | 577978.37      | 557969.62  | 1000        | -3.46       | 20  |         | Averaged   |
| Aroclor-1260(5)          | 409026.41      | 386990.16  | 1000        | -5.39       | 20  |         | Averaged   |
| 4cmx(Surr)               | 6183941.94     | 6988828.31 | 100         | 13.02       | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 4596284.43     | 4817851.73 | 100         | 4.82        | 20  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0922.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 10:21 (#1); 09 Nov 2016 10:21 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR160926-60|CCV|1|SVA|1|1660  
Misc : |MIX[A]  
ALS Vial : 22 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 10:37:00 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1      | ug/L#1    | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2   |
|-----------------------------|-------|-------|--------|-------------|-----------|-------|-------|--------|------------|----------|
| System Monitoring Compounds |       |       |        |             |           |       |       |        |            |          |
| 4CMX                        | 2.150 | 2.143 | -0.007 | 5291103254  | 110.092m  | 2.584 | 2.583 | -0.001 | 698882831  | 113.016  |
| DCB                         | 6.104 | 6.093 | -0.011 | 4003014256  | 104.470   | 6.924 | 6.920 | -0.004 | 481785173  | 104.821  |
| Target Compounds            |       |       |        |             |           |       |       |        |            |          |
| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1      | ug/L#1    | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2   |
| Aroclor-1016                | 2.698 | 2.689 | -0.009 | 1966198111  | 1069.607  | 3.309 | 3.308 | -0.001 | 278015656  | 1046.241 |
| Aroclor-1016 {2}            | 3.138 | 3.129 | -0.009 | 1580050463  | 1018.827  | 3.762 | 3.759 | -0.003 | 204825482  | 1086.069 |
| Aroclor-1016 {3}            | 3.184 | 3.174 | -0.010 | 972780334   | 1011.967  | 3.838 | 3.836 | -0.002 | 123678518  | 1070.554 |
| Aroclor-1016 {4}            | 3.276 | 3.283 | 0.007  | 906781569   | 1079.475  | 3.910 | 3.908 | -0.002 | 131519347  | 1043.097 |
| Aroclor-1016 {5}            | 3.436 | 3.426 | -0.010 | 1186254619  | 1011.681m | 4.109 | 4.106 | -0.003 | 167141001  | 1056.325 |
| Sum Aroclor-1016            |       |       |        | 6612065096  | 5191.557  |       |       |        | 905180003  | 5302.285 |
| Average Aroclor-1016        |       |       |        |             | 1038.311  |       |       |        |            | 1060.457 |
| Aroclor-1260                | 4.301 | 4.292 | -0.009 | 2338202738  | 937.028   | 5.018 | 5.013 | -0.005 | 307466302  | 1024.117 |
| Aroclor-1260 {2}            | 4.496 | 4.487 | -0.009 | 3594997551  | 957.074   | 5.163 | 5.159 | -0.004 | 367962250  | 987.292  |
| Aroclor-1260 {3}            | 4.770 | 4.760 | -0.010 | 1743366065  | 905.795   | 5.479 | 5.474 | -0.005 | 244090979  | 943.140  |
| Aroclor-1260 {4}            | 5.155 | 5.145 | -0.010 | 4322414665  | 936.862   | 5.859 | 5.855 | -0.004 | 557969617  | 965.381  |
| Aroclor-1260 {5}            | 5.350 | 5.340 | -0.010 | 2324285643  | 945.515   | 6.118 | 6.113 | -0.005 | 386990162  | 946.125  |
| Sum Aroclor-1260            |       |       |        | 14323266661 | 4682.274  |       |       |        | 1864479311 | 4866.056 |
| Average Aroclor-1260        |       |       |        |             | 936.455   |       |       |        |            | 973.211  |

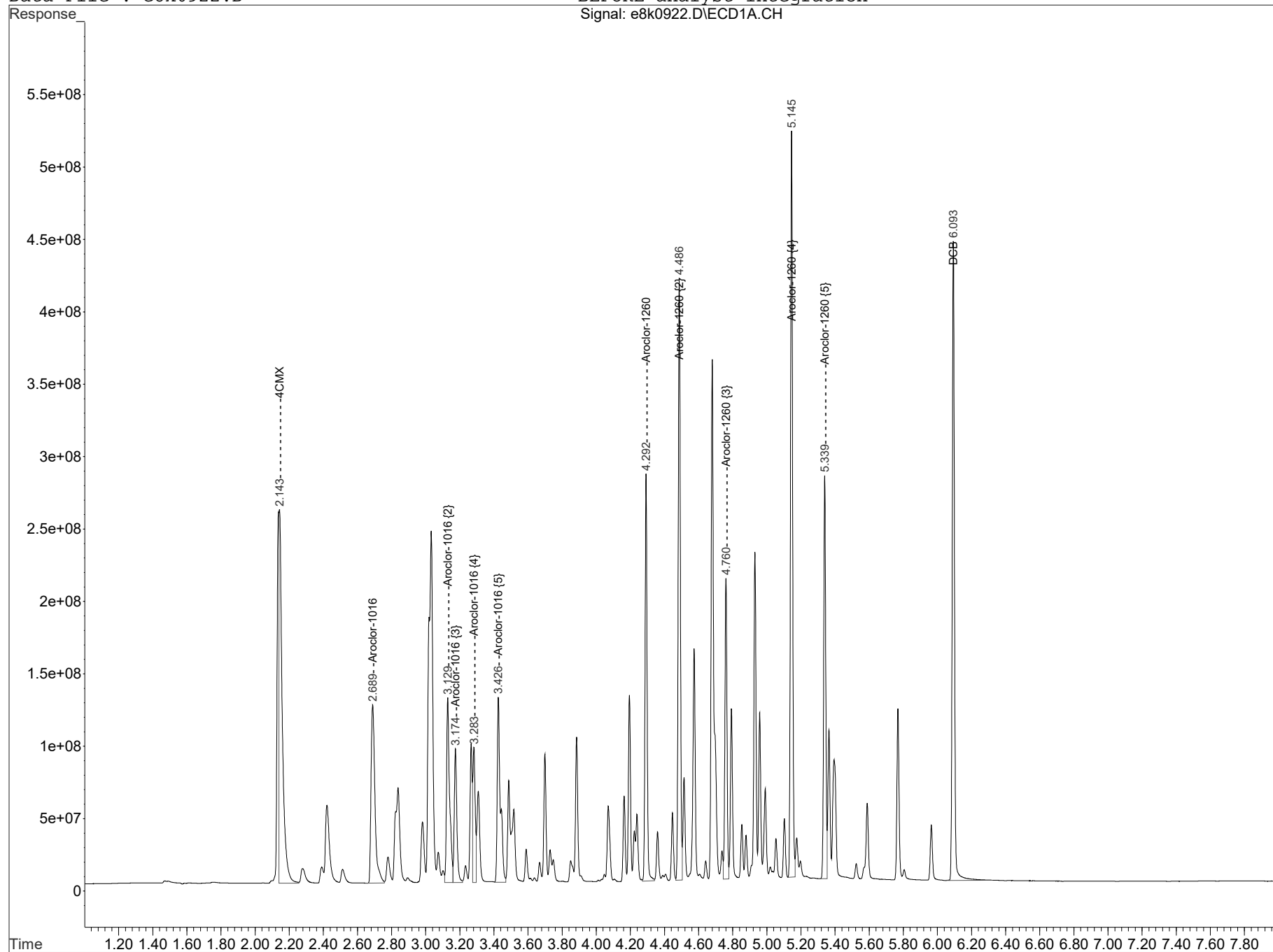
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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0922.D

BEFORE analyst integration

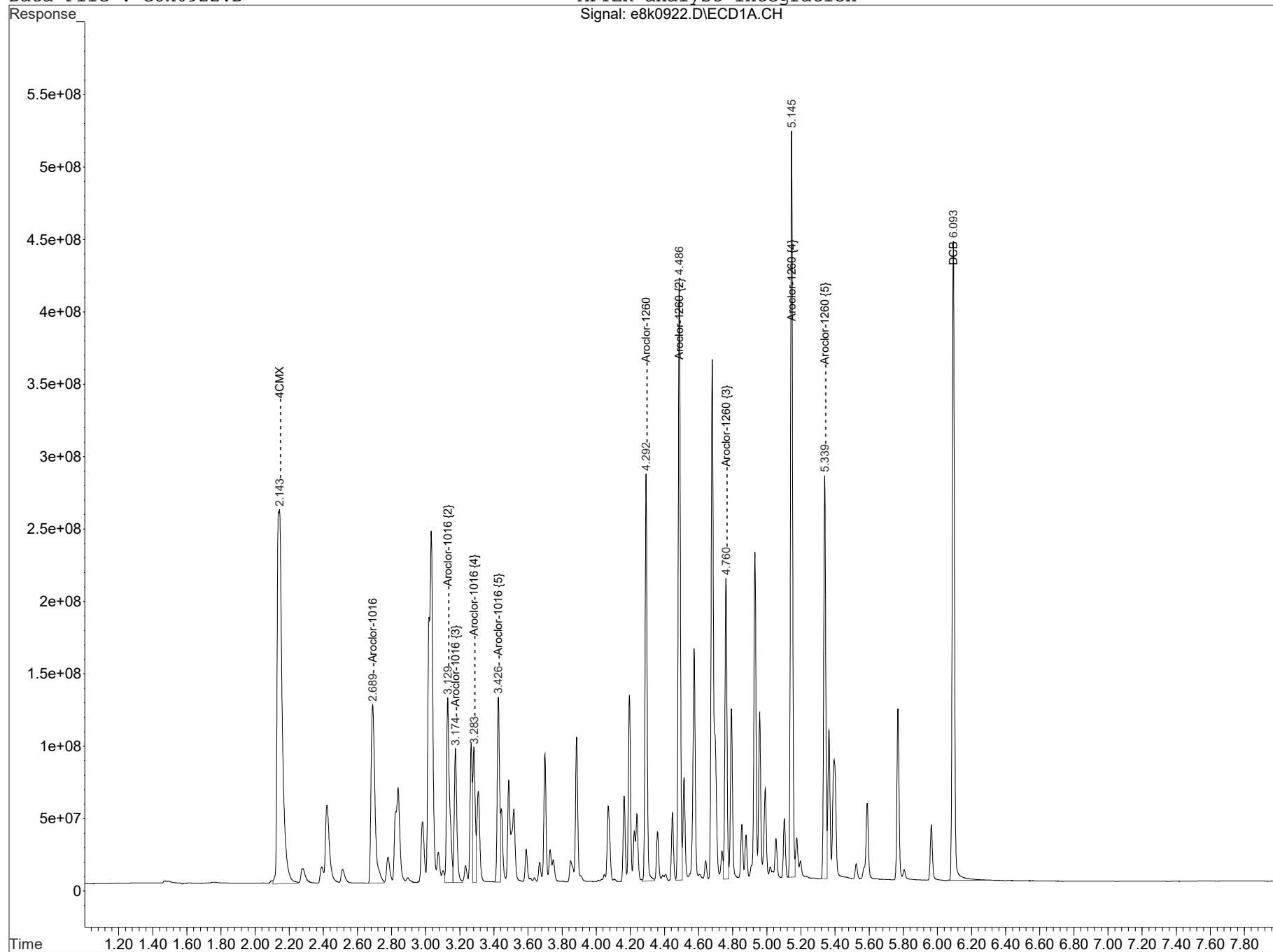
Signal: e8k0922.D\ECD1A.CH





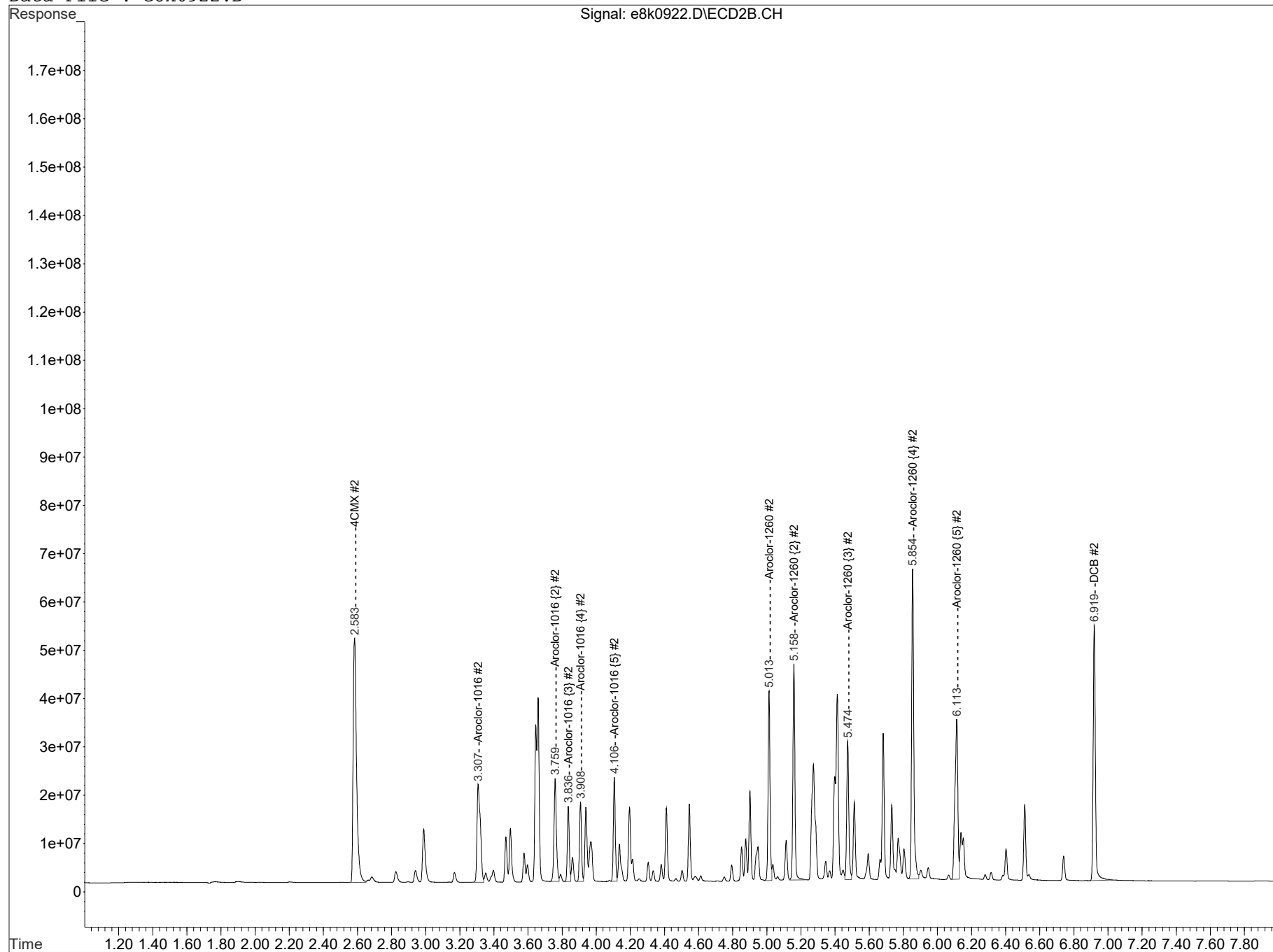
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0922.D

AFTER analyst integration  
Signal: e8k0922.D\ECD1A.CH



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0922.D



## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_1  
**Data File:** 110916.B\8k0930.D  
**Lab Sample ID** WAR160926-60  
**Column ID:** RTX-CLPEST1

**Client SDG:** 409254  
**Injection Date:** 09-NOV-16 12:12  
**Init. Cal. Date(s):** NA  
**Method:** 110916.B\ECD8\_8082\_103116.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV      | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|-------------|-------------|-------------|-----|---------|------------|
| Aroclor-1016             | 1838243.38     | 1971700.5   | 1000        | 7.26        | 20  |         | Averaged   |
| Aroclor-1016(2)          | 1550853.25     | 1567067.13  | 1000        | 1.05        | 20  |         | Averaged   |
| Aroclor-1016(3)          | 961276.94      | 958269.7    | 1000        | -0.31       | 20  |         | Averaged   |
| Aroclor-1016(4)          | 840020.53      | 803678.08   | 1000        | -4.33       | 20  |         | Averaged   |
| Aroclor-1016(5)          | 1172557.47     | 1186506.11  | 1000        | 1.19        | 20  |         | Averaged   |
| Aroclor-1260             | 2495340.53     | 2349730.52  | 1000        | -5.84       | 20  |         | Averaged   |
| Aroclor-1260(2)          | 3756236        | 3587433.99  | 1000        | -4.49       | 20  |         | Averaged   |
| Aroclor-1260(3)          | 1924679.99     | 1758808.7   | 1000        | -8.62       | 20  |         | Averaged   |
| Aroclor-1260(4)          | 4613713.95     | 4370207.51  | 1000        | -5.28       | 20  |         | Averaged   |
| Aroclor-1260(5)          | 2458223.13     | 2329394.74  | 1000        | -5.24       | 20  |         | Averaged   |
| 4cmx(Surr)               | 48060926.84    | 53151361.49 | 100         | 10.59       | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 38317356.01    | 39982438.78 | 100         | 4.35        | 20  |         | Averaged   |

## Continuing Calibration Summary

**Instrument ID:** ECD8A.I\_2  
**Data File:** 110916.B\8k0930.D  
**Lab Sample ID** WAR160926-60  
**Column ID:** RTX-CLPEST2

**Client SDG:** 409254  
**Injection Date:** 09-NOV-16 12:12  
**Init. Cal. Date(s):** NA  
**Method:** 110916.B\ECD8\_8082\_103116.m  
**Quant Type:** ESTD

| Compound                 | AVECF / Amount | CF CCV     | Nominal CCV | %D / %Drift | Max | Drift Q | Curve Type |
|--------------------------|----------------|------------|-------------|-------------|-----|---------|------------|
| Aroclor-1016             | 265728.24      | 279167.88  | 1000        | 5.06        | 20  |         | Averaged   |
| Aroclor-1016(2)          | 188593.5       | 204495.28  | 1000        | 8.43        | 20  |         | Averaged   |
| Aroclor-1016(3)          | 115527.59      | 123552.71  | 1000        | 6.95        | 20  |         | Averaged   |
| Aroclor-1016(4)          | 126085.45      | 131282.84  | 1000        | 4.12        | 20  |         | Averaged   |
| Aroclor-1016(5)          | 158228.81      | 165646.19  | 1000        | 4.69        | 20  |         | Averaged   |
| Aroclor-1260             | 300225.87      | 297519.29  | 1000        | -0.9        | 20  |         | Averaged   |
| Aroclor-1260(2)          | 372698.4       | 363279.92  | 1000        | -2.53       | 20  |         | Averaged   |
| Aroclor-1260(3)          | 258806.69      | 242497.27  | 1000        | -6.3        | 20  |         | Averaged   |
| Aroclor-1260(4)          | 577978.37      | 552886.38  | 1000        | -4.34       | 20  |         | Averaged   |
| Aroclor-1260(5)          | 409026.41      | 375231.18  | 1000        | -8.26       | 20  |         | Averaged   |
| 4cmx(Surr)               | 6183941.94     | 7111960.45 | 100         | 15.01       | 20  |         | Averaged   |
| Decachlorobiphenyl(Surr) | 4596284.43     | 4574737.46 | 100         | -0.47       | 20  |         | Averaged   |

Quantitation Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0930.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 12:12 (#1); 09 Nov 2016 12:12 (#2)  
Operator : JXM InstName : ECD8  
Sample : |WAR160926-60|CCV|1|SVA|1|1660  
Misc : |MIX[A]  
ALS Vial : 30 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

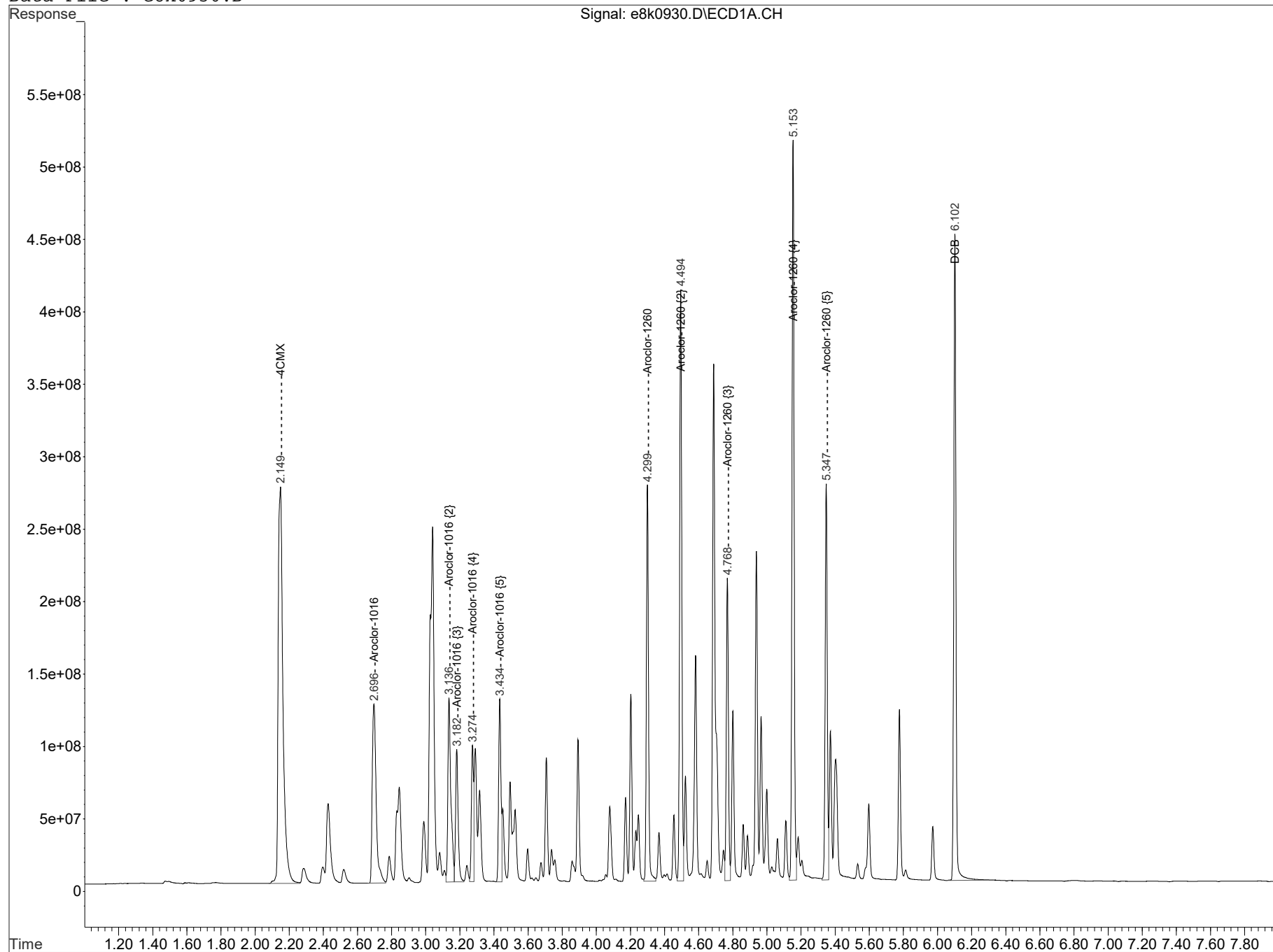
Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 12:26:24 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2   |
|-----------------------------|-------|-------|--------|-------------|----------|-------|-------|--------|------------|----------|
| System Monitoring Compounds |       |       |        |             |          |       |       |        |            |          |
| 4CMX                        | 2.150 | 2.149 | -0.001 | 5315136149  | 110.592  | 2.584 | 2.583 | -0.001 | 711196045  | 115.007  |
| DCB                         | 6.104 | 6.102 | -0.002 | 3998243878  | 104.346  | 6.924 | 6.923 | -0.001 | 457473746  | 99.531   |
| Target Compounds            |       |       |        |             |          |       |       |        |            |          |
| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2   |
| Aroclor-1016                | 2.698 | 2.696 | -0.002 | 1971700500  | 1072.600 | 3.309 | 3.309 | 0.000  | 279167881  | 1050.577 |
| Aroclor-1016 {2}            | 3.138 | 3.137 | -0.001 | 1567067127  | 1010.455 | 3.762 | 3.761 | -0.001 | 204495278  | 1084.318 |
| Aroclor-1016 {3}            | 3.184 | 3.182 | -0.002 | 958269695   | 996.872  | 3.838 | 3.838 | 0.000  | 123552713  | 1069.465 |
| Aroclor-1016 {4}            | 3.276 | 3.274 | -0.002 | 803678083   | 956.736  | 3.910 | 3.910 | 0.000  | 131282835  | 1041.221 |
| Aroclor-1016 {5}            | 3.436 | 3.434 | -0.002 | 1186506110  | 1011.896 | 4.109 | 4.108 | -0.001 | 165646189  | 1046.878 |
| Sum Aroclor-1016            |       |       |        | 6487221515  | 5048.559 |       |       |        | 904144896  | 5292.458 |
| Average Aroclor-1016        |       |       |        |             | 1009.712 |       |       |        |            | 1058.492 |
| Aroclor-1260                | 4.301 | 4.300 | -0.001 | 2349730519  | 941.647  | 5.018 | 5.016 | -0.002 | 297519292  | 990.985  |
| Aroclor-1260 {2}            | 4.496 | 4.495 | -0.001 | 3587433994  | 955.061  | 5.163 | 5.162 | -0.001 | 363279919  | 974.729  |
| Aroclor-1260 {3}            | 4.770 | 4.768 | -0.002 | 1758808697  | 913.819  | 5.479 | 5.477 | -0.002 | 242497274  | 936.982  |
| Aroclor-1260 {4}            | 5.155 | 5.154 | -0.001 | 4370207514  | 947.221  | 5.859 | 5.859 | 0.000  | 552886383  | 956.587  |
| Aroclor-1260 {5}            | 5.350 | 5.348 | -0.002 | 2329394738  | 947.593  | 6.118 | 6.117 | -0.001 | 375231183  | 917.376  |
| Sum Aroclor-1260            |       |       |        | 14395575462 | 4705.341 |       |       |        | 1831414051 | 4776.659 |
| Average Aroclor-1260        |       |       |        |             | 941.068  |       |       |        |            | 955.332  |

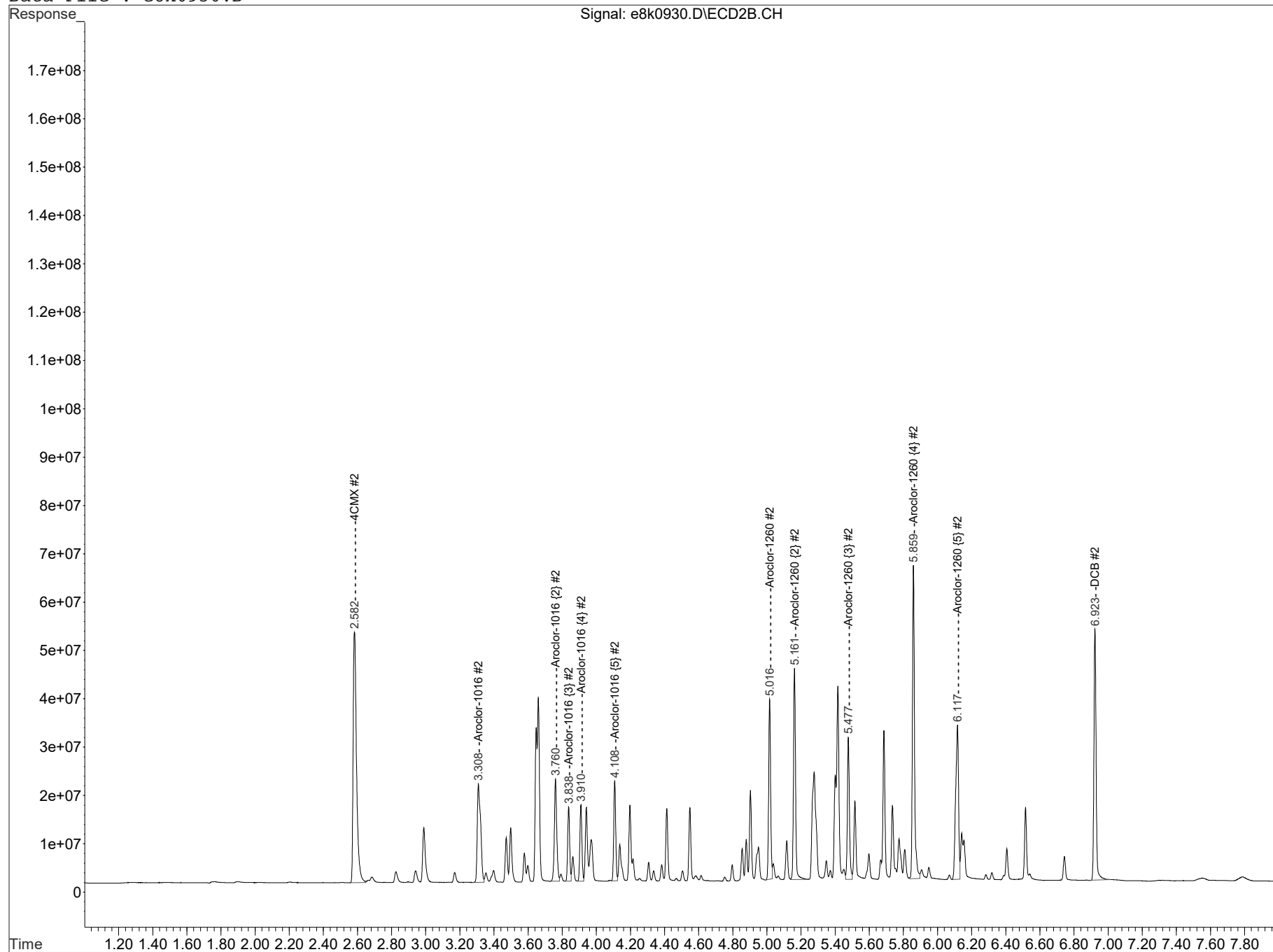
-----  
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0930.D



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0930.D



Lab Name: GEL Laboratories LLC                      Client SDG: 409254

GC Column: RTX-CLPEST1

Instrument ID: ECD8A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |               |                 | 2.15<br>2.12      2.18    # | 6.1<br>6.07      6.13    # |
|--|---------------|---------------|-----------------|-----------------------------|----------------------------|
| File   | Sample Number | Lab Sample ID | Analysis Date   | 4cmx                        | Decachlorobiphenyl         |
| e8j3113.D  | ICAL          | WAR161031-01  | 31-OCT-16 09:17 | 2.16                        | 6.11                       |
| e8j3114.D  | ICAL          | WAR161031-02  | 31-OCT-16 09:30 | 2.15                        | 6.11                       |
| e8j3115.D  | ICAL          | WAR161031-03  | 31-OCT-16 09:42 | 2.15                        | 6.1                        |
| e8j3116.D  | ICAL          | WAR161031-04  | 31-OCT-16 09:54 | 2.15                        | 6.1                        |
| e8j3117.D  | ICAL          | WAR160926-01  | 31-OCT-16 10:07 | 2.15                        | 6.1                        |
| e8j3118.D  | ICV           | WAR160926-60  | 31-OCT-16 10:19 | 2.15                        | 6.1                        |

# Column used to flag retention time values with an asterisk.



Lab Name: GEL Laboratories LLC                      Client SDG: 409254

GC Column: RTX-CLPEST2

Instrument ID: ECD8A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |               |                 | 2.59<br>2.56 2.62 # | 6.92<br>6.89 6.95 # |
|--|---------------|---------------|-----------------|---------------------|---------------------|
| File   | Sample Number | Lab Sample ID | Analysis Date   | 4cmx                | Decachlorobiphenyl  |
| e8j3113.D  | ICAL          | WAR161031-01  | 31-OCT-16 09:17 | 2.59                | 6.93                |
| e8j3114.D  | ICAL          | WAR161031-02  | 31-OCT-16 09:30 | 2.59                | 6.92                |
| e8j3115.D  | ICAL          | WAR161031-03  | 31-OCT-16 09:42 | 2.59                | 6.92                |
| e8j3116.D  | ICAL          | WAR161031-04  | 31-OCT-16 09:54 | 2.59                | 6.92                |
| e8j3117.D  | ICAL          | WAR160926-01  | 31-OCT-16 10:07 | 2.59                | 6.92                |
| e8j3118.D  | ICV           | WAR160926-60  | 31-OCT-16 10:19 | 2.59                | 6.92                |

# Column used to flag retention time values with an asterisk.

## Analytical Sequence

Page 1 of 4

Lab Name: GEL Laboratories LLC

Client SDG: 409254

GC Column: RTX-CLPEST1

Instrument ID: ECD8A.

**Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:**

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |               |                 | 2.15<br>2.12 2.18 # | 6.1<br>6.07 6.13 # |
|--|---------------|---------------|-----------------|---------------------|--------------------|
| File   | Sample Number | Lab Sample ID | Analysis Date   | 4cmx                | Decachlorobiphenyl |
| e8k0901.D  | CCB           | WAR160712-99  | 09-NOV-16 05:35 | 2.16                | 6.11               |
| e8k0902.D  | ZZZZZZ        | ZZZZZZ        | 09-NOV-16 05:47 | NA                  | NA                 |
| e8k0903.D  | CCV           | WAR160926-60  | 09-NOV-16 05:59 | 2.15                | 6.1                |
| e8k0904.D  | CCV           | WAR160721-54  | 09-NOV-16 06:11 | NA                  | NA                 |
| e8k0905.D  | CCV           | WAR160728-42  | 09-NOV-16 06:24 | NA                  | NA                 |
| e8k0906.D  | CCV           | WAR160728-48  | 09-NOV-16 06:36 | NA                  | NA                 |
| e8k0907.D  | CCV           | WAR160922-62  | 09-NOV-16 06:48 | NA                  | NA                 |
| e8k0908.D  | CCV           | WAR160809-68  | 09-NOV-16 07:00 | NA                  | NA                 |
| e8k0909.D  | CCV           | WAR160809-32  | 09-NOV-16 07:13 | NA                  | NA                 |
| e8k0910.D  | CCV           | WAR160628-21  | 09-NOV-16 07:25 | NA                  | NA                 |
| e8k0911.D  | CCB           | WAR160712-99  | 09-NOV-16 07:37 | 2.15                | 6.1                |
| e8k0912.D  | MB            | 1203665373    | 09-NOV-16 07:50 | 2.15                | 6.1                |
| e8k0913.D  | BLK01LCS      | 1203665374    | 09-NOV-16 08:02 | 2.15                | 6.1                |
| e8k0914.D  | ZZZZZZ        | ZZZZZZ        | 09-NOV-16 08:14 | 2.15                | 6.11               |
| e8k0915.D  | ZZZZZZ        | ZZZZZZ        | 09-NOV-16 08:28 | 2.14                | 6.1                |
| e8k0916.D  | ZZZZZZ        | ZZZZZZ        | 09-NOV-16 08:43 | 2.15                | 6.11               |
| e8k0917.D  | DP050113      | 409254026     | 09-NOV-16 08:57 | 2.14                | 6.1                |
| e8k0918.D  | DP050113MS    | 1203665375    | 09-NOV-16 09:11 | 2.15                | 6.1                |
| e8k0919.D  | DP050113MSD   | 1203665376    | 09-NOV-16 09:26 | 2.15                | 6.1                |
| e8k0920.D  | DP050213      | 409254027     | 09-NOV-16 09:40 | 2.15                | 6.1                |
| e8k0921.D  | SS050100      | 409254028     | 09-NOV-16 09:55 | 2.17                | 6.13               |
| e8k0922.D  | CCV           | WAR160926-60  | 09-NOV-16 10:21 | 2.14                | 6.09               |
| e8k0923.D  | CCB           | WAR160712-99  | 09-NOV-16 10:33 | 2.15                | 6.1                |
| e8k0924.D  | DP020312      | 409254029     | 09-NOV-16 10:46 | 2.15                | 6.1                |
| e8k0925.D  | DP020312DUP   | 409254031     | 09-NOV-16 11:00 | 2.15                | 6.1                |
| e8k0926.D  | DP020413      | 409254032     | 09-NOV-16 11:14 | 2.15                | 6.1                |
| e8k0927.D  | DP020207      | 409254034     | 09-NOV-16 11:29 | 2.15                | 6.1                |
| e8k0928.D  | DP020209      | 409254036     | 09-NOV-16 11:43 | 2.15                | 6.1                |
| e8k0929.D  | DP020114      | 409254038     | 09-NOV-16 11:57 | 2.15                | 6.1                |

# Column used to flag retention time values with an asterisk.

Analytical Sequence

Lab Name: GEL Laboratories LLC                      Client SDG: 409254

GC Column: RTX-CLPEST1

Instrument ID: ECD8A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |     |               |                 | 2.15<br>2.12 2.18 # | 6.1<br>6.07 6.13 # |
|--|-----|---------------|-----------------|---------------------|--------------------|
| Sample Number  |     | Lab Sample ID | Analysis Date   | 4cmx                | Decachlorobiphenyl |
| e8k0930.D  | CCV | WAR160926-60  | 09-NOV-16 12:12 | 2.15                | 6.1                |
| e8k0931.D  | CCB | WAR160712-99  | 09-NOV-16 12:24 | 2.15                | 6.1                |

# Column used to flag retention time values with an  
asterisk.

## Analytical Sequence

Page 3 of 4

Lab Name: GEL Laboratories LLC

Client SDG: 409254

GC Column: RTX-CLPEST2

Instrument ID: ECD8A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |               |               |                 | 2.55 <sup>2.58</sup><br>2.61 # | 6.89 <sup>6.92</sup><br>6.95 # |
|--|---------------|---------------|-----------------|--------------------------------|--------------------------------|
| File   | Sample Number | Lab Sample ID | Analysis Date   | 4cmx                           | Decachlorobiphenyl             |
| e8k0901.D  | CCB           | WAR160712-99  | 09-NOV-16 05:35 | 2.59                           | 6.93                           |
| e8k0902.D  | ZZZZZZ        | ZZZZZZ        | 09-NOV-16 05:47 | NA                             | NA                             |
| e8k0903.D  | CCV           | WAR160926-60  | 09-NOV-16 05:59 | 2.58                           | 6.92                           |
| e8k0904.D  | CCV           | WAR160721-54  | 09-NOV-16 06:11 | NA                             | NA                             |
| e8k0905.D  | CCV           | WAR160728-42  | 09-NOV-16 06:24 | NA                             | NA                             |
| e8k0906.D  | CCV           | WAR160728-48  | 09-NOV-16 06:36 | NA                             | NA                             |
| e8k0907.D  | CCV           | WAR160922-62  | 09-NOV-16 06:48 | NA                             | NA                             |
| e8k0908.D  | CCV           | WAR160809-68  | 09-NOV-16 07:00 | NA                             | NA                             |
| e8k0909.D  | CCV           | WAR160809-32  | 09-NOV-16 07:13 | NA                             | NA                             |
| e8k0910.D  | CCV           | WAR160628-21  | 09-NOV-16 07:25 | NA                             | NA                             |
| e8k0911.D  | CCB           | WAR160712-99  | 09-NOV-16 07:37 | 2.58                           | 6.92                           |
| e8k0912.D  | MB            | 1203665373    | 09-NOV-16 07:50 | 2.58                           | 6.92                           |
| e8k0913.D  | BLK01LCS      | 1203665374    | 09-NOV-16 08:02 | 2.58                           | 6.92                           |
| e8k0914.D  | ZZZZZZ        | ZZZZZZ        | 09-NOV-16 08:14 | 2.59                           | 6.93                           |
| e8k0915.D  | ZZZZZZ        | ZZZZZZ        | 09-NOV-16 08:28 | 2.58                           | 6.93                           |
| e8k0916.D  | ZZZZZZ        | ZZZZZZ        | 09-NOV-16 08:43 | 2.59                           | 6.93                           |
| e8k0917.D  | DP050113      | 409254026     | 09-NOV-16 08:57 | 2.58                           | 6.92                           |
| e8k0918.D  | DP050113MS    | 1203665375    | 09-NOV-16 09:11 | 2.59                           | 6.92                           |
| e8k0919.D  | DP050113MSD   | 1203665376    | 09-NOV-16 09:26 | 2.59                           | 6.92                           |
| e8k0920.D  | DP050213      | 409254027     | 09-NOV-16 09:40 | 2.58                           | 6.92                           |
| e8k0921.D  | SS050100      | 409254028     | 09-NOV-16 09:55 | 2.62 *                         | 6.94                           |
| e8k0922.D  | CCV           | WAR160926-60  | 09-NOV-16 10:21 | 2.58                           | 6.92                           |
| e8k0923.D  | CCB           | WAR160712-99  | 09-NOV-16 10:33 | 2.58                           | 6.92                           |
| e8k0924.D  | DP020312      | 409254029     | 09-NOV-16 10:46 | 2.59                           | 6.92                           |
| e8k0925.D  | DP020312DUP   | 409254031     | 09-NOV-16 11:00 | 2.58                           | 6.93                           |
| e8k0926.D  | DP020413      | 409254032     | 09-NOV-16 11:14 | 2.58                           | 6.92                           |
| e8k0927.D  | DP020207      | 409254034     | 09-NOV-16 11:29 | 2.58                           | 6.92                           |
| e8k0928.D  | DP020209      | 409254036     | 09-NOV-16 11:43 | 2.58                           | 6.92                           |
| e8k0929.D  | DP020114      | 409254038     | 09-NOV-16 11:57 | 2.58                           | 6.92                           |

# Column used to flag retention time values with an asterisk.

Analytical Sequence

Lab Name: GEL Laboratories LLC                      Client SDG: 409254

GC Column: RTX-CLPEST2

Instrument ID: ECD8A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples,  
and Standards is given below:

| Mean Surrogate RT From Initial Calibration:<br>RT Range Based on Calibration Verification: |     |               |                 | 2.58<br>2.55 2.61 # | 6.92<br>6.89 6.95 # |
|--|-----|---------------|-----------------|---------------------|---------------------|
| Sample Number  |     | Lab Sample ID | Analysis Date   | 4cmx                | Decachlorobiphenyl  |
| e8k0930.D  | CCV | WAR160926-60  | 09-NOV-16 12:12 | 2.58                | 6.92                |
| e8k0931.D  | CCB | WAR160712-99  | 09-NOV-16 12:24 | 2.58                | 6.92                |

# Column used to flag retention time values with an asterisk.

# Quality Control Data

**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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|                       |                             |                      |                      |
|-----------------------|-----------------------------|----------------------|----------------------|
| <b>SDG Number:</b>    | <b>409254</b>               | <b>Matrix:</b>       | <b>MISC SOLID</b>    |
| <b>Lab Sample ID:</b> | <b>1203665373</b>           |                      |                      |
| <b>Client Sample:</b> | <b>QC for batch 1614292</b> | <b>Project:</b>      | <b>QC</b>            |
| <b>Client ID:</b>     | <b>MB for batch 1614292</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-040</b>   |
| <b>Batch ID:</b>      | <b>1614293</b>              | <b>Dilution:</b>     | <b>1</b>             |
| <b>Run Date:</b>      | <b>11/09/2016 07:50</b>     | <b>Inj. Vol:</b>     | <b>1 uL</b>          |
| <b>Prep Date:</b>     | <b>11/08/2016 10:54</b>     | <b>Final Volume:</b> | <b>1 mL</b>          |
| <b>Data File:</b>     | <b>110916.B\8k0912.D</b>    |                      |                      |
|                       | <b>110916.B\8k0912.D</b>    | <b>Column:</b>       | <b>1 RTX-CLPEST1</b> |
|                       |                             |                      | <b>2 RTX-CLPEST2</b> |

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 11096-82-5 | Aroclor-1260 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |

Quantitation (Manual Int.) Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0912.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 07:50 (#1); 09 Nov 2016 7:50 (#2)  
Operator : JXM InstName : ECD8  
Sample : |1203665373|1614293|1|SVA|1|MB|||  
Misc : |ECD4X2A 1S|MISC SOLID|QC A|||  
ALS Vial : 12 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 10:17:04 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2    | ug/L#2  |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|--------|-----------|---------|
| -----                       |       |       |        |            |          |       |       |        |           |         |
| System Monitoring Compounds |       |       |        |            |          |       |       |        |           |         |
| 4CMX                        | 2.150 | 2.147 | -0.003 | 6703641561 | 139.482m | 2.584 | 2.583 | -0.001 | 933947648 | 151.028 |
| DCB                         | 6.104 | 6.103 | -0.001 | 6197400369 | 161.739  | 6.924 | 6.924 | 0.000  | 747909078 | 162.720 |

| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 70%       | 76%       |
| DCB      | 200.000 | No Limits | 81%       | 81%       |

Target Compounds

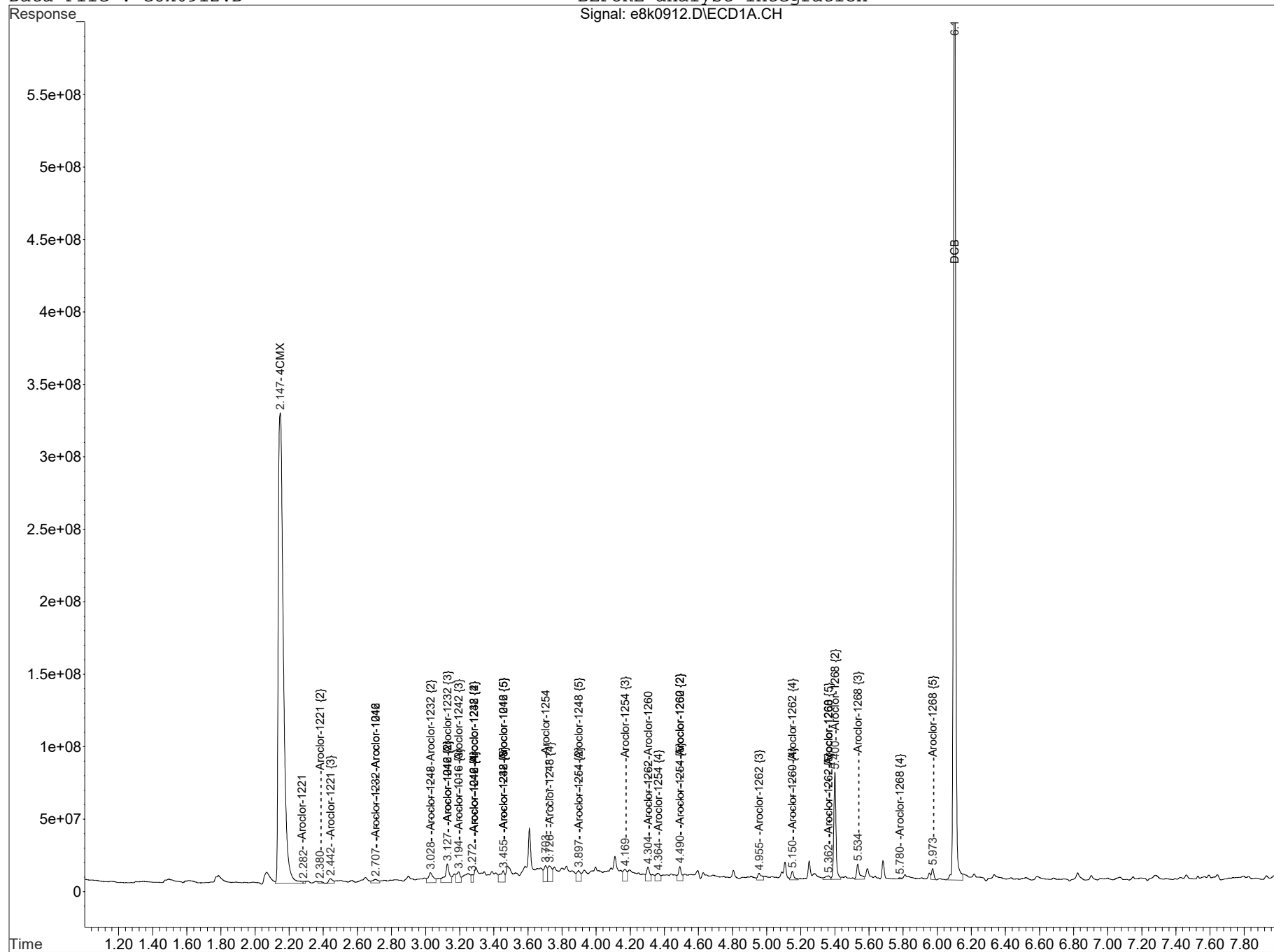
| Compound | Exp#1 | RT#1 | Dlt#1 | Resp#1 | ug/L#1 | Exp#2 | RT#2 | Dlt#2 | Resp#2 | ug/L#2 |
|----------|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| -----    |       |      |       |        |        |       |      |       |        |        |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted



Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0912.D

BEFORE analyst integration  
Signal: e8k0912.D\ECD1A.CH

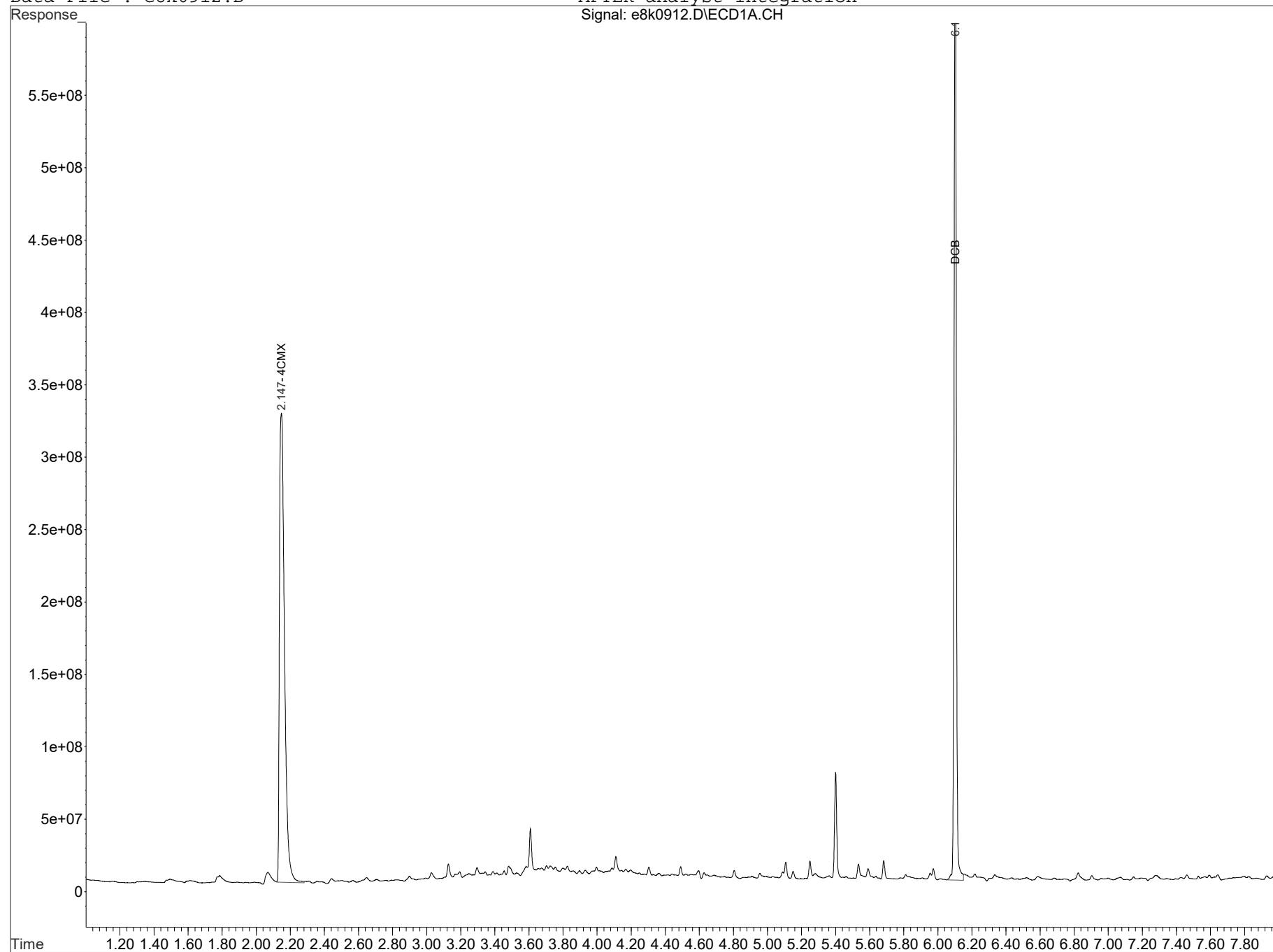


Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0912.D

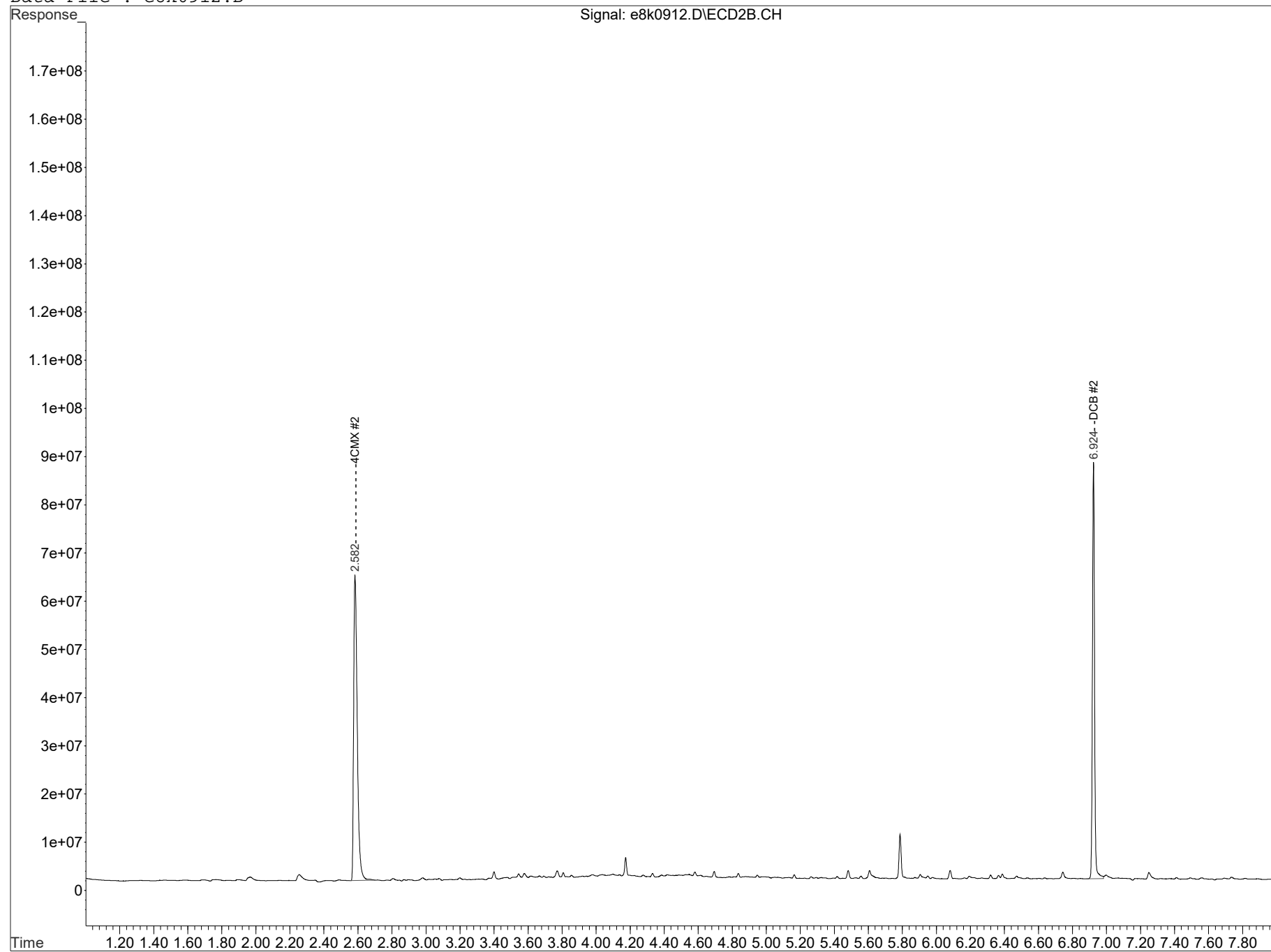
AFTER analyst integration

Signal: e8k0912.D\ECD1A.CH



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0912.D



**PCB**  
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**Sample Summary**

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|                       |                              |                      |                    |
|-----------------------|------------------------------|----------------------|--------------------|
| <b>SDG Number:</b>    | <b>409254</b>                | <b>Matrix:</b>       | <b>MISC SOLID</b>  |
| <b>Lab Sample ID:</b> | <b>1203665374</b>            |                      |                    |
| <b>Client Sample:</b> | <b>QC for batch 1614292</b>  | <b>Project:</b>      | <b>QC</b>          |
| <b>Client ID:</b>     | <b>LCS for batch 1614292</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-040</b> |
| <b>Batch ID:</b>      | <b>1614293</b>               | <b>Dilution:</b>     | <b>1</b>           |
| <b>Run Date:</b>      | <b>11/09/2016 08:02</b>      | <b>Inj. Vol:</b>     | <b>1 uL</b>        |
| <b>Prep Date:</b>     | <b>11/08/2016 10:54</b>      | <b>Final Volume:</b> | <b>1 mL</b>        |
| <b>Data File:</b>     | <b>110916.B\8k0913.D</b>     |                      |                    |
|                       | <b>110916.B\8k0913.D</b>     |                      |                    |

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 |           | 22.0   | ug/kg | 1.11    | 3.33    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 3.33   | ug/kg | 1.11    | 3.33    | 1      |
| 11096-82-5 | Aroclor-1260 |           | 21.2   | ug/kg | 1.11    | 3.33    | 1      |

## Quantitation (Manual Int.) Report

GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
 Data File : e8k0913.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 09 Nov 2016 08:02 (#1); 09 Nov 2016 8:02 (#2)  
 Operator : JXM InstName : ECD8  
 Sample : |1203665374|1614293|1|SVA|1|LCS|||  
 Misc : |ECD4X2A 1S|MISC SOLID|QC A|||  
 ALS Vial : 13 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
 Quant Time: Nov 09 10:20:59 2016  
 Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
 Quant Title : ECD8 SubList :  
 QLast Update : Tue Nov 01 04:35:57 2016  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
 Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
 Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2  |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|-------|-----------|---------|
| System Monitoring Compounds |       |       |        |            |          |       |       |       |           |         |
| 4CMX                        | 2.150 | 2.150 | 0.000  | 6794870703 | 141.380m | 2.584 | 2.584 | 0.000 | 937965909 | 151.678 |
| DCB                         | 6.104 | 6.102 | -0.002 | 6300016859 | 164.417m | 6.924 | 6.924 | 0.000 | 774836145 | 168.579 |

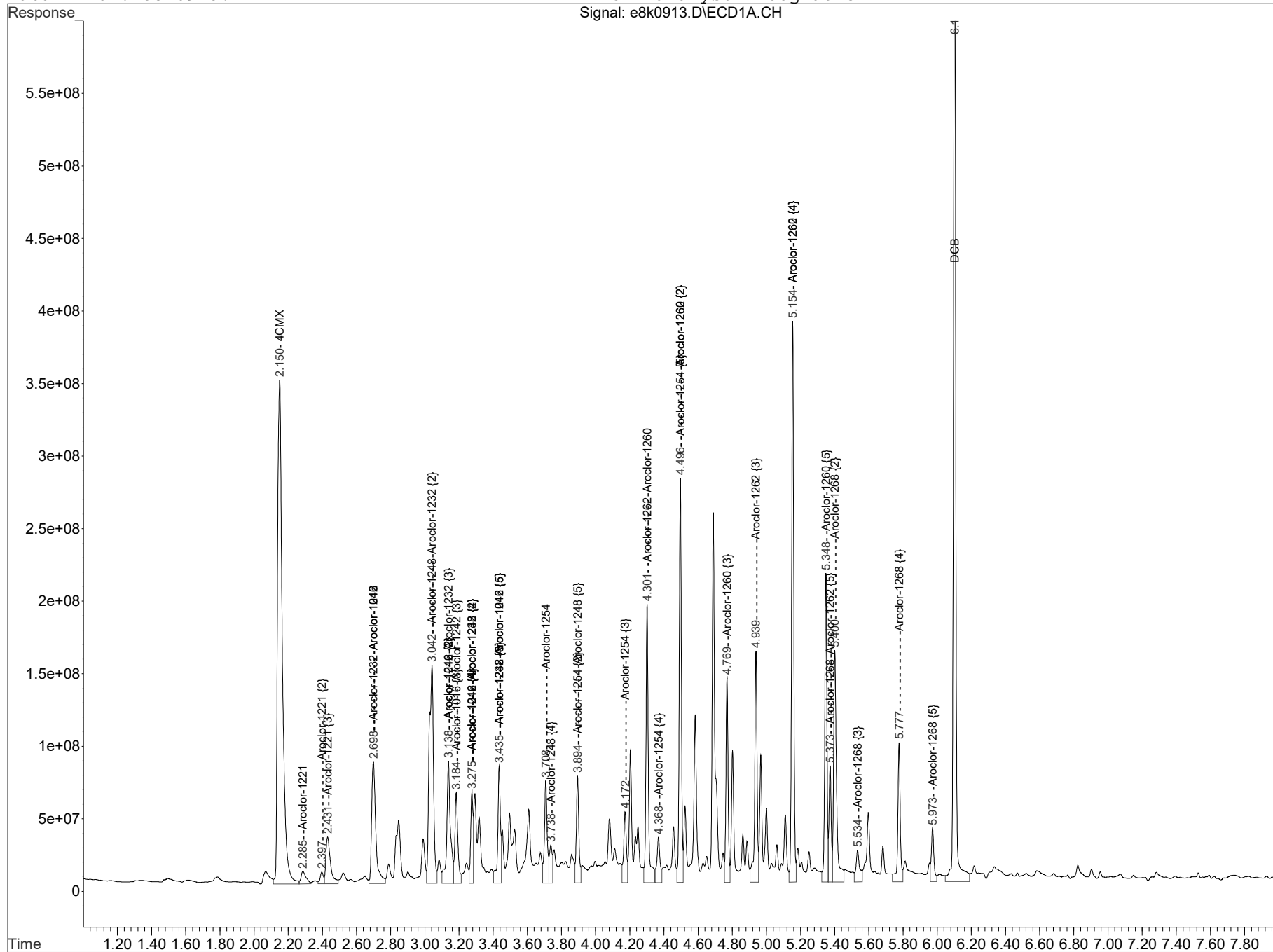
| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 71%       | 76%       |
| DCB      | 200.000 | No Limits | 82%       | 84%       |

| Target Compounds     |       |       |        |            |          |       |       |        |            |          |
|----------------------|-------|-------|--------|------------|----------|-------|-------|--------|------------|----------|
| Compound             | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2   |
| Aroclor-1016         | 2.698 | 2.698 | 0.000  | 1309934962 | 712.601m | 3.309 | 3.309 | 0.000  | 180044709  | 677.552  |
| Aroclor-1016 {2}     | 3.138 | 3.138 | 0.000  | 1097832808 | 707.890m | 3.762 | 3.762 | 0.000  | 144669925  | 767.099  |
| Aroclor-1016 {3}     | 3.184 | 3.184 | 0.000  | 634778738  | 660.349m | 3.838 | 3.839 | 0.001  | 76120347   | 658.893  |
| Aroclor-1016 {4}     | 3.276 | 3.275 | -0.001 | 519536904  | 618.481m | 3.910 | 3.910 | 0.000  | 79195245   | 628.108  |
| Aroclor-1016 {5}     | 3.436 | 3.435 | -0.001 | 708024476  | 603.829m | 4.109 | 4.109 | 0.000  | 103409115  | 653.542  |
| Sum Aroclor-1016     |       |       |        | 4270107888 | 3303.151 |       |       |        | 583439341  | 3385.194 |
| Average Aroclor-1016 |       |       |        |            | 660.630  |       |       |        |            | 677.039  |
| Aroclor-1260         | 4.301 | 4.301 | 0.000  | 1550953392 | 621.540m | 5.018 | 5.017 | -0.001 | 208661439  | 695.015  |
| Aroclor-1260 {2}     | 4.496 | 4.496 | 0.000  | 2283845581 | 608.014m | 5.163 | 5.163 | 0.000  | 254143530  | 681.901  |
| Aroclor-1260 {3}     | 4.770 | 4.769 | -0.001 | 1085164259 | 563.815m | 5.479 | 5.479 | 0.000  | 189650711  | 732.789  |
| Aroclor-1260 {4}     | 5.155 | 5.154 | -0.001 | 3133959269 | 679.270m | 5.859 | 5.859 | 0.000  | 413278587  | 715.042  |
| Aroclor-1260 {5}     | 5.350 | 5.348 | -0.002 | 1745510483 | 710.070m | 6.118 | 6.117 | -0.001 | 297121489  | 726.411  |
| Sum Aroclor-1260     |       |       |        | 9799432984 | 3182.710 |       |       |        | 1362855755 | 3551.158 |
| Average Aroclor-1260 |       |       |        |            | 636.542  |       |       |        |            | 710.232  |

-----  
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

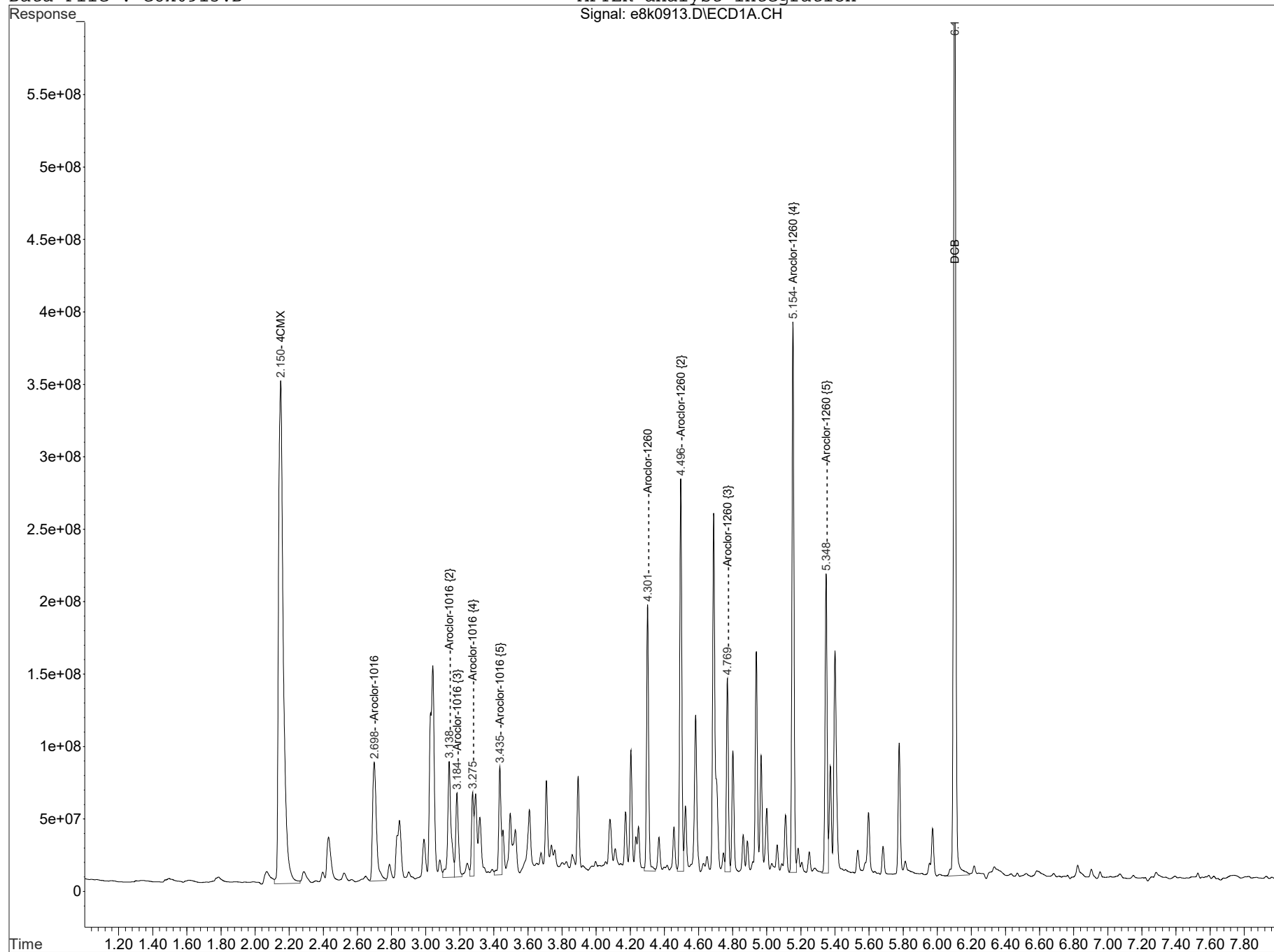
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0913.D

BEFORE analyst integration  
Signal: e8k0913.D\ECD1A.CH



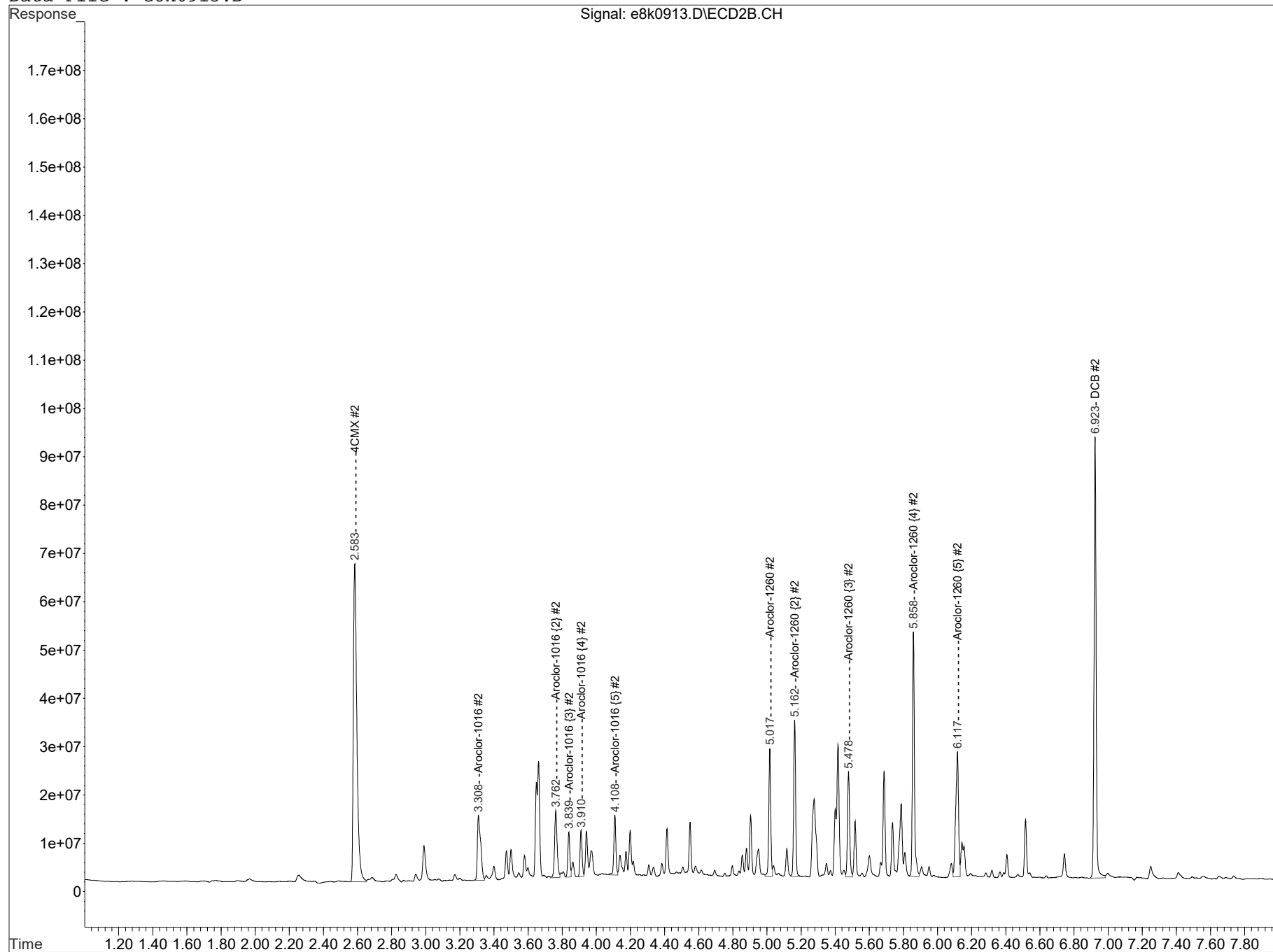
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0913.D

AFTER analyst integration  
Signal: e8k0913.D\ECD1A.CH



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0913.D





**PCB**  
**Certificate of Analysis**  
**Sample Summary**

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|                       |                             |                        |                         |                      |                    |
|-----------------------|-----------------------------|------------------------|-------------------------|----------------------|--------------------|
| <b>SDG Number:</b>    | <b>409254</b>               | <b>Date Collected:</b> | <b>10/25/2016 12:14</b> | <b>Matrix:</b>       | <b>SOIL</b>        |
| <b>Lab Sample ID:</b> | <b>1203665375</b>           | <b>Date Received:</b>  | <b>10/27/2016 09:00</b> | <b>%Moisture:</b>    | <b>19</b>          |
| <b>Client Sample:</b> | <b>QC for batch 1614292</b> | <b>Client:</b>         | <b>HAAL002</b>          | <b>Project:</b>      | <b>QC</b>          |
| <b>Client ID:</b>     | <b>DP050113MS</b>           | <b>Method:</b>         | <b>SW846 3541/8082A</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-040</b> |
| <b>Batch ID:</b>      | <b>1614293</b>              | <b>Inst:</b>           | <b>ECD8A.I</b>          | <b>Dilution:</b>     | <b>1</b>           |
| <b>Run Date:</b>      | <b>11/09/2016 09:11</b>     | <b>Analyst:</b>        | <b>JXM</b>              | <b>Inj. Vol:</b>     | <b>1 uL</b>        |
| <b>Prep Date:</b>     | <b>11/08/2016 10:54</b>     | <b>Aliquot:</b>        | <b>30.003 g</b>         | <b>Final Volume:</b> | <b>1 mL</b>        |
| <b>Data File:</b>     | <b>110916.B\8k0918.D</b>    | <b>Column:</b>         | <b>1 RTX-CLPEST1</b>    |                      |                    |
|                       | <b>110916.B\8k0918.D</b>    |                        | <b>2 RTX-CLPEST2</b>    |                      |                    |

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 |           | 27.7   | ug/kg | 1.37    | 4.12    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.12   | ug/kg | 1.37    | 4.12    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.12   | ug/kg | 1.37    | 4.12    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.12   | ug/kg | 1.37    | 4.12    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.12   | ug/kg | 1.37    | 4.12    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.12   | ug/kg | 1.37    | 4.12    | 1      |
| 11096-82-5 | Aroclor-1260 |           | 28.3   | ug/kg | 1.37    | 4.12    | 1      |

Quantitation (Manual Int.) Report

GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
 Data File : e8k0918.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 09 Nov 2016 09:11 (#1); 09 Nov 2016 9:11 (#2)  
 Operator : JXM InstName : ECD8  
 Sample : |1203665375|1614293|1|SVA|1|MS|||  
 Misc : |ECD4X2A 1S|SOIL|QC A|||  
 ALS Vial : 18 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
 Quant Time: Nov 09 10:32:10 2016  
 Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
 Quant Title : ECD8 SubList :  
 QLast Update : Tue Nov 01 04:35:57 2016  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
 Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
 Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2    | ug/L#2  |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|--------|-----------|---------|
| System Monitoring Compounds |       |       |        |            |          |       |       |        |           |         |
| 4CMX                        | 2.150 | 2.150 | 0.000  | 7025803652 | 146.185m | 2.584 | 2.586 | 0.002  | 963789893 | 155.854 |
| DCB                         | 6.104 | 6.101 | -0.003 | 5406157987 | 141.089m | 6.924 | 6.923 | -0.001 | 718088251 | 156.232 |

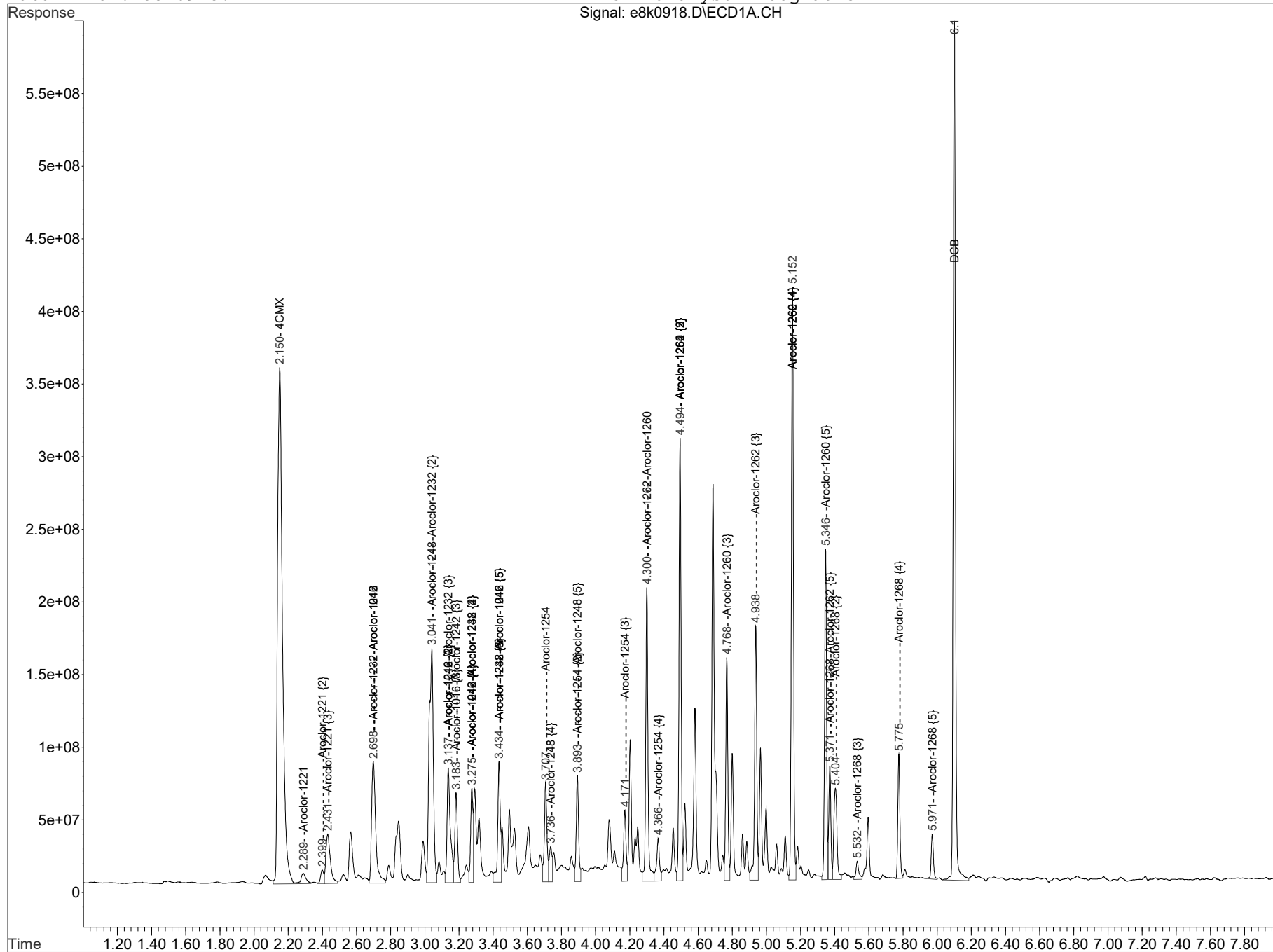
| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 73%       | 78%       |
| DCB      | 200.000 | No Limits | 71%       | 78%       |

| Target Compounds     |       |       |        |             |          |       |       |        |            |          |
|----------------------|-------|-------|--------|-------------|----------|-------|-------|--------|------------|----------|
| Compound             | Exp#1 | RT#1  | Dlt#1  | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2   |
| Aroclor-1016         | 2.698 | 2.698 | 0.000  | 1343031231  | 730.606m | 3.309 | 3.310 | 0.001  | 188688334  | 710.080  |
| Aroclor-1016 {2}     | 3.138 | 3.137 | -0.001 | 1019398317  | 657.314m | 3.762 | 3.762 | 0.000  | 141144807  | 748.408  |
| Aroclor-1016 {3}     | 3.184 | 3.183 | -0.001 | 625358820   | 650.550m | 3.838 | 3.839 | 0.001  | 78424773   | 678.840  |
| Aroclor-1016 {4}     | 3.276 | 3.275 | -0.001 | 549046119   | 653.610m | 3.910 | 3.911 | 0.001  | 85664209   | 679.414  |
| Aroclor-1016 {5}     | 3.436 | 3.434 | -0.002 | 781150507   | 666.194m | 4.109 | 4.109 | 0.000  | 118976252  | 751.925  |
| Sum Aroclor-1016     |       |       |        | 4317984994  | 3358.275 |       |       |        | 612898374  | 3568.667 |
| Average Aroclor-1016 |       |       |        |             | 671.655  |       |       |        |            | 713.733  |
| Aroclor-1260         | 4.301 | 4.300 | -0.001 | 1624602336  | 651.054m | 5.018 | 5.016 | -0.002 | 225853906  | 752.280  |
| Aroclor-1260 {2}     | 4.496 | 4.494 | -0.002 | 2509308470  | 668.038m | 5.163 | 5.162 | -0.001 | 270555527  | 725.937  |
| Aroclor-1260 {3}     | 4.770 | 4.768 | -0.002 | 1209794549  | 628.569m | 5.479 | 5.478 | -0.001 | 181313656  | 700.576  |
| Aroclor-1260 {4}     | 5.155 | 5.152 | -0.003 | 3383389549  | 733.333m | 5.859 | 5.859 | 0.000  | 431596723  | 746.735  |
| Aroclor-1260 {5}     | 5.350 | 5.346 | -0.004 | 1860077519  | 756.676m | 6.118 | 6.117 | -0.001 | 288956944  | 706.451  |
| Sum Aroclor-1260     |       |       |        | 10587172423 | 3437.670 |       |       |        | 1398276756 | 3631.978 |
| Average Aroclor-1260 |       |       |        |             | 687.534  |       |       |        |            | 726.396  |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

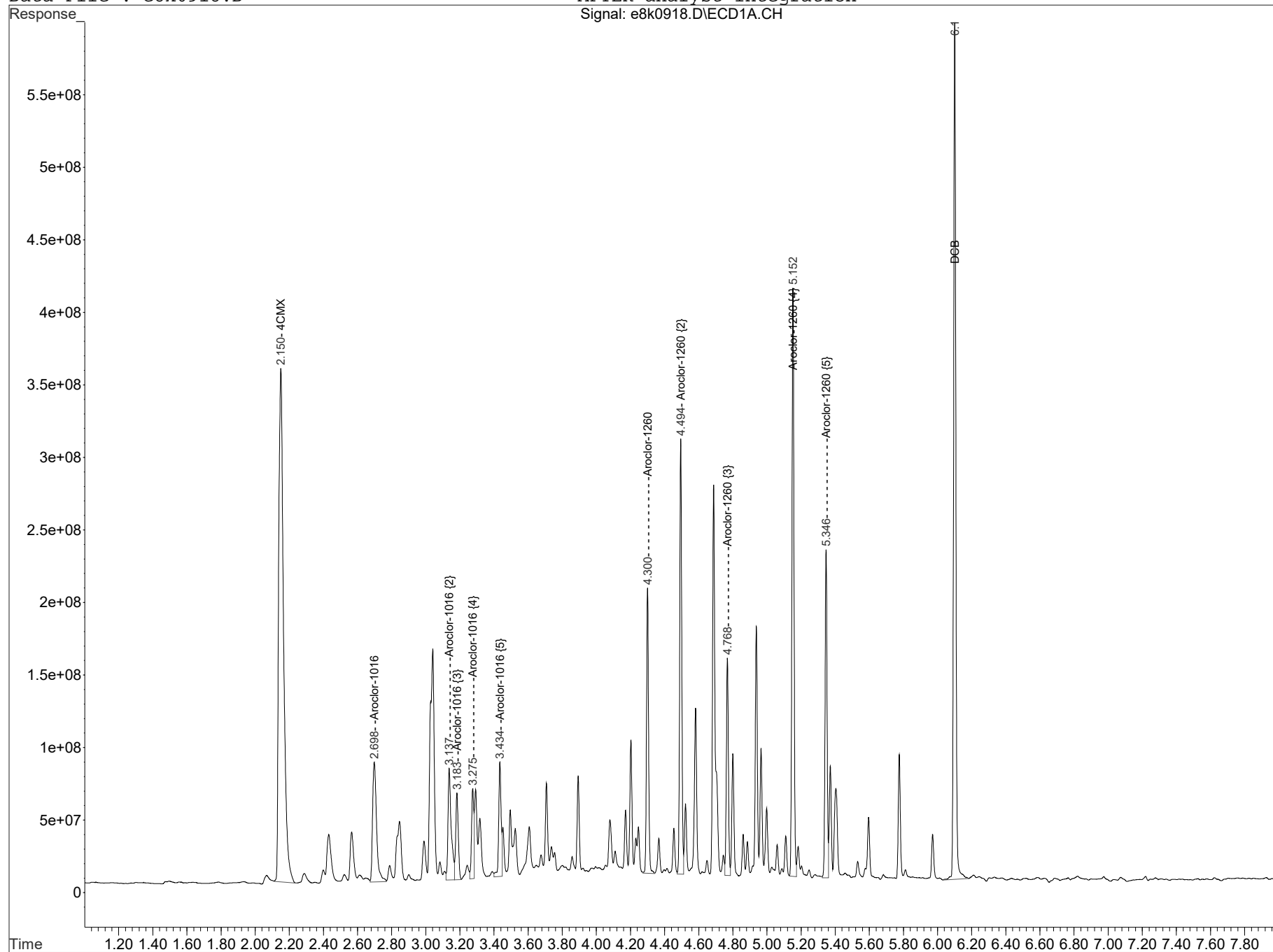
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0918.D

BEFORE analyst integration  
Signal: e8k0918.D\ECD1A.CH



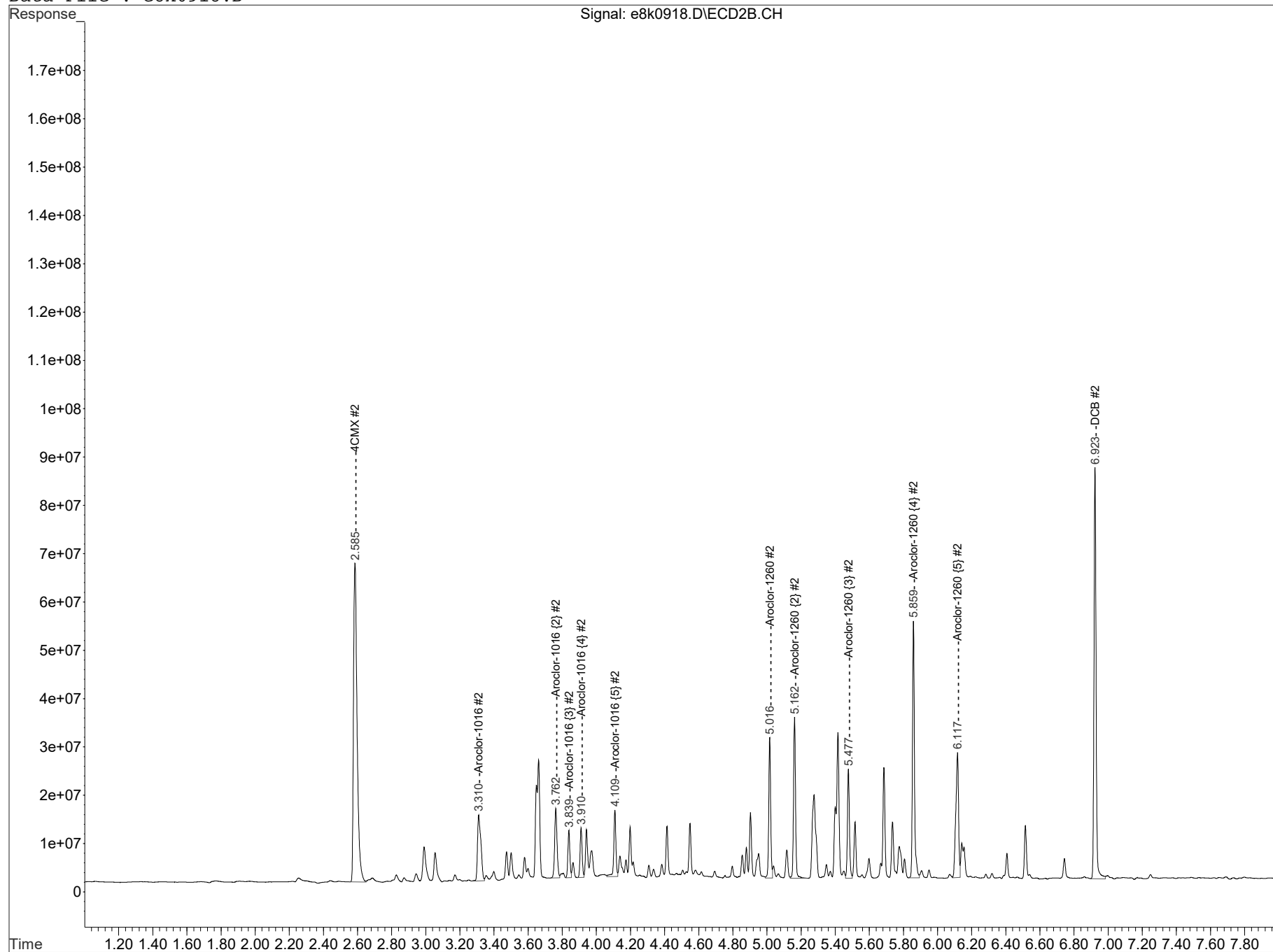
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0918.D

AFTER analyst integration  
Signal: e8k0918.D\ECD1A.CH



Data Path : C:\msdchem\1\DATA\110916.B\

Data File : e8k0918.D



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

|                       |                             |                        |                         |                      |                    |
|-----------------------|-----------------------------|------------------------|-------------------------|----------------------|--------------------|
| <b>SDG Number:</b>    | <b>409254</b>               | <b>Date Collected:</b> | <b>10/25/2016 12:14</b> | <b>Matrix:</b>       | <b>SOIL</b>        |
| <b>Lab Sample ID:</b> | <b>1203665376</b>           | <b>Date Received:</b>  | <b>10/27/2016 09:00</b> | <b>%Moisture:</b>    | <b>19</b>          |
| <b>Client Sample:</b> | <b>QC for batch 1614292</b> | <b>Client:</b>         | <b>HAAL002</b>          | <b>Project:</b>      | <b>QC</b>          |
| <b>Client ID:</b>     | <b>DP050113MSD</b>          | <b>Method:</b>         | <b>SW846 3541/8082A</b> | <b>SOP Ref:</b>      | <b>GL-OA-E-040</b> |
| <b>Batch ID:</b>      | <b>1614293</b>              | <b>Inst:</b>           | <b>ECD8A.I</b>          | <b>Dilution:</b>     | <b>1</b>           |
| <b>Run Date:</b>      | <b>11/09/2016 09:26</b>     | <b>Analyst:</b>        | <b>JXM</b>              | <b>Inj. Vol:</b>     | <b>1 uL</b>        |
| <b>Prep Date:</b>     | <b>11/08/2016 10:54</b>     | <b>Aliquot:</b>        | <b>30.023 g</b>         | <b>Final Volume:</b> | <b>1 mL</b>        |
| <b>Data File:</b>     | <b>110916.B\8k0919.D</b>    | <b>Column:</b>         | <b>1 RTX-CLPEST1</b>    |                      |                    |
|                       | <b>110916.B\8k0919.D</b>    |                        | <b>2 RTX-CLPEST2</b>    |                      |                    |

| CAS No.    | Parmname     | Qualifier | Result | Units | MDL/LOD | PQL/LOQ | Column |
|------------|--------------|-----------|--------|-------|---------|---------|--------|
| 12674-11-2 | Aroclor-1016 |           | 30.4   | ug/kg | 1.37    | 4.11    | 1      |
| 11104-28-2 | Aroclor-1221 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11141-16-5 | Aroclor-1232 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 53469-21-9 | Aroclor-1242 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 12672-29-6 | Aroclor-1248 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11097-69-1 | Aroclor-1254 | U         | 4.11   | ug/kg | 1.37    | 4.11    | 1      |
| 11096-82-5 | Aroclor-1260 |           | 26.8   | ug/kg | 1.37    | 4.11    | 1      |

Quantitation (Manual Int.) Report  
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0919.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 09 Nov 2016 09:26 (#1); 09 Nov 2016 9:26 (#2)  
Operator : JXM InstName : ECD8  
Sample : |1203665376|1614293|1|SVA|1|MSD|||  
Misc : |ECD4X2A 1S|SOIL|QC A|||  
ALS Vial : 19 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e  
Quant Time: Nov 09 10:12:55 2016  
Quant Method : C:\msdchem\1\DATA\110916.B\ECD8 8082 103116.m  
Quant Title : ECD8 SubList :  
QLast Update : Tue Nov 01 04:35:57 2016  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1.0 ul  
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2  
Signal #1 Info : 250 um Signal #2 Info : 250 um

| Compound                    | Exp#1 | RT#1  | Dlt#1  | Resp#1     | ug/L#1   | Exp#2 | RT#2  | Dlt#2 | Resp#2    | ug/L#2   |
|-----------------------------|-------|-------|--------|------------|----------|-------|-------|-------|-----------|----------|
| System Monitoring Compounds |       |       |        |            |          |       |       |       |           |          |
| 4CMX                        | 2.150 | 2.152 | 0.002  | 6981300862 | 145.259m | 2.584 | 2.586 | 0.002 | 987539494 | 159.694m |
| DCB                         | 6.104 | 6.102 | -0.002 | 5523698257 | 144.157  | 6.924 | 6.924 | 0.000 | 763226428 | 166.053  |

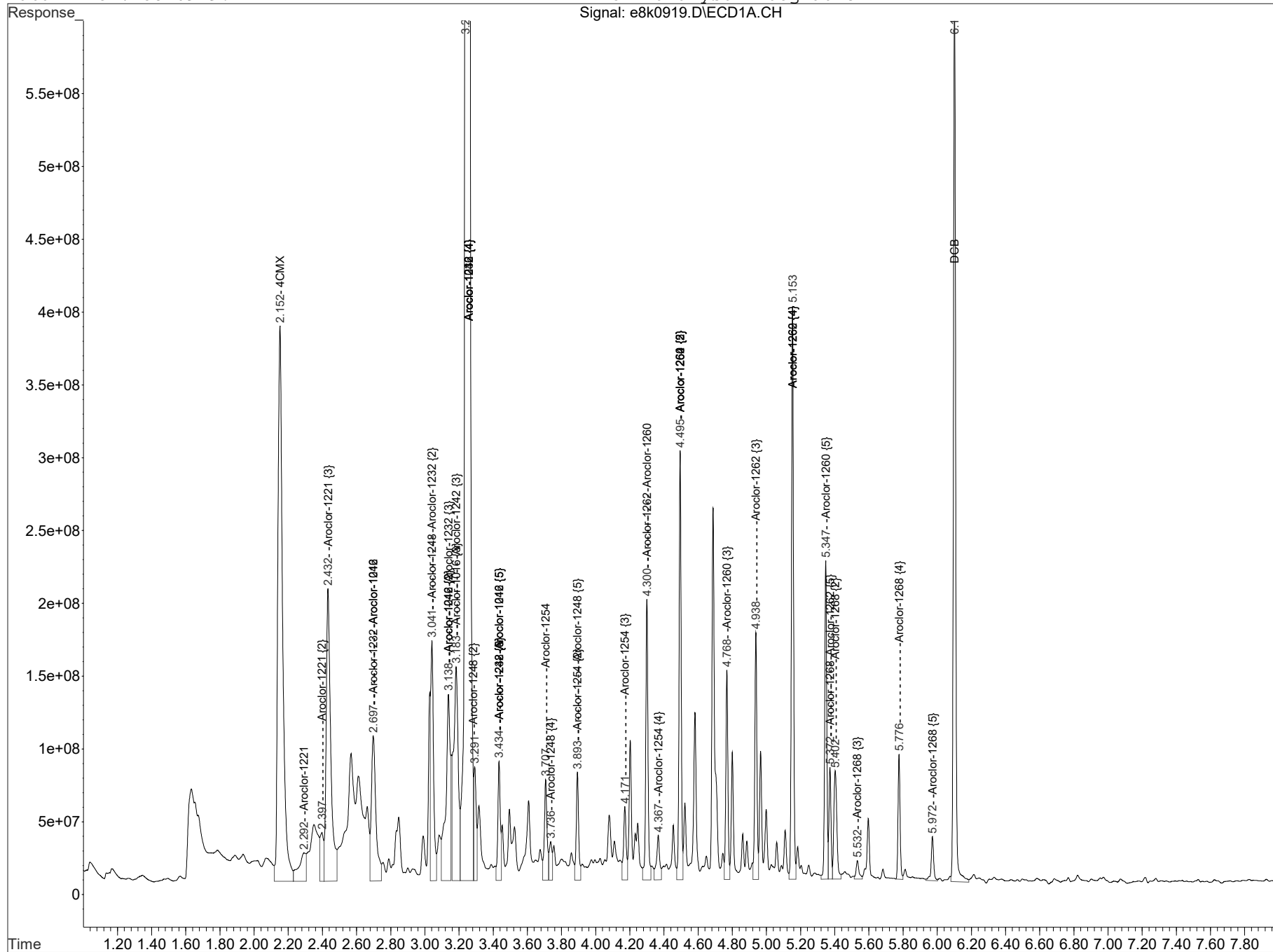
| Compound | Amount  | Range     | Recovery1 | Recovery2 |
|----------|---------|-----------|-----------|-----------|
| 4CMX     | 200.000 | No Limits | 73%       | 80%       |
| DCB      | 200.000 | No Limits | 72%       | 83%       |

| Target Compounds     |       |       |        |             |          |       |       |        |            |          |
|----------------------|-------|-------|--------|-------------|----------|-------|-------|--------|------------|----------|
| Compound             | Exp#1 | RT#1  | Dlt#1  | Resp#1      | ug/L#1   | Exp#2 | RT#2  | Dlt#2  | Resp#2     | ug/L#2   |
| Aroclor-1016         | 2.698 | 2.697 | -0.001 | 1096334662  | 596.403m | 3.309 | 3.310 | 0.001  | 232498289  | 874.948m |
| Aroclor-1016 {2}     | 3.138 | 3.138 | 0.000  | 1353317919  | 872.628m | 3.762 | 3.762 | 0.000  | 143031905  | 758.414m |
| Aroclor-1016 {3}     | 3.184 | 3.184 | 0.000  | 806170390   | 838.645m | 3.838 | 3.838 | 0.000  | 79847686   | 691.157m |
| Aroclor-1016 {4}     | 3.276 | 3.271 | -0.005 | 670582397   | 798.293m | 3.910 | 3.911 | 0.001  | 81863167   | 649.267m |
| Aroclor-1016 {5}     | 3.436 | 3.434 | -0.002 | 684212714   | 583.522m | 4.109 | 4.109 | 0.000  | 117152058  | 740.397m |
| Sum Aroclor-1016     |       |       |        | 4610618081  | 3689.491 |       |       |        | 654393105  | 3714.182 |
| Average Aroclor-1016 |       |       |        |             | 737.898  |       |       |        |            | 742.836  |
| Aroclor-1260         | 4.301 | 4.300 | -0.001 | 1555141881  | 623.218m | 5.018 | 5.017 | -0.001 | 220786408  | 735.401m |
| Aroclor-1260 {2}     | 4.496 | 4.495 | -0.001 | 2361414761  | 628.665m | 5.163 | 5.161 | -0.002 | 268325038  | 719.952m |
| Aroclor-1260 {3}     | 4.770 | 4.768 | -0.002 | 1116192342  | 579.937m | 5.479 | 5.478 | -0.001 | 175972930  | 679.940m |
| Aroclor-1260 {4}     | 5.155 | 5.153 | -0.002 | 3207575503  | 695.226m | 5.859 | 5.858 | -0.001 | 436639561  | 755.460  |
| Aroclor-1260 {5}     | 5.350 | 5.347 | -0.003 | 1793361529  | 729.536m | 6.118 | 6.118 | 0.000  | 296752555  | 725.510  |
| Sum Aroclor-1260     |       |       |        | 10033686016 | 3256.582 |       |       |        | 1398476491 | 3616.262 |
| Average Aroclor-1260 |       |       |        |             | 651.316  |       |       |        |            | 723.252  |

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0919.D

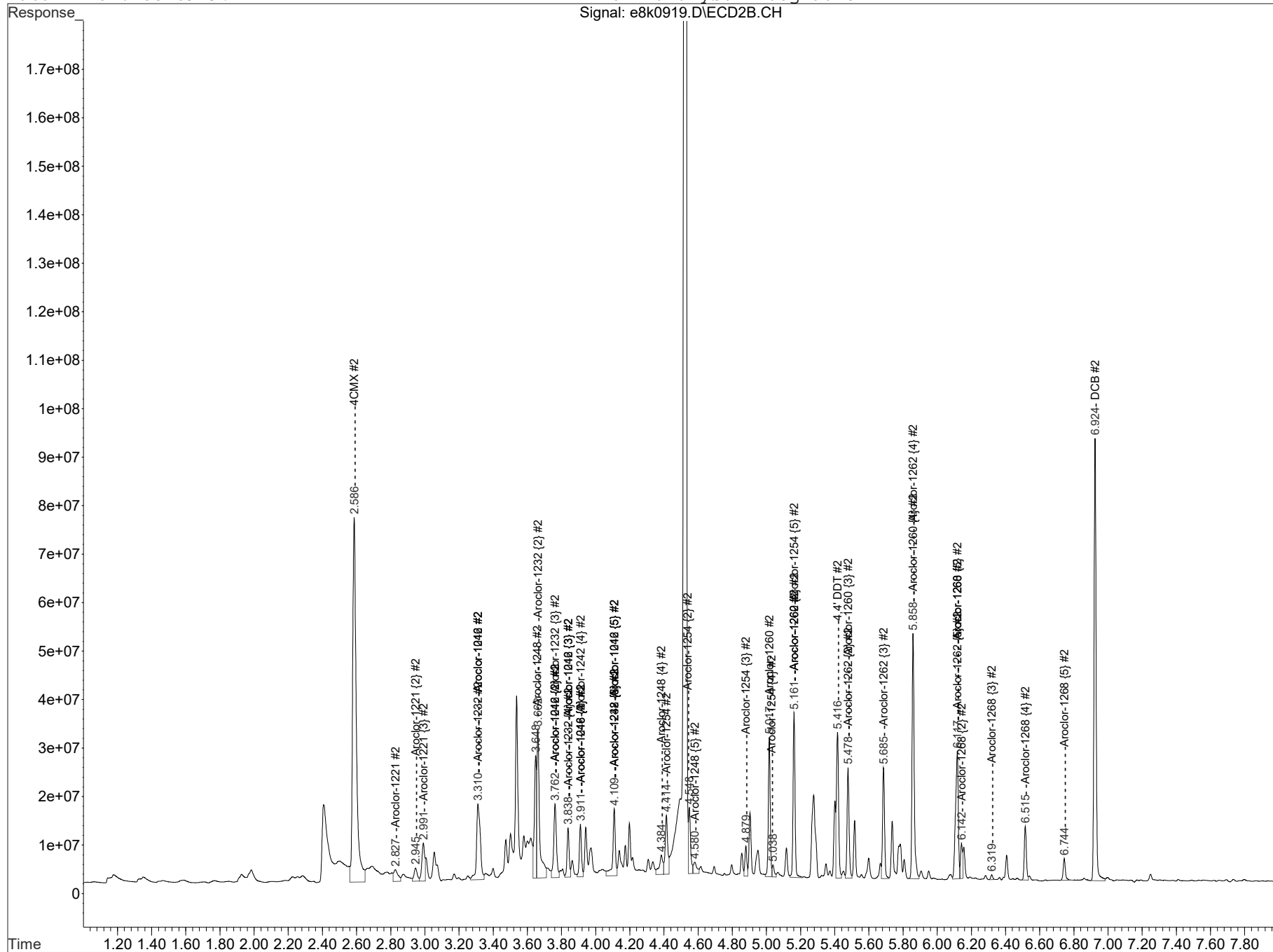
BEFORE analyst integration  
Signal: e8k0919.D\ECD1A.CH





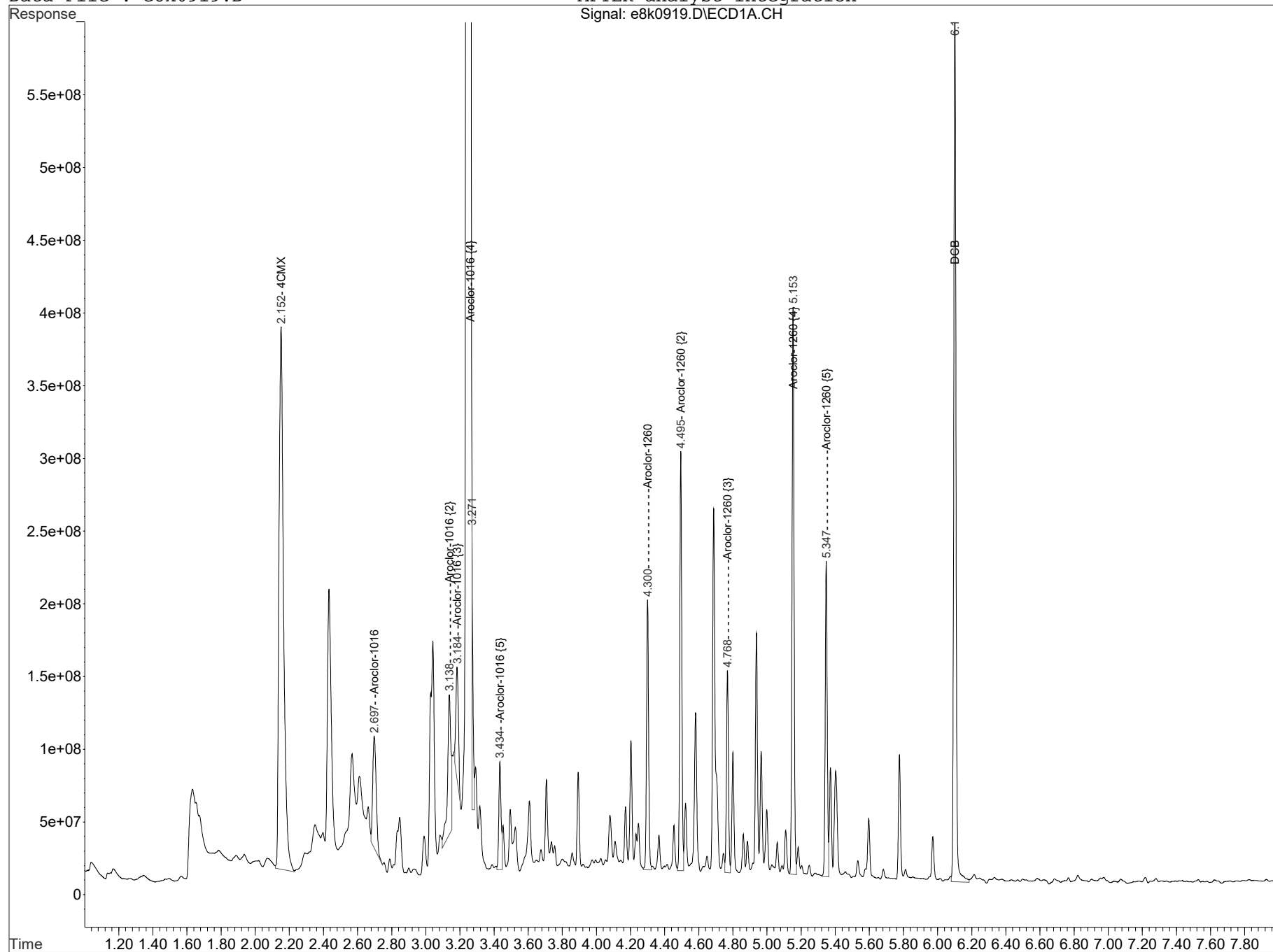
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0919.D

BEFORE analyst integration  
Signal: e8k0919.D\ECD2B.CH



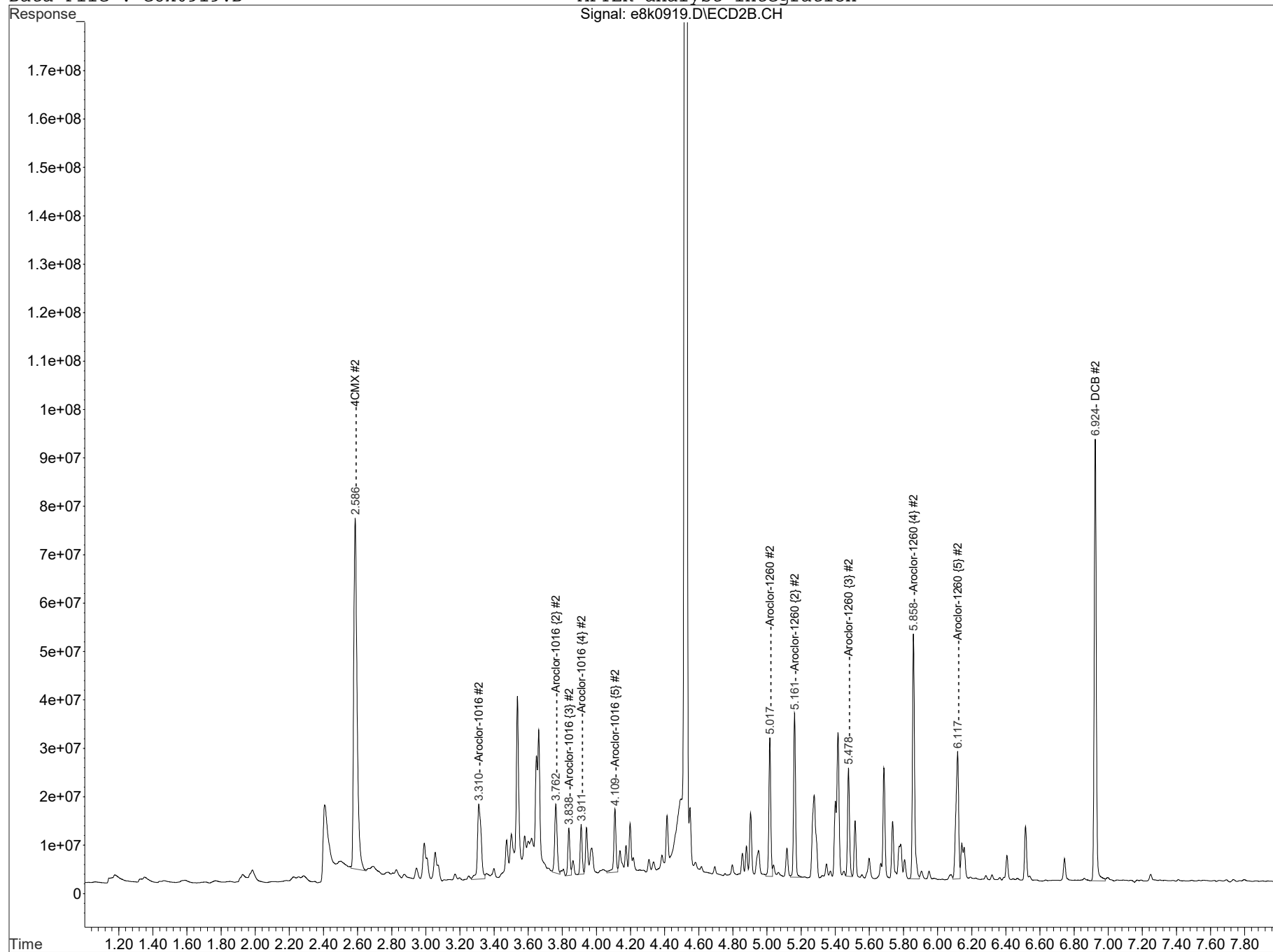
Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0919.D

AFTER analyst integration  
Signal: e8k0919.D\ECD1A.CH



Data Path : C:\msdchem\1\DATA\110916.B\  
Data File : e8k0919.D

AFTER analyst integration  
Signal: e8k0919.D\ECD2B.CH



# Miscellaneous

# Prep Logbook

## Automated Soxhlet Extraction

**Batch ID:** 1614292  
**Analyst:** Mia DeLee  
**Method:** SW846 3541

Verified by: \_\_\_\_\_

**Lab SOP:** GL-OA-E-066 REV# 7  
**Instrument:** Semi-Volatiles Manual

| Sample ID                     | Prep Date            | Aliquot (g) | Clean Up 1<br>Amount 1 (mL) | Clean Up 2<br>Amount 2 (mL) | Post Clean Up<br>Amount 1 (mL) | Final Volume (mL) | Prepped Factor (mL/g) |
|-------------------------------|----------------------|-------------|-----------------------------|-----------------------------|--------------------------------|-------------------|-----------------------|
| 1203665373 MB                 | 08-NOV-2016 10:54:00 | 30.048      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03328               |
| 1203665374 LCS                | 08-NOV-2016 10:54:00 | 30.015      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03332               |
| 408430001                     | 08-NOV-2016 10:54:00 | 30.015      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03332               |
| 408605019                     | 08-NOV-2016 10:54:00 | 30.019      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03331               |
| 408825001                     | 08-NOV-2016 10:54:00 | 10.285      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.09723               |
| 409254026                     | 08-NOV-2016 10:54:00 | 30.031      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.0333                |
| 1203665375 MS<br>(409254026)  | 08-NOV-2016 10:54:00 | 30.003      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03333               |
| 1203665376 MSD<br>(409254026) | 08-NOV-2016 10:54:00 | 30.023      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03331               |
| 409254027                     | 08-NOV-2016 10:54:00 | 30.048      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03328               |
| 409254028                     | 08-NOV-2016 10:54:00 | 30.118      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.0332                |
| 409254029                     | 08-NOV-2016 10:54:00 | 30.12       | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.0332                |
| 409254031                     | 08-NOV-2016 10:54:00 | 30.006      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03333               |
| 409254032                     | 08-NOV-2016 10:54:00 | 30.082      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03324               |
| 409254034                     | 08-NOV-2016 10:54:00 | 30.042      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03329               |
| 409254036                     | 08-NOV-2016 10:54:00 | 30.044      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03328               |
| 409254038                     | 08-NOV-2016 10:54:00 | 30.089      | H2SO4/KM 2<br>nO4           |                             | 9                              | 1                 | 0.03323               |

| Type  | Sample Id  | Description                       | Serial Number | Spike Amt | Units | Comments:   |
|-------|------------|-----------------------------------|---------------|-----------|-------|---|
| LCS   | 1203665374 | PCB Laboratory Control            | WE160924-06   | 1         | mL    | Final Solvent: Hexane   |
| MS    | 1203665375 | PCB Laboratory Control            | WE160924-06   | 1         | mL    | Verified by: SR   |
| MSD   | 1203665376 | PCB Laboratory Control            | WE160924-06   | 1         | mL    | Clean-up: H2SO4/KMnO4   |
| SURR  | All        | PEST LOW LEVEL SURROGATE 200 UG/L | WE160924-02   | 1         | mL    | Prior to clean-up: 2mL  |
| REGNT | All        | Sand pure 40-100 mesh             | 160712-A      | 30        | g     | Clean-up initials: MD   |
| REGNT | All        | Hexane                            | 161025        | 120       | mL    | Clean-up SOP: GL-OA-E-037 Rev.7   |
| REGNT | All        | 1:1 sulfuric acid                 | 2472041       | 5         | mL    | Clean-up date: 11-08-16   |
| WORK  | All        | 5% Potassium Permanganate         | 160831        | 5         | mL    | Sample 408825001 contained strips of absorbent material soaked in a red liquid. |

## ORGANIC RUN LOG - INSTRUMENT ID#ECD8

## GEL ORGANIC RUN LOG

103116.B

DATE: 31-Oct-16METHOD: See DataOPERATOR: JXMSolvent ID: 2415029Alumina ID: 160524ACopper ID: 2419596-BCalibration Information:

Initial Calibration Dates: See Calibration History

Initial Calibration Std ID's: See associated data and run log

Sequence Number: 103116.B

GEL SOP: GL-OA-E-040

| Analysis   |       | Data File | Lab Sample ID | Client | Batch # | Dil.   | AS     | Analyst | Comments            |
|------------|-------|-----------|---------------|--------|---------|--------|--------|---------|---------------------|
| Date       | Time  |           |               |        |         | Factor | Slot # |         |                     |
| 10/31/2016 | 06:31 | e8j3101.D | WAR160712-99  | IBLK   | BLANK   | 1      | 1      | JXM     | CLEAN               |
| 10/31/2016 | 06:43 | e8j3102.D | WAR160606-DDT | DDT    | ICS     | 1      | 2      | JXM     | DDT                 |
| 10/31/2016 | 06:55 | e8j3103.D | WAR160926-60  | 1660   | CCV     | 1      | 3      | JXM     | DUSE                |
| 10/31/2016 | 07:11 | e8j3104.D | WAR160721-54  | 1254   | CCV     | 1      | 4      | JXM     | DUSE                |
| 10/31/2016 | 07:23 | e8j3105.D | WAR160926-60  | 1660   | CCV     | 1      | 5      | JXM     | DUSE                |
| 10/31/2016 | 07:36 | e8j3106.D | WAR160728-42  | 1242   | CCV     | 1      | 6      | JXM     | DUSE                |
| 10/31/2016 | 07:48 | e8j3107.D | WAR160728-48  | 1248   | CCV     | 1      | 7      | JXM     | DUSE                |
| 10/31/2016 | 08:00 | e8j3108.D | WAR160926-60  | 1660   | CCV     | 1      | 8      | JXM     | DUSE                |
| 10/31/2016 | 08:15 | e8j3109.D | WAR160922-62  | 1262   | CCV     | 1      | 9      | JXM     | HIGH ON FRONT       |
| 10/31/2016 | 08:27 | e8j3110.D | WAR160809-68  | 1268   | CCV     | 1      | 10     | JXM     | HIGH ON FRONT       |
| 10/31/2016 | 08:39 | e8j3111.D | WAR160809-32  | 1232   | CCV     | 1      | 11     | JXM     | PATTERN ONLY        |
| 10/31/2016 | 08:52 | e8j3112.D | WAR160628-21  | 1221   | CCV     | 1      | 12     | JXM     | PATTERN ONLY        |
| 10/31/2016 | 09:17 | e8j3113.D | WAR161031-01  | 1660-1 | ICAL    | 1      | 13     | JXM     | 1660 LEVEL 1        |
| 10/31/2016 | 09:30 | e8j3114.D | WAR161031-02  | 1660-2 | ICAL    | 1      | 14     | JXM     | 1660 LEVEL 2        |
| 10/31/2016 | 09:42 | e8j3115.D | WAR161031-03  | 1660-3 | ICAL    | 1      | 15     | JXM     | 1660 LEVEL 3        |
| 10/31/2016 | 09:54 | e8j3116.D | WAR161031-04  | 1660-4 | ICAL    | 1      | 16     | JXM     | 1660 LEVEL 4        |
| 10/31/2016 | 10:07 | e8j3117.D | IAR160926-01  | 1660-5 | ICAL    | 1      | 17     | JXM     | 1660 LEVEL 5        |
| 10/31/2016 | 10:19 | e8j3118.D | WAR160926-60  | 1660   | ICV     | 1      | 18     | JXM     | PASSES BOTH COLUMNS |
| 10/31/2016 | 10:31 | e8j3119.D | WAR161031-05  | 1254-1 | ICAL    | 1      | 19     | JXM     | 1254 LEVEL 1        |
| 10/31/2016 | 10:43 | e8j3120.D | WAR161031-06  | 1254-2 | ICAL    | 1      | 20     | JXM     | 1254 LEVEL 2        |
| 10/31/2016 | 10:56 | e8j3121.D | WAR161031-07  | 1254-3 | ICAL    | 1      | 21     | JXM     | 1254 LEVEL 3        |
| 10/31/2016 | 11:08 | e8j3122.D | WAR161031-08  | 1254-4 | ICAL    | 1      | 22     | JXM     | 1254 LEVEL 4        |
| 10/31/2016 | 11:20 | e8j3123.D | IAR160907-01  | 1254-5 | ICAL    | 1      | 23     | JXM     | 1254 LEVEL 5        |
| 10/31/2016 | 11:32 | e8j3124.D | WAR160721-54  | 1254   | ICV     | 1      | 24     | JXM     | PASSES BOTH COLUMNS |
| 10/31/2016 | 11:45 | e8j3125.D | WAR161031-09  | 1242-1 | ICAL    | 1      | 25     | JXM     | 1242 LEVEL 1        |
| 10/31/2016 | 11:57 | e8j3126.D | WAR161031-10  | 1242-2 | ICAL    | 1      | 26     | JXM     | 1242 LEVEL 2        |
| 10/31/2016 | 12:09 | e8j3127.D | WAR161031-11  | 1242-3 | ICAL    | 1      | 27     | JXM     | 1242 LEVEL 3        |
| 10/31/2016 | 12:22 | e8j3128.D | WAR161031-12  | 1242-4 | ICAL    | 1      | 28     | JXM     | 1242 LEVEL 4        |

## ORGANIC RUN LOG - INSTRUMENT ID#ECD8

## GEL ORGANIC RUN LOG

103116.B

|                  |           |              |        |         |   |    |     |                                    |
|------------------|-----------|--------------|--------|---------|---|----|-----|------------------------------------|
| 10/31/2016 12:34 | e8j3129.D | IAR160729-02 | 1242-5 | ICAL    | 1 | 29 | JXM | 1242 LEVEL 5                       |
| 10/31/2016 12:46 | e8j3130.D | WAR160728-42 | 1242   | ICV     | 1 | 30 | JXM | PASSES BOTH COLUMNS                |
| 10/31/2016 12:58 | e8j3131.D | WAR161031-13 | 1248-1 | ICAL    | 1 | 31 | JXM | 1248 LEVEL 1                       |
| 10/31/2016 13:11 | e8j3132.D | WAR161031-14 | 1248-2 | ICAL    | 1 | 32 | JXM | 1248 LEVEL 2                       |
| 10/31/2016 13:23 | e8j3133.D | WAR161031-15 | 1248-3 | ICAL    | 1 | 33 | JXM | 1248 LEVEL 3                       |
| 10/31/2016 13:35 | e8j3134.D | WAR161031-16 | 1248-4 | ICAL    | 1 | 34 | JXM | 1248 LEVEL 4                       |
| 10/31/2016 13:47 | e8j3135.D | IAR161003-02 | 1248-5 | ICAL    | 1 | 35 | JXM | 1248 LEVEL 5                       |
| 10/31/2016 14:00 | e8j3136.D | WAR160728-48 | 1248   | ICV     | 1 | 36 | JXM | PASSES BOTH COLUMNS                |
| 10/31/2016 14:12 | e8j3137.D | WAR160712-99 | IBLK   | BLANK   | 1 | 37 | JXM | CLEAN                              |
| 10/31/2016 14:24 | e8j3138.D | 1203658238   | MB     | 1611397 | 1 | 38 | JXM | USE: LOWER, Cu and alumina cleanup |
| 10/31/2016 14:37 | e8j3139.D | 1203658239   | LCS    | 1611397 | 1 | 39 | JXM | USE: LOWER, Cu and alumina cleanup |
| 10/31/2016 14:49 | e8j3140.D | 1203658240   | LCSD   | 1611397 | 1 | 40 | JXM | USE: LOWER, Cu and alumina cleanup |
| 10/31/2016 15:01 | e8j3141.D | 409171002    | ARSL   | 1611397 | 1 | 41 | JXM | USE: LOWER, Cu and alumina cleanup |
| 10/31/2016 15:15 | e8j3142.D | 409171003    | ARSL   | 1611397 | 1 | 42 | JXM | USE: LOWER, Cu and alumina cleanup |
| 10/31/2016 15:30 | e8j3143.D | WAR160926-60 | 1660   | CCV     | 1 | 43 | JXM | PASSES BOTH COLUMNS                |
| 10/31/2016 15:42 | e8j3144.D | WAR160712-99 | IBLK   | BLANK   | 1 | 44 | JXM | CLEAN                              |

## ORGANIC RUN LOG - INSTRUMENT ID#ECD8

## GEL ORGANIC RUN LOG

110916.B

DATE: 9-Nov-16

METHOD: See Data

OPERATOR: JXM

Solvent ID: 2415029

Alumina ID: 160524A

Copper ID: 2419596-B

## Calibration Information:

Initial Calibration Dates: See Calibration History

Initial Calibration Std ID's: See associated data and run log

Sequence Number: 110916.B

GEL SOP: GL-OA-E-040

| Analysis   |       | Data File | Lab Sample ID | Client | Batch # | Dil.   | AS     | Analyst | Comments                              |
|------------|-------|-----------|---------------|--------|---------|--------|--------|---------|---------------------------------------|
| Date       | Time  |           |               |        |         | Factor | Slot # |         |                                       |
| 11/09/2016 | 05:35 | e8k0901.D | WAR160712-99  | IBLK   | BLANK   | 1      | 1      | JXM     | CLEAN                                 |
| 11/09/2016 | 05:47 | e8k0902.D | WAR160606-DDT | DDT    | ICS     | 1      | 2      | JXM     | DDT                                   |
| 11/09/2016 | 05:59 | e8k0903.D | WAR160926-60  | 1660   | CCV     | 1      | 3      | JXM     | PASSES BOTH COLUMNS                   |
| 11/09/2016 | 06:11 | e8k0904.D | WAR160721-54  | 1254   | CCV     | 1      | 4      | JXM     | PASSES BOTH COLUMNS                   |
| 11/09/2016 | 06:24 | e8k0905.D | WAR160728-42  | 1242   | CCV     | 1      | 5      | JXM     | PASSES BOTH COLUMNS                   |
| 11/09/2016 | 06:36 | e8k0906.D | WAR160728-48  | 1248   | CCV     | 1      | 6      | JXM     | PASSES BOTH COLUMNS                   |
| 11/09/2016 | 06:48 | e8k0907.D | WAR160922-62  | 1262   | CCV     | 1      | 7      | JXM     | HIGH ON FRONT                         |
| 11/09/2016 | 07:00 | e8k0908.D | WAR160809-68  | 1268   | CCV     | 1      | 8      | JXM     | HIGH ON FRONT                         |
| 11/09/2016 | 07:13 | e8k0909.D | WAR160809-32  | 1232   | CCV     | 1      | 9      | JXM     | PATTERN ONLY                          |
| 11/09/2016 | 07:25 | e8k0910.D | WAR160628-21  | 1221   | CCV     | 1      | 10     | JXM     | PATTERN ONLY                          |
| 11/09/2016 | 07:37 | e8k0911.D | WAR160712-99  | IBLK   | BLANK   | 1      | 11     | JXM     | CLEAN                                 |
| 11/09/2016 | 07:50 | e8k0912.D | 1203665373    | MB     | 1614293 | 1      | 12     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 08:02 | e8k0913.D | 1203665374    | LCS    | 1614293 | 1      | 13     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 08:14 | e8k0914.D | 408430001     | ATKG   | 1614293 | 5      | 14     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 08:28 | e8k0915.D | 408605019     | PTQA   | 1614293 | 50     | 15     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 08:43 | e8k0916.D | 408825001     | ATKG   | 1614293 | 5      | 16     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 08:57 | e8k0917.D | 409254026     | HAAL   | 1614293 | 1      | 17     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 09:11 | e8k0918.D | 1203665375    | MS     | 1614293 | 1      | 18     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 09:26 | e8k0919.D | 1203665376    | MSD    | 1614293 | 1      | 19     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 09:40 | e8k0920.D | 409254027     | HAAL   | 1614293 | 1      | 20     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 09:55 | e8k0921.D | 409254028     | HAAL   | 1614293 | 10     | 21     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 10:21 | e8k0922.D | WAR160926-60  | 1660   | CCV     | 1      | 22     | JXM     | PASSES BOTH COLUMNS                   |
| 11/09/2016 | 10:33 | e8k0923.D | WAR160712-99  | IBLK   | BLANK   | 1      | 23     | JXM     | CLEAN                                 |
| 11/09/2016 | 10:46 | e8k0924.D | 409254029     | HAAL   | 1614293 | 1      | 24     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 11:00 | e8k0925.D | 409254031     | HAAL   | 1614293 | 1      | 25     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 11:14 | e8k0926.D | 409254032     | HAAL   | 1614293 | 1      | 26     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 11:29 | e8k0927.D | 409254034     | HAAL   | 1614293 | 1      | 27     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 | 11:43 | e8k0928.D | 409254036     | HAAL   | 1614293 | 1      | 28     | JXM     | USE: COLUMN 1, Cu and alumina cleanup |



## ORGANIC RUN LOG - INSTRUMENT ID#ECD8

## GEL ORGANIC RUN LOG

110916.B

|                  |           |              |      |         |   |    |     |                                       |
|------------------|-----------|--------------|------|---------|---|----|-----|---------------------------------------|
| 11/09/2016 11:57 | e8k0929.D | 409254038    | HAAL | 1614293 | 1 | 29 | JXM | USE: COLUMN 1, Cu and alumina cleanup |
| 11/09/2016 12:12 | e8k0930.D | WAR160926-60 | 1660 | CCV     | 1 | 30 | JXM | PASSES BOTH COLUMNS                   |
| 11/09/2016 12:24 | e8k0931.D | WAR160712-99 | IBLK | BLANK   | 1 | 31 | JXM | CLEAN                                 |

| DATA EXCEPTION REPORT  |   |  |                                   |
|--|---|--|-----------------------------------|
| <b>Mo.Day Yr.</b><br>10-NOV-16   | <b>Division:</b><br>Industrial                                | <b>Quality Criteria:</b><br>Specifications   | <b>Type:</b><br>Process           |
| <b>Instrument Type:</b><br>GC/ECD  | <b>Test / Method:</b><br>SW846 3541/8082, SW846<br>3541/8082A | <b>Matrix Type:</b><br>Solid   | <b>Client Code:</b><br>ATKG, HAAL |
| <b>Batch ID:</b><br>1614293  | <b>Sample Numbers:</b><br>See Below                           |  |                                   |
| <b>Potentially affected work order(s)(SDG): 408825(408819-1),409254</b><br><b>Application Issues:</b><br>Failed Yield for Surrogates |   |  |                                   |
| <b>Specification and Requirements</b>  |   | <b>DER Disposition:</b>  |                                   |
| <b>Exception Description:</b>  |   |  |                                   |
| 1. Samples 408825001 and 409254028 did not meet acceptance criteria for surrogate recovery.  |   | 1. Samples (See Below) did not meet acceptance criteria for surrogate recovery due to dilution.<br>408825001 (17A-1192-16) Decachlorobiphenyl [28* (32%-139%)].<br>409254028 (SS050100) 4cmx [25* (30%-120%)]. |                                   |

**Originator's Name:**  
James Maestas 10-NOV-16

**Data Validator/Group Leader:**  
Jimin Cao 10-NOV-16

# Metals Analysis

# Case Narrative

**Metals**  
**Technical Case Narrative**  
**Haley & Aldrich, Inc. (HAAL)**  
**SDG #: 409254**

**Product:** Determination of Metals by ICP

**Analytical Method:** SW846 3050B/6010C

**Analytical Procedure:** GL-MA-E-013 REV# 26

**Analytical Batches:** 1611117 and 1611119

**Product:** Determination of Metals by ICP

**Analytical Method:** SW846 3010A/6010C

**Analytical Procedure:** GL-MA-E-013 REV# 26

**Analytical Batch:** 1611348

**Product:** Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer

**Analytical Method:** SW846 7471B

**Analytical Procedure:** GL-MA-E-010 REV# 31

**Analytical Batch:** 1614669

**Product:** Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer

**Analytical Method:** SW846 7470A

**Analytical Procedure:** GL-MA-E-010 REV# 31

**Analytical Batch:** 1614671

**Preparation Method:** SW846 3050B

**Preparation Procedure:** GL-MA-E-009 REV# 26

**Preparation Batches:** 1611116 and 1611118

**Preparation Method:** SW846 3010A

**Preparation Procedure:** GL-MA-E-008 REV# 18

**Preparation Batch:** 1611344

**Preparation Method:** SW846 7471B Prep

**Preparation Procedure:** GL-MA-E-010 REV# 31

**Preparation Batch:** 1614668

**Preparation Method:** SW846 7470A Prep

**Preparation Procedure:** GL-MA-E-010 REV# 31

**Preparation Batch:** 1614670

**TCLP Preparation Method:** EPA 1312

**TCLP Preparation Procedure:** GL-LB-E-024 REV# 11

**TCLP Preparation Batch:** 1611084

The following samples were analyzed using the above methods and analytical procedure(s).

| <b><u>GEL Sample ID#</u></b> | <b><u>Client Sample Identification</u></b> |
|------------------------------|--|
| 409254001                    | DP110100                                   |
| 409254002                    | DP110102                                   |
| 409254003                    | DP110104                                   |
| 409254004                    | DP110106                                   |

|            |   |
|------------|---|
| 409254005  | DP110113                                    |
| 409254006  | DP110200                                    |
| 409254007  | DP110202                                    |
| 409254008  | DP110204                                    |
| 409254009  | DP110206                                    |
| 409254010  | DP110214                                    |
| 409254011  | SS110100                                    |
| 409254012  | SS110200                                    |
| 409254013  | SD140300                                    |
| 409254014  | SD140200                                    |
| 409254015  | SD140100                                    |
| 409254016  | SD140100DUP                                 |
| 409254017  | DP100113                                    |
| 409254018  | DP100212                                    |
| 409254019  | DP100310                                    |
| 409254020  | DP010216                                    |
| 409254021  | DP010216                                    |
| 409254022  | DP010109                                    |
| 409254023  | DP010109                                    |
| 409254024  | DP010307                                    |
| 409254025  | DP010307                                    |
| 409254029  | DP020312                                    |
| 409254030  | DP020312                                    |
| 409254032  | DP020413                                    |
| 409254033  | DP020413                                    |
| 409254034  | DP020207                                    |
| 409254035  | DP020207                                    |
| 409254036  | DP020209                                    |
| 409254037  | DP020209                                    |
| 409254038  | DP020114                                    |
| 409254039  | DP020114                                    |
| 1203657517 | TCLP Blank (TB)                             |
| 1203657595 | Method Blank (MB) <b>ICP</b>                |
| 1203657600 | Method Blank (MB) <b>ICP</b>                |
| 1203658086 | Method Blank (MB) <b>ICP</b>                |
| 1203657596 | Laboratory Control Sample (LCS)             |
| 1203657601 | Laboratory Control Sample (LCS)             |
| 1203658087 | Laboratory Control Sample (LCS)             |
| 1203657599 | 409254001(DP110100L) Serial Dilution (SD)   |
| 1203657604 | 409254022(DP010109L) Serial Dilution (SD)   |
| 1203658090 | 409254021(DP010216L) Serial Dilution (SD)   |
| 1203657597 | 409254001(DP110100D) Sample Duplicate (DUP) |
| 1203657602 | 409254022(DP010109D) Sample Duplicate (DUP) |
| 1203658088 | 409254021(DP010216D) Sample Duplicate (DUP) |
| 1203657516 | 409254021(DP010216S) Matrix Spike (MS)      |
| 1203657598 | 409254001(DP110100S) Matrix Spike (MS)      |
| 1203657603 | 409254022(DP010109S) Matrix Spike (MS)      |
| 1203668749 | 409254001(DP110100PS) Post Spike (PS)       |
| 1203671682 | 409254022(DP010109PS) Post Spike (PS)       |
| 1203666305 | Method Blank (MB) <b>CVAA</b>               |
| 1203666311 | Method Blank (MB) <b>CVAA</b>               |
| 1203666306 | Laboratory Control Sample (LCS)             |
| 1203666312 | Laboratory Control Sample (LCS)             |
| 1203666309 | 409254011(SS110100L) Serial Dilution (SD)   |
| 1203666315 | 409254021(DP010216L) Serial Dilution (SD)   |
| 1203666307 | 409254011(SS110100D) Sample Duplicate (DUP) |

|            |   |
|------------|---|
| 1203666313 | 409254021(DP010216D) Sample Duplicate (DUP) |
| 1203657516 | 409254021(DP010216S) Matrix Spike (MS)      |
| 1203666308 | 409254011(SS110100S) Matrix Spike (MS)      |
| 1203666317 | 409254021(DP010216PS) Post Spike (PS)       |

#### Samples

409254001,002,003,004,005,006,007,008,009,010,011,012,013,014,015,016,017,018,019,020,022,024,029,032,034,036 and 038 in this SDG were analyzed for metals and mercury on a "dry weight corrected" basis. Samples 409254021,023,025,030,033,035,037 and 039 in this SDG were analyzed for metals and mercury on an "as received" basis.

#### Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

#### Calibration Information

##### CRDL/PQL Requirements

The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of antimony. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 409254011 (SS110100), 409254012 (SS110200), 409254013 (SD140300), 409254014 (SD140200), 409254015 (SD140100), 409254016 (SD140100DUP), 409254017 (DP100113), 409254018 (DP100212), 409254019 (DP100310) and 409254020 (DP010216)-ICP.

#### Quality Control (QC) Information

##### Matrix Spike (MS/MSD) Recovery Statement

The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analytes. The post spike recoveries were within the required control limits. This verifies the absence of a matrix interference in the post-spike digested sample. The recoveries may be attributed to possible sample matrix interference and/or non-homogeneity.

| Sample                  | Analyte   | Value            |
|-------------------------|-----------|------------------|
| 1203657516 (DP010216MS) | Mercury   | 48.1* (75%-125%) |
| 1203657598 (DP110100MS) | Barium    | 149* (75%-125%)  |
|                         | Potassium | 189* (75%-125%)  |
|                         | Zinc      | 65.7* (75%-125%) |
| 1203657603 (DP010109MS) | Antimony  | 73.2* (75%-125%) |
|                         | Potassium | 133* (75%-125%)  |

##### Duplicate Relative Percent Difference (RPD) Statement

The RPD obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control of +/-RL is used to evaluate the DUP results. Not all the applicable analyte RPD values were within the acceptance criteria.

| Sample | Analyte | Value |
|--------|---------|-------|
|--------|---------|-------|

|                          |           |                                   |
|--------------------------|-----------|-----------------------------------|
| 1203657597 (DP110100DUP) | Antimony  | abs(4030 - 2730)* (+/-1040 ug/kg) |
|                          | Lead      | 153* (0%-20%)                     |
|                          | Manganese | 20.4* (0%-20%)                    |
| 1203657602 (DP010109DUP) | Aluminum  | 21.8* (0%-20%)                    |
|                          | Barium    | 23.4* (0%-20%)                    |
|                          | Copper    | 24.1* (0%-20%)                    |
|                          | Lead      | 20.8* (0%-20%)                    |

#### Serial Dilution % Difference Statement

The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. Not all the applicable analytes were within the established acceptance criteria. Matrix suppression may be suspected. The data has been qualified.

| Sample                     | Analyte | Value          |
|----------------------------|---------|----------------|
| 1203657599 (DP110100SDILT) | Copper  | 17.4 *(0%-10%) |

#### Technical Information

##### Preparation/Analytical Method Verification

Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

##### Sample Dilutions

Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range. Sample was diluted in order to bring raw values within the linear range of the instrument for calcium, and for the analytes interfered with, in order to ensure that the inter-element correction factors were valid for silver, aluminum and potassium. 409254011 (SS110100)-ICP. Samples required dilutions in order to minimize suppression of beryllium, thallium and antimony due to matrix interferences. 409254011 (SS110100), 409254012 (SS110200), 409254013 (SD140300), 409254014 (SD140200), 409254015 (SD140100), 409254016 (SD140100DUP), 409254018 (DP100212), 409254019 (DP100310) and 409254020 (DP010216)-ICP.

| Analyte | 409254    |           |           |           |           |           |           |           |           |               |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------|
|         | 011       | 012       | 013       | 014       | 015       | 016       | 017       | 018       | 019       | 020           |
| Several | 10X<br>1X | 10X<br>1X | 10X<br>1X | 10X<br>1X | 10X<br>1X | 10X<br>1X | 10X<br>1X | 10X<br>1X | 10X<br>1X | 20X 10X<br>1X |

##### Preparation Information

The samples and associated matrix QC were prepared at a ten times dilution factor or greater to minimize potential interferences arising from the SPLP leaching solution. ICP and CVAA.

##### Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the



requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Qualifier Definition Report for

HAAL002 Haley & Aldrich, Inc.

Client SDG: 409254 GEL Work Order: 409254

#### The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- B Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
- E %difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- J Value is estimated
- N Metals--The Matrix spike sample recovery is not within specified control limits
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

#### Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:



Name: Jamie Johnson

Date: 18 NOV 2016

Title: Group Leader

# Sample Data Summary

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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254001**CLIENT ID:** DP110100**CONTRACT:** HAAL00201**MATRIX:**Soil**DATE RECEIVED** 27-OCT-16**LEVEL:** Low **%SOLIDS:** 87

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-92-1     | Lead           | 2230000       | ug/Kg        |          | *           | P         | 365        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:****P** SW846 3050B/6010C

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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254002**CLIENT ID:** DP110102**CONTRACT:** HAAL00201**MATRIX:**Soil**DATE RECEIVED** 27-OCT-16**LEVEL:** Low    **%SOLIDS:** 82

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-92-1     | Lead           | 11900         | ug/Kg        |          | *           | P         | 386        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:****P      SW846 3050B/6010C**

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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254003**CLIENT ID:** DP110104**CONTRACT:** HAAL00201**MATRIX:**Soil**DATE RECEIVED** 27-OCT-16**LEVEL:** Low    **%SOLIDS:** 82

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-92-1     | Lead           | 10100         | ug/Kg        |          | *           | P         | 360        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:****P**      **SW846 3050B/6010C**

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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254004**CLIENT ID:** DP110106**CONTRACT:** HAAL00201**MATRIX:**Soil**DATE RECEIVED** 27-OCT-16**LEVEL:** Low **%SOLIDS:** 94.9

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-92-1     | Lead           | 4820          | ug/Kg        |          | *           | P         | 336        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:****P** SW846 3050B/6010C

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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254005**CLIENT ID:** DP110113**CONTRACT:** HAAL00201**MATRIX:**Soil**DATE RECEIVED** 27-OCT-16**LEVEL:** Low **%SOLIDS:** 77

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-92-1     | Lead           | 6690          | ug/Kg        |          | *           | P         | 390        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:****P** SW846 3050B/6010C



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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254006**CLIENT ID:** DP110200**CONTRACT:** HAAL00201**MATRIX:**Soil**DATE RECEIVED** 27-OCT-16**LEVEL:** Low **%SOLIDS:** 82

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-92-1     | Lead           | 9170          | ug/Kg        |          | *           | P         | 369        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:****P** SW846 3050B/6010C

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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254007**CLIENT ID:** DP110202**CONTRACT:** HAAL00201**MATRIX:**Soil**DATE RECEIVED** 27-OCT-16**LEVEL:** Low    **%SOLIDS:** 79

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-92-1     | Lead           | 10800         | ug/Kg        |          | *           | P         | 354        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:****P**      **SW846 3050B/6010C**

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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254008**CLIENT ID:** DP110204**CONTRACT:** HAAL00201**MATRIX:**Soil**DATE RECEIVED** 27-OCT-16**LEVEL:** Low    **%SOLIDS:** 83

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-92-1     | Lead           | 5000          | ug/Kg        |          | *           | P         | 381        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:****P**      **SW846 3050B/6010C**

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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254009**CLIENT ID:** DP110206**CONTRACT:** HAAL00201**MATRIX:** Soil**DATE RECEIVED** 27-OCT-16**LEVEL:** Low **%SOLIDS:** 79

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-92-1     | Lead           | 6570          | ug/Kg        |          | *           | P         | 371        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:****P** SW846 3050B/6010C

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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254010**CLIENT ID:** DP110214**CONTRACT:** HAAL00201**MATRIX:**Soil**DATE RECEIVED** 27-OCT-16**LEVEL:** Low    **%SOLIDS:** 81

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-92-1     | Lead           | 4800          | ug/Kg        |          | *           | P         | 380        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:****P**      **SW846 3050B/6010C**

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254011

CLIENT ID: SS110100

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 95.8

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 2950000       | ug/kg        |          | *           | P         | 68100      | 10        | OPTIMA4        | 111116-3              |
| 7440-36-0     | Antimony       | 2110          | ug/kg        |          | *N          | P         | 331        | 1         | OPTIMA4        | 111116-3              |
| 7440-38-2     | Arsenic        | 4500          | ug/kg        |          |             | P         | 501        | 1         | OPTIMA4        | 111116-3              |
| 7440-39-3     | Barium         | 89200         | ug/kg        |          | *N          | P         | 100        | 1         | OPTIMA4        | 111116-3              |
| 7440-41-7     | Beryllium      | 1000          | ug/kg        | U        |             | P         | 1000       | 10        | OPTIMA4        | 111116-3              |
| 7440-43-9     | Cadmium        | 360           | ug/kg        | B        |             | P         | 100        | 1         | OPTIMA4        | 111116-3              |
| 7440-70-2     | Calcium        | 183000000     | ug/kg        |          |             | P         | 80100      | 10        | OPTIMA4        | 111116-3              |
| 7440-47-3     | Chromium       | 7890          | ug/kg        |          |             | P         | 150        | 1         | OPTIMA4        | 111116-3              |
| 7440-48-4     | Cobalt         | 3720          | ug/kg        |          |             | P         | 150        | 1         | OPTIMA4        | 111116-3              |
| 7440-50-8     | Copper         | 21000         | ug/kg        |          | *E          | P         | 301        | 1         | OPTIMA4        | 111116-3              |
| 7439-89-6     | Iron           | 10600000      | ug/kg        |          |             | P         | 8010       | 1         | OPTIMA4        | 111116-3              |
| 7439-92-1     | Lead           | 105000        | ug/kg        |          | *           | P         | 331        | 1         | OPTIMA4        | 111116-3              |
| 7439-95-4     | Magnesium      | 4820000       | ug/kg        |          |             | P         | 8520       | 1         | OPTIMA4        | 111116-3              |
| 7439-96-5     | Manganese      | 294000        | ug/kg        |          | *           | P         | 200        | 1         | OPTIMA4        | 111116-3              |
| 7439-97-6     | Mercury        | 11.5          | ug/kg        | B        |             | AV        | 4.11       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 12400         | ug/kg        |          |             | P         | 150        | 1         | OPTIMA4        | 111116-3              |
| 7440-09-7     | Potassium      | 678000        | ug/kg        |          | N           | P         | 64100      | 10        | OPTIMA4        | 111116-3              |
| 7782-49-2     | Selenium       | 1200          | ug/kg        | B        |             | P         | 501        | 1         | OPTIMA4        | 111116-3              |
| 7440-22-4     | Silver         | 1000          | ug/kg        | U        |             | P         | 1000       | 10        | OPTIMA4        | 111116-3              |
| 7440-23-5     | Sodium         | 399000        | ug/kg        |          |             | P         | 7010       | 1         | OPTIMA4        | 111116-3              |
| 7440-28-0     | Thallium       | 501           | ug/kg        | U        |             | P         | 501        | 1         | OPTIMA4        | 111116-3              |
| 7440-62-2     | Vanadium       | 10800         | ug/kg        |          |             | P         | 100        | 1         | OPTIMA4        | 111116-3              |
| 7440-66-6     | Zinc           | 56600         | ug/kg        |          | N           | P         | 401        | 1         | OPTIMA4        | 111116-3              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254012

CLIENT ID: SS110200

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 83

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 8030000       | ug/kg        |          | *           | P         | 8020       | 1         | OPTIMA4        | 111116-3              |
| 7440-36-0     | Antimony       | 389           | ug/kg        | U        | *N          | P         | 389        | 1         | OPTIMA4        | 111116-3              |
| 7440-38-2     | Arsenic        | 11900         | ug/kg        |          |             | P         | 590        | 1         | OPTIMA4        | 111116-3              |
| 7440-39-3     | Barium         | 265000        | ug/kg        |          | *N          | P         | 118        | 1         | OPTIMA4        | 111116-3              |
| 7440-41-7     | Beryllium      | 1180          | ug/kg        | U        |             | P         | 1180       | 10        | OPTIMA4        | 111116-3              |
| 7440-43-9     | Cadmium        | 703           | ug/kg        |          |             | P         | 118        | 1         | OPTIMA4        | 111116-3              |
| 7440-70-2     | Calcium        | 19100000      | ug/kg        |          |             | P         | 9440       | 1         | OPTIMA4        | 111116-3              |
| 7440-47-3     | Chromium       | 13300         | ug/kg        |          |             | P         | 177        | 1         | OPTIMA4        | 111116-3              |
| 7440-48-4     | Cobalt         | 10400         | ug/kg        |          |             | P         | 177        | 1         | OPTIMA4        | 111116-3              |
| 7440-50-8     | Copper         | 23400         | ug/kg        |          | *E          | P         | 354        | 1         | OPTIMA4        | 111116-3              |
| 7439-89-6     | Iron           | 18300000      | ug/kg        |          |             | P         | 9440       | 1         | OPTIMA4        | 111116-3              |
| 7439-92-1     | Lead           | 32200         | ug/kg        |          | *           | P         | 389        | 1         | OPTIMA4        | 111116-3              |
| 7439-95-4     | Magnesium      | 9960000       | ug/kg        |          |             | P         | 10000      | 1         | OPTIMA4        | 111116-3              |
| 7439-96-5     | Manganese      | 853000        | ug/kg        |          | *           | P         | 236        | 1         | OPTIMA4        | 111116-3              |
| 7439-97-6     | Mercury        | 30.6          | ug/kg        |          |             | AV        | 4.71       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 24200         | ug/kg        |          |             | P         | 177        | 1         | OPTIMA4        | 111116-3              |
| 7440-09-7     | Potassium      | 1520000       | ug/kg        |          | N           | P         | 7550       | 1         | OPTIMA4        | 111116-3              |
| 7782-49-2     | Selenium       | 590           | ug/kg        | U        |             | P         | 590        | 1         | OPTIMA4        | 111116-3              |
| 7440-22-4     | Silver         | 341           | ug/kg        | B        |             | P         | 118        | 1         | OPTIMA4        | 111116-3              |
| 7440-23-5     | Sodium         | 835000        | ug/kg        |          |             | P         | 8260       | 1         | OPTIMA4        | 111116-3              |
| 7440-28-0     | Thallium       | 5900          | ug/kg        | U        |             | P         | 5900       | 10        | OPTIMA4        | 111116-3              |
| 7440-62-2     | Vanadium       | 29300         | ug/kg        |          |             | P         | 118        | 1         | OPTIMA4        | 111116-3              |
| 7440-66-6     | Zinc           | 75500         | ug/kg        |          | N           | P         | 472        | 1         | OPTIMA4        | 111116-3              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254013

CLIENT ID: SD140300

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 63

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 9630000       | ug/kg        |          | *           | P         | 9820       | 1         | OPTIMA4        | 111116-3              |
| 7440-36-0     | Antimony       | 477           | ug/kg        | U        | *N          | P         | 477        | 1         | OPTIMA4        | 111116-3              |
| 7440-38-2     | Arsenic        | 12300         | ug/kg        |          |             | P         | 722        | 1         | OPTIMA4        | 111116-3              |
| 7440-39-3     | Barium         | 222000        | ug/kg        |          | *N          | P         | 144        | 1         | OPTIMA4        | 111116-3              |
| 7440-41-7     | Beryllium      | 1440          | ug/kg        | U        |             | P         | 1440       | 10        | OPTIMA4        | 111116-3              |
| 7440-43-9     | Cadmium        | 585           | ug/kg        | B        |             | P         | 144        | 1         | OPTIMA4        | 111116-3              |
| 7440-70-2     | Calcium        | 23100000      | ug/kg        |          |             | P         | 11600      | 1         | OPTIMA4        | 111116-3              |
| 7440-47-3     | Chromium       | 14500         | ug/kg        |          |             | P         | 217        | 1         | OPTIMA4        | 111116-3              |
| 7440-48-4     | Cobalt         | 9080          | ug/kg        |          |             | P         | 217        | 1         | OPTIMA4        | 111116-3              |
| 7440-50-8     | Copper         | 23800         | ug/kg        |          | *E          | P         | 433        | 1         | OPTIMA4        | 111116-3              |
| 7439-89-6     | Iron           | 19800000      | ug/kg        |          |             | P         | 11600      | 1         | OPTIMA4        | 111116-3              |
| 7439-92-1     | Lead           | 14500         | ug/kg        |          | *           | P         | 477        | 1         | OPTIMA4        | 111116-3              |
| 7439-95-4     | Magnesium      | 7010000       | ug/kg        |          |             | P         | 12300      | 1         | OPTIMA4        | 111116-3              |
| 7439-96-5     | Manganese      | 663000        | ug/kg        |          | *           | P         | 289        | 1         | OPTIMA4        | 111116-3              |
| 7439-97-6     | Mercury        | 34.2          | ug/kg        |          |             | AV        | 6.23       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 21900         | ug/kg        |          |             | P         | 217        | 1         | OPTIMA4        | 111116-3              |
| 7440-09-7     | Potassium      | 2050000       | ug/kg        |          | N           | P         | 9250       | 1         | OPTIMA4        | 111116-3              |
| 7782-49-2     | Selenium       | 1380          | ug/kg        | B        |             | P         | 722        | 1         | OPTIMA4        | 111116-3              |
| 7440-22-4     | Silver         | 311           | ug/kg        | B        |             | P         | 144        | 1         | OPTIMA4        | 111116-3              |
| 7440-23-5     | Sodium         | 195000        | ug/kg        |          |             | P         | 10100      | 1         | OPTIMA4        | 111116-3              |
| 7440-28-0     | Thallium       | 722           | ug/kg        | U        |             | P         | 722        | 1         | OPTIMA4        | 111116-3              |
| 7440-62-2     | Vanadium       | 30700         | ug/kg        |          |             | P         | 144        | 1         | OPTIMA4        | 111116-3              |
| 7440-66-6     | Zinc           | 87500         | ug/kg        |          | N           | P         | 578        | 1         | OPTIMA4        | 111116-3              |

**\*Analytical Methods:**

AV SW846 7471B

P SW846 3050B/6010C



**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254014

CLIENT ID: SD140200

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 56

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 11100000      | ug/kg        |          | *           | P         | 11400      | 1         | OPTIMA4        | 111116-3              |
| 7440-36-0     | Antimony       | 553           | ug/kg        | U        | *N          | P         | 553        | 1         | OPTIMA4        | 111116-3              |
| 7440-38-2     | Arsenic        | 9950          | ug/kg        |          |             | P         | 837        | 1         | OPTIMA4        | 111116-3              |
| 7440-39-3     | Barium         | 263000        | ug/kg        |          | *N          | P         | 167        | 1         | OPTIMA4        | 111116-3              |
| 7440-41-7     | Beryllium      | 1670          | ug/kg        | U        |             | P         | 1670       | 10        | OPTIMA4        | 111116-3              |
| 7440-43-9     | Cadmium        | 788           | ug/kg        | B        |             | P         | 167        | 1         | OPTIMA4        | 111116-3              |
| 7440-70-2     | Calcium        | 29700000      | ug/kg        |          |             | P         | 13400      | 1         | OPTIMA4        | 111116-3              |
| 7440-47-3     | Chromium       | 17000         | ug/kg        |          |             | P         | 251        | 1         | OPTIMA4        | 111116-3              |
| 7440-48-4     | Cobalt         | 9960          | ug/kg        |          |             | P         | 251        | 1         | OPTIMA4        | 111116-3              |
| 7440-50-8     | Copper         | 26600         | ug/kg        |          | *E          | P         | 502        | 1         | OPTIMA4        | 111116-3              |
| 7439-89-6     | Iron           | 21100000      | ug/kg        |          |             | P         | 13400      | 1         | OPTIMA4        | 111116-3              |
| 7439-92-1     | Lead           | 16600         | ug/kg        |          | *           | P         | 553        | 1         | OPTIMA4        | 111116-3              |
| 7439-95-4     | Magnesium      | 9470000       | ug/kg        |          |             | P         | 14200      | 1         | OPTIMA4        | 111116-3              |
| 7439-96-5     | Manganese      | 784000        | ug/kg        |          | *           | P         | 335        | 1         | OPTIMA4        | 111116-3              |
| 7439-97-6     | Mercury        | 42.2          | ug/kg        |          |             | AV        | 6.29       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 24700         | ug/kg        |          |             | P         | 251        | 1         | OPTIMA4        | 111116-3              |
| 7440-09-7     | Potassium      | 2370000       | ug/kg        |          | N           | P         | 10700      | 1         | OPTIMA4        | 111116-3              |
| 7782-49-2     | Selenium       | 2210          | ug/kg        | B        |             | P         | 837        | 1         | OPTIMA4        | 111116-3              |
| 7440-22-4     | Silver         | 348           | ug/kg        | B        |             | P         | 167        | 1         | OPTIMA4        | 111116-3              |
| 7440-23-5     | Sodium         | 221000        | ug/kg        |          |             | P         | 11700      | 1         | OPTIMA4        | 111116-3              |
| 7440-28-0     | Thallium       | 837           | ug/kg        | U        |             | P         | 837        | 1         | OPTIMA4        | 111116-3              |
| 7440-62-2     | Vanadium       | 35700         | ug/kg        |          |             | P         | 167        | 1         | OPTIMA4        | 111116-3              |
| 7440-66-6     | Zinc           | 112000        | ug/kg        |          | N           | P         | 670        | 1         | OPTIMA4        | 111116-3              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254015

CLIENT ID: SD140100

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 62

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 10300000      | ug/kg        |          | *           | P         | 9900       | 1         | OPTIMA4        | 111116-3              |
| 7440-36-0     | Antimony       | 480           | ug/kg        | U        | *N          | P         | 480        | 1         | OPTIMA4        | 111116-3              |
| 7440-38-2     | Arsenic        | 10900         | ug/kg        |          |             | P         | 728        | 1         | OPTIMA4        | 111116-3              |
| 7440-39-3     | Barium         | 244000        | ug/kg        |          | *N          | P         | 146        | 1         | OPTIMA4        | 111116-3              |
| 7440-41-7     | Beryllium      | 1460          | ug/kg        | U        |             | P         | 1460       | 10        | OPTIMA4        | 111116-3              |
| 7440-43-9     | Cadmium        | 740           | ug/kg        |          |             | P         | 146        | 1         | OPTIMA4        | 111116-3              |
| 7440-70-2     | Calcium        | 32900000      | ug/kg        |          |             | P         | 11600      | 1         | OPTIMA4        | 111116-3              |
| 7440-47-3     | Chromium       | 16100         | ug/kg        |          |             | P         | 218        | 1         | OPTIMA4        | 111116-3              |
| 7440-48-4     | Cobalt         | 9260          | ug/kg        |          |             | P         | 218        | 1         | OPTIMA4        | 111116-3              |
| 7440-50-8     | Copper         | 24300         | ug/kg        |          | *E          | P         | 437        | 1         | OPTIMA4        | 111116-3              |
| 7439-89-6     | Iron           | 19800000      | ug/kg        |          |             | P         | 11600      | 1         | OPTIMA4        | 111116-3              |
| 7439-92-1     | Lead           | 14900         | ug/kg        |          | *           | P         | 480        | 1         | OPTIMA4        | 111116-3              |
| 7439-95-4     | Magnesium      | 10300000      | ug/kg        |          |             | P         | 12400      | 1         | OPTIMA4        | 111116-3              |
| 7439-96-5     | Manganese      | 706000        | ug/kg        |          | *           | P         | 291        | 1         | OPTIMA4        | 111116-3              |
| 7439-97-6     | Mercury        | 35.5          | ug/kg        |          |             | AV        | 6.27       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 23100         | ug/kg        |          |             | P         | 218        | 1         | OPTIMA4        | 111116-3              |
| 7440-09-7     | Potassium      | 2060000       | ug/kg        |          | N           | P         | 9310       | 1         | OPTIMA4        | 111116-3              |
| 7782-49-2     | Selenium       | 1950          | ug/kg        | B        |             | P         | 728        | 1         | OPTIMA4        | 111116-3              |
| 7440-22-4     | Silver         | 217           | ug/kg        | B        |             | P         | 146        | 1         | OPTIMA4        | 111116-3              |
| 7440-23-5     | Sodium         | 263000        | ug/kg        |          |             | P         | 10200      | 1         | OPTIMA4        | 111116-3              |
| 7440-28-0     | Thallium       | 728           | ug/kg        | U        |             | P         | 728        | 1         | OPTIMA4        | 111116-3              |
| 7440-62-2     | Vanadium       | 33300         | ug/kg        |          |             | P         | 146        | 1         | OPTIMA4        | 111116-3              |
| 7440-66-6     | Zinc           | 106000        | ug/kg        |          | N           | P         | 582        | 1         | OPTIMA4        | 111116-3              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254016

CLIENT ID: SD140100DUP

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 63

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 10000000      | ug/kg        |          | *           | P         | 10400      | 1         | OPTIMA4        | 111116-3              |
| 7440-36-0     | Antimony       | 506           | ug/kg        | U        | *N          | P         | 506        | 1         | OPTIMA4        | 111116-3              |
| 7440-38-2     | Arsenic        | 11400         | ug/kg        |          |             | P         | 766        | 1         | OPTIMA4        | 111116-3              |
| 7440-39-3     | Barium         | 243000        | ug/kg        |          | *N          | P         | 153        | 1         | OPTIMA4        | 111116-3              |
| 7440-41-7     | Beryllium      | 1530          | ug/kg        | U        |             | P         | 1530       | 10        | OPTIMA4        | 111116-3              |
| 7440-43-9     | Cadmium        | 708           | ug/kg        | B        |             | P         | 153        | 1         | OPTIMA4        | 111116-3              |
| 7440-70-2     | Calcium        | 26700000      | ug/kg        |          |             | P         | 12300      | 1         | OPTIMA4        | 111116-3              |
| 7440-47-3     | Chromium       | 15600         | ug/kg        |          |             | P         | 230        | 1         | OPTIMA4        | 111116-3              |
| 7440-48-4     | Cobalt         | 9360          | ug/kg        |          |             | P         | 230        | 1         | OPTIMA4        | 111116-3              |
| 7440-50-8     | Copper         | 23400         | ug/kg        |          | *E          | P         | 460        | 1         | OPTIMA4        | 111116-3              |
| 7439-89-6     | Iron           | 19500000      | ug/kg        |          |             | P         | 12300      | 1         | OPTIMA4        | 111116-3              |
| 7439-92-1     | Lead           | 15000         | ug/kg        |          | *           | P         | 506        | 1         | OPTIMA4        | 111116-3              |
| 7439-95-4     | Magnesium      | 9400000       | ug/kg        |          |             | P         | 13000      | 1         | OPTIMA4        | 111116-3              |
| 7439-96-5     | Manganese      | 668000        | ug/kg        |          | *           | P         | 307        | 1         | OPTIMA4        | 111116-3              |
| 7439-97-6     | Mercury        | 36.5          | ug/kg        |          |             | AV        | 5.55       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 23000         | ug/kg        |          |             | P         | 230        | 1         | OPTIMA4        | 111116-3              |
| 7440-09-7     | Potassium      | 1960000       | ug/kg        |          | N           | P         | 9810       | 1         | OPTIMA4        | 111116-3              |
| 7782-49-2     | Selenium       | 2360          | ug/kg        | B        |             | P         | 766        | 1         | OPTIMA4        | 111116-3              |
| 7440-22-4     | Silver         | 328           | ug/kg        | B        |             | P         | 153        | 1         | OPTIMA4        | 111116-3              |
| 7440-23-5     | Sodium         | 248000        | ug/kg        |          |             | P         | 10700      | 1         | OPTIMA4        | 111116-3              |
| 7440-28-0     | Thallium       | 766           | ug/kg        | U        |             | P         | 766        | 1         | OPTIMA4        | 111116-3              |
| 7440-62-2     | Vanadium       | 33200         | ug/kg        |          |             | P         | 153        | 1         | OPTIMA4        | 111116-3              |
| 7440-66-6     | Zinc           | 108000        | ug/kg        |          | N           | P         | 613        | 1         | OPTIMA4        | 111116-3              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254017

CLIENT ID: DP100113

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 73

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 6650000       | ug/kg        |          | *           | P         | 7990       | 1         | OPTIMA4        | 111116-3              |
| 7440-36-0     | Antimony       | 388           | ug/kg        | U        | *N          | P         | 388        | 1         | OPTIMA4        | 111116-3              |
| 7440-38-2     | Arsenic        | 9860          | ug/kg        |          |             | P         | 588        | 1         | OPTIMA4        | 111116-3              |
| 7440-39-3     | Barium         | 254000        | ug/kg        |          | *N          | P         | 118        | 1         | OPTIMA4        | 111116-3              |
| 7440-41-7     | Beryllium      | 1180          | ug/kg        | U        |             | P         | 1180       | 10        | OPTIMA4        | 111116-3              |
| 7440-43-9     | Cadmium        | 328           | ug/kg        | B        |             | P         | 118        | 1         | OPTIMA4        | 111116-3              |
| 7440-70-2     | Calcium        | 22400000      | ug/kg        |          |             | P         | 9400       | 1         | OPTIMA4        | 111116-3              |
| 7440-47-3     | Chromium       | 11800         | ug/kg        |          |             | P         | 176        | 1         | OPTIMA4        | 111116-3              |
| 7440-48-4     | Cobalt         | 6800          | ug/kg        |          |             | P         | 176        | 1         | OPTIMA4        | 111116-3              |
| 7440-50-8     | Copper         | 13300         | ug/kg        |          | *E          | P         | 353        | 1         | OPTIMA4        | 111116-3              |
| 7439-89-6     | Iron           | 15300000      | ug/kg        |          |             | P         | 9400       | 1         | OPTIMA4        | 111116-3              |
| 7439-92-1     | Lead           | 9500          | ug/kg        |          | *           | P         | 388        | 1         | OPTIMA4        | 111116-3              |
| 7439-95-4     | Magnesium      | 8790000       | ug/kg        |          |             | P         | 9990       | 1         | OPTIMA4        | 111116-3              |
| 7439-96-5     | Manganese      | 336000        | ug/kg        |          | *           | P         | 235        | 1         | OPTIMA4        | 111116-3              |
| 7439-97-6     | Mercury        | 30.2          | ug/kg        |          |             | AV        | 5.32       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 17700         | ug/kg        |          |             | P         | 176        | 1         | OPTIMA4        | 111116-3              |
| 7440-09-7     | Potassium      | 1470000       | ug/kg        |          | N           | P         | 7520       | 1         | OPTIMA4        | 111116-3              |
| 7782-49-2     | Selenium       | 588           | ug/kg        | U        |             | P         | 588        | 1         | OPTIMA4        | 111116-3              |
| 7440-22-4     | Silver         | 127           | ug/kg        | B        |             | P         | 118        | 1         | OPTIMA4        | 111116-3              |
| 7440-23-5     | Sodium         | 264000        | ug/kg        |          |             | P         | 8230       | 1         | OPTIMA4        | 111116-3              |
| 7440-28-0     | Thallium       | 5880          | ug/kg        | U        |             | P         | 5880       | 10        | OPTIMA4        | 111116-3              |
| 7440-62-2     | Vanadium       | 23000         | ug/kg        |          |             | P         | 118        | 1         | OPTIMA4        | 111116-3              |
| 7440-66-6     | Zinc           | 49100         | ug/kg        |          | N           | P         | 470        | 1         | OPTIMA4        | 111116-3              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254018

CLIENT ID: DP100212

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 75

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 9700000       | ug/kg        |          | *           | P         | 8990       | 1         | OPTIMA4        | 111116-3              |
| 7440-36-0     | Antimony       | 436           | ug/kg        | U        | *N          | P         | 436        | 1         | OPTIMA4        | 111116-3              |
| 7440-38-2     | Arsenic        | 5820          | ug/kg        |          |             | P         | 661        | 1         | OPTIMA4        | 111116-3              |
| 7440-39-3     | Barium         | 239000        | ug/kg        |          | *N          | P         | 132        | 1         | OPTIMA4        | 111116-3              |
| 7440-41-7     | Beryllium      | 1320          | ug/kg        | U        |             | P         | 1320       | 10        | OPTIMA4        | 111116-3              |
| 7440-43-9     | Cadmium        | 434           | ug/kg        | B        |             | P         | 132        | 1         | OPTIMA4        | 111116-3              |
| 7440-70-2     | Calcium        | 19900000      | ug/kg        |          |             | P         | 10600      | 1         | OPTIMA4        | 111116-3              |
| 7440-47-3     | Chromium       | 15200         | ug/kg        |          |             | P         | 198        | 1         | OPTIMA4        | 111116-3              |
| 7440-48-4     | Cobalt         | 9870          | ug/kg        |          |             | P         | 198        | 1         | OPTIMA4        | 111116-3              |
| 7440-50-8     | Copper         | 23900         | ug/kg        |          | *E          | P         | 397        | 1         | OPTIMA4        | 111116-3              |
| 7439-89-6     | Iron           | 13700000      | ug/kg        |          |             | P         | 10600      | 1         | OPTIMA4        | 111116-3              |
| 7439-92-1     | Lead           | 13800         | ug/kg        |          | *           | P         | 436        | 1         | OPTIMA4        | 111116-3              |
| 7439-95-4     | Magnesium      | 7840000       | ug/kg        |          |             | P         | 11200      | 1         | OPTIMA4        | 111116-3              |
| 7439-96-5     | Manganese      | 433000        | ug/kg        |          | *           | P         | 265        | 1         | OPTIMA4        | 111116-3              |
| 7439-97-6     | Mercury        | 31.3          | ug/kg        |          |             | AV        | 5.12       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 24700         | ug/kg        |          |             | P         | 198        | 1         | OPTIMA4        | 111116-3              |
| 7440-09-7     | Potassium      | 1980000       | ug/kg        |          | N           | P         | 8460       | 1         | OPTIMA4        | 111116-3              |
| 7782-49-2     | Selenium       | 948           | ug/kg        | B        |             | P         | 661        | 1         | OPTIMA4        | 111116-3              |
| 7440-22-4     | Silver         | 250           | ug/kg        | B        |             | P         | 132        | 1         | OPTIMA4        | 111116-3              |
| 7440-23-5     | Sodium         | 234000        | ug/kg        |          |             | P         | 9260       | 1         | OPTIMA4        | 111116-3              |
| 7440-28-0     | Thallium       | 6610          | ug/kg        | U        |             | P         | 6610       | 10        | OPTIMA4        | 111116-3              |
| 7440-62-2     | Vanadium       | 30600         | ug/kg        |          |             | P         | 132        | 1         | OPTIMA4        | 111116-3              |
| 7440-66-6     | Zinc           | 64800         | ug/kg        |          | N           | P         | 529        | 1         | OPTIMA4        | 111116-3              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254019

CLIENT ID: DP100310

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 75

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 5650000       | ug/kg        |          | *           | P         | 7940       | 1         | OPTIMA4        | 111116-3              |
| 7440-36-0     | Antimony       | 386           | ug/kg        | U        | *N          | P         | 386        | 1         | OPTIMA4        | 111116-3              |
| 7440-38-2     | Arsenic        | 6630          | ug/kg        |          |             | P         | 584        | 1         | OPTIMA4        | 111116-3              |
| 7440-39-3     | Barium         | 224000        | ug/kg        |          | *N          | P         | 117        | 1         | OPTIMA4        | 111116-3              |
| 7440-41-7     | Beryllium      | 1170          | ug/kg        | U        |             | P         | 1170       | 10        | OPTIMA4        | 111116-3              |
| 7440-43-9     | Cadmium        | 399           | ug/kg        | B        |             | P         | 117        | 1         | OPTIMA4        | 111116-3              |
| 7440-70-2     | Calcium        | 19300000      | ug/kg        |          |             | P         | 9350       | 1         | OPTIMA4        | 111116-3              |
| 7440-47-3     | Chromium       | 10100         | ug/kg        |          |             | P         | 175        | 1         | OPTIMA4        | 111116-3              |
| 7440-48-4     | Cobalt         | 5830          | ug/kg        |          |             | P         | 175        | 1         | OPTIMA4        | 111116-3              |
| 7440-50-8     | Copper         | 14900         | ug/kg        |          | *E          | P         | 350        | 1         | OPTIMA4        | 111116-3              |
| 7439-89-6     | Iron           | 12500000      | ug/kg        |          |             | P         | 9350       | 1         | OPTIMA4        | 111116-3              |
| 7439-92-1     | Lead           | 8860          | ug/kg        |          | *           | P         | 386        | 1         | OPTIMA4        | 111116-3              |
| 7439-95-4     | Magnesium      | 7460000       | ug/kg        |          |             | P         | 9930       | 1         | OPTIMA4        | 111116-3              |
| 7439-96-5     | Manganese      | 255000        | ug/kg        |          | *           | P         | 234        | 1         | OPTIMA4        | 111116-3              |
| 7439-97-6     | Mercury        | 21.9          | ug/kg        |          |             | AV        | 4.52       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 14900         | ug/kg        |          |             | P         | 175        | 1         | OPTIMA4        | 111116-3              |
| 7440-09-7     | Potassium      | 1270000       | ug/kg        |          | N           | P         | 7480       | 1         | OPTIMA4        | 111116-3              |
| 7782-49-2     | Selenium       | 2010          | ug/kg        | B        |             | P         | 584        | 1         | OPTIMA4        | 111116-3              |
| 7440-22-4     | Silver         | 142           | ug/kg        | B        |             | P         | 117        | 1         | OPTIMA4        | 111116-3              |
| 7440-23-5     | Sodium         | 248000        | ug/kg        |          |             | P         | 8180       | 1         | OPTIMA4        | 111116-3              |
| 7440-28-0     | Thallium       | 5840          | ug/kg        | U        |             | P         | 5840       | 10        | OPTIMA4        | 111116-3              |
| 7440-62-2     | Vanadium       | 20200         | ug/kg        |          |             | P         | 117        | 1         | OPTIMA4        | 111116-3              |
| 7440-66-6     | Zinc           | 43500         | ug/kg        |          | N           | P         | 467        | 1         | OPTIMA4        | 111116-3              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254020

CLIENT ID: DP010216

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 66

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 14500000      | ug/kg        |          | *           | P         | 9050       | 1         | OPTIMA4        | 111116-3              |
| 7440-36-0     | Antimony       | 4390          | ug/kg        | U        | *N          | P         | 4390       | 10        | OPTIMA4        | 111116-3              |
| 7440-38-2     | Arsenic        | 16500         | ug/kg        |          |             | P         | 665        | 1         | OPTIMA4        | 111116-3              |
| 7440-39-3     | Barium         | 427000        | ug/kg        |          | *N          | P         | 133        | 1         | OPTIMA4        | 111116-3              |
| 7440-41-7     | Beryllium      | 2660          | ug/kg        | U        |             | P         | 2660       | 20        | OPTIMA4        | 111116-3              |
| 7440-43-9     | Cadmium        | 859           | ug/kg        |          |             | P         | 133        | 1         | OPTIMA4        | 111116-3              |
| 7440-70-2     | Calcium        | 15500000      | ug/kg        |          |             | P         | 10600      | 1         | OPTIMA4        | 111116-3              |
| 7440-47-3     | Chromium       | 19700         | ug/kg        |          |             | P         | 200        | 1         | OPTIMA4        | 111116-3              |
| 7440-48-4     | Cobalt         | 11400         | ug/kg        |          |             | P         | 200        | 1         | OPTIMA4        | 111116-3              |
| 7440-50-8     | Copper         | 30600         | ug/kg        |          | *E          | P         | 399        | 1         | OPTIMA4        | 111116-3              |
| 7439-89-6     | Iron           | 27100000      | ug/kg        |          |             | P         | 10600      | 1         | OPTIMA4        | 111116-3              |
| 7439-92-1     | Lead           | 20200         | ug/kg        |          | *           | P         | 439        | 1         | OPTIMA4        | 111116-3              |
| 7439-95-4     | Magnesium      | 6730000       | ug/kg        |          |             | P         | 11300      | 1         | OPTIMA4        | 111116-3              |
| 7439-96-5     | Manganese      | 1050000       | ug/kg        |          | *           | P         | 266        | 1         | OPTIMA4        | 111116-3              |
| 7439-97-6     | Mercury        | 51.4          | ug/kg        |          |             | AV        | 5.56       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 30100         | ug/kg        |          |             | P         | 200        | 1         | OPTIMA4        | 111116-3              |
| 7440-09-7     | Potassium      | 2660000       | ug/kg        |          | N           | P         | 8520       | 1         | OPTIMA4        | 111116-3              |
| 7782-49-2     | Selenium       | 2470          | ug/kg        | B        |             | P         | 665        | 1         | OPTIMA4        | 111116-3              |
| 7440-22-4     | Silver         | 725           | ug/kg        |          |             | P         | 133        | 1         | OPTIMA4        | 111116-3              |
| 7440-23-5     | Sodium         | 2080000       | ug/kg        |          |             | P         | 9310       | 1         | OPTIMA4        | 111116-3              |
| 7440-28-0     | Thallium       | 6650          | ug/kg        | U        |             | P         | 6650       | 10        | OPTIMA4        | 111116-3              |
| 7440-62-2     | Vanadium       | 44900         | ug/kg        |          |             | P         | 133        | 1         | OPTIMA4        | 111116-3              |
| 7440-66-6     | Zinc           | 95100         | ug/kg        |          | N           | P         | 532        | 1         | OPTIMA4        | 111116-3              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254021

CLIENT ID: DP010216

CONTRACT: HAAL00201

MATRIX: SPLP

DATE RECEIVED 27-OCT-16

LEVEL: Low

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-97-6     | Mercury        | 0.00067       | mg/L         | U        | N           | AV        | 0.00067    | 1         | HG4            | 111016W1-5            |
| 7440-38-2     | Arsenic        | 94.1          | ug/L         | B        |             | P         | 50         | 1         | OPTIMA5        | 110216-2              |
| 7440-39-3     | Barium         | 61.6          | ug/L         |          |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-43-9     | Cadmium        | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-47-3     | Chromium       | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7439-92-1     | Lead           | 33            | ug/L         | U        |             | P         | 33         | 1         | OPTIMA5        | 110216-2              |
| 7782-49-2     | Selenium       | 60            | ug/L         | U        |             | P         | 60         | 1         | OPTIMA5        | 110216-2              |
| 7440-22-4     | Silver         | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |

**\*Analytical Methods:**

P SW846 3010A/6010C

AV SW846 7470A



**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254022

CLIENT ID: DP010109

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 76

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 8980000       | ug/kg        |          | *           | P         | 7620       | 1         | OPTIMA3        | 111616-1              |
| 7440-36-0     | Antimony       | 454           | ug/kg        | B        | *N          | P         | 370        | 1         | OPTIMA3        | 111616-1              |
| 7440-38-2     | Arsenic        | 7300          | ug/kg        |          |             | P         | 560        | 1         | OPTIMA3        | 111616-1              |
| 7440-39-3     | Barium         | 278000        | ug/kg        |          | *N          | P         | 112        | 1         | OPTIMA3        | 111616-1              |
| 7440-41-7     | Beryllium      | 685           | ug/kg        |          |             | P         | 112        | 1         | OPTIMA3        | 111616-1              |
| 7440-43-9     | Cadmium        | 289           | ug/kg        | B        |             | P         | 112        | 1         | OPTIMA3        | 111616-1              |
| 7440-70-2     | Calcium        | 14700000      | ug/kg        |          |             | P         | 8970       | 1         | OPTIMA3        | 111616-1              |
| 7440-47-3     | Chromium       | 12700         | ug/kg        |          |             | P         | 168        | 1         | OPTIMA3        | 111616-1              |
| 7440-48-4     | Cobalt         | 6800          | ug/kg        |          |             | P         | 168        | 1         | OPTIMA3        | 111616-1              |
| 7440-50-8     | Copper         | 17400         | ug/kg        |          | *E          | P         | 336        | 1         | OPTIMA3        | 111616-1              |
| 7439-89-6     | Iron           | 17600000      | ug/kg        |          |             | P         | 8970       | 1         | OPTIMA3        | 111616-1              |
| 7439-92-1     | Lead           | 11200         | ug/kg        |          | *           | P         | 370        | 1         | OPTIMA3        | 111616-1              |
| 7439-95-4     | Magnesium      | 6440000       | ug/kg        |          |             | P         | 9530       | 1         | OPTIMA3        | 111616-1              |
| 7439-96-5     | Manganese      | 692000        | ug/kg        |          | *           | P         | 224        | 1         | OPTIMA3        | 111616-1              |
| 7439-97-6     | Mercury        | 29.6          | ug/kg        |          |             | AV        | 4.69       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 19800         | ug/kg        |          |             | P         | 168        | 1         | OPTIMA3        | 111616-1              |
| 7440-09-7     | Potassium      | 1670000       | ug/kg        |          | N           | P         | 7170       | 1         | OPTIMA3        | 111616-1              |
| 7782-49-2     | Selenium       | 2300          | ug/kg        | B        |             | P         | 560        | 1         | OPTIMA3        | 111616-1              |
| 7440-22-4     | Silver         | 753           | ug/kg        |          |             | P         | 112        | 1         | OPTIMA3        | 111616-1              |
| 7440-23-5     | Sodium         | 680000        | ug/kg        |          |             | P         | 7850       | 1         | OPTIMA3        | 111616-1              |
| 7440-28-0     | Thallium       | 560           | ug/kg        | U        |             | P         | 560        | 1         | OPTIMA3        | 111616-1              |
| 7440-62-2     | Vanadium       | 29400         | ug/kg        |          |             | P         | 112        | 1         | OPTIMA3        | 111616-1              |
| 7440-66-6     | Zinc           | 56000         | ug/kg        |          | N           | P         | 448        | 1         | OPTIMA3        | 111616-1              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254023

CLIENT ID: DP010109

CONTRACT: HAAL00201

MATRIX: SPLP

DATE RECEIVED 27-OCT-16

LEVEL: Low

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-97-6     | Mercury        | 0.00067       | mg/L         | U        | N           | AV        | 0.00067    | 1         | HG4            | 111016W1-5            |
| 7440-38-2     | Arsenic        | 50            | ug/L         | U        |             | P         | 50         | 1         | OPTIMA5        | 110216-2              |
| 7440-39-3     | Barium         | 83.5          | ug/L         |          |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-43-9     | Cadmium        | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-47-3     | Chromium       | 12            | ug/L         | B        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7439-92-1     | Lead           | 33            | ug/L         | U        |             | P         | 33         | 1         | OPTIMA5        | 110216-2              |
| 7782-49-2     | Selenium       | 60            | ug/L         | U        |             | P         | 60         | 1         | OPTIMA5        | 110216-2              |
| 7440-22-4     | Silver         | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |

**\*Analytical Methods:**

P SW846 3010A/6010C

AV SW846 7470A

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254024

CLIENT ID: DP010307

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 86

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 4380000       | ug/kg        |          | *           | P         | 7490       | 1         | OPTIMA3        | 111616-1              |
| 7440-36-0     | Antimony       | 547           | ug/kg        | B        | *N          | P         | 364        | 1         | OPTIMA3        | 111616-1              |
| 7440-38-2     | Arsenic        | 5830          | ug/kg        |          |             | P         | 551        | 1         | OPTIMA3        | 111616-1              |
| 7440-39-3     | Barium         | 155000        | ug/kg        |          | *N          | P         | 110        | 1         | OPTIMA3        | 111616-1              |
| 7440-41-7     | Beryllium      | 402           | ug/kg        | B        |             | P         | 110        | 1         | OPTIMA3        | 111616-1              |
| 7440-43-9     | Cadmium        | 201           | ug/kg        | B        |             | P         | 110        | 1         | OPTIMA3        | 111616-1              |
| 7440-70-2     | Calcium        | 30700000      | ug/kg        |          |             | P         | 8820       | 1         | OPTIMA3        | 111616-1              |
| 7440-47-3     | Chromium       | 15100         | ug/kg        |          |             | P         | 165        | 1         | OPTIMA3        | 111616-1              |
| 7440-48-4     | Cobalt         | 4280          | ug/kg        |          |             | P         | 165        | 1         | OPTIMA3        | 111616-1              |
| 7440-50-8     | Copper         | 8870          | ug/kg        |          | *E          | P         | 331        | 1         | OPTIMA3        | 111616-1              |
| 7439-89-6     | Iron           | 10500000      | ug/kg        |          |             | P         | 8820       | 1         | OPTIMA3        | 111616-1              |
| 7439-92-1     | Lead           | 6030          | ug/kg        |          | *           | P         | 364        | 1         | OPTIMA3        | 111616-1              |
| 7439-95-4     | Magnesium      | 5840000       | ug/kg        |          |             | P         | 9370       | 1         | OPTIMA3        | 111616-1              |
| 7439-96-5     | Manganese      | 235000        | ug/kg        |          | *           | P         | 220        | 1         | OPTIMA3        | 111616-1              |
| 7439-97-6     | Mercury        | 24            | ug/kg        |          |             | AV        | 4.29       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 15400         | ug/kg        |          |             | P         | 165        | 1         | OPTIMA3        | 111616-1              |
| 7440-09-7     | Potassium      | 900000        | ug/kg        |          | N           | P         | 7050       | 1         | OPTIMA3        | 111616-1              |
| 7782-49-2     | Selenium       | 1640          | ug/kg        | B        |             | P         | 551        | 1         | OPTIMA3        | 111616-1              |
| 7440-22-4     | Silver         | 110           | ug/kg        | U        |             | P         | 110        | 1         | OPTIMA3        | 111616-1              |
| 7440-23-5     | Sodium         | 213000        | ug/kg        |          |             | P         | 7710       | 1         | OPTIMA3        | 111616-1              |
| 7440-28-0     | Thallium       | 551           | ug/kg        | U        |             | P         | 551        | 1         | OPTIMA3        | 111616-1              |
| 7440-62-2     | Vanadium       | 14900         | ug/kg        |          |             | P         | 110        | 1         | OPTIMA3        | 111616-1              |
| 7440-66-6     | Zinc           | 32100         | ug/kg        |          | N           | P         | 441        | 1         | OPTIMA3        | 111616-1              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254025

CLIENT ID: DP010307

CONTRACT: HAAL00201

MATRIX: SPLP

DATE RECEIVED 27-OCT-16

LEVEL: Low

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-97-6     | Mercury        | 0.00067       | mg/L         | U        | N           | AV        | 0.00067    | 1         | HG4            | 111016W1-5            |
| 7440-38-2     | Arsenic        | 74.9          | ug/L         | B        |             | P         | 50         | 1         | OPTIMA5        | 110216-2              |
| 7440-39-3     | Barium         | 63.1          | ug/L         |          |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-43-9     | Cadmium        | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-47-3     | Chromium       | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7439-92-1     | Lead           | 33            | ug/L         | U        |             | P         | 33         | 1         | OPTIMA5        | 110216-2              |
| 7782-49-2     | Selenium       | 60            | ug/L         | U        |             | P         | 60         | 1         | OPTIMA5        | 110216-2              |
| 7440-22-4     | Silver         | 16.4          | ug/L         | B        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |

**\*Analytical Methods:**

P SW846 3010A/6010C

AV SW846 7470A

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254029

CLIENT ID: DP020312

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 74

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 13800000      | ug/kg        |          | *           | P         | 8290       | 1         | OPTIMA3        | 111616-1              |
| 7440-36-0     | Antimony       | 556           | ug/kg        | B        | *N          | P         | 402        | 1         | OPTIMA3        | 111616-1              |
| 7440-38-2     | Arsenic        | 9960          | ug/kg        |          |             | P         | 610        | 1         | OPTIMA3        | 111616-1              |
| 7440-39-3     | Barium         | 252000        | ug/kg        |          | *N          | P         | 122        | 1         | OPTIMA3        | 111616-1              |
| 7440-41-7     | Beryllium      | 1030          | ug/kg        |          |             | P         | 122        | 1         | OPTIMA3        | 111616-1              |
| 7440-43-9     | Cadmium        | 127           | ug/kg        | B        |             | P         | 122        | 1         | OPTIMA3        | 111616-1              |
| 7440-70-2     | Calcium        | 8360000       | ug/kg        |          |             | P         | 9750       | 1         | OPTIMA3        | 111616-1              |
| 7440-47-3     | Chromium       | 18000         | ug/kg        |          |             | P         | 183        | 1         | OPTIMA3        | 111616-1              |
| 7440-48-4     | Cobalt         | 8310          | ug/kg        |          |             | P         | 183        | 1         | OPTIMA3        | 111616-1              |
| 7440-50-8     | Copper         | 25300         | ug/kg        |          | *E          | P         | 366        | 1         | OPTIMA3        | 111616-1              |
| 7439-89-6     | Iron           | 23900000      | ug/kg        |          |             | P         | 9750       | 1         | OPTIMA3        | 111616-1              |
| 7439-92-1     | Lead           | 17800         | ug/kg        |          | *           | P         | 402        | 1         | OPTIMA3        | 111616-1              |
| 7439-95-4     | Magnesium      | 6290000       | ug/kg        |          |             | P         | 10400      | 1         | OPTIMA3        | 111616-1              |
| 7439-96-5     | Manganese      | 461000        | ug/kg        |          | *           | P         | 244        | 1         | OPTIMA3        | 111616-1              |
| 7439-97-6     | Mercury        | 43.4          | ug/kg        |          |             | AV        | 5.42       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 26300         | ug/kg        |          |             | P         | 183        | 1         | OPTIMA3        | 111616-1              |
| 7440-09-7     | Potassium      | 2670000       | ug/kg        |          | N           | P         | 7800       | 1         | OPTIMA3        | 111616-1              |
| 7782-49-2     | Selenium       | 2730          | ug/kg        | B        |             | P         | 610        | 1         | OPTIMA3        | 111616-1              |
| 7440-22-4     | Silver         | 1020          | ug/kg        |          |             | P         | 122        | 1         | OPTIMA3        | 111616-1              |
| 7440-23-5     | Sodium         | 251000        | ug/kg        |          |             | P         | 8530       | 1         | OPTIMA3        | 111616-1              |
| 7440-28-0     | Thallium       | 610           | ug/kg        | U        |             | P         | 610        | 1         | OPTIMA3        | 111616-1              |
| 7440-62-2     | Vanadium       | 41700         | ug/kg        |          |             | P         | 122        | 1         | OPTIMA3        | 111616-1              |
| 7440-66-6     | Zinc           | 80200         | ug/kg        |          | N           | P         | 488        | 1         | OPTIMA3        | 111616-1              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254030

CLIENT ID: DP020312

CONTRACT: HAAL00201

MATRIX: SPLP

DATE RECEIVED 27-OCT-16

LEVEL: Low

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-97-6     | Mercury        | 0.00067       | mg/L         | U        | N           | AV        | 0.00067    | 1         | HG4            | 111016W1-5            |
| 7440-38-2     | Arsenic        | 61            | ug/L         | B        |             | P         | 50         | 1         | OPTIMA5        | 110216-2              |
| 7440-39-3     | Barium         | 93.4          | ug/L         |          |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-43-9     | Cadmium        | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-47-3     | Chromium       | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7439-92-1     | Lead           | 33            | ug/L         | U        |             | P         | 33         | 1         | OPTIMA5        | 110216-2              |
| 7782-49-2     | Selenium       | 60            | ug/L         | U        |             | P         | 60         | 1         | OPTIMA5        | 110216-2              |
| 7440-22-4     | Silver         | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |

**\*Analytical Methods:****P SW846 3010A/6010C****AV SW846 7470A**

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254032

CLIENT ID: DP020413

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 82

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 6420000       | ug/kg        |          | *           | P         | 7230       | 1         | OPTIMA3        | 111616-1              |
| 7440-36-0     | Antimony       | 500           | ug/kg        | B        | *N          | P         | 351        | 1         | OPTIMA3        | 111616-1              |
| 7440-38-2     | Arsenic        | 9220          | ug/kg        |          |             | P         | 532        | 1         | OPTIMA3        | 111616-1              |
| 7440-39-3     | Barium         | 205000        | ug/kg        |          | *N          | P         | 106        | 1         | OPTIMA3        | 111616-1              |
| 7440-41-7     | Beryllium      | 568           | ug/kg        |          |             | P         | 106        | 1         | OPTIMA3        | 111616-1              |
| 7440-43-9     | Cadmium        | 208           | ug/kg        | B        |             | P         | 106        | 1         | OPTIMA3        | 111616-1              |
| 7440-70-2     | Calcium        | 16700000      | ug/kg        |          |             | P         | 8510       | 1         | OPTIMA3        | 111616-1              |
| 7440-47-3     | Chromium       | 10000         | ug/kg        |          |             | P         | 160        | 1         | OPTIMA3        | 111616-1              |
| 7440-48-4     | Cobalt         | 5630          | ug/kg        |          |             | P         | 160        | 1         | OPTIMA3        | 111616-1              |
| 7440-50-8     | Copper         | 16200         | ug/kg        |          | *E          | P         | 319        | 1         | OPTIMA3        | 111616-1              |
| 7439-89-6     | Iron           | 13900000      | ug/kg        |          |             | P         | 8510       | 1         | OPTIMA3        | 111616-1              |
| 7439-92-1     | Lead           | 8980          | ug/kg        |          | *           | P         | 351        | 1         | OPTIMA3        | 111616-1              |
| 7439-95-4     | Magnesium      | 6520000       | ug/kg        |          |             | P         | 9040       | 1         | OPTIMA3        | 111616-1              |
| 7439-96-5     | Manganese      | 396000        | ug/kg        |          | *           | P         | 213        | 1         | OPTIMA3        | 111616-1              |
| 7439-97-6     | Mercury        | 17            | ug/kg        |          |             | AV        | 4.43       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 16300         | ug/kg        |          |             | P         | 160        | 1         | OPTIMA3        | 111616-1              |
| 7440-09-7     | Potassium      | 1430000       | ug/kg        |          | N           | P         | 6810       | 1         | OPTIMA3        | 111616-1              |
| 7782-49-2     | Selenium       | 1910          | ug/kg        | B        |             | P         | 532        | 1         | OPTIMA3        | 111616-1              |
| 7440-22-4     | Silver         | 522           | ug/kg        | B        |             | P         | 106        | 1         | OPTIMA3        | 111616-1              |
| 7440-23-5     | Sodium         | 179000        | ug/kg        |          |             | P         | 7440       | 1         | OPTIMA3        | 111616-1              |
| 7440-28-0     | Thallium       | 532           | ug/kg        | U        |             | P         | 532        | 1         | OPTIMA3        | 111616-1              |
| 7440-62-2     | Vanadium       | 22600         | ug/kg        |          |             | P         | 106        | 1         | OPTIMA3        | 111616-1              |
| 7440-66-6     | Zinc           | 44300         | ug/kg        |          | N           | P         | 425        | 1         | OPTIMA3        | 111616-1              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254033

CLIENT ID: DP020413

CONTRACT: HAAL00201

MATRIX: SPLP

DATE RECEIVED 27-OCT-16

LEVEL: Low

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-97-6     | Mercury        | 0.00067       | mg/L         | U        | N           | AV        | 0.00067    | 1         | HG4            | 111016W1-5            |
| 7440-38-2     | Arsenic        | 61.2          | ug/L         | B        |             | P         | 50         | 1         | OPTIMA5        | 110216-2              |
| 7440-39-3     | Barium         | 32.2          | ug/L         | B        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-43-9     | Cadmium        | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-47-3     | Chromium       | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7439-92-1     | Lead           | 33            | ug/L         | U        |             | P         | 33         | 1         | OPTIMA5        | 110216-2              |
| 7782-49-2     | Selenium       | 60            | ug/L         | U        |             | P         | 60         | 1         | OPTIMA5        | 110216-2              |
| 7440-22-4     | Silver         | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |

**\*Analytical Methods:**

P SW846 3010A/6010C

AV SW846 7470A



**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254034

CLIENT ID: DP020207

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 80

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 9270000       | ug/kg        |          | *           | P         | 7780       | 1         | OPTIMA3        | 111616-1              |
| 7440-36-0     | Antimony       | 670           | ug/kg        | B        | *N          | P         | 378        | 1         | OPTIMA3        | 111616-1              |
| 7440-38-2     | Arsenic        | 13900         | ug/kg        |          |             | P         | 572        | 1         | OPTIMA3        | 111616-1              |
| 7440-39-3     | Barium         | 265000        | ug/kg        |          | *N          | P         | 114        | 1         | OPTIMA3        | 111616-1              |
| 7440-41-7     | Beryllium      | 784           | ug/kg        |          |             | P         | 114        | 1         | OPTIMA3        | 111616-1              |
| 7440-43-9     | Cadmium        | 193           | ug/kg        | B        |             | P         | 114        | 1         | OPTIMA3        | 111616-1              |
| 7440-70-2     | Calcium        | 19000000      | ug/kg        |          |             | P         | 9150       | 1         | OPTIMA3        | 111616-1              |
| 7440-47-3     | Chromium       | 14000         | ug/kg        |          |             | P         | 172        | 1         | OPTIMA3        | 111616-1              |
| 7440-48-4     | Cobalt         | 7210          | ug/kg        |          |             | P         | 172        | 1         | OPTIMA3        | 111616-1              |
| 7440-50-8     | Copper         | 24900         | ug/kg        |          | *E          | P         | 343        | 1         | OPTIMA3        | 111616-1              |
| 7439-89-6     | Iron           | 19500000      | ug/kg        |          |             | P         | 9150       | 1         | OPTIMA3        | 111616-1              |
| 7439-92-1     | Lead           | 12500         | ug/kg        |          | *           | P         | 378        | 1         | OPTIMA3        | 111616-1              |
| 7439-95-4     | Magnesium      | 7430000       | ug/kg        |          |             | P         | 9730       | 1         | OPTIMA3        | 111616-1              |
| 7439-96-5     | Manganese      | 646000        | ug/kg        |          | *           | P         | 229        | 1         | OPTIMA3        | 111616-1              |
| 7439-97-6     | Mercury        | 29.3          | ug/kg        |          |             | AV        | 4.91       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 20300         | ug/kg        |          |             | P         | 172        | 1         | OPTIMA3        | 111616-1              |
| 7440-09-7     | Potassium      | 1990000       | ug/kg        |          | N           | P         | 7320       | 1         | OPTIMA3        | 111616-1              |
| 7782-49-2     | Selenium       | 2230          | ug/kg        | B        |             | P         | 572        | 1         | OPTIMA3        | 111616-1              |
| 7440-22-4     | Silver         | 759           | ug/kg        |          |             | P         | 114        | 1         | OPTIMA3        | 111616-1              |
| 7440-23-5     | Sodium         | 211000        | ug/kg        |          |             | P         | 8010       | 1         | OPTIMA3        | 111616-1              |
| 7440-28-0     | Thallium       | 572           | ug/kg        | U        |             | P         | 572        | 1         | OPTIMA3        | 111616-1              |
| 7440-62-2     | Vanadium       | 31500         | ug/kg        |          |             | P         | 114        | 1         | OPTIMA3        | 111616-1              |
| 7440-66-6     | Zinc           | 63800         | ug/kg        |          | N           | P         | 458        | 1         | OPTIMA3        | 111616-1              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254035

CLIENT ID: DP020207

CONTRACT: HAAL00201

MATRIX: SPLP

DATE RECEIVED 27-OCT-16

LEVEL: Low

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-97-6     | Mercury        | 0.00067       | mg/L         | U        | N           | AV        | 0.00067    | 1         | HG4            | 111016W1-5            |
| 7440-38-2     | Arsenic        | 55.2          | ug/L         | B        |             | P         | 50         | 1         | OPTIMA5        | 110216-2              |
| 7440-39-3     | Barium         | 64.2          | ug/L         |          |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-43-9     | Cadmium        | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-47-3     | Chromium       | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7439-92-1     | Lead           | 33            | ug/L         | U        |             | P         | 33         | 1         | OPTIMA5        | 110216-2              |
| 7782-49-2     | Selenium       | 60            | ug/L         | U        |             | P         | 60         | 1         | OPTIMA5        | 110216-2              |
| 7440-22-4     | Silver         | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |

**\*Analytical Methods:****P SW846 3010A/6010C****AV SW846 7470A**

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254036

CLIENT ID: DP020209

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 89

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 4850000       | ug/kg        |          | *           | P         | 6970       | 1         | OPTIMA3        | 111616-1              |
| 7440-36-0     | Antimony       | 416           | ug/kg        | B        | *N          | P         | 338        | 1         | OPTIMA3        | 111616-1              |
| 7440-38-2     | Arsenic        | 8090          | ug/kg        |          |             | P         | 513        | 1         | OPTIMA3        | 111616-1              |
| 7440-39-3     | Barium         | 217000        | ug/kg        |          | *N          | P         | 103        | 1         | OPTIMA3        | 111616-1              |
| 7440-41-7     | Beryllium      | 422           | ug/kg        | B        |             | P         | 103        | 1         | OPTIMA3        | 111616-1              |
| 7440-43-9     | Cadmium        | 103           | ug/kg        | U        |             | P         | 103        | 1         | OPTIMA3        | 111616-1              |
| 7440-70-2     | Calcium        | 16100000      | ug/kg        |          |             | P         | 8200       | 1         | OPTIMA3        | 111616-1              |
| 7440-47-3     | Chromium       | 8590          | ug/kg        |          |             | P         | 154        | 1         | OPTIMA3        | 111616-1              |
| 7440-48-4     | Cobalt         | 4330          | ug/kg        |          |             | P         | 154        | 1         | OPTIMA3        | 111616-1              |
| 7440-50-8     | Copper         | 7710          | ug/kg        |          | *E          | P         | 308        | 1         | OPTIMA3        | 111616-1              |
| 7439-89-6     | Iron           | 12200000      | ug/kg        |          |             | P         | 8200       | 1         | OPTIMA3        | 111616-1              |
| 7439-92-1     | Lead           | 6750          | ug/kg        |          | *           | P         | 338        | 1         | OPTIMA3        | 111616-1              |
| 7439-95-4     | Magnesium      | 6390000       | ug/kg        |          |             | P         | 8720       | 1         | OPTIMA3        | 111616-1              |
| 7439-96-5     | Manganese      | 348000        | ug/kg        |          | *           | P         | 205        | 1         | OPTIMA3        | 111616-1              |
| 7439-97-6     | Mercury        | 13            | ug/kg        |          |             | AV        | 4.18       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 11900         | ug/kg        |          |             | P         | 154        | 1         | OPTIMA3        | 111616-1              |
| 7440-09-7     | Potassium      | 1030000       | ug/kg        |          | N           | P         | 6560       | 1         | OPTIMA3        | 111616-1              |
| 7782-49-2     | Selenium       | 1880          | ug/kg        | B        |             | P         | 513        | 1         | OPTIMA3        | 111616-1              |
| 7440-22-4     | Silver         | 433           | ug/kg        | B        |             | P         | 103        | 1         | OPTIMA3        | 111616-1              |
| 7440-23-5     | Sodium         | 207000        | ug/kg        |          |             | P         | 7180       | 1         | OPTIMA3        | 111616-1              |
| 7440-28-0     | Thallium       | 513           | ug/kg        | U        |             | P         | 513        | 1         | OPTIMA3        | 111616-1              |
| 7440-62-2     | Vanadium       | 17700         | ug/kg        |          |             | P         | 103        | 1         | OPTIMA3        | 111616-1              |
| 7440-66-6     | Zinc           | 34000         | ug/kg        |          | N           | P         | 410        | 1         | OPTIMA3        | 111616-1              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

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**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

**SDG No:** 409254**METHOD TYPE:** SW846**SAMPLE ID:** 409254037**CLIENT ID:** DP020209**CONTRACT:** HAAL00201**MATRIX:**SPLP**DATE RECEIVED** 27-OCT-16**LEVEL:** Low

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| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-97-6     | Mercury        | 0.00067       | mg/L         | U        | N           | AV        | 0.00067    | 1         | HG4            | 111016W1-5            |
| 7440-38-2     | Arsenic        | 50            | ug/L         | U        |             | P         | 50         | 1         | OPTIMA5        | 110216-2              |
| 7440-39-3     | Barium         | 49.8          | ug/L         | B        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-43-9     | Cadmium        | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-47-3     | Chromium       | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7439-92-1     | Lead           | 33            | ug/L         | U        |             | P         | 33         | 1         | OPTIMA5        | 110216-2              |
| 7782-49-2     | Selenium       | 79.9          | ug/L         | B        |             | P         | 60         | 1         | OPTIMA5        | 110216-2              |
| 7440-22-4     | Silver         | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |

**\*Analytical Methods:****P** SW846 3010A/6010C**AV** SW846 7470A

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254038

CLIENT ID: DP020114

CONTRACT: HAAL00201

MATRIX: Soil

DATE RECEIVED 27-OCT-16

LEVEL: Low %SOLIDS: 98

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7429-90-5     | Aluminum       | 1390000       | ug/kg        |          | *           | P         | 6830       | 1         | OPTIMA3        | 111616-1              |
| 7440-36-0     | Antimony       | 384           | ug/kg        | B        | *N          | P         | 331        | 1         | OPTIMA3        | 111616-1              |
| 7440-38-2     | Arsenic        | 3820          | ug/kg        |          |             | P         | 502        | 1         | OPTIMA3        | 111616-1              |
| 7440-39-3     | Barium         | 71600         | ug/kg        |          | *N          | P         | 100        | 1         | OPTIMA3        | 111616-1              |
| 7440-41-7     | Beryllium      | 142           | ug/kg        | B        |             | P         | 100        | 1         | OPTIMA3        | 111616-1              |
| 7440-43-9     | Cadmium        | 100           | ug/kg        | U        |             | P         | 100        | 1         | OPTIMA3        | 111616-1              |
| 7440-70-2     | Calcium        | 5420000       | ug/kg        |          |             | P         | 8040       | 1         | OPTIMA3        | 111616-1              |
| 7440-47-3     | Chromium       | 3120          | ug/kg        |          |             | P         | 151        | 1         | OPTIMA3        | 111616-1              |
| 7440-48-4     | Cobalt         | 2230          | ug/kg        |          |             | P         | 151        | 1         | OPTIMA3        | 111616-1              |
| 7440-50-8     | Copper         | 1310          | ug/kg        |          | *E          | P         | 301        | 1         | OPTIMA3        | 111616-1              |
| 7439-89-6     | Iron           | 5510000       | ug/kg        |          |             | P         | 8040       | 1         | OPTIMA3        | 111616-1              |
| 7439-92-1     | Lead           | 2360          | ug/kg        |          | *           | P         | 331        | 1         | OPTIMA3        | 111616-1              |
| 7439-95-4     | Magnesium      | 1690000       | ug/kg        |          |             | P         | 8540       | 1         | OPTIMA3        | 111616-1              |
| 7439-96-5     | Manganese      | 115000        | ug/kg        |          | *           | P         | 201        | 1         | OPTIMA3        | 111616-1              |
| 7439-97-6     | Mercury        | 3.94          | ug/kg        | U        |             | AV        | 3.94       | 1         | HG3            | 111016S1-4            |
| 7440-02-0     | Nickel         | 5240          | ug/kg        |          |             | P         | 151        | 1         | OPTIMA3        | 111616-1              |
| 7440-09-7     | Potassium      | 346000        | ug/kg        |          | N           | P         | 6430       | 1         | OPTIMA3        | 111616-1              |
| 7782-49-2     | Selenium       | 611           | ug/kg        | B        |             | P         | 502        | 1         | OPTIMA3        | 111616-1              |
| 7440-22-4     | Silver         | 241           | ug/kg        | B        |             | P         | 100        | 1         | OPTIMA3        | 111616-1              |
| 7440-23-5     | Sodium         | 133000        | ug/kg        |          |             | P         | 7030       | 1         | OPTIMA3        | 111616-1              |
| 7440-28-0     | Thallium       | 502           | ug/kg        | U        |             | P         | 502        | 1         | OPTIMA3        | 111616-1              |
| 7440-62-2     | Vanadium       | 5900          | ug/kg        |          |             | P         | 100        | 1         | OPTIMA3        | 111616-1              |
| 7440-66-6     | Zinc           | 11300         | ug/kg        |          | N           | P         | 402        | 1         | OPTIMA3        | 111616-1              |

## \*Analytical Methods:

AV SW846 7471B

P SW846 3050B/6010C

**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 409254

METHOD TYPE: SW846

SAMPLE ID: 409254039

CLIENT ID: DP020114

CONTRACT: HAAL00201

MATRIX: SPLP

DATE RECEIVED 27-OCT-16

LEVEL: Low

| <u>CAS No</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>C</u> | <u>Qual</u> | <u>M*</u> | <u>MDL</u> | <u>DF</u> | <u>Inst ID</u> | <u>Analytical Run</u> |
|---------------|----------------|---------------|--------------|----------|-------------|-----------|------------|-----------|----------------|-----------------------|
| 7439-97-6     | Mercury        | 0.00067       | mg/L         | U        | N           | AV        | 0.00067    | 1         | HG4            | 111016W1-5            |
| 7440-38-2     | Arsenic        | 50            | ug/L         | U        |             | P         | 50         | 1         | OPTIMA5        | 110216-2              |
| 7440-39-3     | Barium         | 50.3          | ug/L         |          |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-43-9     | Cadmium        | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7440-47-3     | Chromium       | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |
| 7439-92-1     | Lead           | 33            | ug/L         | U        |             | P         | 33         | 1         | OPTIMA5        | 110216-2              |
| 7782-49-2     | Selenium       | 60            | ug/L         | U        |             | P         | 60         | 1         | OPTIMA5        | 110216-2              |
| 7440-22-4     | Silver         | 10            | ug/L         | U        |             | P         | 10         | 1         | OPTIMA5        | 110216-2              |

**\*Analytical Methods:****P SW846 3010A/6010C****AV SW846 7470A**

# **Quality Control Summary**

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
| ICV01            |                |               |              |                   |              |                   |                               |           |                           |                   |
|                  | Arsenic        | 479           | ug/L         | 500               | ug/L         | 95.8              | 90.0 – 110.0                  | P         | 02-NOV-16 12:36           | 110216-2          |
|                  | Barium         | 494           | ug/L         | 500               | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 02-NOV-16 12:36           | 110216-2          |
|                  | Cadmium        | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 02-NOV-16 12:36           | 110216-2          |
|                  | Chromium       | 490           | ug/L         | 500               | ug/L         | 98                | 90.0 – 110.0                  | P         | 02-NOV-16 12:36           | 110216-2          |
|                  | Lead           | 500           | ug/L         | 500               | ug/L         | 100               | 90.0 – 110.0                  | P         | 02-NOV-16 12:36           | 110216-2          |
|                  | Selenium       | 2440          | ug/L         | 2500              | ug/L         | 97.6              | 90.0 – 110.0                  | P         | 02-NOV-16 12:36           | 110216-2          |
|                  | Silver         | 251           | ug/L         | 250               | ug/L         | 100.5             | 90.0 – 110.0                  | P         | 02-NOV-16 12:36           | 110216-2          |
|                  | Mercury        | 5.04          | ug/L         | 5                 | ug/L         | 100.8             | 90.0 – 110.0                  | AV        | 10-NOV-16 10:49           | 111016S1-4        |
|                  | Mercury        | 4.97          | ug/L         | 5                 | ug/L         | 99.4              | 90.0 – 110.0                  | AV        | 10-NOV-16 10:50           | 111016W1-5        |
|                  | Aluminum       | 5100          | ug/L         | 5000              | ug/L         | 102.1             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Antimony       | 500           | ug/L         | 500               | ug/L         | 100               | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Arsenic        | 506           | ug/L         | 500               | ug/L         | 101.3             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Barium         | 507           | ug/L         | 500               | ug/L         | 101.3             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Beryllium      | 243           | ug/L         | 250               | ug/L         | 97.1              | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Cadmium        | 511           | ug/L         | 500               | ug/L         | 102.2             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Calcium        | 5180          | ug/L         | 5000              | ug/L         | 103.5             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Chromium       | 501           | ug/L         | 500               | ug/L         | 100.2             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Cobalt         | 507           | ug/L         | 500               | ug/L         | 101.3             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Copper         | 503           | ug/L         | 500               | ug/L         | 100.6             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Iron           | 5180          | ug/L         | 5000              | ug/L         | 103.6             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Lead           | 516           | ug/L         | 500               | ug/L         | 103.3             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Magnesium      | 5180          | ug/L         | 5000              | ug/L         | 103.7             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Manganese      | 508           | ug/L         | 500               | ug/L         | 101.7             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Nickel         | 506           | ug/L         | 500               | ug/L         | 101.1             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Potassium      | 2610          | ug/L         | 2500              | ug/L         | 104.3             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Selenium       | 2570          | ug/L         | 2500              | ug/L         | 102.8             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Silver         | 252           | ug/L         | 250               | ug/L         | 101               | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Sodium         | 2510          | ug/L         | 2500              | ug/L         | 100.5             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Thallium       | 518           | ug/L         | 500               | ug/L         | 103.7             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Vanadium       | 500           | ug/L         | 500               | ug/L         | 100               | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |
|                  | Zinc           | 509           | ug/L         | 500               | ug/L         | 101.8             | 90.0 – 110.0                  | P         | 11-NOV-16 09:16           | 111116-3          |



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Aluminum       | 5170          | ug/L         | 5000              | ug/L         | 103.3             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Antimony       | 487           | ug/L         | 500               | ug/L         | 97.4              | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Arsenic        | 491           | ug/L         | 500               | ug/L         | 98.2              | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Barium         | 501           | ug/L         | 500               | ug/L         | 100.2             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Beryllium      | 250           | ug/L         | 250               | ug/L         | 100.1             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Cadmium        | 503           | ug/L         | 500               | ug/L         | 100.5             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Calcium        | 5200          | ug/L         | 5000              | ug/L         | 104               | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Chromium       | 495           | ug/L         | 500               | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Cobalt         | 489           | ug/L         | 500               | ug/L         | 97.8              | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Copper         | 505           | ug/L         | 500               | ug/L         | 101.1             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Iron           | 5230          | ug/L         | 5000              | ug/L         | 104.7             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Lead           | 504           | ug/L         | 500               | ug/L         | 100.8             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Magnesium      | 5280          | ug/L         | 5000              | ug/L         | 105.6             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Manganese      | 502           | ug/L         | 500               | ug/L         | 100.4             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Nickel         | 488           | ug/L         | 500               | ug/L         | 97.6              | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Potassium      | 2540          | ug/L         | 2500              | ug/L         | 101.6             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Selenium       | 2480          | ug/L         | 2500              | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Silver         | 252           | ug/L         | 250               | ug/L         | 100.9             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Sodium         | 2490          | ug/L         | 2500              | ug/L         | 99.8              | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Thallium       | 503           | ug/L         | 500               | ug/L         | 100.6             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Vanadium       | 498           | ug/L         | 500               | ug/L         | 99.6              | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
|                  | Zinc           | 501           | ug/L         | 500               | ug/L         | 100.2             | 90.0 – 110.0                  | P         | 16-NOV-16 06:21           | 111616-1          |
| CCV01            | Arsenic        | 490           | ug/L         | 500               | ug/L         | 98                | 90.0 – 110.0                  | P         | 02-NOV-16 12:54           | 110216-2          |
|                  | Barium         | 485           | ug/L         | 500               | ug/L         | 97                | 90.0 – 110.0                  | P         | 02-NOV-16 12:54           | 110216-2          |
|                  | Cadmium        | 482           | ug/L         | 500               | ug/L         | 96.4              | 90.0 – 110.0                  | P         | 02-NOV-16 12:54           | 110216-2          |
|                  | Chromium       | 485           | ug/L         | 500               | ug/L         | 97                | 90.0 – 110.0                  | P         | 02-NOV-16 12:54           | 110216-2          |
|                  | Lead           | 488           | ug/L         | 500               | ug/L         | 97.7              | 90.0 – 110.0                  | P         | 02-NOV-16 12:54           | 110216-2          |
|                  | Selenium       | 491           | ug/L         | 500               | ug/L         | 98.2              | 90.0 – 110.0                  | P         | 02-NOV-16 12:54           | 110216-2          |
|                  | Silver         | 474           | ug/L         | 500               | ug/L         | 94.8              | 90.0 – 110.0                  | P         | 02-NOV-16 12:54           | 110216-2          |
|                  | Mercury        | 4.96          | ug/L         | 5                 | ug/L         | 99.2              | 80.0 – 120.0                  | AV        | 10-NOV-16 10:54           | 111016S1-4        |

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Mercury        | 4.9           | ug/L         | 5                 | ug/L         | 98                | 80.0 – 120.0                  | AV        | 10-NOV-16 10:55           | 111016W1-5        |
|                  | Aluminum       | 5110          | ug/L         | 5000              | ug/L         | 102.3             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Antimony       | 500           | ug/L         | 500               | ug/L         | 100.1             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Arsenic        | 506           | ug/L         | 500               | ug/L         | 101.2             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Barium         | 505           | ug/L         | 500               | ug/L         | 101.1             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Beryllium      | 486           | ug/L         | 500               | ug/L         | 97.1              | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Cadmium        | 504           | ug/L         | 500               | ug/L         | 100.7             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Calcium        | 5130          | ug/L         | 5000              | ug/L         | 102.5             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Chromium       | 506           | ug/L         | 500               | ug/L         | 101.1             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Cobalt         | 505           | ug/L         | 500               | ug/L         | 100.9             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Copper         | 503           | ug/L         | 500               | ug/L         | 100.6             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Iron           | 5130          | ug/L         | 5000              | ug/L         | 102.5             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Lead           | 504           | ug/L         | 500               | ug/L         | 100.8             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Magnesium      | 5060          | ug/L         | 5000              | ug/L         | 101.3             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Manganese      | 504           | ug/L         | 500               | ug/L         | 100.8             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Nickel         | 506           | ug/L         | 500               | ug/L         | 101.1             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Potassium      | 4980          | ug/L         | 5000              | ug/L         | 99.7              | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Selenium       | 514           | ug/L         | 500               | ug/L         | 102.8             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Silver         | 502           | ug/L         | 500               | ug/L         | 100.3             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Sodium         | 9700          | ug/L         | 10000             | ug/L         | 97                | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Thallium       | 512           | ug/L         | 500               | ug/L         | 102.4             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Vanadium       | 504           | ug/L         | 500               | ug/L         | 100.8             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Zinc           | 506           | ug/L         | 500               | ug/L         | 101.2             | 90.0 – 110.0                  | P         | 11-NOV-16 09:31           | 111116-3          |
|                  | Aluminum       | 5080          | ug/L         | 5000              | ug/L         | 101.5             | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Antimony       | 486           | ug/L         | 500               | ug/L         | 97.2              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Arsenic        | 494           | ug/L         | 500               | ug/L         | 98.9              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Barium         | 489           | ug/L         | 500               | ug/L         | 97.8              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Beryllium      | 486           | ug/L         | 500               | ug/L         | 97.3              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Cadmium        | 490           | ug/L         | 500               | ug/L         | 97.9              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Calcium        | 5060          | ug/L         | 5000              | ug/L         | 101.1             | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Chromium       | 487           | ug/L         | 500               | ug/L         | 97.4              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Cobalt         | 483           | ug/L         | 500               | ug/L         | 96.6              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Copper         | 488           | ug/L         | 500               | ug/L         | 97.6              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Iron           | 5140          | ug/L         | 5000              | ug/L         | 102.8             | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Lead           | 494           | ug/L         | 500               | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Magnesium      | 5130          | ug/L         | 5000              | ug/L         | 102.6             | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Manganese      | 487           | ug/L         | 500               | ug/L         | 97.5              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Nickel         | 483           | ug/L         | 500               | ug/L         | 96.5              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Potassium      | 5050          | ug/L         | 5000              | ug/L         | 101               | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Selenium       | 497           | ug/L         | 500               | ug/L         | 99.4              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Silver         | 489           | ug/L         | 500               | ug/L         | 97.8              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Sodium         | 9400          | ug/L         | 10000             | ug/L         | 94                | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Thallium       | 491           | ug/L         | 500               | ug/L         | 98.1              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Vanadium       | 489           | ug/L         | 500               | ug/L         | 97.9              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
|                  | Zinc           | 486           | ug/L         | 500               | ug/L         | 97.1              | 90.0 – 110.0                  | P         | 16-NOV-16 06:41           | 111616-1          |
| CCV02            |                |               |              |                   |              |                   |                               |           |                           |                   |
|                  | Arsenic        | 464           | ug/L         | 500               | ug/L         | 92.7              | 90.0 – 110.0                  | P         | 02-NOV-16 15:36           | 110216-2          |
|                  | Barium         | 474           | ug/L         | 500               | ug/L         | 94.8              | 90.0 – 110.0                  | P         | 02-NOV-16 15:36           | 110216-2          |
|                  | Cadmium        | 468           | ug/L         | 500               | ug/L         | 93.6              | 90.0 – 110.0                  | P         | 02-NOV-16 15:36           | 110216-2          |
|                  | Chromium       | 472           | ug/L         | 500               | ug/L         | 94.4              | 90.0 – 110.0                  | P         | 02-NOV-16 15:36           | 110216-2          |
|                  | Lead           | 467           | ug/L         | 500               | ug/L         | 93.4              | 90.0 – 110.0                  | P         | 02-NOV-16 15:36           | 110216-2          |
|                  | Selenium       | 472           | ug/L         | 500               | ug/L         | 94.4              | 90.0 – 110.0                  | P         | 02-NOV-16 15:36           | 110216-2          |
|                  | Silver         | 465           | ug/L         | 500               | ug/L         | 93                | 90.0 – 110.0                  | P         | 02-NOV-16 15:36           | 110216-2          |
|                  | Mercury        | 4.97          | ug/L         | 5                 | ug/L         | 99.3              | 80.0 – 120.0                  | AV        | 10-NOV-16 11:20           | 111016S1-4        |
|                  | Mercury        | 5             | ug/L         | 5                 | ug/L         | 99.9              | 80.0 – 120.0                  | AV        | 10-NOV-16 13:37           | 111016W1-5        |
|                  | Aluminum       | 5050          | ug/L         | 5000              | ug/L         | 101               | 90.0 – 110.0                  | P         | 11-NOV-16 09:39           | 111116-3          |
|                  | Antimony       | 491           | ug/L         | 500               | ug/L         | 98.2              | 90.0 – 110.0                  | P         | 11-NOV-16 09:39           | 111116-3          |
|                  | Arsenic        | 503           | ug/L         | 500               | ug/L         | 100.6             | 90.0 – 110.0                  | P         | 11-NOV-16 09:39           | 111116-3          |
|                  | Barium         | 498           | ug/L         | 500               | ug/L         | 99.7              | 90.0 – 110.0                  | P         | 11-NOV-16 09:39           | 111116-3          |
|                  | Beryllium      | 484           | ug/L         | 500               | ug/L         | 96.9              | 90.0 – 110.0                  | P         | 11-NOV-16 09:39           | 111116-3          |
|                  | Cadmium        | 497           | ug/L         | 500               | ug/L         | 99.4              | 90.0 – 110.0                  | P         | 11-NOV-16 09:39           | 111116-3          |
|                  | Calcium        | 5060          | ug/L         | 5000              | ug/L         | 101.2             | 90.0 – 110.0                  | P         | 11-NOV-16 09:39           | 111116-3          |

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Chromium       | 497           | ug/L         | 500               | ug/L         | 99.4              | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Cobalt         | 499           | ug/L         | 500               | ug/L         | 99.7              | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Copper         | 497           | ug/L         | 500               | ug/L         | 99.3              | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Iron           | 5060          | ug/L         | 5000              | ug/L         | 101.1             | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Lead           | 501           | ug/L         | 500               | ug/L         | 100.3             | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Magnesium      | 5000          | ug/L         | 5000              | ug/L         | 100.1             | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Manganese      | 498           | ug/L         | 500               | ug/L         | 99.7              | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Nickel         | 497           | ug/L         | 500               | ug/L         | 99.5              | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Potassium      | 5010          | ug/L         | 5000              | ug/L         | 100.2             | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Selenium       | 506           | ug/L         | 500               | ug/L         | 101.2             | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Silver         | 498           | ug/L         | 500               | ug/L         | 99.7              | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Sodium         | 9700          | ug/L         | 10000             | ug/L         | 97                | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Thallium       | 505           | ug/L         | 500               | ug/L         | 101               | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Vanadium       | 498           | ug/L         | 500               | ug/L         | 99.6              | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Zinc           | 499           | ug/L         | 500               | ug/L         | 99.8              | 90.0 – 110.0                  | P         | 11–NOV–16 09:39           | 111116–3          |
|                  | Aluminum       | 5140          | ug/L         | 5000              | ug/L         | 102.8             | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Antimony       | 484           | ug/L         | 500               | ug/L         | 96.9              | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Arsenic        | 501           | ug/L         | 500               | ug/L         | 100.3             | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Barium         | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Beryllium      | 493           | ug/L         | 500               | ug/L         | 98.7              | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Cadmium        | 497           | ug/L         | 500               | ug/L         | 99.4              | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Calcium        | 5110          | ug/L         | 5000              | ug/L         | 102.3             | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Chromium       | 492           | ug/L         | 500               | ug/L         | 98.4              | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Cobalt         | 488           | ug/L         | 500               | ug/L         | 97.6              | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Copper         | 493           | ug/L         | 500               | ug/L         | 98.6              | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Iron           | 5190          | ug/L         | 5000              | ug/L         | 103.9             | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Lead           | 498           | ug/L         | 500               | ug/L         | 99.7              | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Magnesium      | 5200          | ug/L         | 5000              | ug/L         | 104.1             | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Manganese      | 494           | ug/L         | 500               | ug/L         | 98.7              | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Nickel         | 488           | ug/L         | 500               | ug/L         | 97.5              | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |
|                  | Potassium      | 5100          | ug/L         | 5000              | ug/L         | 102               | 90.0 – 110.0                  | P         | 16–NOV–16 07:01           | 111616–1          |

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
| CCV03            | Selenium       | 498           | ug/L         | 500               | ug/L         | 99.6              | 90.0 – 110.0                  | P         | 16-NOV-16 07:01           | 111616-1          |
|                  | Silver         | 494           | ug/L         | 500               | ug/L         | 98.9              | 90.0 – 110.0                  | P         | 16-NOV-16 07:01           | 111616-1          |
|                  | Sodium         | 9560          | ug/L         | 10000             | ug/L         | 95.6              | 90.0 – 110.0                  | P         | 16-NOV-16 07:01           | 111616-1          |
|                  | Thallium       | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 16-NOV-16 07:01           | 111616-1          |
|                  | Vanadium       | 496           | ug/L         | 500               | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 16-NOV-16 07:01           | 111616-1          |
|                  | Zinc           | 491           | ug/L         | 500               | ug/L         | 98.2              | 90.0 – 110.0                  | P         | 16-NOV-16 07:01           | 111616-1          |
|                  |                |               |              |                   |              |                   |                               |           |                           |                   |
| CCV03            | Arsenic        | 451           | ug/L         | 500               | ug/L         | 90.2              | 90.0 – 110.0                  | P         | 02-NOV-16 16:02           | 110216-2          |
|                  | Barium         | 475           | ug/L         | 500               | ug/L         | 95.1              | 90.0 – 110.0                  | P         | 02-NOV-16 16:02           | 110216-2          |
|                  | Cadmium        | 471           | ug/L         | 500               | ug/L         | 94.3              | 90.0 – 110.0                  | P         | 02-NOV-16 16:02           | 110216-2          |
|                  | Chromium       | 472           | ug/L         | 500               | ug/L         | 94.5              | 90.0 – 110.0                  | P         | 02-NOV-16 16:02           | 110216-2          |
|                  | Lead           | 470           | ug/L         | 500               | ug/L         | 94                | 90.0 – 110.0                  | P         | 02-NOV-16 16:02           | 110216-2          |
|                  | Selenium       | 467           | ug/L         | 500               | ug/L         | 93.4              | 90.0 – 110.0                  | P         | 02-NOV-16 16:02           | 110216-2          |
|                  | Silver         | 467           | ug/L         | 500               | ug/L         | 93.5              | 90.0 – 110.0                  | P         | 02-NOV-16 16:02           | 110216-2          |
|                  | Mercury        | 4.86          | ug/L         | 5                 | ug/L         | 97.3              | 80.0 – 120.0                  | AV        | 10-NOV-16 11:40           | 111016S1-4        |
|                  | Mercury        | 5.08          | ug/L         | 5                 | ug/L         | 101.5             | 80.0 – 120.0                  | AV        | 10-NOV-16 13:58           | 111016W1-5        |
|                  | Aluminum       | 5170          | ug/L         | 5000              | ug/L         | 103.4             | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Antimony       | 487           | ug/L         | 500               | ug/L         | 97.4              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Arsenic        | 503           | ug/L         | 500               | ug/L         | 100.7             | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Barium         | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Beryllium      | 483           | ug/L         | 500               | ug/L         | 96.6              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Cadmium        | 493           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Calcium        | 5180          | ug/L         | 5000              | ug/L         | 103.6             | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Chromium       | 494           | ug/L         | 500               | ug/L         | 98.9              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Cobalt         | 496           | ug/L         | 500               | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Copper         | 492           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Iron           | 5140          | ug/L         | 5000              | ug/L         | 102.7             | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Lead           | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Magnesium      | 5130          | ug/L         | 5000              | ug/L         | 102.6             | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Manganese      | 494           | ug/L         | 500               | ug/L         | 98.9              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Nickel         | 494           | ug/L         | 500               | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Potassium      | 5050          | ug/L         | 5000              | ug/L         | 101               | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Selenium       | 504           | ug/L         | 500               | ug/L         | 100.8             | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Silver         | 494           | ug/L         | 500               | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Sodium         | 9660          | ug/L         | 10000             | ug/L         | 96.6              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Thallium       | 496           | ug/L         | 500               | ug/L         | 99.3              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Vanadium       | 494           | ug/L         | 500               | ug/L         | 98.7              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Zinc           | 494           | ug/L         | 500               | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 11-NOV-16 10:52           | 111116-3          |
|                  | Aluminum       | 5170          | ug/L         | 5000              | ug/L         | 103.5             | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Antimony       | 489           | ug/L         | 500               | ug/L         | 97.9              | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Arsenic        | 509           | ug/L         | 500               | ug/L         | 101.7             | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Barium         | 499           | ug/L         | 500               | ug/L         | 99.9              | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Beryllium      | 499           | ug/L         | 500               | ug/L         | 99.8              | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Cadmium        | 503           | ug/L         | 500               | ug/L         | 100.6             | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Calcium        | 5190          | ug/L         | 5000              | ug/L         | 103.8             | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Chromium       | 498           | ug/L         | 500               | ug/L         | 99.5              | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Cobalt         | 501           | ug/L         | 500               | ug/L         | 100.3             | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Copper         | 497           | ug/L         | 500               | ug/L         | 99.5              | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Iron           | 5370          | ug/L         | 5000              | ug/L         | 107.4             | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Lead           | 503           | ug/L         | 500               | ug/L         | 100.5             | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Magnesium      | 5280          | ug/L         | 5000              | ug/L         | 105.6             | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Manganese      | 498           | ug/L         | 500               | ug/L         | 99.6              | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Nickel         | 493           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Potassium      | 5100          | ug/L         | 5000              | ug/L         | 102               | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Selenium       | 509           | ug/L         | 500               | ug/L         | 101.8             | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Silver         | 499           | ug/L         | 500               | ug/L         | 99.9              | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Sodium         | 9850          | ug/L         | 10000             | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Thallium       | 508           | ug/L         | 500               | ug/L         | 101.6             | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Vanadium       | 500           | ug/L         | 500               | ug/L         | 100               | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
|                  | Zinc           | 496           | ug/L         | 500               | ug/L         | 99.3              | 90.0 – 110.0                  | P         | 16-NOV-16 11:17           | 111616-1          |
| CCV04            | Arsenic        | 454           | ug/L         | 500               | ug/L         | 90.8              | 90.0 – 110.0                  | P         | 02-NOV-16 16:28           | 110216-2          |

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Barium         | 475           | ug/L         | 500               | ug/L         | 95                | 90.0 – 110.0                  | P         | 02-NOV-16 16:28           | 110216-2          |
|                  | Cadmium        | 468           | ug/L         | 500               | ug/L         | 93.6              | 90.0 – 110.0                  | P         | 02-NOV-16 16:28           | 110216-2          |
|                  | Chromium       | 471           | ug/L         | 500               | ug/L         | 94.2              | 90.0 – 110.0                  | P         | 02-NOV-16 16:28           | 110216-2          |
|                  | Lead           | 467           | ug/L         | 500               | ug/L         | 93.5              | 90.0 – 110.0                  | P         | 02-NOV-16 16:28           | 110216-2          |
|                  | Selenium       | 465           | ug/L         | 500               | ug/L         | 93                | 90.0 – 110.0                  | P         | 02-NOV-16 16:28           | 110216-2          |
|                  | Silver         | 465           | ug/L         | 500               | ug/L         | 92.9              | 90.0 – 110.0                  | P         | 02-NOV-16 16:28           | 110216-2          |
|                  | Mercury        | 4.86          | ug/L         | 5                 | ug/L         | 97.1              | 80.0 – 120.0                  | AV        | 10-NOV-16 12:00           | 111016S1-4        |
|                  | Mercury        | 5.08          | ug/L         | 5                 | ug/L         | 101.6             | 80.0 – 120.0                  | AV        | 10-NOV-16 14:19           | 111016W1-5        |
|                  | Aluminum       | 5010          | ug/L         | 5000              | ug/L         | 100.2             | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Antimony       | 480           | ug/L         | 500               | ug/L         | 95.9              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Arsenic        | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Barium         | 488           | ug/L         | 500               | ug/L         | 97.6              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Beryllium      | 479           | ug/L         | 500               | ug/L         | 95.8              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Cadmium        | 484           | ug/L         | 500               | ug/L         | 96.8              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Calcium        | 5070          | ug/L         | 5000              | ug/L         | 101.5             | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Chromium       | 486           | ug/L         | 500               | ug/L         | 97.3              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Cobalt         | 488           | ug/L         | 500               | ug/L         | 97.7              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Copper         | 488           | ug/L         | 500               | ug/L         | 97.5              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Iron           | 5060          | ug/L         | 5000              | ug/L         | 101.3             | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Lead           | 488           | ug/L         | 500               | ug/L         | 97.6              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Magnesium      | 4970          | ug/L         | 5000              | ug/L         | 99.3              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Manganese      | 489           | ug/L         | 500               | ug/L         | 97.8              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Nickel         | 486           | ug/L         | 500               | ug/L         | 97.3              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Potassium      | 4990          | ug/L         | 5000              | ug/L         | 99.8              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Selenium       | 491           | ug/L         | 500               | ug/L         | 98.2              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Silver         | 488           | ug/L         | 500               | ug/L         | 97.5              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Sodium         | 9610          | ug/L         | 10000             | ug/L         | 96.1              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Thallium       | 487           | ug/L         | 500               | ug/L         | 97.4              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Vanadium       | 488           | ug/L         | 500               | ug/L         | 97.6              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Zinc           | 487           | ug/L         | 500               | ug/L         | 97.3              | 90.0 – 110.0                  | P         | 11-NOV-16 11:59           | 111116-3          |
|                  | Aluminum       | 5140          | ug/L         | 5000              | ug/L         | 102.8             | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Antimony       | 482           | ug/L         | 500               | ug/L         | 96.5              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Arsenic        | 499           | ug/L         | 500               | ug/L         | 99.9              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Barium         | 496           | ug/L         | 500               | ug/L         | 99.2              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Beryllium      | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Cadmium        | 496           | ug/L         | 500               | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Calcium        | 5150          | ug/L         | 5000              | ug/L         | 103.1             | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Chromium       | 494           | ug/L         | 500               | ug/L         | 98.9              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Cobalt         | 489           | ug/L         | 500               | ug/L         | 97.7              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Copper         | 497           | ug/L         | 500               | ug/L         | 99.4              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Iron           | 5520          | ug/L         | 5000              | ug/L         | 110.3             | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Lead           | 496           | ug/L         | 500               | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Magnesium      | 5270          | ug/L         | 5000              | ug/L         | 105.4             | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Manganese      | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Nickel         | 488           | ug/L         | 500               | ug/L         | 97.6              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Potassium      | 4990          | ug/L         | 5000              | ug/L         | 99.9              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Selenium       | 499           | ug/L         | 500               | ug/L         | 99.8              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Silver         | 498           | ug/L         | 500               | ug/L         | 99.6              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Sodium         | 10600         | ug/L         | 10000             | ug/L         | 106.4             | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Thallium       | 500           | ug/L         | 500               | ug/L         | 100               | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Vanadium       | 498           | ug/L         | 500               | ug/L         | 99.6              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
|                  | Zinc           | 491           | ug/L         | 500               | ug/L         | 98.2              | 90.0 – 110.0                  | P         | 16-NOV-16 11:43           | 111616-1          |
| CCV05            |                |               |              |                   |              |                   |                               |           |                           |                   |
|                  | Mercury        | 4.79          | ug/L         | 5                 | ug/L         | 95.8              | 80.0 – 120.0                  | AV        | 10-NOV-16 12:15           | 111016S1-4        |
|                  | Mercury        | 5.11          | ug/L         | 5                 | ug/L         | 102.1             | 80.0 – 120.0                  | AV        | 10-NOV-16 14:39           | 111016W1-5        |
|                  | Aluminum       | 5080          | ug/L         | 5000              | ug/L         | 101.5             | 90.0 – 110.0                  | P         | 11-NOV-16 12:21           | 111116-3          |
|                  | Antimony       | 486           | ug/L         | 500               | ug/L         | 97.2              | 90.0 – 110.0                  | P         | 11-NOV-16 12:21           | 111116-3          |
|                  | Arsenic        | 496           | ug/L         | 500               | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 11-NOV-16 12:21           | 111116-3          |
|                  | Barium         | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 11-NOV-16 12:21           | 111116-3          |
|                  | Beryllium      | 476           | ug/L         | 500               | ug/L         | 95.2              | 90.0 – 110.0                  | P         | 11-NOV-16 12:21           | 111116-3          |
|                  | Cadmium        | 488           | ug/L         | 500               | ug/L         | 97.7              | 90.0 – 110.0                  | P         | 11-NOV-16 12:21           | 111116-3          |
|                  | Calcium        | 5000          | ug/L         | 5000              | ug/L         | 100.1             | 90.0 – 110.0                  | P         | 11-NOV-16 12:21           | 111116-3          |



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Chromium       | 493           | ug/L         | 500               | ug/L         | 98.6              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Cobalt         | 494           | ug/L         | 500               | ug/L         | 98.9              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Copper         | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Iron           | 5070          | ug/L         | 5000              | ug/L         | 101.3             | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Lead           | 489           | ug/L         | 500               | ug/L         | 97.8              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Magnesium      | 4940          | ug/L         | 5000              | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Manganese      | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Nickel         | 493           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Potassium      | 5090          | ug/L         | 5000              | ug/L         | 101.8             | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Selenium       | 497           | ug/L         | 500               | ug/L         | 99.4              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Silver         | 493           | ug/L         | 500               | ug/L         | 98.7              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Sodium         | 9740          | ug/L         | 10000             | ug/L         | 97.4              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Thallium       | 492           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Vanadium       | 494           | ug/L         | 500               | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Zinc           | 492           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 11–NOV–16 12:21           | 111116–3          |
|                  | Aluminum       | 5140          | ug/L         | 5000              | ug/L         | 102.7             | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Antimony       | 477           | ug/L         | 500               | ug/L         | 95.3              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Arsenic        | 490           | ug/L         | 500               | ug/L         | 98.1              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Barium         | 489           | ug/L         | 500               | ug/L         | 97.7              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Beryllium      | 487           | ug/L         | 500               | ug/L         | 97.4              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Cadmium        | 484           | ug/L         | 500               | ug/L         | 96.7              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Calcium        | 5050          | ug/L         | 5000              | ug/L         | 101               | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Chromium       | 486           | ug/L         | 500               | ug/L         | 97.2              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Cobalt         | 481           | ug/L         | 500               | ug/L         | 96.3              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Copper         | 492           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Iron           | 5430          | ug/L         | 5000              | ug/L         | 108.7             | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Lead           | 487           | ug/L         | 500               | ug/L         | 97.3              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Magnesium      | 5100          | ug/L         | 5000              | ug/L         | 102               | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Manganese      | 488           | ug/L         | 500               | ug/L         | 97.6              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Nickel         | 479           | ug/L         | 500               | ug/L         | 95.7              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |
|                  | Potassium      | 4980          | ug/L         | 5000              | ug/L         | 99.6              | 90.0 – 110.0                  | P         | 16–NOV–16 12:13           | 111616–1          |

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Selenium       | 490           | ug/L         | 500               | ug/L         | 98                | 90.0 – 110.0                  | P         | 16-NOV-16 12:13           | 111616-1          |
|                  | Silver         | 493           | ug/L         | 500               | ug/L         | 98.6              | 90.0 – 110.0                  | P         | 16-NOV-16 12:13           | 111616-1          |
|                  | Sodium         | 10500         | ug/L         | 10000             | ug/L         | 104.8             | 90.0 – 110.0                  | P         | 16-NOV-16 12:13           | 111616-1          |
|                  | Thallium       | 492           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 16-NOV-16 12:13           | 111616-1          |
|                  | Vanadium       | 492           | ug/L         | 500               | ug/L         | 98.3              | 90.0 – 110.0                  | P         | 16-NOV-16 12:13           | 111616-1          |
|                  | Zinc           | 482           | ug/L         | 500               | ug/L         | 96.4              | 90.0 – 110.0                  | P         | 16-NOV-16 12:13           | 111616-1          |
| CCV06            |                |               |              |                   |              |                   |                               |           |                           |                   |
|                  | Mercury        | 5.11          | ug/L         | 5                 | ug/L         | 102.1             | 80.0 – 120.0                  | AV        | 10-NOV-16 14:48           | 111016W1-5        |
|                  | Aluminum       | 5010          | ug/L         | 5000              | ug/L         | 100.3             | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Antimony       | 492           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Arsenic        | 509           | ug/L         | 500               | ug/L         | 101.8             | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Barium         | 498           | ug/L         | 500               | ug/L         | 99.7              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Beryllium      | 481           | ug/L         | 500               | ug/L         | 96.2              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Cadmium        | 496           | ug/L         | 500               | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Calcium        | 5020          | ug/L         | 5000              | ug/L         | 100.4             | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Chromium       | 497           | ug/L         | 500               | ug/L         | 99.5              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Cobalt         | 500           | ug/L         | 500               | ug/L         | 99.9              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Copper         | 497           | ug/L         | 500               | ug/L         | 99.4              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Iron           | 5070          | ug/L         | 5000              | ug/L         | 101.4             | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Lead           | 499           | ug/L         | 500               | ug/L         | 99.8              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Magnesium      | 4940          | ug/L         | 5000              | ug/L         | 98.9              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Manganese      | 499           | ug/L         | 500               | ug/L         | 99.8              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Nickel         | 497           | ug/L         | 500               | ug/L         | 99.5              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Potassium      | 5070          | ug/L         | 5000              | ug/L         | 101.4             | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Selenium       | 501           | ug/L         | 500               | ug/L         | 100.2             | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Silver         | 496           | ug/L         | 500               | ug/L         | 99.2              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Sodium         | 9750          | ug/L         | 10000             | ug/L         | 97.5              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Thallium       | 496           | ug/L         | 500               | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Vanadium       | 498           | ug/L         | 500               | ug/L         | 99.5              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |
|                  | Zinc           | 498           | ug/L         | 500               | ug/L         | 99.5              | 90.0 – 110.0                  | P         | 11-NOV-16 13:05           | 111116-3          |

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
| CCV07            |                |               |              |                   |              |                   |                               |           |                           |                   |
|                  | Aluminum       | 5010          | ug/L         | 5000              | ug/L         | 100.2             | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Antimony       | 492           | ug/L         | 500               | ug/L         | 98.4              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Arsenic        | 510           | ug/L         | 500               | ug/L         | 102               | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Barium         | 498           | ug/L         | 500               | ug/L         | 99.5              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Beryllium      | 476           | ug/L         | 500               | ug/L         | 95.1              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Cadmium        | 493           | ug/L         | 500               | ug/L         | 98.7              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Calcium        | 5030          | ug/L         | 5000              | ug/L         | 100.6             | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Chromium       | 496           | ug/L         | 500               | ug/L         | 99.3              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Cobalt         | 498           | ug/L         | 500               | ug/L         | 99.6              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Copper         | 498           | ug/L         | 500               | ug/L         | 99.7              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Iron           | 5030          | ug/L         | 5000              | ug/L         | 100.6             | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Lead           | 496           | ug/L         | 500               | ug/L         | 99.3              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Magnesium      | 4870          | ug/L         | 5000              | ug/L         | 97.4              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Manganese      | 498           | ug/L         | 500               | ug/L         | 99.6              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Nickel         | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Potassium      | 5050          | ug/L         | 5000              | ug/L         | 101               | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Selenium       | 500           | ug/L         | 500               | ug/L         | 100               | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Silver         | 495           | ug/L         | 500               | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Sodium         | 9700          | ug/L         | 10000             | ug/L         | 97                | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Thallium       | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Vanadium       | 498           | ug/L         | 500               | ug/L         | 99.6              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
|                  | Zinc           | 496           | ug/L         | 500               | ug/L         | 99.2              | 90.0 – 110.0                  | P         | 11–NOV–16 13:13           | 111116–3          |
| CCV08            |                |               |              |                   |              |                   |                               |           |                           |                   |
|                  | Aluminum       | 5010          | ug/L         | 5000              | ug/L         | 100.3             | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Antimony       | 494           | ug/L         | 500               | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Arsenic        | 513           | ug/L         | 500               | ug/L         | 102.7             | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Barium         | 494           | ug/L         | 500               | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Beryllium      | 476           | ug/L         | 500               | ug/L         | 95.1              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Cadmium        | 490           | ug/L         | 500               | ug/L         | 98.1              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Calcium        | 5000          | ug/L         | 5000              | ug/L         | 99.9              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Chromium       | 493           | ug/L         | 500               | ug/L         | 98.7              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |

**METALS**  
**–2a–**  
**Initial and Continuing Calibration Verification**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Cobalt         | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Copper         | 494           | ug/L         | 500               | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Iron           | 5080          | ug/L         | 5000              | ug/L         | 101.5             | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Lead           | 497           | ug/L         | 500               | ug/L         | 99.4              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Magnesium      | 4920          | ug/L         | 5000              | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Manganese      | 495           | ug/L         | 500               | ug/L         | 99                | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Nickel         | 492           | ug/L         | 500               | ug/L         | 98.4              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Potassium      | 5060          | ug/L         | 5000              | ug/L         | 101.2             | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Selenium       | 503           | ug/L         | 500               | ug/L         | 100.6             | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Silver         | 492           | ug/L         | 500               | ug/L         | 98.3              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Sodium         | 9680          | ug/L         | 10000             | ug/L         | 96.8              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Thallium       | 496           | ug/L         | 500               | ug/L         | 99.1              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Vanadium       | 493           | ug/L         | 500               | ug/L         | 98.7              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
|                  | Zinc           | 494           | ug/L         | 500               | ug/L         | 98.8              | 90.0 – 110.0                  | P         | 11–NOV–16 13:36           | 111116–3          |
| CCV09            | Aluminum       | 5020          | ug/L         | 5000              | ug/L         | 100.4             | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Antimony       | 488           | ug/L         | 500               | ug/L         | 97.7              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Arsenic        | 506           | ug/L         | 500               | ug/L         | 101.2             | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Barium         | 492           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Beryllium      | 478           | ug/L         | 500               | ug/L         | 95.7              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Cadmium        | 489           | ug/L         | 500               | ug/L         | 97.7              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Calcium        | 4960          | ug/L         | 5000              | ug/L         | 99.2              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Chromium       | 492           | ug/L         | 500               | ug/L         | 98.3              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Cobalt         | 492           | ug/L         | 500               | ug/L         | 98.5              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Copper         | 493           | ug/L         | 500               | ug/L         | 98.6              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Iron           | 5040          | ug/L         | 5000              | ug/L         | 100.9             | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Lead           | 492           | ug/L         | 500               | ug/L         | 98.4              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Magnesium      | 4900          | ug/L         | 5000              | ug/L         | 98.1              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Manganese      | 493           | ug/L         | 500               | ug/L         | 98.7              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Nickel         | 491           | ug/L         | 500               | ug/L         | 98.1              | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |
|                  | Potassium      | 5060          | ug/L         | 5000              | ug/L         | 101.2             | 90.0 – 110.0                  | P         | 11–NOV–16 13:43           | 111116–3          |

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**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

**SDG No:** 409254

**Contract:** HAAL00201

**Lab Code:** GEL

**Instrument ID:** HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

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| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|-----------|---------------------------|-------------------|
|                  | Selenium       | 496           | ug/L         | 500               | ug/L         | 99.2              | 90.0 – 110.0                  | P         | 11-NOV-16 13:43           | 111116-3          |
|                  | Silver         | 489           | ug/L         | 500               | ug/L         | 97.8              | 90.0 – 110.0                  | P         | 11-NOV-16 13:43           | 111116-3          |
|                  | Sodium         | 9670          | ug/L         | 10000             | ug/L         | 96.7              | 90.0 – 110.0                  | P         | 11-NOV-16 13:43           | 111116-3          |
|                  | Thallium       | 491           | ug/L         | 500               | ug/L         | 98.2              | 90.0 – 110.0                  | P         | 11-NOV-16 13:43           | 111116-3          |
|                  | Vanadium       | 492           | ug/L         | 500               | ug/L         | 98.4              | 90.0 – 110.0                  | P         | 11-NOV-16 13:43           | 111116-3          |
|                  | Zinc           | 492           | ug/L         | 500               | ug/L         | 98.4              | 90.0 – 110.0                  | P         | 11-NOV-16 13:43           | 111116-3          |

**\*Analytical Methods:**

AV SW846 7471B  
P SW846 3010A/6010C  
P SW846 3050B/6010C  
AV SW846 7470A

**METALS**  
**-2b-**  
**CRDL Standard for ICP & ICPMS**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Advisory Limits (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-----------------------------|-----------|---------------------------|-------------------|
| CRDL01           |                |               |              |                   |              |                   |                             |           |                           |                   |
|                  | Mercury        | .16           | ug/L         | .2                | ug/L         | 80                | 70.0 – 130.0                | AV        | 10-NOV-16 10:52           | 111016S1-4        |
|                  | Mercury        | .182          | ug/L         | .2                | ug/L         | 91                | 70.0 – 130.0                | AV        | 10-NOV-16 10:54           | 111016W1-5        |
| PQL01            |                |               |              |                   |              |                   |                             |           |                           |                   |
|                  | Arsenic        | 29.8          | ug/L         | 30                | ug/L         | 99.4              | 70.0 – 130.0                | P         | 02-NOV-16 12:42           | 110216-2          |
|                  | Barium         | 4.86          | ug/L         | 5                 | ug/L         | 97.1              | 70.0 – 130.0                | P         | 02-NOV-16 12:42           | 110216-2          |
|                  | Cadmium        | 5.03          | ug/L         | 5                 | ug/L         | 100.6             | 70.0 – 130.0                | P         | 02-NOV-16 12:42           | 110216-2          |
|                  | Chromium       | 5.65          | ug/L         | 5                 | ug/L         | 113               | 70.0 – 130.0                | P         | 02-NOV-16 12:42           | 110216-2          |
|                  | Lead           | 9.77          | ug/L         | 10                | ug/L         | 97.7              | 70.0 – 130.0                | P         | 02-NOV-16 12:42           | 110216-2          |
|                  | Selenium       | 30.8          | ug/L         | 30                | ug/L         | 102.7             | 70.0 – 130.0                | P         | 02-NOV-16 12:42           | 110216-2          |
|                  | Silver         | 5.55          | ug/L         | 5                 | ug/L         | 111               | 70.0 – 130.0                | P         | 02-NOV-16 12:42           | 110216-2          |
|                  | Aluminum       | 217           | ug/L         | 200               | ug/L         | 108.3             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Antimony       | 9.16          | ug/L         | 10                | ug/L         | 91.6              | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Barium         | 5.26          | ug/L         | 5                 | ug/L         | 105.3             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Beryllium      | 4.97          | ug/L         | 5                 | ug/L         | 99.3              | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Calcium        | 221           | ug/L         | 200               | ug/L         | 110.6             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Cobalt         | 5.24          | ug/L         | 5                 | ug/L         | 104.9             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Iron           | 109           | ug/L         | 100               | ug/L         | 108.7             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Magnesium      | 318           | ug/L         | 300               | ug/L         | 105.9             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Zinc           | 10.4          | ug/L         | 10                | ug/L         | 104.3             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Vanadium       | 5.26          | ug/L         | 5                 | ug/L         | 105.2             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Thallium       | 21.2          | ug/L         | 20                | ug/L         | 106.1             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Sodium         | 306           | ug/L         | 300               | ug/L         | 102               | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Silver         | 5.8           | ug/L         | 5                 | ug/L         | 115.9             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Selenium       | 30.5          | ug/L         | 30                | ug/L         | 101.7             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Potassium      | 119           | ug/L         | 150               | ug/L         | 79.3              | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Nickel         | 5.19          | ug/L         | 5                 | ug/L         | 103.9             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Manganese      | 10.4          | ug/L         | 10                | ug/L         | 103.6             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Lead           | 10.3          | ug/L         | 10                | ug/L         | 102.6             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Copper         | 9.54          | ug/L         | 10                | ug/L         | 95.4              | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Chromium       | 5.39          | ug/L         | 5                 | ug/L         | 107.9             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Cadmium        | 5.2           | ug/L         | 5                 | ug/L         | 104               | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |
|                  | Arsenic        | 30.6          | ug/L         | 30                | ug/L         | 102.1             | 70.0 – 130.0                | P         | 11-NOV-16 09:21           | 111116-3          |

**METALS**  
**-2b-**  
**CRDL Standard for ICP & ICPMS**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Advisory Limits (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-----------------------------|-----------|---------------------------|-------------------|
|                  | Antimony       | 8.33          | ug/L         | 10                | ug/L         | 83.3              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Calcium        | 200           | ug/L         | 200               | ug/L         | 100               | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Cobalt         | 4.93          | ug/L         | 5                 | ug/L         | 98.6              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Silver         | 5.31          | ug/L         | 5                 | ug/L         | 106.1             | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Selenium       | 31.6          | ug/L         | 30                | ug/L         | 105.4             | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Potassium      | 144           | ug/L         | 150               | ug/L         | 95.8              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Nickel         | 4.89          | ug/L         | 5                 | ug/L         | 97.7              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Manganese      | 10            | ug/L         | 10                | ug/L         | 100               | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Magnesium      | 297           | ug/L         | 300               | ug/L         | 98.9              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Lead           | 9.75          | ug/L         | 10                | ug/L         | 97.5              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Iron           | 100           | ug/L         | 100               | ug/L         | 100.2             | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Copper         | 10.2          | ug/L         | 10                | ug/L         | 102.2             | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Aluminum       | 196           | ug/L         | 200               | ug/L         | 98.2              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Zinc           | 9.06          | ug/L         | 10                | ug/L         | 90.6              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Vanadium       | 4.98          | ug/L         | 5                 | ug/L         | 99.6              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Thallium       | 20.2          | ug/L         | 20                | ug/L         | 100.8             | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Sodium         | 346           | ug/L         | 300               | ug/L         | 115.4             | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Chromium       | 4.85          | ug/L         | 5                 | ug/L         | 97                | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Cadmium        | 5.1           | ug/L         | 5                 | ug/L         | 101.9             | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Arsenic        | 29.1          | ug/L         | 30                | ug/L         | 97                | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Barium         | 4.86          | ug/L         | 5                 | ug/L         | 97.3              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
|                  | Beryllium      | 4.86          | ug/L         | 5                 | ug/L         | 97.2              | 70.0 – 130.0                | P         | 16-NOV-16 06:27           | 111616-1          |
| PQL02            |                |               |              |                   |              |                   |                             |           |                           |                   |
|                  | Arsenic        | 33.1          | ug/L         | 30                | ug/L         | 110.2             | 70.0 – 130.0                | P         | 02-NOV-16 16:31           | 110216-2          |
|                  | Barium         | 5.86          | ug/L         | 5                 | ug/L         | 117.3             | 70.0 – 130.0                | P         | 02-NOV-16 16:31           | 110216-2          |
|                  | Cadmium        | 4.7           | ug/L         | 5                 | ug/L         | 94                | 70.0 – 130.0                | P         | 02-NOV-16 16:31           | 110216-2          |
|                  | Chromium       | 6.05          | ug/L         | 5                 | ug/L         | 121               | 70.0 – 130.0                | P         | 02-NOV-16 16:31           | 110216-2          |
|                  | Lead           | 9.67          | ug/L         | 10                | ug/L         | 96.7              | 70.0 – 130.0                | P         | 02-NOV-16 16:31           | 110216-2          |
|                  | Selenium       | 34.4          | ug/L         | 30                | ug/L         | 114.7             | 70.0 – 130.0                | P         | 02-NOV-16 16:31           | 110216-2          |
|                  | Silver         | 5.41          | ug/L         | 5                 | ug/L         | 108.2             | 70.0 – 130.0                | P         | 02-NOV-16 16:31           | 110216-2          |
|                  | Aluminum       | 214           | ug/L         | 200               | ug/L         | 106.8             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Barium         | 5.26          | ug/L         | 5                 | ug/L         | 105.2             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |

**METALS**  
**-2b-**  
**CRDL Standard for ICP & ICPMS**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Advisory Limits (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-----------------------------|-----------|---------------------------|-------------------|
|                  | Cadmium        | 5.4           | ug/L         | 5                 | ug/L         | 107.9             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Chromium       | 5.43          | ug/L         | 5                 | ug/L         | 108.6             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Selenium       | 28.2          | ug/L         | 30                | ug/L         | 94                | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Potassium      | 113           | ug/L         | 150               | ug/L         | 75.3              | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Nickel         | 5.87          | ug/L         | 5                 | ug/L         | 117.3             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Manganese      | 10.5          | ug/L         | 10                | ug/L         | 105.4             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Magnesium      | 305           | ug/L         | 300               | ug/L         | 101.6             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Lead           | 12            | ug/L         | 10                | ug/L         | 120.2             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Iron           | 110           | ug/L         | 100               | ug/L         | 110.3             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Copper         | 9.15          | ug/L         | 10                | ug/L         | 91.5              | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Cobalt         | 5.19          | ug/L         | 5                 | ug/L         | 103.8             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Zinc           | 10.2          | ug/L         | 10                | ug/L         | 102.4             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Vanadium       | 5.4           | ug/L         | 5                 | ug/L         | 107.9             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Thallium       | 25.6          | ug/L         | 20                | ug/L         | 128               | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Sodium         | 318           | ug/L         | 300               | ug/L         | 105.9             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Silver         | 4.91          | ug/L         | 5                 | ug/L         | 98.3              | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Calcium        | 212           | ug/L         | 200               | ug/L         | 105.9             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Beryllium      | 5.14          | ug/L         | 5                 | ug/L         | 102.8             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Arsenic        | 32.5          | ug/L         | 30                | ug/L         | 108.4             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Antimony       | 14.4          | ug/L         | 10                | ug/L         | 143.9             | 70.0 – 130.0                | P         | 11-NOV-16 13:45           | 111116-3          |
|                  | Thallium       | 23            | ug/L         | 20                | ug/L         | 114.8             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Barium         | 5.29          | ug/L         | 5                 | ug/L         | 105.8             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Cadmium        | 5.41          | ug/L         | 5                 | ug/L         | 108.3             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Chromium       | 5.32          | ug/L         | 5                 | ug/L         | 106.4             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Selenium       | 35.7          | ug/L         | 30                | ug/L         | 119               | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Potassium      | 162           | ug/L         | 150               | ug/L         | 108.2             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Nickel         | 5.17          | ug/L         | 5                 | ug/L         | 103.5             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Manganese      | 10.8          | ug/L         | 10                | ug/L         | 107.6             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Magnesium      | 322           | ug/L         | 300               | ug/L         | 107.4             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Lead           | 10.1          | ug/L         | 10                | ug/L         | 101.1             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Iron           | 125           | ug/L         | 100               | ug/L         | 124.7             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |
|                  | Copper         | 10.9          | ug/L         | 10                | ug/L         | 109.4             | 70.0 – 130.0                | P         | 16-NOV-16 12:16           | 111616-1          |



**METALS**  
**–2b–**  
**CRDL Standard for ICP & ICPMS**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID: HG3,HG4,OPTIMA3,OPTIMA4,OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Advisory Limits (%R)</u> | <u>M*</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-----------------------------|-----------|---------------------------|-------------------|
|                  | Cobalt         | 5.22          | ug/L         | 5                 | ug/L         | 104.4             | 70.0 – 130.0                | P         | 16–NOV–16 12:16           | 111616–1          |
|                  | Sodium         | 228           | ug/L         | 300               | ug/L         | 75.9              | 70.0 – 130.0                | P         | 16–NOV–16 12:16           | 111616–1          |
|                  | Silver         | 5.49          | ug/L         | 5                 | ug/L         | 109.8             | 70.0 – 130.0                | P         | 16–NOV–16 12:16           | 111616–1          |
|                  | Calcium        | 222           | ug/L         | 200               | ug/L         | 110.9             | 70.0 – 130.0                | P         | 16–NOV–16 12:16           | 111616–1          |
|                  | Beryllium      | 5.1           | ug/L         | 5                 | ug/L         | 102               | 70.0 – 130.0                | P         | 16–NOV–16 12:16           | 111616–1          |
|                  | Arsenic        | 31.3          | ug/L         | 30                | ug/L         | 104.4             | 70.0 – 130.0                | P         | 16–NOV–16 12:16           | 111616–1          |
|                  | Vanadium       | 5.06          | ug/L         | 5                 | ug/L         | 101.2             | 70.0 – 130.0                | P         | 16–NOV–16 12:16           | 111616–1          |
|                  | Aluminum       | 217           | ug/L         | 200               | ug/L         | 108.6             | 70.0 – 130.0                | P         | 16–NOV–16 12:16           | 111616–1          |
|                  | Antimony       | 9.83          | ug/L         | 10                | ug/L         | 98.3              | 70.0 – 130.0                | P         | 16–NOV–16 12:16           | 111616–1          |
|                  | Zinc           | 9.7           | ug/L         | 10                | ug/L         | 97                | 70.0 – 130.0                | P         | 16–NOV–16 12:16           | 111616–1          |

## \*Analytical Methods:

|    |                   |
|----|-------------------|
| AV | SW846 7471B       |
| P  | SW846 3010A/6010C |
| P  | SW846 3050B/6010C |
| AV | SW846 7470A       |

**Metals**  
**–3a–**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
| ICB01            | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | LIQ           | P         | 02-NOV-16 12:39                     | 110216-2   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 12:39                     | 110216-2   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 12:39                     | 110216-2   |
|                  | Chromium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 12:39                     | 110216-2   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | LIQ           | P         | 02-NOV-16 12:39                     | 110216-2   |
|                  | Selenium       | 6.0                          | +/-30             | U                          | 6.0        | 30.0       | LIQ           | P         | 02-NOV-16 12:39                     | 110216-2   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 12:39                     | 110216-2   |
|                  | Mercury        | 0.067                        | +/-2              | U                          | 0.067      | 0.2        | LIQ           | AV        | 10-NOV-16 10:52                     | 111016W1-5 |
|                  | Mercury        | 0.067                        | +/-2              | U                          | 0.067      | 0.2        | SOL           | AV        | 10-NOV-16 10:50                     | 111016S1-4 |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Antimony       | 5.01                         | +/-10             | B                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 11-NOV-16 09:18                     | 111116-3   |

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Antimony       | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Sodium         | 113.66                       | +/-250            | B                          | 70.0       | 250        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 16-NOV-16 06:24                     | 111616-1   |
| <b>CCB01</b>     | Arsenic        | 8.81                         | +/-30             | B                          | 5.0        | 30.0       | LIQ           | P         | 02-NOV-16 12:56                     | 110216-2   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 12:56                     | 110216-2   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 12:56                     | 110216-2   |
|                  | Chromium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 12:56                     | 110216-2   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | LIQ           | P         | 02-NOV-16 12:56                     | 110216-2   |
|                  | Selenium       | 6.0                          | +/-30             | U                          | 6.0        | 30.0       | LIQ           | P         | 02-NOV-16 12:56                     | 110216-2   |
|                  | Silver         | 1.18                         | +/-5              | B                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 12:56                     | 110216-2   |
|                  | Mercury        | 0.067                        | +/-2              | U                          | 0.067      | 0.2        | LIQ           | AV        | 10-NOV-16 10:57                     | 111016W1-5 |

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Mercury        | 0.067                        | +/- .2            | U                          | 0.067      | 0.2        | SOL           | AV        | 10-NOV-16 10:55                     | 111016S1-4 |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Antimony       | 6.96                         | +/-10             | B                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Silver         | 1.25                         | +/-5              | B                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 11-NOV-16 09:33                     | 111116-3   |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Antimony       | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 16-NOV-16 06:45                     | 111616-1   |
|                  |                |                              |                   |                            |            |            |               |           |                                     |            |
| CCB02            | Arsenic        | 5.7                          | +/-30             | B                          | 5.0        | 30.0       | LIQ           | P         | 02-NOV-16 15:39                     | 110216-2   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 15:39                     | 110216-2   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 15:39                     | 110216-2   |
|                  | Chromium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 15:39                     | 110216-2   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | LIQ           | P         | 02-NOV-16 15:39                     | 110216-2   |
|                  | Selenium       | 6.0                          | +/-30             | U                          | 6.0        | 30.0       | LIQ           | P         | 02-NOV-16 15:39                     | 110216-2   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 15:39                     | 110216-2   |
|                  | Mercury        | 0.067                        | +/-2              | U                          | 0.067      | 0.2        | LIQ           | AV        | 10-NOV-16 13:39                     | 111016W1-5 |
|                  | Mercury        | 0.067                        | +/-2              | U                          | 0.067      | 0.2        | SOL           | AV        | 10-NOV-16 11:22                     | 111016S1-4 |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Antimony       | 5.83                         | +/-10             | B                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Potassium      | 77.92                        | +/-250            | B                          | 64.0       | 250        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 11-NOV-16 09:41                     | 111116-3   |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Antimony       | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |

**Metals**  
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**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
| <b>CCB03</b>     | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 16-NOV-16 07:04                     | 111616-1   |
|                  |                |                              |                   |                            |            |            |               |           |                                     |            |
| <b>CCB03</b>     | Arsenic        | 6.74                         | +/-30             | B                          | 5.0        | 30.0       | LIQ           | P         | 02-NOV-16 16:05                     | 110216-2   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 16:05                     | 110216-2   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 16:05                     | 110216-2   |
|                  | Chromium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 16:05                     | 110216-2   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | LIQ           | P         | 02-NOV-16 16:05                     | 110216-2   |
|                  | Selenium       | 6.0                          | +/-30             | U                          | 6.0        | 30.0       | LIQ           | P         | 02-NOV-16 16:05                     | 110216-2   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 16:05                     | 110216-2   |
|                  | Mercury        | 0.067                        | +/-2              | U                          | 0.067      | 0.2        | LIQ           | AV        | 10-NOV-16 13:59                     | 111016W1-5 |
|                  | Mercury        | 0.067                        | +/-2              | U                          | 0.067      | 0.2        | SOL           | AV        | 10-NOV-16 11:42                     | 111016S1-4 |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Antimony       | 4.37                         | +/-10             | B                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 11-NOV-16 10:53                     | 111116-3   |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Antimony       | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Sodium         | 166.06                       | +/-250            | B                          | 70.0       | 250        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 16-NOV-16 11:20                     | 111616-1   |
| <b>CCB04</b>     |                |                              |                   |                            |            |            |               |           |                                     |            |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | LIQ           | P         | 02-NOV-16 16:33                     | 110216-2   |



**Metals**  
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**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 16:33                     | 110216-2   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 16:33                     | 110216-2   |
|                  | Chromium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 16:33                     | 110216-2   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | LIQ           | P         | 02-NOV-16 16:33                     | 110216-2   |
|                  | Selenium       | 6.0                          | +/-30             | U                          | 6.0        | 30.0       | LIQ           | P         | 02-NOV-16 16:33                     | 110216-2   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | LIQ           | P         | 02-NOV-16 16:33                     | 110216-2   |
|                  | Mercury        | 0.067                        | +/-2              | U                          | 0.067      | 0.2        | LIQ           | AV        | 10-NOV-16 14:21                     | 111016W1-5 |
|                  | Mercury        | 0.067                        | +/-2              | U                          | 0.067      | 0.2        | SOL           | AV        | 10-NOV-16 12:02                     | 111016S1-4 |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Antimony       | 5.41                         | +/-10             | B                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 11-NOV-16 12:01                     | 111116-3   |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |

**Metals**  
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**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Antimony       | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Selenium       | 5.39                         | +/-30             | B                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Sodium         | 148.28                       | +/-250            | B                          | 70.0       | 250        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 16-NOV-16 11:46                     | 111616-1   |
| <b>CCB05</b>     |                |                              |                   |                            |            |            |               |           |                                     |            |
|                  | Mercury        | -0.084                       | +/-2              | B                          | 0.067      | 0.2        | LIQ           | AV        | 10-NOV-16 14:41                     | 111016W1-5 |
|                  | Mercury        | 0.067                        | +/-2              | U                          | 0.067      | 0.2        | SOL           | AV        | 10-NOV-16 12:17                     | 111016S1-4 |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Antimony       | 3.77                         | +/-10             | B                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 11-NOV-16 12:23                     | 111116-3   |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Antimony       | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |

**Metals**  
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**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 16-NOV-16 12:19                     | 111616-1   |
| <b>CCB06</b>     | Mercury        | -0.084                       | +/-2              | B                          | 0.067      | 0.2        | LIQ           | AV        | 10-NOV-16 14:49                     | 111016W1-5 |
|                  | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Antimony       | 3.53                         | +/-10             | B                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 11-NOV-16 13:07                     | 111116-3   |

**Metals**  
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**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
| <b>CCB07</b>     | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Antimony       | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 11-NOV-16 13:15                     | 111116-3   |
| <b>CCB08</b>     | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Antimony       | 5.01                         | +/-10             | B                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Potassium      | -88.19                       | +/-250            | B                          | 64.0       | 250        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 11-NOV-16 13:38                     | 111116-3   |
|                  |                |                              |                   |                            |            |            |               |           |                                     |            |
| CCB09            | Aluminum       | 68.0                         | +/-200            | U                          | 68.0       | 200        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Antimony       | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Arsenic        | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Barium         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Beryllium      | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Cadmium        | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Calcium        | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Chromium       | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Cobalt         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Copper         | 3.0                          | +/-10             | U                          | 3.0        | 10.0       | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Iron           | 80.0                         | +/-250            | U                          | 80.0       | 250        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Lead           | 3.3                          | +/-10             | U                          | 3.3        | 10.0       | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Magnesium      | 85.0                         | +/-300            | U                          | 85.0       | 300        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Manganese      | 2.0                          | +/-10             | U                          | 2.0        | 10.0       | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Nickel         | 1.5                          | +/-5              | U                          | 1.5        | 5.0        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Potassium      | 64.0                         | +/-250            | U                          | 64.0       | 250        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |

Metals  
-3a-  
Initial and Continuing Calibration Blank Summary

SDG No.: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u><br><u>ug/L</u> | <u>Acceptance</u> | <u>Conc</u><br><u>Qual</u> | <u>MDL</u> | <u>RDL</u> | <u>Matrix</u> | <u>M*</u> | <u>Analysis</u><br><u>Date/Time</u> | <u>Run</u> |
|------------------|----------------|------------------------------|-------------------|----------------------------|------------|------------|---------------|-----------|-------------------------------------|------------|
|                  | Selenium       | 5.0                          | +/-30             | U                          | 5.0        | 30.0       | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Silver         | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Sodium         | 70.0                         | +/-250            | U                          | 70.0       | 250        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Thallium       | 5.0                          | +/-20             | U                          | 5.0        | 20.0       | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Vanadium       | 1.0                          | +/-5              | U                          | 1.0        | 5.0        | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |
|                  | Zinc           | 4.0                          | +/-10             | U                          | 4.0        | 10.0       | SOL           | P         | 11-NOV-16 13:48                     | 111116-3   |

**\*Analytical Methods:**

|    |                   |
|----|-------------------|
| AV | SW846 7471B       |
| P  | SW846 3010A/6010C |
| P  | SW846 3050B/6010C |
| AV | SW846 7470A       |

**METALS**  
**-3b-**  
**PREPARATION BLANK SUMMARY**

**SDG NO.** 409254  
**Contract:** HAAL00201  
**Matrix:** Soil

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>Acceptance Window</u> | <u>Conc Qual</u> | <u>M*</u> | <u>MDL</u> | <u>RDL</u> |
|------------------|----------------|---------------|--------------|--------------------------|------------------|-----------|------------|------------|
| 1203657517       | Arsenic        | 50            | ug/L         | +/-300                   | U                | P         | 50         | 300        |
|                  | Barium         | 10            | ug/L         | +/-50                    | U                | P         | 10         | 50         |
|                  | Chromium       | 10            | ug/L         | +/-50                    | U                | P         | 10         | 50         |
|                  | Cadmium        | 10            | ug/L         | +/-50                    | U                | P         | 10         | 50         |
|                  | Lead           | 33            | ug/L         | +/-100                   | U                | P         | 33         | 100        |
|                  | Selenium       | 60            | ug/L         | +/-300                   | U                | P         | 60         | 300        |
|                  | Silver         | 10            | ug/L         | +/-50                    | U                | P         | 10         | 50         |
|                  | Mercury        | 0.00067       | mg/L         | +/-0.002                 | U                | AV        | 0.00067    | 0.002      |
| 1203657595       | Thallium       | 460           | ug/kg        | +/-1840                  | U                | P         | 460        | 1840       |
|                  | Manganese      | 184           | ug/kg        | +/-919                   | U                | P         | 184        | 919        |
|                  | Magnesium      | 7810          | ug/kg        | +/-27600                 | U                | P         | 7810       | 27600      |
|                  | Lead           | 303           | ug/Kg        | +/-919                   | U                | P         | 303        | 919        |
|                  | Iron           | 7350          | ug/kg        | +/-23000                 | U                | P         | 7350       | 23000      |
|                  | Copper         | 276           | ug/kg        | +/-919                   | U                | P         | 276        | 919        |
|                  | Cobalt         | 138           | ug/kg        | +/-460                   | U                | P         | 138        | 460        |
|                  | Chromium       | 138           | ug/kg        | +/-460                   | U                | P         | 138        | 460        |
|                  | Calcium        | 20200         | ug/kg        | +/-23000                 | B                | P         | 7350       | 23000      |
|                  | Cadmium        | 91.9          | ug/kg        | +/-460                   | U                | P         | 91.9       | 460        |
|                  | Sodium         | 17500         | ug/kg        | +/-23000                 | B                | P         | 6430       | 23000      |
|                  | Silver         | 91.9          | ug/kg        | +/-460                   | U                | P         | 91.9       | 460        |
|                  | Selenium       | 460           | ug/kg        | +/-2760                  | U                | P         | 460        | 2760       |
|                  | Potassium      | 5880          | ug/kg        | +/-23000                 | U                | P         | 5880       | 23000      |
|                  | Nickel         | 138           | ug/kg        | +/-460                   | U                | P         | 138        | 460        |
|                  | Aluminum       | 6250          | ug/kg        | +/-18400                 | U                | P         | 6250       | 18400      |
|                  | Antimony       | 303           | ug/kg        | +/-919                   | U                | P         | 303        | 919        |
|                  | Arsenic        | 460           | ug/kg        | +/-2760                  | U                | P         | 460        | 2760       |
|                  | Beryllium      | 91.9          | ug/kg        | +/-460                   | U                | P         | 91.9       | 460        |
|                  | Barium         | 91.9          | ug/kg        | +/-460                   | U                | P         | 91.9       | 460        |
|                  | Vanadium       | 91.9          | ug/kg        | +/-460                   | U                | P         | 91.9       | 460        |
|                  | Zinc           | 662           | ug/kg        | +/-919                   | B                | P         | 368        | 919        |
| 1203657600       | Manganese      | 198           | ug/kg        | +/-990                   | U                | P         | 198        | 990        |
|                  | Nickel         | 149           | ug/kg        | +/-495                   | U                | P         | 149        | 495        |
|                  | Potassium      | 6340          | ug/kg        | +/-24800                 | U                | P         | 6340       | 24800      |
|                  | Selenium       | 495           | ug/kg        | +/-2970                  | U                | P         | 495        | 2970       |
|                  | Silver         | 99            | ug/kg        | +/-495                   | U                | P         | 99         | 495        |



**METALS**  
**-3b-**  
**PREPARATION BLANK SUMMARY**

**SDG NO.** 409254  
**Contract:** HAAL00201  
**Matrix:** Soil

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>Acceptance Window</u> | <u>Conc Qual</u> | <u>M*</u> | <u>MDL</u> | <u>RDL</u> |
|------------------|----------------|---------------|--------------|--------------------------|------------------|-----------|------------|------------|
|                  | Sodium         | 21800         | ug/kg        | +/-24800                 | B                | P         | 6930       | 24800      |
|                  | Thallium       | 495           | ug/kg        | +/-1980                  | U                | P         | 495        | 1980       |
|                  | Vanadium       | 99            | ug/kg        | +/-495                   | U                | P         | 99         | 495        |
|                  | Zinc           | 396           | ug/kg        | +/-990                   | U                | P         | 396        | 990        |
|                  | Cobalt         | 149           | ug/kg        | +/-495                   | U                | P         | 149        | 495        |
|                  | Chromium       | 149           | ug/kg        | +/-495                   | U                | P         | 149        | 495        |
|                  | Calcium        | 7920          | ug/kg        | +/-24800                 | U                | P         | 7920       | 24800      |
|                  | Cadmium        | 99            | ug/kg        | +/-495                   | U                | P         | 99         | 495        |
|                  | Beryllium      | 99            | ug/kg        | +/-495                   | U                | P         | 99         | 495        |
|                  | Barium         | 99            | ug/kg        | +/-495                   | U                | P         | 99         | 495        |
|                  | Arsenic        | 495           | ug/kg        | +/-2970                  | U                | P         | 495        | 2970       |
|                  | Antimony       | 327           | ug/kg        | +/-990                   | U                | P         | 327        | 990        |
|                  | Aluminum       | 6730          | ug/kg        | +/-19800                 | U                | P         | 6730       | 19800      |
|                  | Magnesium      | 8420          | ug/kg        | +/-29700                 | U                | P         | 8420       | 29700      |
|                  | Lead           | 327           | ug/kg        | +/-990                   | U                | P         | 327        | 990        |
|                  | Iron           | 7920          | ug/kg        | +/-24800                 | U                | P         | 7920       | 24800      |
|                  | Copper         | 297           | ug/kg        | +/-990                   | U                | P         | 297        | 990        |
| <hr/>            |                |               |              |                          |                  |           |            |            |
| 1203658086       | Arsenic        | 50            | ug/L         | +/-300                   | U                | P         | 50         | 300        |
|                  | Barium         | 10            | ug/L         | +/-50                    | U                | P         | 10         | 50         |
|                  | Cadmium        | 10            | ug/L         | +/-50                    | U                | P         | 10         | 50         |
|                  | Chromium       | 10            | ug/L         | +/-50                    | U                | P         | 10         | 50         |
|                  | Lead           | 33            | ug/L         | +/-100                   | U                | P         | 33         | 100        |
|                  | Selenium       | 60            | ug/L         | +/-300                   | U                | P         | 60         | 300        |
|                  | Silver         | 10            | ug/L         | +/-50                    | U                | P         | 10         | 50         |
| <hr/>            |                |               |              |                          |                  |           |            |            |
| 1203666305       | Mercury        | 3.93          | ug/kg        | +/-11.7                  | U                | AV        | 3.93       | 11.7       |
| <hr/>            |                |               |              |                          |                  |           |            |            |
| 1203666311       | Mercury        | 0.00067       | mg/L         | +/-0.002                 | U                | AV        | 0.00067    | 0.002      |

**\*Analytical Methods:**

AV SW846 7471B  
P SW846 3010A/6010C  
P SW846 3050B/6010C  
AV SW846 7470A

**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument: OPTIMA3

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
| <b>ICSA01</b>    |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Aluminum       | 499000        | ug/L         | 500000            | ug/L         | 99.7              | 80.0 – 120.0                  | 16-NOV-16 06:30           | 111616-1          |
|                  | Antimony       | 3.75          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Arsenic        | -0.604        | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Barium         | 0.176         | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Beryllium      | 1.01          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Cadmium        | 0.329         | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Calcium        | 488000        | ug/L         | 500000            | ug/L         | 97.5              | 80.0 – 120.0                  | 16-NOV-16 06:30           | 111616-1          |
|                  | Chromium       | 1.11          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Cobalt         | 0.396         | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Copper         | 0.042         | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Iron           | 194000        | ug/L         | 200000            | ug/L         | 97.2              | 80.0 – 120.0                  | 16-NOV-16 06:30           | 111616-1          |
|                  | Lead           | 3.84          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Magnesium      | 488000        | ug/L         | 500000            | ug/L         | 97.6              | 80.0 – 120.0                  | 16-NOV-16 06:30           | 111616-1          |
|                  | Manganese      | 0.557         | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Nickel         | 1.38          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Potassium      | 56.8          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Selenium       | 13.0          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Silver         | 1.16          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Sodium         | 33.3          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Thallium       | 3.05          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Vanadium       | 1.17          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
|                  | Zinc           | 5.11          | ug/L         |                   |              |                   |                               | 16-NOV-16 06:30           | 111616-1          |
| <b>ICSAB01</b>   |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Aluminum       | 499000        | ug/L         | 500000            | ug/L         | 99.8              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Antimony       | 491           | ug/L         | 500               | ug/L         | 98.3              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Arsenic        | 495           | ug/L         | 500               | ug/L         | 99.1              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Barium         | 486           | ug/L         | 500               | ug/L         | 97.1              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Beryllium      | 237           | ug/L         | 250               | ug/L         | 95                | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Cadmium        | 458           | ug/L         | 500               | ug/L         | 91.7              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Calcium        | 485000        | ug/L         | 500000            | ug/L         | 97.1              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |

**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
|                  | Chromium       | 456           | ug/L         | 500               | ug/L         | 91.1              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Cobalt         | 435           | ug/L         | 500               | ug/L         | 87                | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Copper         | 520           | ug/L         | 500               | ug/L         | 104               | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Iron           | 189000        | ug/L         | 200000            | ug/L         | 94.4              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Lead           | 465           | ug/L         | 500               | ug/L         | 92.9              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Magnesium      | 485000        | ug/L         | 500000            | ug/L         | 97.1              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Manganese      | 463           | ug/L         | 500               | ug/L         | 92.6              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Nickel         | 429           | ug/L         | 500               | ug/L         | 85.7              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Potassium      | 5660          | ug/L         | 5000              | ug/L         | 113               | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Selenium       | 2310          | ug/L         | 2500              | ug/L         | 92.2              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Silver         | 257           | ug/L         | 250               | ug/L         | 103               | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Sodium         | 4920          | ug/L         | 5000              | ug/L         | 98.5              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Thallium       | 458           | ug/L         | 500               | ug/L         | 91.6              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Vanadium       | 495           | ug/L         | 500               | ug/L         | 99                | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |
|                  | Zinc           | 465           | ug/L         | 500               | ug/L         | 93.1              | 80.0 – 120.0                  | 16-NOV-16 06:33           | 111616-1          |

**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument: OPTIMA5

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
| <b>ICSA01</b>    |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Arsenic        | 10.0          | ug/L         |                   |              |                   |                               | 02-NOV-16 12:45           | 110216-2          |
|                  | Barium         | 2.17          | ug/L         |                   |              |                   |                               | 02-NOV-16 12:45           | 110216-2          |
|                  | Cadmium        | -0.178        | ug/L         |                   |              |                   |                               | 02-NOV-16 12:45           | 110216-2          |
|                  | Chromium       | 0.731         | ug/L         |                   |              |                   |                               | 02-NOV-16 12:45           | 110216-2          |
|                  | Lead           | 14.4          | ug/L         |                   |              |                   |                               | 02-NOV-16 12:45           | 110216-2          |
|                  | Selenium       | -7.38         | ug/L         |                   |              |                   |                               | 02-NOV-16 12:45           | 110216-2          |
|                  | Silver         | 4.39          | ug/L         |                   |              |                   |                               | 02-NOV-16 12:45           | 110216-2          |
| <b>ICSAB01</b>   |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Arsenic        | 491           | ug/L         | 500               | ug/L         | 98.2              | 80.0 – 120.0                  | 02-NOV-16 12:47           | 110216-2          |
|                  | Barium         | 462           | ug/L         | 500               | ug/L         | 92.5              | 80.0 – 120.0                  | 02-NOV-16 12:47           | 110216-2          |
|                  | Cadmium        | 451           | ug/L         | 500               | ug/L         | 90.1              | 80.0 – 120.0                  | 02-NOV-16 12:47           | 110216-2          |
|                  | Chromium       | 459           | ug/L         | 500               | ug/L         | 91.7              | 80.0 – 120.0                  | 02-NOV-16 12:47           | 110216-2          |
|                  | Lead           | 473           | ug/L         | 500               | ug/L         | 94.7              | 80.0 – 120.0                  | 02-NOV-16 12:47           | 110216-2          |
|                  | Selenium       | 2250          | ug/L         | 2500              | ug/L         | 90                | 80.0 – 120.0                  | 02-NOV-16 12:47           | 110216-2          |
|                  | Silver         | 256           | ug/L         | 250               | ug/L         | 103               | 80.0 – 120.0                  | 02-NOV-16 12:47           | 110216-2          |
| <b>ICSA02</b>    |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Arsenic        | 9.65          | ug/L         |                   |              |                   |                               | 02-NOV-16 15:03           | 110216-2          |
|                  | Barium         | 3.28          | ug/L         |                   |              |                   |                               | 02-NOV-16 15:03           | 110216-2          |
|                  | Cadmium        | 0.105         | ug/L         |                   |              |                   |                               | 02-NOV-16 15:03           | 110216-2          |
|                  | Chromium       | 1.12          | ug/L         |                   |              |                   |                               | 02-NOV-16 15:03           | 110216-2          |
|                  | Lead           | 19.3          | ug/L         |                   |              |                   |                               | 02-NOV-16 15:03           | 110216-2          |
|                  | Selenium       | -3.59         | ug/L         |                   |              |                   |                               | 02-NOV-16 15:03           | 110216-2          |
|                  | Silver         | 3.72          | ug/L         |                   |              |                   |                               | 02-NOV-16 15:03           | 110216-2          |
| <b>ICSAB02</b>   |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Arsenic        | 457           | ug/L         | 500               | ug/L         | 91.3              | 80.0 – 120.0                  | 02-NOV-16 15:05           | 110216-2          |
|                  | Barium         | 457           | ug/L         | 500               | ug/L         | 91.3              | 80.0 – 120.0                  | 02-NOV-16 15:05           | 110216-2          |
|                  | Cadmium        | 434           | ug/L         | 500               | ug/L         | 86.8              | 80.0 – 120.0                  | 02-NOV-16 15:05           | 110216-2          |
|                  | Chromium       | 444           | ug/L         | 500               | ug/L         | 88.7              | 80.0 – 120.0                  | 02-NOV-16 15:05           | 110216-2          |
|                  | Lead           | 459           | ug/L         | 500               | ug/L         | 91.9              | 80.0 – 120.0                  | 02-NOV-16 15:05           | 110216-2          |
|                  | Selenium       | 2190          | ug/L         | 2500              | ug/L         | 87.6              | 80.0 – 120.0                  | 02-NOV-16 15:05           | 110216-2          |

**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
| <b>ICSA03</b>    | Silver         | 252           | ug/L         | 250               | ug/L         | 101               | 80.0 – 120.0                  | 02-NOV-16 15:05           | 110216-2          |
|                  | Arsenic        | 4.25          | ug/L         |                   |              |                   |                               | 02-NOV-16 15:33           | 110216-2          |
|                  | Barium         | 3.13          | ug/L         |                   |              |                   |                               | 02-NOV-16 15:33           | 110216-2          |
|                  | Cadmium        | 0.034         | ug/L         |                   |              |                   |                               | 02-NOV-16 15:33           | 110216-2          |
|                  | Chromium       | 1.39          | ug/L         |                   |              |                   |                               | 02-NOV-16 15:33           | 110216-2          |
|                  | Lead           | 16.0          | ug/L         |                   |              |                   |                               | 02-NOV-16 15:33           | 110216-2          |
|                  | Selenium       | -7.93         | ug/L         |                   |              |                   |                               | 02-NOV-16 15:33           | 110216-2          |
|                  | Silver         | 3.42          | ug/L         |                   |              |                   |                               | 02-NOV-16 15:33           | 110216-2          |
| <b>ICSAB03</b>   | Arsenic        | 464           | ug/L         | 500               | ug/L         | 92.9              | 80.0 – 120.0                  | 02-NOV-16 15:35           | 110216-2          |
|                  | Barium         | 455           | ug/L         | 500               | ug/L         | 91.1              | 80.0 – 120.0                  | 02-NOV-16 15:35           | 110216-2          |
|                  | Cadmium        | 435           | ug/L         | 500               | ug/L         | 87                | 80.0 – 120.0                  | 02-NOV-16 15:35           | 110216-2          |
|                  | Chromium       | 447           | ug/L         | 500               | ug/L         | 89.5              | 80.0 – 120.0                  | 02-NOV-16 15:35           | 110216-2          |
|                  | Lead           | 456           | ug/L         | 500               | ug/L         | 91.3              | 80.0 – 120.0                  | 02-NOV-16 15:35           | 110216-2          |
|                  | Selenium       | 2170          | ug/L         | 2500              | ug/L         | 86.8              | 80.0 – 120.0                  | 02-NOV-16 15:35           | 110216-2          |
|                  | Silver         | 253           | ug/L         | 250               | ug/L         | 101               | 80.0 – 120.0                  | 02-NOV-16 15:35           | 110216-2          |

**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

Instrument: OPTIMA4

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
| <b>ICSA01</b>    |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Aluminum       | 501000        | ug/L         | 500000            | ug/L         | 100               | 80.0 – 120.0                  | 11-NOV-16 09:23           | 111116-3          |
|                  | Antimony       | 4.01          | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Arsenic        | -3.15         | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Barium         | 2.22          | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Beryllium      | 0.082         | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Cadmium        | 2.32          | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Calcium        | 482000        | ug/L         | 500000            | ug/L         | 96.4              | 80.0 – 120.0                  | 11-NOV-16 09:23           | 111116-3          |
|                  | Chromium       | 0.138         | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Cobalt         | -0.207        | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Copper         | -1.45         | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Iron           | 189000        | ug/L         | 200000            | ug/L         | 94.7              | 80.0 – 120.0                  | 11-NOV-16 09:23           | 111116-3          |
|                  | Lead           | 2.61          | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Magnesium      | 497000        | ug/L         | 500000            | ug/L         | 99.4              | 80.0 – 120.0                  | 11-NOV-16 09:23           | 111116-3          |
|                  | Manganese      | -1.71         | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Nickel         | -1.06         | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Potassium      | 1.05          | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Selenium       | -3.82         | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Silver         | -0.854        | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Sodium         | -21.8         | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Thallium       | -7.24         | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Vanadium       | 1.6           | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
|                  | Zinc           | 4.43          | ug/L         |                   |              |                   |                               | 11-NOV-16 09:23           | 111116-3          |
| <b>ICSAB01</b>   |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Aluminum       | 504000        | ug/L         | 500000            | ug/L         | 101               | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Antimony       | 508           | ug/L         | 500               | ug/L         | 102               | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Arsenic        | 509           | ug/L         | 500               | ug/L         | 102               | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Barium         | 501           | ug/L         | 500               | ug/L         | 100               | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Beryllium      | 228           | ug/L         | 250               | ug/L         | 91                | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Cadmium        | 474           | ug/L         | 500               | ug/L         | 94.8              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Calcium        | 485000        | ug/L         | 500000            | ug/L         | 96.9              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |

**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
|                  | Chromium       | 484           | ug/L         | 500               | ug/L         | 96.9              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Cobalt         | 474           | ug/L         | 500               | ug/L         | 94.8              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Copper         | 579           | ug/L         | 500               | ug/L         | 116               | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Iron           | 191000        | ug/L         | 200000            | ug/L         | 95.3              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Lead           | 498           | ug/L         | 500               | ug/L         | 99.6              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Magnesium      | 496000        | ug/L         | 500000            | ug/L         | 99.2              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Manganese      | 485           | ug/L         | 500               | ug/L         | 96.9              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Nickel         | 464           | ug/L         | 500               | ug/L         | 92.7              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Potassium      | 5650          | ug/L         | 5000              | ug/L         | 113               | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Selenium       | 2360          | ug/L         | 2500              | ug/L         | 94.4              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Silver         | 268           | ug/L         | 250               | ug/L         | 107               | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Sodium         | 5250          | ug/L         | 5000              | ug/L         | 105               | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Thallium       | 487           | ug/L         | 500               | ug/L         | 97.3              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Vanadium       | 499           | ug/L         | 500               | ug/L         | 99.8              | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
|                  | Zinc           | 505           | ug/L         | 500               | ug/L         | 101               | 80.0 – 120.0                  | 11-NOV-16 09:25           | 111116-3          |
| <b>ICSA02</b>    | Aluminum       | 502000        | ug/L         | 500000            | ug/L         | 100               | 80.0 – 120.0                  | 11-NOV-16 10:48           | 111116-3          |
|                  | Antimony       | 2.15          | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Arsenic        | -3.23         | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Barium         | 2.17          | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Beryllium      | 0.171         | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Cadmium        | 2.35          | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Calcium        | 478000        | ug/L         | 500000            | ug/L         | 95.6              | 80.0 – 120.0                  | 11-NOV-16 10:48           | 111116-3          |
|                  | Chromium       | 0.421         | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Cobalt         | -0.311        | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Copper         | -1.99         | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Iron           | 189000        | ug/L         | 200000            | ug/L         | 94.4              | 80.0 – 120.0                  | 11-NOV-16 10:48           | 111116-3          |
|                  | Lead           | 0.891         | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Magnesium      | 492000        | ug/L         | 500000            | ug/L         | 98.4              | 80.0 – 120.0                  | 11-NOV-16 10:48           | 111116-3          |
|                  | Manganese      | -1.69         | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |

**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 409254

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
|                  | Nickel         | -0.608        | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Potassium      | -31.7         | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Selenium       | -6.47         | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Silver         | -0.869        | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Sodium         | -16.4         | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Thallium       | -3.95         | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Vanadium       | 2.45          | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
|                  | Zinc           | 4.58          | ug/L         |                   |              |                   |                               | 11-NOV-16 10:48           | 111116-3          |
| <b>ICSAB02</b>   |                |               |              |                   |              |                   |                               |                           |                   |
|                  | Aluminum       | 503000        | ug/L         | 500000            | ug/L         | 101               | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Antimony       | 517           | ug/L         | 500               | ug/L         | 103               | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Arsenic        | 514           | ug/L         | 500               | ug/L         | 103               | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Barium         | 499           | ug/L         | 500               | ug/L         | 99.9              | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Beryllium      | 227           | ug/L         | 250               | ug/L         | 90.6              | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Cadmium        | 471           | ug/L         | 500               | ug/L         | 94.2              | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Calcium        | 481000        | ug/L         | 500000            | ug/L         | 96.2              | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Chromium       | 484           | ug/L         | 500               | ug/L         | 96.7              | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Cobalt         | 482           | ug/L         | 500               | ug/L         | 96.4              | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Copper         | 579           | ug/L         | 500               | ug/L         | 116               | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Iron           | 190000        | ug/L         | 200000            | ug/L         | 94.9              | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Lead           | 505           | ug/L         | 500               | ug/L         | 101               | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Magnesium      | 491000        | ug/L         | 500000            | ug/L         | 98.3              | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Manganese      | 484           | ug/L         | 500               | ug/L         | 96.8              | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Nickel         | 471           | ug/L         | 500               | ug/L         | 94.1              | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Potassium      | 5680          | ug/L         | 5000              | ug/L         | 114               | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Selenium       | 2400          | ug/L         | 2500              | ug/L         | 96                | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Silver         | 267           | ug/L         | 250               | ug/L         | 107               | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Sodium         | 5260          | ug/L         | 5000              | ug/L         | 105               | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Thallium       | 485           | ug/L         | 500               | ug/L         | 97                | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |
|                  | Vanadium       | 500           | ug/L         | 500               | ug/L         | 100               | 80.0 - 120.0                  | 11-NOV-16 10:50           | 111116-3          |



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**METALS**  
**-4-**  
**Interference Check Sample**

**SDG No:** 409254

**Contract:** HAAL00201

**Lab Code:** GEL

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| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>True Value</u> | <u>Units</u> | <u>% Recovery</u> | <u>Acceptance Window (%R)</u> | <u>Analysis Date/Time</u> | <u>Run Number</u> |
|------------------|----------------|---------------|--------------|-------------------|--------------|-------------------|-------------------------------|---------------------------|-------------------|
|                  | Zinc           | 503           | ug/L         | 500               | ug/L         | 101               | 80.0 – 120.0                  | 11-NOV-16 10:50           | 111116-3          |

## METALS

-5a-

## Matrix Spike Summary

SDG NO. 409254

Client ID DP010216S

Contract: HAAL00201

Level: Low

Matrix: SPLP

% Solids:

Sample ID: 409254021

Spike ID: 1203657516

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance<br/>Limit</u> | <u>Spiked<br/>Result</u> | <u>C</u> | <u>Sample<br/>Result</u> | <u>C</u> | <u>Spike<br/>Added</u> | <u>%<br/>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Arsenic        | ug/L         | 75-125                      | 4750                     |          | 94.1                     | B        | 5000                   | 93.2                  |             | P         |
| Barium         | ug/L         | 75-125                      | 8780                     |          | 61.6                     |          | 10000                  | 87.2                  |             | P         |
| Cadmium        | ug/L         | 75-125                      | 916                      |          | 10                       | U        | 1000                   | 91.4                  |             | P         |
| Chromium       | ug/L         | 75-125                      | 4790                     |          | 10                       | U        | 5000                   | 95.6                  |             | P         |
| Lead           | ug/L         | 75-125                      | 4860                     |          | 33                       | U        | 5000                   | 97.1                  |             | P         |
| Mercury        | mg/L         | 75-125                      | .00961                   |          | 0.00067                  | U        | .02                    | 48.1                  | N           | AV        |
| Selenium       | ug/L         | 75-125                      | 848                      |          | 60                       | U        | 1000                   | 80.4                  |             | P         |
| Silver         | ug/L         | 75-125                      | 486                      |          | 10                       | U        | 503                    | 96.3                  |             | P         |

## \*Analytical Methods:

P SW846 3010A/6010C  
 AV SW846 7470A

## METALS

-5a-

## Matrix Spike Summary

SDG NO. 409254

Client ID DP110100S

Contract: HAAL00201

Level: Low

Matrix: SOIL

% Solids: 87

Sample ID: 409254001

Spike ID: 1203657598

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance<br/>Limit</u> | <u>Spiked<br/>Result</u> | <u>C</u> | <u>Sample<br/>Result</u> | <u>C</u> | <u>Spike<br/>Added</u> | <u>%<br/>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Manganese      | ug/kg        |                             | 591000                   |          | 614000                   |          | 51100                  | -45.3                 | N/A         | P         |
| Nickel         | ug/kg        | 75-125                      | 64200                    |          | 19000                    |          | 51100                  | 88.6                  |             | P         |
| Potassium      | ug/kg        | 75-125                      | 2260000                  |          | 1300000                  |          | 511000                 | 189                   | N           | P         |
| Selenium       | ug/kg        | 75-125                      | 48800                    |          | 694                      | B        | 51100                  | 94.2                  |             | P         |
| Silver         | ug/kg        | 75-125                      | 51100                    |          | 111                      | U        | 51100                  | 100                   |             | P         |
| Sodium         | ug/kg        | 75-125                      | 717000                   |          | 154000                   |          | 511000                 | 110                   |             | P         |
| Thallium       | ug/kg        | 75-125                      | 44000                    |          | 553                      | U        | 51100                  | 86.2                  |             | P         |
| Vanadium       | ug/kg        | 75-125                      | 78200                    |          | 22300                    |          | 51100                  | 109                   |             | P         |
| Zinc           | ug/kg        | 75-125                      | 115000                   |          | 81600                    |          | 51100                  | 65.7                  | N           | P         |
| Aluminum       | ug/kg        |                             | 10100000                 |          | 6350000                  |          | 511000                 | 732                   | N/A         | P         |
| Antimony       | ug/kg        | 75-125                      | 48900                    |          | 2730                     |          | 51100                  | 90.4                  |             | P         |
| Arsenic        | ug/kg        | 75-125                      | 63700                    |          | 10200                    |          | 51100                  | 105                   |             | P         |
| Barium         | ug/kg        | 75-125                      | 275000                   |          | 199000                   |          | 51100                  | 149                   | N           | P         |
| Beryllium      | ug/kg        | 75-125                      | 42600                    |          | 111                      | U        | 51100                  | 83.4                  |             | P         |
| Cadmium        | ug/kg        | 75-125                      | 46400                    |          | 575                      |          | 51100                  | 89.7                  |             | P         |
| Calcium        | ug/kg        |                             | 77400000                 |          | 79300000                 |          | 511000                 | -371                  | N/A         | P         |
| Chromium       | ug/kg        | 75-125                      | 61700                    |          | 11200                    |          | 51100                  | 98.7                  |             | P         |
| Cobalt         | ug/kg        | 75-125                      | 54700                    |          | 7750                     |          | 51100                  | 91.9                  |             | P         |
| Copper         | ug/kg        | 75-125                      | 77500                    |          | 21900                    |          | 51100                  | 109                   |             | P         |
| Iron           | ug/kg        |                             | 15700000                 |          | 14200000                 |          | 511000                 | 299                   | N/A         | P         |
| Lead           | ug/Kg        |                             | 378000                   |          | 2230000                  |          | 51100                  | -3630                 | N/A         | P         |
| Magnesium      | ug/kg        |                             | 8790000                  |          | 8310000                  |          | 511000                 | 93.4                  | N/A         | P         |

| METALS               |           |                  |               |   |               |   |             |            |      |    |
|----------------------|-----------|------------------|---------------|---|---------------|---|-------------|------------|------|----|
| -5a-                 |           |                  |               |   |               |   |             |            |      |    |
| Matrix Spike Summary |           |                  |               |   |               |   |             |            |      |    |
| SDG NO.              | 409254    | Client ID        | DP110100S     |   |               |   |             |            |      |    |
| Contract:            | HAAL00201 | Level:           | Low           |   |               |   |             |            |      |    |
| Matrix:              | SOIL      | % Solids:        | 87            |   |               |   |             |            |      |    |
| Sample ID:           | 409254001 | Spike ID:        | 1203657598    |   |               |   |             |            |      |    |
| Analyte              | Units     | Acceptance Limit | Spiked Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M* |
|                      |           |                  |               |   |               |   |             |            |      |    |

\*Analytical Methods:  
P SW846 3050B/6010C

## METALS

-5a-

## Matrix Spike Summary

**SDG NO.** 409254 **Client ID** DP010109S

**Contract:** HAAL00201 **Level:** Low

**Matrix:** SOIL **% Solids:** 76

**Sample ID:** 409254022 **Spike ID:** 1203657603

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance<br/>Limit</u> | <u>Spiked<br/>Result</u> | <u>C</u> | <u>Sample<br/>Result</u> | <u>C</u> | <u>Spike<br/>Added</u> | <u>%<br/>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Aluminum       | ug/kg        |                             | 13100000                 |          | 8980000                  |          | 640000                 | 642                   | N/A         | P         |
| Antimony       | ug/kg        | 75-125                      | 47300                    |          | 454                      | B        | 64000                  | 73.2                  | N           | P         |
| Arsenic        | ug/kg        | 75-125                      | 66700                    |          | 7300                     |          | 64000                  | 92.9                  |             | P         |
| Barium         | ug/kg        |                             | 338000                   |          | 278000                   |          | 64000                  | 93.2                  | N/A         | P         |
| Beryllium      | ug/kg        | 75-125                      | 61100                    |          | 685                      |          | 64000                  | 94.5                  |             | P         |
| Cadmium        | ug/kg        | 75-125                      | 57400                    |          | 289                      | B        | 64000                  | 89.3                  |             | P         |
| Calcium        | ug/kg        |                             | 14600000                 |          | 14700000                 |          | 640000                 | -16.5                 | N/A         | P         |
| Chromium       | ug/kg        | 75-125                      | 74100                    |          | 12700                    |          | 64000                  | 96                    |             | P         |
| Cobalt         | ug/kg        | 75-125                      | 63600                    |          | 6800                     |          | 64000                  | 88.7                  |             | P         |
| Copper         | ug/kg        | 75-125                      | 78100                    |          | 17400                    |          | 64000                  | 94.8                  |             | P         |
| Iron           | ug/kg        |                             | 18500000                 |          | 17600000                 |          | 640000                 | 135                   | N/A         | P         |
| Lead           | ug/kg        | 75-125                      | 67200                    |          | 11200                    |          | 64000                  | 87.5                  |             | P         |
| Magnesium      | ug/kg        |                             | 7340000                  |          | 6440000                  |          | 640000                 | 140                   | N/A         | P         |
| Manganese      | ug/kg        |                             | 949000                   |          | 692000                   |          | 64000                  | 402                   | N/A         | P         |
| Nickel         | ug/kg        | 75-125                      | 76300                    |          | 19800                    |          | 64000                  | 88.2                  |             | P         |
| Potassium      | ug/kg        | 75-125                      | 2520000                  |          | 1670000                  |          | 640000                 | 133                   | N           | P         |
| Selenium       | ug/kg        | 75-125                      | 60800                    |          | 2300                     | B        | 64000                  | 91.4                  |             | P         |
| Silver         | ug/kg        | 75-125                      | 61100                    |          | 753                      |          | 64000                  | 94.3                  |             | P         |
| Sodium         | ug/kg        | 75-125                      | 1300000                  |          | 680000                   |          | 640000                 | 97                    |             | P         |
| Thallium       | ug/kg        | 75-125                      | 57500                    |          | 560                      | U        | 64000                  | 89.9                  |             | P         |
| Vanadium       | ug/kg        | 75-125                      | 96500                    |          | 29400                    |          | 64000                  | 105                   |             | P         |
| Zinc           | ug/kg        | 75-125                      | 110000                   |          | 56000                    |          | 64000                  | 84.3                  |             | P         |

METALS

-5a-

Matrix Spike Summary

SDG NO. 409254 Client ID DP010109S

Contract: HAAL00201 Level: Low

Matrix: SOIL % Solids: 76

Sample ID: 409254022 Spike ID: 1203657603

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance</u><br><u>Limit</u> | <u>Spiked</u><br><u>Result</u> | <u>C</u> | <u>Sample</u><br><u>Result</u> | <u>C</u> | <u>Spike</u><br><u>Added</u> | <u>%</u><br><u>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------------|--------------------------------|----------|--------------------------------|----------|------------------------------|-----------------------------|-------------|-----------|
|----------------|--------------|-----------------------------------|--------------------------------|----------|--------------------------------|----------|------------------------------|-----------------------------|-------------|-----------|

\*Analytical Methods:  
P SW846 3050B/6010C

## METALS

-5a-

## Matrix Spike Summary

SDG NO. 409254

Client ID SS110100S

Contract: HAAL00201

Level: Low

Matrix: SOIL

% Solids: 95.8

Sample ID: 409254011

Spike ID: 1203666308

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance<br/>Limit</u> | <u>Spiked<br/>Result</u> | <u>C</u> | <u>Sample<br/>Result</u> | <u>C</u> | <u>Spike<br/>Added</u> | <u>%<br/>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Mercury        | ug/kg        | 80-120                      | 145                      |          | 11.5                     | B        | 125                    | 107                   |             | AV        |

## \*Analytical Methods:

AV SW846 7471B

## METALS

-5a-

## Spike Summary

SDG NO. 409254 Client ID DP010216PS

Contract: HAAL00201 Level: Low

Matrix: SPLP % Solids:

Sample ID: 409254021 Spike ID: 1203666317

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance<br/>Limit</u> | <u>Spiked<br/>Result</u> | <u>C</u> | <u>Sample<br/>Result</u> | <u>C</u> | <u>Spike<br/>Added</u> | <u>%<br/>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Mercury        | ug/L         | 80-120                      | 2.2                      |          | 0.00067                  | U        | 2                      | 110                   |             | AV        |

## \*Analytical Methods:

AV SW846 7470A



## METALS

-5a-

## Spike Summary

**SDG NO.** 409254 **Client ID** DP110100PS**Contract:** HAAL00201 **Level:** Low**Matrix:** SOIL **% Solids:** 87**Sample ID:** 409254001 **Spike ID:** 1203668749

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance<br/>Limit</u> | <u>Spiked<br/>Result</u> | <u>C</u> | <u>Sample<br/>Result</u> | <u>C</u> | <u>Spike<br/>Added</u> | <u>%<br/>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Barium         | ug/L         | 80-120                      | 2250                     |          | 1800                     |          | 500                    | 90.1                  |             | P         |
| Potassium      | ug/L         | 80-120                      | 16900                    |          | 11700                    |          | 5000                   | 104                   |             | P         |
| Zinc           | ug/L         | 80-120                      | 1200                     |          | 738                      |          | 500                    | 91.7                  |             | P         |

## \*Analytical Methods:

P SW846 3050B/6010C

## METALS

-5a-

## Spike Summary

**SDG NO.** 409254 **Client ID** DP010109PS**Contract:** HAAL00201 **Level:** Low**Matrix:** SOIL **% Solids:** 76**Sample ID:** 409254022 **Spike ID:** 1203671682

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance<br/>Limit</u> | <u>Spiked<br/>Result</u> | <u>C</u> | <u>Sample<br/>Result</u> | <u>C</u> | <u>Spike<br/>Added</u> | <u>%<br/>Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Antimony       | ug/L         | 80-120                      | 473                      |          | 4.05                     | B        | 500                    | 93.8                  |             | P         |
| Potassium      | ug/L         | 80-120                      | 19500                    |          | 14900                    |          | 5000                   | 91                    |             | P         |

## \*Analytical Methods:

P SW846 3050B/6010C

**Metals**  
**-6-**  
**Duplicate Sample Summary**

SDG No.: 409254

Lab Code: GEL

Contract: HAAL00201

Client ID: DP110100D

Matrix: SOIL

Level: Low

Sample ID: 409254001

Duplicate ID: 1203657597

Percent Solids for Dup: 87

| Analyte   | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD  | Qual | M* |
|-----------|-------|------------------|---------------|---|------------------|---|------|------|----|
| Aluminum  | ug/kg | +/-20%           | 6350000       |   | 5470000          |   | 14.9 |      | P  |
| Antimony  | ug/kg | +/-1040          | 2730          |   | 4030             |   | 38.5 | *    | P  |
| Arsenic   | ug/kg | +/-3120          | 10200         |   | 9720             |   | 5.31 |      | P  |
| Barium    | ug/kg | +/-20%           | 199000        |   | 204000           |   | 2.48 |      | P  |
| Beryllium | ug/kg |                  | 111 U         |   | 104 U            |   |      |      | P  |
| Cadmium   | ug/kg | +/-520           | 575           |   | 491 B            |   | 15.7 |      | P  |
| Calcium   | ug/kg | +/-20%           | 79300000      |   | 90000000         |   | 12.7 |      | P  |
| Chromium  | ug/kg | +/-20%           | 11200         |   | 10500            |   | 7.07 |      | P  |
| Cobalt    | ug/kg | +/-20%           | 7750          |   | 6830             |   | 12.7 |      | P  |
| Copper    | ug/kg | +/-20%           | 21900         |   | 18900            |   | 14.7 |      | P  |
| Iron      | ug/kg | +/-20%           | 14200000      |   | 12700000         |   | 10.6 |      | P  |
| Lead      | ug/Kg | +/-20%           | 2230000       |   | 297000           |   | 153  | *    | P  |
| Magnesium | ug/kg | +/-20%           | 8310000       |   | 7670000          |   | 8.04 |      | P  |
| Manganese | ug/kg | +/-20%           | 614000        |   | 500000           |   | 20.4 | *    | P  |
| Nickel    | ug/kg | +/-20%           | 19000         |   | 16400            |   | 14.8 |      | P  |
| Potassium | ug/kg | +/-20%           | 1300000       |   | 1170000          |   | 10.4 |      | P  |
| Selenium  | ug/kg | +/-3120          | 694 B         |   | 786 B            |   | 12.4 |      | P  |
| Silver    | ug/kg |                  | 111 U         |   | 104 U            |   |      |      | P  |
| Sodium    | ug/kg | +/-20%           | 154000        |   | 158000           |   | 2.45 |      | P  |
| Thallium  | ug/kg |                  | 553 U         |   | 520 U            |   |      |      | P  |
| Vanadium  | ug/kg | +/-20%           | 22300         |   | 20000            |   | 11   |      | P  |
| Zinc      | ug/kg | +/-20%           | 81600         |   | 72200            |   | 12.3 |      | P  |

\*Analytical Methods:

P SW846 3050B/6010C

**Metals**  
**-6-**  
**Duplicate Sample Summary**

SDG No.: 409254

Lab Code: GEL

Contract: HAAL00201

Client ID: DP010109D

Matrix: SOIL

Level: Low

Sample ID: 409254022

Duplicate ID: 1203657602

Percent Solids for Dup: 76

| Analyte   | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD  | Qual | M* |
|-----------|-------|------------------|---------------|---|------------------|---|------|------|----|
| Aluminum  | ug/kg | +/-20%           | 8980000       |   | 7210000          |   | 21.8 | *    | P  |
| Antimony  | ug/kg | +/-1260          | 454 B         |   | 498 B            |   | 9.09 |      | P  |
| Arsenic   | ug/kg | +/-3770          | 7300          |   | 5690             |   | 24.9 |      | P  |
| Barium    | ug/kg | +/-20%           | 278000        |   | 220000           |   | 23.4 | *    | P  |
| Beryllium | ug/kg | +/-628           | 685           |   | 579 B            |   | 16.7 |      | P  |
| Cadmium   | ug/kg | +/-628           | 289 B         |   | 208 B            |   | 32.5 |      | P  |
| Calcium   | ug/kg | +/-20%           | 14700000      |   | 16500000         |   | 11.5 |      | P  |
| Chromium  | ug/kg | +/-20%           | 12700         |   | 10900            |   | 15.1 |      | P  |
| Cobalt    | ug/kg | +/-20%           | 6800          |   | 6060             |   | 11.5 |      | P  |
| Copper    | ug/kg | +/-20%           | 17400         |   | 13600            |   | 24.1 | *    | P  |
| Iron      | ug/kg | +/-20%           | 17600000      |   | 14700000         |   | 18.2 |      | P  |
| Lead      | ug/kg | +/-20%           | 11200         |   | 9060             |   | 20.8 | *    | P  |
| Magnesium | ug/kg | +/-20%           | 6440000       |   | 6690000          |   | 3.7  |      | P  |
| Manganese | ug/kg | +/-20%           | 692000        |   | 640000           |   | 7.75 |      | P  |
| Nickel    | ug/kg | +/-20%           | 19800         |   | 16400            |   | 19   |      | P  |
| Potassium | ug/kg | +/-20%           | 1670000       |   | 1440000          |   | 15.1 |      | P  |
| Selenium  | ug/kg | +/-3770          | 2300 B        |   | 2460 B           |   | 6.88 |      | P  |
| Silver    | ug/kg | +/-628           | 753           |   | 537 B            |   | 33.4 |      | P  |
| Sodium    | ug/kg | +/-20%           | 680000        |   | 605000           |   | 11.5 |      | P  |
| Thallium  | ug/kg |                  | 560 U         |   | 628 U            |   |      |      | P  |
| Vanadium  | ug/kg | +/-20%           | 29400         |   | 24500            |   | 18.1 |      | P  |
| Zinc      | ug/kg | +/-20%           | 56000         |   | 46500            |   | 18.6 |      | P  |

\*Analytical Methods:

P SW846 3050B/6010C

**Metals**  
**–6–**  
**Duplicate Sample Summary**

SDG No.: 409254

Lab Code: GEL

Contract: HAAL00201

Client ID: DP010216D

Matrix: SPLP

Level: Low

Sample ID: 409254021

Duplicate ID: 1203658088

Percent Solids for Dup: N/A

| Analyte  | Units | Acceptance<br>Limit | Sample<br>Result | C | Duplicate<br>Result | C | RPD  | Qual | M* |
|----------|-------|---------------------|------------------|---|---------------------|---|------|------|----|
| Arsenic  | ug/L  | +/-300              | 94.1             | B | 67.9                | B | 32.3 |      | P  |
| Barium   | ug/L  | +/-50               | 61.6             |   | 58.5                |   | 5.09 |      | P  |
| Cadmium  | ug/L  |                     | 10               | U | 10                  | U |      |      | P  |
| Chromium | ug/L  |                     | 10               | U | 10                  | U |      |      | P  |
| Lead     | ug/L  |                     | 33               | U | 33                  | U |      |      | P  |
| Selenium | ug/L  |                     | 60               | U | 60                  | U |      |      | P  |
| Silver   | ug/L  |                     | 10               | U | 10                  | U |      |      | P  |

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\*Analytical Methods:

P SW846 3010A/6010C

**Metals**  
**-6-**  
**Duplicate Sample Summary**

**SDG No.:** 409254**Lab Code:** GEL**Contract:** HAAL00201**Client ID:** SS110100D**Matrix:** SOIL**Level:** Low**Sample ID:** 409254011**Duplicate ID:** 1203666307**Percent Solids for Dup:** 95.8

| Analyte | Units | Acceptance<br>Limit | Sample<br>Result | C | Duplicate<br>Result | C | RPD | Qual | M* |
|---------|-------|---------------------|------------------|---|---------------------|---|-----|------|----|
| Mercury | ug/kg | +/-12.5             | 11.5             | B | 9.52                | B | 19  |      | AV |

\*Analytical Methods:

AV SW846 7471B

**Metals**  
**–6–**  
**Duplicate Sample Summary**

**SDG No.:** 409254**Lab Code:** GEL**Contract:** HAAL00201**Client ID:** DP010216D**Matrix:** SPLP**Level:** Low**Sample ID:** 409254021**Duplicate ID:** 1203666313**Percent Solids for Dup:** N/A

| Analyte | Units | Acceptance<br>Limit | Sample<br>Result | C | Duplicate<br>Result | C | RPD | Qual | M* |
|---------|-------|---------------------|------------------|---|---------------------|---|-----|------|----|
| Mercury | mg/L  |                     | 0.00067          | U | 0.00067             | U |     |      | AV |

\*Analytical Methods:

AV SW846 7470A

## METALS

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## Laboratory Control Sample Summary

SDG NO. 409254

Contract: HAAL00201

Aqueous LCS Source:

Solid LCS Source: OS2I

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203657596       |                |              |                   |               |          |                   |                         |           |
|                  | Aluminum       | ug/kg        | 443000            | 436000        |          | 98.3              | 80-120                  | P         |
|                  | Antimony       | ug/kg        | 44300             | 42900         |          | 96.9              | 80-120                  | P         |
|                  | Arsenic        | ug/kg        | 44300             | 43400         |          | 97.9              | 80-120                  | P         |
|                  | Barium         | ug/kg        | 44300             | 43100         |          | 97.3              | 80-120                  | P         |
|                  | Beryllium      | ug/kg        | 44300             | 42800         |          | 96.5              | 80-120                  | P         |
|                  | Cadmium        | ug/kg        | 44300             | 42500         |          | 95.9              | 80-120                  | P         |
|                  | Calcium        | ug/kg        | 443000            | 434000        |          | 98                | 80-120                  | P         |
|                  | Chromium       | ug/kg        | 44300             | 42400         |          | 95.7              | 80-120                  | P         |
|                  | Cobalt         | ug/kg        | 44300             | 42600         |          | 96.1              | 80-120                  | P         |
|                  | Copper         | ug/kg        | 44300             | 43500         |          | 98                | 80-120                  | P         |
|                  | Iron           | ug/kg        | 443000            | 440000        |          | 99.2              | 80-120                  | P         |
|                  | Lead           | ug/Kg        | 44300             | 42900         |          | 96.9              | 80-120                  | P         |
|                  | Magnesium      | ug/kg        | 443000            | 433000        |          | 97.6              | 80-120                  | P         |
|                  | Manganese      | ug/kg        | 44300             | 42600         |          | 96.2              | 80-120                  | P         |
|                  | Nickel         | ug/kg        | 44300             | 42400         |          | 95.8              | 80-120                  | P         |
|                  | Potassium      | ug/kg        | 443000            | 443000        |          | 100               | 80-120                  | P         |
|                  | Selenium       | ug/kg        | 44300             | 42600         |          | 96                | 80-120                  | P         |
|                  | Silver         | ug/kg        | 44300             | 42500         |          | 96                | 80-120                  | P         |
|                  | Sodium         | ug/kg        | 443000            | 442000        |          | 99.6              | 80-120                  | P         |
|                  | Thallium       | ug/kg        | 44300             | 42300         |          | 95.5              | 80-120                  | P         |
|                  | Vanadium       | ug/kg        | 44300             | 42400         |          | 95.7              | 80-120                  | P         |
|                  | Zinc           | ug/kg        | 44300             | 42700         |          | 96.3              | 80-120                  | P         |

## \*Analytical Methods:

P SW846 3050B/6010C



## METALS

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## Laboratory Control Sample Summary

SDG NO. 409254

Contract: HAAL00201

Aqueous LCS Source:

Solid LCS Source: OS2I

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203657601       |                |              |                   |               |          |                   |                         |           |
|                  | Aluminum       | ug/kg        | 476000            | 467000        |          | 98.1              | 80-120                  | P         |
|                  | Antimony       | ug/kg        | 47600             | 44700         |          | 94                | 80-120                  | P         |
|                  | Arsenic        | ug/kg        | 47600             | 45200         |          | 94.9              | 80-120                  | P         |
|                  | Barium         | ug/kg        | 47600             | 45500         |          | 95.6              | 80-120                  | P         |
|                  | Beryllium      | ug/kg        | 47600             | 46300         |          | 97.1              | 80-120                  | P         |
|                  | Cadmium        | ug/kg        | 47600             | 45300         |          | 95.1              | 80-120                  | P         |
|                  | Calcium        | ug/kg        | 476000            | 463000        |          | 97.2              | 80-120                  | P         |
|                  | Chromium       | ug/kg        | 47600             | 44800         |          | 94.1              | 80-120                  | P         |
|                  | Cobalt         | ug/kg        | 47600             | 44100         |          | 92.6              | 80-120                  | P         |
|                  | Copper         | ug/kg        | 47600             | 45700         |          | 96                | 80-120                  | P         |
|                  | Iron           | ug/kg        | 476000            | 492000        |          | 103               | 80-120                  | P         |
|                  | Lead           | ug/kg        | 47600             | 45000         |          | 94.5              | 80-120                  | P         |
|                  | Magnesium      | ug/kg        | 476000            | 484000        |          | 102               | 80-120                  | P         |
|                  | Manganese      | ug/kg        | 47600             | 44900         |          | 94.2              | 80-120                  | P         |
|                  | Nickel         | ug/kg        | 47600             | 44000         |          | 92.5              | 80-120                  | P         |
|                  | Potassium      | ug/kg        | 476000            | 464000        |          | 97.4              | 80-120                  | P         |
|                  | Selenium       | ug/kg        | 47600             | 45000         |          | 94.5              | 80-120                  | P         |
|                  | Silver         | ug/kg        | 47600             | 45300         |          | 95.2              | 80-120                  | P         |
|                  | Sodium         | ug/kg        | 476000            | 474000        |          | 99.5              | 80-120                  | P         |
|                  | Thallium       | ug/kg        | 47600             | 45700         |          | 96                | 80-120                  | P         |
|                  | Zinc           | ug/kg        | 47600             | 44300         |          | 92.9              | 80-120                  | P         |
|                  | Vanadium       | ug/kg        | 47600             | 45100         |          | 94.7              | 80-120                  | P         |

## \*Analytical Methods:

P SW846 3050B/6010C

## METALS

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## Laboratory Control Sample Summary

SDG NO. 409254

Contract: HAAL00201

Aqueous LCS Source:OS2I

Solid LCS Source:

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203658087       |                |              |                   |               |          |                   |                         |           |
|                  | Arsenic        | ug/L         | 5000              | 4580          |          | 91.6              | 80-120                  | P         |
|                  | Barium         | ug/L         | 5000              | 4720          |          | 94.4              | 80-120                  | P         |
|                  | Cadmium        | ug/L         | 5000              | 4640          |          | 92.7              | 80-120                  | P         |
|                  | Chromium       | ug/L         | 5000              | 4680          |          | 93.6              | 80-120                  | P         |
|                  | Lead           | ug/L         | 5000              | 4680          |          | 93.6              | 80-120                  | P         |
|                  | Selenium       | ug/L         | 5000              | 4570          |          | 91.4              | 80-120                  | P         |
|                  | Silver         | ug/L         | 5000              | 4710          |          | 94.2              | 80-120                  | P         |

## \*Analytical Methods:

P SW846 3010A/6010C

## METALS

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## Laboratory Control Sample Summary

SDG NO. 409254

Contract: HAAL00201

Aqueous LCS Source:

Solid LCS Source: GEL

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203666306       | Mercury        | ug/kg        | 112               | 117           |          | 104               | 80-120                  | AV        |

## \*Analytical Methods:

AV SW846 7471B

## METALS

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## Laboratory Control Sample Summary

SDG NO. 409254

Contract: HAAL00201

Aqueous LCS Source:GEL

Solid LCS Source:

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203666312       | Mercury        | mg/L         | .02               | .0201         |          | 101               | 80-120                  | AV        |

## \*Analytical Methods:

AV SW846 7470A

## METALS

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## Serial Dilution Sample Summary

SDG NO. 409254

Client ID DP110100L

Contract: HAAL00201

Matrix: SOLID

Level: Low

Sample ID: 409254001

Serial Dilution ID: 1203657599

| <u>Analyte</u> | <u>Initial Value</u><br>ug/L | <u>C</u> | <u>Serial Value</u><br>ug/L | <u>C</u> | <u>% Difference</u> | <u>Qual</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|----------------|------------------------------|----------|-----------------------------|----------|---------------------|-------------|-------------------------|-----------|
| Aluminum       | 57500                        |          | 55700                       |          | 3.118               |             | 10                      | P         |
| Antimony       | 24.7                         |          | 29.7                        | B        | 20.593              |             |                         | P         |
| Arsenic        | 92.7                         |          | 90.6                        | B        | 2.27                |             |                         | P         |
| Barium         | 1800                         |          | 1780                        |          | 1.01                |             | 10                      | P         |
| Beryllium      | 1                            | U        | 5                           | U        |                     |             |                         | P         |
| Cadmium        | 5.2                          |          | 5                           | U        | 7.517               |             |                         | P         |
| Calcium        | 717000                       |          | 710000                      |          | .803                |             | 10                      | P         |
| Chromium       | 102                          |          | 102                         |          | .403                |             | 10                      | P         |
| Cobalt         | 70.1                         |          | 71.2                        |          | 1.533               |             |                         | P         |
| Copper         | 198                          |          | 164                         |          | 17.364              | E           | 10                      | P         |
| Iron           | 128000                       |          | 129000                      |          | .625                |             | 10                      | P         |
| Lead           | 20200                        |          | 20200                       |          | .131                |             | 10                      | P         |
| Magnesium      | 75200                        |          | 74900                       |          | .351                |             | 10                      | P         |
| Manganese      | 5550                         |          | 5620                        |          | 1.194               |             | 10                      | P         |
| Nickel         | 172                          |          | 174                         |          | 1.192               |             | 10                      | P         |
| Potassium      | 11700                        |          | 10700                       |          | 8.686               |             | 10                      | P         |
| Selenium       | 6.28                         | B        | 25                          | U        | 11.465              |             |                         | P         |
| Silver         | 1                            | U        | 5                           | U        |                     |             |                         | P         |
| Sodium         | 1390                         |          | 1220                        | B        | 12.623              |             |                         | P         |
| Thallium       | 5                            | U        | 25                          | U        |                     |             |                         | P         |
| Vanadium       | 202                          |          | 199                         |          | 1.623               |             | 10                      | P         |
| Zinc           | 738                          |          | 741                         |          | .395                |             | 10                      | P         |

\*Analytical Methods:

P SW846 3050B/6010C

## METALS

-9-

## Serial Dilution Sample Summary

SDG NO. 409254

Client ID DP010109L

Contract: HAAL00201

Matrix: SOLID

Level: Low

Sample ID: 409254022

Serial Dilution ID: 1203657604

| <u>Analyte</u> | <u>Initial Value</u><br>ug/L | <u>C</u> | <u>Serial Value</u><br>ug/L | <u>C</u> | <u>% Difference</u> | <u>Qual</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|----------------|------------------------------|----------|-----------------------------|----------|---------------------|-------------|-------------------------|-----------|
| Aluminum       | 80100                        |          | 85600                       |          | 6.846               |             | 10                      | P         |
| Antimony       | 4.05                         | B        | 16.5                        | U        | 243.292             |             |                         | P         |
| Arsenic        | 65.1                         |          | 58.5                        | B        | 10.141              |             |                         | P         |
| Barium         | 2480                         |          | 2630                        |          | 6.127               |             | 10                      | P         |
| Beryllium      | 6.11                         |          | 6.6                         | B        | 7.986               |             |                         | P         |
| Cadmium        | 2.58                         | B        | 5                           | U        | 57.534              |             |                         | P         |
| Calcium        | 131000                       |          | 135000                      |          | 3.367               |             | 10                      | P         |
| Chromium       | 113                          |          | 123                         |          | 8.691               |             | 10                      | P         |
| Cobalt         | 60.6                         |          | 64.6                        |          | 6.547               |             |                         | P         |
| Copper         | 155                          |          | 155                         |          | .029                |             | 10                      | P         |
| Iron           | 157000                       |          | 164000                      |          | 4.27                |             | 10                      | P         |
| Lead           | 99.5                         |          | 99.8                        |          | .23                 |             |                         | P         |
| Magnesium      | 57500                        |          | 60400                       |          | 5.094               |             | 10                      | P         |
| Manganese      | 6170                         |          | 6730                        |          | 8.995               |             | 10                      | P         |
| Nickel         | 177                          |          | 193                         |          | 9.492               |             | 10                      | P         |
| Potassium      | 14900                        |          | 15100                       |          | 1.047               |             | 10                      | P         |
| Selenium       | 20.5                         | B        | 47.5                        | B        | 131.698             |             |                         | P         |
| Silver         | 6.71                         |          | 5.48                        | B        | 18.321              |             |                         | P         |
| Sodium         | 6060                         |          | 6570                        |          | 8.299               |             | 10                      | P         |
| Thallium       | 5                            | U        | 25                          | U        |                     |             |                         | P         |
| Vanadium       | 262                          |          | 264                         |          | .876                |             | 10                      | P         |
| Zinc           | 500                          |          | 518                         |          | 3.71                |             | 10                      | P         |

\*Analytical Methods:

P SW846 3050B/6010C

## METALS

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## Serial Dilution Sample Summary

SDG NO. 409254

Client ID DP010216L

Contract: HAAL00201

Matrix: SPLP

Level: Low

Sample ID: 409254021

Serial Dilution ID: 1203658090

| <u>Analyte</u> | <u>Initial<br/>Value<br/>ug/L</u> | <u>C</u> | <u>Serial<br/>Value<br/>ug/L</u> | <u>C</u> | <u>%<br/>Difference</u> | <u>Qual</u> | <u>Acceptance<br/>Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Arsenic        | 9.41                              | B        | 25                               | U        | 79.274                  |             |                             | P         |
| Barium         | 6.16                              |          | 6.62                             | B        | 7.552                   |             |                             | P         |
| Cadmium        | 1                                 | U        | 5                                | U        |                         |             |                             | P         |
| Chromium       | 1                                 | U        | 5                                | U        |                         |             |                             | P         |
| Lead           | 3.3                               | U        | 16.5                             | U        |                         |             |                             | P         |
| Selenium       | 6                                 | U        | 30                               | U        |                         |             |                             | P         |
| Silver         | 1                                 | U        | 5                                | U        |                         |             |                             | P         |

## \*Analytical Methods:

P SW846 3010A/6010C

## METALS

-9-

## Serial Dilution Sample Summary

**SDG NO.** 409254 **Client ID** SS110100L**Contract:** HAAL00201**Matrix:** SOLID **Level:** Low**Sample ID:** 409254011 **Serial Dilution ID:** 1203666309

| <u>Analyte</u> | <u>Initial<br/>Value<br/>ug/L</u> | <u>C</u> | <u>Serial<br/>Value<br/>ug/L</u> | <u>C</u> | <u>%<br/>Difference</u> | <u>Qual</u> | <u>Acceptance<br/>Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Mercury        | .188                              | B        | .335                             | U        | 129.255                 |             |                             | AV        |

## \*Analytical Methods:

AV SW846 7471B



## METALS

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## Serial Dilution Sample Summary

SDG NO. 409254

Client ID DP010216L

Contract: HAAL00201

Matrix: SPLP

Level: Low

Sample ID: 409254021

Serial Dilution ID: 1203666315

| <u>Analyte</u> | <u>Initial<br/>Value<br/>ug/L</u> | <u>C</u> | <u>Serial<br/>Value<br/>ug/L</u> | <u>C</u> | <u>%<br/>Difference</u> | <u>Qual</u> | <u>Acceptance<br/>Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Mercury        | .067                              | U        | .335                             | U        |                         |             |                             | AV        |

## \*Analytical Methods:

AV SW846 7470A

**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

SDG No: 409254

Method Type: P

Contract:

HAAL00201

Lab Code: GEL

| <u>Sample ID</u>    | <u>Client ID</u>      | <u>Sample Type</u> | <u>Matrix</u> | <u>Prep Date</u> | <u>Initial Sample Size</u> | <u>Final Sample Volume</u> | <u>Percent Solids</u> |
|---------------------|-----------------------|--------------------|---------------|------------------|----------------------------|----------------------------|-----------------------|
| <b>Batch Number</b> | 1611116               |                    |               |                  |                            |                            |                       |
| 1203657595          | MB for batch 1611116  | MB                 | S             | 27-OCT-16        | .544g                      | 50mL                       |                       |
| 1203657596          | LCS for batch 1611116 | LCS                | S             | 27-OCT-16        | .564g                      | 50mL                       |                       |
| 1203657598          | DP110100S             | MS                 | S             | 27-OCT-16        | .565g                      | 50mL                       | 87                    |
| 1203657597          | DP110100D             | DUP                | S             | 27-OCT-16        | .555g                      | 50mL                       | 87                    |
| 409254001           | DP110100              | SAMPLE             | S             | 27-OCT-16        | .522g                      | 50mL                       | 87                    |
| 409254002           | DP110102              | SAMPLE             | S             | 27-OCT-16        | .52g                       | 50mL                       | 82                    |
| 409254003           | DP110104              | SAMPLE             | S             | 27-OCT-16        | .561g                      | 50mL                       | 82                    |
| 409254004           | DP110106              | SAMPLE             | S             | 27-OCT-16        | .518g                      | 50mL                       | 94.9                  |
| 409254005           | DP110113              | SAMPLE             | S             | 27-OCT-16        | .55g                       | 50mL                       | 77                    |
| 409254006           | DP110200              | SAMPLE             | S             | 27-OCT-16        | .547g                      | 50mL                       | 82                    |
| 409254007           | DP110202              | SAMPLE             | S             | 27-OCT-16        | .591g                      | 50mL                       | 79                    |
| 409254008           | DP110204              | SAMPLE             | S             | 27-OCT-16        | .524g                      | 50mL                       | 83                    |
| 409254009           | DP110206              | SAMPLE             | S             | 27-OCT-16        | .566g                      | 50mL                       | 79                    |
| 409254010           | DP110214              | SAMPLE             | S             | 27-OCT-16        | .538g                      | 50mL                       | 81                    |
| 409254011           | SS110100              | SAMPLE             | S             | 27-OCT-16        | .521g                      | 50mL                       | 95.8                  |
| 409254012           | SS110200              | SAMPLE             | S             | 27-OCT-16        | .513g                      | 50mL                       | 83                    |
| 409254013           | SD140300              | SAMPLE             | S             | 27-OCT-16        | .546g                      | 50mL                       | 63                    |
| 409254014           | SD140200              | SAMPLE             | S             | 27-OCT-16        | .538g                      | 50mL                       | 56                    |
| 409254015           | SD140100              | SAMPLE             | S             | 27-OCT-16        | .551g                      | 50mL                       | 62                    |

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**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

SDG No: 409254

Method Type: P

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u>            | <u>Client ID</u>      | <u>Sample Type</u> | <u>Matrix</u> | <u>Prep Date</u> | <u>Initial Sample Size</u> | <u>Final Sample Volume</u> | <u>Percent Solids</u> |
|-----------------------------|-----------------------|--------------------|---------------|------------------|----------------------------|----------------------------|-----------------------|
| 409254016                   | SD140100DUP           | SAMPLE             | S             | 27-OCT-16        | .515g                      | 50mL                       | 63                    |
| 409254017                   | DP100113              | SAMPLE             | S             | 27-OCT-16        | .586g                      | 50mL                       | 73                    |
| 409254018                   | DP100212              | SAMPLE             | S             | 27-OCT-16        | .502g                      | 50mL                       | 75                    |
| 409254019                   | DP100310              | SAMPLE             | S             | 27-OCT-16        | .572g                      | 50mL                       | 75                    |
| 409254020                   | DP010216              | SAMPLE             | S             | 27-OCT-16        | .571g                      | 50mL                       | 66                    |
| <b>Batch Number 1611118</b> |                       |                    |               |                  |                            |                            |                       |
| 1203657600                  | MB for batch 1611118  | MB                 | S             | 27-OCT-16        | .505g                      | 50mL                       |                       |
| 1203657601                  | LCS for batch 1611118 | LCS                | S             | 27-OCT-16        | .525g                      | 50mL                       |                       |
| 1203657603                  | DP010109S             | MS                 | S             | 27-OCT-16        | .514g                      | 50mL                       | 76                    |
| 1203657602                  | DP010109D             | DUP                | S             | 27-OCT-16        | .524g                      | 50mL                       | 76                    |
| 409254022                   | DP010109              | SAMPLE             | S             | 27-OCT-16        | .587g                      | 50mL                       | 76                    |
| 409254024                   | DP010307              | SAMPLE             | S             | 27-OCT-16        | .527g                      | 50mL                       | 86                    |
| 409254029                   | DP020312              | SAMPLE             | S             | 27-OCT-16        | .555g                      | 50mL                       | 74                    |
| 409254032                   | DP020413              | SAMPLE             | S             | 27-OCT-16        | .571g                      | 50mL                       | 82                    |
| 409254034                   | DP020207              | SAMPLE             | S             | 27-OCT-16        | .547g                      | 50mL                       | 80                    |
| 409254036                   | DP020209              | SAMPLE             | S             | 27-OCT-16        | .547g                      | 50mL                       | 89                    |
| 409254038                   | DP020114              | SAMPLE             | S             | 27-OCT-16        | .508g                      | 50mL                       | 98                    |
| <b>Batch Number 1611344</b> |                       |                    |               |                  |                            |                            |                       |
| 1203658086                  | MB for batch 1611344  | MB                 | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |

SW846

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**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

**SDG No:** 409254**Method Type:** P**Contract:** HAAL00201**Lab Code:** GEL

| <u>Sample ID</u> | <u>Client ID</u>      | <u>Sample Type</u> | <u>Matrix</u> | <u>Prep Date</u> | <u>Initial Sample Size</u> | <u>Final Sample Volume</u> | <u>Percent Solids</u> |
|------------------|-----------------------|--------------------|---------------|------------------|----------------------------|----------------------------|-----------------------|
| 1203657517       | TB for batch 1611084  | TB                 | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 1203658087       | LCS for batch 1611344 | LCS                | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 1203657516       | DP010216S             | MS                 | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 1203658088       | DP010216D             | DUP                | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 409254021        | DP010216              | SAMPLE             | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 409254023        | DP010109              | SAMPLE             | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 409254025        | DP010307              | SAMPLE             | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 409254030        | DP020312              | SAMPLE             | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 409254033        | DP020413              | SAMPLE             | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 409254035        | DP020207              | SAMPLE             | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 409254037        | DP020209              | SAMPLE             | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |
| 409254039        | DP020114              | SAMPLE             | SPLP          | 28-OCT-16        | 5mL                        | 50mL                       |                       |

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**SW846**

**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

SDG No: 409254

Method Type AV

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u>    | <u>Client ID</u>      | <u>Sample Type</u> | <u>Matrix</u> | <u>Prep Date</u> | <u>Initial Sample Size</u> | <u>Final Sample Volume</u> | <u>Percent Solids</u> |
|---------------------|-----------------------|--------------------|---------------|------------------|----------------------------|----------------------------|-----------------------|
| <b>Batch Number</b> | 1614668               |                    |               |                  |                            |                            |                       |
| 1203666305          | MB for batch 1614668  | MB                 | S             | 09-NOV-16        | .512g                      | 30mL                       |                       |
| 1203666306          | LCS for batch 1614668 | LCS                | S             | 09-NOV-16        | .534g                      | 30mL                       |                       |
| 1203666308          | SS110100S             | MS                 | S             | 09-NOV-16        | .501g                      | 30mL                       | 95.8                  |
| 1203666307          | SS110100D             | DUP                | S             | 09-NOV-16        | .5g                        | 30mL                       | 95.8                  |
| 409254011           | SS110100              | SAMPLE             | S             | 09-NOV-16        | .511g                      | 30mL                       | 95.8                  |
| 409254012           | SS110200              | SAMPLE             | S             | 09-NOV-16        | .516g                      | 30mL                       | 83                    |
| 409254013           | SD140300              | SAMPLE             | S             | 09-NOV-16        | .509g                      | 30mL                       | 63                    |
| 409254014           | SD140200              | SAMPLE             | S             | 09-NOV-16        | .576g                      | 30mL                       | 56                    |
| 409254015           | SD140100              | SAMPLE             | S             | 09-NOV-16        | .514g                      | 30mL                       | 62                    |
| 409254016           | SD140100DUP           | SAMPLE             | S             | 09-NOV-16        | .572g                      | 30mL                       | 63                    |
| 409254017           | DP100113              | SAMPLE             | S             | 09-NOV-16        | .52g                       | 30mL                       | 73                    |
| 409254018           | DP100212              | SAMPLE             | S             | 09-NOV-16        | .521g                      | 30mL                       | 75                    |
| 409254019           | DP100310              | SAMPLE             | S             | 09-NOV-16        | .594g                      | 30mL                       | 75                    |
| 409254020           | DP010216              | SAMPLE             | S             | 09-NOV-16        | .549g                      | 30mL                       | 66                    |
| 409254022           | DP010109              | SAMPLE             | S             | 09-NOV-16        | .564g                      | 30mL                       | 76                    |
| 409254024           | DP010307              | SAMPLE             | S             | 09-NOV-16        | .544g                      | 30mL                       | 86                    |
| 409254029           | DP020312              | SAMPLE             | S             | 09-NOV-16        | .502g                      | 30mL                       | 74                    |
| 409254032           | DP020413              | SAMPLE             | S             | 09-NOV-16        | .551g                      | 30mL                       | 82                    |
| 409254034           | DP020207              | SAMPLE             | S             | 09-NOV-16        | .512g                      | 30mL                       | 80                    |

SW846

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**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

SDG No: 409254

Method Type AV

Contract: HAAL00201

Lab Code: GEL

| <u>Sample ID</u>            | <u>Client ID</u>      | <u>Sample Type</u> | <u>Matrix</u> | <u>Prep Date</u> | <u>Initial Sample Size</u> | <u>Final Sample Volume</u> | <u>Percent Solids</u> |
|-----------------------------|-----------------------|--------------------|---------------|------------------|----------------------------|----------------------------|-----------------------|
| 409254036                   | DP020209              | SAMPLE             | S             | 09-NOV-16        | .539g                      | 30mL                       | 89                    |
| 409254038                   | DP020114              | SAMPLE             | S             | 09-NOV-16        | .521g                      | 30mL                       | 98                    |
| <b>Batch Number</b> 1614670 |                       |                    |               |                  |                            |                            |                       |
| 1203666311                  | MB for batch 1614670  | MB                 | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 1203657517                  | TB for batch 1611084  | TB                 | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 1203666312                  | LCS for batch 1614670 | LCS                | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 1203657516                  | DP010216S             | MS                 | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 1203666313                  | DP010216D             | DUP                | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 409254021                   | DP010216              | SAMPLE             | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 409254023                   | DP010109              | SAMPLE             | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 409254025                   | DP010307              | SAMPLE             | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 409254030                   | DP020312              | SAMPLE             | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 409254033                   | DP020413              | SAMPLE             | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 409254035                   | DP020207              | SAMPLE             | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 409254037                   | DP020209              | SAMPLE             | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |
| 409254039                   | DP020114              | SAMPLE             | TCLP          | 09-NOV-16        | 2mL                        | 20mL                       |                       |

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SW846

**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** OPTIMA3**Start Date:** 16-NOV-16**Client Sdg:** 409254**Instrument Type:**P**End Date:** 16-NOV-16**Data File:** 111616-1

| Samp ID | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|---------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| S0.0    | 1   | 06:07:14 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| S0.1    | 1   | 06:10:27 |    | X  | X  | X  | X  | X  |    | X  | X  | X  |    | X  |    | X  |    | X  | X | X  | X  |    | X  | X | X  |
| S0.5    | 1   | 06:12:35 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X  | X  |    | X  | X | X  | X  |    | X  | X | X  |
| SCAL    | 1   | 06:15:47 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| S10     | 1   | 06:19:11 | X  |    |    |    |    |    | X  |    |    |    | X  |    | X  |    |    |    |   |    |    | X  |    |   |    |
| ICV01   | 1   | 06:21:16 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ICB01   | 1   | 06:24:24 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| PQL01   | 1   | 06:27:30 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ICSA01  | 1   | 06:30:37 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ICSAB01 | 1   | 06:33:45 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| LR01    | 1   | 06:36:09 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| LR02    | 1   | 06:37:48 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCV01   | 1   | 06:41:55 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB01   | 1   | 06:45:09 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| LR03    | 1   | 06:54:59 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| LR04    | 1   | 06:58:26 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCV02   | 1   | 07:01:33 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB02   | 1   | 07:04:46 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ  | 1   | 07:07:51 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 07:10:58 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 07:14:10 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 07:17:16 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 07:20:22 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 07:23:28 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 07:26:34 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 5   | 07:29:46 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 07:32:52 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| PQL     | 1   | 07:36:06 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB     | 1   | 07:39:14 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ  | 10  | 07:42:21 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 07:45:50 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB     | 1   | 07:49:09 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ  | 1   | 07:52:15 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 07:55:22 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 07:58:35 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 08:01:42 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 08:04:48 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 5   | 08:08:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 08:11:06 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB     | 1   | 08:14:20 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ  | 1   | 08:17:26 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |

**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** OPTIMA3**Start Date:** 16-NOV-16**Client Sdg:** 409254**Instrument Type:**P**Data File:** 111616-1**End Date:** 16-NOV-16

| Samp ID | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|---------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| ZZZZZZ  | 1   | 08:20:34 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 08:23:41 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 20  | 08:26:48 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 20  | 08:29:55 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 08:33:01 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 08:36:07 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 08:39:14 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB     | 1   | 08:42:27 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ  | 1   | 08:45:43 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 08:48:55 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 08:52:08 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 08:55:17 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 08:58:27 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 09:01:37 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 5   | 09:04:50 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 09:07:57 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| PQL     | 1   | 09:11:11 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB     | 1   | 09:14:19 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCV     | 1   | 09:17:26 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB     | 1   | 09:20:39 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ  | 1   | 09:23:45 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 09:26:53 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 09:29:59 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 09:33:11 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 09:36:17 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 09:39:23 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 09:42:29 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 09:45:35 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 5   | 09:48:42 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 09:51:48 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB     | 1   | 09:55:02 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ  | 10  | 10:05:47 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 10  | 10:09:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 10  | 10:12:07 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 10  | 10:15:14 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 50  | 10:18:27 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 10:21:34 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| PQL     | 1   | 10:24:48 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB     | 1   | 10:27:56 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCV     | 1   | 10:31:04 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB     | 1   | 10:34:19 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |



**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** OPTIMA3**Start Date:** 16-NOV-16**End Date:** 16-NOV-16**Client Sdg:** 409254**Instrument Type:**P**Data File:** 111616-1

| Samp ID    | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|------------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| ZZZZZZ     | 10  | 10:37:42 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 10:40:59 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 10:44:13 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 10:47:20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 10:50:34 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 10:53:56 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 10:59:04 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV        | 1   | 11:02:18 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| PQL        | 1   | 11:05:33 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB        | 1   | 11:08:42 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ     | 10  | 11:11:48 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV03      | 1   | 11:17:07 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB03      | 1   | 11:20:28 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 1203657600 | 1   | 11:23:34 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 1203657601 | 1   | 11:26:43 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254022  | 1   | 11:29:55 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 1203657602 | 1   | 11:33:23 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 1203657603 | 1   | 11:36:47 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 1203657604 | 5   | 11:40:18 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCV04      | 1   | 11:43:29 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB04      | 1   | 11:46:43 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 1203671682 | 1   | 11:49:49 |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X |    |    |    |    |   |    |
| 409254024  | 1   | 11:53:18 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254029  | 1   | 11:56:30 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254032  | 1   | 11:59:57 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254034  | 1   | 12:03:23 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254036  | 1   | 12:06:49 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254038  | 1   | 12:10:01 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCV05      | 1   | 12:13:08 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| PQL02      | 1   | 12:16:22 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB05      | 1   | 12:19:30 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |

**Metals**  
**–14–**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** HG3**Start Date:** 10–NOV–16**Client Sdg:** 409254**Instrument Type:** <sup>AV</sup>**Data File:** 111016S1–4**End Date:** 10–NOV–16

| Samp ID    | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|------------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| S0.0       | 1   | 10:39:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| S0.2       | 1   | 10:40:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| S0.5       | 1   | 10:42:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| S2.0       | 1   | 10:44:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| S5.0       | 1   | 10:45:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| S10.0      | 1   | 10:47:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ICV01      | 1   | 10:49:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ICB01      | 1   | 10:50:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CRDL01     | 1   | 10:52:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCV01      | 1   | 10:54:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB01      | 1   | 10:55:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:03:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:05:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:07:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:08:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:10:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 11:12:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:13:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:15:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:17:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:18:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV02      | 1   | 11:20:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB02      | 1   | 11:22:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:23:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:25:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:27:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:28:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| 1203666305 | 1   | 11:30:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 1203666306 | 1   | 11:32:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254011  | 1   | 11:33:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 1203666307 | 1   | 11:35:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 1203666308 | 1   | 11:37:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 1203666309 | 5   | 11:38:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCV03      | 1   | 11:40:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB03      | 1   | 11:42:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 11:43:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| 409254012  | 1   | 11:45:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254013  | 1   | 11:47:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254014  | 1   | 11:49:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254015  | 1   | 11:50:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254016  | 1   | 11:52:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |

**Metals**  
**–14–**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** HG3**Start Date:** 10–NOV–16**Client Sdg:** 409254**Instrument Type:** <sup>AV</sup>**Data File:** 111016S1–4**End Date:** 10–NOV–16

| Samp ID   | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|-----------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| 409254017 | 1   | 11:54:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254018 | 1   | 11:55:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254019 | 1   | 11:57:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254020 | 1   | 11:59:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCV04     | 1   | 12:00:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB04     | 1   | 12:02:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254022 | 1   | 12:04:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254024 | 1   | 12:05:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254029 | 1   | 12:07:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254032 | 1   | 12:09:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254034 | 1   | 12:10:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254036 | 1   | 12:12:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254038 | 1   | 12:14:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCV05     | 1   | 12:15:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB05     | 1   | 12:17:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |

**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** OPTIMA4**Start Date:** 11-NOV-16**Client Sdg:** 409254**Instrument Type:**P**Data File:** 111116-3**End Date:** 11-NOV-16

| Samp ID    | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|------------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| S0.0       | 1   | 09:06:49 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| S0.1       | 1   | 09:09:46 |    | X  | X  | X  | X  | X  |    | X  | X  | X  |    | X  |    | X  |    | X  | X | X  | X  |    | X  | X | X  |
| S0.5       | 1   | 09:11:32 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X  | X  |    | X  | X | X  | X  |    | X  | X | X  |
| SCAL       | 1   | 09:13:29 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| S10        | 1   | 09:15:27 | X  |    |    |    |    |    | X  |    |    |    | X  |    | X  |    |    |    |   |    |    | X  |    |   |    |
| ICV01      | 1   | 09:16:11 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ICB01      | 1   | 09:18:10 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| PQL01      | 1   | 09:21:00 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ICSA01     | 1   | 09:23:51 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ICSAB01    | 1   | 09:25:45 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| LR01       | 1   | 09:27:37 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| LR02       | 1   | 09:29:29 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCV01      | 1   | 09:31:44 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB01      | 1   | 09:33:43 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| LR03       | 1   | 09:36:46 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCV02      | 1   | 09:39:39 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB02      | 1   | 09:41:38 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ     | 1   | 10:14:49 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 10:17:45 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 10:19:38 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 10:22:28 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV        | 1   | 10:25:18 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| PQL        | 1   | 10:27:17 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB        | 1   | 10:30:09 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCV        | 1   | 10:33:01 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB        | 1   | 10:34:59 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ     | 1   | 10:37:49 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 10:40:41 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 10:42:34 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 10:45:24 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ICSA02     | 1   | 10:48:14 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ICSAB02    | 1   | 10:50:08 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCV03      | 1   | 10:52:00 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB03      | 1   | 10:53:59 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 1203657595 | 1   | 11:45:33 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 1203657596 | 1   | 11:48:28 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254001  | 1   | 11:50:21 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |   |    |    |    |    |   |    |
| 1203657597 | 1   | 11:52:15 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 1203657598 | 1   | 11:54:09 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 1203668749 | 1   | 11:56:03 |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |    | X |    |    |    |    |   | X  |
| 1203657599 | 5   | 11:57:58 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |

**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** OPTIMA4**Start Date:** 11-NOV-16**Client Sdg:** 409254**Instrument Type:**P**Data File:** 111116-3**End Date:** 11-NOV-16

| Samp ID   | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|-----------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| CCV04     | 1   | 11:59:50 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB04     | 1   | 12:01:50 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254002 | 1   | 12:04:40 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |   |    |    |    |    |   |    |
| 409254003 | 1   | 12:06:35 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |   |    |    |    |    |   |    |
| 409254004 | 1   | 12:08:28 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |   |    |    |    |    |   |    |
| 409254005 | 1   | 12:10:20 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |   |    |    |    |    |   |    |
| 409254006 | 1   | 12:12:14 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |   |    |    |    |    |   |    |
| 409254007 | 1   | 12:14:08 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |   |    |    |    |    |   |    |
| 409254008 | 1   | 12:16:02 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |   |    |    |    |    |   |    |
| 409254009 | 1   | 12:17:54 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |   |    |    |    |    |   |    |
| 409254010 | 1   | 12:19:52 |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |   |    |    |    |    |   |    |
| CCV05     | 1   | 12:21:43 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB05     | 1   | 12:23:42 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254011 | 1   | 12:26:32 |    | X  | X  | X  |    | X  |    | X  | X  | X  | X  | X  | X  | X  |    | X  |   | X  |    | X  | X  | X | X  |
| 409254012 | 1   | 12:28:34 | X  | X  | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  |    | X | X  |
| 409254013 | 1   | 12:30:34 | X  | X  | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254014 | 1   | 12:32:28 | X  | X  | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254015 | 1   | 12:34:22 | X  | X  | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254016 | 1   | 12:36:15 | X  | X  | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254017 | 1   | 12:38:09 | X  | X  | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  |    | X | X  |
| 409254018 | 1   | 12:40:02 | X  | X  | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  |    | X | X  |
| 409254019 | 1   | 12:42:00 | X  | X  | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  |    | X | X  |
| 409254020 | 1   | 12:43:58 | X  |    | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  |    | X | X  |
| CCV06     | 1   | 13:05:00 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB06     | 1   | 13:07:03 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| ZZZZZZ    | 10  | 13:09:54 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV07     | 1   | 13:13:19 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB07     | 1   | 13:15:26 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254011 | 10  | 13:18:17 | X  |    |    |    | X  |    | X  |    |    |    |    |    |    |    |    |    | X |    | X  |    |    |   |    |
| 409254012 | 10  | 13:20:10 |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    | X  |   |    |
| 409254013 | 10  | 13:21:56 |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| 409254014 | 10  | 13:23:47 |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| 409254015 | 10  | 13:25:32 |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| 409254016 | 10  | 13:27:24 |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| 409254017 | 10  | 13:29:15 |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    | X  |   |    |
| 409254018 | 10  | 13:31:00 |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    | X  |   |    |
| 409254019 | 10  | 13:32:45 |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    | X  |   |    |
| 409254020 | 10  | 13:34:30 |    | X  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    | X  |   |    |
| CCV08     | 1   | 13:36:22 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB08     | 1   | 13:38:28 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| 409254020 | 20  | 13:41:24 |    |    |    |    | X  |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |

**Metals**  
**–14–**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** OPTIMA4**Start Date:** 11–NOV–16**Client Sdg:** 409254**Instrument Type:**<sup>P</sup>**Data File:** 111116–3**End Date:** 11–NOV–16

| Samp ID | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|---------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| CCV09   | 1   | 13:43:18 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| PQL02   | 1   | 13:45:18 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |
| CCB09   | 1   | 13:48:10 | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  | X  |    | X  | X | X  | X  | X  | X  | X | X  |

**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** OPTIMA5**Start Date:** 02-NOV-16**Client Sdg:** 409254**Instrument Type:**P**Data File:** 110216-2**End Date:** 02-NOV-16

| Samp ID | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|---------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| S0.0    | 1   | 12:25:10 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| S0.1    | 1   | 12:28:01 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| S0.5    | 1   | 12:29:52 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| SCAL    | 1   | 12:32:42 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| S10     | 1   | 12:35:37 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ICV01   | 1   | 12:36:33 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ICB01   | 1   | 12:39:27 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| PQL01   | 1   | 12:42:18 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ICSA01  | 1   | 12:45:07 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ICSAB01 | 1   | 12:47:05 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| LR01    | 1   | 12:49:00 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| LR02    | 1   | 12:50:57 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCV01   | 1   | 12:54:04 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB01   | 1   | 12:56:57 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ZZZZZZ  | 1   | 13:09:07 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:11:59 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:14:51 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:17:41 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:20:33 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 5   | 13:23:23 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 13:26:13 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| PQL     | 1   | 13:29:06 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB     | 1   | 13:31:58 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCV     | 1   | 13:34:50 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB     | 1   | 13:37:43 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ZZZZZZ  | 1   | 13:40:33 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:43:24 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:46:15 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:49:06 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 5   | 13:51:56 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 13:54:47 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| PQL     | 1   | 13:57:41 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB     | 1   | 14:00:31 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCV     | 1   | 14:03:22 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB     | 1   | 14:06:15 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ZZZZZZ  | 1   | 14:09:07 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 14:11:59 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 14:14:50 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 14:17:41 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 14:20:32 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 5   | 14:23:23 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |

**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** OPTIMA5**Start Date:** 02-NOV-16**Client Sdg:** 409254**Instrument Type:**P**Data File:** 110216-2**End Date:** 02-NOV-16

| Samp ID    | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|------------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| CCV        | 1   | 14:26:14 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| PQL        | 1   | 14:29:08 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB        | 1   | 14:32:00 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCV        | 1   | 14:34:51 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB        | 1   | 14:37:44 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ZZZZZZ     | 1   | 14:40:36 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:43:28 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:46:19 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:49:10 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:52:01 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:54:52 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 14:57:43 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| PQL        | 1   | 15:00:34 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ICSA02     | 1   | 15:03:26 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ICSA02     | 1   | 15:05:25 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCV        | 1   | 15:07:22 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB        | 1   | 15:10:15 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ZZZZZZ     | 1   | 15:13:06 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 15:15:57 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 15:18:48 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 15:21:39 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 15:24:29 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 15:27:20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| PQL        | 1   | 15:30:10 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ICSA03     | 1   | 15:33:01 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| ICSA03     | 1   | 15:35:00 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCV02      | 1   | 15:36:56 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB02      | 1   | 15:39:49 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 1203658086 | 1   | 15:42:41 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 1203657517 | 1   | 15:45:32 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 1203658087 | 1   | 15:48:23 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 409254021  | 1   | 15:51:14 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 1203658088 | 1   | 15:54:04 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 1203657516 | 1   | 15:56:54 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 1203658090 | 5   | 15:59:44 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCV03      | 1   | 16:02:35 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB03      | 1   | 16:05:27 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 409254023  | 1   | 16:08:17 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 409254025  | 1   | 16:11:08 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 409254030  | 1   | 16:13:59 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 409254033  | 1   | 16:16:49 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |



**Metals**  
**–14–**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** OPTIMA5**Start Date:** 02–NOV–16**Client Sdg:** 409254**Instrument Type:**<sup>P</sup>**Data File:** 110216–2**End Date:** 02–NOV–16

| Samp ID   | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|-----------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| 409254035 | 1   | 16:19:39 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 409254037 | 1   | 16:22:29 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| 409254039 | 1   | 16:25:20 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCV04     | 1   | 16:28:10 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| PQL02     | 1   | 16:31:02 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |
| CCB04     | 1   | 16:33:55 |    |    | X  | X  |    | X  |    | X  |    |    |    | X  |    |    |    |    |   | X  | X  |    |    |   |    |

**Metals**  
**–14–**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** HG4**Start Date:** 10–NOV–16**Client Sdg:** 409254**Instrument Type:** <sup>AV</sup>**Data File:** 111016W1–5

| Samp ID | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|---------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| S0.0    | 1   | 10:40:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| S0.2    | 1   | 10:42:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| S0.5    | 1   | 10:43:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| S2.0    | 1   | 10:45:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| S5.0    | 1   | 10:47:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| S10.0   | 1   | 10:49:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ICV01   | 1   | 10:50:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ICB01   | 1   | 10:52:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CRDL01  | 1   | 10:54:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCV01   | 1   | 10:55:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB01   | 1   | 10:57:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 10:59:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 11:00:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB     | 1   | 11:02:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:14:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:16:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:17:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:19:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:21:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 5   | 11:22:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:24:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:26:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:27:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:29:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 11:31:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB     | 1   | 11:32:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:34:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 5   | 11:36:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:38:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:39:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:41:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:43:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:44:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:46:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:48:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:49:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 11:51:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB     | 1   | 11:53:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:54:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:56:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 11:58:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |

**Metals**  
**–14–**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** HG4**Start Date:** 10–NOV–16**Client Sdg:** 409254**Instrument Type:** <sup>AV</sup>**Data File:** 111016W1–5**End Date:** 10–NOV–16

| Samp ID | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|---------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| ZZZZZZ  | 1   | 11:59:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:01:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:03:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:05:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:06:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:08:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:10:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 12:11:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB     | 1   | 12:13:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:15:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:16:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:18:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:20:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:21:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:23:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:25:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:26:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:28:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:30:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 12:31:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB     | 1   | 12:33:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:35:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 12:36:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB     | 1   | 12:38:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:40:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:42:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:43:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:45:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:47:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:48:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:50:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:52:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:53:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 12:55:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV     | 1   | 12:57:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB     | 1   | 12:58:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:00:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:02:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:04:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:05:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ  | 1   | 13:07:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |

**Metals**  
**–14–**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** HG4**Start Date:** 10–NOV–16**Client Sdg:** 409254**Instrument Type:** <sup>AV</sup>**Data File:** 111016W1–5**End Date:** 10–NOV–16

| Samp ID    | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|------------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| ZZZZZZ     | 1   | 13:09:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 13:10:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:12:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:14:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:15:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV        | 1   | 13:17:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB        | 1   | 13:19:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:20:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:22:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:24:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:25:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 13:27:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:29:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:31:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:32:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:34:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:36:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| CCV02      | 1   | 13:37:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB02      | 1   | 13:39:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:41:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:42:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 13:44:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 13:46:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| 1203666311 | 1   | 13:47:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 1203657517 | 1   | 13:49:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 1203666312 | 1   | 13:51:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254021  | 1   | 13:53:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 1203657516 | 1   | 13:54:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 1203666313 | 1   | 13:56:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCV03      | 1   | 13:58:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB03      | 1   | 13:59:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:02:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:04:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 14:05:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:07:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:09:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:10:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:12:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:14:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 5   | 14:15:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:17:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |

**Metals**  
**-14-**  
**Analysis Run Log**

**Contract:** HAAL00201**Lab Code :** GEL**Inst Name:** HG4**Start Date:** 10-NOV-16**Client Sdg:** 409254**Instrument Type:** AV**Data File:** 111016W1-5**End Date:** 10-NOV-16

| Samp ID    | D/F | Run Time | Al | Sb | As | Ba | Be | Cd | Ca | Cr | Co | Cu | Fe | Pb | Mg | Mn | Hg | Ni | K | Se | Ag | Na | Tl | V | Zn |
|------------|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|----|----|---|----|
| CCV04      | 1   | 14:19:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB04      | 1   | 14:21:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:22:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:24:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:26:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| ZZZZZZ     | 1   | 14:27:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |    |    |   |    |
| 1203666315 | 5   | 14:29:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 1203666317 | 1   | 14:31:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254023  | 1   | 14:32:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254025  | 1   | 14:34:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254030  | 1   | 14:36:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254033  | 1   | 14:37:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCV05      | 1   | 14:39:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB05      | 1   | 14:41:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254035  | 1   | 14:42:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254037  | 1   | 14:44:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| 409254039  | 1   | 14:46:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCV06      | 1   | 14:48:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |
| CCB06      | 1   | 14:49:00 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | X  |    |   |    |    |    |    |   |    |

# Standards

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METALS  
-10-  
Instrument Detection Limits

SDG NO. 409254

Contract: HAAL00201

Lab Code: GEL

MDL Effective Date: 01-MAY-12

Instrument(s):

HG3

Verified on:

26-OCT-16

HG4

24-OCT-16

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|         |                | <u>Wavelength</u><br><u>(nm)</u> | <u>MDL</u><br><u>ug/L</u> | <u>RDL</u><br><u>ug/L</u> |
|---------|----------------|----------------------------------|---------------------------|---------------------------|
| MERCURY | <u>Analyte</u> |                                  |                           |                           |
| LIQUID  | Mercury        |                                  | 0.067                     | 0.2                       |
| SOLID   | Mercury        |                                  | 0.067                     | 0.2                       |

**METALS**  
**-10-**  
**Instrument Detection Limits**

**SDG NO.** 409254

**Contract:** HAAL00201

**Lab Code:** GEL

**MDL Effective Date:** 23-JAN-11

**Instrument(s):**

**Verified on:**

OPTIMA3

31-OCT-16

OPTIMA4

02-NOV-16

OPTIMA5

12-AUG-16

|        |                | <u>Wavelength</u> | <u>MDL</u>  | <u>RDL</u>  |
|--------|----------------|-------------------|-------------|-------------|
|        |                | <u>(nm)</u>       | <u>ug/L</u> | <u>ug/L</u> |
| ICP    | <u>Analyte</u> |                   |             |             |
| LIQUID | Aluminum       | 396.153           | 68.0        | 200         |
|        | Antimony       | 206.836           | 3.5         | 10.0        |
|        | Arsenic        | 188.979           | 5.0         | 30.0        |
|        | Barium         | 233.527           | 1.0         | 5.0         |
|        | Beryllium      | 313.107           | 1.0         | 5.0         |
|        | Cadmium        | 226.502           | 1.0         | 5.0         |
|        | Calcium        | 317.933           | 50.0        | 250         |
|        | Chromium       | 267.716           | 1.0         | 5.0         |
|        | Cobalt         | 228.616           | 1.0         | 5.0         |
|        | Copper         | 324.752           | 3.0         | 10.0        |
|        | Iron           | 238.204           | 30.0        | 250         |
|        | Lead           | 220.353           | 3.3         | 10.0        |
|        | Magnesium      | 279.077           | 110         | 300         |
|        | Manganese      | 257.61            | 2.0         | 10.0        |
|        | Nickel         | 231.604           | 1.5         | 5.0         |
|        | Potassium      | 766.49            | 50.0        | 250         |
|        | Selenium       | 196.026           | 6.0         | 30.0        |
|        | Silver         | 328.068           | 1.0         | 5.0         |
|        | Sodium         | 589.592           | 100         | 250         |
|        | Thallium       | 190.801           | 5.0         | 20.0        |
|        | Vanadium       | 292.402           | 1.0         | 5.0         |
|        | Zinc           | 213.857           | 3.3         | 10.0        |
| SOLID  | Aluminum       | 396.153           | 68.0        | 200         |
|        | Antimony       | 206.836           | 3.3         | 10.0        |
|        | Arsenic        | 188.979           | 5.0         | 30.0        |
|        | Barium         | 233.527           | 1.0         | 5.0         |
|        | Beryllium      | 313.107           | 1.0         | 5.0         |
|        | Cadmium        | 226.502           | 1.0         | 5.0         |
|        | Calcium        | 317.933           | 80.0        | 250         |
|        | Chromium       | 267.716           | 1.5         | 5.0         |
|        | Cobalt         | 228.616           | 1.5         | 5.0         |
|        | Copper         | 324.752           | 3.0         | 10.0        |
|        | Iron           | 238.204           | 80.0        | 250         |
|        | Lead           | 220.353           | 3.3         | 10.0        |



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**METALS**  
**-10-**  
**Instrument Detection Limits**

**SDG NO.** 409254

**Contract:** HAAL00201

**Lab Code:** GEL

**MDL Effective Date:** 23-JAN-11

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| ICP | <u>Analyte</u> | <u>Wavelength</u> | <u>MDL</u>  | <u>RDL</u>  |
|-----|----------------|-------------------|-------------|-------------|
|     |                | <u>(nm)</u>       | <u>ug/L</u> | <u>ug/L</u> |
|     | Magnesium      | 279.077           | 85.0        | 300         |
|     | Manganese      | 257.61            | 2.0         | 10.0        |
|     | Nickel         | 231.604           | 1.5         | 5.0         |
|     | Potassium      | 766.49            | 64.0        | 250         |
|     | Selenium       | 196.026           | 5.0         | 30.0        |
|     | Silver         | 328.068           | 1.0         | 5.0         |
|     | Sodium         | 589.592           | 70.0        | 250         |
|     | Thallium       | 190.801           | 5.0         | 20.0        |
|     | Vanadium       | 292.402           | 1.0         | 5.0         |
|     | Zinc           | 213.857           | 4.0         | 10.0        |

**METALS**  
**–11–**  
**Interelement Correction Factors**

Lab Code: GELGEL Job No: **409254**

Contract: HAAL00201

Instrument: OPTIMA3

Effective Dates: **02–NOV–16**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Aluminum | Antimony | Arsenic | Barium   | Beryllium |
|-----------------|-------------------|----------|----------|---------|----------|-----------|
| <b>Parmname</b> | <b>Wavelength</b> |          |          |         |          |           |
| Aluminum        | 396.153           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Antimony        | 206.836           | 0.02562  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Arsenic         | 188.979           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Barium          | 233.527           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Beryllium       | 313.107           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Boron           | 249.677           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Cadmium         | 226.502           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Calcium         | 317.933           | 0.01516  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Chromium        | 267.716           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Cobalt          | 228.616           | 0.00000  | 0.00000  | 0.00000 | –0.87639 | 0.00000   |
| Copper          | 324.752           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Iron            | 238.204           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Lead            | 220.353           | 0.35399  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Magnesium       | 279.077           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Manganese       | 257.61            | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Molybdenum      | 202.031           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Nickel          | 231.604           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Phosphorous     | 214.914           | –0.12055 | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Potassium       | 766.49            | 0.00000  | 0.00000  | 0.00000 | 4.75962  | 0.00000   |
| Selenium        | 196.026           | 0.00039  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Silicon         | 251.611           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Silver          | 328.068           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Sodium          | 589.592           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Strontium       | 421.552           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Sulfur          | 181.975           | –0.16325 | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Thallium        | 190.801           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Tin             | 189.927           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Titanium        | 334.94            | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Uranium         | 367.007           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Vanadium        | 292.402           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Zinc            | 231.857           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA3

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|             |            | Boron   | Cadmium | Calcium  | Chromium | Cobalt   |
|-------------|------------|---------|---------|----------|----------|----------|
| Parmname    | Wavelength |         |         |          |          |          |
| Aluminum    | 396.153    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Antimony    | 206.836    | 0.00000 | 0.00000 | 0.00000  | 24.7409  | 0.00000  |
| Arsenic     | 188.979    | 0.00000 | 0.00000 | 0.00000  | -3.41126 | 0.00000  |
| Barium      | 233.527    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Beryllium   | 313.107    | 0.00000 | 0.00000 | -0.01216 | -0.19721 | 0.00000  |
| Boron       | 249.677    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 4.60567  |
| Cadmium     | 226.502    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | -0.14252 |
| Calcium     | 317.933    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Chromium    | 267.716    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Cobalt      | 228.616    | 0.00000 | 0.00000 | 0.00000  | 0.33494  | 0.00000  |
| Copper      | 324.752    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Iron        | 238.204    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Lead        | 220.353    | 0.00000 | 0.00000 | -0.02929 | 0.00000  | -1.93795 |
| Magnesium   | 279.077    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Manganese   | 257.61     | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Molybdenum  | 202.031    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Nickel      | 231.604    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | -0.22903 |
| Phosphorous | 214.914    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Potassium   | 766.49     | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Selenium    | 196.026    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Silicon     | 251.611    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Silver      | 328.068    | 0.00000 | 0.00000 | 0.01389  | 0.00000  | 0.00000  |
| Sodium      | 589.592    | 0.00000 | 0.00000 | -0.21290 | 0.00000  | 0.00000  |
| Strontium   | 421.552    | 0.00000 | 0.00000 | 0.03376  | 0.00000  | 0.00000  |
| Sulfur      | 181.975    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Thallium    | 190.801    | 0.00000 | 0.00000 | 0.00000  | 0.53517  | 6.24833  |
| Tin         | 189.927    | 0.00000 | 0.00000 | 0.01438  | 0.00000  | 0.00000  |
| Titanium    | 334.94     | 0.00000 | 0.00000 | -0.05594 | 0.33181  | 0.00000  |
| Uranium     | 367.007    | 0.00000 | 0.00000 | 0.29986  | 0.00000  | 0.00000  |
| Vanadium    | 292.402    | 0.00000 | 0.00000 | 0.00000  | -1.86449 | 0.00000  |
| Zinc        | 231.857    | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000  |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GELGEL Job No: **409254**

Contract: HAAL00201

Instrument: OPTIMA3

Effective Dates: **02-NOV-16**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

| Parmname    | Wavelength | Copper   | Iron     | Lead    | Magnesium | Manganese |
|-------------|------------|----------|----------|---------|-----------|-----------|
| Aluminum    | 396.153    | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000   |
| Antimony    | 206.836    | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000   |
| Arsenic     | 188.979    | 0.00000  | 0.06032  | 0.00000 | 0.00000   | 0.00000   |
| Barium      | 233.527    | 0.00000  | 0.02681  | 0.00000 | 0.00000   | 0.00000   |
| Beryllium   | 313.107    | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000   |
| Boron       | 249.677    | 0.00000  | -3.90259 | 0.00000 | 0.00000   | 0.00000   |
| Cadmium     | 226.502    | 0.00000  | 0.11227  | 0.00000 | 0.00000   | 0.00000   |
| Calcium     | 317.933    | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000   |
| Chromium    | 267.716    | 0.00000  | -0.00797 | 0.00000 | -0.02012  | 0.34259   |
| Cobalt      | 228.616    | 0.00000  | 0.06981  | 0.00000 | 0.00000   | 0.00000   |
| Copper      | 324.752    | 0.00000  | -0.05873 | 0.00000 | -0.00424  | 0.00000   |
| Iron        | 238.204    | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000   |
| Lead        | 220.353    | -0.15530 | -0.04221 | 0.00000 | 0.00000   | 0.00000   |
| Magnesium   | 279.077    | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000   |
| Manganese   | 257.61     | 0.00000  | -0.04765 | 0.00000 | 0.03774   | 0.00000   |
| Molybdenum  | 202.031    | 0.00000  | -0.03029 | 0.00000 | 0.00000   | 0.00000   |
| Nickel      | 231.604    | 0.00000  | 0.05298  | 0.00000 | 0.00000   | 0.00000   |
| Phosphorous | 214.914    | 9.13825  | 1.00849  | 0.00000 | 0.00000   | 0.00000   |
| Potassium   | 766.49     | 0.00000  | -1.07116 | 0.00000 | 0.00000   | 0.00000   |
| Selenium    | 196.026    | 0.00000  | -0.47682 | 0.00000 | 0.00000   | 0.00000   |
| Silicon     | 251.611    | 0.00000  | 0.18532  | 0.00000 | 0.00000   | 0.00000   |
| Silver      | 328.068    | 0.00000  | -0.17476 | 0.00000 | 0.00000   | 0.00000   |
| Sodium      | 589.592    | 0.00000  | 0.00000  | 0.00000 | 0.60266   | 0.00000   |
| Strontium   | 421.552    | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000   |
| Sulfur      | 181.975    | 0.00000  | 0.60462  | 0.00000 | 0.00000   | -4.26995  |
| Thallium    | 190.801    | 0.00000  | 0.00000  | 0.00000 | -0.01480  | 0.00000   |
| Tin         | 189.927    | 0.00000  | -0.01709 | 0.00000 | 0.00761   | 0.00000   |
| Titanium    | 334.94     | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000   |
| Uranium     | 367.007    | 0.00000  | 4.12457  | 0.00000 | 0.00000   | 0.00000   |
| Vanadium    | 292.402    | 0.00000  | -0.13469 | 0.00000 | 0.00000   | 0.00000   |
| Zinc        | 231.857    | 1.07062  | 0.11943  | 0.00000 | 0.05880   | 0.00000   |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA3

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|             |            | Molybdenum | Nickel   | Phosphorous | Potassium | Selenium |
|-------------|------------|------------|----------|-------------|-----------|----------|
| Parmname    | Wavelength |            |          |             |           |          |
| Aluminum    | 396.153    | 36.2196    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Antimony    | 206.836    | -13.3485   | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Arsenic     | 188.979    | -6.45607   | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Barium      | 233.527    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Beryllium   | 313.107    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Boron       | 249.677    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Cadmium     | 226.502    | 0.00000    | -0.35033 | 0.00000     | 0.00000   | 0.00000  |
| Calcium     | 317.933    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Chromium    | 267.716    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Cobalt      | 228.616    | -1.58377   | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Copper      | 324.752    | 0.50166    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Iron        | 238.204    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Lead        | 220.353    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Magnesium   | 279.077    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Manganese   | 257.61     | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Molybdenum  | 202.031    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Nickel      | 231.604    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Phosphorous | 214.914    | 9.80072    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Potassium   | 766.49     | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Selenium    | 196.026    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Silicon     | 251.611    | 11.8775    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Silver      | 328.068    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Sodium      | 589.592    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Strontium   | 421.552    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Sulfur      | 181.975    | -4.85097   | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Thallium    | 190.801    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Tin         | 189.927    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Titanium    | 334.94     | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Uranium     | 367.007    | 0.00000    | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Vanadium    | 292.402    | -9.76156   | 0.00000  | 0.00000     | 0.00000   | 0.00000  |
| Zinc        | 231.857    | 0.00000    | 6.69795  | 0.00000     | 0.00000   | 0.00000  |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA3

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|             |            | Silicon | Silver  | Sodium  | Strontium | Sulfur  |
|-------------|------------|---------|---------|---------|-----------|---------|
| Parmname    | Wavelength |         |         |         |           |         |
| Aluminum    | 396.153    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Antimony    | 206.836    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Arsenic     | 188.979    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Barium      | 233.527    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Beryllium   | 313.107    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Boron       | 249.677    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Cadmium     | 226.502    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Calcium     | 317.933    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Chromium    | 267.716    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Cobalt      | 228.616    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Copper      | 324.752    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Iron        | 238.204    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Lead        | 220.353    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Magnesium   | 279.077    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Manganese   | 257.61     | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Molybdenum  | 202.031    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Nickel      | 231.604    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Phosphorous | 214.914    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Potassium   | 766.49     | 0.00000 | 0.00000 | 0.04035 | 0.00000   | 0.00000 |
| Selenium    | 196.026    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Silicon     | 251.611    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Silver      | 328.068    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Sodium      | 589.592    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Strontium   | 421.552    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Sulfur      | 181.975    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Thallium    | 190.801    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Tin         | 189.927    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Titanium    | 334.94     | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Uranium     | 367.007    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Vanadium    | 292.402    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |
| Zinc        | 231.857    | 0.00000 | 0.00000 | 0.00000 | 0.00000   | 0.00000 |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA3

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|             |            | Thallium | Tin      | Titanium | Uranium  | Vanadium |
|-------------|------------|----------|----------|----------|----------|----------|
| Parmname    | Wavelength |          |          |          |          |          |
| Aluminum    | 396.153    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Antimony    | 206.836    | 0.00000  | -2.81667 | -1.26734 | 0.00000  | -1.88188 |
| Arsenic     | 188.979    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Barium      | 233.527    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Beryllium   | 313.107    | 0.00000  | 0.00000  | 0.00000  | -0.23820 | 0.00000  |
| Boron       | 249.677    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Cadmium     | 226.502    | 0.00000  | 0.00000  | 0.21398  | 0.00000  | 0.00000  |
| Calcium     | 317.933    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Chromium    | 267.716    | 0.00000  | 0.00000  | 0.00000  | 0.70193  | -0.46390 |
| Cobalt      | 228.616    | 0.00000  | 0.00000  | 2.08007  | 0.00000  | 0.00000  |
| Copper      | 324.752    | 0.00000  | 0.00000  | 0.00000  | -0.53024 | 0.00000  |
| Iron        | 238.204    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Lead        | 220.353    | 0.00000  | 0.00000  | 0.00000  | 0.65553  | 0.00000  |
| Magnesium   | 279.077    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Manganese   | 257.61     | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Molybdenum  | 202.031    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Nickel      | 231.604    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Phosphorous | 214.914    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Potassium   | 766.49     | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Selenium    | 196.026    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Silicon     | 251.611    | 0.00000  | 1.96043  | 0.00000  | 0.00000  | 0.00000  |
| Silver      | 328.068    | 0.00000  | 0.00000  | 0.00000  | 0.47792  | -1.48099 |
| Sodium      | 589.592    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Strontium   | 421.552    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Sulfur      | 181.975    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Thallium    | 190.801    | 0.00000  | 0.00000  | -9.31052 | -0.33161 | 0.96147  |
| Tin         | 189.927    | 0.00000  | 0.00000  | -3.52795 | 0.00000  | 0.00000  |
| Titanium    | 334.94     | 0.00000  | 0.00000  | 0.00000  | 0.48348  | 0.00000  |
| Uranium     | 367.007    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |
| Vanadium    | 292.402    | 0.00000  | 0.00000  | 0.72993  | -0.61864 | 0.00000  |
| Zinc        | 231.857    | 0.00000  | 0.00000  | 0.00000  | 0.00000  | 0.00000  |

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**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA3

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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|             |            | Zinc    |
|-------------|------------|---------|
| Parmname    | Wavelength |         |
| Aluminum    | 396.153    | 0.00000 |
| Antimony    | 206.836    | 0.00000 |
| Arsenic     | 188.979    | 0.00000 |
| Barium      | 233.527    | 0.00000 |
| Beryllium   | 313.107    | 0.00000 |
| Boron       | 249.677    | 0.00000 |
| Cadmium     | 226.502    | 0.00000 |
| Calcium     | 317.933    | 0.00000 |
| Chromium    | 267.716    | 0.00000 |
| Cobalt      | 228.616    | 0.00000 |
| Copper      | 324.752    | 0.00000 |
| Iron        | 238.204    | 0.00000 |
| Lead        | 220.353    | 0.00000 |
| Magnesium   | 279.077    | 0.00000 |
| Manganese   | 257.61     | 0.00000 |
| Molybdenum  | 202.031    | 0.00000 |
| Nickel      | 231.604    | 0.00000 |
| Phosphorous | 214.914    | 0.00000 |
| Potassium   | 766.49     | 0.00000 |
| Selenium    | 196.026    | 0.00000 |
| Silicon     | 251.611    | 0.00000 |
| Silver      | 328.068    | 0.00000 |
| Sodium      | 589.592    | 0.00000 |
| Strontium   | 421.552    | 0.00000 |
| Sulfur      | 181.975    | 0.00000 |
| Thallium    | 190.801    | 0.00000 |
| Tin         | 189.927    | 0.00000 |
| Titanium    | 334.94     | 0.00000 |
| Uranium     | 367.007    | 0.00000 |
| Vanadium    | 292.402    | 0.00000 |
| Zinc        | 231.857    | 0.00000 |



**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA4

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Aluminum | Antimony | Arsenic | Barium   | Beryllium |
|-----------------|-------------------|----------|----------|---------|----------|-----------|
| <b>Parmname</b> | <b>Wavelength</b> |          |          |         |          |           |
| Aluminum        | 396.153           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Antimony        | 206.836           | -0.05322 | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Arsenic         | 188.979           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Barium          | 233.527           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Beryllium       | 313.107           | 0.00000  | 0.00000  | 0.00000 | 24.5915  | 0.00000   |
| Boron           | 249.677           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Cadmium         | 226.502           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Chromium        | 267.716           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Cobalt          | 228.616           | 0.00000  | 0.00000  | 0.00000 | -1.17464 | 0.00000   |
| Copper          | 324.752           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Lead            | 220.353           | -0.05094 | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Magnesium       | 279.077           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Manganese       | 257.61            | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Molybdenum      | 202.031           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Nickel          | 231.604           | 0.00000  | -0.00034 | 0.00000 | 0.00000  | 0.00000   |
| Phosphorous     | 214.914           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Potassium       | 766.49            | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Selenium        | 196.026           | 0.04568  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Silicon         | 251.611           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Silver          | 328.068           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Strontium       | 421.552           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Sulfur          | 181.975           | 0.07795  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Thallium        | 190.801           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Tin             | 189.927           | 0.00824  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Titanium        | 334.94            | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Uranium         | 367.007           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Vanadium        | 292.402           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |
| Zinc            | 213.857           | 0.00000  | 0.00000  | 0.00000 | 0.00000  | 0.00000   |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA4

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Boron   | Cadmium | Chromium | Cobalt   | Copper  |
|-----------------|-------------------|---------|---------|----------|----------|---------|
| <b>Parmname</b> | <b>Wavelength</b> |         |         |          |          |         |
| Aluminum        | 396.153           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Antimony        | 206.836           | 0.00000 | 0.00000 | 15.4644  | 0.00000  | 0.00000 |
| Arsenic         | 188.979           | 0.00000 | 0.00000 | -9.05998 | 0.00000  | 0.00000 |
| Barium          | 233.527           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Beryllium       | 313.107           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Boron           | 249.677           | 0.00000 | 0.00000 | 0.00000  | 0.00338  | 0.00000 |
| Cadmium         | 226.502           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Chromium        | 267.716           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Cobalt          | 228.616           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Copper          | 324.752           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Lead            | 220.353           | 0.00000 | 0.00000 | 0.00000  | -0.00076 | 0.27984 |
| Magnesium       | 279.077           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Manganese       | 257.61            | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Molybdenum      | 202.031           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Nickel          | 231.604           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Phosphorous     | 214.914           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Potassium       | 766.49            | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Selenium        | 196.026           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Silicon         | 251.611           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Silver          | 328.068           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Strontium       | 421.552           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Sulfur          | 181.975           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Thallium        | 190.801           | 0.00000 | 0.00000 | 0.00000  | 0.00152  | 0.00000 |
| Tin             | 189.927           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Titanium        | 334.94            | 0.00000 | 0.00000 | 0.28288  | 0.00000  | 0.00000 |
| Uranium         | 367.007           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 0.00000 |
| Vanadium        | 292.402           | 0.00000 | 0.00000 | -1.66775 | 0.00000  | 0.00000 |
| Zinc            | 213.857           | 0.00000 | 0.00000 | 0.00000  | 0.00000  | 1.06133 |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA4

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Lead    | Magnesium | Manganese | Molybdenum | Nickel  |
|-----------------|-------------------|---------|-----------|-----------|------------|---------|
| <b>Parmname</b> | <b>Wavelength</b> |         |           |           |            |         |
| Aluminum        | 396.153           | 0.00000 | 0.00000   | 0.00000   | 0.04684    | 0.00000 |
| Antimony        | 206.836           | 0.00000 | 0.00000   | 0.00000   | -0.01264   | 0.00000 |
| Arsenic         | 188.979           | 0.00000 | 0.00000   | 0.00000   | 0.00199    | 0.00000 |
| Barium          | 233.527           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Beryllium       | 313.107           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Boron           | 249.677           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Cadmium         | 226.502           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Chromium        | 267.716           | 0.00000 | 0.00560   | 0.00039   | 0.00000    | 0.00000 |
| Cobalt          | 228.616           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Copper          | 324.752           | 0.00000 | -0.01322  | 0.00000   | 0.00530    | 0.00000 |
| Lead            | 220.353           | 0.00000 | 0.00963   | 0.00000   | -0.00157   | 0.00000 |
| Magnesium       | 279.077           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Manganese       | 257.61            | 0.00000 | 0.03616   | 0.00000   | 0.00000    | 0.00000 |
| Molybdenum      | 202.031           | 0.00000 | -0.01060  | 0.00000   | 0.00000    | 0.00000 |
| Nickel          | 231.604           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Phosphorous     | 214.914           | 0.00000 | 0.00000   | 0.00000   | 0.00848    | 0.00000 |
| Potassium       | 766.49            | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Selenium        | 196.026           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Silicon         | 251.611           | 0.00000 | 0.00000   | 0.00000   | 0.01085    | 0.00000 |
| Silver          | 328.068           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Strontium       | 421.552           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Sulfur          | 181.975           | 0.00000 | 0.00000   | 0.00000   | -0.00784   | 0.00000 |
| Thallium        | 190.801           | 0.00000 | 0.00000   | -0.00152  | 0.00000    | 0.00000 |
| Tin             | 189.927           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Titanium        | 334.94            | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Uranium         | 367.007           | 0.00000 | 0.00000   | 0.00000   | 0.00000    | 0.00000 |
| Vanadium        | 292.402           | 0.00000 | 0.00000   | 0.00000   | -0.00149   | 0.00000 |
| Zinc            | 213.857           | 0.00000 | 0.04937   | 0.00000   | 0.00000    | 0.00623 |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA4

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Phosphorous | Potassium | Selenium | Silicon | Silver  |
|-----------------|-------------------|-------------|-----------|----------|---------|---------|
| <b>Parmname</b> | <b>Wavelength</b> |             |           |          |         |         |
| Aluminum        | 396.153           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Antimony        | 206.836           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Arsenic         | 188.979           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Barium          | 233.527           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Beryllium       | 313.107           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Boron           | 249.677           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Cadmium         | 226.502           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Chromium        | 267.716           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Cobalt          | 228.616           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Copper          | 324.752           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Lead            | 220.353           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Magnesium       | 279.077           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Manganese       | 257.61            | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Molybdenum      | 202.031           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Nickel          | 231.604           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Phosphorous     | 214.914           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Potassium       | 766.49            | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Selenium        | 196.026           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Silicon         | 251.611           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Silver          | 328.068           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Strontium       | 421.552           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Sulfur          | 181.975           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Thallium        | 190.801           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Tin             | 189.927           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Titanium        | 334.94            | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Uranium         | 367.007           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Vanadium        | 292.402           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |
| Zinc            | 213.857           | 0.00000     | 0.00000   | 0.00000  | 0.00000 | 0.00000 |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA4

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Strontium | Sulfur  | Thallium | Tin      | Titanium |
|-----------------|-------------------|-----------|---------|----------|----------|----------|
| <b>Parmname</b> | <b>Wavelength</b> |           |         |          |          |          |
| Aluminum        | 396.153           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Antimony        | 206.836           | 0.00000   | 0.00000 | 0.00000  | -0.00108 | -0.00228 |
| Arsenic         | 188.979           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Barium          | 233.527           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Beryllium       | 313.107           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00053  |
| Boron           | 249.677           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Cadmium         | 226.502           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Chromium        | 267.716           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Cobalt          | 228.616           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00202  |
| Copper          | 324.752           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Lead            | 220.353           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | -0.00060 |
| Magnesium       | 279.077           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Manganese       | 257.61            | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Molybdenum      | 202.031           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Nickel          | 231.604           | 0.00000   | 0.00000 | 0.00054  | 0.00000  | 0.00000  |
| Phosphorous     | 214.914           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Potassium       | 766.49            | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Selenium        | 196.026           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Silicon         | 251.611           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Silver          | 328.068           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Strontium       | 421.552           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Sulfur          | 181.975           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Thallium        | 190.801           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | -0.00217 |
| Tin             | 189.927           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | -0.00263 |
| Titanium        | 334.94            | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Uranium         | 367.007           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |
| Vanadium        | 292.402           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00093  |
| Zinc            | 213.857           | 0.00000   | 0.00000 | 0.00000  | 0.00000  | 0.00000  |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA4

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Uranium  | Vanadium | Zinc    |
|-----------------|-------------------|----------|----------|---------|
| <b>Parmname</b> | <b>Wavelength</b> |          |          |         |
| Aluminum        | 396.153           | 0.00000  | 0.00000  | 0.00000 |
| Antimony        | 206.836           | 0.00000  | -0.00079 | 0.00000 |
| Arsenic         | 188.979           | 0.00000  | 0.00000  | 0.00000 |
| Barium          | 233.527           | 0.00000  | -0.00130 | 0.00000 |
| Beryllium       | 313.107           | -0.36137 | 0.00000  | 0.00000 |
| Boron           | 249.677           | 0.00000  | 0.00000  | 0.00000 |
| Cadmium         | 226.502           | 0.00000  | 0.00000  | 0.00000 |
| Chromium        | 267.716           | 0.90386  | -0.00039 | 0.00000 |
| Cobalt          | 228.616           | 0.00000  | 0.00000  | 0.00000 |
| Copper          | 324.752           | -0.79680 | 0.00000  | 0.00000 |
| Lead            | 220.353           | 1.11963  | 0.00000  | 0.00000 |
| Magnesium       | 279.077           | 0.00000  | 0.00000  | 0.00000 |
| Manganese       | 257.61            | 0.00000  | 0.00000  | 0.00000 |
| Molybdenum      | 202.031           | 0.00000  | 0.00000  | 0.00000 |
| Nickel          | 231.604           | 0.00000  | 0.00000  | 0.00000 |
| Phosphorous     | 214.914           | 0.00000  | 0.00000  | 0.00000 |
| Potassium       | 766.49            | 0.00000  | 0.00000  | 0.00000 |
| Selenium        | 196.026           | -1.08574 | 0.00000  | 0.00000 |
| Silicon         | 251.611           | 0.00000  | 0.00000  | 0.00000 |
| Silver          | 328.068           | 0.57358  | -0.00068 | 0.00000 |
| Strontium       | 421.552           | 0.00000  | 0.00000  | 0.00000 |
| Sulfur          | 181.975           | 0.00000  | 0.00000  | 0.00000 |
| Thallium        | 190.801           | 0.00000  | 0.00000  | 0.00000 |
| Tin             | 189.927           | 0.00000  | 0.00000  | 0.00000 |
| Titanium        | 334.94            | 0.52240  | 0.00000  | 0.00000 |
| Uranium         | 367.007           | 0.00000  | 0.00000  | 0.00000 |
| Vanadium        | 292.402           | -0.36650 | 0.00000  | 0.00000 |
| Zinc            | 213.857           | 0.00000  | 0.00000  | 0.00000 |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA5

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Aluminum | Antimony | Arsenic | Beryllium | Boron   |
|-----------------|-------------------|----------|----------|---------|-----------|---------|
| <b>Parmname</b> | <b>Wavelength</b> |          |          |         |           |         |
| Aluminum        | 396.153           | 0.00000  | -0.02532 | 0.00000 | 0.00000   | 0.00000 |
| Antimony        | 206.836           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Arsenic         | 188.979           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Beryllium       | 313.107           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Boron           | 249.677           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Cadmium         | 226.502           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Calcium         | 317.933           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Chromium        | 267.716           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Cobalt          | 228.616           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Copper          | 324.752           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Iron            | 238.204           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Lead            | 220.353           | -0.05916 | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Magnesium       | 279.077           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Manganese       | 257.61            | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Molybdenum      | 202.031           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Nickel          | 231.604           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Phosphorous     | 214.914           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Potassium       | 766.49            | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Selenium        | 196.026           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Silver          | 328.068           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Strontium       | 421.552           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Sulfur          | 181.975           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Thallium        | 190.801           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Tin             | 189.927           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Titanium        | 334.94            | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Uranium         | 367.007           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Vanadium        | 292.402           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |
| Zinc            | 213.857           | 0.00000  | 0.00000  | 0.00000 | 0.00000   | 0.00000 |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA5

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Cadmium | Calcium  | Chromium | Cobalt  | Copper  |
|-----------------|-------------------|---------|----------|----------|---------|---------|
| <b>Parmname</b> | <b>Wavelength</b> |         |          |          |         |         |
| Aluminum        | 396.153           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Antimony        | 206.836           | 0.00000 | 0.00000  | 10.4866  | 0.00000 | 0.00000 |
| Arsenic         | 188.979           | 0.00000 | 0.00000  | -5.03740 | 0.00000 | 0.00000 |
| Beryllium       | 313.107           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Boron           | 249.677           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Cadmium         | 226.502           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Calcium         | 317.933           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Chromium        | 267.716           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Cobalt          | 228.616           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Copper          | 324.752           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Iron            | 238.204           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Lead            | 220.353           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Magnesium       | 279.077           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Manganese       | 257.61            | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Molybdenum      | 202.031           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Nickel          | 231.604           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Phosphorous     | 214.914           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 10.0639 |
| Potassium       | 766.49            | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Selenium        | 196.026           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Silver          | 328.068           | 0.00000 | -0.00518 | 0.00000  | 0.00000 | 0.00000 |
| Strontium       | 421.552           | 0.00000 | 0.00984  | 0.00000  | 0.00000 | 0.00000 |
| Sulfur          | 181.975           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Thallium        | 190.801           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Tin             | 189.927           | 0.00000 | -0.00886 | 0.00000  | 0.00000 | 0.00000 |
| Titanium        | 334.94            | 0.00000 | -0.01900 | 0.36160  | 0.00000 | 0.00000 |
| Uranium         | 367.007           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.00000 |
| Vanadium        | 292.402           | 0.00000 | 0.00000  | -1.40560 | 0.00000 | 0.00000 |
| Zinc            | 213.857           | 0.00000 | 0.00000  | 0.00000  | 0.00000 | 0.64860 |



**METALS**  
**–11–**  
**Interelement Correction Factors**

Lab Code: GELGEL Job No: **409254**

Contract: HAAL00201

Instrument: OPTIMA5

Effective Dates: **02–NOV–16**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Iron     | Lead     | Magnesium | Manganese | Molybdenum |
|-----------------|-------------------|----------|----------|-----------|-----------|------------|
| <b>Parmname</b> | <b>Wavelength</b> |          |          |           |           |            |
| Aluminum        | 396.153           | 0.00000  | –0.02625 | 0.00000   | 0.00000   | 0.00000    |
| Antimony        | 206.836           | 0.00593  | 0.00000  | 0.00000   | 0.00000   | –7.85170   |
| Arsenic         | 188.979           | 0.02454  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Beryllium       | 313.107           | 0.00000  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Boron           | 249.677           | 0.22480  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Cadmium         | 226.502           | 0.06277  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Calcium         | 317.933           | 0.00000  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Chromium        | 267.716           | 0.00909  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Cobalt          | 228.616           | 0.09141  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Copper          | 324.752           | –0.05782 | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Iron            | 238.204           | 0.00000  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Lead            | 220.353           | 0.00000  | 0.00000  | 0.00000   | 0.00000   | –1.59380   |
| Magnesium       | 279.077           | 0.00000  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Manganese       | 257.61            | –0.01882 | 0.00000  | 0.03333   | 0.00000   | 0.00000    |
| Molybdenum      | 202.031           | –0.07750 | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Nickel          | 231.604           | 0.02898  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Phosphorous     | 214.914           | 0.54770  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Potassium       | 766.49            | 0.17724  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Selenium        | 196.026           | 0.04803  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Silver          | 328.068           | –0.03120 | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Strontium       | 421.552           | 0.05682  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Sulfur          | 181.975           | –0.34914 | 0.00000  | 0.00000   | 0.00000   | –4.28470   |
| Thallium        | 190.801           | 0.09856  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Tin             | 189.927           | 0.00000  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Titanium        | 334.94            | 0.00000  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Uranium         | 367.007           | 5.87069  | 0.00000  | 0.00000   | 0.00000   | 0.00000    |
| Vanadium        | 292.402           | –0.12117 | 0.00000  | 0.00000   | 0.00000   | –5.75030   |
| Zinc            | 213.857           | 0.14316  | 0.00000  | 0.06842   | 0.00000   | 0.00000    |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA5

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Nickel  | Phosphorous | Potassium | Selenium | Silver  |
|-----------------|-------------------|---------|-------------|-----------|----------|---------|
| <b>Parmname</b> | <b>Wavelength</b> |         |             |           |          |         |
| Aluminum        | 396.153           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Antimony        | 206.836           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Arsenic         | 188.979           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Beryllium       | 313.107           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Boron           | 249.677           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Cadmium         | 226.502           | 0.72750 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Calcium         | 317.933           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Chromium        | 267.716           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Cobalt          | 228.616           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Copper          | 324.752           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Iron            | 238.204           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Lead            | 220.353           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Magnesium       | 279.077           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Manganese       | 257.61            | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Molybdenum      | 202.031           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Nickel          | 231.604           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Phosphorous     | 214.914           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Potassium       | 766.49            | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Selenium        | 196.026           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Silver          | 328.068           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Strontium       | 421.552           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Sulfur          | 181.975           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Thallium        | 190.801           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Tin             | 189.927           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Titanium        | 334.94            | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Uranium         | 367.007           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Vanadium        | 292.402           | 0.00000 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |
| Zinc            | 213.857           | 6.31820 | 0.00000     | 0.00000   | 0.00000  | 0.00000 |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA5

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|                 |                   | Strontium | Sulfur  | Thallium | Tin     | Titanium |
|-----------------|-------------------|-----------|---------|----------|---------|----------|
| <b>Parmname</b> | <b>Wavelength</b> |           |         |          |         |          |
| Aluminum        | 396.153           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Antimony        | 206.836           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | -2.28970 |
| Arsenic         | 188.979           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | -2.98850 |
| Beryllium       | 313.107           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | -1.73690 |
| Boron           | 249.677           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Cadmium         | 226.502           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Calcium         | 317.933           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Chromium        | 267.716           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Cobalt          | 228.616           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Copper          | 324.752           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Iron            | 238.204           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Lead            | 220.353           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Magnesium       | 279.077           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Manganese       | 257.61            | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Molybdenum      | 202.031           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Nickel          | 231.604           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Phosphorous     | 214.914           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Potassium       | 766.49            | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Selenium        | 196.026           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Silver          | 328.068           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Strontium       | 421.552           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Sulfur          | 181.975           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Thallium        | 190.801           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | -7.91580 |
| Tin             | 189.927           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | -3.11170 |
| Titanium        | 334.94            | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Uranium         | 367.007           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Vanadium        | 292.402           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |
| Zinc            | 213.857           | 0.00000   | 0.00000 | 0.00000  | 0.00000 | 0.00000  |

**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 409254

Contract: HAAL00201

Instrument: OPTIMA5

Effective Dates: 02-NOV-16

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

|             |            | Uranium  | Vanadium | Zinc    |
|-------------|------------|----------|----------|---------|
| Parmname    | Wavelength |          |          |         |
| Aluminum    | 396.153    | 0.00000  | 0.00000  | 0.00000 |
| Antimony    | 206.836    | 0.00000  | 0.00000  | 0.00000 |
| Arsenic     | 188.979    | 0.00000  | 0.00000  | 0.00000 |
| Beryllium   | 313.107    | 0.00000  | 0.00000  | 0.00000 |
| Boron       | 249.677    | 0.00000  | 0.00000  | 0.00000 |
| Cadmium     | 226.502    | 0.00000  | 0.00000  | 0.00000 |
| Calcium     | 317.933    | 0.00000  | 0.00000  | 0.00000 |
| Chromium    | 267.716    | 0.00000  | -0.79750 | 0.00000 |
| Cobalt      | 228.616    | 0.00000  | 0.00000  | 0.00000 |
| Copper      | 324.752    | -0.69646 | 0.00000  | 0.00000 |
| Iron        | 238.204    | 0.00000  | 0.00000  | 0.00000 |
| Lead        | 220.353    | 0.93240  | 0.00000  | 0.00000 |
| Magnesium   | 279.077    | 0.00000  | 0.00000  | 0.00000 |
| Manganese   | 257.61     | 0.00000  | 0.00000  | 0.00000 |
| Molybdenum  | 202.031    | 0.00000  | 0.00000  | 0.00000 |
| Nickel      | 231.604    | 0.00000  | 0.00000  | 0.00000 |
| Phosphorous | 214.914    | 0.00000  | 0.00000  | 0.00000 |
| Potassium   | 766.49     | 0.00000  | 0.00000  | 0.00000 |
| Selenium    | 196.026    | 0.00000  | 0.00000  | 0.00000 |
| Silver      | 328.068    | 1.05890  | -0.70100 | 0.00000 |
| Strontium   | 421.552    | 0.00000  | 0.00000  | 0.00000 |
| Sulfur      | 181.975    | 0.00000  | 0.00000  | 0.00000 |
| Thallium    | 190.801    | 0.00000  | 0.00000  | 0.00000 |
| Tin         | 189.927    | 0.00000  | 0.00000  | 0.00000 |
| Titanium    | 334.94     | 0.00000  | 0.00000  | 0.00000 |
| Uranium     | 367.007    | 0.00000  | 0.00000  | 0.00000 |
| Vanadium    | 292.402    | -0.47343 | 0.00000  | 0.00000 |
| Zinc        | 213.857    | 0.00000  | 0.00000  | 0.00000 |

**METALS**  
**-12-**  
**Linear Ranges**

SDG NO. 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID OPTIMA3

| <u>Analyte</u> | <u>Integration<br/>Time<br/>(sec)</u> | <u>LDR</u> | <u>Units</u> | <u>Effective<br/>Date</u> |
|----------------|---------------------------------------|------------|--------------|---------------------------|
| Aluminum       | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Antimony       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Arsenic        | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Barium         | 20                                    | 15000      | ug/L         | 31-OCT-16                 |
| Beryllium      | 20                                    | 3000       | ug/L         | 31-OCT-16                 |
| Cadmium        | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Calcium        | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Chromium       | 20                                    | 25000      | ug/L         | 31-OCT-16                 |
| Cobalt         | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Copper         | 20                                    | 20000      | ug/L         | 31-OCT-16                 |
| Iron           | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Lead           | 20                                    | 25000      | ug/L         | 31-OCT-16                 |
| Magnesium      | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Manganese      | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Nickel         | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Potassium      | 20                                    | 300000     | ug/L         | 31-OCT-16                 |
| Selenium       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Silver         | 20                                    | 1000       | ug/L         | 31-OCT-16                 |
| Sodium         | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Thallium       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Vanadium       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Zinc           | 20                                    | 15000      | ug/L         | 31-OCT-16                 |

**METALS**  
**-12-**  
**Linear Ranges**

SDG NO. 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID OPTIMA4

| <u>Analyte</u> | <u>Integration<br/>Time<br/>(sec)</u> | <u>LDR</u> | <u>Units</u> | <u>Effective<br/>Date</u> |
|----------------|---------------------------------------|------------|--------------|---------------------------|
| Aluminum       | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Antimony       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Arsenic        | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Barium         | 20                                    | 15000      | ug/L         | 31-OCT-16                 |
| Beryllium      | 20                                    | 3000       | ug/L         | 31-OCT-16                 |
| Cadmium        | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Calcium        | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Chromium       | 20                                    | 25000      | ug/L         | 31-OCT-16                 |
| Cobalt         | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Copper         | 20                                    | 20000      | ug/L         | 31-OCT-16                 |
| Iron           | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Lead           | 20                                    | 25000      | ug/L         | 31-OCT-16                 |
| Magnesium      | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Manganese      | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Nickel         | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Potassium      | 20                                    | 300000     | ug/L         | 31-OCT-16                 |
| Selenium       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Silver         | 20                                    | 1000       | ug/L         | 31-OCT-16                 |
| Sodium         | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Thallium       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Vanadium       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Zinc           | 20                                    | 15000      | ug/L         | 31-OCT-16                 |

**METALS**  
**-12-**  
**Linear Ranges**

SDG NO. 409254

Contract: HAAL00201

Lab Code: GEL

Instrument ID OPTIMA5

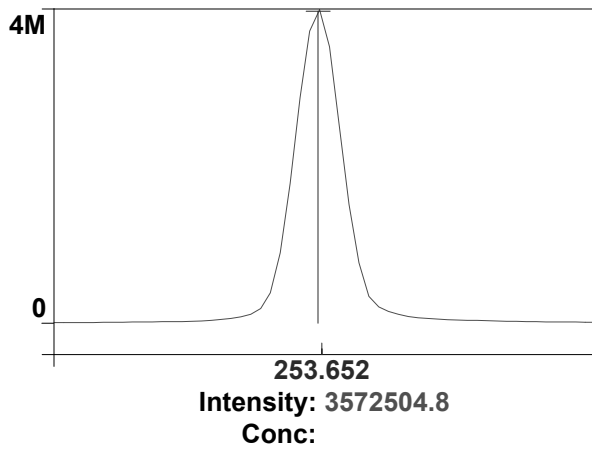
| <u>Analyte</u> | <u>Integration<br/>Time<br/>(sec)</u> | <u>LDR</u> | <u>Units</u> | <u>Effective<br/>Date</u> |
|----------------|---------------------------------------|------------|--------------|---------------------------|
| Aluminum       | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Antimony       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Arsenic        | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Barium         | 20                                    | 15000      | ug/L         | 31-OCT-16                 |
| Beryllium      | 20                                    | 3000       | ug/L         | 31-OCT-16                 |
| Cadmium        | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Calcium        | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Chromium       | 20                                    | 25000      | ug/L         | 31-OCT-16                 |
| Cobalt         | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Copper         | 20                                    | 20000      | ug/L         | 31-OCT-16                 |
| Iron           | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Lead           | 20                                    | 25000      | ug/L         | 31-OCT-16                 |
| Magnesium      | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Manganese      | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Nickel         | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Potassium      | 20                                    | 300000     | ug/L         | 31-OCT-16                 |
| Selenium       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Silver         | 20                                    | 1000       | ug/L         | 31-OCT-16                 |
| Sodium         | 20                                    | 500000     | ug/L         | 31-OCT-16                 |
| Thallium       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Vanadium       | 20                                    | 10000      | ug/L         | 31-OCT-16                 |
| Zinc           | 20                                    | 15000      | ug/L         | 31-OCT-16                 |

# Raw Data



Hg 253.652

Rep: 1



1

=====

11/16/2016 06:06:11 Hg ReAlign... Actual peak offset (nm): 0.002  
Drift (nm): -0.000 Slit adjustment: -2

=====

=====

**Analysis Begun**

Start Time: 11/16/2016 06:07:05 Plasma On Time: 11/14/2016 06:15:24  
Logged In Analyst: Optima3 Technique: ICP Continuous  
Spectrometer: Optima 5300 DV, S/N 077C7090601 Autosampler: ESI

Sample Information File: C:\Users\Public\PerkinElmer\ICP\Data\Sample Information\111616.sif  
Batch ID:  
Results Data Set: 111616  
Results Library: C:\Users\Public\PerkinElmer\ICP\Data\Results\Results.mdb

=====

Sequence No.: 1 Autosampler Location: 8  
Sample ID: S0 Date Collected: 11/16/2016 06:07:14  
Analyst: Data Type: Original  
Initial Sample Wt: Initial Sample Vol:  
Dilution: Sample Prep Vol:  
Wash Time:

-----

**Replicate Data: S0**

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Conc.<br>Units | Calib. | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|----------------|--------|------------------|
| 1     | Sc RADIAL          | 8403.6           | 8403.6                 | 99.7 %         |        | 06:07:50         |
| 1     | Al 396.153Radial†  | -782.7           | -784.9                 | [0.00] µg/L    |        | 06:07:50         |
| 1     | Ca 317.933Radial†  | 102.4            | 102.7                  | [0.00] µg/L    |        | 06:08:10         |
| 1     | Fe 238.204 Radial† | 13.8             | 13.9                   | [0.00] µg/L    |        | 06:08:10         |
| 1     | K 766.490 Radial†  | 375.6            | 376.6                  | [0.00] µg/L    |        | 06:07:50         |
| 1     | Mg 279.077 IEC†    | 9.1              | 9.1                    | [0.00] µg/L    |        | 06:08:10         |
| 1     | Na 589.592 Radial† | 3.7              | 3.7                    | [0.00] µg/L    |        | 06:08:10         |
| 1     | Sr 421.552†        | 1.1              | 1.1                    | [0.00] µg/L    |        | 06:07:50         |
| 1     | Sc 361.383         | 624770.4         | 624770.4               | 99.838 %       |        | 06:09:07         |
| 1     | Y 371.029          | 708863.4         | 708863.4               | 99.834 %       |        | 06:09:07         |
| 1     | Ag 328.068†        | -999.2           | -1000.9                | [0.00] µg/L    |        | 06:09:07         |
| 1     | As 188.979†        | 16.7             | 16.7                   | [0.00] µg/L    |        | 06:09:27         |
| 1     | B 249.677†         | 190.5            | 190.8                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | Ba 233.527†        | 137.1            | 137.3                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | Be 313.107†        | -5408.0          | -5416.8                | [0.00] µg/L    |        | 06:09:07         |
| 1     | Cd 226.502†        | -247.5           | -247.9                 | [0.00] µg/L    |        | 06:09:27         |
| 1     | Co 228.616†        | -329.6           | -330.1                 | [0.00] µg/L    |        | 06:09:27         |
| 1     | Cr 267.716†        | 126.2            | 126.4                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | Cu 324.752†        | 2553.2           | 2557.4                 | [0.00] µg/L    |        | 06:09:07         |
| 1     | Mn 257.610†        | 854.9            | 856.3                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | Mo 202.031†        | -13.2            | -13.3                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | Ni 231.604†        | -178.4           | -178.7                 | [0.00] µg/L    |        | 06:09:27         |
| 1     | P 214.914†         | 152.8            | 153.1                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | Pb 220.353†        | 124.6            | 124.8                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | S 181.975 Axial†   | 153.2            | 153.4                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | Sb 206.836†        | 110.3            | 110.5                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | Se 196.026†        | -22.7            | -22.7                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | SiO2†              | 1625.9           | 1628.6                 | [0.00] µg/L    |        | 06:09:07         |
| 1     | Si 251.611†        | 285.0            | 285.4                  | [0.00] µg/L    |        | 06:09:27         |
| 1     | Sn 189.927†        | 25.5             | 25.6                   | [0.00] µg/L    |        | 06:09:27         |
| 1     | Ti 334.940†        | -757.1           | -758.3                 | [0.00] µg/L    |        | 06:09:07         |
| 1     | Tl 190.801†        | -158.5           | -158.8                 | [0.00] µg/L    |        | 06:09:27         |
| 1     | U 367.007†         | 1433.5           | 1435.9                 | [0.00] µg/L    |        | 06:09:07         |
| 1     | V 292.402†         | 407.9            | 408.6                  | [0.00] µg/L    |        | 06:09:07         |
| 1     | Zn 213.857†        | 780.3            | 781.6                  | [0.00] µg/L    |        | 06:09:27         |
| 2     | Sc RADIAL          | 8495.7           | 8495.7                 | 101 %          |        | 06:08:15         |
| 2     | Al 396.153Radial†  | -752.1           | -746.0                 | [0.00] µg/L    |        | 06:08:15         |
| 2     | Ca 317.933Radial†  | 116.5            | 115.6                  | [0.00] µg/L    |        | 06:08:35         |
| 2     | Fe 238.204 Radial† | 9.7              | 9.6                    | [0.00] µg/L    |        | 06:08:35         |
| 2     | K 766.490 Radial†  | 371.0            | 368.0                  | [0.00] µg/L    |        | 06:08:15         |
| 2     | Mg 279.077 IEC†    | 9.4              | 9.4                    | [0.00] µg/L    |        | 06:08:35         |
| 2     | Na 589.592 Radial† | 6.9              | 6.8                    | [0.00] µg/L    |        | 06:08:35         |

|   |                    |          |          |             |          |
|---|--------------------|----------|----------|-------------|----------|
| 2 | Sr 421.552†        | 5.0      | 5.0      | [0.00] µg/L | 06:08:15 |
| 2 | Sc 361.383         | 628914.0 | 628914.0 | 100.50 %    | 06:09:33 |
| 2 | Y 371.029          | 713493.7 | 713493.7 | 100.49 %    | 06:09:33 |
| 2 | Ag 328.068†        | -962.3   | -957.5   | [0.00] µg/L | 06:09:33 |
| 2 | As 188.979†        | 27.5     | 27.4     | [0.00] µg/L | 06:09:53 |
| 2 | B 249.677†         | 193.3    | 192.4    | [0.00] µg/L | 06:09:53 |
| 2 | Ba 233.527†        | 124.1    | 123.5    | [0.00] µg/L | 06:09:53 |
| 2 | Be 313.107†        | -5545.4  | -5517.8  | [0.00] µg/L | 06:09:33 |
| 2 | Cd 226.502†        | -274.5   | -273.1   | [0.00] µg/L | 06:09:53 |
| 2 | Co 228.616†        | -326.7   | -325.0   | [0.00] µg/L | 06:09:53 |
| 2 | Cr 267.716†        | 105.4    | 104.9    | [0.00] µg/L | 06:09:53 |
| 2 | Cu 324.752†        | 2462.4   | 2450.1   | [0.00] µg/L | 06:09:33 |
| 2 | Mn 257.610†        | 849.5    | 845.3    | [0.00] µg/L | 06:09:53 |
| 2 | Mo 202.031†        | -13.5    | -13.4    | [0.00] µg/L | 06:09:53 |
| 2 | Ni 231.604†        | -177.6   | -176.7   | [0.00] µg/L | 06:09:53 |
| 2 | P 214.914†         | 141.1    | 140.4    | [0.00] µg/L | 06:09:53 |
| 2 | Pb 220.353†        | 91.5     | 91.1     | [0.00] µg/L | 06:09:53 |
| 2 | S 181.975 Axial†   | 133.7    | 133.0    | [0.00] µg/L | 06:09:53 |
| 2 | Sb 206.836†        | 122.3    | 121.6    | [0.00] µg/L | 06:09:53 |
| 2 | Se 196.026†        | -12.7    | -12.6    | [0.00] µg/L | 06:09:53 |
| 2 | SiO2†              | 1609.8   | 1601.8   | [0.00] µg/L | 06:09:33 |
| 2 | Si 251.611†        | 282.1    | 280.7    | [0.00] µg/L | 06:09:53 |
| 2 | Sn 189.927†        | 18.4     | 18.3     | [0.00] µg/L | 06:09:53 |
| 2 | Ti 334.940†        | -897.4   | -893.0   | [0.00] µg/L | 06:09:33 |
| 2 | Tl 190.801†        | -161.4   | -160.6   | [0.00] µg/L | 06:09:53 |
| 2 | U 367.007†         | 1388.7   | 1381.8   | [0.00] µg/L | 06:09:33 |
| 2 | V 292.402†         | 406.7    | 404.7    | [0.00] µg/L | 06:09:33 |
| 2 | Zn 213.857†        | 788.8    | 784.9    | [0.00] µg/L | 06:09:53 |
| 3 | Sc RADIAL          | 8380.4   | 8380.4   | 99.5 %      | 06:08:40 |
| 3 | Al 396.153Radial†  | -674.4   | -678.1   | [0.00] µg/L | 06:08:40 |
| 3 | Ca 317.933Radial†  | 106.9    | 107.5    | [0.00] µg/L | 06:09:00 |
| 3 | Fe 238.204 Radial† | 9.5      | 9.6      | [0.00] µg/L | 06:09:00 |
| 3 | K 766.490 Radial†  | 462.9    | 465.5    | [0.00] µg/L | 06:08:40 |
| 3 | Mg 279.077 IEC†    | 15.0     | 15.1     | [0.00] µg/L | 06:09:00 |
| 3 | Na 589.592 Radial† | 4.3      | 4.3      | [0.00] µg/L | 06:09:00 |
| 3 | Sr 421.552†        | 5.4      | 5.4      | [0.00] µg/L | 06:08:40 |
| 3 | Sc 361.383         | 623673.0 | 623673.0 | 99.662 %    | 06:09:58 |
| 3 | Y 371.029          | 707774.0 | 707774.0 | 99.680 %    | 06:09:58 |
| 3 | Ag 328.068†        | -857.1   | -860.0   | [0.00] µg/L | 06:09:58 |
| 3 | As 188.979†        | 22.3     | 22.3     | [0.00] µg/L | 06:10:18 |
| 3 | B 249.677†         | 192.3    | 193.0    | [0.00] µg/L | 06:10:18 |
| 3 | Ba 233.527†        | 126.6    | 127.1    | [0.00] µg/L | 06:10:18 |
| 3 | Be 313.107†        | -5376.4  | -5394.6  | [0.00] µg/L | 06:09:58 |
| 3 | Cd 226.502†        | -237.4   | -238.2   | [0.00] µg/L | 06:10:18 |
| 3 | Co 228.616†        | -326.2   | -327.4   | [0.00] µg/L | 06:10:18 |
| 3 | Cr 267.716†        | 118.8    | 119.2    | [0.00] µg/L | 06:10:18 |
| 3 | Cu 324.752†        | 2465.3   | 2473.6   | [0.00] µg/L | 06:09:58 |
| 3 | Mn 257.610†        | 826.0    | 828.8    | [0.00] µg/L | 06:10:18 |
| 3 | Mo 202.031†        | -23.0    | -23.1    | [0.00] µg/L | 06:10:18 |
| 3 | Ni 231.604†        | -172.4   | -173.0   | [0.00] µg/L | 06:10:18 |
| 3 | P 214.914†         | 140.7    | 141.2    | [0.00] µg/L | 06:10:18 |
| 3 | Pb 220.353†        | 102.9    | 103.3    | [0.00] µg/L | 06:10:18 |
| 3 | S 181.975 Axial†   | 154.2    | 154.7    | [0.00] µg/L | 06:10:18 |
| 3 | Sb 206.836†        | 113.2    | 113.6    | [0.00] µg/L | 06:10:18 |
| 3 | Se 196.026†        | -18.9    | -19.0    | [0.00] µg/L | 06:10:18 |
| 3 | SiO2†              | 1663.7   | 1669.4   | [0.00] µg/L | 06:09:58 |
| 3 | Si 251.611†        | 317.5    | 318.6    | [0.00] µg/L | 06:10:18 |
| 3 | Sn 189.927†        | 19.8     | 19.9     | [0.00] µg/L | 06:10:18 |
| 3 | Ti 334.940†        | -739.4   | -741.9   | [0.00] µg/L | 06:09:58 |
| 3 | Tl 190.801†        | -152.3   | -152.8   | [0.00] µg/L | 06:10:18 |
| 3 | U 367.007†         | 1450.9   | 1455.8   | [0.00] µg/L | 06:09:58 |
| 3 | V 292.402†         | 442.9    | 444.4    | [0.00] µg/L | 06:09:58 |
| 3 | Zn 213.857†        | 788.1    | 790.7    | [0.00] µg/L | 06:10:18 |

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Mean Data: S0

| Analyte    | Mean Corrected |          |       | Calib  |       |
|------------|----------------|----------|-------|--------|-------|
|            | Intensity      | Std.Dev. | RSD   | Conc.  | Units |
| Sc 361.383 | 625785.8       | 2764.12  | 0.44% | 100.00 | %     |
| Sc RADIAL  | 8426.6         | 60.99    | 0.72% | 100    | %     |
| Y 371.029  | 710043.7       | 3037.02  | 0.43% | 100.00 | %     |

|                    |         |       |        |        |      |
|--------------------|---------|-------|--------|--------|------|
| Ag 328.068†        | -939.5  | 72.14 | 7.68%  | [0.00] | µg/L |
| Al 396.153Radial†  | -736.3  | 54.04 | 7.34%  | [0.00] | µg/L |
| As 188.979†        | 22.1    | 5.34  | 24.12% | [0.00] | µg/L |
| B 249.677†         | 192.0   | 1.14  | 0.59%  | [0.00] | µg/L |
| Ba 233.527†        | 129.3   | 7.14  | 5.52%  | [0.00] | µg/L |
| Be 313.107†        | -5443.1 | 65.67 | 1.21%  | [0.00] | µg/L |
| Ca 317.933Radial†  | 108.6   | 6.54  | 6.02%  | [0.00] | µg/L |
| Cd 226.502†        | -253.1  | 18.01 | 7.12%  | [0.00] | µg/L |
| Co 228.616†        | -327.5  | 2.55  | 0.78%  | [0.00] | µg/L |
| Cr 267.716†        | 116.8   | 10.94 | 9.36%  | [0.00] | µg/L |
| Cu 324.752†        | 2493.7  | 56.38 | 2.26%  | [0.00] | µg/L |
| Fe 238.204 Radial† | 11.0    | 2.47  | 22.39% | [0.00] | µg/L |
| K 766.490 Radial†  | 403.3   | 53.97 | 13.38% | [0.00] | µg/L |
| Mg 279.077 IEC†    | 11.2    | 3.39  | 30.25% | [0.00] | µg/L |
| Mn 257.610†        | 843.5   | 13.87 | 1.64%  | [0.00] | µg/L |
| Mo 202.031†        | -16.6   | 5.64  | 33.97% | [0.00] | µg/L |
| Na 589.592 Radial† | 5.0     | 1.65  | 33.15% | [0.00] | µg/L |
| Ni 231.604†        | -176.1  | 2.89  | 1.64%  | [0.00] | µg/L |
| P 214.914†         | 144.9   | 7.09  | 4.90%  | [0.00] | µg/L |
| Pb 220.353†        | 106.4   | 17.05 | 16.03% | [0.00] | µg/L |
| S 181.975 Axial†   | 147.1   | 12.16 | 8.27%  | [0.00] | µg/L |
| Sb 206.836†        | 115.2   | 5.76  | 5.00%  | [0.00] | µg/L |
| Se 196.026†        | -18.1   | 5.09  | 28.11% | [0.00] | µg/L |
| SiO2†              | 1633.2  | 34.02 | 2.08%  | [0.00] | µg/L |
| Si 251.611†        | 294.9   | 20.66 | 7.00%  | [0.00] | µg/L |
| Sn 189.927†        | 21.3    | 3.80  | 17.89% | [0.00] | µg/L |
| Sr 421.552†        | 3.8     | 2.34  | 61.04% | [0.00] | µg/L |
| Ti 334.940†        | -797.8  | 82.86 | 10.39% | [0.00] | µg/L |
| Tl 190.801†        | -157.4  | 4.07  | 2.59%  | [0.00] | µg/L |
| U 367.007†         | 1424.5  | 38.29 | 2.69%  | [0.00] | µg/L |
| V 292.402†         | 419.2   | 21.89 | 5.22%  | [0.00] | µg/L |
| Zn 213.857†        | 785.7   | 4.64  | 0.59%  | [0.00] | µg/L |

Sequence No.: 2

Sample ID: S0.1

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 2

Date Collected: 11/16/2016 06:10:27

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: S0.1

| Repl# | Analyte           | Net Intensity | Corrected Intensity | Conc.    | Calib. Units | Analysis Time |
|-------|-------------------|---------------|---------------------|----------|--------------|---------------|
| 1     | Sc RADIAL         | 8458.3        | 8458.3              | 100      | %            | 06:10:57      |
| 1     | K 766.490 Radial† | 2112.1        | 1700.9              | [1000]   | µg/L         | 06:10:57      |
| 1     | Sr 421.552†       | 3886.7        | 3868.4              | [100]    | µg/L         | 06:10:57      |
| 1     | Sc 361.383        | 626494.5      | 626494.5            | 100.11   | %            | 06:11:14      |
| 1     | Y 371.029         | 708008.4      | 708008.4            | 99.713   | %            | 06:11:14      |
| 1     | Ag 328.068†       | 18380.4       | 19299.0             | [100]    | µg/L         | 06:11:14      |
| 1     | As 188.979†       | 336.1         | 313.6               | [100]    | µg/L         | 06:11:34      |
| 1     | B 249.677†        | 5046.0        | 4848.2              | [100]    | µg/L         | 06:11:14      |
| 1     | Ba 233.527†       | 17545.5       | 17396.4             | [100]    | µg/L         | 06:11:14      |
| 1     | Be 313.107†       | 234197.6      | 239375.7            | [100]    | µg/L         | 06:11:14      |
| 1     | Cd 226.502†       | 15887.6       | 16122.7             | [100]    | µg/L         | 06:11:14      |
| 1     | Co 228.616†       | 5610.8        | 5932.0              | [100]    | µg/L         | 06:11:34      |
| 1     | Cr 267.716†       | 7895.1        | 7769.4              | [100]    | µg/L         | 06:11:14      |
| 1     | Cu 324.752†       | 25839.3       | 23316.3             | [100]    | µg/L         | 06:11:14      |
| 1     | Mn 257.610†       | 101591.0      | 100632.7            | [100]    | µg/L         | 06:11:14      |
| 1     | Mo 202.031†       | 2350.8        | 2364.7              | [100]    | µg/L         | 06:11:34      |
| 1     | Ni 231.604†       | 5254.3        | 5424.5              | [100]    | µg/L         | 06:11:34      |
| 1     | P 214.914†        | 1237.9        | 1091.6              | [500]    | µg/L         | 06:11:34      |
| 1     | Pb 220.353†       | 1281.4        | 1173.6              | [100]    | µg/L         | 06:11:34      |
| 1     | S 181.975 Axial†  | 332.6         | 185.2               | [200]    | µg/L         | 06:11:34      |
| 1     | Sb 206.836†       | 566.7         | 450.8               | [100]    | µg/L         | 06:11:34      |
| 1     | Se 196.026†       | 248.9         | 266.7               | [100]    | µg/L         | 06:11:34      |
| 1     | SiO2†             | 12538.7       | 10891.3             | [1069.5] | µg/L         | 06:11:14      |
| 1     | Si 251.611†       | 14093.9       | 13783.0             | [500]    | µg/L         | 06:11:14      |
| 1     | Sn 189.927†       | 1022.2        | 999.8               | [100]    | µg/L         | 06:11:34      |
| 1     | Ti 334.940†       | 41637.4       | 42388.0             | [100]    | µg/L         | 06:11:14      |
| 1     | Tl 190.801†       | 439.0         | 595.9               | [100]    | µg/L         | 06:11:34      |
| 1     | U 367.007†        | 1893.7        | 467.1               | [100]    | µg/L         | 06:11:14      |
| 1     | V 292.402†        | 15351.7       | 14915.2             | [100]    | µg/L         | 06:11:14      |
| 1     | Zn 213.857†       | 18742.7       | 17935.8             | [100]    | µg/L         | 06:11:14      |
| 2     | Sc RADIAL         | 8471.6        | 8471.6              | 101      | %            | 06:11:02      |
| 2     | K 766.490 Radial† | 2293.0        | 1877.5              | [1000]   | µg/L         | 06:11:02      |
| 2     | Sr 421.552†       | 3914.0        | 3889.4              | [100]    | µg/L         | 06:11:02      |
| 2     | Sc 361.383        | 625468.4      | 625468.4            | 99.949   | %            | 06:11:40      |
| 2     | Y 371.029         | 707095.2      | 707095.2            | 99.585   | %            | 06:11:40      |
| 2     | Ag 328.068†       | 18407.3       | 19356.1             | [100]    | µg/L         | 06:11:40      |
| 2     | As 188.979†       | 340.3         | 318.3               | [100]    | µg/L         | 06:12:01      |
| 2     | B 249.677†        | 4957.9        | 4768.4              | [100]    | µg/L         | 06:11:40      |
| 2     | Ba 233.527†       | 17475.8       | 17355.3             | [100]    | µg/L         | 06:11:40      |
| 2     | Be 313.107†       | 233695.1      | 239256.8            | [100]    | µg/L         | 06:11:40      |
| 2     | Cd 226.502†       | 15830.9       | 16092.0             | [100]    | µg/L         | 06:11:40      |
| 2     | Co 228.616†       | 5599.0        | 5929.3              | [100]    | µg/L         | 06:12:01      |
| 2     | Cr 267.716†       | 7883.3        | 7770.4              | [100]    | µg/L         | 06:11:40      |
| 2     | Cu 324.752†       | 25724.3       | 23243.6             | [100]    | µg/L         | 06:11:40      |
| 2     | Mn 257.610†       | 101275.6      | 100483.5            | [100]    | µg/L         | 06:11:40      |
| 2     | Mo 202.031†       | 2363.3        | 2381.1              | [100]    | µg/L         | 06:12:01      |
| 2     | Ni 231.604†       | 5273.2        | 5452.0              | [100]    | µg/L         | 06:12:01      |
| 2     | P 214.914†        | 1236.0        | 1091.7              | [500]    | µg/L         | 06:12:01      |
| 2     | Pb 220.353†       | 1283.6        | 1177.9              | [100]    | µg/L         | 06:12:01      |
| 2     | S 181.975 Axial†  | 337.9         | 191.0               | [200]    | µg/L         | 06:12:01      |
| 2     | Sb 206.836†       | 561.4         | 446.5               | [100]    | µg/L         | 06:12:01      |
| 2     | Se 196.026†       | 250.2         | 268.5               | [100]    | µg/L         | 06:12:01      |
| 2     | SiO2†             | 12491.8       | 10864.8             | [1069.5] | µg/L         | 06:11:40      |
| 2     | Si 251.611†       | 14086.1       | 13798.3             | [500]    | µg/L         | 06:11:40      |
| 2     | Sn 189.927†       | 1022.3        | 1001.6              | [100]    | µg/L         | 06:12:01      |
| 2     | Ti 334.940†       | 41691.3       | 42510.2             | [100]    | µg/L         | 06:11:40      |
| 2     | Tl 190.801†       | 440.3         | 597.9               | [100]    | µg/L         | 06:12:01      |
| 2     | U 367.007†        | 1913.5        | 490.0               | [100]    | µg/L         | 06:11:40      |

|   |                   |          |          |               |          |
|---|-------------------|----------|----------|---------------|----------|
| 2 | V 292.402†        | 15250.3  | 14838.8  | [100] µg/L    | 06:11:40 |
| 2 | Zn 213.857†       | 18716.8  | 17940.6  | [100] µg/L    | 06:11:40 |
| 3 | Sc RADIAL         | 8440.8   | 8440.8   | 100 %         | 06:11:07 |
| 3 | K 766.490 Radial† | 2151.1   | 1744.2   | [1000] µg/L   | 06:11:07 |
| 3 | Sr 421.552†       | 3885.9   | 3875.5   | [100] µg/L    | 06:11:07 |
| 3 | Sc 361.383        | 624903.2 | 624903.2 | 99.859 %      | 06:12:07 |
| 3 | Y 371.029         | 706856.0 | 706856.0 | 99.551 %      | 06:12:07 |
| 3 | Ag 328.068†       | 18473.2  | 19438.7  | [100] µg/L    | 06:12:07 |
| 3 | As 188.979†       | 333.0    | 311.3    | [100] µg/L    | 06:12:27 |
| 3 | B 249.677†        | 5052.0   | 4867.1   | [100] µg/L    | 06:12:07 |
| 3 | Ba 233.527†       | 17483.7  | 17379.1  | [100] µg/L    | 06:12:07 |
| 3 | Be 313.107†       | 233353.6 | 239126.2 | [100] µg/L    | 06:12:07 |
| 3 | Cd 226.502†       | 15790.3  | 16065.7  | [100] µg/L    | 06:12:07 |
| 3 | Co 228.616†       | 5607.7   | 5943.1   | [100] µg/L    | 06:12:27 |
| 3 | Cr 267.716†       | 7910.7   | 7805.0   | [100] µg/L    | 06:12:07 |
| 3 | Cu 324.752†       | 25878.1  | 23420.9  | [100] µg/L    | 06:12:07 |
| 3 | Mn 257.610†       | 101106.8 | 100406.1 | [100] µg/L    | 06:12:07 |
| 3 | Mo 202.031†       | 2344.3   | 2364.2   | [100] µg/L    | 06:12:27 |
| 3 | Ni 231.604†       | 5279.5   | 5463.1   | [100] µg/L    | 06:12:27 |
| 3 | P 214.914†        | 1204.6   | 1061.4   | [500] µg/L    | 06:12:27 |
| 3 | Pb 220.353†       | 1258.4   | 1153.8   | [100] µg/L    | 06:12:27 |
| 3 | S 181.975 Axial†  | 340.6    | 194.0    | [200] µg/L    | 06:12:27 |
| 3 | Sb 206.836†       | 562.4    | 448.0    | [100] µg/L    | 06:12:27 |
| 3 | Se 196.026†       | 252.3    | 270.7    | [100] µg/L    | 06:12:27 |
| 3 | SiO2†             | 12461.3  | 10845.7  | [1069.5] µg/L | 06:12:07 |
| 3 | Si 251.611†       | 14032.5  | 13757.4  | [500] µg/L    | 06:12:07 |
| 3 | Sn 189.927†       | 1025.3   | 1005.5   | [100] µg/L    | 06:12:27 |
| 3 | Ti 334.940†       | 41595.4  | 42451.9  | [100] µg/L    | 06:12:07 |
| 3 | Tl 190.801†       | 464.8    | 622.8    | [100] µg/L    | 06:12:27 |
| 3 | U 367.007†        | 1943.4   | 521.7    | [100] µg/L    | 06:12:07 |
| 3 | V 292.402†        | 15311.0  | 14913.4  | [100] µg/L    | 06:12:07 |
| 3 | Zn 213.857†       | 18649.9  | 17890.5  | [100] µg/L    | 06:12:07 |

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Mean Data: S0.1

| Analyte           | Mean Corrected<br>Intensity | Std.Dev. | RSD   | Calib<br>Conc. Units |
|-------------------|-----------------------------|----------|-------|----------------------|
| Sc 361.383        | 625622.0                    | 806.72   | 0.13% | 99.974 %             |
| Sc RADIAL         | 8456.9                      | 15.44    | 0.18% | 100 %                |
| Y 371.029         | 707319.8                    | 608.16   | 0.09% | 99.616 %             |
| Ag 328.068†       | 19364.6                     | 70.23    | 0.36% | [100] µg/L           |
| As 188.979†       | 314.4                       | 3.56     | 1.13% | [100] µg/L           |
| B 249.677†        | 4827.9                      | 52.42    | 1.09% | [100] µg/L           |
| Ba 233.527†       | 17376.9                     | 20.59    | 0.12% | [100] µg/L           |
| Be 313.107†       | 239252.9                    | 124.77   | 0.05% | [100] µg/L           |
| Cd 226.502†       | 16093.5                     | 28.56    | 0.18% | [100] µg/L           |
| Co 228.616†       | 5934.8                      | 7.33     | 0.12% | [100] µg/L           |
| Cr 267.716†       | 7781.6                      | 20.28    | 0.26% | [100] µg/L           |
| Cu 324.752†       | 23326.9                     | 89.13    | 0.38% | [100] µg/L           |
| K 766.490 Radial† | 1774.2                      | 92.07    | 5.19% | [1000] µg/L          |
| Mn 257.610†       | 100507.4                    | 115.14   | 0.11% | [100] µg/L           |
| Mo 202.031†       | 2370.0                      | 9.61     | 0.41% | [100] µg/L           |
| Ni 231.604†       | 5446.5                      | 19.86    | 0.36% | [100] µg/L           |
| P 214.914†        | 1081.6                      | 17.47    | 1.62% | [500] µg/L           |
| Pb 220.353†       | 1168.4                      | 12.86    | 1.10% | [100] µg/L           |
| S 181.975 Axial†  | 190.0                       | 4.50     | 2.37% | [200] µg/L           |
| Sb 206.836†       | 448.4                       | 2.21     | 0.49% | [100] µg/L           |
| Se 196.026†       | 268.6                       | 2.01     | 0.75% | [100] µg/L           |
| SiO2†             | 10867.3                     | 22.91    | 0.21% | [1069.5] µg/L        |
| Si 251.611†       | 13779.6                     | 20.68    | 0.15% | [500] µg/L           |
| Sn 189.927†       | 1002.3                      | 2.90     | 0.29% | [100] µg/L           |
| Sr 421.552†       | 3877.7                      | 10.68    | 0.28% | [100] µg/L           |
| Ti 334.940†       | 42450.0                     | 61.10    | 0.14% | [100] µg/L           |
| Tl 190.801†       | 605.5                       | 15.01    | 2.48% | [100] µg/L           |
| U 367.007†        | 492.9                       | 27.43    | 5.56% | [100] µg/L           |
| V 292.402†        | 14889.1                     | 43.58    | 0.29% | [100] µg/L           |
| Zn 213.857†       | 17922.3                     | 27.62    | 0.15% | [100] µg/L           |

Sequence No.: 3

Sample ID: S0.5

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 3

Date Collected: 11/16/2016 06:12:35

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: S0.5

| Repl# | Analyte           | Net Intensity | Corrected Intensity | Conc. Units | Calib. | Analysis Time |
|-------|-------------------|---------------|---------------------|-------------|--------|---------------|
| 1     | Sc RADIAL         | 8222.5        | 8222.5              | 97.6        | %      | 06:13:23      |
| 1     | Al 396.153Radial† | 9305.9        | 10273.3             | [5000]      | µg/L   | 06:13:03      |
| 1     | Ca 317.933Radial† | 10216.4       | 10361.4             | [5000]      | µg/L   | 06:13:23      |
| 1     | K 766.490 Radial† | 9282.4        | 9109.5              | [5000]      | µg/L   | 06:13:03      |
| 1     | Mg 279.077 IEC†   | 804.5         | 813.3               | [5000]      | µg/L   | 06:13:23      |
| 1     | Sr 421.552†       | 18963.7       | 19430.7             | [500]       | µg/L   | 06:13:03      |
| 1     | Sc 361.383        | 624005.6      | 624005.6            | 99.716      | %      | 06:14:23      |
| 1     | Y 371.029         | 700932.8      | 700932.8            | 98.717      | %      | 06:14:23      |
| 1     | Ag 328.068†       | 95651.6       | 96863.9             | [500]       | µg/L   | 06:14:23      |
| 1     | As 188.979†       | 1617.2        | 1599.6              | [500]       | µg/L   | 06:14:43      |
| 1     | B 249.677†        | 24867.7       | 24746.6             | [500]       | µg/L   | 06:14:23      |
| 1     | Ba 233.527†       | 85846.0       | 85961.7             | [500]       | µg/L   | 06:14:23      |
| 1     | Be 313.107†       | 1195466.8     | 1204320.5           | [500]       | µg/L   | 06:14:23      |
| 1     | Cd 226.502†       | 79577.4       | 80057.5             | [500]       | µg/L   | 06:14:23      |
| 1     | Co 228.616†       | 28906.6       | 29316.6             | [500]       | µg/L   | 06:14:43      |
| 1     | Cr 267.716†       | 38365.1       | 38357.8             | [500]       | µg/L   | 06:14:23      |
| 1     | Cu 324.752†       | 118196.1      | 116039.6            | [500]       | µg/L   | 06:14:23      |
| 1     | Mn 257.610†       | 489321.1      | 489873.6            | [500]       | µg/L   | 06:14:23      |
| 1     | Mo 202.031†       | 11928.6       | 11979.2             | [500]       | µg/L   | 06:14:43      |
| 1     | Ni 231.604†       | 26836.3       | 27089.0             | [500]       | µg/L   | 06:14:43      |
| 1     | P 214.914†        | 5670.1        | 5541.4              | [2500]      | µg/L   | 06:14:43      |
| 1     | Pb 220.353†       | 5928.1        | 5838.6              | [500]       | µg/L   | 06:14:43      |
| 1     | S 181.975 Axial†  | 1117.5        | 973.6               | [1000]      | µg/L   | 06:14:43      |
| 1     | Sb 206.836†       | 2325.6        | 2217.0              | [500]       | µg/L   | 06:14:43      |
| 1     | Se 196.026†       | 1323.4        | 1345.3              | [500]       | µg/L   | 06:14:43      |
| 1     | SiO2†             | 56160.7       | 54687.7             | [5347.5]    | µg/L   | 06:14:23      |
| 1     | Si 251.611†       | 69085.0       | 68987.2             | [2500]      | µg/L   | 06:14:23      |
| 1     | Sn 189.927†       | 5054.5        | 5047.6              | [500]       | µg/L   | 06:14:43      |
| 1     | Ti 334.940†       | 213044.4      | 214450.0            | [500]       | µg/L   | 06:14:23      |
| 1     | Tl 190.801†       | 2798.4        | 2963.7              | [500]       | µg/L   | 06:14:43      |
| 1     | U 367.007†        | 4138.3        | 2725.6              | [500]       | µg/L   | 06:14:23      |
| 1     | V 292.402†        | 75120.6       | 74915.7             | [500]       | µg/L   | 06:14:23      |
| 1     | Zn 213.857†       | 89447.3       | 88916.7             | [500]       | µg/L   | 06:14:23      |
| 2     | Sc RADIAL         | 8243.0        | 8243.0              | 97.8        | %      | 06:13:49      |
| 2     | Al 396.153Radial† | 9310.0        | 10253.7             | [5000]      | µg/L   | 06:13:29      |
| 2     | Ca 317.933Radial† | 10215.4       | 10334.3             | [5000]      | µg/L   | 06:13:49      |
| 2     | K 766.490 Radial† | 9078.5        | 8877.4              | [5000]      | µg/L   | 06:13:29      |
| 2     | Mg 279.077 IEC†   | 804.9         | 811.6               | [5000]      | µg/L   | 06:13:49      |
| 2     | Sr 421.552†       | 19025.7       | 19445.6             | [500]       | µg/L   | 06:13:29      |
| 2     | Sc 361.383        | 626125.6      | 626125.6            | 100.05      | %      | 06:14:50      |
| 2     | Y 371.029         | 702776.4      | 702776.4            | 98.976      | %      | 06:14:50      |
| 2     | Ag 328.068†       | 95895.4       | 96782.8             | [500]       | µg/L   | 06:14:50      |
| 2     | As 188.979†       | 1602.5        | 1579.5              | [500]       | µg/L   | 06:15:10      |
| 2     | B 249.677†        | 24915.6       | 24710.1             | [500]       | µg/L   | 06:14:50      |
| 2     | Ba 233.527†       | 86215.1       | 86039.0             | [500]       | µg/L   | 06:14:50      |
| 2     | Be 313.107†       | 1201135.5     | 1205926.8           | [500]       | µg/L   | 06:14:50      |
| 2     | Cd 226.502†       | 80010.6       | 80220.3             | [500]       | µg/L   | 06:14:50      |
| 2     | Co 228.616†       | 28917.0       | 29228.8             | [500]       | µg/L   | 06:15:10      |
| 2     | Cr 267.716†       | 38553.4       | 38415.7             | [500]       | µg/L   | 06:14:50      |
| 2     | Cu 324.752†       | 118590.4      | 116032.4            | [500]       | µg/L   | 06:14:50      |
| 2     | Mn 257.610†       | 491699.1      | 490588.8            | [500]       | µg/L   | 06:14:50      |
| 2     | Mo 202.031†       | 11928.0       | 11938.1             | [500]       | µg/L   | 06:15:10      |
| 2     | Ni 231.604†       | 26933.3       | 27094.8             | [500]       | µg/L   | 06:15:10      |
| 2     | P 214.914†        | 5675.4        | 5527.5              | [2500]      | µg/L   | 06:15:10      |
| 2     | Pb 220.353†       | 5948.4        | 5838.8              | [500]       | µg/L   | 06:15:10      |
| 2     | S 181.975 Axial†  | 1120.4        | 972.7               | [1000]      | µg/L   | 06:15:10      |
| 2     | Sb 206.836†       | 2318.9        | 2202.4              | [500]       | µg/L   | 06:15:10      |
| 2     | Se 196.026†       | 1316.3        | 1333.7              | [500]       | µg/L   | 06:15:10      |

|   |                   |           |           |          |      |          |
|---|-------------------|-----------|-----------|----------|------|----------|
| 2 | SiO2†             | 56396.3   | 54732.4   | [5347.5] | µg/L | 06:14:50 |
| 2 | Si 251.611†       | 69389.5   | 69056.9   | [2500]   | µg/L | 06:14:50 |
| 2 | Sn 189.927†       | 5069.4    | 5045.4    | [500]    | µg/L | 06:15:10 |
| 2 | Ti 334.940†       | 213955.9  | 214637.6  | [500]    | µg/L | 06:14:50 |
| 2 | Tl 190.801†       | 2797.9    | 2953.8    | [500]    | µg/L | 06:15:10 |
| 2 | U 367.007†        | 4026.6    | 2600.0    | [500]    | µg/L | 06:14:50 |
| 2 | V 292.402†        | 75580.3   | 75120.1   | [500]    | µg/L | 06:14:50 |
| 2 | Zn 213.857†       | 89813.3   | 88978.8   | [500]    | µg/L | 06:14:50 |
| 3 | Sc RADIAL         | 8280.4    | 8280.4    | 98.3     | %    | 06:14:14 |
| 3 | Al 396.153Radial† | 9486.6    | 10390.5   | [5000]   | µg/L | 06:13:54 |
| 3 | Ca 317.933Radial† | 10224.2   | 10296.2   | [5000]   | µg/L | 06:14:14 |
| 3 | K 766.490 Radial† | 9439.1    | 9202.5    | [5000]   | µg/L | 06:13:54 |
| 3 | Mg 279.077 IEC†   | 808.4     | 811.5     | [5000]   | µg/L | 06:14:14 |
| 3 | Sr 421.552†       | 19200.1   | 19535.3   | [500]    | µg/L | 06:13:54 |
| 3 | Sc 361.383        | 624085.7  | 624085.7  | 99.728   | %    | 06:15:18 |
| 3 | Y 371.029         | 700929.7  | 700929.7  | 98.716   | %    | 06:15:18 |
| 3 | Ag 328.068†       | 95642.9   | 96843.0   | [500]    | µg/L | 06:15:18 |
| 3 | As 188.979†       | 1617.5    | 1599.7    | [500]    | µg/L | 06:15:38 |
| 3 | B 249.677†        | 24876.4   | 24752.2   | [500]    | µg/L | 06:15:18 |
| 3 | Ba 233.527†       | 85914.8   | 86019.6   | [500]    | µg/L | 06:15:18 |
| 3 | Be 313.107†       | 1197401.3 | 1206106.3 | [500]    | µg/L | 06:15:18 |
| 3 | Cd 226.502†       | 79771.3   | 80241.7   | [500]    | µg/L | 06:15:18 |
| 3 | Co 228.616†       | 28990.1   | 29396.6   | [500]    | µg/L | 06:15:38 |
| 3 | Cr 267.716†       | 38424.9   | 38412.7   | [500]    | µg/L | 06:15:18 |
| 3 | Cu 324.752†       | 118145.9  | 115974.0  | [500]    | µg/L | 06:15:18 |
| 3 | Mn 257.610†       | 490601.8  | 491094.8  | [500]    | µg/L | 06:15:18 |
| 3 | Mo 202.031†       | 11939.0   | 11988.1   | [500]    | µg/L | 06:15:38 |
| 3 | Ni 231.604†       | 26886.7   | 27136.1   | [500]    | µg/L | 06:15:38 |
| 3 | P 214.914†        | 5699.2    | 5569.8    | [2500]   | µg/L | 06:15:38 |
| 3 | Pb 220.353†       | 5945.2    | 5855.0    | [500]    | µg/L | 06:15:38 |
| 3 | S 181.975 Axial†  | 1128.1    | 984.1     | [1000]   | µg/L | 06:15:38 |
| 3 | Sb 206.836†       | 2315.1    | 2206.1    | [500]    | µg/L | 06:15:38 |
| 3 | Se 196.026†       | 1333.6    | 1355.3    | [500]    | µg/L | 06:15:38 |
| 3 | SiO2†             | 56171.8   | 54691.6   | [5347.5] | µg/L | 06:15:18 |
| 3 | Si 251.611†       | 69128.0   | 69021.4   | [2500]   | µg/L | 06:15:18 |
| 3 | Sn 189.927†       | 5063.4    | 5055.9    | [500]    | µg/L | 06:15:38 |
| 3 | Ti 334.940†       | 213257.6  | 214636.4  | [500]    | µg/L | 06:15:18 |
| 3 | Tl 190.801†       | 2815.3    | 2980.4    | [500]    | µg/L | 06:15:38 |
| 3 | U 367.007†        | 4085.4    | 2672.0    | [500]    | µg/L | 06:15:18 |
| 3 | V 292.402†        | 75294.1   | 75080.0   | [500]    | µg/L | 06:15:18 |
| 3 | Zn 213.857†       | 89639.3   | 89097.8   | [500]    | µg/L | 06:15:18 |

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Mean Data: S0.5

| Analyte           | Mean Corrected Intensity | Std.Dev. | RSD   | Calib Conc. | Units |
|-------------------|--------------------------|----------|-------|-------------|-------|
| Sc 361.383        | 624738.9                 | 1201.53  | 0.19% | 99.833      | %     |
| Sc RADIAL         | 8248.6                   | 29.36    | 0.36% | 97.9        | %     |
| Y 371.029         | 701546.3                 | 1065.27  | 0.15% | 98.803      | %     |
| Ag 328.068†       | 96829.9                  | 42.11    | 0.04% | [500]       | µg/L  |
| Al 396.153Radial† | 10305.8                  | 73.98    | 0.72% | [5000]      | µg/L  |
| As 188.979†       | 1592.9                   | 11.68    | 0.73% | [500]       | µg/L  |
| B 249.677†        | 24736.3                  | 22.85    | 0.09% | [500]       | µg/L  |
| Ba 233.527†       | 86006.8                  | 40.23    | 0.05% | [500]       | µg/L  |
| Be 313.107†       | 1205451.2                | 983.31   | 0.08% | [500]       | µg/L  |
| Ca 317.933Radial† | 10330.6                  | 32.78    | 0.32% | [5000]      | µg/L  |
| Cd 226.502†       | 80173.1                  | 100.76   | 0.13% | [500]       | µg/L  |
| Co 228.616†       | 29314.0                  | 83.90    | 0.29% | [500]       | µg/L  |
| Cr 267.716†       | 38395.4                  | 32.62    | 0.08% | [500]       | µg/L  |
| Cu 324.752†       | 116015.4                 | 35.96    | 0.03% | [500]       | µg/L  |
| K 766.490 Radial† | 9063.1                   | 167.43   | 1.85% | [5000]      | µg/L  |
| Mg 279.077 IEC†   | 812.1                    | 1.00     | 0.12% | [5000]      | µg/L  |
| Mn 257.610†       | 490519.1                 | 613.59   | 0.13% | [500]       | µg/L  |
| Mo 202.031†       | 11968.5                  | 26.65    | 0.22% | [500]       | µg/L  |
| Ni 231.604†       | 27106.6                  | 25.64    | 0.09% | [500]       | µg/L  |
| P 214.914†        | 5546.2                   | 21.58    | 0.39% | [2500]      | µg/L  |
| Pb 220.353†       | 5844.1                   | 9.40     | 0.16% | [500]       | µg/L  |
| S 181.975 Axial†  | 976.8                    | 6.33     | 0.65% | [1000]      | µg/L  |
| Sb 206.836†       | 2208.5                   | 7.58     | 0.34% | [500]       | µg/L  |
| Se 196.026†       | 1344.8                   | 10.83    | 0.81% | [500]       | µg/L  |
| SiO2†             | 54703.9                  | 24.76    | 0.05% | [5347.5]    | µg/L  |



|             |          |        |       |        |      |
|-------------|----------|--------|-------|--------|------|
| Si 251.611† | 69021.9  | 34.85  | 0.05% | [2500] | µg/L |
| Sn 189.927† | 5049.6   | 5.55   | 0.11% | [500]  | µg/L |
| Sr 421.552† | 19470.5  | 56.60  | 0.29% | [500]  | µg/L |
| Ti 334.940† | 214574.6 | 107.95 | 0.05% | [500]  | µg/L |
| Tl 190.801† | 2966.0   | 13.43  | 0.45% | [500]  | µg/L |
| U 367.007†  | 2665.9   | 63.07  | 2.37% | [500]  | µg/L |
| V 292.402†  | 75038.6  | 108.32 | 0.14% | [500]  | µg/L |
| Zn 213.857† | 88997.8  | 92.00  | 0.10% | [500]  | µg/L |

Sequence No.: 4

Sample ID: SCAL

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 4

Date Collected: 11/16/2016 06:15:47

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: SCAL

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units | Calib. | Analysis Time |
|-------|--------------------|---------------|---------------------|-------------|--------|---------------|
| 1     | Sc RADIAL          | 8275.9        | 8275.9              | 98.2        | %      | 06:16:36      |
| 1     | Al 396.153Radial†  | 19929.8       | 21029.1             | [10000]     | µg/L   | 06:16:16      |
| 1     | Ca 317.933Radial†  | 20752.7       | 21022.1             | [10000]     | µg/L   | 06:16:36      |
| 1     | Fe 238.204 Radial† | 6579.7        | 6688.5              | [10000]     | µg/L   | 06:16:36      |
| 1     | K 766.490 Radial†  | 18283.3       | 18212.9             | [10000]     | µg/L   | 06:16:16      |
| 1     | Mg 279.077 IEC†    | 1620.5        | 1638.8              | [10000]     | µg/L   | 06:16:36      |
| 1     | Na 589.592 Radial† | 238.7         | 238.1               | [10000]     | µg/L   | 06:16:36      |
| 1     | Sr 421.552†        | 38223.0       | 38915.3             | [1000]      | µg/L   | 06:16:16      |
| 1     | Sc 361.383         | 603078.4      | 603078.4            | 96.371      | %      | 06:17:39      |
| 1     | Y 371.029          | 673722.9      | 673722.9            | 94.885      | %      | 06:17:39      |
| 1     | Ag 328.068†        | 193304.1      | 201521.9            | [1000]      | µg/L   | 06:17:39      |
| 1     | As 188.979†        | 3275.8        | 3377.0              | [1000]      | µg/L   | 06:17:59      |
| 1     | B 249.677†         | 50142.9       | 51838.9             | [1000]      | µg/L   | 06:17:39      |
| 1     | Ba 233.527†        | 172596.2      | 178965.6            | [1000]      | µg/L   | 06:17:39      |
| 1     | Be 313.107†        | 2418916.9     | 2515438.1           | [1000]      | µg/L   | 06:17:33      |
| 1     | Cd 226.502†        | 159839.1      | 166110.5            | [1000]      | µg/L   | 06:17:39      |
| 1     | Co 228.616†        | 59561.7       | 62131.9             | [1000]      | µg/L   | 06:17:39      |
| 1     | Cr 267.716†        | 77557.1       | 80360.5             | [1000]      | µg/L   | 06:17:39      |
| 1     | Cu 324.752†        | 235366.8      | 241735.3            | [1000]      | µg/L   | 06:17:39      |
| 1     | Mn 257.610†        | 986124.4      | 1022410.9           | [1000]      | µg/L   | 06:17:33      |
| 1     | Mo 202.031†        | 23996.1       | 24916.2             | [1000]      | µg/L   | 06:17:59      |
| 1     | Ni 231.604†        | 55228.5       | 57484.1             | [1000]      | µg/L   | 06:17:39      |
| 1     | P 214.914†         | 11323.5       | 11605.0             | [5000]      | µg/L   | 06:17:59      |
| 1     | Pb 220.353†        | 11724.2       | 12059.2             | [1000]      | µg/L   | 06:17:59      |
| 1     | S 181.975 Axial†   | 2138.0        | 2071.4              | [2000]      | µg/L   | 06:17:59      |
| 1     | Sb 206.836†        | 4605.9        | 4664.1              | [1000]      | µg/L   | 06:17:59      |
| 1     | Se 196.026†        | 2662.4        | 2780.8              | [1000]      | µg/L   | 06:17:59      |
| 1     | SiO2†              | 112217.1      | 114809.1            | [10695]     | µg/L   | 06:17:39      |
| 1     | Si 251.611†        | 140465.4      | 145459.4            | [5000]      | µg/L   | 06:17:39      |
| 1     | Sn 189.927†        | 10154.4       | 10515.5             | [1000]      | µg/L   | 06:17:59      |
| 1     | Ti 334.940†        | 428425.9      | 445354.9            | [1000]      | µg/L   | 06:17:39      |
| 1     | Tl 190.801†        | 5685.6        | 6057.1              | [1000]      | µg/L   | 06:17:59      |
| 1     | U 367.007†         | 6609.1        | 5433.5              | [1000]      | µg/L   | 06:17:39      |
| 1     | V 292.402†         | 152340.2      | 157657.0            | [1000]      | µg/L   | 06:17:39      |
| 1     | Zn 213.857†        | 178734.0      | 184678.0            | [1000]      | µg/L   | 06:17:39      |
| 2     | Sc RADIAL          | 8300.1        | 8300.1              | 98.5        | %      | 06:17:01      |
| 2     | Al 396.153Radial†  | 19968.1       | 21008.8             | [10000]     | µg/L   | 06:16:41      |
| 2     | Ca 317.933Radial†  | 20829.2       | 21038.1             | [10000]     | µg/L   | 06:17:01      |
| 2     | Fe 238.204 Radial† | 6625.7        | 6715.7              | [10000]     | µg/L   | 06:17:01      |
| 2     | K 766.490 Radial†  | 18668.7       | 18549.9             | [10000]     | µg/L   | 06:16:41      |
| 2     | Mg 279.077 IEC†    | 1630.6        | 1644.3              | [10000]     | µg/L   | 06:17:01      |
| 2     | Na 589.592 Radial† | 233.6         | 232.2               | [10000]     | µg/L   | 06:17:01      |
| 2     | Sr 421.552†        | 38815.8       | 39403.6             | [1000]      | µg/L   | 06:16:41      |
| 2     | Sc 361.383         | 605643.3      | 605643.3            | 96.781      | %      | 06:18:10      |
| 2     | Y 371.029          | 676752.7      | 676752.7            | 95.311      | %      | 06:18:10      |
| 2     | Ag 328.068†        | 194187.0      | 201584.7            | [1000]      | µg/L   | 06:18:10      |
| 2     | As 188.979†        | 3274.7        | 3361.5              | [1000]      | µg/L   | 06:18:31      |
| 2     | B 249.677†         | 50366.9       | 51850.0             | [1000]      | µg/L   | 06:18:10      |
| 2     | Ba 233.527†        | 173341.0      | 178976.7            | [1000]      | µg/L   | 06:18:10      |
| 2     | Be 313.107†        | 2421816.7     | 2507804.8           | [1000]      | µg/L   | 06:18:05      |
| 2     | Cd 226.502†        | 160734.8      | 166333.6            | [1000]      | µg/L   | 06:18:10      |
| 2     | Co 228.616†        | 59721.8       | 62035.6             | [1000]      | µg/L   | 06:18:10      |
| 2     | Cr 267.716†        | 77993.7       | 80470.8             | [1000]      | µg/L   | 06:18:10      |
| 2     | Cu 324.752†        | 236314.1      | 241679.7            | [1000]      | µg/L   | 06:18:10      |
| 2     | Mn 257.610†        | 986435.9      | 1018399.4           | [1000]      | µg/L   | 06:18:05      |
| 2     | Mo 202.031†        | 24099.5       | 24917.5             | [1000]      | µg/L   | 06:18:31      |
| 2     | Ni 231.604†        | 55493.0       | 57514.7             | [1000]      | µg/L   | 06:18:10      |
| 2     | P 214.914†         | 11353.7       | 11586.4             | [5000]      | µg/L   | 06:18:31      |

|   |                    |           |           |         |      |          |
|---|--------------------|-----------|-----------|---------|------|----------|
| 2 | Pb 220.353†        | 11786.2   | 12071.8   | [1000]  | µg/L | 06:18:31 |
| 2 | S 181.975 Axial†   | 2141.8    | 2065.9    | [2000]  | µg/L | 06:18:31 |
| 2 | Sb 206.836†        | 4598.8    | 4636.5    | [1000]  | µg/L | 06:18:31 |
| 2 | Se 196.026†        | 2670.4    | 2777.3    | [1000]  | µg/L | 06:18:31 |
| 2 | SiO2†              | 112613.8  | 114725.9  | [10695] | µg/L | 06:18:10 |
| 2 | Si 251.611†        | 141023.7  | 145418.9  | [5000]  | µg/L | 06:18:10 |
| 2 | Sn 189.927†        | 10247.8   | 10567.4   | [1000]  | µg/L | 06:18:31 |
| 2 | Ti 334.940†        | 430092.5  | 445194.3  | [1000]  | µg/L | 06:18:10 |
| 2 | Tl 190.801†        | 5797.2    | 6147.4    | [1000]  | µg/L | 06:18:31 |
| 2 | U 367.007†         | 6705.2    | 5503.7    | [1000]  | µg/L | 06:18:10 |
| 2 | V 292.402†         | 152999.4  | 157668.6  | [1000]  | µg/L | 06:18:10 |
| 2 | Zn 213.857†        | 179608.6  | 184796.3  | [1000]  | µg/L | 06:18:10 |
| 3 | Sc RADIAL          | 8277.2    | 8277.2    | 98.2    | %    | 06:17:26 |
| 3 | Al 396.153Radial†  | 20074.8   | 21173.3   | [10000] | µg/L | 06:17:06 |
| 3 | Ca 317.933Radial†  | 20803.7   | 21070.5   | [10000] | µg/L | 06:17:26 |
| 3 | Fe 238.204 Radial† | 6578.7    | 6686.4    | [10000] | µg/L | 06:17:26 |
| 3 | K 766.490 Radial†  | 18478.6   | 18408.6   | [10000] | µg/L | 06:17:06 |
| 3 | Mg 279.077 IEC†    | 1626.5    | 1644.6    | [10000] | µg/L | 06:17:26 |
| 3 | Na 589.592 Radial† | 235.8     | 235.1     | [10000] | µg/L | 06:17:26 |
| 3 | Sr 421.552†        | 38805.2   | 39501.5   | [1000]  | µg/L | 06:17:06 |
| 3 | Sc 361.383         | 602354.8  | 602354.8  | 96.256  | %    | 06:18:42 |
| 3 | Y 371.029          | 672565.5  | 672565.5  | 94.722  | %    | 06:18:42 |
| 3 | Ag 328.068†        | 193053.7  | 201502.8  | [1000]  | µg/L | 06:18:42 |
| 3 | As 188.979†        | 3250.7    | 3355.0    | [1000]  | µg/L | 06:19:02 |
| 3 | B 249.677†         | 50196.4   | 51956.9   | [1000]  | µg/L | 06:18:42 |
| 3 | Ba 233.527†        | 172666.3  | 179253.5  | [1000]  | µg/L | 06:18:42 |
| 3 | Be 313.107†        | 2429343.1 | 2529285.2 | [1000]  | µg/L | 06:18:37 |
| 3 | Cd 226.502†        | 159959.2  | 166434.6  | [1000]  | µg/L | 06:18:42 |
| 3 | Co 228.616†        | 59518.4   | 62161.1   | [1000]  | µg/L | 06:18:42 |
| 3 | Cr 267.716†        | 77524.7   | 80423.6   | [1000]  | µg/L | 06:18:42 |
| 3 | Cu 324.752†        | 235104.1  | 241755.7  | [1000]  | µg/L | 06:18:42 |
| 3 | Mn 257.610†        | 989795.8  | 1027454.4 | [1000]  | µg/L | 06:18:37 |
| 3 | Mo 202.031†        | 23946.3   | 24894.4   | [1000]  | µg/L | 06:19:02 |
| 3 | Ni 231.604†        | 55317.4   | 57645.4   | [1000]  | µg/L | 06:18:42 |
| 3 | P 214.914†         | 11306.8   | 11601.7   | [5000]  | µg/L | 06:19:02 |
| 3 | Pb 220.353†        | 11746.1   | 12096.6   | [1000]  | µg/L | 06:19:02 |
| 3 | S 181.975 Axial†   | 2129.3    | 2065.1    | [2000]  | µg/L | 06:19:02 |
| 3 | Sb 206.836†        | 4570.4    | 4632.9    | [1000]  | µg/L | 06:19:02 |
| 3 | Se 196.026†        | 2659.7    | 2781.2    | [1000]  | µg/L | 06:19:02 |
| 3 | SiO2†              | 112188.7  | 114919.5  | [10695] | µg/L | 06:18:42 |
| 3 | Si 251.611†        | 140608.1  | 145782.8  | [5000]  | µg/L | 06:18:42 |
| 3 | Sn 189.927†        | 10131.6   | 10504.5   | [1000]  | µg/L | 06:19:02 |
| 3 | Ti 334.940†        | 428295.0  | 445753.0  | [1000]  | µg/L | 06:18:42 |
| 3 | Tl 190.801†        | 5825.1    | 6209.1    | [1000]  | µg/L | 06:19:02 |
| 3 | U 367.007†         | 6696.9    | 5532.9    | [1000]  | µg/L | 06:18:42 |
| 3 | V 292.402†         | 152321.1  | 157827.0  | [1000]  | µg/L | 06:18:42 |
| 3 | Zn 213.857†        | 179155.1  | 185338.3  | [1000]  | µg/L | 06:18:42 |

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Mean Data: SCAL

| Analyte            | Mean Corrected Intensity | Std.Dev. | RSD   | Conc. Units | Calib |
|--------------------|--------------------------|----------|-------|-------------|-------|
| Sc 361.383         | 603692.2                 | 1728.00  | 0.29% | 96.469      | %     |
| Sc RADIAL          | 8284.4                   | 13.59    | 0.16% | 98.3        | %     |
| Y 371.029          | 674347.1                 | 2162.24  | 0.32% | 94.973      | %     |
| Ag 328.068†        | 201536.5                 | 42.87    | 0.02% | [1000]      | µg/L  |
| Al 396.153Radial†  | 21070.4                  | 89.71    | 0.43% | [10000]     | µg/L  |
| As 188.979†        | 3364.5                   | 11.26    | 0.33% | [1000]      | µg/L  |
| B 249.677†         | 51881.9                  | 65.18    | 0.13% | [1000]      | µg/L  |
| Ba 233.527†        | 179065.3                 | 163.13   | 0.09% | [1000]      | µg/L  |
| Be 313.107†        | 2517509.4                | 10888.98 | 0.43% | [1000]      | µg/L  |
| Ca 317.933Radial†  | 21043.5                  | 24.65    | 0.12% | [10000]     | µg/L  |
| Cd 226.502†        | 166292.9                 | 165.82   | 0.10% | [1000]      | µg/L  |
| Co 228.616†        | 62109.5                  | 65.69    | 0.11% | [1000]      | µg/L  |
| Cr 267.716†        | 80418.3                  | 55.32    | 0.07% | [1000]      | µg/L  |
| Cu 324.752†        | 241723.6                 | 39.34    | 0.02% | [1000]      | µg/L  |
| Fe 238.204 Radial† | 6696.9                   | 16.36    | 0.24% | [10000]     | µg/L  |
| K 766.490 Radial†  | 18390.5                  | 169.23   | 0.92% | [10000]     | µg/L  |
| Mg 279.077 IEC†    | 1642.5                   | 3.27     | 0.20% | [10000]     | µg/L  |
| Mn 257.610†        | 1022754.9                | 4537.30  | 0.44% | [1000]      | µg/L  |
| Mo 202.031†        | 24909.4                  | 12.99    | 0.05% | [1000]      | µg/L  |

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|                    |          |        |       |         |      |
|--------------------|----------|--------|-------|---------|------|
| Na 589.592 Radial† | 235.1    | 2.97   | 1.26% | [10000] | µg/L |
| Ni 231.604†        | 57548.1  | 85.63  | 0.15% | [1000]  | µg/L |
| P 214.914†         | 11597.7  | 9.92   | 0.09% | [5000]  | µg/L |
| Pb 220.353†        | 12075.9  | 19.02  | 0.16% | [1000]  | µg/L |
| S 181.975 Axial†   | 2067.5   | 3.44   | 0.17% | [2000]  | µg/L |
| Sb 206.836†        | 4644.5   | 17.04  | 0.37% | [1000]  | µg/L |
| Se 196.026†        | 2779.8   | 2.14   | 0.08% | [1000]  | µg/L |
| SiO2†              | 114818.2 | 97.13  | 0.08% | [10695] | µg/L |
| Si 251.611†        | 145553.7 | 199.41 | 0.14% | [5000]  | µg/L |
| Sn 189.927†        | 10529.1  | 33.62  | 0.32% | [1000]  | µg/L |
| Sr 421.552†        | 39273.5  | 314.03 | 0.80% | [1000]  | µg/L |
| Ti 334.940†        | 445434.1 | 287.65 | 0.06% | [1000]  | µg/L |
| Tl 190.801†        | 6137.9   | 76.47  | 1.25% | [1000]  | µg/L |
| U 367.007†         | 5490.0   | 51.08  | 0.93% | [1000]  | µg/L |
| V 292.402†         | 157717.5 | 95.01  | 0.06% | [1000]  | µg/L |
| Zn 213.857†        | 184937.5 | 352.06 | 0.19% | [1000]  | µg/L |

Sequence No.: 5

Sample ID: S10

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 5

Date Collected: 11/16/2016 06:19:11

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: S10

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc.   | Calib. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|---------|--------------|---------------|
| 1     | Sc RADIAL          | 8290.3        | 8290.3              | 98.4    | %            | 06:19:59      |
| 1     | Al 396.153Radial†  | 98696.1       | 101054.4            | [50000] | µg/L         | 06:19:39      |
| 1     | Ca 317.933Radial†  | 100513.0      | 102056.3            | [50000] | µg/L         | 06:19:39      |
| 1     | Fe 238.204 Radial† | 12782.1       | 12981.2             | [20000] | µg/L         | 06:19:59      |
| 1     | Mg 279.077 IEC†    | 7896.1        | 8014.7              | [50000] | µg/L         | 06:19:59      |
| 1     | Na 589.592 Radial† | 483.3         | 486.2               | [20000] | µg/L         | 06:19:59      |
| 1     | Sc 361.383         | 610447.7      | 610447.7            | 97.549  | %            | 06:20:57      |
| 1     | Y 371.029          | 681573.4      | 681573.4            | 95.990  | %            | 06:20:57      |
| 2     | Sc RADIAL          | 8361.7        | 8361.7              | 99.2    | %            | 06:20:25      |
| 2     | Al 396.153Radial†  | 99278.8       | 100785.8            | [50000] | µg/L         | 06:20:05      |
| 2     | Ca 317.933Radial†  | 101242.3      | 101919.6            | [50000] | µg/L         | 06:20:05      |
| 2     | Fe 238.204 Radial† | 12827.1       | 12915.7             | [20000] | µg/L         | 06:20:25      |
| 2     | Mg 279.077 IEC†    | 7945.1        | 7995.5              | [50000] | µg/L         | 06:20:25      |
| 2     | Na 589.592 Radial† | 501.0         | 499.9               | [20000] | µg/L         | 06:20:25      |
| 2     | Sc 361.383         | 610688.7      | 610688.7            | 97.587  | %            | 06:21:02      |
| 2     | Y 371.029          | 681559.9      | 681559.9            | 95.988  | %            | 06:21:02      |
| 3     | Sc RADIAL          | 8317.7        | 8317.7              | 98.7    | %            | 06:20:50      |
| 3     | Al 396.153Radial†  | 99964.5       | 102009.0            | [50000] | µg/L         | 06:20:30      |
| 3     | Ca 317.933Radial†  | 102415.2      | 103646.8            | [50000] | µg/L         | 06:20:30      |
| 3     | Fe 238.204 Radial† | 12791.4       | 12947.8             | [20000] | µg/L         | 06:20:50      |
| 3     | Mg 279.077 IEC†    | 7923.1        | 8015.6              | [50000] | µg/L         | 06:20:50      |
| 3     | Na 589.592 Radial† | 491.2         | 492.7               | [20000] | µg/L         | 06:20:50      |
| 3     | Sc 361.383         | 614456.0      | 614456.0            | 98.190  | %            | 06:21:08      |
| 3     | Y 371.029          | 685994.9      | 685994.9            | 96.613  | %            | 06:21:08      |

## Mean Data: S10

| Analyte            | Mean Corrected Intensity | Std.Dev. | RSD   | Conc.   | Calib. Units |
|--------------------|--------------------------|----------|-------|---------|--------------|
| Sc 361.383         | 611864.1                 | 2247.86  | 0.37% | 97.775  | %            |
| Sc RADIAL          | 8323.2                   | 35.99    | 0.43% | 98.8    | %            |
| Y 371.029          | 683042.7                 | 2556.70  | 0.37% | 96.197  | %            |
| Al 396.153Radial†  | 101283.1                 | 642.86   | 0.63% | [50000] | µg/L         |
| Ca 317.933Radial†  | 102540.9                 | 960.16   | 0.94% | [50000] | µg/L         |
| Fe 238.204 Radial† | 12948.2                  | 32.76    | 0.25% | [20000] | µg/L         |
| Mg 279.077 IEC†    | 8008.6                   | 11.32    | 0.14% | [50000] | µg/L         |
| Na 589.592 Radial† | 492.9                    | 6.83     | 1.38% | [20000] | µg/L         |

## Calibration Summary

| Analyte          | Stds. | Equation   | Intercept | Slope  | Curvature | Corr. Coef. | Reslope |
|------------------|-------|------------|-----------|--------|-----------|-------------|---------|
| Ag 328.068       | 3     | Lin Thru 0 | 0.0       | 199.9  | 0.00000   | 0.999873    |         |
| Al 396.153Radial | 3     | Lin Thru 0 | 0.0       | 2.029  | 0.00000   | 0.999969    |         |
| As 188.979       | 3     | Lin Thru 0 | 0.0       | 3.327  | 0.00000   | 0.999759    |         |
| B 249.677        | 3     | Lin Thru 0 | 0.0       | 51.38  | 0.00000   | 0.999811    |         |
| Ba 233.527       | 3     | Lin Thru 0 | 0.0       | 177.6  | 0.00000   | 0.999873    |         |
| Be 313.107       | 3     | Lin Thru 0 | 0.0       | 2495   | 0.00000   | 0.999848    |         |
| Ca 317.933Radial | 3     | Lin Thru 0 | 0.0       | 2.053  | 0.00000   | 0.999987    |         |
| Cd 226.502       | 3     | Lin Thru 0 | 0.0       | 165.1  | 0.00000   | 0.999895    |         |
| Co 228.616       | 3     | Lin Thru 0 | 0.0       | 61.40  | 0.00000   | 0.999740    |         |
| Cr 267.716       | 3     | Lin Thru 0 | 0.0       | 79.68  | 0.00000   | 0.999833    |         |
| Cu 324.752       | 3     | Lin Thru 0 | 0.0       | 239.7  | 0.00000   | 0.999867    |         |
| Fe 238.204 Radia | 2     | Lin Thru 0 | 0.0       | 0.6519 | 0.00000   | 0.999907    |         |
| K 766.490 Radial | 3     | Lin Thru 0 | 0.0       | 1.833  | 0.00000   | 0.999979    |         |
| Mg 279.077 IEC   | 3     | Lin Thru 0 | 0.0       | 0.1603 | 0.00000   | 0.999987    |         |
| Mn 257.610       | 3     | Lin Thru 0 | 0.0       | 1014   | 0.00000   | 0.999865    |         |
| Mo 202.031       | 3     | Lin Thru 0 | 0.0       | 24.71  | 0.00000   | 0.999870    |         |

|                  |   |            |     |        |         |          |
|------------------|---|------------|-----|--------|---------|----------|
| Na 589.592 Radia | 2 | Lin Thru 0 | 0.0 | 0.0244 | 0.00000 | 0.999827 |
| Ni 231.604       | 3 | Lin Thru 0 | 0.0 | 56.86  | 0.00000 | 0.999720 |
| P 214.914        | 3 | Lin Thru 0 | 0.0 | 2.298  | 0.00000 | 0.999833 |
| Pb 220.353       | 3 | Lin Thru 0 | 0.0 | 12.00  | 0.00000 | 0.999914 |
| S 181.975 Axial  | 3 | Lin Thru 0 | 0.0 | 1.022  | 0.00000 | 0.999734 |
| Sb 206.836       | 3 | Lin Thru 0 | 0.0 | 4.598  | 0.00000 | 0.999803 |
| Se 196.026       | 3 | Lin Thru 0 | 0.0 | 2.761  | 0.00000 | 0.999912 |
| SiO2             | 3 | Lin Thru 0 | 0.0 | 10.63  | 0.00000 | 0.999813 |
| Si 251.611       | 3 | Lin Thru 0 | 0.0 | 28.80  | 0.00000 | 0.999777 |
| Sn 189.927       | 3 | Lin Thru 0 | 0.0 | 10.44  | 0.00000 | 0.999859 |
| Sr 421.552       | 3 | Lin Thru 0 | 0.0 | 39.20  | 0.00000 | 0.999994 |
| Ti 334.940       | 3 | Lin Thru 0 | 0.0 | 442.0  | 0.00000 | 0.999886 |
| Tl 190.801       | 3 | Lin Thru 0 | 0.0 | 6.096  | 0.00000 | 0.999909 |
| U 367.007        | 3 | Lin Thru 0 | 0.0 | 5.454  | 0.00000 | 0.999896 |
| V 292.402        | 3 | Lin Thru 0 | 0.0 | 156.1  | 0.00000 | 0.999801 |
| Zn 213.857       | 3 | Lin Thru 0 | 0.0 | 183.5  | 0.00000 | 0.999884 |

Sequence No.: 6

Sample ID: ICV

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 9

Date Collected: 11/16/2016 06:21:16

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: ICV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8281.7        | 8281.7              | 98.3 %             |                    | 06:22:06      |
| 1     | Al 396.153Radial†  | 9649.5        | 10554.7             | 5184.0 µg/L        | 5184.0 ppb         | 06:21:46      |
| 1     | Ca 317.933Radial†  | 10581.8       | 10658.4             | 5191.5 µg/L        | 5191.5 ppb         | 06:22:06      |
| 1     | Fe 238.204 Radial† | 3362.6        | 3410.5              | 5231.8 µg/L        | 5231.8 ppb         | 06:22:06      |
| 1     | K 766.490 Radial†  | 5081.1        | 4766.7              | 2601.7 µg/L        | 2601.7 ppb         | 06:21:46      |
| 1     | Mg 279.077 IEC†    | 836.3         | 839.7               | 5236.8 µg/L        | 5236.8 ppb         | 06:22:06      |
| 1     | Na 589.592 Radial† | 61.9          | 58.0                | 2373.5 µg/L        | 2373.5 ppb         | 06:22:06      |
| 1     | Sr 421.552†        | 19430.7       | 19766.9             | 504.04 µg/L        | 504.04 ppb         | 06:21:46      |
| 1     | Sc 361.383         | 621641.3      | 621641.3            | 99.338 %           |                    | 06:23:03      |
| 1     | Y 371.029          | 698513.8      | 698513.8            | 98.376 %           |                    | 06:23:03      |
| 1     | Ag 328.068†        | 48760.3       | 50024.8             | 251.60 µg/L        | 251.60 ppb         | 06:23:03      |
| 1     | As 188.979†        | 1628.8        | 1617.5              | 490.70 µg/L        | 490.70 ppb         | 06:23:24      |
| 1     | B 249.677†         | 25130.2       | 25105.7             | 506.92 µg/L        | 506.92 ppb         | 06:23:03      |
| 1     | Ba 233.527†        | 88393.1       | 88853.2             | 500.09 µg/L        | 500.09 ppb         | 06:23:03      |
| 1     | Be 313.107†        | 612880.5      | 622409.7            | 249.71 µg/L        | 249.71 ppb         | 06:23:03      |
| 1     | Cd 226.502†        | 81993.9       | 82793.7             | 501.18 µg/L        | 501.18 ppb         | 06:23:03      |
| 1     | Co 228.616†        | 29427.9       | 29951.6             | 487.50 µg/L        | 487.50 ppb         | 06:23:24      |
| 1     | Cr 267.716†        | 39151.3       | 39295.5             | 493.02 µg/L        | 493.02 ppb         | 06:23:03      |
| 1     | Cu 324.752†        | 122609.0      | 120932.7            | 504.74 µg/L        | 504.74 ppb         | 06:23:03      |
| 1     | Mn 257.610†        | 506035.2      | 508565.5            | 501.47 µg/L        | 501.47 ppb         | 06:23:03      |
| 1     | Mo 202.031†        | 11972.8       | 12069.2             | 488.71 µg/L        | 488.71 ppb         | 06:23:24      |
| 1     | Ni 231.604†        | 27328.6       | 27687.0             | 486.78 µg/L        | 486.78 ppb         | 06:23:24      |
| 1     | P 214.914†         | 5644.7        | 5537.4              | 2395.4 µg/L        | 2395.4 ppb         | 06:23:24      |
| 1     | Pb 220.353†        | 6102.9        | 6037.2              | 502.75 µg/L        | 502.75 ppb         | 06:23:24      |
| 1     | S 181.975 Axial†   | 2624.4        | 2494.8              | 2445.6 µg/L        | 2445.6 ppb         | 06:23:24      |
| 1     | Sb 206.836†        | 2344.5        | 2244.9              | 485.37 µg/L        | 485.37 ppb         | 06:23:24      |
| 1     | Se 196.026†        | 6741.7        | 6804.8              | 2467.0 µg/L        | 2467.0 ppb         | 06:23:24      |
| 1     | SiO2†              | 111448.3      | 110558.1            | 10406 µg/L         | 10406 ppb          | 06:23:03      |
| 1     | Si 251.611†        | 138866.8      | 139497.8            | 4835.9 µg/L        | 4835.9 ppb         | 06:23:03      |
| 1     | Sn 189.927†        | 5167.4        | 5180.6              | 498.07 µg/L        | 498.07 ppb         | 06:23:24      |
| 1     | Ti 334.940†        | 214950.5      | 217181.3            | 491.19 µg/L        | 491.19 ppb         | 06:23:03      |
| 1     | Tl 190.801†        | 2855.8        | 3032.2              | 498.41 µg/L        | 498.41 ppb         | 06:23:24      |
| 1     | U 367.007†         | 4113.8        | 2716.7              | 475.1 µg/L         | 475.1 ppb          | 06:23:03      |
| 1     | V 292.402†         | 76563.5       | 76654.8             | 497.30 µg/L        | 497.30 ppb         | 06:23:03      |
| 1     | Zn 213.857†        | 92662.2       | 92494.3             | 499.25 µg/L        | 499.25 ppb         | 06:23:03      |
| 2     | Sc RADIAL          | 8275.9        | 8275.9              | 98.2 %             |                    | 06:22:31      |
| 2     | Al 396.153Radial†  | 9585.8        | 10496.6             | 5155.3 µg/L        | 5155.3 ppb         | 06:22:11      |
| 2     | Ca 317.933Radial†  | 10623.6       | 10708.5             | 5215.9 µg/L        | 5215.9 ppb         | 06:22:31      |
| 2     | Fe 238.204 Radial† | 3370.3        | 3420.6              | 5247.4 µg/L        | 5247.4 ppb         | 06:22:31      |
| 2     | K 766.490 Radial†  | 4976.5        | 4663.7              | 2545.5 µg/L        | 2545.5 ppb         | 06:22:11      |
| 2     | Mg 279.077 IEC†    | 844.0         | 848.2               | 5289.5 µg/L        | 5289.5 ppb         | 06:22:31      |
| 2     | Na 589.592 Radial† | 64.5          | 60.7                | 2484.2 µg/L        | 2484.2 ppb         | 06:22:31      |
| 2     | Sr 421.552†        | 19442.6       | 19792.8             | 504.70 µg/L        | 504.70 ppb         | 06:22:11      |
| 2     | Sc 361.383         | 624447.8      | 624447.8            | 99.786 %           |                    | 06:23:30      |
| 2     | Y 371.029          | 701828.1      | 701828.1            | 98.843 %           |                    | 06:23:30      |
| 2     | Ag 328.068†        | 49140.5       | 50185.2             | 252.41 µg/L        | 252.41 ppb         | 06:23:30      |
| 2     | As 188.979†        | 1642.4        | 1623.7              | 492.59 µg/L        | 492.59 ppb         | 06:23:50      |
| 2     | B 249.677†         | 25298.8       | 25161.0             | 508.05 µg/L        | 508.05 ppb         | 06:23:30      |
| 2     | Ba 233.527†        | 88708.1       | 88768.9             | 499.62 µg/L        | 499.62 ppb         | 06:23:30      |
| 2     | Be 313.107†        | 616098.5      | 622861.7            | 249.89 µg/L        | 249.89 ppb         | 06:23:30      |
| 2     | Cd 226.502†        | 82459.4       | 82889.2             | 501.76 µg/L        | 501.76 ppb         | 06:23:30      |
| 2     | Co 228.616†        | 29618.7       | 30009.7             | 488.44 µg/L        | 488.44 ppb         | 06:23:50      |
| 2     | Cr 267.716†        | 39464.7       | 39432.5             | 494.74 µg/L        | 494.74 ppb         | 06:23:30      |
| 2     | Cu 324.752†        | 123271.5      | 121041.9            | 505.19 µg/L        | 505.19 ppb         | 06:23:30      |
| 2     | Mn 257.610†        | 508096.7      | 508341.9            | 501.25 µg/L        | 501.25 ppb         | 06:23:30      |
| 2     | Mo 202.031†        | 12060.3       | 12102.7             | 490.07 µg/L        | 490.07 ppb         | 06:23:50      |
| 2     | Ni 231.604†        | 27470.0       | 27705.0             | 487.09 µg/L        | 487.09 ppb         | 06:23:50      |
| 2     | P 214.914†         | 5709.7        | 5577.0              | 2412.5 µg/L        | 2412.5 ppb         | 06:23:50      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 6143.4   | 6050.2   | 503.85 µg/L | 503.85 ppb | 06:23:50 |
| 2 | S 181.975 Axial†   | 2640.8   | 2499.4   | 2450.1 µg/L | 2450.1 ppb | 06:23:50 |
| 2 | Sb 206.836†        | 2365.5   | 2255.3   | 487.62 µg/L | 487.62 ppb | 06:23:50 |
| 2 | Se 196.026†        | 6799.9   | 6832.6   | 2477.0 µg/L | 2477.0 ppb | 06:23:50 |
| 2 | SiO2†              | 111951.0 | 110557.7 | 10406 µg/L  | 10406 ppb  | 06:23:30 |
| 2 | Si 251.611†        | 139600.3 | 139604.5 | 4839.5 µg/L | 4839.5 ppb | 06:23:30 |
| 2 | Sn 189.927†        | 5191.4   | 5181.3   | 498.14 µg/L | 498.14 ppb | 06:23:50 |
| 2 | Ti 334.940†        | 216226.6 | 217487.7 | 491.88 µg/L | 491.88 ppb | 06:23:30 |
| 2 | Tl 190.801†        | 2873.1   | 3036.6   | 499.13 µg/L | 499.13 ppb | 06:23:50 |
| 2 | U 367.007†         | 4094.2   | 2678.5   | 468.0 µg/L  | 468.0 ppb  | 06:23:30 |
| 2 | V 292.402†         | 77013.1  | 76758.9  | 497.99 µg/L | 497.99 ppb | 06:23:30 |
| 2 | Zn 213.857†        | 93277.1  | 92691.2  | 500.32 µg/L | 500.32 ppb | 06:23:30 |
| 3 | Sc RADIAL          | 8286.0   | 8286.0   | 98.3 %      |            | 06:22:56 |
| 3 | Al 396.153Radial†  | 9608.7   | 10508.1  | 5160.9 µg/L | 5160.9 ppb | 06:22:36 |
| 3 | Ca 317.933Radial†  | 10599.0  | 10670.3  | 5197.3 µg/L | 5197.3 ppb | 06:22:56 |
| 3 | Fe 238.204 Radial† | 3357.8   | 3403.7   | 5221.5 µg/L | 5221.5 ppb | 06:22:56 |
| 3 | K 766.490 Radial†  | 4848.4   | 4527.4   | 2471.1 µg/L | 2471.1 ppb | 06:22:36 |
| 3 | Mg 279.077 IEC†    | 848.7    | 851.9    | 5312.6 µg/L | 5312.6 ppb | 06:22:56 |
| 3 | Na 589.592 Radial† | 67.9     | 64.1     | 2623.8 µg/L | 2623.8 ppb | 06:22:56 |
| 3 | Sr 421.552†        | 19500.9  | 19828.0  | 505.59 µg/L | 505.59 ppb | 06:22:36 |
| 3 | Sc 361.383         | 623640.2 | 623640.2 | 99.657 %    |            | 06:23:56 |
| 3 | Y 371.029          | 700285.6 | 700285.6 | 98.626 %    |            | 06:23:56 |
| 3 | Ag 328.068†        | 49131.9  | 50240.4  | 252.69 µg/L | 252.69 ppb | 06:23:56 |
| 3 | As 188.979†        | 1632.4   | 1615.9   | 490.26 µg/L | 490.26 ppb | 06:24:16 |
| 3 | B 249.677†         | 25368.3  | 25263.5  | 509.93 µg/L | 509.93 ppb | 06:23:56 |
| 3 | Ba 233.527†        | 89158.9  | 89336.3  | 502.81 µg/L | 502.81 ppb | 06:23:56 |
| 3 | Be 313.107†        | 618204.6 | 625774.6 | 251.05 µg/L | 251.05 ppb | 06:23:56 |
| 3 | Cd 226.502†        | 82817.6  | 83355.6  | 504.59 µg/L | 504.59 ppb | 06:23:56 |
| 3 | Co 228.616†        | 29734.4  | 30164.2  | 490.96 µg/L | 490.96 ppb | 06:24:16 |
| 3 | Cr 267.716†        | 39668.9  | 39688.5  | 497.96 µg/L | 497.96 ppb | 06:23:56 |
| 3 | Cu 324.752†        | 123367.9 | 121298.6 | 506.25 µg/L | 506.25 ppb | 06:23:56 |
| 3 | Mn 257.610†        | 509865.9 | 510776.6 | 503.65 µg/L | 503.65 ppb | 06:23:56 |
| 3 | Mo 202.031†        | 12107.2  | 12165.5  | 492.61 µg/L | 492.61 ppb | 06:24:16 |
| 3 | Ni 231.604†        | 27578.3  | 27849.3  | 489.63 µg/L | 489.63 ppb | 06:24:16 |
| 3 | P 214.914†         | 5725.8   | 5600.6   | 2422.8 µg/L | 2422.8 ppb | 06:24:16 |
| 3 | Pb 220.353†        | 6161.8   | 6076.6   | 506.06 µg/L | 506.06 ppb | 06:24:16 |
| 3 | S 181.975 Axial†   | 2661.3   | 2523.4   | 2473.6 µg/L | 2473.6 ppb | 06:24:16 |
| 3 | Sb 206.836†        | 2364.7   | 2257.6   | 488.08 µg/L | 488.08 ppb | 06:24:16 |
| 3 | Se 196.026†        | 6831.1   | 6872.7   | 2491.6 µg/L | 2491.6 ppb | 06:24:16 |
| 3 | SiO2†              | 112221.4 | 110974.2 | 10445 µg/L  | 10445 ppb  | 06:23:56 |
| 3 | Si 251.611†        | 139983.0 | 140169.7 | 4859.1 µg/L | 4859.1 ppb | 06:23:56 |
| 3 | Sn 189.927†        | 5220.8   | 5217.5   | 501.61 µg/L | 501.61 ppb | 06:24:16 |
| 3 | Ti 334.940†        | 216767.0 | 218310.6 | 493.75 µg/L | 493.75 ppb | 06:23:56 |
| 3 | Tl 190.801†        | 2943.5   | 3111.0   | 511.34 µg/L | 511.34 ppb | 06:24:16 |
| 3 | U 367.007†         | 4062.1   | 2651.5   | 463.2 µg/L  | 463.2 ppb  | 06:23:56 |
| 3 | V 292.402†         | 77021.4  | 76867.2  | 498.70 µg/L | 498.70 ppb | 06:23:56 |
| 3 | Zn 213.857†        | 93585.4  | 93121.7  | 502.65 µg/L | 502.65 ppb | 06:23:56 |

## Mean Data: ICV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 623243.1                 | 99.594 %           | 0.2309   |                    |          | 0.23% |
| Sc RADIAL  | 8281.2                   | 98.3 %             | 0.06     |                    |          | 0.06% |
| Y 371.029  | 700209.2                 | 98.615 %           | 0.2336   |                    |          | 0.24% |
| Ag 328.068†  | 50150.2                  | 252.23 µg/L        | 0.564    | 252.23 ppb         | 0.564    | 0.22% |
| QC value within limits for Ag 328.068 Recovery = 100.89%       |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 10519.8                  | 5166.7 µg/L        | 15.21    | 5166.7 ppb         | 15.21    | 0.29% |
| QC value within limits for Al 396.153Radial Recovery = 103.33% |                          |                    |          |                    |          |       |
| As 188.979†  | 1619.1                   | 491.18 µg/L        | 1.235    | 491.18 ppb         | 1.235    | 0.25% |
| QC value within limits for As 188.979 Recovery = 98.24%        |                          |                    |          |                    |          |       |
| B 249.677†   | 25176.7                  | 508.30 µg/L        | 1.523    | 508.30 ppb         | 1.523    | 0.30% |
| QC value within limits for B 249.677 Recovery = 101.66%        |                          |                    |          |                    |          |       |
| Ba 233.527†  | 88986.1                  | 500.84 µg/L        | 1.724    | 500.84 ppb         | 1.724    | 0.34% |
| QC value within limits for Ba 233.527 Recovery = 100.17%       |                          |                    |          |                    |          |       |
| Be 313.107†  | 623682.0                 | 250.21 µg/L        | 0.731    | 250.21 ppb         | 0.731    | 0.29% |
| QC value within limits for Be 313.107 Recovery = 100.09%       |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 10679.1                  | 5201.6 µg/L        | 12.75    | 5201.6 ppb         | 12.75    | 0.25% |
| QC value within limits for Ca 317.933Radial Recovery = 104.03% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 83012.8                  | 502.51 µg/L        | 1.823    | 502.51 ppb         | 1.823    | 0.36% |
| QC value within limits for Cd 226.502 Recovery = 100.50%       |                          |                    |          |                    |          |       |



|   |          |             |        |            |        |       |
|---|----------|-------------|--------|------------|--------|-------|
| Co 228.616†   | 30041.8  | 488.97 µg/L | 1.791  | 488.97 ppb | 1.791  | 0.37% |
| QC value within limits for Co 228.616 Recovery = 97.79%         |          |             |        |            |        |       |
| Cr 267.716†   | 39472.1  | 495.24 µg/L | 2.509  | 495.24 ppb | 2.509  | 0.51% |
| QC value within limits for Cr 267.716 Recovery = 99.05%         |          |             |        |            |        |       |
| Cu 324.752†   | 121091.1 | 505.39 µg/L | 0.779  | 505.39 ppb | 0.779  | 0.15% |
| QC value within limits for Cu 324.752 Recovery = 101.08%        |          |             |        |            |        |       |
| Fe 238.204 Radial†  | 3411.6   | 5233.6 µg/L | 13.04  | 5233.6 ppb | 13.04  | 0.25% |
| QC value within limits for Fe 238.204 Radial Recovery = 104.67% |          |             |        |            |        |       |
| K 766.490 Radial†   | 4652.6   | 2539.4 µg/L | 65.49  | 2539.4 ppb | 65.49  | 2.58% |
| QC value within limits for K 766.490 Radial Recovery = 101.58%  |          |             |        |            |        |       |
| Mg 279.077 IEC†   | 846.6    | 5279.6 µg/L | 38.83  | 5279.6 ppb | 38.83  | 0.74% |
| QC value within limits for Mg 279.077 IEC Recovery = 105.59%    |          |             |        |            |        |       |
| Mn 257.610†   | 509228.0 | 502.12 µg/L | 1.325  | 502.12 ppb | 1.325  | 0.26% |
| QC value within limits for Mn 257.610 Recovery = 100.42%        |          |             |        |            |        |       |
| Mo 202.031†   | 12112.4  | 490.46 µg/L | 1.978  | 490.46 ppb | 1.978  | 0.40% |
| QC value within limits for Mo 202.031 Recovery = 98.09%         |          |             |        |            |        |       |
| Na 589.592 Radial†  | 60.9     | 2493.8 µg/L | 125.41 | 2493.8 ppb | 125.41 | 5.03% |
| QC value within limits for Na 589.592 Radial Recovery = 99.75%  |          |             |        |            |        |       |
| Ni 231.604†   | 27747.1  | 487.83 µg/L | 1.566  | 487.83 ppb | 1.566  | 0.32% |
| QC value within limits for Ni 231.604 Recovery = 97.57%         |          |             |        |            |        |       |
| P 214.914†  | 5571.7   | 2410.2 µg/L | 13.87  | 2410.2 ppb | 13.87  | 0.58% |
| QC value within limits for P 214.914 Recovery = 96.41%          |          |             |        |            |        |       |
| Pb 220.353†   | 6054.6   | 504.22 µg/L | 1.685  | 504.22 ppb | 1.685  | 0.33% |
| QC value within limits for Pb 220.353 Recovery = 100.84%        |          |             |        |            |        |       |
| S 181.975 Axial†  | 2505.9   | 2456.4 µg/L | 15.04  | 2456.4 ppb | 15.04  | 0.61% |
| QC value within limits for S 181.975 Axial Recovery = 98.26%    |          |             |        |            |        |       |
| Sb 206.836†   | 2252.6   | 487.02 µg/L | 1.451  | 487.02 ppb | 1.451  | 0.30% |
| QC value within limits for Sb 206.836 Recovery = 97.40%         |          |             |        |            |        |       |
| Se 196.026†   | 6836.7   | 2478.5 µg/L | 12.36  | 2478.5 ppb | 12.36  | 0.50% |
| QC value within limits for Se 196.026 Recovery = 99.14%         |          |             |        |            |        |       |
| SiO2†   | 110696.7 | 10419 µg/L  | 22.64  | 10419 ppb  | 22.64  | 0.22% |
| QC value within limits for SiO2 Recovery = 97.42%               |          |             |        |            |        |       |
| Si 251.611†   | 139757.3 | 4844.8 µg/L | 12.51  | 4844.8 ppb | 12.51  | 0.26% |
| QC value within limits for Si 251.611 Recovery = 96.90%         |          |             |        |            |        |       |
| Sn 189.927†   | 5193.1   | 499.27 µg/L | 2.025  | 499.27 ppb | 2.025  | 0.41% |
| QC value within limits for Sn 189.927 Recovery = 99.85%         |          |             |        |            |        |       |
| Sr 421.552†   | 19795.9  | 504.78 µg/L | 0.782  | 504.78 ppb | 0.782  | 0.15% |
| QC value within limits for Sr 421.552 Recovery = 100.96%        |          |             |        |            |        |       |
| Ti 334.940†   | 217659.8 | 492.27 µg/L | 1.323  | 492.27 ppb | 1.323  | 0.27% |
| QC value within limits for Ti 334.940 Recovery = 98.45%         |          |             |        |            |        |       |
| Tl 190.801†   | 3059.9   | 502.96 µg/L | 7.264  | 502.96 ppb | 7.264  | 1.44% |
| QC value within limits for Tl 190.801 Recovery = 100.59%        |          |             |        |            |        |       |
| U 367.007†  | 2682.3   | 468.8 µg/L  | 5.99   | 468.8 ppb  | 5.99   | 1.28% |
| QC value within limits for U 367.007 Recovery = 93.76%          |          |             |        |            |        |       |
| V 292.402†  | 76760.3  | 498.00 µg/L | 0.699  | 498.00 ppb | 0.699  | 0.14% |
| QC value within limits for V 292.402 Recovery = 99.60%          |          |             |        |            |        |       |
| Zn 213.857†   | 92769.1  | 500.74 µg/L | 1.736  | 500.74 ppb | 1.736  | 0.35% |
| QC value within limits for Zn 213.857 Recovery = 100.15%        |          |             |        |            |        |       |

All analyte(s) passed QC.

Sequence No.: 7

Autosampler Location: 10

Sample ID: ICB

Date Collected: 11/16/2016 06:24:24

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Wash Time: 5

Auto Dilution Factor: 1

## Replicate Data: ICB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8317.2        | 8317.2              | 98.7 %             |                    | 06:24:53      |
| 1     | Al 396.153Radial†  | -735.6        | -8.9                | -4.3819 µg/L       | -4.3819 ppb        | 06:24:53      |
| 1     | Ca 317.933Radial†  | 97.5          | -9.8                | -4.7907 µg/L       | -4.7907 ppb        | 06:25:13      |
| 1     | Fe 238.204 Radial† | 14.5          | 3.6                 | 5.5800 µg/L        | 5.5800 ppb         | 06:25:13      |
| 1     | K 766.490 Radial†  | 342.2         | -56.7               | -30.914 µg/L       | -30.914 ppb        | 06:24:53      |
| 1     | Mg 279.077 IEC†    | 9.8           | -1.3                | -8.1686 µg/L       | -8.1686 ppb        | 06:25:13      |
| 1     | Na 589.592 Radial† | 6.9           | 2.0                 | 82.261 µg/L        | 82.261 ppb         | 06:25:13      |
| 1     | Sr 421.552†        | 11.1          | 7.4                 | 0.1883 µg/L        | 0.1883 ppb         | 06:24:53      |
| 1     | Sc 361.383         | 616976.2      | 616976.2            | 98.592 %           |                    | 06:26:10      |
| 1     | Y 371.029          | 699639.5      | 699639.5            | 98.535 %           |                    | 06:26:10      |
| 1     | Ag 328.068†        | -866.5        | 60.5                | 0.2976 µg/L        | 0.2976 ppb         | 06:26:10      |
| 1     | As 188.979†        | 26.2          | 4.4                 | 1.3338 µg/L        | 1.3338 ppb         | 06:26:30      |
| 1     | B 249.677†         | 297.0         | 109.2               | 2.1491 µg/L        | 2.1491 ppb         | 06:26:30      |
| 1     | Ba 233.527†        | 141.5         | 14.2                | 0.0798 µg/L        | 0.0798 ppb         | 06:26:30      |
| 1     | Be 313.107†        | -5254.7       | 113.4               | 0.0487 µg/L        | 0.0487 ppb         | 06:26:10      |
| 1     | Cd 226.502†        | -215.7        | 34.3                | 0.2071 µg/L        | 0.2071 ppb         | 06:26:30      |
| 1     | Co 228.616†        | -342.4        | -19.8               | -0.3230 µg/L       | -0.3230 ppb        | 06:26:30      |
| 1     | Cr 267.716†        | 124.6         | 9.5                 | 0.1096 µg/L        | 0.1096 ppb         | 06:26:30      |
| 1     | Cu 324.752†        | 2570.6        | 113.6               | 0.4816 µg/L        | 0.4816 ppb         | 06:26:10      |
| 1     | Mn 257.610†        | 862.1         | 31.0                | 0.0311 µg/L        | 0.0311 ppb         | 06:26:30      |
| 1     | Mo 202.031†        | -25.2         | -8.9                | -0.3619 µg/L       | -0.3619 ppb        | 06:26:30      |
| 1     | Ni 231.604†        | -163.6        | 10.2                | 0.1796 µg/L        | 0.1796 ppb         | 06:26:30      |
| 1     | P 214.914†         | 130.9         | -12.1               | -5.2744 µg/L       | -5.2744 ppb        | 06:26:30      |
| 1     | Pb 220.353†        | 98.1          | -6.9                | -0.5817 µg/L       | -0.5817 ppb        | 06:26:30      |
| 1     | S 181.975 Axial†   | 139.6         | -5.5                | -5.3901 µg/L       | -5.3901 ppb        | 06:26:30      |
| 1     | Sb 206.836†        | 119.7         | 6.2                 | 1.3313 µg/L        | 1.3313 ppb         | 06:26:30      |
| 1     | Se 196.026†        | -13.2         | 4.7                 | 1.7118 µg/L        | 1.7118 ppb         | 06:26:30      |
| 1     | SiO2†              | 1675.2        | 65.9                | 6.2022 µg/L        | 6.2022 ppb         | 06:26:10      |
| 1     | Si 251.611†        | 325.1         | 34.9                | 1.2160 µg/L        | 1.2160 ppb         | 06:26:30      |
| 1     | Sn 189.927†        | 9.2           | -11.9               | -1.1422 µg/L       | -1.1422 ppb        | 06:26:30      |
| 1     | Ti 334.940†        | -721.4        | 66.1                | 0.1425 µg/L        | 0.1425 ppb         | 06:26:10      |
| 1     | Tl 190.801†        | -155.1        | 0.1                 | 0.0190 µg/L        | 0.0190 ppb         | 06:26:30      |
| 1     | U 367.007†         | 1479.3        | 75.9                | 13.89 µg/L         | 13.89 ppb          | 06:26:10      |
| 1     | V 292.402†         | 449.5         | 36.7                | 0.2411 µg/L        | 0.2411 ppb         | 06:26:10      |
| 1     | Zn 213.857†        | 698.2         | -77.6               | -0.4247 µg/L       | -0.4247 ppb        | 06:26:30      |
| 2     | Sc RADIAL          | 8368.9        | 8368.9              | 99.3 %             |                    | 06:25:18      |
| 2     | Al 396.153Radial†  | -706.6        | 24.9                | 12.243 µg/L        | 12.243 ppb         | 06:25:18      |
| 2     | Ca 317.933Radial†  | 105.5         | -2.3                | -1.1288 µg/L       | -1.1288 ppb        | 06:25:38      |
| 2     | Fe 238.204 Radial† | 14.1          | 3.2                 | 4.8911 µg/L        | 4.8911 ppb         | 06:25:38      |
| 2     | K 766.490 Radial†  | 224.5         | -177.3              | -96.699 µg/L       | -96.699 ppb        | 06:25:18      |
| 2     | Mg 279.077 IEC†    | 8.1           | -3.0                | -18.751 µg/L       | -18.751 ppb        | 06:25:38      |
| 2     | Na 589.592 Radial† | 5.6           | 0.7                 | 27.214 µg/L        | 27.214 ppb         | 06:25:38      |
| 2     | Sr 421.552†        | 27.7          | 24.1                | 0.6144 µg/L        | 0.6144 ppb         | 06:25:18      |
| 2     | Sc 361.383         | 620672.9      | 620672.9            | 99.183 %           |                    | 06:26:35      |
| 2     | Y 371.029          | 704018.2      | 704018.2            | 99.151 %           |                    | 06:26:35      |
| 2     | Ag 328.068†        | -942.5        | -10.8               | -0.0548 µg/L       | -0.0548 ppb        | 06:26:35      |
| 2     | As 188.979†        | 24.9          | 3.0                 | 0.9093 µg/L        | 0.9093 ppb         | 06:26:55      |
| 2     | B 249.677†         | 267.2         | 77.3                | 1.5243 µg/L        | 1.5243 ppb         | 06:26:55      |
| 2     | Ba 233.527†        | 138.6         | 10.5                | 0.0590 µg/L        | 0.0590 ppb         | 06:26:55      |
| 2     | Be 313.107†        | -5282.2       | 117.3               | 0.0481 µg/L        | 0.0481 ppb         | 06:26:35      |
| 2     | Cd 226.502†        | -184.2        | 67.4                | 0.4077 µg/L        | 0.4077 ppb         | 06:26:55      |
| 2     | Co 228.616†        | -326.0        | -1.2                | -0.0190 µg/L       | -0.0190 ppb        | 06:26:55      |
| 2     | Cr 267.716†        | 147.3         | 31.7                | 0.3945 µg/L        | 0.3945 ppb         | 06:26:55      |
| 2     | Cu 324.752†        | 2640.6        | 168.6               | 0.7055 µg/L        | 0.7055 ppb         | 06:26:35      |
| 2     | Mn 257.610†        | 869.8         | 33.5                | 0.0340 µg/L        | 0.0340 ppb         | 06:26:55      |
| 2     | Mo 202.031†        | -0.7          | 15.9                | 0.6424 µg/L        | 0.6424 ppb         | 06:26:55      |
| 2     | Ni 231.604†        | -157.1        | 17.7                | 0.3113 µg/L        | 0.3113 ppb         | 06:26:55      |
| 2     | P 214.914†         | 121.4         | -22.5               | -9.7874 µg/L       | -9.7874 ppb        | 06:26:55      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 124.1    | 18.7     | 1.5555 µg/L  | 1.5555 ppb  | 06:26:55 |
| 2 | S 181.975 Axial†   | 153.2    | 7.4      | 7.2187 µg/L  | 7.2187 ppb  | 06:26:55 |
| 2 | Sb 206.836†        | 109.7    | -4.6     | -1.0065 µg/L | -1.0065 ppb | 06:26:55 |
| 2 | Se 196.026†        | -25.3    | -7.4     | -2.6901 µg/L | -2.6901 ppb | 06:26:55 |
| 2 | SiO2†              | 1639.0   | 19.3     | 1.8153 µg/L  | 1.8153 ppb  | 06:26:35 |
| 2 | Si 251.611†        | 346.3    | 54.3     | 1.8739 µg/L  | 1.8739 ppb  | 06:26:55 |
| 2 | Sn 189.927†        | 30.0     | 8.9      | 0.8585 µg/L  | 0.8585 ppb  | 06:26:55 |
| 2 | Ti 334.940†        | -658.2   | 134.1    | 0.3011 µg/L  | 0.3011 ppb  | 06:26:35 |
| 2 | Tl 190.801†        | -142.4   | 13.9     | 2.2765 µg/L  | 2.2765 ppb  | 06:26:55 |
| 2 | U 367.007†         | 1436.3   | 23.6     | 4.312 µg/L   | 4.312 ppb   | 06:26:35 |
| 2 | V 292.402†         | 459.4    | 44.0     | 0.2918 µg/L  | 0.2918 ppb  | 06:26:35 |
| 2 | Zn 213.857†        | 709.9    | -69.9    | -0.3835 µg/L | -0.3835 ppb | 06:26:55 |
| 3 | Sc RADIAL          | 8342.1   | 8342.1   | 99.0 %       |             | 06:25:43 |
| 3 | Al 396.153Radial†  | -723.1   | 5.9      | 2.9012 µg/L  | 2.9012 ppb  | 06:25:43 |
| 3 | Ca 317.933Radial†  | 109.6    | 2.1      | 1.0313 µg/L  | 1.0313 ppb  | 06:26:03 |
| 3 | Fe 238.204 Radial† | 8.6      | -2.3     | -3.5818 µg/L | -3.5818 ppb | 06:26:03 |
| 3 | K 766.490 Radial†  | 455.1    | 56.3     | 30.716 µg/L  | 30.716 ppb  | 06:25:43 |
| 3 | Mg 279.077 IEC†    | 8.0      | -3.2     | -19.732 µg/L | -19.732 ppb | 06:26:03 |
| 3 | Na 589.592 Radial† | 10.5     | 5.7      | 231.51 µg/L  | 231.51 ppb  | 06:26:03 |
| 3 | Sr 421.552†        | 35.6     | 32.2     | 0.8201 µg/L  | 0.8201 ppb  | 06:25:43 |
| 3 | Sc 361.383         | 618191.7 | 618191.7 | 98.786 %     |             | 06:27:01 |
| 3 | Y 371.029          | 701326.5 | 701326.5 | 98.772 %     |             | 06:27:01 |
| 3 | Ag 328.068†        | -843.0   | 86.1     | 0.4302 µg/L  | 0.4302 ppb  | 06:27:01 |
| 3 | As 188.979†        | 16.8     | -5.1     | -1.5429 µg/L | -1.5429 ppb | 06:27:21 |
| 3 | B 249.677†         | 279.5    | 90.9     | 1.7557 µg/L  | 1.7557 ppb  | 06:27:21 |
| 3 | Ba 233.527†        | 107.7    | -20.3    | -0.1139 µg/L | -0.1139 ppb | 06:27:21 |
| 3 | Be 313.107†        | -5193.6  | 185.6    | 0.0743 µg/L  | 0.0743 ppb  | 06:27:01 |
| 3 | Cd 226.502†        | -213.9   | 36.5     | 0.2216 µg/L  | 0.2216 ppb  | 06:27:21 |
| 3 | Co 228.616†        | -336.6   | -13.2    | -0.2159 µg/L | -0.2159 ppb | 06:27:21 |
| 3 | Cr 267.716†        | 126.6    | 11.3     | 0.1416 µg/L  | 0.1416 ppb  | 06:27:21 |
| 3 | Cu 324.752†        | 2474.4   | 11.1     | 0.0459 µg/L  | 0.0459 ppb  | 06:27:01 |
| 3 | Mn 257.610†        | 842.7    | 9.6      | 0.0100 µg/L  | 0.0100 ppb  | 06:27:21 |
| 3 | Mo 202.031†        | -20.4    | -4.1     | -0.1657 µg/L | -0.1657 ppb | 06:27:21 |
| 3 | Ni 231.604†        | -136.8   | 37.7     | 0.6625 µg/L  | 0.6625 ppb  | 06:27:21 |
| 3 | P 214.914†         | 136.0    | -7.2     | -3.1168 µg/L | -3.1168 ppb | 06:27:21 |
| 3 | Pb 220.353†        | 96.5     | -8.7     | -0.7264 µg/L | -0.7264 ppb | 06:27:21 |
| 3 | S 181.975 Axial†   | 152.5    | 7.3      | 7.1215 µg/L  | 7.1215 ppb  | 06:27:21 |
| 3 | Sb 206.836†        | 108.6    | -5.3     | -1.1530 µg/L | -1.1530 ppb | 06:27:21 |
| 3 | Se 196.026†        | -13.4    | 4.6      | 1.6511 µg/L  | 1.6511 ppb  | 06:27:21 |
| 3 | SiO2†              | 1745.9   | 134.1    | 12.613 µg/L  | 12.613 ppb  | 06:27:01 |
| 3 | Si 251.611†        | 332.1    | 41.3     | 1.4349 µg/L  | 1.4349 ppb  | 06:27:21 |
| 3 | Sn 189.927†        | 25.7     | 4.7      | 0.4544 µg/L  | 0.4544 ppb  | 06:27:21 |
| 3 | Ti 334.940†        | -733.0   | 55.7     | 0.1264 µg/L  | 0.1264 ppb  | 06:27:01 |
| 3 | Tl 190.801†        | -151.7   | 3.8      | 0.6307 µg/L  | 0.6307 ppb  | 06:27:21 |
| 3 | U 367.007†         | 1403.8   | -3.4     | -0.613 µg/L  | -0.613 ppb  | 06:27:01 |
| 3 | V 292.402†         | 399.2    | -15.1    | -0.0990 µg/L | -0.0990 ppb | 06:27:01 |
| 3 | Zn 213.857†        | 695.7    | -81.5    | -0.4469 µg/L | -0.4469 ppb | 06:27:21 |

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Mean Data: ICB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 618613.6                 | 98.854 %           | 0.3011   |                    |          | 0.30%   |
| Sc RADIAL   | 8342.7                   | 99.0 %             | 0.31     |                    |          | 0.31%   |
| Y 371.029   | 701661.4                 | 98.819 %           | 0.3110   |                    |          | 0.31%   |
| Ag 328.068†   | 45.3                     | 0.2243 µg/L        | 0.25068  | 0.2243 ppb         | 0.25068  | 111.73% |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 7.3                      | 3.5876 µg/L        | 8.33387  | 3.5876 ppb         | 8.33387  | 232.30% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | 0.8                      | 0.2334 µg/L        | 1.55289  | 0.2334 ppb         | 1.55289  | 665.35% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 92.5                     | 1.8097 µg/L        | 0.31586  | 1.8097 ppb         | 0.31586  | 17.45%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | 1.5                      | 0.0083 µg/L        | 0.10636  | 0.0083 ppb         | 0.10636  | >999.9% |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 138.8                    | 0.0570 µg/L        | 0.01494  | 0.0570 ppb         | 0.01494  | 26.19%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | -3.3                     | -1.6294 µg/L       | 2.94312  | -1.6294 ppb        | 2.94312  | 180.63% |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| Cd 226.502†   | 46.0                     | 0.2788 µg/L        | 0.11185  | 0.2788 ppb         | 0.11185  | 40.12%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |                    |          |                    |          |         |

|  |       |              |         |             |         |         |
|--|-------|--------------|---------|-------------|---------|---------|
| Co 228.616†  | -11.4 | -0.1860 µg/L | 0.15420 | -0.1860 ppb | 0.15420 | 82.92%  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |       |              |         |             |         |         |
| Cr 267.716†  | 17.5  | 0.2152 µg/L  | 0.15608 | 0.2152 ppb  | 0.15608 | 72.51%  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |       |              |         |             |         |         |
| Cu 324.752†  | 97.8  | 0.4110 µg/L  | 0.33540 | 0.4110 ppb  | 0.33540 | 81.61%  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |       |              |         |             |         |         |
| Fe 238.204 Radial†   | 1.5   | 2.2965 µg/L  | 5.10234 | 2.2965 ppb  | 5.10234 | 222.18% |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |       |              |         |             |         |         |
| K 766.490 Radial†  | -59.2 | -32.299 µg/L | 63.7187 | -32.299 ppb | 63.7187 | 197.28% |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |       |              |         |             |         |         |
| Mg 279.077 IEC†  | -2.5  | -15.551 µg/L | 6.4119  | -15.551 ppb | 6.4119  | 41.23%  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |       |              |         |             |         |         |
| Mn 257.610†  | 24.7  | 0.0250 µg/L  | 0.01310 | 0.0250 ppb  | 0.01310 | 52.33%  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |       |              |         |             |         |         |
| Mo 202.031†  | 0.9   | 0.0383 µg/L  | 0.53234 | 0.0383 ppb  | 0.53234 | >999.9% |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |       |              |         |             |         |         |
| Na 589.592 Radial†   | 2.8   | 113.66 µg/L  | 105.706 | 113.66 ppb  | 105.706 | 93.00%  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |       |              |         |             |         |         |
| Ni 231.604†  | 21.9  | 0.3845 µg/L  | 0.24963 | 0.3845 ppb  | 0.24963 | 64.92%  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |       |              |         |             |         |         |
| P 214.914†   | -13.9 | -6.0595 µg/L | 3.40393 | -6.0595 ppb | 3.40393 | 56.17%  |
| QC value within limits for P 214.914 Recovery = Not calculated         |       |              |         |             |         |         |
| Pb 220.353†  | 1.1   | 0.0825 µg/L  | 1.27773 | 0.0825 ppb  | 1.27773 | >999.9% |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |       |              |         |             |         |         |
| S 181.975 Axial†   | 3.0   | 2.9834 µg/L  | 7.25176 | 2.9834 ppb  | 7.25176 | 243.07% |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |       |              |         |             |         |         |
| Sb 206.836†  | -1.2  | -0.2761 µg/L | 1.39397 | -0.2761 ppb | 1.39397 | 504.96% |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |       |              |         |             |         |         |
| Se 196.026†  | 0.6   | 0.2243 µg/L  | 2.52408 | 0.2243 ppb  | 2.52408 | >999.9% |
| QC value within limits for Se 196.026 Recovery = Not calculated        |       |              |         |             |         |         |
| SiO2†  | 73.1  | 6.8767 µg/L  | 5.43022 | 6.8767 ppb  | 5.43022 | 78.97%  |
| QC value within limits for SiO2 Recovery = Not calculated              |       |              |         |             |         |         |
| Si 251.611†  | 43.5  | 1.5083 µg/L  | 0.33507 | 1.5083 ppb  | 0.33507 | 22.22%  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |       |              |         |             |         |         |
| Sn 189.927†  | 0.6   | 0.0569 µg/L  | 1.05792 | 0.0569 ppb  | 1.05792 | >999.9% |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |       |              |         |             |         |         |
| Sr 421.552†  | 21.2  | 0.5409 µg/L  | 0.32221 | 0.5409 ppb  | 0.32221 | 59.56%  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |       |              |         |             |         |         |
| Ti 334.940†  | 85.3  | 0.1900 µg/L  | 0.09654 | 0.1900 ppb  | 0.09654 | 50.81%  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |       |              |         |             |         |         |
| Tl 190.801†  | 5.9   | 0.9754 µg/L  | 1.16754 | 0.9754 ppb  | 1.16754 | 119.70% |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |       |              |         |             |         |         |
| U 367.007†   | 32.0  | 5.864 µg/L   | 7.3770  | 5.864 ppb   | 7.3770  | 125.79% |
| QC value within limits for U 367.007 Recovery = Not calculated         |       |              |         |             |         |         |
| V 292.402†   | 21.9  | 0.1446 µg/L  | 0.21249 | 0.1446 ppb  | 0.21249 | 146.90% |
| QC value within limits for V 292.402 Recovery = Not calculated         |       |              |         |             |         |         |
| Zn 213.857†  | -76.3 | -0.4183 µg/L | 0.03216 | -0.4183 ppb | 0.03216 | 7.69%   |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |       |              |         |             |         |         |

All analyte(s) passed QC.

Sequence No.: 8

Autosampler Location: 101

Sample ID: PQL

Date Collected: 11/16/2016 06:27:30

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Wash Time: 5

Auto Dilution Factor: 1

## Replicate Data: PQL

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8324.7        | 8324.7              | 98.8 %             |                    | 06:27:59      |
| 1     | Al 396.153Radial†  | -361.4        | 370.5               | 182.23 µg/L        | 182.23 ppb         | 06:27:59      |
| 1     | Ca 317.933Radial†  | 515.3         | 413.0               | 201.16 µg/L        | 201.16 ppb         | 06:28:19      |
| 1     | Fe 238.204 Radial† | 77.6          | 67.5                | 103.62 µg/L        | 103.62 ppb         | 06:28:19      |
| 1     | K 766.490 Radial†  | 706.6         | 311.9               | 170.16 µg/L        | 170.16 ppb         | 06:27:59      |
| 1     | Mg 279.077 IEC†    | 58.0          | 47.5                | 296.11 µg/L        | 296.11 ppb         | 06:28:19      |
| 1     | Na 589.592 Radial† | 13.9          | 9.1                 | 373.26 µg/L        | 373.26 ppb         | 06:28:19      |
| 1     | Sr 421.552†        | 214.3         | 213.1               | 5.4285 µg/L        | 5.4285 ppb         | 06:27:59      |
| 1     | Sc 361.383         | 620227.3      | 620227.3            | 99.112 %           |                    | 06:29:17      |
| 1     | Y 371.029          | 703918.6      | 703918.6            | 99.137 %           |                    | 06:29:17      |
| 1     | Ag 328.068†        | 117.1         | 1057.6              | 5.2929 µg/L        | 5.2929 ppb         | 06:29:17      |
| 1     | As 188.979†        | 116.1         | 94.9                | 28.610 µg/L        | 28.610 ppb         | 06:29:37      |
| 1     | B 249.677†         | 2738.5        | 2571.0              | 50.427 µg/L        | 50.427 ppb         | 06:29:17      |
| 1     | Ba 233.527†        | 980.8         | 860.3               | 4.8407 µg/L        | 4.8407 ppb         | 06:29:37      |
| 1     | Be 313.107†        | 6570.0        | 12071.9             | 4.8513 µg/L        | 4.8513 ppb         | 06:29:17      |
| 1     | Cd 226.502†        | 571.8         | 829.9               | 5.0189 µg/L        | 5.0189 ppb         | 06:29:37      |
| 1     | Co 228.616†        | -24.1         | 303.2               | 4.9390 µg/L        | 4.9390 ppb         | 06:29:37      |
| 1     | Cr 267.716†        | 492.1         | 379.7               | 4.7408 µg/L        | 4.7408 ppb         | 06:29:37      |
| 1     | Cu 324.752†        | 4825.6        | 2375.1              | 9.9306 µg/L        | 9.9306 ppb         | 06:29:17      |
| 1     | Mn 257.610†        | 10850.2       | 10104.0             | 9.9563 µg/L        | 9.9563 ppb         | 06:29:17      |
| 1     | Mo 202.031†        | 222.9         | 241.5               | 9.7771 µg/L        | 9.7771 ppb         | 06:29:37      |
| 1     | Ni 231.604†        | 99.0          | 276.0               | 4.8497 µg/L        | 4.8497 ppb         | 06:29:37      |
| 1     | P 214.914†         | 447.5         | 306.7               | 133.17 µg/L        | 133.17 ppb         | 06:29:37      |
| 1     | Pb 220.353†        | 230.3         | 126.0               | 10.438 µg/L        | 10.438 ppb         | 06:29:37      |
| 1     | S 181.975 Axial†   | 241.6         | 96.7                | 94.692 µg/L        | 94.692 ppb         | 06:29:37      |
| 1     | Sb 206.836†        | 140.6         | 26.7                | 5.8508 µg/L        | 5.8508 ppb         | 06:29:37      |
| 1     | Se 196.026†        | 64.1          | 82.8                | 30.039 µg/L        | 30.039 ppb         | 06:29:37      |
| 1     | SiO2†              | 3683.8        | 2083.6              | 196.03 µg/L        | 196.03 ppb         | 06:29:17      |
| 1     | Si 251.611†        | 2888.6        | 2619.5              | 90.799 µg/L        | 90.799 ppb         | 06:29:37      |
| 1     | Sn 189.927†        | 129.8         | 109.7               | 10.523 µg/L        | 10.523 ppb         | 06:29:37      |
| 1     | Ti 334.940†        | 1402.7        | 2213.0              | 4.9947 µg/L        | 4.9947 ppb         | 06:29:17      |
| 1     | Tl 190.801†        | -28.4         | 128.8               | 21.149 µg/L        | 21.149 ppb         | 06:29:37      |
| 1     | U 367.007†         | 1642.5        | 232.7               | 42.18 µg/L         | 42.18 ppb          | 06:29:17      |
| 1     | V 292.402†         | 1132.4        | 723.4               | 4.7742 µg/L        | 4.7742 ppb         | 06:29:17      |
| 1     | Zn 213.857†        | 2431.4        | 1667.5              | 9.0125 µg/L        | 9.0125 ppb         | 06:29:37      |
| 2     | Sc RADIAL          | 8351.9        | 8351.9              | 99.1 %             |                    | 06:28:24      |
| 2     | Al 396.153Radial†  | -352.2        | 381.0               | 187.39 µg/L        | 187.39 ppb         | 06:28:24      |
| 2     | Ca 317.933Radial†  | 518.7         | 414.7               | 202.00 µg/L        | 202.00 ppb         | 06:28:44      |
| 2     | Fe 238.204 Radial† | 75.5          | 65.2                | 99.970 µg/L        | 99.970 ppb         | 06:28:44      |
| 2     | K 766.490 Radial†  | 643.2         | 245.6               | 134.02 µg/L        | 134.02 ppb         | 06:28:24      |
| 2     | Mg 279.077 IEC†    | 59.0          | 48.3                | 301.26 µg/L        | 301.26 ppb         | 06:28:44      |
| 2     | Na 589.592 Radial† | 12.6          | 7.7                 | 316.52 µg/L        | 316.52 ppb         | 06:28:44      |
| 2     | Sr 421.552†        | 222.1         | 220.2               | 5.6100 µg/L        | 5.6100 ppb         | 06:28:24      |
| 2     | Sc 361.383         | 623325.6      | 623325.6            | 99.607 %           |                    | 06:29:42      |
| 2     | Y 371.029          | 706523.2      | 706523.2            | 99.504 %           |                    | 06:29:42      |
| 2     | Ag 328.068†        | 161.7         | 1101.8              | 5.5112 µg/L        | 5.5112 ppb         | 06:29:42      |
| 2     | As 188.979†        | 114.3         | 92.6                | 27.901 µg/L        | 27.901 ppb         | 06:30:02      |
| 2     | B 249.677†         | 2798.3        | 2617.3              | 51.315 µg/L        | 51.315 ppb         | 06:29:42      |
| 2     | Ba 233.527†        | 993.5         | 868.2               | 4.8849 µg/L        | 4.8849 ppb         | 06:30:02      |
| 2     | Be 313.107†        | 6694.8        | 12164.3             | 4.8897 µg/L        | 4.8897 ppb         | 06:29:42      |
| 2     | Cd 226.502†        | 598.6         | 854.1               | 5.1653 µg/L        | 5.1653 ppb         | 06:30:02      |
| 2     | Co 228.616†        | -35.4         | 292.0               | 4.7564 µg/L        | 4.7564 ppb         | 06:30:02      |
| 2     | Cr 267.716†        | 499.5         | 384.6               | 4.7983 µg/L        | 4.7983 ppb         | 06:30:02      |
| 2     | Cu 324.752†        | 4997.2        | 2523.2              | 10.551 µg/L        | 10.551 ppb         | 06:29:42      |
| 2     | Mn 257.610†        | 11014.2       | 10214.2             | 10.065 µg/L        | 10.065 ppb         | 06:29:42      |
| 2     | Mo 202.031†        | 229.4         | 246.9               | 9.9964 µg/L        | 9.9964 ppb         | 06:30:02      |
| 2     | Ni 231.604†        | 90.2          | 266.7               | 4.6869 µg/L        | 4.6869 ppb         | 06:30:02      |
| 2     | P 214.914†         | 469.0         | 325.9               | 141.54 µg/L        | 141.54 ppb         | 06:30:02      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 207.6    | 102.1    | 8.4374 µg/L | 8.4374 ppb | 06:30:02 |
| 2 | S 181.975 Axial†   | 241.3    | 95.2     | 93.201 µg/L | 93.201 ppb | 06:30:02 |
| 2 | Sb 206.836†        | 158.3    | 43.7     | 9.5505 µg/L | 9.5505 ppb | 06:30:02 |
| 2 | Se 196.026†        | 63.9     | 82.3     | 29.850 µg/L | 29.850 ppb | 06:30:02 |
| 2 | SiO2†              | 3704.1   | 2085.5   | 196.21 µg/L | 196.21 ppb | 06:29:42 |
| 2 | Si 251.611†        | 2873.7   | 2590.2   | 89.778 µg/L | 89.778 ppb | 06:30:02 |
| 2 | Sn 189.927†        | 130.5    | 109.8    | 10.535 µg/L | 10.535 ppb | 06:30:02 |
| 2 | Ti 334.940†        | 1465.3   | 2268.8   | 5.1182 µg/L | 5.1182 ppb | 06:29:42 |
| 2 | Tl 190.801†        | -33.5    | 123.7    | 20.325 µg/L | 20.325 ppb | 06:30:02 |
| 2 | U 367.007†         | 1682.7   | 264.9    | 48.10 µg/L  | 48.10 ppb  | 06:29:42 |
| 2 | V 292.402†         | 1188.1   | 773.6    | 5.1009 µg/L | 5.1009 ppb | 06:29:42 |
| 2 | Zn 213.857†        | 2440.7   | 1664.6   | 8.9973 µg/L | 8.9973 ppb | 06:30:02 |
| 3 | Sc RADIAL          | 8394.9   | 8394.9   | 99.6 %      |            | 06:28:49 |
| 3 | Al 396.153Radial†  | -288.9   | 446.4    | 219.62 µg/L | 219.62 ppb | 06:28:49 |
| 3 | Ca 317.933Radial†  | 510.3    | 403.7    | 196.62 µg/L | 196.62 ppb | 06:29:09 |
| 3 | Fe 238.204 Radial† | 73.9     | 63.2     | 96.901 µg/L | 96.901 ppb | 06:29:09 |
| 3 | K 766.490 Radial†  | 633.9    | 232.9    | 127.10 µg/L | 127.10 ppb | 06:28:49 |
| 3 | Mg 279.077 IEC†    | 57.9     | 46.9     | 292.55 µg/L | 292.55 ppb | 06:29:09 |
| 3 | Na 589.592 Radial† | 13.4     | 8.5      | 348.42 µg/L | 348.42 ppb | 06:29:09 |
| 3 | Sr 421.552†        | 214.2    | 211.2    | 5.3800 µg/L | 5.3800 ppb | 06:28:49 |
| 3 | Sc 361.383         | 619280.0 | 619280.0 | 98.960 %    |            | 06:30:08 |
| 3 | Y 371.029          | 701990.1 | 701990.1 | 98.866 %    |            | 06:30:08 |
| 3 | Ag 328.068†        | 83.1     | 1023.5   | 5.1129 µg/L | 5.1129 ppb | 06:30:08 |
| 3 | As 188.979†        | 123.0    | 102.1    | 30.763 µg/L | 30.763 ppb | 06:30:28 |
| 3 | B 249.677†         | 2697.9   | 2534.2   | 49.682 µg/L | 49.682 ppb | 06:30:08 |
| 3 | Ba 233.527†        | 983.5    | 864.6    | 4.8648 µg/L | 4.8648 ppb | 06:30:28 |
| 3 | Be 313.107†        | 6508.6   | 12020.0  | 4.8348 µg/L | 4.8348 ppb | 06:30:08 |
| 3 | Cd 226.502†        | 585.2    | 844.4    | 5.1074 µg/L | 5.1074 ppb | 06:30:28 |
| 3 | Co 228.616†        | -15.1    | 312.2    | 5.0867 µg/L | 5.0867 ppb | 06:30:28 |
| 3 | Cr 267.716†        | 514.2    | 402.7    | 5.0170 µg/L | 5.0170 ppb | 06:30:28 |
| 3 | Cu 324.752†        | 4872.7   | 2430.2   | 10.169 µg/L | 10.169 ppb | 06:30:08 |
| 3 | Mn 257.610†        | 10844.4  | 10114.9  | 9.9667 µg/L | 9.9667 ppb | 06:30:08 |
| 3 | Mo 202.031†        | 229.2    | 248.2    | 10.052 µg/L | 10.052 ppb | 06:30:28 |
| 3 | Ni 231.604†        | 114.1    | 291.5    | 5.1227 µg/L | 5.1227 ppb | 06:30:28 |
| 3 | P 214.914†         | 459.0    | 318.9    | 138.51 µg/L | 138.51 ppb | 06:30:28 |
| 3 | Pb 220.353†        | 229.5    | 125.5    | 10.376 µg/L | 10.376 ppb | 06:30:28 |
| 3 | S 181.975 Axial†   | 243.4    | 98.9     | 96.837 µg/L | 96.837 ppb | 06:30:28 |
| 3 | Sb 206.836†        | 157.5    | 43.9     | 9.5909 µg/L | 9.5909 ppb | 06:30:28 |
| 3 | Se 196.026†        | 77.5     | 96.4     | 34.961 µg/L | 34.961 ppb | 06:30:28 |
| 3 | SiO2†              | 3783.9   | 2190.4   | 206.09 µg/L | 206.09 ppb | 06:30:08 |
| 3 | Si 251.611†        | 2906.1   | 2641.8   | 91.570 µg/L | 91.570 ppb | 06:30:28 |
| 3 | Sn 189.927†        | 121.0    | 101.1    | 9.6975 µg/L | 9.6975 ppb | 06:30:28 |
| 3 | Ti 334.940†        | 1392.2   | 2204.6   | 4.9665 µg/L | 4.9665 ppb | 06:30:08 |
| 3 | Tl 190.801†        | -41.5    | 115.5    | 18.972 µg/L | 18.972 ppb | 06:30:28 |
| 3 | U 367.007†         | 1737.8   | 331.6    | 60.34 µg/L  | 60.34 ppb  | 06:30:08 |
| 3 | V 292.402†         | 1174.5   | 767.6    | 5.0709 µg/L | 5.0709 ppb | 06:30:08 |
| 3 | Zn 213.857†        | 2454.8   | 1694.8   | 9.1604 µg/L | 9.1604 ppb | 06:30:28 |

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Mean Data: PQL

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc 361.383  | 620944.3                 | 99.226 %           | 0.3381   |                    |          | 0.34%  |
| Sc RADIAL   | 8357.2                   | 99.2 %             | 0.42     |                    |          | 0.42%  |
| Y 371.029   | 704144.0                 | 99.169 %           | 0.3204   |                    |          | 0.32%  |
| Ag 328.068†   | 1061.0                   | 5.3057 µg/L        | 0.19947  | 5.3057 ppb         | 0.19947  | 3.76%  |
| QC value within limits for Ag 328.068 Recovery = 106.11%      |                          |                    |          |                    |          |        |
| Al 396.153Radial†   | 399.3                    | 196.41 µg/L        | 20.264   | 196.41 ppb         | 20.264   | 10.32% |
| QC value within limits for Al 396.153Radial Recovery = 98.21% |                          |                    |          |                    |          |        |
| As 188.979†   | 96.5                     | 29.091 µg/L        | 1.4901   | 29.091 ppb         | 1.4901   | 5.12%  |
| QC value within limits for As 188.979 Recovery = 96.97%       |                          |                    |          |                    |          |        |
| B 249.677†  | 2574.2                   | 50.475 µg/L        | 0.8172   | 50.475 ppb         | 0.8172   | 1.62%  |
| QC value within limits for B 249.677 Recovery = 100.95%       |                          |                    |          |                    |          |        |
| Ba 233.527†   | 864.3                    | 4.8635 µg/L        | 0.02214  | 4.8635 ppb         | 0.02214  | 0.46%  |
| QC value within limits for Ba 233.527 Recovery = 97.27%       |                          |                    |          |                    |          |        |
| Be 313.107†   | 12085.4                  | 4.8586 µg/L        | 0.02817  | 4.8586 ppb         | 0.02817  | 0.58%  |
| QC value within limits for Be 313.107 Recovery = 97.17%       |                          |                    |          |                    |          |        |
| Ca 317.933Radial†   | 410.5                    | 199.92 µg/L        | 2.890    | 199.92 ppb         | 2.890    | 1.45%  |
| QC value within limits for Ca 317.933Radial Recovery = 99.96% |                          |                    |          |                    |          |        |
| Cd 226.502†   | 842.8                    | 5.0972 µg/L        | 0.07374  | 5.0972 ppb         | 0.07374  | 1.45%  |
| QC value within limits for Cd 226.502 Recovery = 101.94%      |                          |                    |          |                    |          |        |

|   |         |             |         |            |         |        |
|---|---------|-------------|---------|------------|---------|--------|
| Co 228.616†   | 302.5   | 4.9274 µg/L | 0.16543 | 4.9274 ppb | 0.16543 | 3.36%  |
| QC value within limits for Co 228.616 Recovery = 98.55%         |         |             |         |            |         |        |
| Cr 267.716†   | 389.0   | 4.8520 µg/L | 0.14572 | 4.8520 ppb | 0.14572 | 3.00%  |
| QC value within limits for Cr 267.716 Recovery = 97.04%         |         |             |         |            |         |        |
| Cu 324.752†   | 2442.8  | 10.217 µg/L | 0.3129  | 10.217 ppb | 0.3129  | 3.06%  |
| QC value within limits for Cu 324.752 Recovery = 102.17%        |         |             |         |            |         |        |
| Fe 238.204 Radial†  | 65.3    | 100.16 µg/L | 3.364   | 100.16 ppb | 3.364   | 3.36%  |
| QC value within limits for Fe 238.204 Radial Recovery = 100.16% |         |             |         |            |         |        |
| K 766.490 Radial†   | 263.5   | 143.76 µg/L | 23.126  | 143.76 ppb | 23.126  | 16.09% |
| QC value within limits for K 766.490 Radial Recovery = 95.84%   |         |             |         |            |         |        |
| Mg 279.077 IEC†   | 47.6    | 296.64 µg/L | 4.380   | 296.64 ppb | 4.380   | 1.48%  |
| QC value within limits for Mg 279.077 IEC Recovery = 98.88%     |         |             |         |            |         |        |
| Mn 257.610†   | 10144.4 | 9.9958 µg/L | 0.05971 | 9.9958 ppb | 0.05971 | 0.60%  |
| QC value within limits for Mn 257.610 Recovery = 99.96%         |         |             |         |            |         |        |
| Mo 202.031†   | 245.5   | 9.9418 µg/L | 0.14526 | 9.9418 ppb | 0.14526 | 1.46%  |
| QC value within limits for Mo 202.031 Recovery = 99.42%         |         |             |         |            |         |        |
| Na 589.592 Radial†  | 8.5     | 346.07 µg/L | 28.442  | 346.07 ppb | 28.442  | 8.22%  |
| QC value within limits for Na 589.592 Radial Recovery = 115.36% |         |             |         |            |         |        |
| Ni 231.604†   | 278.1   | 4.8864 µg/L | 0.22024 | 4.8864 ppb | 0.22024 | 4.51%  |
| QC value within limits for Ni 231.604 Recovery = 97.73%         |         |             |         |            |         |        |
| P 214.914†  | 317.2   | 137.74 µg/L | 4.240   | 137.74 ppb | 4.240   | 3.08%  |
| QC value within limits for P 214.914 Recovery = 91.83%          |         |             |         |            |         |        |
| Pb 220.353†   | 117.9   | 9.7506 µg/L | 1.13773 | 9.7506 ppb | 1.13773 | 11.67% |
| QC value within limits for Pb 220.353 Recovery = 97.51%         |         |             |         |            |         |        |
| S 181.975 Axial†  | 96.9    | 94.910 µg/L | 1.8275  | 94.910 ppb | 1.8275  | 1.93%  |
| QC value within limits for S 181.975 Axial Recovery = 94.91%    |         |             |         |            |         |        |
| Sb 206.836†   | 38.1    | 8.3307 µg/L | 2.14780 | 8.3307 ppb | 2.14780 | 25.78% |
| QC value within limits for Sb 206.836 Recovery = 83.31%         |         |             |         |            |         |        |
| Se 196.026†   | 87.2    | 31.617 µg/L | 2.8980  | 31.617 ppb | 2.8980  | 9.17%  |
| QC value within limits for Se 196.026 Recovery = 105.39%        |         |             |         |            |         |        |
| SiO2†   | 2119.8  | 199.44 µg/L | 5.756   | 199.44 ppb | 5.756   | 2.89%  |
| QC value within limits for SiO2 Recovery = 93.63%               |         |             |         |            |         |        |
| Si 251.611†   | 2617.2  | 90.716 µg/L | 0.8992  | 90.716 ppb | 0.8992  | 0.99%  |
| QC value within limits for Si 251.611 Recovery = 90.72%         |         |             |         |            |         |        |
| Sn 189.927†   | 106.8   | 10.252 µg/L | 0.4801  | 10.252 ppb | 0.4801  | 4.68%  |
| QC value within limits for Sn 189.927 Recovery = 102.52%        |         |             |         |            |         |        |
| Sr 421.552†   | 214.8   | 5.4729 µg/L | 0.12123 | 5.4729 ppb | 0.12123 | 2.22%  |
| QC value within limits for Sr 421.552 Recovery = 109.46%        |         |             |         |            |         |        |
| Ti 334.940†   | 2228.8  | 5.0265 µg/L | 0.08067 | 5.0265 ppb | 0.08067 | 1.60%  |
| QC value within limits for Ti 334.940 Recovery = 100.53%        |         |             |         |            |         |        |
| Tl 190.801†   | 122.6   | 20.149 µg/L | 1.0993  | 20.149 ppb | 1.0993  | 5.46%  |
| QC value within limits for Tl 190.801 Recovery = 100.74%        |         |             |         |            |         |        |
| U 367.007†  | 276.4   | 50.21 µg/L  | 9.262   | 50.21 ppb  | 9.262   | 18.45% |
| QC value within limits for U 367.007 Recovery = 100.41%         |         |             |         |            |         |        |
| V 292.402†  | 754.9   | 4.9820 µg/L | 0.18063 | 4.9820 ppb | 0.18063 | 3.63%  |
| QC value within limits for V 292.402 Recovery = 99.64%          |         |             |         |            |         |        |
| Zn 213.857†   | 1675.6  | 9.0568 µg/L | 0.09011 | 9.0568 ppb | 0.09011 | 0.99%  |
| QC value within limits for Zn 213.857 Recovery = 90.57%         |         |             |         |            |         |        |

All analyte(s) passed QC.

Sequence No.: 9

Sample ID: ICSEA

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 103

Date Collected: 11/16/2016 06:30:37

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: ICSEA

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 7719.1        | 7719.1              | 91.6 %             |                    | 06:31:27      |
| 1     | Al 396.153Radial†  | 923510.8      | 1008894.3           | 497210 µg/L        | 497210 ppb         | 06:31:07      |
| 1     | Ca 317.933Radial†  | 913442.5      | 997058.3            | 485650 µg/L        | 485650 ppb         | 06:31:07      |
| 1     | Fe 238.204 Radial† | 115457.4      | 126029.0            | 193340 µg/L        | 193340 ppb         | 06:31:07      |
| 1     | K 766.490 Radial†  | 205.6         | -178.9              | 52.737 µg/L        | 52.737 ppb         | 06:31:07      |
| 1     | Mg 279.077 IEC†    | 71340.9       | 77868.6             | 485620 µg/L        | 485620 ppb         | 06:31:07      |
| 1     | Na 589.592 Radial† | 5.0           | 0.5                 | -42.447 µg/L       | -42.447 ppb        | 06:31:27      |
| 1     | Sr 421.552†        | 615.4         | 668.0               | 0.6413 µg/L        | 0.6413 ppb         | 06:31:27      |
| 1     | Sc 361.383         | 548928.3      | 548928.3            | 87.718 %           |                    | 06:32:25      |
| 1     | Y 371.029          | 606694.1      | 606694.1            | 85.445 %           |                    | 06:32:25      |
| 1     | Ag 328.068†        | -5736.4       | -5600.1             | 0.4146 µg/L        | 0.4146 ppb         | 06:32:25      |
| 1     | As 188.979†        | 39.9          | 23.4                | -2.9715 µg/L       | -2.9715 ppb        | 06:32:45      |
| 1     | B 249.677†         | -33779.9      | -38701.6            | 3.7443 µg/L        | 3.7443 ppb         | 06:32:25      |
| 1     | Ba 233.527†        | 939.3         | 941.5               | 0.1176 µg/L        | 0.1176 ppb         | 06:32:45      |
| 1     | Be 313.107†        | -15916.7      | -12702.2            | 1.0371 µg/L        | 1.0371 ppb         | 06:32:25      |
| 1     | Cd 226.502†        | 2648.8        | 3272.8              | 0.6250 µg/L        | 0.6250 ppb         | 06:32:45      |
| 1     | Co 228.616†        | 456.9         | 848.4               | 0.3685 µg/L        | 0.3685 ppb         | 06:32:45      |
| 1     | Cr 267.716†        | -541.1        | -733.7              | 0.8236 µg/L        | 0.8236 ppb         | 06:32:45      |
| 1     | Cu 324.752†        | -78.3         | -2583.0             | -0.0454 µg/L       | -0.0454 ppb        | 06:32:25      |
| 1     | Mn 257.610†        | 7239.1        | 7409.2              | 0.4827 µg/L        | 0.4827 ppb         | 06:32:25      |
| 1     | Mo 202.031†        | -178.3        | -186.6              | 0.4025 µg/L        | 0.4025 ppb         | 06:32:45      |
| 1     | Ni 231.604†        | 384.1         | 614.1               | 1.5028 µg/L        | 1.5028 ppb         | 06:32:45      |
| 1     | P 214.914†         | 379.4         | 287.6               | -9.7349 µg/L       | -9.7349 ppb        | 06:32:45      |
| 1     | Pb 220.353†        | 1616.4        | 1736.3              | 5.9201 µg/L        | 5.9201 ppb         | 06:32:45      |
| 1     | S 181.975 Axial†   | 181.7         | 60.1                | 19.389 µg/L        | 19.389 ppb         | 06:32:45      |
| 1     | Sb 206.836†        | 165.7         | 73.7                | 5.4566 µg/L        | 5.4566 ppb         | 06:32:45      |
| 1     | Se 196.026†        | -213.3        | -225.1              | 9.3185 µg/L        | 9.3185 ppb         | 06:32:45      |
| 1     | SiO2†              | 2008.7        | 656.7               | 61.609 µg/L        | 61.609 ppb         | 06:32:45      |
| 1     | Si 251.611†        | 1127.0        | 989.9               | -1.3764 µg/L       | -1.3764 ppb        | 06:32:45      |
| 1     | Sn 189.927†        | 54.8          | 41.2                | 3.1299 µg/L        | 3.1299 ppb         | 06:32:45      |
| 1     | Ti 334.940†        | -10502.6      | -11175.4            | -0.3472 µg/L       | -0.3472 ppb        | 06:32:25      |
| 1     | Tl 190.801†        | -167.5        | -33.6               | 1.6983 µg/L        | 1.6983 ppb         | 06:32:45      |
| 1     | U 367.007†         | 5740.9        | 5120.2              | 5.011 µg/L         | 5.011 ppb          | 06:32:25      |
| 1     | V 292.402†         | -3142.5       | -4001.7             | 0.9175 µg/L        | 0.9175 ppb         | 06:32:45      |
| 1     | Zn 213.857†        | 10192.8       | 10834.1             | 5.7546 µg/L        | 5.7546 ppb         | 06:32:45      |
| 2     | Sc RADIAL          | 7701.1        | 7701.1              | 91.4 %             |                    | 06:31:53      |
| 2     | Al 396.153Radial†  | 926540.5      | 1014563.1           | 500010 µg/L        | 500010 ppb         | 06:31:33      |
| 2     | Ca 317.933Radial†  | 918646.0      | 1005079.9           | 489560 µg/L        | 489560 ppb         | 06:31:33      |
| 2     | Fe 238.204 Radial† | 116310.9      | 127257.2            | 195220 µg/L        | 195220 ppb         | 06:31:33      |
| 2     | K 766.490 Radial†  | 213.2         | -170.1              | 59.026 µg/L        | 59.026 ppb         | 06:31:33      |
| 2     | Mg 279.077 IEC†    | 71835.0       | 78591.1             | 490130 µg/L        | 490130 ppb         | 06:31:33      |
| 2     | Na 589.592 Radial† | 2.0           | -2.8                | -177.69 µg/L       | -177.69 ppb        | 06:31:53      |
| 2     | Sr 421.552†        | 629.7         | 685.2               | 0.9493 µg/L        | 0.9493 ppb         | 06:31:53      |
| 2     | Sc 361.383         | 551103.5      | 551103.5            | 88.066 %           |                    | 06:32:51      |
| 2     | Y 371.029          | 609556.1      | 609556.1            | 85.848 %           |                    | 06:32:51      |
| 2     | Ag 328.068†        | -5500.1       | -5306.0             | 2.1864 µg/L        | 2.1864 ppb         | 06:32:51      |
| 2     | As 188.979†        | 48.9          | 33.4                | -0.0576 µg/L       | -0.0576 ppb        | 06:33:11      |
| 2     | B 249.677†         | -33774.4      | -38543.4            | 14.199 µg/L        | 14.199 ppb         | 06:32:51      |
| 2     | Ba 233.527†        | 947.9         | 947.0               | 0.0981 µg/L        | 0.0981 ppb         | 06:33:11      |
| 2     | Be 313.107†        | -16137.0      | -12880.7            | 1.0087 µg/L        | 1.0087 ppb         | 06:32:51      |
| 2     | Cd 226.502†        | 2612.3        | 3219.4              | 0.1142 µg/L        | 0.1142 ppb         | 06:33:11      |
| 2     | Co 228.616†        | 482.8         | 875.7               | 0.6806 µg/L        | 0.6806 ppb         | 06:33:11      |
| 2     | Cr 267.716†        | -558.9        | -751.4              | 0.7143 µg/L        | 0.7143 ppb         | 06:33:11      |
| 2     | Cu 324.752†        | -49.3         | -2549.8             | 0.1833 µg/L        | 0.1833 ppb         | 06:32:51      |
| 2     | Mn 257.610†        | 7417.0        | 7578.6              | 0.5913 µg/L        | 0.5913 ppb         | 06:32:51      |
| 2     | Mo 202.031†        | -198.6        | -208.9              | -0.4226 µg/L       | -0.4226 ppb        | 06:33:11      |
| 2     | Ni 231.604†        | 378.2         | 605.6               | 1.2635 µg/L        | 1.2635 ppb         | 06:33:11      |
| 2     | P 214.914†         | 344.9         | 246.8               | -29.035 µg/L       | -29.035 ppb        | 06:33:11      |



|   |                    |          |           |              |             |          |
|---|--------------------|----------|-----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 1626.3   | 1740.3    | 5.5867 µg/L  | 5.5867 ppb  | 06:33:11 |
| 2 | S 181.975 Axial†   | 182.9    | 60.7      | 19.687 µg/L  | 19.687 ppb  | 06:33:11 |
| 2 | Sb 206.836†        | 148.6    | 53.4      | 0.9771 µg/L  | 0.9771 ppb  | 06:33:11 |
| 2 | Se 196.026†        | -195.2   | -203.5    | 18.030 µg/L  | 18.030 ppb  | 06:33:11 |
| 2 | SiO2†              | 2002.3   | 640.4     | 60.086 µg/L  | 60.086 ppb  | 06:33:11 |
| 2 | Si 251.611†        | 1086.7   | 939.1     | -3.4710 µg/L | -3.4710 ppb | 06:33:11 |
| 2 | Sn 189.927†        | 24.2     | 6.3       | -0.2124 µg/L | -0.2124 ppb | 06:33:11 |
| 2 | Ti 334.940†        | -10437.5 | -11054.1  | 0.1402 µg/L  | 0.1402 ppb  | 06:32:51 |
| 2 | Tl 190.801†        | -149.7   | -12.6     | 5.2031 µg/L  | 5.2031 ppb  | 06:33:11 |
| 2 | U 367.007†         | 5676.1   | 5020.8    | -22.09 µg/L  | -22.09 ppb  | 06:32:51 |
| 2 | V 292.402†         | -3110.8  | -3951.6   | 1.4718 µg/L  | 1.4718 ppb  | 06:33:11 |
| 2 | Zn 213.857†        | 10142.0  | 10730.6   | 4.6865 µg/L  | 4.6865 ppb  | 06:33:11 |
| 3 | Sc RADIAL          | 7713.0   | 7713.0    | 91.5 %       |             | 06:32:18 |
| 3 | Al 396.153Radial†  | 925286.1 | 1011627.9 | 498560 µg/L  | 498560 ppb  | 06:31:58 |
| 3 | Ca 317.933Radial†  | 916455.1 | 1001134.9 | 487640 µg/L  | 487640 ppb  | 06:31:58 |
| 3 | Fe 238.204 Radial† | 116012.3 | 126734.5  | 194420 µg/L  | 194420 ppb  | 06:31:58 |
| 3 | K 766.490 Radial†  | 213.8    | -169.8    | 58.554 µg/L  | 58.554 ppb  | 06:31:58 |
| 3 | Mg 279.077 IEC†    | 71626.1  | 78241.6   | 487950 µg/L  | 487950 ppb  | 06:31:58 |
| 3 | Na 589.592 Radial† | 13.1     | 9.4       | 319.91 µg/L  | 319.91 ppb  | 06:32:18 |
| 3 | Sr 421.552†        | 624.7    | 678.7     | 0.8475 µg/L  | 0.8475 ppb  | 06:32:18 |
| 3 | Sc 361.383         | 551746.2 | 551746.2  | 88.169 %     |             | 06:33:16 |
| 3 | Y 371.029          | 609708.5 | 609708.5  | 85.869 %     |             | 06:33:16 |
| 3 | Ag 328.068†        | -5712.6  | -5539.8   | 0.8912 µg/L  | 0.8912 ppb  | 06:33:16 |
| 3 | As 188.979†        | 52.6     | 37.5      | 1.2169 µg/L  | 1.2169 ppb  | 06:33:36 |
| 3 | B 249.677†         | -33991.1 | -38744.4  | 7.1484 µg/L  | 7.1484 ppb  | 06:33:16 |
| 3 | Ba 233.527†        | 979.2    | 981.3     | 0.3128 µg/L  | 0.3128 ppb  | 06:33:36 |
| 3 | Be 313.107†        | -16154.4 | -12879.1  | 0.9884 µg/L  | 0.9884 ppb  | 06:33:16 |
| 3 | Cd 226.502†        | 2623.1   | 3228.1    | 0.2471 µg/L  | 0.2471 ppb  | 06:33:36 |
| 3 | Co 228.616†        | 451.0    | 839.1     | 0.1400 µg/L  | 0.1400 ppb  | 06:33:36 |
| 3 | Cr 267.716†        | -479.1   | -660.2    | 1.8050 µg/L  | 1.8050 ppb  | 06:33:36 |
| 3 | Cu 324.752†        | -82.7    | -2587.5   | -0.0120 µg/L | -0.0120 ppb | 06:33:16 |
| 3 | Mn 257.610†        | 7400.6   | 7550.3    | 0.5974 µg/L  | 0.5974 ppb  | 06:33:16 |
| 3 | Mo 202.031†        | -196.7   | -206.5    | -0.3551 µg/L | -0.3551 ppb | 06:33:36 |
| 3 | Ni 231.604†        | 382.6    | 610.0     | 1.3799 µg/L  | 1.3799 ppb  | 06:33:36 |
| 3 | P 214.914†         | 350.4    | 252.5     | -25.910 µg/L | -25.910 ppb | 06:33:36 |
| 3 | Pb 220.353†        | 1565.5   | 1669.2    | 0.0203 µg/L  | 0.0203 ppb  | 06:33:36 |
| 3 | S 181.975 Axial†   | 190.5    | 69.0      | 27.912 µg/L  | 27.912 ppb  | 06:33:36 |
| 3 | Sb 206.836†        | 164.2    | 71.0      | 4.8076 µg/L  | 4.8076 ppb  | 06:33:36 |
| 3 | Se 196.026†        | -209.8   | -219.9    | 11.721 µg/L  | 11.721 ppb  | 06:33:36 |
| 3 | SiO2†              | 1974.2   | 605.8     | 56.846 µg/L  | 56.846 ppb  | 06:33:36 |
| 3 | Si 251.611†        | 1107.2   | 960.9     | -2.5687 µg/L | -2.5687 ppb | 06:33:36 |
| 3 | Sn 189.927†        | 36.2     | 19.8      | 1.0902 µg/L  | 1.0902 ppb  | 06:33:36 |
| 3 | Ti 334.940†        | -10538.4 | -11154.8  | -0.1928 µg/L | -0.1928 ppb | 06:33:16 |
| 3 | Tl 190.801†        | -165.5   | -30.3     | 2.2606 µg/L  | 2.2606 ppb  | 06:33:36 |
| 3 | U 367.007†         | 5727.1   | 5071.1    | -9.021 µg/L  | -9.021 ppb  | 06:33:16 |
| 3 | V 292.402†         | -3150.7  | -3992.8   | 1.1091 µg/L  | 1.1091 ppb  | 06:33:36 |
| 3 | Zn 213.857†        | 10150.6  | 10727.0   | 4.8971 µg/L  | 4.8971 ppb  | 06:33:36 |

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Mean Data: ICSA

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 550592.7                 | 87.984 %           | 0.2360   |                    |          | 0.27%   |
| Sc RADIAL   | 7711.1                   | 91.5 %             | 0.11     |                    |          | 0.12%   |
| Y 371.029   | 608652.9                 | 85.720 %           | 0.2392   |                    |          | 0.28%   |
| Ag 328.068†   | -5482.0                  | 1.1640 µg/L        | 0.91686  | 1.1640 ppb         | 0.91686  | 78.77%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 1011695.1                | 498590 µg/L        | 1397.17  | 498590 ppb         | 1397.17  | 0.28%   |
| QC value within limits for Al 396.153Radial Recovery = 99.72%   |                          |                    |          |                    |          |         |
| As 188.979†   | 31.4                     | -0.6041 µg/L       | 2.14701  | -0.6041 ppb        | 2.14701  | 355.43% |
| QC value within limits for As 188.979 Recovery = Not calculated |                          |                    |          |                    |          |         |
| B 249.677†  | -38663.1                 | 8.3641 µg/L        | 5.33253  | 8.3641 ppb         | 5.33253  | 63.76%  |
| QC value within limits for B 249.677 Recovery = Not calculated  |                          |                    |          |                    |          |         |
| Ba 233.527†   | 956.6                    | 0.1762 µg/L        | 0.11871  | 0.1762 ppb         | 0.11871  | 67.39%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated |                          |                    |          |                    |          |         |
| Be 313.107†   | -12820.6                 | 1.0114 µg/L        | 0.02448  | 1.0114 ppb         | 0.02448  | 2.42%   |
| QC value within limits for Be 313.107 Recovery = Not calculated |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 1001091.0                | 487620 µg/L        | 1953.68  | 487620 ppb         | 1953.68  | 0.40%   |
| QC value within limits for Ca 317.933Radial Recovery = 97.52%   |                          |                    |          |                    |          |         |
| Cd 226.502†   | 3240.1                   | 0.3288 µg/L        | 0.26499  | 0.3288 ppb         | 0.26499  | 80.60%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated |                          |                    |          |                    |          |         |

|  |          |              |          |             |          |         |
|--|----------|--------------|----------|-------------|----------|---------|
| Co 228.616†  | 854.4    | 0.3964 µg/L  | 0.27140  | 0.3964 ppb  | 0.27140  | 68.47%  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |          |              |          |             |          |         |
| Cr 267.716†  | -715.1   | 1.1143 µg/L  | 0.60064  | 1.1143 ppb  | 0.60064  | 53.90%  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |          |              |          |             |          |         |
| Cu 324.752†  | -2573.4  | 0.0420 µg/L  | 0.12353  | 0.0420 ppb  | 0.12353  | 294.38% |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |          |              |          |             |          |         |
| Fe 238.204 Radial†   | 126673.5 | 194320 µg/L  | 945.49   | 194320 ppb  | 945.49   | 0.49%   |
| QC value within limits for Fe 238.204 Radial Recovery = 97.16%         |          |              |          |             |          |         |
| K 766.490 Radial†  | -172.9   | 56.772 µg/L  | 3.5028   | 56.772 ppb  | 3.5028   | 6.17%   |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |          |              |          |             |          |         |
| Mg 279.077 IEC†  | 78233.8  | 487900 µg/L  | 2253.18  | 487900 ppb  | 2253.18  | 0.46%   |
| QC value within limits for Mg 279.077 IEC Recovery = 97.58%            |          |              |          |             |          |         |
| Mn 257.610†  | 7512.7   | 0.5571 µg/L  | 0.06452  | 0.5571 ppb  | 0.06452  | 11.58%  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |          |              |          |             |          |         |
| Mo 202.031†  | -200.7   | -0.1251 µg/L | 0.45813  | -0.1251 ppb | 0.45813  | 366.28% |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |          |              |          |             |          |         |
| Na 589.592 Radial†   | 2.4      | 33.257 µg/L  | 257.2915 | 33.257 ppb  | 257.2915 | 773.65% |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |          |              |          |             |          |         |
| Ni 231.604†  | 609.9    | 1.3821 µg/L  | 0.11964  | 1.3821 ppb  | 0.11964  | 8.66%   |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |          |              |          |             |          |         |
| P 214.914†   | 262.3    | -21.560 µg/L | 10.3591  | -21.560 ppb | 10.3591  | 48.05%  |
| QC value within limits for P 214.914 Recovery = Not calculated         |          |              |          |             |          |         |
| Pb 220.353†  | 1715.3   | 3.8424 µg/L  | 3.31419  | 3.8424 ppb  | 3.31419  | 86.25%  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |          |              |          |             |          |         |
| S 181.975 Axial†   | 63.2     | 22.329 µg/L  | 4.8367   | 22.329 ppb  | 4.8367   | 21.66%  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |          |              |          |             |          |         |
| Sb 206.836†  | 66.1     | 3.7471 µg/L  | 2.42078  | 3.7471 ppb  | 2.42078  | 64.60%  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |          |              |          |             |          |         |
| Se 196.026†  | -216.2   | 13.023 µg/L  | 4.4991   | 13.023 ppb  | 4.4991   | 34.55%  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |          |              |          |             |          |         |
| SiO2†  | 634.3    | 59.514 µg/L  | 2.4327   | 59.514 ppb  | 2.4327   | 4.09%   |
| QC value within limits for SiO2 Recovery = Not calculated              |          |              |          |             |          |         |
| Si 251.611†  | 963.3    | -2.4720 µg/L | 1.05065  | -2.4720 ppb | 1.05065  | 42.50%  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |          |              |          |             |          |         |
| Sn 189.927†  | 22.4     | 1.3359 µg/L  | 1.68467  | 1.3359 ppb  | 1.68467  | 126.11% |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |          |              |          |             |          |         |
| Sr 421.552†  | 677.3    | 0.8127 µg/L  | 0.15690  | 0.8127 ppb  | 0.15690  | 19.31%  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |          |              |          |             |          |         |
| Ti 334.940†  | -11128.1 | -0.1332 µg/L | 0.24908  | -0.1332 ppb | 0.24908  | 186.93% |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |          |              |          |             |          |         |
| Tl 190.801†  | -25.5    | 3.0540 µg/L  | 1.88229  | 3.0540 ppb  | 1.88229  | 61.63%  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |          |              |          |             |          |         |
| U 367.007†   | 5070.7   | -8.700 µg/L  | 13.5539  | -8.700 ppb  | 13.5539  | 155.79% |
| QC value within limits for U 367.007 Recovery = Not calculated         |          |              |          |             |          |         |
| V 292.402†   | -3982.0  | 1.1661 µg/L  | 0.28153  | 1.1661 ppb  | 0.28153  | 24.14%  |
| QC value within limits for V 292.402 Recovery = Not calculated         |          |              |          |             |          |         |
| Zn 213.857†  | 10763.9  | 5.1127 µg/L  | 0.56575  | 5.1127 ppb  | 0.56575  | 11.07%  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |          |              |          |             |          |         |
| All analyte(s) passed QC.  |          |              |          |             |          |         |

Sequence No.: 10

Sample ID: ICSAB

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 104

Date Collected: 11/16/2016 06:33:45

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: ICSAB

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 7702.2           | 7702.2                 | 91.4 %                |                       | 06:34:35         |
| 1     | Al 396.153Radial†  | 920657.0         | 1007984.3              | 496750 µg/L           | 496750 ppb            | 06:34:15         |
| 1     | Ca 317.933Radial†  | 907670.7         | 992931.7               | 483640 µg/L           | 483640 ppb            | 06:34:15         |
| 1     | Fe 238.204 Radial† | 111859.7         | 122369.5               | 187720 µg/L           | 187720 ppb            | 06:34:15         |
| 1     | K 766.490 Radial†  | 9444.8           | 9929.8                 | 5559.8 µg/L           | 5559.8 ppb            | 06:34:15         |
| 1     | Mg 279.077 IEC†    | 70771.4          | 77416.5                | 482800 µg/L           | 482800 ppb            | 06:34:15         |
| 1     | Na 589.592 Radial† | 115.5            | 121.4                  | 4909.3 µg/L           | 4909.3 ppb            | 06:34:35         |
| 1     | Sr 421.552†        | 18086.6          | 19783.9                | 488.32 µg/L           | 488.32 ppb            | 06:34:15         |
| 1     | Sc 361.383         | 557500.9         | 557500.9               | 89.088 %              |                       | 06:35:34         |
| 1     | Y 371.029          | 617431.4         | 617431.4               | 86.957 %              |                       | 06:35:34         |
| 1     | Ag 328.068†        | 39827.6          | 45645.4                | 256.31 µg/L           | 256.31 ppb            | 06:35:34         |
| 1     | As 188.979†        | 1486.9           | 1646.9                 | 489.93 µg/L           | 489.93 ppb            | 06:35:39         |
| 1     | B 249.677†         | -9551.1          | -10913.0               | 520.66 µg/L           | 520.66 ppb            | 06:35:34         |
| 1     | Ba 233.527†        | 77704.9          | 87093.2                | 485.29 µg/L           | 485.29 ppb            | 06:35:34         |
| 1     | Be 313.107†        | 508854.4         | 576624.0               | 237.36 µg/L           | 237.36 ppb            | 06:35:34         |
| 1     | Cd 226.502†        | 69968.3          | 78791.3                | 458.78 µg/L           | 458.78 ppb            | 06:35:34         |
| 1     | Co 228.616†        | 24181.7          | 27471.1                | 434.39 µg/L           | 434.39 ppb            | 06:35:39         |
| 1     | Cr 267.716†        | 31727.0          | 35496.2                | 455.24 µg/L           | 455.24 ppb            | 06:35:39         |
| 1     | Cu 324.752†        | 111058.9         | 122168.1               | 520.00 µg/L           | 520.00 ppb            | 06:35:34         |
| 1     | Mn 257.610†        | 425776.9         | 477084.3               | 463.32 µg/L           | 463.32 ppb            | 06:35:34         |
| 1     | Mo 202.031†        | 10480.9          | 11781.3                | 484.57 µg/L           | 484.57 ppb            | 06:35:39         |
| 1     | Ni 231.604†        | 21935.2          | 24798.1                | 427.18 µg/L           | 427.18 ppb            | 06:35:39         |
| 1     | P 214.914†         | 5375.3           | 5888.8                 | 2423.5 µg/L           | 2423.5 ppb            | 06:35:39         |
| 1     | Pb 220.353†        | 6501.4           | 7191.4                 | 461.02 µg/L           | 461.02 ppb            | 06:35:39         |
| 1     | S 181.975 Axial†   | 2440.2           | 2592.0                 | 2501.9 µg/L           | 2501.9 ppb            | 06:35:39         |
| 1     | Sb 206.836†        | 2117.5           | 2261.6                 | 479.36 µg/L           | 479.36 ppb            | 06:35:39         |
| 1     | Se 196.026†        | 5419.9           | 6101.8                 | 2298.1 µg/L           | 2298.1 ppb            | 06:35:39         |
| 1     | SiO2†              | 98669.5          | 109121.7               | 10270 µg/L            | 10270 ppb             | 06:35:34         |
| 1     | Si 251.611†        | 123735.6         | 138596.3               | 4770.9 µg/L           | 4770.9 ppb            | 06:35:34         |
| 1     | Sn 189.927†        | 4366.7           | 4880.3                 | 468.24 µg/L           | 468.24 ppb            | 06:35:39         |
| 1     | Ti 334.940†        | 183211.8         | 206450.0               | 491.53 µg/L           | 491.53 ppb            | 06:35:34         |
| 1     | Tl 190.801†        | 2300.6           | 2739.8                 | 457.87 µg/L           | 457.87 ppb            | 06:35:39         |
| 1     | U 367.007†         | 7712.7           | 7232.9                 | 416.0 µg/L            | 416.0 ppb             | 06:35:34         |
| 1     | V 292.402†         | 64923.6          | 72456.5                | 495.32 µg/L           | 495.32 ppb            | 06:35:34         |
| 1     | Zn 213.857†        | 86015.3          | 95765.0                | 466.01 µg/L           | 466.01 ppb            | 06:35:34         |
| 2     | Sc RADIAL          | 7692.1           | 7692.1                 | 91.3 %                |                       | 06:35:00         |
| 2     | Al 396.153Radial†  | 925483.4         | 1014587.0              | 500000 µg/L           | 500000 ppb            | 06:34:40         |
| 2     | Ca 317.933Radial†  | 911248.4         | 998147.9               | 486180 µg/L           | 486180 ppb            | 06:34:40         |
| 2     | Fe 238.204 Radial† | 112674.0         | 123421.4               | 189340 µg/L           | 189340 ppb            | 06:34:40         |
| 2     | K 766.490 Radial†  | 9619.4           | 10134.6                | 5672.8 µg/L           | 5672.8 ppb            | 06:34:40         |
| 2     | Mg 279.077 IEC†    | 71274.8          | 78069.1                | 486870 µg/L           | 486870 ppb            | 06:34:40         |
| 2     | Na 589.592 Radial† | 116.5            | 122.6                  | 4956.4 µg/L           | 4956.4 ppb            | 06:35:00         |
| 2     | Sr 421.552†        | 18201.4          | 19935.5                | 492.10 µg/L           | 492.10 ppb            | 06:34:40         |
| 2     | Sc 361.383         | 554954.6         | 554954.6               | 88.681 %              |                       | 06:35:45         |
| 2     | Y 371.029          | 614536.6         | 614536.6               | 86.549 %              |                       | 06:35:45         |
| 2     | Ag 328.068†        | 39633.9          | 45632.0                | 256.49 µg/L           | 256.49 ppb            | 06:35:45         |
| 2     | As 188.979†        | 1498.4           | 1667.5                 | 496.08 µg/L           | 496.08 ppb            | 06:35:50         |
| 2     | B 249.677†         | -9479.3          | -10881.2               | 527.57 µg/L           | 527.57 ppb            | 06:35:45         |
| 2     | Ba 233.527†        | 77333.5          | 87074.6                | 485.14 µg/L           | 485.14 ppb            | 06:35:45         |
| 2     | Be 313.107†        | 506205.1         | 576257.3               | 237.25 µg/L           | 237.25 ppb            | 06:35:45         |
| 2     | Cd 226.502†        | 69521.7          | 78648.1                | 457.76 µg/L           | 457.76 ppb            | 06:35:45         |
| 2     | Co 228.616†        | 24330.3          | 27763.2                | 439.04 µg/L           | 439.04 ppb            | 06:35:50         |
| 2     | Cr 267.716†        | 31856.5          | 35805.7                | 459.19 µg/L           | 459.19 ppb            | 06:35:50         |
| 2     | Cu 324.752†        | 110603.1         | 122226.1               | 520.34 µg/L           | 520.34 ppb            | 06:35:45         |
| 2     | Mn 257.610†        | 423348.6         | 476538.9               | 462.72 µg/L           | 462.72 ppb            | 06:35:45         |
| 2     | Mo 202.031†        | 10485.1          | 11840.0                | 487.01 µg/L           | 487.01 ppb            | 06:35:50         |
| 2     | Ni 231.604†        | 22135.2          | 25136.6                | 433.06 µg/L           | 433.06 ppb            | 06:35:50         |
| 2     | P 214.914†         | 5444.1           | 5994.1                 | 2468.1 µg/L           | 2468.1 ppb            | 06:35:50         |

|   |                    |          |           |             |            |          |
|---|--------------------|----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 6621.1   | 7359.9    | 474.15 µg/L | 474.15 ppb | 06:35:50 |
| 2 | S 181.975 Axial†   | 2456.8   | 2623.3    | 2532.3 µg/L | 2532.3 ppb | 06:35:50 |
| 2 | Sb 206.836†        | 2190.5   | 2354.9    | 499.50 µg/L | 499.50 ppb | 06:35:50 |
| 2 | Se 196.026†        | 5432.7   | 6144.2    | 2314.2 µg/L | 2314.2 ppb | 06:35:50 |
| 2 | SiO2†              | 97860.4  | 108717.5  | 10232 µg/L  | 10232 ppb  | 06:35:45 |
| 2 | Si 251.611†        | 122986.9 | 138389.3  | 4763.4 µg/L | 4763.4 ppb | 06:35:45 |
| 2 | Sn 189.927†        | 4328.3   | 4859.4    | 466.24 µg/L | 466.24 ppb | 06:35:50 |
| 2 | Ti 334.940†        | 182102.7 | 206142.9  | 490.96 µg/L | 490.96 ppb | 06:35:45 |
| 2 | Tl 190.801†        | 2280.1   | 2728.5    | 456.04 µg/L | 456.04 ppb | 06:35:50 |
| 2 | U 367.007†         | 7788.5   | 7358.1    | 431.6 µg/L  | 431.6 ppb  | 06:35:45 |
| 2 | V 292.402†         | 64459.7  | 72267.7   | 494.38 µg/L | 494.38 ppb | 06:35:45 |
| 2 | Zn 213.857†        | 85545.3  | 95678.1   | 465.05 µg/L | 465.05 ppb | 06:35:45 |
| 3 | Sc RADIAL          | 7691.9   | 7691.9    | 91.3 %      |            | 06:35:26 |
| 3 | Al 396.153Radial†  | 925147.1 | 1014246.3 | 499830 µg/L | 499830 ppb | 06:35:06 |
| 3 | Ca 317.933Radial†  | 910905.6 | 997799.6  | 486010 µg/L | 486010 ppb | 06:35:06 |
| 3 | Fe 238.204 Radial† | 112715.4 | 123470.1  | 189410 µg/L | 189410 ppb | 06:35:06 |
| 3 | K 766.490 Radial†  | 9737.8   | 10264.5   | 5743.7 µg/L | 5743.7 ppb | 06:35:06 |
| 3 | Mg 279.077 IEC†    | 71256.6  | 78051.2   | 486760 µg/L | 486760 ppb | 06:35:06 |
| 3 | Na 589.592 Radial† | 115.2    | 121.3     | 4901.9 µg/L | 4901.9 ppb | 06:35:26 |
| 3 | Sr 421.552†        | 18166.2  | 19897.5   | 491.13 µg/L | 491.13 ppb | 06:35:06 |
| 3 | Sc 361.383         | 555057.4 | 555057.4  | 88.698 %    |            | 06:35:56 |
| 3 | Y 371.029          | 614716.8 | 614716.8  | 86.575 %    |            | 06:35:56 |
| 3 | Ag 328.068†        | 39757.8  | 45763.4   | 257.16 µg/L | 257.16 ppb | 06:35:56 |
| 3 | As 188.979†        | 1509.8   | 1680.1    | 499.78 µg/L | 499.78 ppb | 06:36:01 |
| 3 | B 249.677†         | -9463.8  | -10861.8  | 528.28 µg/L | 528.28 ppb | 06:35:56 |
| 3 | Ba 233.527†        | 77515.6  | 87263.8   | 486.21 µg/L | 486.21 ppb | 06:35:56 |
| 3 | Be 313.107†        | 506813.0 | 576836.9  | 237.48 µg/L | 237.48 ppb | 06:35:56 |
| 3 | Cd 226.502†        | 69700.9  | 78835.6   | 458.88 µg/L | 458.88 ppb | 06:35:56 |
| 3 | Co 228.616†        | 23922.7  | 27298.6   | 431.46 µg/L | 431.46 ppb | 06:36:01 |
| 3 | Cr 267.716†        | 31406.4  | 35291.5   | 452.74 µg/L | 452.74 ppb | 06:36:01 |
| 3 | Cu 324.752†        | 110774.1 | 122395.8  | 521.06 µg/L | 521.06 ppb | 06:35:56 |
| 3 | Mn 257.610†        | 424092.2 | 477288.9  | 463.47 µg/L | 463.47 ppb | 06:35:56 |
| 3 | Mo 202.031†        | 10348.7  | 11684.0   | 480.70 µg/L | 480.70 ppb | 06:36:01 |
| 3 | Ni 231.604†        | 21779.2  | 24730.6   | 425.92 µg/L | 425.92 ppb | 06:36:01 |
| 3 | P 214.914†         | 5320.0   | 5853.0    | 2406.7 µg/L | 2406.7 ppb | 06:36:01 |
| 3 | Pb 220.353†        | 6460.1   | 7176.9    | 458.94 µg/L | 458.94 ppb | 06:36:01 |
| 3 | S 181.975 Axial†   | 2400.4   | 2559.2    | 2469.5 µg/L | 2469.5 ppb | 06:36:01 |
| 3 | Sb 206.836†        | 2172.8   | 2334.4    | 495.12 µg/L | 495.12 ppb | 06:36:01 |
| 3 | Se 196.026†        | 5406.3   | 6113.4    | 2303.1 µg/L | 2303.1 ppb | 06:36:01 |
| 3 | SiO2†              | 98087.9  | 108953.5  | 10254 µg/L  | 10254 ppb  | 06:35:56 |
| 3 | Si 251.611†        | 123318.7 | 138737.7  | 4775.6 µg/L | 4775.6 ppb | 06:35:56 |
| 3 | Sn 189.927†        | 4289.8   | 4815.2    | 462.01 µg/L | 462.01 ppb | 06:36:01 |
| 3 | Ti 334.940†        | 182514.3 | 206569.0  | 491.91 µg/L | 491.91 ppb | 06:35:56 |
| 3 | Tl 190.801†        | 2304.7   | 2755.7    | 460.58 µg/L | 460.58 ppb | 06:36:01 |
| 3 | U 367.007†         | 7820.3   | 7392.3    | 437.6 µg/L  | 437.6 ppb  | 06:35:56 |
| 3 | V 292.402†         | 64554.1  | 72360.8   | 494.91 µg/L | 494.91 ppb | 06:35:56 |
| 3 | Zn 213.857†        | 85522.6  | 95634.6   | 464.86 µg/L | 464.86 ppb | 06:35:56 |

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Mean Data: ICSAB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|---|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383  | 555837.6                 | 88.822 %           | 0.2303   |                    |          | 0.26% |
| Sc RADIAL   | 7695.4                   | 91.3 %             | 0.07     |                    |          | 0.08% |
| Y 371.029   | 615561.6                 | 86.693 %           | 0.2284   |                    |          | 0.26% |
| Ag 328.068†   | 45680.2                  | 256.65 µg/L        | 0.448    | 256.65 ppb         | 0.448    | 0.17% |
| QC value within limits for Ag 328.068 Recovery = 102.66%      |                          |                    |          |                    |          |       |
| Al 396.153Radial†   | 1012272.5                | 498860 µg/L        | 1832.15  | 498860 ppb         | 1832.15  | 0.37% |
| QC value within limits for Al 396.153Radial Recovery = 99.77% |                          |                    |          |                    |          |       |
| As 188.979†   | 1664.8                   | 495.26 µg/L        | 4.977    | 495.26 ppb         | 4.977    | 1.00% |
| QC value within limits for As 188.979 Recovery = 99.05%       |                          |                    |          |                    |          |       |
| B 249.677†  | -10885.4                 | 525.50 µg/L        | 4.211    | 525.50 ppb         | 4.211    | 0.80% |
| QC value within limits for B 249.677 Recovery = 105.10%       |                          |                    |          |                    |          |       |
| Ba 233.527†   | 87143.8                  | 485.55 µg/L        | 0.576    | 485.55 ppb         | 0.576    | 0.12% |
| QC value within limits for Ba 233.527 Recovery = 97.11%       |                          |                    |          |                    |          |       |
| Be 313.107†   | 576572.7                 | 237.37 µg/L        | 0.115    | 237.37 ppb         | 0.115    | 0.05% |
| QC value within limits for Be 313.107 Recovery = 94.95%       |                          |                    |          |                    |          |       |
| Ca 317.933Radial†   | 996293.1                 | 485280 µg/L        | 1420.44  | 485280 ppb         | 1420.44  | 0.29% |
| QC value within limits for Ca 317.933Radial Recovery = 97.06% |                          |                    |          |                    |          |       |
| Cd 226.502†   | 78758.4                  | 458.47 µg/L        | 0.622    | 458.47 ppb         | 0.622    | 0.14% |
| QC value within limits for Cd 226.502 Recovery = 91.69%       |                          |                    |          |                    |          |       |

|  |          |             |         |            |         |       |
|--|----------|-------------|---------|------------|---------|-------|
| Co 228.616†  | 27511.0  | 434.97 µg/L | 3.823   | 434.97 ppb | 3.823   | 0.88% |
| QC value within limits for Co 228.616 Recovery = 86.99%        |          |             |         |            |         |       |
| Cr 267.716†  | 35531.1  | 455.72 µg/L | 3.257   | 455.72 ppb | 3.257   | 0.71% |
| QC value within limits for Cr 267.716 Recovery = 91.14%        |          |             |         |            |         |       |
| Cu 324.752†  | 122263.3 | 520.47 µg/L | 0.539   | 520.47 ppb | 0.539   | 0.10% |
| QC value within limits for Cu 324.752 Recovery = 104.09%       |          |             |         |            |         |       |
| Fe 238.204 Radial†   | 123087.0 | 188820 µg/L | 953.93  | 188820 ppb | 953.93  | 0.51% |
| QC value within limits for Fe 238.204 Radial Recovery = 94.41% |          |             |         |            |         |       |
| K 766.490 Radial†  | 10109.6  | 5658.8 µg/L | 92.74   | 5658.8 ppb | 92.74   | 1.64% |
| QC value within limits for K 766.490 Radial Recovery = 113.18% |          |             |         |            |         |       |
| Mg 279.077 IEC†  | 77845.6  | 485480 µg/L | 2318.13 | 485480 ppb | 2318.13 | 0.48% |
| QC value within limits for Mg 279.077 IEC Recovery = 97.10%    |          |             |         |            |         |       |
| Mn 257.610†  | 476970.7 | 463.17 µg/L | 0.395   | 463.17 ppb | 0.395   | 0.09% |
| QC value within limits for Mn 257.610 Recovery = 92.63%        |          |             |         |            |         |       |
| Mo 202.031†  | 11768.4  | 484.09 µg/L | 3.182   | 484.09 ppb | 3.182   | 0.66% |
| QC value within limits for Mo 202.031 Recovery = 96.82%        |          |             |         |            |         |       |
| Na 589.592 Radial†   | 121.8    | 4922.5 µg/L | 29.57   | 4922.5 ppb | 29.57   | 0.60% |
| QC value within limits for Na 589.592 Radial Recovery = 98.45% |          |             |         |            |         |       |
| Ni 231.604†  | 24888.4  | 428.72 µg/L | 3.812   | 428.72 ppb | 3.812   | 0.89% |
| QC value within limits for Ni 231.604 Recovery = 85.74%        |          |             |         |            |         |       |
| P 214.914†   | 5912.0   | 2432.8 µg/L | 31.73   | 2432.8 ppb | 31.73   | 1.30% |
| QC value within limits for P 214.914 Recovery = 97.31%         |          |             |         |            |         |       |
| Pb 220.353†  | 7242.7   | 464.70 µg/L | 8.247   | 464.70 ppb | 8.247   | 1.77% |
| QC value within limits for Pb 220.353 Recovery = 92.94%        |          |             |         |            |         |       |
| S 181.975 Axial†   | 2591.5   | 2501.2 µg/L | 31.37   | 2501.2 ppb | 31.37   | 1.25% |
| QC value within limits for S 181.975 Axial Recovery = 100.05%  |          |             |         |            |         |       |
| Sb 206.836†  | 2317.0   | 491.33 µg/L | 10.590  | 491.33 ppb | 10.590  | 2.16% |
| QC value within limits for Sb 206.836 Recovery = 98.27%        |          |             |         |            |         |       |
| Se 196.026†  | 6119.8   | 2305.1 µg/L | 8.24    | 2305.1 ppb | 8.24    | 0.36% |
| QC value within limits for Se 196.026 Recovery = 92.20%        |          |             |         |            |         |       |
| SiO2†  | 108930.9 | 10252 µg/L  | 19.06   | 10252 ppb  | 19.06   | 0.19% |
| QC value within limits for SiO2 Recovery = 95.86%              |          |             |         |            |         |       |
| Si 251.611†  | 138574.4 | 4770.0 µg/L | 6.14    | 4770.0 ppb | 6.14    | 0.13% |
| QC value within limits for Si 251.611 Recovery = 95.40%        |          |             |         |            |         |       |
| Sn 189.927†  | 4851.7   | 465.50 µg/L | 3.179   | 465.50 ppb | 3.179   | 0.68% |
| QC value within limits for Sn 189.927 Recovery = 93.10%        |          |             |         |            |         |       |
| Sr 421.552†  | 19872.3  | 490.52 µg/L | 1.965   | 490.52 ppb | 1.965   | 0.40% |
| QC value within limits for Sr 421.552 Recovery = 98.10%        |          |             |         |            |         |       |
| Ti 334.940†  | 206387.3 | 491.47 µg/L | 0.480   | 491.47 ppb | 0.480   | 0.10% |
| QC value within limits for Ti 334.940 Recovery = 98.29%        |          |             |         |            |         |       |
| Tl 190.801†  | 2741.3   | 458.16 µg/L | 2.279   | 458.16 ppb | 2.279   | 0.50% |
| QC value within limits for Tl 190.801 Recovery = 91.63%        |          |             |         |            |         |       |
| U 367.007†   | 7327.8   | 428.4 µg/L  | 11.15   | 428.4 ppb  | 11.15   | 2.60% |
| QC value within limits for U 367.007 Recovery = 85.68%         |          |             |         |            |         |       |
| V 292.402†   | 72361.7  | 494.87 µg/L | 0.475   | 494.87 ppb | 0.475   | 0.10% |
| QC value within limits for V 292.402 Recovery = 98.97%         |          |             |         |            |         |       |
| Zn 213.857†  | 95692.6  | 465.31 µg/L | 0.617   | 465.31 ppb | 0.617   | 0.13% |
| QC value within limits for Zn 213.857 Recovery = 93.06%        |          |             |         |            |         |       |

All analyte(s) passed QC.

Sequence No.: 11

Sample ID: LR1

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 105

Date Collected: 11/16/2016 06:36:09

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: LR1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Conc. Units | Sample | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|-------------|--------|---------------|
| 1     | Sc RADIAL          | 7580.5        | 7580.5              | 90.0 %             |             |        | 06:36:44      |
| 1     | Al 396.153Radial†  | 904664.6      | 1006376.5           | 495970 µg/L        | 495970 ppb  |        | 06:36:39      |
| 1     | Ca 317.933Radial†  | 906183.4      | 1007219.9           | 490600 µg/L        | 490600 ppb  |        | 06:36:39      |
| 1     | Fe 238.204 Radial† | 278621.9      | 309709.7            | 475110 µg/L        | 475110 ppb  |        | 06:36:39      |
| 1     | K 766.490 Radial†  | 548329.9      | 609129.3            | 332610 µg/L        | 332610 ppb  |        | 06:36:39      |
| 1     | Mg 279.077 IEC†    | 68966.8       | 76653.4             | 478040 µg/L        | 478040 ppb  |        | 06:36:44      |
| 1     | Na 589.592 Radial† | 10280.7       | 11423.2             | 467710 µg/L        | 467710 ppb  |        | 06:36:44      |
| 1     | Sr 421.552†        | 1751.7        | 1943.4              | 33.009 µg/L        | 33.009 ppb  |        | 06:36:44      |
| 1     | Sc 361.383         | 541293.2      | 541293.2            | 86.498 %           |             |        | 06:37:12      |
| 1     | Y 371.029          | 595694.6      | 595694.6            | 83.895 %           |             |        | 06:37:12      |
| 1     | Ag 328.068†        | -7144.6       | -7320.4             | 35.231 µg/L        | 35.231 ppb  |        | 06:37:12      |
| 1     | As 188.979†        | 14.7          | -5.2                | -26.032 µg/L       | -26.032 ppb |        | 06:37:17      |
| 1     | B 249.677†         | -82695.5      | -95795.8            | -4.2031 µg/L       | -4.2031 ppb |        | 06:37:12      |
| 1     | Ba 233.527†        | 2123.0        | 2325.1              | 0.3530 µg/L        | 0.3530 ppb  |        | 06:37:17      |
| 1     | Be 313.107†        | -22222.2      | -20247.8            | 1.6013 µg/L        | 1.6013 ppb  |        | 06:37:17      |
| 1     | Cd 226.502†        | 6872.0        | 8197.7              | 2.4642 µg/L        | 2.4642 ppb  |        | 06:37:17      |
| 1     | Co 228.616†        | 1493.1        | 2053.7              | 0.3093 µg/L        | 0.3093 ppb  |        | 06:37:17      |
| 1     | Cr 267.716†        | -242.5        | -397.2              | -3.9200 µg/L       | -3.9200 ppb |        | 06:37:17      |
| 1     | Cu 324.752†        | -4948.0       | -8214.1             | -1.4459 µg/L       | -1.4459 ppb |        | 06:37:17      |
| 1     | Mn 257.610†        | -2292.8       | -3494.2             | 5.0830 µg/L        | 5.0830 ppb  |        | 06:37:12      |
| 1     | Mo 202.031†        | -324.8        | -358.9              | 5.0272 µg/L        | 5.0272 ppb  |        | 06:37:17      |
| 1     | Ni 231.604†        | 903.1         | 1220.3              | -1.3855 µg/L       | -1.3855 ppb |        | 06:37:17      |
| 1     | P 214.914†         | 939.2         | 940.9               | -9.5033 µg/L       | -9.5033 ppb |        | 06:37:17      |
| 1     | Pb 220.353†        | 1369.8        | 1477.3              | -5.1076 µg/L       | -5.1076 ppb |        | 06:37:17      |
| 1     | S 181.975 Axial†   | 46097.1       | 53145.6             | 51962 µg/L         | 51962 ppb   |        | 06:37:17      |
| 1     | Sb 206.836†        | 151.0         | 59.3                | 2.0695 µg/L        | 2.0695 ppb  |        | 06:37:17      |
| 1     | Se 196.026†        | -494.9        | -554.1              | 23.786 µg/L        | 23.786 ppb  |        | 06:37:17      |
| 1     | SiO2†              | 2075.2        | 765.8               | 71.947 µg/L        | 71.947 ppb  |        | 06:37:17      |
| 1     | Si 251.611†        | 638.8         | 443.7               | -72.475 µg/L       | -72.475 ppb |        | 06:37:17      |
| 1     | Sn 189.927†        | 43.2          | 28.7                | 11.592 µg/L        | 11.592 ppb  |        | 06:37:17      |
| 1     | Ti 334.940†        | -7838.7       | -8264.5             | -0.6637 µg/L       | -0.6637 ppb |        | 06:37:17      |
| 1     | Tl 190.801†        | -178.8        | -49.3               | 3.8978 µg/L        | 3.8978 ppb  |        | 06:37:17      |
| 1     | U 367.007†         | 75517.0       | 85880.2             | 13650 µg/L         | 13650 ppb   |        | 06:37:12      |
| 1     | V 292.402†         | -9256.1       | -11120.1            | 2.3722 µg/L        | 2.3722 ppb  |        | 06:37:17      |
| 1     | Zn 213.857†        | 15969.1       | 17676.0             | 8.6628 µg/L        | 8.6628 ppb  |        | 06:37:17      |
| 2     | Sc RADIAL          | 7563.2        | 7563.2              | 89.8 %             |             |        | 06:36:54      |
| 2     | Al 396.153Radial†  | 906820.6      | 1011081.1           | 498290 µg/L        | 498290 ppb  |        | 06:36:49      |
| 2     | Ca 317.933Radial†  | 909329.1      | 1013031.1           | 493430 µg/L        | 493430 ppb  |        | 06:36:49      |
| 2     | Fe 238.204 Radial† | 279851.8      | 311789.2            | 478300 µg/L        | 478300 ppb  |        | 06:36:49      |
| 2     | K 766.490 Radial†  | 550371.7      | 612799.7            | 334610 µg/L        | 334610 ppb  |        | 06:36:49      |
| 2     | Mg 279.077 IEC†    | 68762.6       | 76601.5             | 477720 µg/L        | 477720 ppb  |        | 06:36:54      |
| 2     | Na 589.592 Radial† | 10301.7       | 11472.8             | 469740 µg/L        | 469740 ppb  |        | 06:36:54      |
| 2     | Sr 421.552†        | 1726.9        | 1920.2              | 32.321 µg/L        | 32.321 ppb  |        | 06:36:54      |
| 2     | Sc 361.383         | 546512.2      | 546512.2            | 87.332 %           |             |        | 06:37:23      |
| 2     | Y 371.029          | 601542.8      | 601542.8            | 84.719 %           |             |        | 06:37:23      |
| 2     | Ag 328.068†        | -7146.9       | -7244.1             | 36.172 µg/L        | 36.172 ppb  |        | 06:37:23      |
| 2     | As 188.979†        | 18.6          | -0.8                | -24.891 µg/L       | -24.891 ppb |        | 06:37:28      |
| 2     | B 249.677†         | -83339.2      | -95619.9            | 11.724 µg/L        | 11.724 ppb  |        | 06:37:23      |
| 2     | Ba 233.527†        | 2202.8        | 2393.1              | 0.6503 µg/L        | 0.6503 ppb  |        | 06:37:28      |
| 2     | Be 313.107†        | -22331.0      | -20127.1            | 1.6745 µg/L        | 1.6745 ppb  |        | 06:37:28      |
| 2     | Cd 226.502†        | 6776.9        | 8012.9              | 1.0274 µg/L        | 1.0274 ppb  |        | 06:37:28      |
| 2     | Co 228.616†        | 1387.4        | 1916.2              | -2.1535 µg/L       | -2.1535 ppb |        | 06:37:28      |
| 2     | Cr 267.716†        | -282.1        | -439.9              | -4.4157 µg/L       | -4.4157 ppb |        | 06:37:28      |
| 2     | Cu 324.752†        | -4997.2       | -8215.8             | -1.3131 µg/L       | -1.3131 ppb |        | 06:37:28      |
| 2     | Mn 257.610†        | -2390.2       | -3580.3             | 5.1802 µg/L        | 5.1802 ppb  |        | 06:37:23      |
| 2     | Mo 202.031†        | -337.4        | -369.7              | 4.7198 µg/L        | 4.7198 ppb  |        | 06:37:28      |
| 2     | Ni 231.604†        | 907.3         | 1215.0              | -1.6317 µg/L       | -1.6317 ppb |        | 06:37:28      |
| 2     | P 214.914†         | 944.7         | 936.8               | -14.211 µg/L       | -14.211 ppb |        | 06:37:28      |

|   |                    |          |           |              |             |          |
|---|--------------------|----------|-----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 1508.4   | 1620.8    | 6.4160 µg/L  | 6.4160 ppb  | 06:37:28 |
| 2 | S 181.975 Axial†   | 46115.6  | 52657.8   | 51484 µg/L   | 51484 ppb   | 06:37:28 |
| 2 | Sb 206.836†        | 101.9    | 1.5       | -10.549 µg/L | -10.549 ppb | 06:37:28 |
| 2 | Se 196.026†        | -536.4   | -596.1    | 10.100 µg/L  | 10.100 ppb  | 06:37:28 |
| 2 | SiO2†              | 1956.7   | 607.3     | 57.041 µg/L  | 57.041 ppb  | 06:37:28 |
| 2 | Si 251.611†        | 686.1    | 490.8     | -71.418 µg/L | -71.418 ppb | 06:37:28 |
| 2 | Sn 189.927†        | 11.1     | -8.5      | 8.1154 µg/L  | 8.1154 ppb  | 06:37:28 |
| 2 | Ti 334.940†        | -7776.4  | -8106.7   | -0.1392 µg/L | -0.1392 ppb | 06:37:28 |
| 2 | Tl 190.801†        | -216.5   | -90.5     | -2.8686 µg/L | -2.8686 ppb | 06:37:28 |
| 2 | U 367.007†         | 76055.1  | 85662.7   | 13600 µg/L   | 13600 ppb   | 06:37:23 |
| 2 | V 292.402†         | -9224.2  | -10981.4  | 3.6599 µg/L  | 3.6599 ppb  | 06:37:28 |
| 2 | Zn 213.857†        | 15921.0  | 17444.7   | 7.0287 µg/L  | 7.0287 ppb  | 06:37:28 |
| 3 | Sc RADIAL          | 7545.9   | 7545.9    | 89.5 %       |             | 06:37:05 |
| 3 | Al 396.153Radial†  | 914655.0 | 1022139.3 | 503740 µg/L  | 503740 ppb  | 06:37:00 |
| 3 | Ca 317.933Radial†  | 918944.5 | 1026084.5 | 499790 µg/L  | 499790 ppb  | 06:37:00 |
| 3 | Fe 238.204 Radial† | 283155.2 | 316190.7  | 485050 µg/L  | 485050 ppb  | 06:37:00 |
| 3 | K 766.490 Radial†  | 557781.2 | 622475.7  | 339900 µg/L  | 339900 ppb  | 06:37:00 |
| 3 | Mg 279.077 IEC†    | 68880.1  | 76907.8   | 479630 µg/L  | 479630 ppb  | 06:37:05 |
| 3 | Na 589.592 Radial† | 10446.9  | 11661.2   | 477460 µg/L  | 477460 ppb  | 06:37:05 |
| 3 | Sr 421.552†        | 1757.6   | 1958.8    | 33.092 µg/L  | 33.092 ppb  | 06:37:05 |
| 3 | Sc 361.383         | 540487.8 | 540487.8  | 86.369 %     |             | 06:37:34 |
| 3 | Y 371.029          | 594335.2 | 594335.2  | 83.704 %     |             | 06:37:34 |
| 3 | Ag 328.068†        | -7083.1  | -7261.5   | 37.198 µg/L  | 37.198 ppb  | 06:37:34 |
| 3 | As 188.979†        | 24.7     | 6.4       | -23.062 µg/L | -23.062 ppb | 06:37:40 |
| 3 | B 249.677†         | -82440.3 | -95642.7  | 37.722 µg/L  | 37.722 ppb  | 06:37:34 |
| 3 | Ba 233.527†        | 2192.3   | 2409.0    | 0.5590 µg/L  | 0.5590 ppb  | 06:37:40 |
| 3 | Be 313.107†        | -22220.0 | -20283.6  | 1.7008 µg/L  | 1.7008 ppb  | 06:37:40 |
| 3 | Cd 226.502†        | 6669.2   | 7974.8    | 0.1255 µg/L  | 0.1255 ppb  | 06:37:40 |
| 3 | Co 228.616†        | 1377.3   | 1922.2    | -2.5258 µg/L | -2.5258 ppb | 06:37:40 |
| 3 | Cr 267.716†        | -226.7   | -379.3    | -3.6138 µg/L | -3.6138 ppb | 06:37:40 |
| 3 | Cu 324.752†        | -4982.5  | -8262.5   | -1.1398 µg/L | -1.1398 ppb | 06:37:40 |
| 3 | Mn 257.610†        | -2462.4  | -3694.5   | 5.3616 µg/L  | 5.3616 ppb  | 06:37:34 |
| 3 | Mo 202.031†        | -311.8   | -344.5    | 6.0197 µg/L  | 6.0197 ppb  | 06:37:40 |
| 3 | Ni 231.604†        | 880.6    | 1195.8    | -2.2951 µg/L | -2.2951 ppb | 06:37:40 |
| 3 | P 214.914†         | 892.3    | 888.2     | -41.512 µg/L | -41.512 ppb | 06:37:40 |
| 3 | Pb 220.353†        | 1490.8   | 1619.7    | 5.1464 µg/L  | 5.1464 ppb  | 06:37:40 |
| 3 | S 181.975 Axial†   | 45642.4  | 52698.4   | 51523 µg/L   | 51523 ppb   | 06:37:40 |
| 3 | Sb 206.836†        | 92.5     | -8.1      | -12.743 µg/L | -12.743 ppb | 06:37:40 |
| 3 | Se 196.026†        | -511.1   | -573.7    | 21.396 µg/L  | 21.396 ppb  | 06:37:40 |
| 3 | SiO2†              | 1998.5   | 680.7     | 63.932 µg/L  | 63.932 ppb  | 06:37:40 |
| 3 | Si 251.611†        | 544.7    | 335.7     | -78.076 µg/L | -78.076 ppb | 06:37:40 |
| 3 | Sn 189.927†        | 60.7     | 49.0      | 13.793 µg/L  | 13.793 ppb  | 06:37:40 |
| 3 | Ti 334.940†        | -7807.5  | -8241.9   | -0.1363 µg/L | -0.1363 ppb | 06:37:40 |
| 3 | Tl 190.801†        | -215.5   | -92.1     | -3.0857 µg/L | -3.0857 ppb | 06:37:40 |
| 3 | U 367.007†         | 75444.4  | 85926.2   | 13620 µg/L   | 13620 ppb   | 06:37:34 |
| 3 | V 292.402†         | -9169.5  | -11035.8  | 4.2629 µg/L  | 4.2629 ppb  | 06:37:40 |
| 3 | Zn 213.857†        | 15801.9  | 17510.0   | 6.4378 µg/L  | 6.4378 ppb  | 06:37:40 |

## Mean Data: LR1

| Analyte  | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--|--------------------------|--------------|-----------------|--------------------|----------|---------|
| Sc 361.383   | 542764.4                 | 86.733 %     | 0.5226          |                    |          | 0.60%   |
| Sc RADIAL  | 7563.2                   | 89.8 %       | 0.21            |                    |          | 0.23%   |
| Y 371.029  | 597190.9                 | 84.106 %     | 0.5394          |                    |          | 0.64%   |
| Ag 328.068†  | -7275.4                  | 36.200 µg/L  | 0.9841          | 36.200 ppb         | 0.9841   | 2.72%   |
| Al 396.153Radial†  | 1013199.0                | 499330 µg/L  | 3987.98         | 499330 ppb         | 3987.98  | 0.80%   |
| QC value within limits for Al 396.153Radial Recovery = 99.87%  |                          |              |                 |                    |          |         |
| As 188.979†  | 0.1                      | -24.662 µg/L | 1.4987          | -24.662 ppb        | 1.4987   | 6.08%   |
| B 249.677†   | -95686.2                 | 15.081 µg/L  | 21.1630         | 15.081 ppb         | 21.1630  | 140.33% |
| Ba 233.527†  | 2375.7                   | 0.5208 µg/L  | 0.15230         | 0.5208 ppb         | 0.15230  | 29.24%  |
| Be 313.107†  | -20219.5                 | 1.6588 µg/L  | 0.05154         | 1.6588 ppb         | 0.05154  | 3.11%   |
| Ca 317.933Radial†  | 1015445.2                | 494610 µg/L  | 4705.82         | 494610 ppb         | 4705.82  | 0.95%   |
| QC value within limits for Ca 317.933Radial Recovery = 98.92%  |                          |              |                 |                    |          |         |
| Cd 226.502†  | 8061.8                   | 1.2057 µg/L  | 1.17953         | 1.2057 ppb         | 1.17953  | 97.83%  |
| Co 228.616†  | 1964.0                   | -1.4567 µg/L | 1.54064         | -1.4567 ppb        | 1.54064  | 105.77% |
| Cr 267.716†  | -405.5                   | -3.9832 µg/L | 0.40465         | -3.9832 ppb        | 0.40465  | 10.16%  |
| Cu 324.752†  | -8230.8                  | -1.2996 µg/L | 0.15353         | -1.2996 ppb        | 0.15353  | 11.81%  |
| Fe 238.204 Radial†   | 312563.2                 | 479490 µg/L  | 5076.40         | 479490 ppb         | 5076.40  | 1.06%   |
| QC value within limits for Fe 238.204 Radial Recovery = 95.90% |                          |              |                 |                    |          |         |
| K 766.490 Radial†  | 614801.5                 | 335710 µg/L  | 3764.59         | 335710 ppb         | 3764.59  | 1.12%   |

QC value greater than the upper limit for K 766.490 Radial Recovery = 111.90%

|  |          |              |         |             |         |         |
|--|----------|--------------|---------|-------------|---------|---------|
| Mg 279.077 IEC†  | 76720.9  | 478460 µg/L  | 1022.34 | 478460 ppb  | 1022.34 | 0.21%   |
| QC value within limits for Mg 279.077 IEC Recovery = 95.69%    |          |              |         |             |         |         |
| Mn 257.610†  | -3589.7  | 5.2082 µg/L  | 0.14139 | 5.2082 ppb  | 0.14139 | 2.71%   |
| Mo 202.031†  | -357.7   | 5.2556 µg/L  | 0.67936 | 5.2556 ppb  | 0.67936 | 12.93%  |
| Na 589.592 Radial†   | 11519.1  | 471640 µg/L  | 5142.49 | 471640 ppb  | 5142.49 | 1.09%   |
| QC value within limits for Na 589.592 Radial Recovery = 94.33% |          |              |         |             |         |         |
| Ni 231.604†  | 1210.3   | -1.7708 µg/L | 0.47046 | -1.7708 ppb | 0.47046 | 26.57%  |
| P 214.914†   | 922.0    | -21.742 µg/L | 17.2823 | -21.742 ppb | 17.2823 | 79.49%  |
| Pb 220.353†  | 1572.6   | 2.1516 µg/L  | 6.31859 | 2.1516 ppb  | 6.31859 | 293.67% |
| S 181.975 Axial†   | 52833.9  | 51657 µg/L   | 265.18  | 51657 ppb   | 265.18  | 0.51%   |
| QC value within limits for S 181.975 Axial Recovery = 103.31%  |          |              |         |             |         |         |
| Sb 206.836†  | 17.6     | -7.0739 µg/L | 7.99411 | -7.0739 ppb | 7.99411 | 113.01% |
| Se 196.026†  | -574.6   | 18.427 µg/L  | 7.3099  | 18.427 ppb  | 7.3099  | 39.67%  |
| SiO2†  | 684.6    | 64.307 µg/L  | 7.4604  | 64.307 ppb  | 7.4604  | 11.60%  |
| Si 251.611†  | 423.4    | -73.990 µg/L | 3.5779  | -73.990 ppb | 3.5779  | 4.84%   |
| Sn 189.927†  | 23.1     | 11.167 µg/L  | 2.8625  | 11.167 ppb  | 2.8625  | 25.63%  |
| Sr 421.552†  | 1940.8   | 32.807 µg/L  | 0.4231  | 32.807 ppb  | 0.4231  | 1.29%   |
| Ti 334.940†  | -8204.3  | -0.3131 µg/L | 0.30367 | -0.3131 ppb | 0.30367 | 96.99%  |
| Tl 190.801†  | -77.3    | -0.6855 µg/L | 3.97072 | -0.6855 ppb | 3.97072 | 579.22% |
| U 367.007†   | 85823.0  | 13620 µg/L   | 27.31   | 13620 ppb   | 27.31   | 0.20%   |
| QC value within limits for U 367.007 Recovery = 90.82%         |          |              |         |             |         |         |
| V 292.402†   | -11045.8 | 3.4317 µg/L  | 0.96576 | 3.4317 ppb  | 0.96576 | 28.14%  |
| Zn 213.857†  | 17543.6  | 7.3764 µg/L  | 1.15254 | 7.3764 ppb  | 1.15254 | 15.62%  |

QC Failed. Continue with analysis.



Sequence No.: 12

Sample ID: LR2

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 108

Date Collected: 11/16/2016 06:37:48

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: LR2

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8433.0        | 8433.0              | 100 %              |                    | 06:38:23      |
| 1     | Al 396.153Radial†  | 532.7         | 1268.6              | 277.79 µg/L        | 277.79 ppb         | 06:38:23      |
| 1     | Ca 317.933Radial†  | 520.9         | 411.9               | 200.62 µg/L        | 200.62 ppb         | 06:38:43      |
| 1     | Fe 238.204 Radial† | 46.2          | 35.2                | 53.965 µg/L        | 53.965 ppb         | 06:38:43      |
| 1     | K 766.490 Radial†  | 663.0         | 259.1               | 72.414 µg/L        | 72.414 ppb         | 06:38:23      |
| 1     | Mg 279.077 IEC†    | 8.0           | -3.2                | -19.913 µg/L       | -19.913 ppb        | 06:38:43      |
| 1     | Na 589.592 Radial† | 9.2           | 4.3                 | 174.16 µg/L        | 174.16 ppb         | 06:38:43      |
| 1     | Sr 421.552†        | 383873.4      | 383579.3            | 9784.3 µg/L        | 9784.3 ppb         | 06:38:18      |
| 1     | Sc 361.383         | 626977.5      | 626977.5            | 100.19 %           |                    | 06:40:01      |
| 1     | Y 371.029          | 708668.7      | 708668.7            | 99.806 %           |                    | 06:40:01      |
| 1     | Ag 328.068†        | -4190.6       | -3243.2             | -1.7473 µg/L       | -1.7473 ppb        | 06:40:06      |
| 1     | As 188.979†        | 32015.6       | 31932.6             | 9742.3 µg/L        | 9742.3 ppb         | 06:40:06      |
| 1     | B 249.677†         | 259481.7      | 258796.5            | 4991.8 µg/L        | 4991.8 ppb         | 06:40:01      |
| 1     | Ba 233.527†        | 2578988.4     | 2573957.1           | 14491 µg/L         | 14491 ppb          | 06:40:01      |
| 1     | Be 313.107†        | 7253049.7     | 7244706.8           | 2908.1 µg/L        | 2908.1 ppb         | 06:39:54      |
| 1     | Cd 226.502†        | 1610139.6     | 1607332.2           | 9740.1 µg/L        | 9740.1 ppb         | 06:40:01      |
| 1     | Co 228.616†        | 611677.3      | 610842.2            | 9948.8 µg/L        | 9948.8 ppb         | 06:40:01      |
| 1     | Cr 267.716†        | 1948399.3     | 1944579.1           | 24407 µg/L         | 24407 ppb          | 06:40:01      |
| 1     | Cu 324.752†        | 4951988.8     | 4940082.7           | 20602 µg/L         | 20602 ppb          | 06:39:54      |
| 1     | Mn 257.610†        | 9758318.9     | 9738927.5           | 9601.3 µg/L        | 9601.3 ppb         | 06:39:54      |
| 1     | Mo 202.031†        | 237418.5      | 236983.9            | 9591.8 µg/L        | 9591.8 ppb         | 06:40:06      |
| 1     | Ni 231.604†        | 570625.8      | 569717.3            | 10022 µg/L         | 10022 ppb          | 06:40:01      |
| 1     | P 214.914†         | 33572.4       | 33363.7             | 14235 µg/L         | 14235 ppb          | 06:40:06      |
| 1     | Pb 220.353†        | 301707.5      | 301027.6            | 25117 µg/L         | 25117 ppb          | 06:40:06      |
| 1     | S 181.975 Axial†   | 128.8         | -18.5               | 69.377 µg/L        | 69.377 ppb         | 06:40:26      |
| 1     | Sb 206.836†        | 46317.1       | 46113.9             | 9611.1 µg/L        | 9611.1 ppb         | 06:40:06      |
| 1     | Se 196.026†        | 26642.7       | 26610.2             | 9637.5 µg/L        | 9637.5 ppb         | 06:40:06      |
| 1     | SiO2†              | 1025181.2     | 1021599.3           | 96448 µg/L         | 96448 ppb          | 06:40:01      |
| 1     | Si 251.611†        | 1295911.3     | 1293153.3           | 44768 µg/L         | 44768 ppb          | 06:40:01      |
| 1     | Sn 189.927†        | 101669.0      | 101454.5            | 9752.0 µg/L        | 9752.0 ppb         | 06:40:06      |
| 1     | Ti 334.940†        | 4266028.2     | 4258717.4           | 9626.2 µg/L        | 9626.2 ppb         | 06:39:54      |
| 1     | Tl 190.801†        | 61449.6       | 61490.2             | 10091 µg/L         | 10091 ppb          | 06:40:06      |
| 1     | U 367.007†         | 1253.6        | -173.3              | -32.05 µg/L        | -32.05 ppb         | 06:40:06      |
| 1     | V 292.402†         | 1527046.1     | 1523724.4           | 9891.3 µg/L        | 9891.3 ppb         | 06:40:01      |
| 1     | Zn 213.857†        | 2632012.6     | 2626224.1           | 14222 µg/L         | 14222 ppb          | 06:40:01      |
| 2     | Sc RADIAL          | 8419.0        | 8419.0              | 99.9 %             |                    | 06:38:53      |
| 2     | Al 396.153Radial†  | 455.0         | 1191.8              | 239.99 µg/L        | 239.99 ppb         | 06:38:53      |
| 2     | Ca 317.933Radial†  | 481.1         | 372.9               | 181.64 µg/L        | 181.64 ppb         | 06:39:14      |
| 2     | Fe 238.204 Radial† | 27.7          | 16.8                | 25.714 µg/L        | 25.714 ppb         | 06:39:14      |
| 2     | K 766.490 Radial†  | 622.5         | 219.7               | 50.711 µg/L        | 50.711 ppb         | 06:38:53      |
| 2     | Mg 279.077 IEC†    | 17.3          | 6.1                 | 38.299 µg/L        | 38.299 ppb         | 06:39:14      |
| 2     | Na 589.592 Radial† | 8.0           | 3.0                 | 124.70 µg/L        | 124.70 ppb         | 06:39:14      |
| 2     | Sr 421.552†        | 386281.1      | 386623.3            | 9861.9 µg/L        | 9861.9 ppb         | 06:38:48      |
| 2     | Sc 361.383         | 627408.5      | 627408.5            | 100.26 %           |                    | 06:40:41      |
| 2     | Y 371.029          | 708885.5      | 708885.5            | 99.837 %           |                    | 06:40:41      |
| 2     | Ag 328.068†        | -4156.2       | -3206.0             | -1.5461 µg/L       | -1.5461 ppb        | 06:40:46      |
| 2     | As 188.979†        | 31970.8       | 31866.0             | 9722.5 µg/L        | 9722.5 ppb         | 06:40:46      |
| 2     | B 249.677†         | 260761.6      | 259895.1            | 5012.8 µg/L        | 5012.8 ppb         | 06:40:41      |
| 2     | Ba 233.527†        | 2587721.7     | 2580899.5           | 14530 µg/L         | 14530 ppb          | 06:40:41      |
| 2     | Be 313.107†        | 7258104.2     | 7244774.9           | 2908.1 µg/L        | 2908.1 ppb         | 06:40:34      |
| 2     | Cd 226.502†        | 1617956.0     | 1614024.4           | 9780.7 µg/L        | 9780.7 ppb         | 06:40:41      |
| 2     | Co 228.616†        | 614877.1      | 613614.3            | 9993.9 µg/L        | 9993.9 ppb         | 06:40:41      |
| 2     | Cr 267.716†        | 1955895.6     | 1950720.1           | 24484 µg/L         | 24484 ppb          | 06:40:41      |
| 2     | Cu 324.752†        | 4955379.0     | 4940068.7           | 20602 µg/L         | 20602 ppb          | 06:40:34      |
| 2     | Mn 257.610†        | 9757588.1     | 9731507.6           | 9594.0 µg/L        | 9594.0 ppb         | 06:40:34      |
| 2     | Mo 202.031†        | 237539.0      | 236941.2            | 9590.1 µg/L        | 9590.1 ppb         | 06:40:46      |
| 2     | Ni 231.604†        | 573450.2      | 572143.2            | 10064 µg/L         | 10064 ppb          | 06:40:41      |
| 2     | P 214.914†         | 33435.4       | 33204.0             | 14165 µg/L         | 14165 ppb          | 06:40:46      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 301781.0  | 300894.2  | 25106 µg/L   | 25106 ppb   | 06:40:46 |
| 2 | S 181.975 Axial†   | 121.7     | -25.7     | 62.310 µg/L  | 62.310 ppb  | 06:41:06 |
| 2 | Sb 206.836†        | 46241.9   | 46007.0   | 9585.9 µg/L  | 9585.9 ppb  | 06:40:46 |
| 2 | Se 196.026†        | 26632.4   | 26581.7   | 9627.1 µg/L  | 9627.1 ppb  | 06:40:46 |
| 2 | SiO2†              | 1030828.2 | 1026528.8 | 96913 µg/L   | 96913 ppb   | 06:40:41 |
| 2 | Si 251.611†        | 1302874.0 | 1299209.3 | 44978 µg/L   | 44978 ppb   | 06:40:41 |
| 2 | Sn 189.927†        | 101593.2  | 101309.2  | 9738.1 µg/L  | 9738.1 ppb  | 06:40:46 |
| 2 | Ti 334.940†        | 4267827.6 | 4257587.0 | 9623.6 µg/L  | 9623.6 ppb  | 06:40:34 |
| 2 | Tl 190.801†        | 61499.3   | 61497.6   | 10092 µg/L   | 10092 ppb   | 06:40:46 |
| 2 | U 367.007†         | 1405.8    | -22.3     | -4.247 µg/L  | -4.247 ppb  | 06:40:46 |
| 2 | V 292.402†         | 1531620.9 | 1527240.4 | 9914.0 µg/L  | 9914.0 ppb  | 06:40:41 |
| 2 | Zn 213.857†        | 2644921.8 | 2637295.2 | 14282 µg/L   | 14282 ppb   | 06:40:41 |
| 3 | Sc RADIAL          | 8354.6    | 8354.6    | 99.1 %       |             | 06:39:24 |
| 3 | Al 396.153Radial†  | 319.7     | 1058.8    | 205.10 µg/L  | 205.10 ppb  | 06:39:24 |
| 3 | Ca 317.933Radial†  | 377.4     | 272.1     | 132.53 µg/L  | 132.53 ppb  | 06:39:44 |
| 3 | Fe 238.204 Radial† | 0.4       | -10.6     | -16.236 µg/L | -16.236 ppb | 06:39:44 |
| 3 | K 766.490 Radial†  | 426.0     | 26.4      | -51.664 µg/L | -51.664 ppb | 06:39:24 |
| 3 | Mg 279.077 IEC†    | 4.2       | -7.0      | -43.504 µg/L | -43.504 ppb | 06:39:44 |
| 3 | Na 589.592 Radial† | 9.3       | 4.4       | 179.75 µg/L  | 179.75 ppb  | 06:39:44 |
| 3 | Sr 421.552†        | 388253.0  | 391594.3  | 9988.7 µg/L  | 9988.7 ppb  | 06:39:19 |
| 3 | Sc 361.383         | 624259.2  | 624259.2  | 99.756 %     |             | 06:41:21 |
| 3 | Y 371.029          | 705351.2  | 705351.2  | 99.339 %     |             | 06:41:21 |
| 3 | Ag 328.068†        | -3806.0   | -2875.8   | -0.7999 µg/L | -0.7999 ppb | 06:41:27 |
| 3 | As 188.979†        | 29513.8   | 29563.8   | 9018.4 µg/L  | 9018.4 ppb  | 06:41:27 |
| 3 | B 249.677†         | 252313.3  | 252738.3  | 4876.1 µg/L  | 4876.1 ppb  | 06:41:21 |
| 3 | Ba 233.527†        | 2457904.3 | 2463785.8 | 13871 µg/L   | 13871 ppb   | 06:41:21 |
| 3 | Be 313.107†        | 7050583.0 | 7073268.4 | 2839.0 µg/L  | 2839.0 ppb  | 06:41:14 |
| 3 | Cd 226.502†        | 1528078.3 | 1532068.3 | 9283.9 µg/L  | 9283.9 ppb  | 06:41:21 |
| 3 | Co 228.616†        | 575319.2  | 577053.7  | 9397.7 µg/L  | 9397.7 ppb  | 06:41:21 |
| 3 | Cr 267.716†        | 1789402.5 | 1793661.7 | 22512 µg/L   | 22512 ppb   | 06:41:21 |
| 3 | Cu 324.752†        | 4808876.7 | 4818143.2 | 20094 µg/L   | 20094 ppb   | 06:41:14 |
| 3 | Mn 257.610†        | 9481228.9 | 9503571.9 | 9369.2 µg/L  | 9369.2 ppb  | 06:41:14 |
| 3 | Mo 202.031†        | 215494.2  | 216037.8  | 8744.0 µg/L  | 8744.0 ppb  | 06:41:27 |
| 3 | Ni 231.604†        | 537229.7  | 538719.7  | 9476.3 µg/L  | 9476.3 ppb  | 06:41:21 |
| 3 | P 214.914†         | 30838.2   | 30768.7   | 13119 µg/L   | 13119 ppb   | 06:41:27 |
| 3 | Pb 220.353†        | 282157.4  | 282741.0  | 23591 µg/L   | 23591 ppb   | 06:41:27 |
| 3 | S 181.975 Axial†   | 136.1     | -10.6     | 72.031 µg/L  | 72.031 ppb  | 06:41:47 |
| 3 | Sb 206.836†        | 43021.5   | 43011.5   | 8967.9 µg/L  | 8967.9 ppb  | 06:41:27 |
| 3 | Se 196.026†        | 25114.7   | 25194.2   | 9124.6 µg/L  | 9124.6 ppb  | 06:41:27 |
| 3 | SiO2†              | 988109.4  | 988892.6  | 93345 µg/L   | 93345 ppb   | 06:41:21 |
| 3 | Si 251.611†        | 1247845.2 | 1250601.9 | 43302 µg/L   | 43302 ppb   | 06:41:21 |
| 3 | Sn 189.927†        | 91453.6   | 91656.0   | 8812.6 µg/L  | 8812.6 ppb  | 06:41:27 |
| 3 | Ti 334.940†        | 4145296.4 | 4156231.5 | 9395.0 µg/L  | 9395.0 ppb  | 06:41:14 |
| 3 | Tl 190.801†        | 59840.0   | 60143.7   | 9873.5 µg/L  | 9873.5 ppb  | 06:41:27 |
| 3 | U 367.007†         | 1361.8    | -59.4     | -10.86 µg/L  | -10.86 ppb  | 06:41:27 |
| 3 | V 292.402†         | 1429106.1 | 1432181.7 | 9293.4 µg/L  | 9293.4 ppb  | 06:41:21 |
| 3 | Zn 213.857†        | 2486654.2 | 2491949.6 | 13494 µg/L   | 13494 ppb   | 06:41:21 |

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Mean Data: LR2

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc 361.383  | 626215.1                 | 100.07 %           | 0.273    |                    |          | 0.27%  |
| Sc RADIAL   | 8402.2                   | 99.7 %             | 0.50     |                    |          | 0.50%  |
| Y 371.029   | 707635.2                 | 99.661 %           | 0.2790   |                    |          | 0.28%  |
| Ag 328.068†   | -3108.3                  | -1.3645 µg/L       | 0.49915  | -1.3645 ppb        | 0.49915  | 36.58% |
| Al 396.153Radial†                                       | 1173.1                   | 240.96 µg/L        | 36.353   | 240.96 ppb         | 36.353   | 15.09% |
| As 188.979†   | 31120.8                  | 9494.4 µg/L        | 412.33   | 9494.4 ppb         | 412.33   | 4.34%  |
| QC value within limits for As 188.979 Recovery = 94.94% |                          |                    |          |                    |          |        |
| B 249.677†  | 257143.3                 | 4960.2 µg/L        | 73.62    | 4960.2 ppb         | 73.62    | 1.48%  |
| QC value within limits for B 249.677 Recovery = 99.20%  |                          |                    |          |                    |          |        |
| Ba 233.527†   | 2539547.5                | 14297 µg/L         | 369.90   | 14297 ppb          | 369.90   | 2.59%  |
| QC value within limits for Ba 233.527 Recovery = 95.32% |                          |                    |          |                    |          |        |
| Be 313.107†   | 7187583.3                | 2885.1 µg/L        | 39.89    | 2885.1 ppb         | 39.89    | 1.38%  |
| QC value within limits for Be 313.107 Recovery = 96.17% |                          |                    |          |                    |          |        |
| Ca 317.933Radial†                                       | 352.3                    | 171.59 µg/L        | 35.139   | 171.59 ppb         | 35.139   | 20.48% |
| Cd 226.502†   | 1584475.0                | 9601.6 µg/L        | 275.82   | 9601.6 ppb         | 275.82   | 2.87%  |
| QC value within limits for Cd 226.502 Recovery = 96.02% |                          |                    |          |                    |          |        |
| Co 228.616†   | 600503.4                 | 9780.1 µg/L        | 331.98   | 9780.1 ppb         | 331.98   | 3.39%  |
| QC value within limits for Co 228.616 Recovery = 97.80% |                          |                    |          |                    |          |        |
| Cr 267.716†   | 1896320.3                | 23801 µg/L         | 1116.59  | 23801 ppb          | 1116.59  | 4.69%  |

|   |           |              |          |             |          |         |  |
|---|-----------|--------------|----------|-------------|----------|---------|--|
| QC value within limits for Cr 267.716 Recovery = 95.20%             |           |              |          |             |          |         |  |
| Cu 324.752†   | 4899431.5 | 20432 µg/L   | 293.40   | 20432 ppb   | 293.40   | 1.44%   |  |
| QC value within limits for Cu 324.752 Recovery = 102.16%            |           |              |          |             |          |         |  |
| Fe 238.204 Radial†  | 13.8      | 21.148 µg/L  | 35.3223  | 21.148 ppb  | 35.3223  | 167.03% |  |
| K 766.490 Radial†   | 168.4     | 23.820 µg/L  | 66.2656  | 23.820 ppb  | 66.2656  | 278.19% |  |
| Mg 279.077 IEC†   | -1.3      | -8.3725 µg/L | 42.10496 | -8.3725 ppb | 42.10496 | 502.90% |  |
| Mn 257.610†   | 9658002.4 | 9521.5 µg/L  | 131.90   | 9521.5 ppb  | 131.90   | 1.39%   |  |
| QC value within limits for Mn 257.610 Recovery = 95.21%             |           |              |          |             |          |         |  |
| Mo 202.031†   | 229987.6  | 9308.7 µg/L  | 488.97   | 9308.7 ppb  | 488.97   | 5.25%   |  |
| QC value within limits for Mo 202.031 Recovery = 93.09%             |           |              |          |             |          |         |  |
| Na 589.592 Radial†  | 3.9       | 159.54 µg/L  | 30.297   | 159.54 ppb  | 30.297   | 18.99%  |  |
| Ni 231.604†   | 560193.4  | 9854.1 µg/L  | 327.82   | 9854.1 ppb  | 327.82   | 3.33%   |  |
| QC value within limits for Ni 231.604 Recovery = 98.54%             |           |              |          |             |          |         |  |
| P 214.914†  | 32445.5   | 13840 µg/L   | 625.30   | 13840 ppb   | 625.30   | 4.52%   |  |
| QC value within limits for P 214.914 Recovery = 92.26%              |           |              |          |             |          |         |  |
| Pb 220.353†   | 294887.6  | 24604 µg/L   | 877.60   | 24604 ppb   | 877.60   | 3.57%   |  |
| QC value within limits for Pb 220.353 Recovery = 98.42%             |           |              |          |             |          |         |  |
| S 181.975 Axial†  | -18.3     | 67.906 µg/L  | 5.0244   | 67.906 ppb  | 5.0244   | 7.40%   |  |
| Sb 206.836†   | 45044.1   | 9388.3 µg/L  | 364.31   | 9388.3 ppb  | 364.31   | 3.88%   |  |
| QC value within limits for Sb 206.836 Recovery = 93.88%             |           |              |          |             |          |         |  |
| Se 196.026†   | 26128.7   | 9463.1 µg/L  | 293.17   | 9463.1 ppb  | 293.17   | 3.10%   |  |
| QC value within limits for Se 196.026 Recovery = 94.63%             |           |              |          |             |          |         |  |
| SiO2†   | 1012340.2 | 95569 µg/L   | 1939.69  | 95569 ppb   | 1939.69  | 2.03%   |  |
| QC value less than the lower limit for SiO2 Recovery = 89.32%       |           |              |          |             |          |         |  |
| Si 251.611†   | 1280988.2 | 44349 µg/L   | 912.92   | 44349 ppb   | 912.92   | 2.06%   |  |
| QC value less than the lower limit for Si 251.611 Recovery = 88.70% |           |              |          |             |          |         |  |
| Sn 189.927†   | 98139.9   | 9434.3 µg/L  | 538.38   | 9434.3 ppb  | 538.38   | 5.71%   |  |
| QC value within limits for Sn 189.927 Recovery = 94.34%             |           |              |          |             |          |         |  |
| Sr 421.552†   | 387265.7  | 9878.3 µg/L  | 103.20   | 9878.3 ppb  | 103.20   | 1.04%   |  |
| QC value within limits for Sr 421.552 Recovery = 98.78%             |           |              |          |             |          |         |  |
| Ti 334.940†   | 4224178.6 | 9548.3 µg/L  | 132.76   | 9548.3 ppb  | 132.76   | 1.39%   |  |
| QC value within limits for Ti 334.940 Recovery = 95.48%             |           |              |          |             |          |         |  |
| Tl 190.801†   | 61043.8   | 10019 µg/L   | 126.11   | 10019 ppb   | 126.11   | 1.26%   |  |
| QC value within limits for Tl 190.801 Recovery = 100.19%            |           |              |          |             |          |         |  |
| U 367.007†  | -85.0     | -15.72 µg/L  | 14.525   | -15.72 ppb  | 14.525   | 92.40%  |  |
| V 292.402†  | 1494382.2 | 9699.6 µg/L  | 351.95   | 9699.6 ppb  | 351.95   | 3.63%   |  |
| QC value within limits for V 292.402 Recovery = 97.00%              |           |              |          |             |          |         |  |
| Zn 213.857†   | 2585156.3 | 13999 µg/L   | 438.37   | 13999 ppb   | 438.37   | 3.13%   |  |
| QC value within limits for Zn 213.857 Recovery = 93.33%             |           |              |          |             |          |         |  |
| QC Failed. Continue with analysis.                                  |           |              |          |             |          |         |  |

Sequence No.: 13

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 7

Date Collected: 11/16/2016 06:41:55

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8205.0        | 8205.0              | 97.4 %             |                    | 06:42:46      |
| 1     | Al 396.153Radial†  | 9334.8        | 10323.2             | 5069.8 µg/L        | 5069.8 ppb         | 06:42:26      |
| 1     | Ca 317.933Radial†  | 10214.2       | 10381.4             | 5056.6 µg/L        | 5056.6 ppb         | 06:42:46      |
| 1     | Fe 238.204 Radial† | 3262.7        | 3339.7              | 5123.4 µg/L        | 5123.4 ppb         | 06:42:46      |
| 1     | K 766.490 Radial†  | 9324.9        | 9173.3              | 5005.0 µg/L        | 5005.0 ppb         | 06:42:26      |
| 1     | Mg 279.077 IEC†    | 807.4         | 818.0               | 5101.6 µg/L        | 5101.6 ppb         | 06:42:46      |
| 1     | Na 589.592 Radial† | 225.6         | 226.7               | 9282.0 µg/L        | 9282.0 ppb         | 06:42:46      |
| 1     | Sr 421.552†        | 18977.3       | 19485.9             | 496.87 µg/L        | 496.87 ppb         | 06:42:26      |
| 1     | Sc 361.383         | 620442.5      | 620442.5            | 99.146 %           |                    | 06:43:45      |
| 1     | Y 371.029          | 696685.5      | 696685.5            | 98.119 %           |                    | 06:43:45      |
| 1     | Ag 328.068†        | 95674.0       | 97437.4             | 488.76 µg/L        | 488.76 ppb         | 06:43:45      |
| 1     | As 188.979†        | 1637.7        | 1629.7              | 494.36 µg/L        | 494.36 ppb         | 06:44:05      |
| 1     | B 249.677†         | 25341.2       | 25367.4             | 511.61 µg/L        | 511.61 ppb         | 06:43:45      |
| 1     | Ba 233.527†        | 86434.4       | 87049.5             | 489.94 µg/L        | 489.94 ppb         | 06:43:45      |
| 1     | Be 313.107†        | 1197150.5     | 1212903.6           | 486.33 µg/L        | 486.33 ppb         | 06:43:45      |
| 1     | Cd 226.502†        | 79923.0       | 80864.4             | 489.50 µg/L        | 489.50 ppb         | 06:43:45      |
| 1     | Co 228.616†        | 29069.9       | 29647.7             | 482.55 µg/L        | 482.55 ppb         | 06:44:05      |
| 1     | Cr 267.716†        | 38594.6       | 38810.1             | 486.95 µg/L        | 486.95 ppb         | 06:43:45      |
| 1     | Cu 324.752†        | 118523.1      | 117050.1            | 488.52 µg/L        | 488.52 ppb         | 06:43:45      |
| 1     | Mn 257.610†        | 491194.0      | 494580.7            | 487.68 µg/L        | 487.68 ppb         | 06:43:45      |
| 1     | Mo 202.031†        | 12015.3       | 12135.4             | 491.38 µg/L        | 491.38 ppb         | 06:44:05      |
| 1     | Ni 231.604†        | 27022.9       | 27431.8             | 482.29 µg/L        | 482.29 ppb         | 06:44:05      |
| 1     | P 214.914†         | 5671.0        | 5575.0              | 2411.9 µg/L        | 2411.9 ppb         | 06:44:05      |
| 1     | Pb 220.353†        | 5991.5        | 5936.7              | 494.41 µg/L        | 494.41 ppb         | 06:44:05      |
| 1     | S 181.975 Axial†   | 1150.2        | 1013.1              | 995.40 µg/L        | 995.40 ppb         | 06:44:05      |
| 1     | Sb 206.836†        | 2336.5        | 2241.4              | 484.76 µg/L        | 484.76 ppb         | 06:44:05      |
| 1     | Se 196.026†        | 1338.7        | 1368.3              | 497.99 µg/L        | 497.99 ppb         | 06:44:05      |
| 1     | SiO2†              | 56748.9       | 55604.4             | 5236.2 µg/L        | 5236.2 ppb         | 06:43:45      |
| 1     | Si 251.611†        | 69949.2       | 70256.8             | 2431.7 µg/L        | 2431.7 ppb         | 06:43:45      |
| 1     | Sn 189.927†        | 5107.7        | 5130.4              | 493.26 µg/L        | 493.26 ppb         | 06:44:05      |
| 1     | Ti 334.940†        | 214451.8      | 217096.5            | 491.01 µg/L        | 491.01 ppb         | 06:43:45      |
| 1     | Tl 190.801†        | 2782.4        | 2963.7              | 487.21 µg/L        | 487.21 ppb         | 06:44:05      |
| 1     | U 367.007†         | 3929.2        | 2538.5              | 442.9 µg/L         | 442.9 ppb          | 06:43:45      |
| 1     | V 292.402†         | 75185.3       | 75413.6             | 489.34 µg/L        | 489.34 ppb         | 06:43:45      |
| 1     | Zn 213.857†        | 90090.3       | 90080.5             | 486.17 µg/L        | 486.17 ppb         | 06:43:45      |
| 2     | Sc RADIAL          | 8184.9        | 8184.9              | 97.1 %             |                    | 06:43:11      |
| 2     | Al 396.153Radial†  | 9314.3        | 10325.7             | 5070.9 µg/L        | 5070.9 ppb         | 06:42:51      |
| 2     | Ca 317.933Radial†  | 10187.8       | 10380.0             | 5055.9 µg/L        | 5055.9 ppb         | 06:43:11      |
| 2     | Fe 238.204 Radial† | 3268.2        | 3353.7              | 5144.8 µg/L        | 5144.8 ppb         | 06:43:11      |
| 2     | K 766.490 Radial†  | 9435.2        | 9310.5              | 5079.8 µg/L        | 5079.8 ppb         | 06:42:51      |
| 2     | Mg 279.077 IEC†    | 810.1         | 822.8               | 5131.5 µg/L        | 5131.5 ppb         | 06:43:11      |
| 2     | Na 589.592 Radial† | 233.5         | 235.4               | 9638.6 µg/L        | 9638.6 ppb         | 06:43:11      |
| 2     | Sr 421.552†        | 18943.0       | 19498.5             | 497.19 µg/L        | 497.19 ppb         | 06:42:51      |
| 2     | Sc 361.383         | 618787.2      | 618787.2            | 98.882 %           |                    | 06:44:12      |
| 2     | Y 371.029          | 695091.7      | 695091.7            | 97.894 %           |                    | 06:44:12      |
| 2     | Ag 328.068†        | 95600.5       | 97621.2             | 489.68 µg/L        | 489.68 ppb         | 06:44:12      |
| 2     | As 188.979†        | 1641.5        | 1638.0              | 496.85 µg/L        | 496.85 ppb         | 06:44:33      |
| 2     | B 249.677†         | 25158.9       | 25251.4             | 509.42 µg/L        | 509.42 ppb         | 06:44:12      |
| 2     | Ba 233.527†        | 86001.0       | 86844.4             | 488.78 µg/L        | 488.78 ppb         | 06:44:12      |
| 2     | Be 313.107†        | 1193859.3     | 1212805.2           | 486.29 µg/L        | 486.29 ppb         | 06:44:12      |
| 2     | Cd 226.502†        | 79668.4       | 80822.6             | 489.25 µg/L        | 489.25 ppb         | 06:44:12      |
| 2     | Co 228.616†        | 29146.3       | 29803.5             | 485.09 µg/L        | 485.09 ppb         | 06:44:33      |
| 2     | Cr 267.716†        | 38497.4       | 38816.0             | 487.02 µg/L        | 487.02 ppb         | 06:44:12      |
| 2     | Cu 324.752†        | 118183.9      | 117026.9            | 488.42 µg/L        | 488.42 ppb         | 06:44:12      |
| 2     | Mn 257.610†        | 489576.0      | 494269.8            | 487.38 µg/L        | 487.38 ppb         | 06:44:12      |
| 2     | Mo 202.031†        | 12020.5       | 12173.1             | 492.91 µg/L        | 492.91 ppb         | 06:44:33      |
| 2     | Ni 231.604†        | 27056.6       | 27538.7             | 484.17 µg/L        | 484.17 ppb         | 06:44:33      |
| 2     | P 214.914†         | 5691.4        | 5610.9              | 2427.5 µg/L        | 2427.5 ppb         | 06:44:33      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 5968.2    | 5929.3    | 493.80 µg/L | 493.80 ppb | 06:44:33 |
| 2 | S 181.975 Axial†   | 1143.4    | 1009.3    | 991.71 µg/L | 991.71 ppb | 06:44:33 |
| 2 | Sb 206.836†        | 2336.9    | 2248.1    | 486.25 µg/L | 486.25 ppb | 06:44:33 |
| 2 | Se 196.026†        | 1331.6    | 1364.7    | 496.70 µg/L | 496.70 ppb | 06:44:33 |
| 2 | SiO2†              | 56099.9   | 55101.2   | 5188.9 µg/L | 5188.9 ppb | 06:44:12 |
| 2 | Si 251.611†        | 69345.3   | 69834.8   | 2417.0 µg/L | 2417.0 ppb | 06:44:12 |
| 2 | Sn 189.927†        | 5086.3    | 5122.6    | 492.50 µg/L | 492.50 ppb | 06:44:33 |
| 2 | Ti 334.940†        | 213397.0  | 216608.4  | 489.90 µg/L | 489.90 ppb | 06:44:12 |
| 2 | Tl 190.801†        | 2793.1    | 2982.1    | 490.20 µg/L | 490.20 ppb | 06:44:33 |
| 2 | U 367.007†         | 3914.1    | 2533.9    | 442.0 µg/L  | 442.0 ppb  | 06:44:12 |
| 2 | V 292.402†         | 74964.1   | 75392.8   | 489.22 µg/L | 489.22 ppb | 06:44:12 |
| 2 | Zn 213.857†        | 89694.7   | 89923.4   | 485.29 µg/L | 485.29 ppb | 06:44:12 |
| 3 | Sc RADIAL          | 8186.1    | 8186.1    | 97.1 %      |            | 06:43:36 |
| 3 | Al 396.153Radial†  | 9351.8    | 10362.9   | 5089.4 µg/L | 5089.4 ppb | 06:43:16 |
| 3 | Ca 317.933Radial†  | 10186.5   | 10377.2   | 5054.6 µg/L | 5054.6 ppb | 06:43:36 |
| 3 | Fe 238.204 Radial† | 3268.4    | 3353.4    | 5144.3 µg/L | 5144.3 ppb | 06:43:36 |
| 3 | K 766.490 Radial†  | 9401.4    | 9274.3    | 5060.1 µg/L | 5060.1 ppb | 06:43:16 |
| 3 | Mg 279.077 IEC†    | 813.7     | 826.4     | 5154.0 µg/L | 5154.0 ppb | 06:43:36 |
| 3 | Na 589.592 Radial† | 225.2     | 226.9     | 9289.6 µg/L | 9289.6 ppb | 06:43:36 |
| 3 | Sr 421.552†        | 18961.5   | 19514.7   | 497.61 µg/L | 497.61 ppb | 06:43:16 |
| 3 | Sc 361.383         | 622349.4  | 622349.4  | 99.451 %    |            | 06:44:40 |
| 3 | Y 371.029          | 698823.7  | 698823.7  | 98.420 %    |            | 06:44:40 |
| 3 | Ag 328.068†        | 95848.3   | 97317.0   | 488.15 µg/L | 488.15 ppb | 06:44:40 |
| 3 | As 188.979†        | 1633.5    | 1620.4    | 491.55 µg/L | 491.55 ppb | 06:45:00 |
| 3 | B 249.677†         | 25224.2   | 25171.4   | 507.88 µg/L | 507.88 ppb | 06:44:40 |
| 3 | Ba 233.527†        | 86513.2   | 86861.7   | 488.88 µg/L | 488.88 ppb | 06:44:40 |
| 3 | Be 313.107†        | 1201529.7 | 1213607.3 | 486.62 µg/L | 486.62 ppb | 06:44:40 |
| 3 | Cd 226.502†        | 80309.1   | 81005.6   | 490.35 µg/L | 490.35 ppb | 06:44:40 |
| 3 | Co 228.616†        | 29113.5   | 29601.8   | 481.80 µg/L | 481.80 ppb | 06:45:00 |
| 3 | Cr 267.716†        | 38723.0   | 38820.0   | 487.06 µg/L | 487.06 ppb | 06:44:40 |
| 3 | Cu 324.752†        | 118411.9  | 116572.0  | 486.53 µg/L | 486.53 ppb | 06:44:40 |
| 3 | Mn 257.610†        | 492364.3  | 494239.6  | 487.35 µg/L | 487.35 ppb | 06:44:40 |
| 3 | Mo 202.031†        | 12020.9   | 12103.9   | 490.11 µg/L | 490.11 ppb | 06:45:00 |
| 3 | Ni 231.604†        | 27044.3   | 27369.8   | 481.20 µg/L | 481.20 ppb | 06:45:00 |
| 3 | P 214.914†         | 5709.2    | 5595.9    | 2421.0 µg/L | 2421.0 ppb | 06:45:00 |
| 3 | Pb 220.353†        | 5995.2    | 5921.9    | 493.16 µg/L | 493.16 ppb | 06:45:00 |
| 3 | S 181.975 Axial†   | 1154.5    | 1013.9    | 996.17 µg/L | 996.17 ppb | 06:45:00 |
| 3 | Sb 206.836†        | 2352.6    | 2250.4    | 486.71 µg/L | 486.71 ppb | 06:45:00 |
| 3 | Se 196.026†        | 1336.5    | 1362.0    | 495.71 µg/L | 495.71 ppb | 06:45:00 |
| 3 | SiO2†              | 56441.4   | 55119.8   | 5190.6 µg/L | 5190.6 ppb | 06:44:40 |
| 3 | Si 251.611†        | 69644.3   | 69733.9   | 2413.5 µg/L | 2413.5 ppb | 06:44:40 |
| 3 | Sn 189.927†        | 5128.3    | 5135.4    | 493.73 µg/L | 493.73 ppb | 06:45:00 |
| 3 | Ti 334.940†        | 214618.9  | 216601.7  | 489.88 µg/L | 489.88 ppb | 06:44:40 |
| 3 | Tl 190.801†        | 2834.2    | 3007.2    | 494.34 µg/L | 494.34 ppb | 06:45:00 |
| 3 | U 367.007†         | 4048.4    | 2646.2    | 462.6 µg/L  | 462.6 ppb  | 06:44:40 |
| 3 | V 292.402†         | 75400.2   | 75397.3   | 489.23 µg/L | 489.23 ppb | 06:44:40 |
| 3 | Zn 213.857†        | 90266.6   | 89979.3   | 485.62 µg/L | 485.62 ppb | 06:44:40 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 620526.3                 | 99.160 %           | 0.2849   |                    |          | 0.29% |
| Sc RADIAL  | 8192.0                   | 97.2 %             | 0.13     |                    |          | 0.14% |
| Y 371.029  | 696867.0                 | 98.144 %           | 0.2637   |                    |          | 0.27% |
| Ag 328.068†  | 97458.5                  | 488.86 µg/L        | 0.771    | 488.86 ppb         | 0.771    | 0.16% |
| QC value within limits for Ag 328.068 Recovery = 97.77%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 10337.3                  | 5076.7 µg/L        | 11.00    | 5076.7 ppb         | 11.00    | 0.22% |
| QC value within limits for Al 396.153Radial Recovery = 101.53% |                          |                    |          |                    |          |       |
| As 188.979†  | 1629.3                   | 494.26 µg/L        | 2.651    | 494.26 ppb         | 2.651    | 0.54% |
| QC value within limits for As 188.979 Recovery = 98.85%        |                          |                    |          |                    |          |       |
| B 249.677†   | 25263.4                  | 509.63 µg/L        | 1.874    | 509.63 ppb         | 1.874    | 0.37% |
| QC value within limits for B 249.677 Recovery = 101.93%        |                          |                    |          |                    |          |       |
| Ba 233.527†  | 86918.5                  | 489.20 µg/L        | 0.641    | 489.20 ppb         | 0.641    | 0.13% |
| QC value within limits for Ba 233.527 Recovery = 97.84%        |                          |                    |          |                    |          |       |
| Be 313.107†  | 1213105.3                | 486.41 µg/L        | 0.178    | 486.41 ppb         | 0.178    | 0.04% |
| QC value within limits for Be 313.107 Recovery = 97.28%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 10379.6                  | 5055.7 µg/L        | 1.04     | 5055.7 ppb         | 1.04     | 0.02% |
| QC value within limits for Ca 317.933Radial Recovery = 101.11% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 80897.5                  | 489.70 µg/L        | 0.580    | 489.70 ppb         | 0.580    | 0.12% |
| QC value within limits for Cd 226.502 Recovery = 97.94%        |                          |                    |          |                    |          |       |

|  |          |             |        |            |        |       |
|--|----------|-------------|--------|------------|--------|-------|
| Co 228.616†  | 29684.3  | 483.15 µg/L | 1.724  | 483.15 ppb | 1.724  | 0.36% |
| QC value within limits for Co 228.616 Recovery = 96.63%            |          |             |        |            |        |       |
| Cr 267.716†  | 38815.4  | 487.01 µg/L | 0.057  | 487.01 ppb | 0.057  | 0.01% |
| QC value within limits for Cr 267.716 Recovery = 97.40%            |          |             |        |            |        |       |
| Cu 324.752†  | 116883.0 | 487.82 µg/L | 1.117  | 487.82 ppb | 1.117  | 0.23% |
| QC value within limits for Cu 324.752 Recovery = 97.56%            |          |             |        |            |        |       |
| Fe 238.204 Radial†   | 3348.9   | 5137.5 µg/L | 12.23  | 5137.5 ppb | 12.23  | 0.24% |
| QC value within limits for Fe 238.204 Radial Recovery = 102.75%    |          |             |        |            |        |       |
| K 766.490 Radial†  | 9252.7   | 5048.3 µg/L | 38.77  | 5048.3 ppb | 38.77  | 0.77% |
| QC value within limits for K 766.490 Radial Recovery = 100.97%     |          |             |        |            |        |       |
| Mg 279.077 IEC†  | 822.4    | 5129.0 µg/L | 26.30  | 5129.0 ppb | 26.30  | 0.51% |
| QC value within limits for Mg 279.077 IEC Recovery = 102.58%       |          |             |        |            |        |       |
| Mn 257.610†  | 494363.4 | 487.47 µg/L | 0.186  | 487.47 ppb | 0.186  | 0.04% |
| QC value within limits for Mn 257.610 Recovery = 97.49%            |          |             |        |            |        |       |
| Mo 202.031†  | 12137.4  | 491.47 µg/L | 1.403  | 491.47 ppb | 1.403  | 0.29% |
| QC value within limits for Mo 202.031 Recovery = 98.29%            |          |             |        |            |        |       |
| Na 589.592 Radial†   | 229.7    | 9403.4 µg/L | 203.73 | 9403.4 ppb | 203.73 | 2.17% |
| QC value within limits for Na 589.592 Radial Recovery = 94.03%     |          |             |        |            |        |       |
| Ni 231.604†  | 27446.8  | 482.55 µg/L | 1.503  | 482.55 ppb | 1.503  | 0.31% |
| QC value within limits for Ni 231.604 Recovery = 96.51%            |          |             |        |            |        |       |
| P 214.914†   | 5593.9   | 2420.2 µg/L | 7.83   | 2420.2 ppb | 7.83   | 0.32% |
| QC value within limits for P 214.914 Recovery = 96.81%             |          |             |        |            |        |       |
| Pb 220.353†  | 5929.3   | 493.79 µg/L | 0.627  | 493.79 ppb | 0.627  | 0.13% |
| QC value within limits for Pb 220.353 Recovery = 98.76%            |          |             |        |            |        |       |
| S 181.975 Axial†   | 1012.1   | 994.43 µg/L | 2.380  | 994.43 ppb | 2.380  | 0.24% |
| QC value within limits for S 181.975 Axial Recovery = 99.44%       |          |             |        |            |        |       |
| Sb 206.836†  | 2246.6   | 485.91 µg/L | 1.015  | 485.91 ppb | 1.015  | 0.21% |
| QC value within limits for Sb 206.836 Recovery = 97.18%            |          |             |        |            |        |       |
| Se 196.026†  | 1365.0   | 496.80 µg/L | 1.146  | 496.80 ppb | 1.146  | 0.23% |
| QC value within limits for Se 196.026 Recovery = 99.36%            |          |             |        |            |        |       |
| SiO2†  | 55275.1  | 5205.2 µg/L | 26.83  | 5205.2 ppb | 26.83  | 0.52% |
| QC value within limits for SiO2 Recovery = 97.34%                  |          |             |        |            |        |       |
| Si 251.611†  | 69941.8  | 2420.8 µg/L | 9.63   | 2420.8 ppb | 9.63   | 0.40% |
| QC value within limits for Si 251.611 Recovery = 96.83%            |          |             |        |            |        |       |
| Sn 189.927†  | 5129.5   | 493.17 µg/L | 0.619  | 493.17 ppb | 0.619  | 0.13% |
| QC value within limits for Sn 189.927 Recovery = 98.63%            |          |             |        |            |        |       |
| Sr 421.552†  | 19499.7  | 497.22 µg/L | 0.369  | 497.22 ppb | 0.369  | 0.07% |
| QC value within limits for Sr 421.552 Recovery = 99.44%            |          |             |        |            |        |       |
| Ti 334.940†  | 216768.8 | 490.26 µg/L | 0.645  | 490.26 ppb | 0.645  | 0.13% |
| QC value within limits for Ti 334.940 Recovery = 98.05%            |          |             |        |            |        |       |
| Tl 190.801†  | 2984.3   | 490.58 µg/L | 3.582  | 490.58 ppb | 3.582  | 0.73% |
| QC value within limits for Tl 190.801 Recovery = 98.12%            |          |             |        |            |        |       |
| U 367.007†   | 2572.9   | 449.2 µg/L  | 11.63  | 449.2 ppb  | 11.63  | 2.59% |
| QC value less than the lower limit for U 367.007 Recovery = 89.83% |          |             |        |            |        |       |
| V 292.402†   | 75401.2  | 489.26 µg/L | 0.063  | 489.26 ppb | 0.063  | 0.01% |
| QC value within limits for V 292.402 Recovery = 97.85%             |          |             |        |            |        |       |
| Zn 213.857†  | 89994.4  | 485.69 µg/L | 0.441  | 485.69 ppb | 0.441  | 0.09% |
| QC value within limits for Zn 213.857 Recovery = 97.14%            |          |             |        |            |        |       |
| QC Failed. Continue with analysis.                                 |          |             |        |            |        |       |

Sequence No.: 14

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 8

Date Collected: 11/16/2016 06:45:09

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8319.4        | 8319.4              | 98.7 %             |                    | 06:45:37      |
| 1     | Al 396.153Radial†  | -733.5        | -6.6                | -3.3198 µg/L       | -3.3198 ppb        | 06:45:37      |
| 1     | Ca 317.933Radial†  | 113.8         | 6.6                 | 3.2282 µg/L        | 3.2282 ppb         | 06:45:57      |
| 1     | Fe 238.204 Radial† | 14.4          | 3.5                 | 5.4382 µg/L        | 5.4382 ppb         | 06:45:57      |
| 1     | K 766.490 Radial†  | 404.6         | 6.5                 | 3.5426 µg/L        | 3.5426 ppb         | 06:45:37      |
| 1     | Mg 279.077 IEC†    | 11.6          | 0.5                 | 3.3266 µg/L        | 3.3266 ppb         | 06:45:57      |
| 1     | Na 589.592 Radial† | 4.4           | -0.5                | -22.003 µg/L       | -22.003 ppb        | 06:45:57      |
| 1     | Sr 421.552†        | 43.3          | 40.0                | 1.0201 µg/L        | 1.0201 ppb         | 06:45:37      |
| 1     | Sc 361.383         | 614230.1      | 614230.1            | 98.153 %           |                    | 06:46:55      |
| 1     | Y 371.029          | 696739.8      | 696739.8            | 98.126 %           |                    | 06:46:55      |
| 1     | Ag 328.068†        | -718.6        | 207.3               | 1.0354 µg/L        | 1.0354 ppb         | 06:46:55      |
| 1     | As 188.979†        | 21.8          | 0.1                 | 0.0283 µg/L        | 0.0283 ppb         | 06:47:15      |
| 1     | B 249.677†         | 446.9         | 263.3               | 5.1468 µg/L        | 5.1468 ppb         | 06:47:15      |
| 1     | Ba 233.527†        | 160.3         | 34.0                | 0.1913 µg/L        | 0.1913 ppb         | 06:47:15      |
| 1     | Be 313.107†        | -5152.7       | 193.4               | 0.0792 µg/L        | 0.0792 ppb         | 06:46:55      |
| 1     | Cd 226.502†        | -127.4        | 123.3               | 0.7466 µg/L        | 0.7466 ppb         | 06:47:15      |
| 1     | Co 228.616†        | -332.0        | -10.7               | -0.1742 µg/L       | -0.1742 ppb        | 06:47:15      |
| 1     | Cr 267.716†        | 174.9         | 61.4                | 0.7665 µg/L        | 0.7665 ppb         | 06:47:15      |
| 1     | Cu 324.752†        | 2430.9        | -17.1               | -0.0683 µg/L       | -0.0683 ppb        | 06:46:55      |
| 1     | Mn 257.610†        | 976.2         | 151.1               | 0.1491 µg/L        | 0.1491 ppb         | 06:47:15      |
| 1     | Mo 202.031†        | 15.2          | 32.0                | 1.2971 µg/L        | 1.2971 ppb         | 06:47:15      |
| 1     | Ni 231.604†        | -153.9        | 19.3                | 0.3398 µg/L        | 0.3398 ppb         | 06:47:15      |
| 1     | P 214.914†         | 134.1         | -8.3                | -3.6309 µg/L       | -3.6309 ppb        | 06:47:15      |
| 1     | Pb 220.353†        | 103.0         | -1.4                | -0.1230 µg/L       | -0.1230 ppb        | 06:47:15      |
| 1     | S 181.975 Axial†   | 163.9         | 19.9                | 19.521 µg/L        | 19.521 ppb         | 06:47:15      |
| 1     | Sb 206.836†        | 124.3         | 11.4                | 2.4731 µg/L        | 2.4731 ppb         | 06:47:15      |
| 1     | Se 196.026†        | -7.7          | 10.2                | 3.7063 µg/L        | 3.7063 ppb         | 06:47:15      |
| 1     | SiO2†              | 1647.2        | 44.9                | 4.2396 µg/L        | 4.2396 ppb         | 06:46:55      |
| 1     | Si 251.611†        | 379.5         | 91.8                | 3.1701 µg/L        | 3.1701 ppb         | 06:47:15      |
| 1     | Sn 189.927†        | 19.1          | -1.8                | -0.1719 µg/L       | -0.1719 ppb        | 06:47:15      |
| 1     | Ti 334.940†        | -591.5        | 195.2               | 0.4383 µg/L        | 0.4383 ppb         | 06:46:55      |
| 1     | Tl 190.801†        | -147.0        | 7.7                 | 1.2620 µg/L        | 1.2620 ppb         | 06:47:15      |
| 1     | U 367.007†         | 1432.6        | 35.0                | 6.401 µg/L         | 6.401 ppb          | 06:46:55      |
| 1     | V 292.402†         | 469.3         | 58.9                | 0.3956 µg/L        | 0.3956 ppb         | 06:46:55      |
| 1     | Zn 213.857†        | 913.5         | 144.9               | 0.7867 µg/L        | 0.7867 ppb         | 06:47:15      |
| 2     | Sc RADIAL          | 8313.1        | 8313.1              | 98.7 %             |                    | 06:46:03      |
| 2     | Al 396.153Radial†  | -747.7        | -21.6               | -10.672 µg/L       | -10.672 ppb        | 06:46:03      |
| 2     | Ca 317.933Radial†  | 125.5         | 18.7                | 9.0920 µg/L        | 9.0920 ppb         | 06:46:23      |
| 2     | Fe 238.204 Radial† | 13.7          | 2.8                 | 4.3561 µg/L        | 4.3561 ppb         | 06:46:23      |
| 2     | K 766.490 Radial†  | 368.6         | -29.8               | -16.227 µg/L       | -16.227 ppb        | 06:46:03      |
| 2     | Mg 279.077 IEC†    | 5.8           | -5.4                | -33.450 µg/L       | -33.450 ppb        | 06:46:23      |
| 2     | Na 589.592 Radial† | 0.9           | -4.1                | -167.18 µg/L       | -167.18 ppb        | 06:46:23      |
| 2     | Sr 421.552†        | 48.6          | 45.4                | 1.1573 µg/L        | 1.1573 ppb         | 06:46:03      |
| 2     | Sc 361.383         | 620063.6      | 620063.6            | 99.086 %           |                    | 06:47:20      |
| 2     | Y 371.029          | 703438.4      | 703438.4            | 99.070 %           |                    | 06:47:20      |
| 2     | Ag 328.068†        | -881.3        | 50.0                | 0.2518 µg/L        | 0.2518 ppb         | 06:47:20      |
| 2     | As 188.979†        | 13.8          | -8.3                | -2.4722 µg/L       | -2.4722 ppb        | 06:47:40      |
| 2     | B 249.677†         | 432.6         | 244.6               | 4.7754 µg/L        | 4.7754 ppb         | 06:47:40      |
| 2     | Ba 233.527†        | 167.3         | 39.5                | 0.2225 µg/L        | 0.2225 ppb         | 06:47:40      |
| 2     | Be 313.107†        | -5166.8       | 228.6               | 0.0921 µg/L        | 0.0921 ppb         | 06:47:20      |
| 2     | Cd 226.502†        | -93.4         | 158.8               | 0.9617 µg/L        | 0.9617 ppb         | 06:47:40      |
| 2     | Co 228.616†        | -300.7        | 24.0                | 0.3912 µg/L        | 0.3912 ppb         | 06:47:40      |
| 2     | Cr 267.716†        | 185.3         | 70.2                | 0.8804 µg/L        | 0.8804 ppb         | 06:47:40      |
| 2     | Cu 324.752†        | 2526.8        | 56.4                | 0.2353 µg/L        | 0.2353 ppb         | 06:47:20      |
| 2     | Mn 257.610†        | 1036.0        | 202.1               | 0.2007 µg/L        | 0.2007 ppb         | 06:47:40      |
| 2     | Mo 202.031†        | 3.7           | 20.3                | 0.8216 µg/L        | 0.8216 ppb         | 06:47:40      |
| 2     | Ni 231.604†        | -170.3        | 4.3                 | 0.0748 µg/L        | 0.0748 ppb         | 06:47:40      |
| 2     | P 214.914†         | 136.7         | -7.0                | -3.0448 µg/L       | -3.0448 ppb        | 06:47:40      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 93.5     | -12.0    | -0.9995 µg/L | -0.9995 ppb | 06:47:40 |
| 2 | S 181.975 Axial†   | 158.5    | 12.9     | 12.602 µg/L  | 12.602 ppb  | 06:47:40 |
| 2 | Sb 206.836†        | 128.4    | 14.3     | 3.1034 µg/L  | 3.1034 ppb  | 06:47:40 |
| 2 | Se 196.026†        | 0.1      | 18.2     | 6.6004 µg/L  | 6.6004 ppb  | 06:47:40 |
| 2 | SiO2†              | 1662.6   | 44.7     | 4.2194 µg/L  | 4.2194 ppb  | 06:47:20 |
| 2 | Si 251.611†        | 366.7    | 75.2     | 2.6015 µg/L  | 2.6015 ppb  | 06:47:40 |
| 2 | Sn 189.927†        | 18.7     | -2.3     | -0.2218 µg/L | -0.2218 ppb | 06:47:40 |
| 2 | Ti 334.940†        | -526.0   | 266.9    | 0.6037 µg/L  | 0.6037 ppb  | 06:47:20 |
| 2 | Tl 190.801†        | -133.7   | 22.4     | 3.6793 µg/L  | 3.6793 ppb  | 06:47:40 |
| 2 | U 367.007†         | 1414.9   | 3.4      | 0.607 µg/L   | 0.607 ppb   | 06:47:20 |
| 2 | V 292.402†         | 541.6    | 127.4    | 0.8260 µg/L  | 0.8260 ppb  | 06:47:20 |
| 2 | Zn 213.857†        | 898.4    | 120.9    | 0.6597 µg/L  | 0.6597 ppb  | 06:47:40 |
| 3 | Sc RADIAL          | 8312.4   | 8312.4   | 98.6 %       |             | 06:46:28 |
| 3 | Al 396.153Radial†  | -729.7   | -3.4     | -1.7006 µg/L | -1.7006 ppb | 06:46:28 |
| 3 | Ca 317.933Radial†  | 115.9    | 8.9      | 4.3362 µg/L  | 4.3362 ppb  | 06:46:48 |
| 3 | Fe 238.204 Radial† | 9.2      | -1.7     | -2.6595 µg/L | -2.6595 ppb | 06:46:48 |
| 3 | K 766.490 Radial†  | 455.4    | 58.3     | 31.794 µg/L  | 31.794 ppb  | 06:46:28 |
| 3 | Mg 279.077 IEC†    | 6.4      | -4.7     | -29.468 µg/L | -29.468 ppb | 06:46:48 |
| 3 | Na 589.592 Radial† | 11.7     | 6.9      | 281.03 µg/L  | 281.03 ppb  | 06:46:48 |
| 3 | Sr 421.552†        | 26.2     | 22.7     | 0.5786 µg/L  | 0.5786 ppb  | 06:46:28 |
| 3 | Sc 361.383         | 617219.9 | 617219.9 | 98.631 %     |             | 06:47:46 |
| 3 | Y 371.029          | 700526.5 | 700526.5 | 98.660 %     |             | 06:47:46 |
| 3 | Ag 328.068†        | -880.2   | 47.0     | 0.2389 µg/L  | 0.2389 ppb  | 06:47:46 |
| 3 | As 188.979†        | 21.2     | -0.6     | -0.1752 µg/L | -0.1752 ppb | 06:48:06 |
| 3 | B 249.677†         | 440.4    | 254.5    | 4.9422 µg/L  | 4.9422 ppb  | 06:48:06 |
| 3 | Ba 233.527†        | 177.8    | 51.0     | 0.2869 µg/L  | 0.2869 ppb  | 06:48:06 |
| 3 | Be 313.107†        | -5069.5  | 303.2    | 0.1202 µg/L  | 0.1202 ppb  | 06:47:46 |
| 3 | Cd 226.502†        | -92.6    | 159.2    | 0.9647 µg/L  | 0.9647 ppb  | 06:48:06 |
| 3 | Co 228.616†        | -306.8   | 16.4     | 0.2677 µg/L  | 0.2677 ppb  | 06:48:06 |
| 3 | Cr 267.716†        | 150.3    | 35.6     | 0.4509 µg/L  | 0.4509 ppb  | 06:48:06 |
| 3 | Cu 324.752†        | 2661.9   | 205.2    | 0.8521 µg/L  | 0.8521 ppb  | 06:47:46 |
| 3 | Mn 257.610†        | 1019.4   | 190.1    | 0.1883 µg/L  | 0.1883 ppb  | 06:48:06 |
| 3 | Mo 202.031†        | -0.7     | 15.9     | 0.6436 µg/L  | 0.6436 ppb  | 06:48:06 |
| 3 | Ni 231.604†        | -160.6   | 13.3     | 0.2347 µg/L  | 0.2347 ppb  | 06:48:06 |
| 3 | P 214.914†         | 130.8    | -12.3    | -5.3704 µg/L | -5.3704 ppb | 06:48:06 |
| 3 | Pb 220.353†        | 126.2    | 21.6     | 1.8068 µg/L  | 1.8068 ppb  | 06:48:06 |
| 3 | S 181.975 Axial†   | 156.7    | 11.8     | 11.546 µg/L  | 11.546 ppb  | 06:48:06 |
| 3 | Sb 206.836†        | 123.4    | 9.9      | 2.1534 µg/L  | 2.1534 ppb  | 06:48:06 |
| 3 | Se 196.026†        | -8.2     | 9.8      | 3.5376 µg/L  | 3.5376 ppb  | 06:48:06 |
| 3 | SiO2†              | 1675.3   | 65.3     | 6.1461 µg/L  | 6.1461 ppb  | 06:47:46 |
| 3 | Si 251.611†        | 367.5    | 77.7     | 2.6895 µg/L  | 2.6895 ppb  | 06:48:06 |
| 3 | Sn 189.927†        | 29.6     | 8.7      | 0.8383 µg/L  | 0.8383 ppb  | 06:48:06 |
| 3 | Ti 334.940†        | -487.7   | 303.2    | 0.6890 µg/L  | 0.6890 ppb  | 06:47:46 |
| 3 | Tl 190.801†        | -134.1   | 21.4     | 3.5161 µg/L  | 3.5161 ppb  | 06:48:06 |
| 3 | U 367.007†         | 1372.3   | -33.2    | -6.076 µg/L  | -6.076 ppb  | 06:47:46 |
| 3 | V 292.402†         | 538.2    | 126.4    | 0.8122 µg/L  | 0.8122 ppb  | 06:47:46 |
| 3 | Zn 213.857†        | 907.8    | 134.7    | 0.7335 µg/L  | 0.7335 ppb  | 06:48:06 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 617171.2                 | 98.623 %           | 0.4661   |                    |          | 0.47%   |
| Sc RADIAL   | 8315.0                   | 98.7 %             | 0.05     |                    |          | 0.05%   |
| Y 371.029   | 700234.9                 | 98.619 %           | 0.4730   |                    |          | 0.48%   |
| Ag 328.068†   | 101.5                    | 0.5087 µg/L        | 0.45620  | 0.5087 ppb         | 0.45620  | 89.68%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | -10.5                    | -5.2308 µg/L       | 4.78134  | -5.2308 ppb        | 4.78134  | 91.41%  |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | -2.9                     | -0.8731 µg/L       | 1.38866  | -0.8731 ppb        | 1.38866  | 159.06% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 254.1                    | 4.9548 µg/L        | 0.18597  | 4.9548 ppb         | 0.18597  | 3.75%   |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | 41.5                     | 0.2336 µg/L        | 0.04879  | 0.2336 ppb         | 0.04879  | 20.89%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 241.8                    | 0.0972 µg/L        | 0.02096  | 0.0972 ppb         | 0.02096  | 21.57%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 11.4                     | 5.5522 µg/L        | 3.11525  | 5.5522 ppb         | 3.11525  | 56.11%  |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| Cd 226.502†   | 147.1                    | 0.8910 µg/L        | 0.12509  | 0.8910 ppb         | 0.12509  | 14.04%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |                    |          |                    |          |         |



|  |       |              |          |             |          |         |
|--|-------|--------------|----------|-------------|----------|---------|
| Co 228.616†  | 9.9   | 0.1616 µg/L  | 0.29726  | 0.1616 ppb  | 0.29726  | 183.99% |
| QC value within limits for Co 228.616 Recovery = Not calculated        |       |              |          |             |          |         |
| Cr 267.716†  | 55.7  | 0.6993 µg/L  | 0.22251  | 0.6993 ppb  | 0.22251  | 31.82%  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |       |              |          |             |          |         |
| Cu 324.752†  | 81.5  | 0.3397 µg/L  | 0.46903  | 0.3397 ppb  | 0.46903  | 138.08% |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |       |              |          |             |          |         |
| Fe 238.204 Radial†   | 1.6   | 2.3783 µg/L  | 4.39628  | 2.3783 ppb  | 4.39628  | 184.85% |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |       |              |          |             |          |         |
| K 766.490 Radial†  | 11.7  | 6.3697 µg/L  | 24.13484 | 6.3697 ppb  | 24.13484 | 378.90% |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |       |              |          |             |          |         |
| Mg 279.077 IEC†  | -3.2  | -19.864 µg/L | 20.1819  | -19.864 ppb | 20.1819  | 101.60% |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |       |              |          |             |          |         |
| Mn 257.610†  | 181.1 | 0.1794 µg/L  | 0.02693  | 0.1794 ppb  | 0.02693  | 15.01%  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |       |              |          |             |          |         |
| Mo 202.031†  | 22.7  | 0.9208 µg/L  | 0.33780  | 0.9208 ppb  | 0.33780  | 36.69%  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |       |              |          |             |          |         |
| Na 589.592 Radial†   | 0.7   | 30.616 µg/L  | 228.6887 | 30.616 ppb  | 228.6887 | 746.95% |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |       |              |          |             |          |         |
| Ni 231.604†  | 12.3  | 0.2165 µg/L  | 0.13341  | 0.2165 ppb  | 0.13341  | 61.63%  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |       |              |          |             |          |         |
| P 214.914†   | -9.2  | -4.0154 µg/L | 1.20958  | -4.0154 ppb | 1.20958  | 30.12%  |
| QC value within limits for P 214.914 Recovery = Not calculated         |       |              |          |             |          |         |
| Pb 220.353†  | 2.7   | 0.2281 µg/L  | 1.43570  | 0.2281 ppb  | 1.43570  | 629.39% |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |       |              |          |             |          |         |
| S 181.975 Axial†   | 14.9  | 14.556 µg/L  | 4.3318   | 14.556 ppb  | 4.3318   | 29.76%  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |       |              |          |             |          |         |
| Sb 206.836†  | 11.9  | 2.5766 µg/L  | 0.48338  | 2.5766 ppb  | 0.48338  | 18.76%  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |       |              |          |             |          |         |
| Se 196.026†  | 12.7  | 4.6148 µg/L  | 1.72168  | 4.6148 ppb  | 1.72168  | 37.31%  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |       |              |          |             |          |         |
| SiO2†  | 51.6  | 4.8684 µg/L  | 1.10663  | 4.8684 ppb  | 1.10663  | 22.73%  |
| QC value within limits for SiO2 Recovery = Not calculated              |       |              |          |             |          |         |
| Si 251.611†  | 81.6  | 2.8204 µg/L  | 0.30605  | 2.8204 ppb  | 0.30605  | 10.85%  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |       |              |          |             |          |         |
| Sn 189.927†  | 1.5   | 0.1482 µg/L  | 0.59819  | 0.1482 ppb  | 0.59819  | 403.61% |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |       |              |          |             |          |         |
| Sr 421.552†  | 36.0  | 0.9186 µg/L  | 0.30239  | 0.9186 ppb  | 0.30239  | 32.92%  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |       |              |          |             |          |         |
| Ti 334.940†  | 255.1 | 0.5770 µg/L  | 0.12746  | 0.5770 ppb  | 0.12746  | 22.09%  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |       |              |          |             |          |         |
| Tl 190.801†  | 17.2  | 2.8191 µg/L  | 1.35099  | 2.8191 ppb  | 1.35099  | 47.92%  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |       |              |          |             |          |         |
| U 367.007†   | 1.8   | 0.311 µg/L   | 6.2440   | 0.311 ppb   | 6.2440   | >999.9% |
| QC value within limits for U 367.007 Recovery = Not calculated         |       |              |          |             |          |         |
| V 292.402†   | 104.2 | 0.6779 µg/L  | 0.24460  | 0.6779 ppb  | 0.24460  | 36.08%  |
| QC value within limits for V 292.402 Recovery = Not calculated         |       |              |          |             |          |         |
| Zn 213.857†  | 133.5 | 0.7266 µg/L  | 0.06376  | 0.7266 ppb  | 0.06376  | 8.77%   |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |       |              |          |             |          |         |

All analyte(s) passed QC.

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Analysis Begun

Start Time: 11/16/2016 06:54:49

Plasma On Time: 11/14/2016 06:15:24

Logged In Analyst: Optima3

Technique: ICP Continuous

Spectrometer: Optima 5300 DV, S/N 077C7090601

Autosampler: ESI

Sample Information File: C:\Users\Public\PerkinElmer\ICP\Data\Sample Information\111616.sif

Batch ID:

Results Data Set: 111616

Results Library: C:\Users\Public\PerkinElmer\ICP\Data\Results\Results.mdb

=====  
Sequence No.: 1

Autosampler Location: 113

Sample ID: LR3

Date Collected: 11/16/2016 06:54:59

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Wash Time:

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Replicate Data: LR3

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8180.9        | 8180.9              | 97.1 %             |                    | 06:55:39      |
| 1     | Al 396.153Radial†  | -725.6        | -11.0               | -5.4508 µg/L       | -5.4508 ppb        | 06:55:39      |
| 1     | Ca 317.933Radial†  | 876.2         | 793.9               | 386.69 µg/L        | 386.69 ppb         | 06:55:59      |
| 1     | Fe 238.204 Radial† | 15.2          | 4.6                 | 7.1305 µg/L        | 7.1305 ppb         | 06:55:59      |
| 1     | K 766.490 Radial†  | 450862.0      | 464001.3            | 253100 µg/L        | 253100 ppb         | 06:55:34      |
| 1     | Mg 279.077 IEC†    | 13.3          | 2.5                 | 15.539 µg/L        | 15.539 ppb         | 06:55:59      |
| 1     | Na 589.592 Radial† | 6.1           | 1.3                 | 53.893 µg/L        | 53.893 ppb         | 06:55:59      |
| 1     | Sr 421.552†        | 45.2          | 42.7                | 1.0773 µg/L        | 1.0773 ppb         | 06:55:39      |
| 1     | Sc 361.383         | 605914.2      | 605914.2            | 96.825 %           |                    | 06:57:07      |
| 1     | Y 371.029          | 670685.7      | 670685.7            | 94.457 %           |                    | 06:57:07      |
| 1     | Ag 328.068†        | -493.8        | 429.4               | 0.7086 µg/L        | 0.7086 ppb         | 06:57:07      |
| 1     | As 188.979†        | 31.8          | 10.7                | 3.2200 µg/L        | 3.2200 ppb         | 06:57:27      |
| 1     | B 249.677†         | 256.4         | 72.8                | 1.4425 µg/L        | 1.4425 ppb         | 06:57:27      |
| 1     | Ba 233.527†        | 98.7          | -27.3               | -0.1539 µg/L       | -0.1539 ppb        | 06:57:27      |
| 1     | Be 313.107†        | -7444.7       | -2245.8             | -0.1795 µg/L       | -0.1795 ppb        | 06:57:07      |
| 1     | Cd 226.502†        | -215.5        | 30.5                | 0.1845 µg/L        | 0.1845 ppb         | 06:57:27      |
| 1     | Co 228.616†        | -292.0        | 25.9                | 0.4169 µg/L        | 0.4169 ppb         | 06:57:27      |
| 1     | Cr 267.716†        | 400.0         | 296.3               | 1.6109 µg/L        | 1.6109 ppb         | 06:57:27      |
| 1     | Cu 324.752†        | 2225.4        | -195.3              | 0.7773 µg/L        | 0.7773 ppb         | 06:57:07      |
| 1     | Mn 257.610†        | 1607.9        | 817.2               | 0.8055 µg/L        | 0.8055 ppb         | 06:57:27      |
| 1     | Mo 202.031†        | -9.9          | 6.3                 | 0.2569 µg/L        | 0.2569 ppb         | 06:57:27      |
| 1     | Ni 231.604†        | -79.7         | 93.8                | 1.6497 µg/L        | 1.6497 ppb         | 06:57:27      |
| 1     | P 214.914†         | 153.8         | 13.9                | 6.0484 µg/L        | 6.0484 ppb         | 06:57:27      |
| 1     | Pb 220.353†        | 135.3         | 33.4                | 0.8355 µg/L        | 0.8355 ppb         | 06:57:27      |
| 1     | S 181.975 Axial†   | 154.1         | 12.0                | 11.794 µg/L        | 11.794 ppb         | 06:57:27      |
| 1     | Sb 206.836†        | 118.4         | 7.0                 | 1.4434 µg/L        | 1.4434 ppb         | 06:57:27      |
| 1     | Se 196.026†        | -12.6         | 5.1                 | 1.8664 µg/L        | 1.8664 ppb         | 06:57:27      |
| 1     | SiO2†              | 1810.4        | 236.5               | 22.311 µg/L        | 22.311 ppb         | 06:57:07      |
| 1     | Si 251.611†        | 545.4         | 268.3               | 9.3138 µg/L        | 9.3138 ppb         | 06:57:27      |
| 1     | Sn 189.927†        | 17.2          | -3.5                | -0.3295 µg/L       | -0.3295 ppb        | 06:57:27      |
| 1     | Ti 334.940†        | -32.7         | 764.0               | 0.2960 µg/L        | 0.2960 ppb         | 06:57:07      |
| 1     | Tl 190.801†        | -153.0        | -0.6                | 0.9097 µg/L        | 0.9097 ppb         | 06:57:27      |
| 1     | U 367.007†         | 17231.8       | 16372.5             | 3002 µg/L          | 3002 ppb           | 06:57:07      |
| 1     | V 292.402†         | 243.1         | -168.1              | 0.7894 µg/L        | 0.7894 ppb         | 06:57:07      |
| 1     | Zn 213.857†        | 6325.4        | 5747.1              | 31.305 µg/L        | 31.305 ppb         | 06:57:27      |
| 2     | Sc RADIAL          | 8052.9        | 8052.9              | 95.6 %             |                    | 06:56:09      |
| 2     | Al 396.153Radial†  | -737.6        | -35.5               | -17.505 µg/L       | -17.505 ppb        | 06:56:09      |
| 2     | Ca 317.933Radial†  | 868.5         | 800.2               | 389.79 µg/L        | 389.79 ppb         | 06:56:29      |
| 2     | Fe 238.204 Radial† | 13.0          | 2.6                 | 4.0549 µg/L        | 4.0549 ppb         | 06:56:29      |
| 2     | K 766.490 Radial†  | 449659.3      | 470123.6            | 256440 µg/L        | 256440 ppb         | 06:56:04      |
| 2     | Mg 279.077 IEC†    | 7.9           | -2.9                | -18.342 µg/L       | -18.342 ppb        | 06:56:29      |
| 2     | Na 589.592 Radial† | 6.6           | 1.9                 | 77.710 µg/L        | 77.710 ppb         | 06:56:29      |
| 2     | Sr 421.552†        | 30.7          | 28.3                | 0.7094 µg/L        | 0.7094 ppb         | 06:56:09      |
| 2     | Sc 361.383         | 602843.4      | 602843.4            | 96.334 %           |                    | 06:57:32      |
| 2     | Y 371.029          | 667222.0      | 667222.0            | 93.969 %           |                    | 06:57:32      |
| 2     | Ag 328.068†        | -507.4        | 412.7               | 0.6150 µg/L        | 0.6150 ppb         | 06:57:32      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | As 188.979†        | 29.3     | 8.3      | 2.4988 µg/L  | 2.4988 ppb  | 06:57:52 |
| 2 | B 249.677†         | 227.1    | 43.7     | 0.8675 µg/L  | 0.8675 ppb  | 06:57:52 |
| 2 | Ba 233.527†        | 107.3    | -17.9    | -0.1011 µg/L | -0.1011 ppb | 06:57:52 |
| 2 | Be 313.107†        | -7435.4  | -2275.3  | -0.1869 µg/L | -0.1869 ppb | 06:57:32 |
| 2 | Cd 226.502†        | -211.2   | 33.9     | 0.2045 µg/L  | 0.2045 ppb  | 06:57:52 |
| 2 | Co 228.616†        | -323.3   | -8.1     | -0.1375 µg/L | -0.1375 ppb | 06:57:52 |
| 2 | Cr 267.716†        | 397.1    | 295.4    | 1.5859 µg/L  | 1.5859 ppb  | 06:57:52 |
| 2 | Cu 324.752†        | 2252.5   | -155.5   | 0.9528 µg/L  | 0.9528 ppb  | 06:57:32 |
| 2 | Mn 257.610†        | 1669.3   | 889.3    | 0.8776 µg/L  | 0.8776 ppb  | 06:57:52 |
| 2 | Mo 202.031†        | -15.1    | 0.9      | 0.0366 µg/L  | 0.0366 ppb  | 06:57:52 |
| 2 | Ni 231.604†        | -130.0   | 41.2     | 0.7237 µg/L  | 0.7237 ppb  | 06:57:52 |
| 2 | P 214.914†         | 155.5    | 16.6     | 7.2106 µg/L  | 7.2106 ppb  | 06:57:52 |
| 2 | Pb 220.353†        | 142.0    | 41.0     | 1.4591 µg/L  | 1.4591 ppb  | 06:57:52 |
| 2 | S 181.975 Axial†   | 162.8    | 22.0     | 21.518 µg/L  | 21.518 ppb  | 06:57:52 |
| 2 | Sb 206.836†        | 119.1    | 8.4      | 1.7262 µg/L  | 1.7262 ppb  | 06:57:52 |
| 2 | Se 196.026†        | -16.1    | 1.4      | 0.5198 µg/L  | 0.5198 ppb  | 06:57:52 |
| 2 | SiO2†              | 1764.3   | 198.2    | 18.700 µg/L  | 18.700 ppb  | 06:57:32 |
| 2 | Si 251.611†        | 564.2    | 290.8    | 10.096 µg/L  | 10.096 ppb  | 06:57:52 |
| 2 | Sn 189.927†        | 25.1     | 4.8      | 0.4667 µg/L  | 0.4667 ppb  | 06:57:52 |
| 2 | Ti 334.940†        | -69.9    | 725.2    | 0.1995 µg/L  | 0.1995 ppb  | 06:57:32 |
| 2 | Tl 190.801†        | -134.8   | 17.5     | 3.8839 µg/L  | 3.8839 ppb  | 06:57:52 |
| 2 | U 367.007†         | 17240.3  | 16471.9  | 3020 µg/L    | 3020 ppb    | 06:57:32 |
| 2 | V 292.402†         | 184.1    | -228.1   | 0.4138 µg/L  | 0.4138 ppb  | 06:57:32 |
| 2 | Zn 213.857†        | 6355.3   | 5811.4   | 31.664 µg/L  | 31.664 ppb  | 06:57:52 |
| 3 | Sc RADIAL          | 8161.4   | 8161.4   | 96.9 %       |             | 06:56:40 |
| 3 | Al 396.153Radial†  | -774.0   | -62.8    | -30.947 µg/L | -30.947 ppb | 06:56:40 |
| 3 | Ca 317.933Radial†  | 866.6    | 786.2    | 382.95 µg/L  | 382.95 ppb  | 06:57:00 |
| 3 | Fe 238.204 Radial† | 14.9     | 4.3      | 6.6710 µg/L  | 6.6710 ppb  | 06:57:00 |
| 3 | K 766.490 Radial†  | 452827.2 | 467135.5 | 254810 µg/L  | 254810 ppb  | 06:56:35 |
| 3 | Mg 279.077 IEC†    | 13.0     | 2.2      | 13.615 µg/L  | 13.615 ppb  | 06:57:00 |
| 3 | Na 589.592 Radial† | 8.7      | 4.1      | 166.24 µg/L  | 166.24 ppb  | 06:57:00 |
| 3 | Sr 421.552†        | 43.7     | 41.3     | 1.0401 µg/L  | 1.0401 ppb  | 06:56:40 |
| 3 | Sc 361.383         | 600917.7 | 600917.7 | 96.026 %     |             | 06:57:58 |
| 3 | Y 371.029          | 665066.8 | 665066.8 | 93.666 %     |             | 06:57:58 |
| 3 | Ag 328.068†        | -552.8   | 363.8    | 0.3673 µg/L  | 0.3673 ppb  | 06:57:58 |
| 3 | As 188.979†        | 26.5     | 5.4      | 1.6453 µg/L  | 1.6453 ppb  | 06:58:18 |
| 3 | B 249.677†         | 235.7    | 53.4     | 1.0634 µg/L  | 1.0634 ppb  | 06:58:18 |
| 3 | Ba 233.527†        | 117.9    | -6.5     | -0.0369 µg/L | -0.0369 ppb | 06:58:18 |
| 3 | Be 313.107†        | -7301.9  | -2161.0  | -0.1393 µg/L | -0.1393 ppb | 06:57:58 |
| 3 | Cd 226.502†        | -207.8   | 36.7     | 0.2217 µg/L  | 0.2217 ppb  | 06:58:18 |
| 3 | Co 228.616†        | -292.3   | 23.1     | 0.3711 µg/L  | 0.3711 ppb  | 06:58:18 |
| 3 | Cr 267.716†        | 411.6    | 311.8    | 1.7868 µg/L  | 1.7868 ppb  | 06:58:18 |
| 3 | Cu 324.752†        | 2238.7   | -162.3   | 0.9288 µg/L  | 0.9288 ppb  | 06:57:58 |
| 3 | Mn 257.610†        | 1613.0   | 836.3    | 0.8243 µg/L  | 0.8243 ppb  | 06:58:18 |
| 3 | Mo 202.031†        | -18.7    | -2.9     | -0.1154 µg/L | -0.1154 ppb | 06:58:18 |
| 3 | Ni 231.604†        | -98.9    | 73.2     | 1.2869 µg/L  | 1.2869 ppb  | 06:58:18 |
| 3 | P 214.914†         | 137.1    | -2.1     | -0.9284 µg/L | -0.9284 ppb | 06:58:18 |
| 3 | Pb 220.353†        | 145.5    | 45.2     | 1.8089 µg/L  | 1.8089 ppb  | 06:58:18 |
| 3 | S 181.975 Axial†   | 157.3    | 16.8     | 16.434 µg/L  | 16.434 ppb  | 06:58:18 |
| 3 | Sb 206.836†        | 119.0    | 8.7      | 1.7993 µg/L  | 1.7993 ppb  | 06:58:18 |
| 3 | Se 196.026†        | -12.9    | 4.7      | 1.6916 µg/L  | 1.6916 ppb  | 06:58:18 |
| 3 | SiO2†              | 1859.4   | 303.1    | 28.571 µg/L  | 28.571 ppb  | 06:57:58 |
| 3 | Si 251.611†        | 541.8    | 269.3    | 9.3502 µg/L  | 9.3502 ppb  | 06:58:18 |
| 3 | Sn 189.927†        | 27.9     | 7.8      | 0.7531 µg/L  | 0.7531 ppb  | 06:58:18 |
| 3 | Ti 334.940†        | -38.6    | 757.6    | 0.2685 µg/L  | 0.2685 ppb  | 06:57:58 |
| 3 | Tl 190.801†        | -134.6   | 17.2     | 3.8444 µg/L  | 3.8444 ppb  | 06:58:18 |
| 3 | U 367.007†         | 17226.6  | 16515.0  | 3028 µg/L    | 3028 ppb    | 06:57:58 |
| 3 | V 292.402†         | 190.5    | -220.8   | 0.4646 µg/L  | 0.4646 ppb  | 06:57:58 |
| 3 | Zn 213.857†        | 6334.1   | 5810.5   | 31.653 µg/L  | 31.653 ppb  | 06:58:18 |

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Mean Data: LR3

| Analyte           | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|-------------------|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc 361.383        | 603225.1                 | 96.395 %           | 0.4027   |                    |          | 0.42%  |
| Sc RADIAL         | 8131.7                   | 96.5 %             | 0.82     |                    |          | 0.85%  |
| Y 371.029         | 667658.2                 | 94.031 %           | 0.3992   |                    |          | 0.42%  |
| Ag 328.068†       | 402.0                    | 0.5636 µg/L        | 0.17638  | 0.5636 ppb         | 0.17638  | 31.29% |
| Al 396.153Radial† | -36.5                    | -17.968 µg/L       | 12.7546  | -17.968 ppb        | 12.7546  | 70.99% |
| As 188.979†       | 8.1                      | 2.4547 µg/L        | 0.78831  | 2.4547 ppb         | 0.78831  | 32.11% |
| B 249.677†        | 56.6                     | 1.1245 µg/L        | 0.29231  | 1.1245 ppb         | 0.29231  | 26.00% |

|  |          |              |          |             |          |         |
|--|----------|--------------|----------|-------------|----------|---------|
| Ba 233.527†  | -17.3    | -0.0973 µg/L | 0.05863  | -0.0973 ppb | 0.05863  | 60.26%  |
| Be 313.107†  | -2227.4  | -0.1686 µg/L | 0.02562  | -0.1686 ppb | 0.02562  | 15.20%  |
| Ca 317.933 Radial†   | 793.4    | 386.48 µg/L  | 3.426    | 386.48 ppb  | 3.426    | 0.89%   |
| Cd 226.502†  | 33.7     | 0.2036 µg/L  | 0.01860  | 0.2036 ppb  | 0.01860  | 9.14%   |
| Co 228.616†  | 13.6     | 0.2169 µg/L  | 0.30769  | 0.2169 ppb  | 0.30769  | 141.89% |
| Cr 267.716†  | 301.1    | 1.6612 µg/L  | 0.10950  | 1.6612 ppb  | 0.10950  | 6.59%   |
| Cu 324.752†  | -171.0   | 0.8863 µg/L  | 0.09514  | 0.8863 ppb  | 0.09514  | 10.73%  |
| Fe 238.204 Radial†   | 3.9      | 5.9521 µg/L  | 1.65905  | 5.9521 ppb  | 1.65905  | 27.87%  |
| K 766.490 Radial†  | 467086.8 | 254780 µg/L  | 1669.93  | 254780 ppb  | 1669.93  | 0.66%   |
| QC value within limits for K 766.490 Radial Recovery = 101.91% |          |              |          |             |          |         |
| Mg 279.077 IEC†  | 0.6      | 3.6040 µg/L  | 19.02996 | 3.6040 ppb  | 19.02996 | 528.02% |
| Mn 257.610†  | 847.6    | 0.8358 µg/L  | 0.03742  | 0.8358 ppb  | 0.03742  | 4.48%   |
| Mo 202.031†  | 1.5      | 0.0594 µg/L  | 0.18720  | 0.0594 ppb  | 0.18720  | 315.13% |
| Na 589.592 Radial†   | 2.4      | 99.282 µg/L  | 59.1997  | 99.282 ppb  | 59.1997  | 59.63%  |
| Ni 231.604†  | 69.4     | 1.2201 µg/L  | 0.46662  | 1.2201 ppb  | 0.46662  | 38.24%  |
| P 214.914†   | 9.5      | 4.1102 µg/L  | 4.40208  | 4.1102 ppb  | 4.40208  | 107.10% |
| Pb 220.353†  | 39.9     | 1.3678 µg/L  | 0.49307  | 1.3678 ppb  | 0.49307  | 36.05%  |
| S 181.975 Axial†   | 16.9     | 16.582 µg/L  | 4.8637   | 16.582 ppb  | 4.8637   | 29.33%  |
| Sb 206.836†  | 8.0      | 1.6563 µg/L  | 0.18795  | 1.6563 ppb  | 0.18795  | 11.35%  |
| Se 196.026†  | 3.7      | 1.3592 µg/L  | 0.73223  | 1.3592 ppb  | 0.73223  | 53.87%  |
| SiO2†  | 245.9    | 23.194 µg/L  | 4.9940   | 23.194 ppb  | 4.9940   | 21.53%  |
| Si 251.611†  | 276.2    | 9.5865 µg/L  | 0.44124  | 9.5865 ppb  | 0.44124  | 4.60%   |
| Sn 189.927†  | 3.1      | 0.2967 µg/L  | 0.56093  | 0.2967 ppb  | 0.56093  | 189.03% |
| Sr 421.552†  | 37.5     | 0.9422 µg/L  | 0.20254  | 0.9422 ppb  | 0.20254  | 21.50%  |
| Ti 334.940†  | 748.9    | 0.2547 µg/L  | 0.04973  | 0.2547 ppb  | 0.04973  | 19.52%  |
| Tl 190.801†  | 11.4     | 2.8793 µg/L  | 1.70585  | 2.8793 ppb  | 1.70585  | 59.25%  |
| U 367.007†   | 16453.1  | 3016 µg/L    | 13.40    | 3016 ppb    | 13.40    | 0.44%   |
| V 292.402†   | -205.7   | 0.5559 µg/L  | 0.20377  | 0.5559 ppb  | 0.20377  | 36.65%  |
| Zn 213.857†  | 5789.7   | 31.540 µg/L  | 0.2043   | 31.540 ppb  | 0.2043   | 0.65%   |

All analyte(s) passed QC.

Sequence No.: 2

Sample ID: LR4

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 114

Date Collected: 11/16/2016 06:58:26

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: LR4

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8468.4        | 8468.4              | 100 %              |                    | 06:58:55      |
| 1     | Al 396.153Radial†  | -732.8        | 7.2                 | 3.5087 µg/L        | 3.5087 ppb         | 06:58:55      |
| 1     | Ca 317.933Radial†  | 103.6         | -5.5                | -2.6898 µg/L       | -2.6898 ppb        | 06:59:15      |
| 1     | Fe 238.204 Radial† | 7.0           | -4.0                | -6.1541 µg/L       | -6.1541 ppb        | 06:59:15      |
| 1     | K 766.490 Radial†  | 676.3         | 269.6               | 147.05 µg/L        | 147.05 ppb         | 06:58:55      |
| 1     | Mg 279.077 IEC†    | 12.7          | 1.4                 | 8.9588 µg/L        | 8.9588 ppb         | 06:59:15      |
| 1     | Na 589.592 Radial† | 8.4           | 3.4                 | 137.40 µg/L        | 137.40 ppb         | 06:59:15      |
| 1     | Sr 421.552†        | 20.4          | 16.5                | 0.4199 µg/L        | 0.4199 ppb         | 06:58:55      |
| 1     | Sc 361.383         | 633219.3      | 633219.3            | 101.19 %           |                    | 07:00:13      |
| 1     | Y 371.029          | 716393.3      | 716393.3            | 100.89 %           |                    | 07:00:13      |
| 1     | Ag 328.068†        | -879.5        | 70.2                | 0.3505 µg/L        | 0.3505 ppb         | 07:00:13      |
| 1     | As 188.979†        | 26.9          | 4.4                 | 1.3414 µg/L        | 1.3414 ppb         | 07:00:33      |
| 1     | B 249.677†         | 304.6         | 108.9               | 2.0985 µg/L        | 2.0985 ppb         | 07:00:33      |
| 1     | Ba 233.527†        | 138.3         | 7.4                 | 0.0418 µg/L        | 0.0418 ppb         | 07:00:33      |
| 1     | Be 313.107†        | -5372.0       | 134.2               | 0.0541 µg/L        | 0.0541 ppb         | 07:00:13      |
| 1     | Cd 226.502†        | -170.9        | 84.1                | 0.5103 µg/L        | 0.5103 ppb         | 07:00:33      |
| 1     | Co 228.616†        | -357.5        | -25.8               | -0.4201 µg/L       | -0.4201 ppb        | 07:00:33      |
| 1     | Cr 267.716†        | 135.9         | 17.5                | 0.2192 µg/L        | 0.2192 ppb         | 07:00:33      |
| 1     | Cu 324.752†        | 2522.7        | -0.6                | -0.0024 µg/L       | -0.0024 ppb        | 07:00:13      |
| 1     | Mn 257.610†        | 823.5         | -29.6               | -0.0298 µg/L       | -0.0298 ppb        | 07:00:33      |
| 1     | Mo 202.031†        | -4.1          | 12.5                | 0.5068 µg/L        | 0.5068 ppb         | 07:00:33      |
| 1     | Ni 231.604†        | -142.9        | 35.0                | 0.6151 µg/L        | 0.6151 ppb         | 07:00:33      |
| 1     | P 214.914†         | 132.5         | -13.9               | -6.0606 µg/L       | -6.0606 ppb        | 07:00:33      |
| 1     | Pb 220.353†        | 46.2          | -60.7               | -5.0668 µg/L       | -5.0668 ppb        | 07:00:33      |
| 1     | S 181.975 Axial†   | 144.2         | -4.6                | -4.4561 µg/L       | -4.4561 ppb        | 07:00:33      |
| 1     | Sb 206.836†        | 119.4         | 2.8                 | 0.6070 µg/L        | 0.6070 ppb         | 07:00:33      |
| 1     | Se 196.026†        | -8.8          | 9.4                 | 3.3951 µg/L        | 3.3951 ppb         | 07:00:33      |
| 1     | SiO2†              | 960193.0      | 947287.9            | 89108 µg/L         | 89108 ppb          | 07:00:13      |
| 1     | Si 251.611†        | 1197662.3     | 1183307.8           | 41086 µg/L         | 41086 ppb          | 07:00:13      |
| 1     | Sn 189.927†        | 22.1          | 0.6                 | 0.0574 µg/L        | 0.0574 ppb         | 07:00:33      |
| 1     | Ti 334.940†        | -639.4        | 165.9               | 0.3743 µg/L        | 0.3743 ppb         | 07:00:13      |
| 1     | Tl 190.801†        | -138.2        | 20.8                | 3.4249 µg/L        | 3.4249 ppb         | 07:00:33      |
| 1     | U 367.007†         | 1449.9        | 8.4                 | 1.567 µg/L         | 1.567 ppb          | 07:00:13      |
| 1     | V 292.402†         | 530.0         | 104.6               | 0.6749 µg/L        | 0.6749 ppb         | 07:00:13      |
| 1     | Zn 213.857†        | 950.8         | 153.9               | 0.8345 µg/L        | 0.8345 ppb         | 07:00:33      |
| 2     | Sc RADIAL          | 8448.2        | 8448.2              | 100 %              |                    | 06:59:20      |
| 2     | Al 396.153Radial†  | -757.7        | -19.5               | -9.6234 µg/L       | -9.6234 ppb        | 06:59:20      |
| 2     | Ca 317.933Radial†  | 108.9         | 0.0                 | 0.0135 µg/L        | 0.0135 ppb         | 06:59:40      |
| 2     | Fe 238.204 Radial† | 8.8           | -2.2                | -3.3589 µg/L       | -3.3589 ppb        | 06:59:40      |
| 2     | K 766.490 Radial†  | 708.7         | 303.5               | 165.55 µg/L        | 165.55 ppb         | 06:59:20      |
| 2     | Mg 279.077 IEC†    | 8.2           | -3.1                | -19.087 µg/L       | -19.087 ppb        | 06:59:40      |
| 2     | Na 589.592 Radial† | 3.0           | -1.9                | -79.086 µg/L       | -79.086 ppb        | 06:59:40      |
| 2     | Sr 421.552†        | 10.3          | 6.4                 | 0.1638 µg/L        | 0.1638 ppb         | 06:59:20      |
| 2     | Sc 361.383         | 632630.0      | 632630.0            | 101.09 %           |                    | 07:00:38      |
| 2     | Y 371.029          | 716219.1      | 716219.1            | 100.87 %           |                    | 07:00:38      |
| 2     | Ag 328.068†        | -878.1        | 70.9                | 0.3540 µg/L        | 0.3540 ppb         | 07:00:38      |
| 2     | As 188.979†        | 22.6          | 0.2                 | 0.0628 µg/L        | 0.0628 ppb         | 07:00:58      |
| 2     | B 249.677†         | 297.0         | 101.7               | 1.9685 µg/L        | 1.9685 ppb         | 07:00:58      |
| 2     | Ba 233.527†        | 161.7         | 30.7                | 0.1728 µg/L        | 0.1728 ppb         | 07:00:58      |
| 2     | Be 313.107†        | -5324.6       | 176.1               | 0.0704 µg/L        | 0.0704 ppb         | 07:00:38      |
| 2     | Cd 226.502†        | -168.7        | 86.2                | 0.5227 µg/L        | 0.5227 ppb         | 07:00:58      |
| 2     | Co 228.616†        | -356.3        | -25.0               | -0.4065 µg/L       | -0.4065 ppb        | 07:00:58      |
| 2     | Cr 267.716†        | 160.2         | 41.6                | 0.5227 µg/L        | 0.5227 ppb         | 07:00:58      |
| 2     | Cu 324.752†        | 2517.4        | -3.5                | -0.0158 µg/L       | -0.0158 ppb        | 07:00:38      |
| 2     | Mn 257.610†        | 791.9         | -60.2               | -0.0588 µg/L       | -0.0588 ppb        | 07:00:58      |
| 2     | Mo 202.031†        | -0.3          | 16.3                | 0.6576 µg/L        | 0.6576 ppb         | 07:00:58      |
| 2     | Ni 231.604†        | -147.3        | 30.5                | 0.5361 µg/L        | 0.5361 ppb         | 07:00:58      |
| 2     | P 214.914†         | 110.7         | -35.4               | -15.389 µg/L       | -15.389 ppb        | 07:00:58      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 85.3      | -21.9     | -1.8264 µg/L | -1.8264 ppb | 07:00:58 |
| 2 | S 181.975 Axial†   | 144.2     | -4.4      | -4.2907 µg/L | -4.2907 ppb | 07:00:58 |
| 2 | Sb 206.836†        | 124.4     | 7.8       | 1.6948 µg/L  | 1.6948 ppb  | 07:00:58 |
| 2 | Se 196.026†        | -12.1     | 6.1       | 2.2071 µg/L  | 2.2071 ppb  | 07:00:58 |
| 2 | SiO2†              | 956824.8  | 944840.0  | 88878 µg/L   | 88878 ppb   | 07:00:38 |
| 2 | Si 251.611†        | 1194299.6 | 1181084.0 | 41009 µg/L   | 41009 ppb   | 07:00:38 |
| 2 | Sn 189.927†        | 11.6      | -9.8      | -0.9392 µg/L | -0.9392 ppb | 07:00:58 |
| 2 | Ti 334.940†        | -571.3    | 232.6     | 0.5266 µg/L  | 0.5266 ppb  | 07:00:38 |
| 2 | Tl 190.801†        | -147.9    | 11.0      | 1.8186 µg/L  | 1.8186 ppb  | 07:00:58 |
| 2 | U 367.007†         | 1433.4    | -6.6      | -1.202 µg/L  | -1.202 ppb  | 07:00:38 |
| 2 | V 292.402†         | 380.7     | -42.6     | -0.2673 µg/L | -0.2673 ppb | 07:00:38 |
| 2 | Zn 213.857†        | 929.7     | 133.9     | 0.7277 µg/L  | 0.7277 ppb  | 07:00:58 |
| 3 | Sc RADIAL          | 8519.3    | 8519.3    | 101 %        |             | 06:59:45 |
| 3 | Al 396.153Radial†  | -766.7    | -22.0     | -10.882 µg/L | -10.882 ppb | 06:59:45 |
| 3 | Ca 317.933Radial†  | 123.6     | 13.7      | 6.6567 µg/L  | 6.6567 ppb  | 07:00:05 |
| 3 | Fe 238.204 Radial† | 8.2       | -2.9      | -4.4230 µg/L | -4.4230 ppb | 07:00:05 |
| 3 | K 766.490 Radial†  | 633.8     | 223.6     | 121.94 µg/L  | 121.94 ppb  | 06:59:45 |
| 3 | Mg 279.077 IEC†    | 13.4      | 2.0       | 12.535 µg/L  | 12.535 ppb  | 07:00:05 |
| 3 | Na 589.592 Radial† | 12.0      | 7.0       | 284.65 µg/L  | 284.65 ppb  | 07:00:05 |
| 3 | Sr 421.552†        | 30.8      | 26.6      | 0.6788 µg/L  | 0.6788 ppb  | 06:59:45 |
| 3 | Sc 361.383         | 636916.3  | 636916.3  | 101.78 %     |             | 07:01:04 |
| 3 | Y 371.029          | 720457.2  | 720457.2  | 101.47 %     |             | 07:01:04 |
| 3 | Ag 328.068†        | -896.2    | 58.9      | 0.2994 µg/L  | 0.2994 ppb  | 07:01:04 |
| 3 | As 188.979†        | 25.2      | 2.6       | 0.7998 µg/L  | 0.7998 ppb  | 07:01:24 |
| 3 | B 249.677†         | 307.9     | 110.4     | 2.1348 µg/L  | 2.1348 ppb  | 07:01:24 |
| 3 | Ba 233.527†        | 135.6     | 4.0       | 0.0225 µg/L  | 0.0225 ppb  | 07:01:24 |
| 3 | Be 313.107†        | -5435.7   | 102.4     | 0.0383 µg/L  | 0.0383 ppb  | 07:01:04 |
| 3 | Cd 226.502†        | -162.7    | 93.2      | 0.5653 µg/L  | 0.5653 ppb  | 07:01:24 |
| 3 | Co 228.616†        | -365.2    | -31.3     | -0.5096 µg/L | -0.5096 ppb | 07:01:24 |
| 3 | Cr 267.716†        | 114.0     | -4.8      | -0.0514 µg/L | -0.0514 ppb | 07:01:24 |
| 3 | Cu 324.752†        | 2614.7    | 75.3      | 0.3075 µg/L  | 0.3075 ppb  | 07:01:04 |
| 3 | Mn 257.610†        | 747.4     | -109.1    | -0.1082 µg/L | -0.1082 ppb | 07:01:24 |
| 3 | Mo 202.031†        | -3.4      | 13.3      | 0.5368 µg/L  | 0.5368 ppb  | 07:01:24 |
| 3 | Ni 231.604†        | -145.5    | 33.2      | 0.5838 µg/L  | 0.5838 ppb  | 07:01:24 |
| 3 | P 214.914†         | 124.0     | -23.1     | -10.046 µg/L | -10.046 ppb | 07:01:24 |
| 3 | Pb 220.353†        | 54.4      | -52.9     | -4.3979 µg/L | -4.3979 ppb | 07:01:24 |
| 3 | S 181.975 Axial†   | 148.4     | -1.3      | -1.2294 µg/L | -1.2294 ppb | 07:01:24 |
| 3 | Sb 206.836†        | 122.7     | 5.3       | 1.1647 µg/L  | 1.1647 ppb  | 07:01:24 |
| 3 | Se 196.026†        | -6.3      | 11.9      | 4.3062 µg/L  | 4.3062 ppb  | 07:01:24 |
| 3 | SiO2†              | 965669.1  | 947160.2  | 89096 µg/L   | 89096 ppb   | 07:01:04 |
| 3 | Si 251.611†        | 1205665.5 | 1184300.9 | 41121 µg/L   | 41121 ppb   | 07:01:04 |
| 3 | Sn 189.927†        | 10.9      | -10.5     | -1.0082 µg/L | -1.0082 ppb | 07:01:24 |
| 3 | Ti 334.940†        | -576.5    | 231.3     | 0.5294 µg/L  | 0.5294 ppb  | 07:01:04 |
| 3 | Tl 190.801†        | -160.2    | 0.0       | 0.0086 µg/L  | 0.0086 ppb  | 07:01:24 |
| 3 | U 367.007†         | 1384.9    | -63.8     | -11.69 µg/L  | -11.69 ppb  | 07:01:04 |
| 3 | V 292.402†         | 416.3     | -10.1     | -0.0681 µg/L | -0.0681 ppb | 07:01:04 |
| 3 | Zn 213.857†        | 939.6     | 137.5     | 0.7447 µg/L  | 0.7447 ppb  | 07:01:24 |

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Mean Data: LR4

| Analyte            | Mean Corrected Intensity | Conc.   | Calib. Units | Std.Dev. | Sample Conc. | Units | Std.Dev. | RSD     |
|--------------------|--------------------------|---------|--------------|----------|--------------|-------|----------|---------|
| Sc 361.383         | 634255.2                 | 101.35  | %            | 0.371    |              |       |          | 0.37%   |
| Sc RADIAL          | 8478.6                   | 101     | %            | 0.43     |              |       |          | 0.43%   |
| Y 371.029          | 717689.9                 | 101.08  | %            | 0.338    |              |       |          | 0.33%   |
| Ag 328.068†        | 66.7                     | 0.3346  | µg/L         | 0.03060  | 0.3346       | ppb   | 0.03060  | 9.15%   |
| Al 396.153Radial†  | -11.5                    | -5.6655 | µg/L         | 7.97003  | -5.6655      | ppb   | 7.97003  | 140.68% |
| As 188.979†        | 2.4                      | 0.7347  | µg/L         | 0.64174  | 0.7347       | ppb   | 0.64174  | 87.35%  |
| B 249.677†         | 107.0                    | 2.0673  | µg/L         | 0.08742  | 2.0673       | ppb   | 0.08742  | 4.23%   |
| Ba 233.527†        | 14.0                     | 0.0791  | µg/L         | 0.08180  | 0.0791       | ppb   | 0.08180  | 103.48% |
| Be 313.107†        | 137.5                    | 0.0543  | µg/L         | 0.01604  | 0.0543       | ppb   | 0.01604  | 29.55%  |
| Ca 317.933Radial†  | 2.7                      | 1.3268  | µg/L         | 4.80968  | 1.3268       | ppb   | 4.80968  | 362.50% |
| Cd 226.502†        | 87.9                     | 0.5328  | µg/L         | 0.02886  | 0.5328       | ppb   | 0.02886  | 5.42%   |
| Co 228.616†        | -27.4                    | -0.4454 | µg/L         | 0.05602  | -0.4454      | ppb   | 0.05602  | 12.58%  |
| Cr 267.716†        | 18.1                     | 0.2302  | µg/L         | 0.28721  | 0.2302       | ppb   | 0.28721  | 124.79% |
| Cu 324.752†        | 23.7                     | 0.0964  | µg/L         | 0.18288  | 0.0964       | ppb   | 0.18288  | 189.62% |
| Fe 238.204 Radial† | -3.0                     | -4.6454 | µg/L         | 1.41080  | -4.6454      | ppb   | 1.41080  | 30.37%  |
| K 766.490 Radial†  | 265.6                    | 144.85  | µg/L         | 21.889   | 144.85       | ppb   | 21.889   | 15.11%  |
| Mg 279.077 IEC†    | 0.1                      | 0.8026  | µg/L         | 17.31706 | 0.8026       | ppb   | 17.31706 | >999.9% |
| Mn 257.610†        | -66.3                    | -0.0656 | µg/L         | 0.03964  | -0.0656      | ppb   | 0.03964  | 60.40%  |
| Mo 202.031†        | 14.0                     | 0.5671  | µg/L         | 0.07983  | 0.5671       | ppb   | 0.07983  | 14.08%  |

|   |           |              |         |             |         |         |
|---|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial†                                      | 2.8       | 114.32 µg/L  | 182.961 | 114.32 ppb  | 182.961 | 160.04% |
| Ni 231.604†   | 32.9      | 0.5783 µg/L  | 0.03976 | 0.5783 ppb  | 0.03976 | 6.87%   |
| P 214.914†  | -24.1     | -10.499 µg/L | 4.6807  | -10.499 ppb | 4.6807  | 44.58%  |
| Pb 220.353†   | -45.2     | -3.7637 µg/L | 1.71075 | -3.7637 ppb | 1.71075 | 45.45%  |
| S 181.975 Axial†  | -3.4      | -3.3254 µg/L | 1.81708 | -3.3254 ppb | 1.81708 | 54.64%  |
| Sb 206.836†   | 5.3       | 1.1555 µg/L  | 0.54391 | 1.1555 ppb  | 0.54391 | 47.07%  |
| Se 196.026†   | 9.1       | 3.3028 µg/L  | 1.05255 | 3.3028 ppb  | 1.05255 | 31.87%  |
| SiO2†   | 946429.3  | 89027 µg/L   | 129.61  | 89027 ppb   | 129.61  | 0.15%   |
| Si 251.611†   | 1182897.6 | 41072 µg/L   | 57.20   | 41072 ppb   | 57.20   | 0.14%   |
| QC value within limits for Si 251.611 Recovery = 91.27% |           |              |         |             |         |         |
| Sn 189.927†   | -6.6      | -0.6300 µg/L | 0.59630 | -0.6300 ppb | 0.59630 | 94.65%  |
| Sr 421.552†   | 16.5      | 0.4209 µg/L  | 0.25749 | 0.4209 ppb  | 0.25749 | 61.18%  |
| Ti 334.940†   | 209.9     | 0.4767 µg/L  | 0.08876 | 0.4767 ppb  | 0.08876 | 18.62%  |
| Tl 190.801†   | 10.6      | 1.7507 µg/L  | 1.70918 | 1.7507 ppb  | 1.70918 | 97.63%  |
| U 367.007†  | -20.7     | -3.774 µg/L  | 6.9910  | -3.774 ppb  | 6.9910  | 185.24% |
| V 292.402†  | 17.3      | 0.1132 µg/L  | 0.49660 | 0.1132 ppb  | 0.49660 | 438.81% |
| Zn 213.857†   | 141.8     | 0.7690 µg/L  | 0.05741 | 0.7690 ppb  | 0.05741 | 7.47%   |
| All analyte(s) passed QC.                               |           |              |         |             |         |         |

Sequence No.: 3

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 7

Date Collected: 11/16/2016 07:01:33

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8214.5        | 8214.5              | 97.5 %             |                    | 07:02:23      |
| 1     | Al 396.153Radial†  | 9395.6        | 10374.5             | 5094.9 µg/L        | 5094.9 ppb         | 07:02:03      |
| 1     | Ca 317.933Radial†  | 10326.1       | 10484.1             | 5106.6 µg/L        | 5106.6 ppb         | 07:02:23      |
| 1     | Fe 238.204 Radial† | 3299.2        | 3373.4              | 5175.0 µg/L        | 5175.0 ppb         | 07:02:23      |
| 1     | K 766.490 Radial†  | 9432.4        | 9272.6              | 5059.2 µg/L        | 5059.2 ppb         | 07:02:03      |
| 1     | Mg 279.077 IEC†    | 822.4         | 832.5               | 5191.6 µg/L        | 5191.6 ppb         | 07:02:23      |
| 1     | Na 589.592 Radial† | 231.5         | 232.5               | 9521.1 µg/L        | 9521.1 ppb         | 07:02:23      |
| 1     | Sr 421.552†        | 19066.6       | 19554.9             | 498.63 µg/L        | 498.63 ppb         | 07:02:03      |
| 1     | Sc 361.383         | 621280.4      | 621280.4            | 99.280 %           |                    | 07:03:22      |
| 1     | Y 371.029          | 697097.6      | 697097.6            | 98.177 %           |                    | 07:03:22      |
| 1     | Ag 328.068†        | 96855.6       | 98497.4             | 494.06 µg/L        | 494.06 ppb         | 07:03:22      |
| 1     | As 188.979†        | 1668.4        | 1658.4              | 503.04 µg/L        | 503.04 ppb         | 07:03:42      |
| 1     | B 249.677†         | 25339.5       | 25331.2             | 511.08 µg/L        | 511.08 ppb         | 07:03:22      |
| 1     | Ba 233.527†        | 87448.6       | 87953.5             | 495.03 µg/L        | 495.03 ppb         | 07:03:22      |
| 1     | Be 313.107†        | 1216060.8     | 1230322.4           | 493.32 µg/L        | 493.32 ppb         | 07:03:22      |
| 1     | Cd 226.502†        | 81166.1       | 82007.7             | 496.43 µg/L        | 496.43 ppb         | 07:03:22      |
| 1     | Co 228.616†        | 29494.1       | 30035.5             | 488.87 µg/L        | 488.87 ppb         | 07:03:42      |
| 1     | Cr 267.716†        | 39083.3       | 39249.9             | 492.45 µg/L        | 492.45 ppb         | 07:03:22      |
| 1     | Cu 324.752†        | 119760.9      | 118135.7            | 493.06 µg/L        | 493.06 ppb         | 07:03:22      |
| 1     | Mn 257.610†        | 497670.3      | 500435.8            | 493.46 µg/L        | 493.46 ppb         | 07:03:22      |
| 1     | Mo 202.031†        | 12169.9       | 12274.7             | 497.03 µg/L        | 497.03 ppb         | 07:03:42      |
| 1     | Ni 231.604†        | 27408.1       | 27783.0             | 488.47 µg/L        | 488.47 ppb         | 07:03:42      |
| 1     | P 214.914†         | 5784.0        | 5681.1              | 2458.0 µg/L        | 2458.0 ppb         | 07:03:42      |
| 1     | Pb 220.353†        | 6044.5        | 5982.0              | 498.17 µg/L        | 498.17 ppb         | 07:03:42      |
| 1     | S 181.975 Axial†   | 1154.6        | 1015.9              | 998.27 µg/L        | 998.27 ppb         | 07:03:42      |
| 1     | Sb 206.836†        | 2333.7        | 2235.4              | 483.45 µg/L        | 483.45 ppb         | 07:03:42      |
| 1     | Se 196.026†        | 1343.3        | 1371.1              | 499.02 µg/L        | 499.02 ppb         | 07:03:42      |
| 1     | SiO2†              | 57283.2       | 56065.4             | 5279.6 µg/L        | 5279.6 ppb         | 07:03:22      |
| 1     | Si 251.611†        | 70640.7       | 70858.1             | 2452.5 µg/L        | 2452.5 ppb         | 07:03:22      |
| 1     | Sn 189.927†        | 5175.5        | 5191.7              | 499.15 µg/L        | 499.15 ppb         | 07:03:42      |
| 1     | Ti 334.940†        | 216280.1      | 218646.3            | 494.50 µg/L        | 494.50 ppb         | 07:03:22      |
| 1     | Tl 190.801†        | 2849.4        | 3027.5              | 497.66 µg/L        | 497.66 ppb         | 07:03:42      |
| 1     | U 367.007†         | 4107.7        | 2713.0              | 474.7 µg/L         | 474.7 ppb          | 07:03:22      |
| 1     | V 292.402†         | 76144.7       | 76277.7             | 494.96 µg/L        | 494.96 ppb         | 07:03:22      |
| 1     | Zn 213.857†        | 91055.6       | 90930.2             | 490.74 µg/L        | 490.74 ppb         | 07:03:22      |
| 2     | Sc RADIAL          | 8201.2        | 8201.2              | 97.3 %             |                    | 07:02:48      |
| 2     | Al 396.153Radial†  | 9468.7        | 10465.2             | 5139.7 µg/L        | 5139.7 ppb         | 07:02:28      |
| 2     | Ca 317.933Radial†  | 10306.9       | 10481.5             | 5105.4 µg/L        | 5105.4 ppb         | 07:02:48      |
| 2     | Fe 238.204 Radial† | 3304.9        | 3384.7              | 5192.3 µg/L        | 5192.3 ppb         | 07:02:48      |
| 2     | K 766.490 Radial†  | 9563.2        | 9422.6              | 5141.0 µg/L        | 5141.0 ppb         | 07:02:28      |
| 2     | Mg 279.077 IEC†    | 825.3         | 836.8               | 5218.8 µg/L        | 5218.8 ppb         | 07:02:48      |
| 2     | Na 589.592 Radial† | 234.1         | 235.6               | 9647.3 µg/L        | 9647.3 ppb         | 07:02:48      |
| 2     | Sr 421.552†        | 19135.2       | 19657.1             | 501.24 µg/L        | 501.24 ppb         | 07:02:28      |
| 2     | Sc 361.383         | 623279.5      | 623279.5            | 99.599 %           |                    | 07:03:50      |
| 2     | Y 371.029          | 699191.8      | 699191.8            | 98.472 %           |                    | 07:03:50      |
| 2     | Ag 328.068†        | 97300.3       | 98631.0             | 494.74 µg/L        | 494.74 ppb         | 07:03:50      |
| 2     | As 188.979†        | 1662.1        | 1646.6              | 499.46 µg/L        | 499.46 ppb         | 07:04:10      |
| 2     | B 249.677†         | 25477.6       | 25388.0             | 512.26 µg/L        | 512.26 ppb         | 07:03:50      |
| 2     | Ba 233.527†        | 87833.3       | 88057.2             | 495.61 µg/L        | 495.61 ppb         | 07:03:50      |
| 2     | Be 313.107†        | 1221819.9     | 1232176.1           | 494.06 µg/L        | 494.06 ppb         | 07:03:50      |
| 2     | Cd 226.502†        | 81819.9       | 82402.0             | 498.81 µg/L        | 498.81 ppb         | 07:03:50      |
| 2     | Co 228.616†        | 29397.5       | 29843.3             | 485.73 µg/L        | 485.73 ppb         | 07:04:10      |
| 2     | Cr 267.716†        | 39173.0       | 39213.7             | 492.01 µg/L        | 492.01 ppb         | 07:03:50      |
| 2     | Cu 324.752†        | 120064.6      | 118053.7            | 492.71 µg/L        | 492.71 ppb         | 07:03:50      |
| 2     | Mn 257.610†        | 500077.8      | 501245.2            | 494.25 µg/L        | 494.25 ppb         | 07:03:50      |
| 2     | Mo 202.031†        | 12091.2       | 12156.4             | 492.24 µg/L        | 492.24 ppb         | 07:04:10      |
| 2     | Ni 231.604†        | 27274.5       | 27560.3             | 484.55 µg/L        | 484.55 ppb         | 07:04:10      |
| 2     | P 214.914†         | 5750.1        | 5628.4              | 2435.0 µg/L        | 2435.0 ppb         | 07:04:10      |



|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 6034.3    | 5952.2    | 495.68 µg/L | 495.68 ppb | 07:04:10 |
| 2 | S 181.975 Axial†   | 1151.2    | 1008.7    | 991.20 µg/L | 991.20 ppb | 07:04:10 |
| 2 | Sb 206.836†        | 2320.5    | 2214.6    | 478.85 µg/L | 478.85 ppb | 07:04:10 |
| 2 | Se 196.026†        | 1332.1    | 1355.6    | 493.40 µg/L | 493.40 ppb | 07:04:10 |
| 2 | SiO2†              | 57411.4   | 56009.0   | 5274.3 µg/L | 5274.3 ppb | 07:03:50 |
| 2 | Si 251.611†        | 70842.6   | 70832.6   | 2451.7 µg/L | 2451.7 ppb | 07:03:50 |
| 2 | Sn 189.927†        | 5149.3    | 5148.8    | 495.03 µg/L | 495.03 ppb | 07:04:10 |
| 2 | Ti 334.940†        | 217014.3  | 218684.7  | 494.59 µg/L | 494.59 ppb | 07:03:50 |
| 2 | Tl 190.801†        | 2826.5    | 2995.2    | 492.39 µg/L | 492.39 ppb | 07:04:10 |
| 2 | U 367.007†         | 4007.3    | 2599.0    | 453.7 µg/L  | 453.7 ppb  | 07:03:50 |
| 2 | V 292.402†         | 76640.5   | 76529.4   | 496.51 µg/L | 496.51 ppb | 07:03:50 |
| 2 | Zn 213.857†        | 91589.9   | 91172.4   | 492.08 µg/L | 492.08 ppb | 07:03:50 |
| 3 | Sc RADIAL          | 8141.4    | 8141.4    | 96.6 %      |            | 07:03:13 |
| 3 | Al 396.153Radial†  | 9500.0    | 10569.0   | 5190.7 µg/L | 5190.7 ppb | 07:02:53 |
| 3 | Ca 317.933Radial†  | 10281.2   | 10532.7   | 5130.3 µg/L | 5130.3 ppb | 07:03:13 |
| 3 | Fe 238.204 Radial† | 3295.0    | 3399.4    | 5214.8 µg/L | 5214.8 ppb | 07:03:13 |
| 3 | K 766.490 Radial†  | 9415.5    | 9341.9    | 5097.0 µg/L | 5097.0 ppb | 07:02:53 |
| 3 | Mg 279.077 IEC†    | 817.1     | 834.5     | 5204.1 µg/L | 5204.1 ppb | 07:03:13 |
| 3 | Na 589.592 Radial† | 229.2     | 232.3     | 9510.5 µg/L | 9510.5 ppb | 07:03:13 |
| 3 | Sr 421.552†        | 19145.3   | 19812.1   | 505.19 µg/L | 505.19 ppb | 07:02:53 |
| 3 | Sc 361.383         | 615765.2  | 615765.2  | 98.399 %    |            | 07:04:18 |
| 3 | Y 371.029          | 691338.7  | 691338.7  | 97.366 %    |            | 07:04:18 |
| 3 | Ag 328.068†        | 96093.3   | 98596.5   | 494.56 µg/L | 494.56 ppb | 07:04:18 |
| 3 | As 188.979†        | 1649.5    | 1654.2    | 501.77 µg/L | 501.77 ppb | 07:04:38 |
| 3 | B 249.677†         | 24999.4   | 25214.1   | 508.95 µg/L | 508.95 ppb | 07:04:18 |
| 3 | Ba 233.527†        | 86422.2   | 87699.3   | 493.60 µg/L | 493.60 ppb | 07:04:18 |
| 3 | Be 313.107†        | 1202813.7 | 1227830.7 | 492.32 µg/L | 492.32 ppb | 07:04:18 |
| 3 | Cd 226.502†        | 80304.1   | 81864.0   | 495.55 µg/L | 495.55 ppb | 07:04:18 |
| 3 | Co 228.616†        | 29304.7   | 30109.1   | 490.06 µg/L | 490.06 ppb | 07:04:38 |
| 3 | Cr 267.716†        | 38692.6   | 39205.5   | 491.89 µg/L | 491.89 ppb | 07:04:18 |
| 3 | Cu 324.752†        | 118551.6  | 117987.1  | 492.44 µg/L | 492.44 ppb | 07:04:18 |
| 3 | Mn 257.610†        | 492857.4  | 500034.4  | 493.06 µg/L | 493.06 ppb | 07:04:18 |
| 3 | Mo 202.031†        | 12072.4   | 12285.4   | 497.46 µg/L | 497.46 ppb | 07:04:38 |
| 3 | Ni 231.604†        | 27239.2   | 27858.6   | 489.80 µg/L | 489.80 ppb | 07:04:38 |
| 3 | P 214.914†         | 5732.6    | 5681.0    | 2457.9 µg/L | 2457.9 ppb | 07:04:38 |
| 3 | Pb 220.353†        | 6024.5    | 6016.2    | 501.00 µg/L | 501.00 ppb | 07:04:38 |
| 3 | S 181.975 Axial†   | 1148.9    | 1020.6    | 1002.8 µg/L | 1002.8 ppb | 07:04:38 |
| 3 | Sb 206.836†        | 2345.2    | 2268.2    | 490.59 µg/L | 490.59 ppb | 07:04:38 |
| 3 | Se 196.026†        | 1336.6    | 1376.5    | 500.99 µg/L | 500.99 ppb | 07:04:38 |
| 3 | SiO2†              | 56561.3   | 55848.5   | 5259.2 µg/L | 5259.2 ppb | 07:04:18 |
| 3 | Si 251.611†        | 69731.8   | 70571.7   | 2442.5 µg/L | 2442.5 ppb | 07:04:18 |
| 3 | Sn 189.927†        | 5156.2    | 5218.9    | 501.75 µg/L | 501.75 ppb | 07:04:38 |
| 3 | Ti 334.940†        | 214217.8  | 218501.6  | 494.17 µg/L | 494.17 ppb | 07:04:18 |
| 3 | Tl 190.801†        | 2810.1    | 3013.2    | 495.31 µg/L | 495.31 ppb | 07:04:38 |
| 3 | U 367.007†         | 4065.3    | 2707.0    | 473.4 µg/L  | 473.4 ppb  | 07:04:18 |
| 3 | V 292.402†         | 75511.7   | 76321.3   | 495.25 µg/L | 495.25 ppb | 07:04:18 |
| 3 | Zn 213.857†        | 90107.3   | 90787.9   | 489.95 µg/L | 489.95 ppb | 07:04:18 |

## Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 620108.4                 | 99.093 %           | 0.6219   |                    |          | 0.63% |
| Sc RADIAL  | 8185.7                   | 97.1 %             | 0.46     |                    |          | 0.48% |
| Y 371.029  | 695876.0                 | 98.005 %           | 0.5727   |                    |          | 0.58% |
| Ag 328.068†  | 98575.0                  | 494.46 µg/L        | 0.354    | 494.46 ppb         | 0.354    | 0.07% |
| QC value within limits for Ag 328.068 Recovery = 98.89%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 10469.6                  | 5141.8 µg/L        | 47.96    | 5141.8 ppb         | 47.96    | 0.93% |
| QC value within limits for Al 396.153Radial Recovery = 102.84% |                          |                    |          |                    |          |       |
| As 188.979†  | 1653.1                   | 501.42 µg/L        | 1.813    | 501.42 ppb         | 1.813    | 0.36% |
| QC value within limits for As 188.979 Recovery = 100.28%       |                          |                    |          |                    |          |       |
| B 249.677†   | 25311.1                  | 510.76 µg/L        | 1.680    | 510.76 ppb         | 1.680    | 0.33% |
| QC value within limits for B 249.677 Recovery = 102.15%        |                          |                    |          |                    |          |       |
| Ba 233.527†  | 87903.3                  | 494.74 µg/L        | 1.037    | 494.74 ppb         | 1.037    | 0.21% |
| QC value within limits for Ba 233.527 Recovery = 98.95%        |                          |                    |          |                    |          |       |
| Be 313.107†  | 1230109.7                | 493.23 µg/L        | 0.871    | 493.23 ppb         | 0.871    | 0.18% |
| QC value within limits for Be 313.107 Recovery = 98.65%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 10499.4                  | 5114.1 µg/L        | 14.06    | 5114.1 ppb         | 14.06    | 0.28% |
| QC value within limits for Ca 317.933Radial Recovery = 102.28% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 82091.2                  | 496.93 µg/L        | 1.687    | 496.93 ppb         | 1.687    | 0.34% |
| QC value within limits for Cd 226.502 Recovery = 99.39%        |                          |                    |          |                    |          |       |

|   |          |             |       |            |       |       |
|---|----------|-------------|-------|------------|-------|-------|
| Co 228.616†   | 29995.9  | 488.22 µg/L | 2.239 | 488.22 ppb | 2.239 | 0.46% |
| QC value within limits for Co 228.616 Recovery = 97.64%         |          |             |       |            |       |       |
| Cr 267.716†   | 39223.0  | 492.12 µg/L | 0.293 | 492.12 ppb | 0.293 | 0.06% |
| QC value within limits for Cr 267.716 Recovery = 98.42%         |          |             |       |            |       |       |
| Cu 324.752†   | 118058.8 | 492.74 µg/L | 0.310 | 492.74 ppb | 0.310 | 0.06% |
| QC value within limits for Cu 324.752 Recovery = 98.55%         |          |             |       |            |       |       |
| Fe 238.204 Radial†  | 3385.8   | 5194.0 µg/L | 19.97 | 5194.0 ppb | 19.97 | 0.38% |
| QC value within limits for Fe 238.204 Radial Recovery = 103.88% |          |             |       |            |       |       |
| K 766.490 Radial†   | 9345.7   | 5099.1 µg/L | 40.98 | 5099.1 ppb | 40.98 | 0.80% |
| QC value within limits for K 766.490 Radial Recovery = 101.98%  |          |             |       |            |       |       |
| Mg 279.077 IEC†   | 834.6    | 5204.8 µg/L | 13.61 | 5204.8 ppb | 13.61 | 0.26% |
| QC value within limits for Mg 279.077 IEC Recovery = 104.10%    |          |             |       |            |       |       |
| Mn 257.610†   | 500571.8 | 493.59 µg/L | 0.607 | 493.59 ppb | 0.607 | 0.12% |
| QC value within limits for Mn 257.610 Recovery = 98.72%         |          |             |       |            |       |       |
| Mo 202.031†   | 12238.9  | 495.58 µg/L | 2.898 | 495.58 ppb | 2.898 | 0.58% |
| QC value within limits for Mo 202.031 Recovery = 99.12%         |          |             |       |            |       |       |
| Na 589.592 Radial†  | 233.5    | 9559.6 µg/L | 76.13 | 9559.6 ppb | 76.13 | 0.80% |
| QC value within limits for Na 589.592 Radial Recovery = 95.60%  |          |             |       |            |       |       |
| Ni 231.604†   | 27734.0  | 487.60 µg/L | 2.728 | 487.60 ppb | 2.728 | 0.56% |
| QC value within limits for Ni 231.604 Recovery = 97.52%         |          |             |       |            |       |       |
| P 214.914†  | 5663.5   | 2450.3 µg/L | 13.21 | 2450.3 ppb | 13.21 | 0.54% |
| QC value within limits for P 214.914 Recovery = 98.01%          |          |             |       |            |       |       |
| Pb 220.353†   | 5983.5   | 498.29 µg/L | 2.658 | 498.29 ppb | 2.658 | 0.53% |
| QC value within limits for Pb 220.353 Recovery = 99.66%         |          |             |       |            |       |       |
| S 181.975 Axial†  | 1015.1   | 997.41 µg/L | 5.838 | 997.41 ppb | 5.838 | 0.59% |
| QC value within limits for S 181.975 Axial Recovery = 99.74%    |          |             |       |            |       |       |
| Sb 206.836†   | 2239.4   | 484.30 µg/L | 5.917 | 484.30 ppb | 5.917 | 1.22% |
| QC value within limits for Sb 206.836 Recovery = 96.86%         |          |             |       |            |       |       |
| Se 196.026†   | 1367.7   | 497.80 µg/L | 3.941 | 497.80 ppb | 3.941 | 0.79% |
| QC value within limits for Se 196.026 Recovery = 99.56%         |          |             |       |            |       |       |
| SiO2†   | 55974.3  | 5271.0 µg/L | 10.60 | 5271.0 ppb | 10.60 | 0.20% |
| QC value within limits for SiO2 Recovery = 98.57%               |          |             |       |            |       |       |
| Si 251.611†   | 70754.1  | 2448.9 µg/L | 5.53  | 2448.9 ppb | 5.53  | 0.23% |
| QC value within limits for Si 251.611 Recovery = 97.96%         |          |             |       |            |       |       |
| Sn 189.927†   | 5186.5   | 498.64 µg/L | 3.386 | 498.64 ppb | 3.386 | 0.68% |
| QC value within limits for Sn 189.927 Recovery = 99.73%         |          |             |       |            |       |       |
| Sr 421.552†   | 19674.7  | 501.69 µg/L | 3.302 | 501.69 ppb | 3.302 | 0.66% |
| QC value within limits for Sr 421.552 Recovery = 100.34%        |          |             |       |            |       |       |
| Ti 334.940†   | 218610.9 | 494.42 µg/L | 0.221 | 494.42 ppb | 0.221 | 0.04% |
| QC value within limits for Ti 334.940 Recovery = 98.88%         |          |             |       |            |       |       |
| Tl 190.801†   | 3012.0   | 495.12 µg/L | 2.642 | 495.12 ppb | 2.642 | 0.53% |
| QC value within limits for Tl 190.801 Recovery = 99.02%         |          |             |       |            |       |       |
| U 367.007†  | 2673.0   | 467.3 µg/L  | 11.76 | 467.3 ppb  | 11.76 | 2.52% |
| QC value within limits for U 367.007 Recovery = 93.45%          |          |             |       |            |       |       |
| V 292.402†  | 76376.1  | 495.57 µg/L | 0.827 | 495.57 ppb | 0.827 | 0.17% |
| QC value within limits for V 292.402 Recovery = 99.11%          |          |             |       |            |       |       |
| Zn 213.857†   | 90963.5  | 490.92 µg/L | 1.078 | 490.92 ppb | 1.078 | 0.22% |
| QC value within limits for Zn 213.857 Recovery = 98.18%         |          |             |       |            |       |       |

All analyte(s) passed QC.

Sequence No.: 4

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 8

Date Collected: 11/16/2016 07:04:46

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8295.3        | 8295.3              | 98.4 %             |                    | 07:05:15      |
| 1     | Al 396.153Radial†  | -677.8        | 47.8                | 23.558 µg/L        | 23.558 ppb         | 07:05:15      |
| 1     | Ca 317.933Radial†  | 117.6         | 10.9                | 5.3106 µg/L        | 5.3106 ppb         | 07:05:35      |
| 1     | Fe 238.204 Radial† | 12.6          | 1.8                 | 2.8213 µg/L        | 2.8213 ppb         | 07:05:35      |
| 1     | K 766.490 Radial†  | 469.0         | 73.1                | 39.861 µg/L        | 39.861 ppb         | 07:05:15      |
| 1     | Mg 279.077 IEC†    | 10.8          | -0.2                | -1.4481 µg/L       | -1.4481 ppb        | 07:05:35      |
| 1     | Na 589.592 Radial† | 4.8           | -0.1                | -2.0550 µg/L       | -2.0550 ppb        | 07:05:35      |
| 1     | Sr 421.552†        | 36.8          | 33.5                | 0.8556 µg/L        | 0.8556 ppb         | 07:05:15      |
| 1     | Sc 361.383         | 610245.9      | 610245.9            | 97.517 %           |                    | 07:06:31      |
| 1     | Y 371.029          | 692000.8      | 692000.8            | 97.459 %           |                    | 07:06:31      |
| 1     | Ag 328.068†        | -865.5        | 51.9                | 0.2524 µg/L        | 0.2524 ppb         | 07:06:31      |
| 1     | As 188.979†        | 12.2          | -9.6                | -2.8902 µg/L       | -2.8902 ppb        | 07:06:51      |
| 1     | B 249.677†         | 288.6         | 103.9               | 2.0352 µg/L        | 2.0352 ppb         | 07:06:51      |
| 1     | Ba 233.527†        | 138.0         | 12.2                | 0.0687 µg/L        | 0.0687 ppb         | 07:06:51      |
| 1     | Be 313.107†        | -5399.4       | -93.8               | -0.0333 µg/L       | -0.0333 ppb        | 07:06:31      |
| 1     | Cd 226.502†        | -211.0        | 36.7                | 0.2221 µg/L        | 0.2221 ppb         | 07:06:51      |
| 1     | Co 228.616†        | -344.6        | -25.9               | -0.4228 µg/L       | -0.4228 ppb        | 07:06:51      |
| 1     | Cr 267.716†        | 111.7         | -2.3                | -0.0409 µg/L       | -0.0409 ppb        | 07:06:51      |
| 1     | Cu 324.752†        | 2571.8        | 143.6               | 0.6085 µg/L        | 0.6085 ppb         | 07:06:31      |
| 1     | Mn 257.610†        | 848.5         | 26.7                | 0.0265 µg/L        | 0.0265 ppb         | 07:06:51      |
| 1     | Mo 202.031†        | -15.5         | 0.7                 | 0.0277 µg/L        | 0.0277 ppb         | 07:06:51      |
| 1     | Ni 231.604†        | -175.9        | -4.2                | -0.0748 µg/L       | -0.0748 ppb        | 07:06:51      |
| 1     | P 214.914†         | 125.6         | -16.0               | -6.9878 µg/L       | -6.9878 ppb        | 07:06:51      |
| 1     | Pb 220.353†        | 93.9          | -10.1               | -0.8588 µg/L       | -0.8588 ppb        | 07:06:51      |
| 1     | S 181.975 Axial†   | 156.1         | 13.0                | 12.759 µg/L        | 12.759 ppb         | 07:06:51      |
| 1     | Sb 206.836†        | 119.4         | 7.2                 | 1.5706 µg/L        | 1.5706 ppb         | 07:06:51      |
| 1     | Se 196.026†        | -7.2          | 10.7                | 3.8814 µg/L        | 3.8814 ppb         | 07:06:51      |
| 1     | SiO2†              | 1648.8        | 57.5                | 5.4104 µg/L        | 5.4104 ppb         | 07:06:31      |
| 1     | Si 251.611†        | 360.6         | 74.9                | 2.5993 µg/L        | 2.5993 ppb         | 07:06:51      |
| 1     | Sn 189.927†        | 19.8          | -0.9                | -0.0877 µg/L       | -0.0877 ppb        | 07:06:51      |
| 1     | Ti 334.940†        | -616.1        | 166.0               | 0.3672 µg/L        | 0.3672 ppb         | 07:06:31      |
| 1     | Tl 190.801†        | -137.7        | 16.2                | 2.6692 µg/L        | 2.6692 ppb         | 07:06:51      |
| 1     | U 367.007†         | 1483.8        | 97.1                | 17.79 µg/L         | 17.79 ppb          | 07:06:31      |
| 1     | V 292.402†         | 507.2         | 100.9               | 0.6579 µg/L        | 0.6579 ppb         | 07:06:31      |
| 1     | Zn 213.857†        | 776.3         | 10.3                | 0.0558 µg/L        | 0.0558 ppb         | 07:06:51      |
| 2     | Sc RADIAL          | 8239.9        | 8239.9              | 97.8 %             |                    | 07:05:40      |
| 2     | Al 396.153Radial†  | -788.3        | -69.9               | -34.446 µg/L       | -34.446 ppb        | 07:05:40      |
| 2     | Ca 317.933Radial†  | 121.1         | 15.2                | 7.4083 µg/L        | 7.4083 ppb         | 07:06:00      |
| 2     | Fe 238.204 Radial† | 11.0          | 0.3                 | 0.4324 µg/L        | 0.4324 ppb         | 07:06:00      |
| 2     | K 766.490 Radial†  | 463.4         | 70.5                | 38.465 µg/L        | 38.465 ppb         | 07:05:40      |
| 2     | Mg 279.077 IEC†    | 12.8          | 1.9                 | 11.630 µg/L        | 11.630 ppb         | 07:06:00      |
| 2     | Na 589.592 Radial† | 4.1           | -0.8                | -31.199 µg/L       | -31.199 ppb        | 07:06:00      |
| 2     | Sr 421.552†        | 14.0          | 10.5                | 0.2680 µg/L        | 0.2680 ppb         | 07:05:40      |
| 2     | Sc 361.383         | 611316.5      | 611316.5            | 97.688 %           |                    | 07:06:57      |
| 2     | Y 371.029          | 692559.6      | 692559.6            | 97.538 %           |                    | 07:06:57      |
| 2     | Ag 328.068†        | -840.9        | 78.6                | 0.3899 µg/L        | 0.3899 ppb         | 07:06:57      |
| 2     | As 188.979†        | 24.7          | 3.1                 | 0.9311 µg/L        | 0.9311 ppb         | 07:07:17      |
| 2     | B 249.677†         | 271.2         | 85.6                | 1.6705 µg/L        | 1.6705 ppb         | 07:07:17      |
| 2     | Ba 233.527†        | 143.4         | 17.5                | 0.0985 µg/L        | 0.0985 ppb         | 07:07:17      |
| 2     | Be 313.107†        | -5431.4       | -116.9              | -0.0450 µg/L       | -0.0450 ppb        | 07:06:57      |
| 2     | Cd 226.502†        | -191.4        | 57.2                | 0.3460 µg/L        | 0.3460 ppb         | 07:07:17      |
| 2     | Co 228.616†        | -358.3        | -39.3               | -0.6404 µg/L       | -0.6404 ppb        | 07:07:17      |
| 2     | Cr 267.716†        | 109.7         | -4.6                | -0.0623 µg/L       | -0.0623 ppb        | 07:07:17      |
| 2     | Cu 324.752†        | 2557.7        | 124.5               | 0.5234 µg/L        | 0.5234 ppb         | 07:06:57      |
| 2     | Mn 257.610†        | 865.2         | 42.2                | 0.0412 µg/L        | 0.0412 ppb         | 07:07:17      |
| 2     | Mo 202.031†        | -10.5         | 5.8                 | 0.2367 µg/L        | 0.2367 ppb         | 07:07:17      |
| 2     | Ni 231.604†        | -180.6        | -8.7                | -0.1540 µg/L       | -0.1540 ppb        | 07:07:17      |
| 2     | P 214.914†         | 125.6         | -16.3               | -7.1067 µg/L       | -7.1067 ppb        | 07:07:17      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 116.1    | 12.5     | 1.0488 µg/L  | 1.0488 ppb  | 07:07:17 |
| 2 | S 181.975 Axial†   | 145.8    | 2.2      | 2.1857 µg/L  | 2.1857 ppb  | 07:07:17 |
| 2 | Sb 206.836†        | 122.6    | 10.3     | 2.2424 µg/L  | 2.2424 ppb  | 07:07:17 |
| 2 | Se 196.026†        | -21.4    | -3.8     | -1.3814 µg/L | -1.3814 ppb | 07:07:17 |
| 2 | SiO2†              | 1658.4   | 64.4     | 6.0529 µg/L  | 6.0529 ppb  | 07:06:57 |
| 2 | Si 251.611†        | 366.0    | 79.8     | 2.7644 µg/L  | 2.7644 ppb  | 07:07:17 |
| 2 | Sn 189.927†        | 34.5     | 14.0     | 1.3439 µg/L  | 1.3439 ppb  | 07:07:17 |
| 2 | Ti 334.940†        | -605.7   | 177.7    | 0.3988 µg/L  | 0.3988 ppb  | 07:06:57 |
| 2 | Tl 190.801†        | -157.0   | -3.3     | -0.5321 µg/L | -0.5321 ppb | 07:07:17 |
| 2 | U 367.007†         | 1432.2   | 41.6     | 7.618 µg/L   | 7.618 ppb   | 07:06:57 |
| 2 | V 292.402†         | 430.0    | 20.9     | 0.1407 µg/L  | 0.1407 ppb  | 07:06:57 |
| 2 | Zn 213.857†        | 771.7    | 4.2      | 0.0225 µg/L  | 0.0225 ppb  | 07:07:17 |
| 3 | Sc RADIAL          | 8350.5   | 8350.5   | 99.1 %       |             | 07:06:05 |
| 3 | Al 396.153Radial†  | -766.9   | -37.6    | -18.549 µg/L | -18.549 ppb | 07:06:05 |
| 3 | Ca 317.933Radial†  | 110.5    | 2.9      | 1.4063 µg/L  | 1.4063 ppb  | 07:06:25 |
| 3 | Fe 238.204 Radial† | 8.0      | -3.0     | -4.5667 µg/L | -4.5667 ppb | 07:06:25 |
| 3 | K 766.490 Radial†  | 501.7    | 102.9    | 56.111 µg/L  | 56.111 ppb  | 07:06:05 |
| 3 | Mg 279.077 IEC†    | 12.0     | 1.0      | 5.9647 µg/L  | 5.9647 ppb  | 07:06:25 |
| 3 | Na 589.592 Radial† | 4.6      | -0.3     | -11.510 µg/L | -11.510 ppb | 07:06:25 |
| 3 | Sr 421.552†        | 34.9     | 31.3     | 0.7991 µg/L  | 0.7991 ppb  | 07:06:05 |
| 3 | Sc 361.383         | 611831.6 | 611831.6 | 97.770 %     |             | 07:07:22 |
| 3 | Y 371.029          | 693408.3 | 693408.3 | 97.657 %     |             | 07:07:22 |
| 3 | Ag 328.068†        | -1004.6  | -88.0    | -0.4445 µg/L | -0.4445 ppb | 07:07:22 |
| 3 | As 188.979†        | 18.2     | -3.5     | -1.0491 µg/L | -1.0491 ppb | 07:07:42 |
| 3 | B 249.677†         | 293.0    | 107.6    | 2.0785 µg/L  | 2.0785 ppb  | 07:07:42 |
| 3 | Ba 233.527†        | 143.1    | 17.1     | 0.0965 µg/L  | 0.0965 ppb  | 07:07:42 |
| 3 | Be 313.107†        | -5334.4  | -13.0    | -0.0029 µg/L | -0.0029 ppb | 07:07:22 |
| 3 | Cd 226.502†        | -187.4   | 61.4     | 0.3722 µg/L  | 0.3722 ppb  | 07:07:42 |
| 3 | Co 228.616†        | -348.5   | -29.0    | -0.4714 µg/L | -0.4714 ppb | 07:07:42 |
| 3 | Cr 267.716†        | 124.2    | 10.2     | 0.1220 µg/L  | 0.1220 ppb  | 07:07:42 |
| 3 | Cu 324.752†        | 2514.9   | 78.5     | 0.3321 µg/L  | 0.3321 ppb  | 07:07:22 |
| 3 | Mn 257.610†        | 863.1    | 39.4     | 0.0383 µg/L  | 0.0383 ppb  | 07:07:42 |
| 3 | Mo 202.031†        | -4.1     | 12.4     | 0.5010 µg/L  | 0.5010 ppb  | 07:07:42 |
| 3 | Ni 231.604†        | -172.6   | -0.4     | -0.0063 µg/L | -0.0063 ppb | 07:07:42 |
| 3 | P 214.914†         | 131.1    | -10.8    | -4.6971 µg/L | -4.6971 ppb | 07:07:42 |
| 3 | Pb 220.353†        | 104.9    | 0.9      | 0.0759 µg/L  | 0.0759 ppb  | 07:07:42 |
| 3 | S 181.975 Axial†   | 156.0    | 12.5     | 12.198 µg/L  | 12.198 ppb  | 07:07:42 |
| 3 | Sb 206.836†        | 126.6    | 14.2     | 3.1016 µg/L  | 3.1016 ppb  | 07:07:42 |
| 3 | Se 196.026†        | -18.7    | -1.0     | -0.3576 µg/L | -0.3576 ppb | 07:07:42 |
| 3 | SiO2†              | 1720.7   | 126.7    | 11.915 µg/L  | 11.915 ppb  | 07:07:22 |
| 3 | Si 251.611†        | 359.5    | 72.8     | 2.5212 µg/L  | 2.5212 ppb  | 07:07:42 |
| 3 | Sn 189.927†        | 30.7     | 10.1     | 0.9697 µg/L  | 0.9697 ppb  | 07:07:42 |
| 3 | Ti 334.940†        | -617.1   | 166.6    | 0.3724 µg/L  | 0.3724 ppb  | 07:07:22 |
| 3 | Tl 190.801†        | -136.8   | 17.5     | 2.8754 µg/L  | 2.8754 ppb  | 07:07:42 |
| 3 | U 367.007†         | 1442.7   | 51.1     | 9.381 µg/L   | 9.381 ppb   | 07:07:22 |
| 3 | V 292.402†         | 529.5    | 122.4    | 0.7941 µg/L  | 0.7941 ppb  | 07:07:22 |
| 3 | Zn 213.857†        | 800.1    | 32.6     | 0.1773 µg/L  | 0.1773 ppb  | 07:07:42 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 611131.4                 | 97.658 %           | 0.1293   |                    |          | 0.13%   |
| Sc RADIAL   | 8295.2                   | 98.4 %             | 0.66     |                    |          | 0.67%   |
| Y 371.029   | 692656.2                 | 97.551 %           | 0.0998   |                    |          | 0.10%   |
| Ag 328.068†   | 14.2                     | 0.0659 µg/L        | 0.44739  | 0.0659 ppb         | 0.44739  | 678.57% |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | -19.9                    | -9.8125 µg/L       | 29.97261 | -9.8125 ppb        | 29.97261 | 305.45% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | -3.3                     | -1.0027 µg/L       | 1.91104  | -1.0027 ppb        | 1.91104  | 190.58% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 99.0                     | 1.9281 µg/L        | 0.22411  | 1.9281 ppb         | 0.22411  | 11.62%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | 15.6                     | 0.0879 µg/L        | 0.01666  | 0.0879 ppb         | 0.01666  | 18.96%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | -74.6                    | -0.0271 µg/L       | 0.02168  | -0.0271 ppb        | 0.02168  | 80.12%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 9.7                      | 4.7084 µg/L        | 3.04593  | 4.7084 ppb         | 3.04593  | 64.69%  |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| Cd 226.502†   | 51.8                     | 0.3135 µg/L        | 0.08018  | 0.3135 ppb         | 0.08018  | 25.58%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |                    |          |                    |          |         |

|  |       |              |         |             |         |         |
|--|-------|--------------|---------|-------------|---------|---------|
| Co 228.616†  | -31.4 | -0.5115 µg/L | 0.11419 | -0.5115 ppb | 0.11419 | 22.32%  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |       |              |         |             |         |         |
| Cr 267.716†  | 1.1   | 0.0063 µg/L  | 0.10077 | 0.0063 ppb  | 0.10077 | >999.9% |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |       |              |         |             |         |         |
| Cu 324.752†  | 115.5 | 0.4880 µg/L  | 0.14153 | 0.4880 ppb  | 0.14153 | 29.00%  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |       |              |         |             |         |         |
| Fe 238.204 Radial†   | -0.3  | -0.4377 µg/L | 3.77008 | -0.4377 ppb | 3.77008 | 861.42% |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |       |              |         |             |         |         |
| K 766.490 Radial†  | 82.2  | 44.813 µg/L  | 9.8100  | 44.813 ppb  | 9.8100  | 21.89%  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |       |              |         |             |         |         |
| Mg 279.077 IEC†  | 0.9   | 5.3821 µg/L  | 6.55829 | 5.3821 ppb  | 6.55829 | 121.85% |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |       |              |         |             |         |         |
| Mn 257.610†  | 36.1  | 0.0354 µg/L  | 0.00780 | 0.0354 ppb  | 0.00780 | 22.06%  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |       |              |         |             |         |         |
| Mo 202.031†  | 6.3   | 0.2551 µg/L  | 0.23719 | 0.2551 ppb  | 0.23719 | 92.98%  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |       |              |         |             |         |         |
| Na 589.592 Radial†   | -0.4  | -14.921 µg/L | 14.8686 | -14.921 ppb | 14.8686 | 99.65%  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |       |              |         |             |         |         |
| Ni 231.604†  | -4.5  | -0.0784 µg/L | 0.07389 | -0.0784 ppb | 0.07389 | 94.27%  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |       |              |         |             |         |         |
| P 214.914†   | -14.4 | -6.2639 µg/L | 1.35819 | -6.2639 ppb | 1.35819 | 21.68%  |
| QC value within limits for P 214.914 Recovery = Not calculated         |       |              |         |             |         |         |
| Pb 220.353†  | 1.1   | 0.0886 µg/L  | 0.95385 | 0.0886 ppb  | 0.95385 | >999.9% |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |       |              |         |             |         |         |
| S 181.975 Axial†   | 9.2   | 9.0477 µg/L  | 5.94926 | 9.0477 ppb  | 5.94926 | 65.75%  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |       |              |         |             |         |         |
| Sb 206.836†  | 10.6  | 2.3048 µg/L  | 0.76742 | 2.3048 ppb  | 0.76742 | 33.30%  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |       |              |         |             |         |         |
| Se 196.026†  | 2.0   | 0.7141 µg/L  | 2.79029 | 0.7141 ppb  | 2.79029 | 390.74% |
| QC value within limits for Se 196.026 Recovery = Not calculated        |       |              |         |             |         |         |
| SiO2†  | 82.9  | 7.7927 µg/L  | 3.58427 | 7.7927 ppb  | 3.58427 | 46.00%  |
| QC value within limits for SiO2 Recovery = Not calculated              |       |              |         |             |         |         |
| Si 251.611†  | 75.8  | 2.6283 µg/L  | 0.12418 | 2.6283 ppb  | 0.12418 | 4.72%   |
| QC value within limits for Si 251.611 Recovery = Not calculated        |       |              |         |             |         |         |
| Sn 189.927†  | 7.7   | 0.7420 µg/L  | 0.74247 | 0.7420 ppb  | 0.74247 | 100.06% |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |       |              |         |             |         |         |
| Sr 421.552†  | 25.1  | 0.6409 µg/L  | 0.32419 | 0.6409 ppb  | 0.32419 | 50.58%  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |       |              |         |             |         |         |
| Ti 334.940†  | 170.1 | 0.3795 µg/L  | 0.01693 | 0.3795 ppb  | 0.01693 | 4.46%   |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |       |              |         |             |         |         |
| Tl 190.801†  | 10.1  | 1.6708 µg/L  | 1.91056 | 1.6708 ppb  | 1.91056 | 114.35% |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |       |              |         |             |         |         |
| U 367.007†   | 63.3  | 11.60 µg/L   | 5.438   | 11.60 ppb   | 5.438   | 46.89%  |
| QC value within limits for U 367.007 Recovery = Not calculated         |       |              |         |             |         |         |
| V 292.402†   | 81.4  | 0.5309 µg/L  | 0.34473 | 0.5309 ppb  | 0.34473 | 64.94%  |
| QC value within limits for V 292.402 Recovery = Not calculated         |       |              |         |             |         |         |
| Zn 213.857†  | 15.7  | 0.0852 µg/L  | 0.08149 | 0.0852 ppb  | 0.08149 | 95.62%  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |       |              |         |             |         |         |
| All analyte(s) passed QC.  |       |              |         |             |         |         |

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Analysis Begun

Start Time: 11/16/2016 11:17:01

Plasma On Time: 11/14/2016 06:15:24

Logged In Analyst: Optima3

Technique: ICP Continuous

Spectrometer: Optima 5300 DV, S/N 077C7090601

Autosampler: ESI

Sample Information File: C:\Users\Public\PerkinElmer\ICP\Data\Sample Information\111616.sif

Batch ID:

Results Data Set: 111616

Results Library: C:\Users\Public\PerkinElmer\ICP\Data\Results\Results.mdb

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Sequence No.: 1

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/16/2016 11:17:07

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Wash Time:

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Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|-------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8449.6        | 8449.6              | 100 %       |                    | 11:18:04      |
| 1     | Al 396.153Radial†  | 9824.1        | 10533.7             | 5173.2 µg/L | 5173.2 ppb         | 11:17:44      |
| 1     | Ca 317.933Radial†  | 10775.8       | 10637.9             | 5181.5 µg/L | 5181.5 ppb         | 11:18:04      |
| 1     | Fe 238.204 Radial† | 3508.4        | 3487.8              | 5350.5 µg/L | 5350.5 ppb         | 11:18:04      |
| 1     | K 766.490 Radial†  | 9842.4        | 9412.3              | 5135.5 µg/L | 5135.5 ppb         | 11:17:44      |
| 1     | Mg 279.077 IEC†    | 852.5         | 839.0               | 5232.4 µg/L | 5232.4 ppb         | 11:18:04      |
| 1     | Na 589.592 Radial† | 240.2         | 234.6               | 9605.2 µg/L | 9605.2 ppb         | 11:18:04      |
| 1     | Sr 421.552†        | 20154.8       | 20096.1             | 512.43 µg/L | 512.43 ppb         | 11:17:44      |
| 1     | Sc 361.383         | 638528.7      | 638528.7            | 102.04 %    |                    | 11:19:03      |
| 1     | Y 371.029          | 716639.3      | 716639.3            | 100.93 %    |                    | 11:19:03      |
| 1     | Ag 328.068†        | 100474.1      | 99408.4             | 498.66 µg/L | 498.66 ppb         | 11:19:03      |
| 1     | As 188.979†        | 1732.2        | 1675.5              | 508.21 µg/L | 508.21 ppb         | 11:19:23      |
| 1     | B 249.677†         | 26325.7       | 25608.3             | 517.10 µg/L | 517.10 ppb         | 11:19:03      |
| 1     | Ba 233.527†        | 90760.6       | 88820.0             | 499.90 µg/L | 499.90 ppb         | 11:19:03      |
| 1     | Be 313.107†        | 1264112.7     | 1244328.4           | 498.93 µg/L | 498.93 ppb         | 11:19:03      |
| 1     | Cd 226.502†        | 84637.8       | 83201.7             | 503.64 µg/L | 503.64 ppb         | 11:19:03      |
| 1     | Co 228.616†        | 31104.6       | 30811.3             | 501.49 µg/L | 501.49 ppb         | 11:19:03      |
| 1     | Cr 267.716†        | 40578.9       | 39652.2             | 497.51 µg/L | 497.51 ppb         | 11:19:03      |
| 1     | Cu 324.752†        | 124078.1      | 119108.2            | 497.12 µg/L | 497.12 ppb         | 11:19:03      |
| 1     | Mn 257.610†        | 516010.4      | 504869.1            | 497.83 µg/L | 497.83 ppb         | 11:19:03      |
| 1     | Mo 202.031†        | 12598.6       | 12363.7             | 500.64 µg/L | 500.64 ppb         | 11:19:23      |
| 1     | Ni 231.604†        | 28405.5       | 28014.8             | 492.54 µg/L | 492.54 ppb         | 11:19:23      |
| 1     | P 214.914†         | 6018.4        | 5753.4              | 2489.1 µg/L | 2489.1 ppb         | 11:19:23      |
| 1     | Pb 220.353†        | 6277.7        | 6046.1              | 503.53 µg/L | 503.53 ppb         | 11:19:23      |
| 1     | S 181.975 Axial†   | 1179.8        | 1009.2              | 991.67 µg/L | 991.67 ppb         | 11:19:23      |
| 1     | Sb 206.836†        | 2439.5        | 2275.6              | 492.14 µg/L | 492.14 ppb         | 11:19:23      |
| 1     | Se 196.026†        | 1407.1        | 1397.1              | 508.53 µg/L | 508.53 ppb         | 11:19:23      |
| 1     | SiO2†              | 59081.5       | 56269.2             | 5298.8 µg/L | 5298.8 ppb         | 11:19:03      |
| 1     | Si 251.611†        | 72826.5       | 71078.2             | 2460.0 µg/L | 2460.0 ppb         | 11:19:03      |
| 1     | Sn 189.927†        | 5401.6        | 5272.5              | 506.91 µg/L | 506.91 ppb         | 11:19:23      |
| 1     | Ti 334.940†        | 224232.6      | 220555.4            | 498.82 µg/L | 498.82 ppb         | 11:19:03      |
| 1     | Tl 190.801†        | 2982.9        | 3080.7              | 506.35 µg/L | 506.35 ppb         | 11:19:23      |
| 1     | U 367.007†         | 4176.3        | 2668.4              | 465.8 µg/L  | 465.8 ppb          | 11:19:03      |
| 1     | V 292.402†         | 79125.0       | 77126.7             | 500.46 µg/L | 500.46 ppb         | 11:19:03      |
| 1     | Zn 213.857†        | 94750.1       | 92073.5             | 496.91 µg/L | 496.91 ppb         | 11:19:03      |
| 2     | Sc RADIAL          | 8468.5        | 8468.5              | 100 %       |                    | 11:18:29      |
| 2     | Al 396.153Radial†  | 9811.7        | 10499.4             | 5156.3 µg/L | 5156.3 ppb         | 11:18:09      |
| 2     | Ca 317.933Radial†  | 10821.8       | 10659.7             | 5192.1 µg/L | 5192.1 ppb         | 11:18:29      |
| 2     | Fe 238.204 Radial† | 3526.3        | 3497.8              | 5365.8 µg/L | 5365.8 ppb         | 11:18:29      |
| 2     | K 766.490 Radial†  | 9769.8        | 9318.1              | 5084.1 µg/L | 5084.1 ppb         | 11:18:09      |
| 2     | Mg 279.077 IEC†    | 869.6         | 854.1               | 5326.3 µg/L | 5326.3 ppb         | 11:18:29      |
| 2     | Na 589.592 Radial† | 249.7         | 243.5               | 9970.8 µg/L | 9970.8 ppb         | 11:18:29      |
| 2     | Sr 421.552†        | 20224.4       | 20120.4             | 513.05 µg/L | 513.05 ppb         | 11:18:09      |
| 2     | Sc 361.383         | 638508.1      | 638508.1            | 102.03 %    |                    | 11:19:31      |
| 2     | Y 371.029          | 716337.2      | 716337.2            | 100.89 %    |                    | 11:19:31      |
| 2     | Ag 328.068†        | 100565.5      | 99501.1             | 499.13 µg/L | 499.13 ppb         | 11:19:31      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | As 188.979†        | 1742.5    | 1685.7    | 511.26 µg/L | 511.26 ppb | 11:19:51 |
| 2 | B 249.677†         | 26325.5   | 25608.9   | 517.17 µg/L | 517.17 ppb | 11:19:31 |
| 2 | Ba 233.527†        | 90571.5   | 88637.6   | 498.87 µg/L | 498.87 ppb | 11:19:31 |
| 2 | Be 313.107†        | 1262810.4 | 1243091.9 | 498.44 µg/L | 498.44 ppb | 11:19:31 |
| 2 | Cd 226.502†        | 84351.8   | 82924.2   | 501.96 µg/L | 501.96 ppb | 11:19:31 |
| 2 | Co 228.616†        | 31096.2   | 30804.1   | 501.37 µg/L | 501.37 ppb | 11:19:31 |
| 2 | Cr 267.716†        | 40576.9   | 39651.5   | 497.50 µg/L | 497.50 ppb | 11:19:31 |
| 2 | Cu 324.752†        | 124010.9  | 119046.2  | 496.86 µg/L | 496.86 ppb | 11:19:31 |
| 2 | Mn 257.610†        | 515793.4  | 504672.7  | 497.64 µg/L | 497.64 ppb | 11:19:31 |
| 2 | Mo 202.031†        | 12589.3   | 12355.0   | 500.28 µg/L | 500.28 ppb | 11:19:51 |
| 2 | Ni 231.604†        | 28383.7   | 27994.3   | 492.18 µg/L | 492.18 ppb | 11:19:51 |
| 2 | P 214.914†         | 5999.7    | 5735.3    | 2481.3 µg/L | 2481.3 ppb | 11:19:51 |
| 2 | Pb 220.353†        | 6266.5    | 6035.2    | 502.64 µg/L | 502.64 ppb | 11:19:51 |
| 2 | S 181.975 Axial†   | 1182.1    | 1011.5    | 993.94 µg/L | 993.94 ppb | 11:19:51 |
| 2 | Sb 206.836†        | 2415.7    | 2252.3    | 487.07 µg/L | 487.07 ppb | 11:19:51 |
| 2 | Se 196.026†        | 1417.1    | 1407.0    | 512.10 µg/L | 512.10 ppb | 11:19:51 |
| 2 | SiO2†              | 59048.5   | 56238.7   | 5296.0 µg/L | 5296.0 ppb | 11:19:31 |
| 2 | Si 251.611†        | 72760.9   | 71016.2   | 2457.9 µg/L | 2457.9 ppb | 11:19:31 |
| 2 | Sn 189.927†        | 5388.5    | 5259.8    | 505.69 µg/L | 505.69 ppb | 11:19:51 |
| 2 | Ti 334.940†        | 224125.5  | 220457.5  | 498.61 µg/L | 498.61 ppb | 11:19:31 |
| 2 | Tl 190.801†        | 2987.4    | 3085.3    | 507.09 µg/L | 507.09 ppb | 11:19:51 |
| 2 | U 367.007†         | 4127.6    | 2620.9    | 457.0 µg/L  | 457.0 ppb  | 11:19:31 |
| 2 | V 292.402†         | 78954.0   | 76961.6   | 499.39 µg/L | 499.39 ppb | 11:19:31 |
| 2 | Zn 213.857†        | 94598.4   | 91927.8   | 496.12 µg/L | 496.12 ppb | 11:19:31 |
| 3 | Sc RADIAL          | 8458.9    | 8458.9    | 100 %       |            | 11:18:54 |
| 3 | Al 396.153Radial†  | 9877.1    | 10575.7   | 5193.9 µg/L | 5193.9 ppb | 11:18:34 |
| 3 | Ca 317.933Radial†  | 10815.3   | 10665.4   | 5194.9 µg/L | 5194.9 ppb | 11:18:54 |
| 3 | Fe 238.204 Radial† | 3539.7    | 3515.1    | 5392.4 µg/L | 5392.4 ppb | 11:18:54 |
| 3 | K 766.490 Radial†  | 9742.4    | 9301.9    | 5075.3 µg/L | 5075.3 ppb | 11:18:34 |
| 3 | Mg 279.077 IEC†    | 862.2     | 847.8     | 5286.9 µg/L | 5286.9 ppb | 11:18:54 |
| 3 | Na 589.592 Radial† | 249.3     | 243.4     | 9965.9 µg/L | 9965.9 ppb | 11:18:54 |
| 3 | Sr 421.552†        | 20422.6   | 20340.8   | 518.67 µg/L | 518.67 ppb | 11:18:34 |
| 3 | Sc 361.383         | 635316.6  | 635316.6  | 101.52 %    |            | 11:19:59 |
| 3 | Y 371.029          | 713104.6  | 713104.6  | 100.43 %    |            | 11:19:59 |
| 3 | Ag 328.068†        | 100354.3  | 99788.2   | 500.56 µg/L | 500.56 ppb | 11:19:59 |
| 3 | As 188.979†        | 1716.4    | 1668.5    | 506.12 µg/L | 506.12 ppb | 11:20:19 |
| 3 | B 249.677†         | 26232.2   | 25646.7   | 518.01 µg/L | 518.01 ppb | 11:19:59 |
| 3 | Ba 233.527†        | 90128.4   | 88647.1   | 498.93 µg/L | 498.93 ppb | 11:19:59 |
| 3 | Be 313.107†        | 1257843.7 | 1244417.1 | 498.97 µg/L | 498.97 ppb | 11:19:59 |
| 3 | Cd 226.502†        | 84109.4   | 83100.7   | 503.03 µg/L | 503.03 ppb | 11:19:59 |
| 3 | Co 228.616†        | 30953.4   | 30816.6   | 501.57 µg/L | 501.57 ppb | 11:19:59 |
| 3 | Cr 267.716†        | 40377.4   | 39654.8   | 497.53 µg/L | 497.53 ppb | 11:19:59 |
| 3 | Cu 324.752†        | 123661.2  | 119312.4  | 497.98 µg/L | 497.98 ppb | 11:19:59 |
| 3 | Mn 257.610†        | 513627.9  | 505079.2  | 498.04 µg/L | 498.04 ppb | 11:19:59 |
| 3 | Mo 202.031†        | 12533.0   | 12361.6   | 500.55 µg/L | 500.55 ppb | 11:20:19 |
| 3 | Ni 231.604†        | 28311.9   | 28063.3   | 493.39 µg/L | 493.39 ppb | 11:20:19 |
| 3 | P 214.914†         | 5969.2    | 5734.7    | 2481.0 µg/L | 2481.0 ppb | 11:20:19 |
| 3 | Pb 220.353†        | 6223.7    | 6024.0    | 501.68 µg/L | 501.68 ppb | 11:20:19 |
| 3 | S 181.975 Axial†   | 1177.6    | 1012.8    | 995.26 µg/L | 995.26 ppb | 11:20:19 |
| 3 | Sb 206.836†        | 2411.9    | 2260.5    | 488.84 µg/L | 488.84 ppb | 11:20:19 |
| 3 | Se 196.026†        | 1392.1    | 1389.4    | 505.74 µg/L | 505.74 ppb | 11:20:19 |
| 3 | SiO2†              | 58784.7   | 56269.6   | 5298.9 µg/L | 5298.9 ppb | 11:19:59 |
| 3 | Si 251.611†        | 72550.6   | 71167.4   | 2463.1 µg/L | 2463.1 ppb | 11:19:59 |
| 3 | Sn 189.927†        | 5347.5    | 5246.0    | 504.37 µg/L | 504.37 ppb | 11:20:19 |
| 3 | Ti 334.940†        | 223146.7  | 220596.9  | 498.91 µg/L | 498.91 ppb | 11:19:59 |
| 3 | Tl 190.801†        | 2991.1    | 3103.6    | 510.11 µg/L | 510.11 ppb | 11:20:19 |
| 3 | U 367.007†         | 4204.9    | 2717.3    | 474.6 µg/L  | 474.6 ppb  | 11:19:59 |
| 3 | V 292.402†         | 78728.6   | 77128.3   | 500.48 µg/L | 500.48 ppb | 11:19:59 |
| 3 | Zn 213.857†        | 94101.1   | 91903.7   | 495.97 µg/L | 495.97 ppb | 11:19:59 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 637451.1                 | 101.86 %           | 0.295    |                    |          | 0.29% |
| Sc RADIAL  | 8459.0                   | 100 %              | 0.11     |                    |          | 0.11% |
| Y 371.029  | 715360.3                 | 100.75 %           | 0.276    |                    |          | 0.27% |
| Ag 328.068†  | 99565.9                  | 499.45 µg/L        | 0.992    | 499.45 ppb         | 0.992    | 0.20% |
| QC value within limits for Ag 328.068 Recovery = 99.89%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 10536.3                  | 5174.5 µg/L        | 18.82    | 5174.5 ppb         | 18.82    | 0.36% |
| QC value within limits for Al 396.153Radial Recovery = 103.49% |                          |                    |          |                    |          |       |

|   |           |             |        |            |        |       |
|---|-----------|-------------|--------|------------|--------|-------|
| As 188.979†   | 1676.6    | 508.53 µg/L | 2.588  | 508.53 ppb | 2.588  | 0.51% |
| QC value within limits for As 188.979 Recovery = 101.71%        |           |             |        |            |        |       |
| B 249.677†  | 25621.3   | 517.43 µg/L | 0.506  | 517.43 ppb | 0.506  | 0.10% |
| QC value within limits for B 249.677 Recovery = 103.49%         |           |             |        |            |        |       |
| Ba 233.527†   | 88701.6   | 499.23 µg/L | 0.579  | 499.23 ppb | 0.579  | 0.12% |
| QC value within limits for Ba 233.527 Recovery = 99.85%         |           |             |        |            |        |       |
| Be 313.107†   | 1243945.8 | 498.78 µg/L | 0.299  | 498.78 ppb | 0.299  | 0.06% |
| QC value within limits for Be 313.107 Recovery = 99.76%         |           |             |        |            |        |       |
| Ca 317.933Radial†   | 10654.3   | 5189.5 µg/L | 7.07   | 5189.5 ppb | 7.07   | 0.14% |
| QC value within limits for Ca 317.933Radial Recovery = 103.79%  |           |             |        |            |        |       |
| Cd 226.502†   | 83075.5   | 502.88 µg/L | 0.852  | 502.88 ppb | 0.852  | 0.17% |
| QC value within limits for Cd 226.502 Recovery = 100.58%        |           |             |        |            |        |       |
| Co 228.616†   | 30810.7   | 501.48 µg/L | 0.101  | 501.48 ppb | 0.101  | 0.02% |
| QC value within limits for Co 228.616 Recovery = 100.30%        |           |             |        |            |        |       |
| Cr 267.716†   | 39652.9   | 497.51 µg/L | 0.016  | 497.51 ppb | 0.016  | 0.00% |
| QC value within limits for Cr 267.716 Recovery = 99.50%         |           |             |        |            |        |       |
| Cu 324.752†   | 119155.6  | 497.32 µg/L | 0.586  | 497.32 ppb | 0.586  | 0.12% |
| QC value within limits for Cu 324.752 Recovery = 99.46%         |           |             |        |            |        |       |
| Fe 238.204 Radial†  | 3500.3    | 5369.6 µg/L | 21.21  | 5369.6 ppb | 21.21  | 0.40% |
| QC value within limits for Fe 238.204 Radial Recovery = 107.39% |           |             |        |            |        |       |
| K 766.490 Radial†   | 9344.1    | 5098.3 µg/L | 32.51  | 5098.3 ppb | 32.51  | 0.64% |
| QC value within limits for K 766.490 Radial Recovery = 101.97%  |           |             |        |            |        |       |
| Mg 279.077 IEC†   | 846.9     | 5281.9 µg/L | 47.13  | 5281.9 ppb | 47.13  | 0.89% |
| QC value within limits for Mg 279.077 IEC Recovery = 105.64%    |           |             |        |            |        |       |
| Mn 257.610†   | 504873.7  | 497.84 µg/L | 0.202  | 497.84 ppb | 0.202  | 0.04% |
| QC value within limits for Mn 257.610 Recovery = 99.57%         |           |             |        |            |        |       |
| Mo 202.031†   | 12360.1   | 500.49 µg/L | 0.184  | 500.49 ppb | 0.184  | 0.04% |
| QC value within limits for Mo 202.031 Recovery = 100.10%        |           |             |        |            |        |       |
| Na 589.592 Radial†  | 240.5     | 9847.3 µg/L | 209.68 | 9847.3 ppb | 209.68 | 2.13% |
| QC value within limits for Na 589.592 Radial Recovery = 98.47%  |           |             |        |            |        |       |
| Ni 231.604†   | 28024.1   | 492.70 µg/L | 0.623  | 492.70 ppb | 0.623  | 0.13% |
| QC value within limits for Ni 231.604 Recovery = 98.54%         |           |             |        |            |        |       |
| P 214.914†  | 5741.1    | 2483.8 µg/L | 4.63   | 2483.8 ppb | 4.63   | 0.19% |
| QC value within limits for P 214.914 Recovery = 99.35%          |           |             |        |            |        |       |
| Pb 220.353†   | 6035.1    | 502.62 µg/L | 0.924  | 502.62 ppb | 0.924  | 0.18% |
| QC value within limits for Pb 220.353 Recovery = 100.52%        |           |             |        |            |        |       |
| S 181.975 Axial†  | 1011.2    | 993.62 µg/L | 1.813  | 993.62 ppb | 1.813  | 0.18% |
| QC value within limits for S 181.975 Axial Recovery = 99.36%    |           |             |        |            |        |       |
| Sb 206.836†   | 2262.8    | 489.35 µg/L | 2.572  | 489.35 ppb | 2.572  | 0.53% |
| QC value within limits for Sb 206.836 Recovery = 97.87%         |           |             |        |            |        |       |
| Se 196.026†   | 1397.8    | 508.79 µg/L | 3.191  | 508.79 ppb | 3.191  | 0.63% |
| QC value within limits for Se 196.026 Recovery = 101.76%        |           |             |        |            |        |       |
| SiO2†   | 56259.1   | 5297.9 µg/L | 1.67   | 5297.9 ppb | 1.67   | 0.03% |
| QC value within limits for SiO2 Recovery = 99.07%               |           |             |        |            |        |       |
| Si 251.611†   | 71087.3   | 2460.3 µg/L | 2.64   | 2460.3 ppb | 2.64   | 0.11% |
| QC value within limits for Si 251.611 Recovery = 98.41%         |           |             |        |            |        |       |
| Sn 189.927†   | 5259.5    | 505.65 µg/L | 1.268  | 505.65 ppb | 1.268  | 0.25% |
| QC value within limits for Sn 189.927 Recovery = 101.13%        |           |             |        |            |        |       |
| Sr 421.552†   | 20185.8   | 514.72 µg/L | 3.438  | 514.72 ppb | 3.438  | 0.67% |
| QC value within limits for Sr 421.552 Recovery = 102.94%        |           |             |        |            |        |       |
| Ti 334.940†   | 220536.6  | 498.78 µg/L | 0.158  | 498.78 ppb | 0.158  | 0.03% |
| QC value within limits for Ti 334.940 Recovery = 99.76%         |           |             |        |            |        |       |
| Tl 190.801†   | 3089.9    | 507.85 µg/L | 1.992  | 507.85 ppb | 1.992  | 0.39% |
| QC value within limits for Tl 190.801 Recovery = 101.57%        |           |             |        |            |        |       |
| U 367.007†  | 2668.9    | 465.8 µg/L  | 8.79   | 465.8 ppb  | 8.79   | 1.89% |
| QC value within limits for U 367.007 Recovery = 93.16%          |           |             |        |            |        |       |
| V 292.402†  | 77072.2   | 500.11 µg/L | 0.620  | 500.11 ppb | 0.620  | 0.12% |
| QC value within limits for V 292.402 Recovery = 100.02%         |           |             |        |            |        |       |
| Zn 213.857†   | 91968.4   | 496.33 µg/L | 0.507  | 496.33 ppb | 0.507  | 0.10% |
| QC value within limits for Zn 213.857 Recovery = 99.27%         |           |             |        |            |        |       |
| All analyte(s) passed QC.                                       |           |             |        |            |        |       |



Sequence No.: 2

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 8

Date Collected: 11/16/2016 11:20:28

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8640.6        | 8640.6              | 103 %              |                    | 11:20:56      |
| 1     | Al 396.153Radial†  | -703.2        | 50.5                | 24.873 µg/L        | 24.873 ppb         | 11:20:56      |
| 1     | Ca 317.933Radial†  | 126.2         | 14.5                | 7.0555 µg/L        | 7.0555 ppb         | 11:21:16      |
| 1     | Fe 238.204 Radial† | 10.9          | -0.3                | -0.5248 µg/L       | -0.5248 ppb        | 11:21:16      |
| 1     | K 766.490 Radial†  | 338.1         | -73.6               | -40.156 µg/L       | -40.156 ppb        | 11:20:56      |
| 1     | Mg 279.077 IEC†    | 8.3           | -3.1                | -19.342 µg/L       | -19.342 ppb        | 11:21:16      |
| 1     | Na 589.592 Radial† | 12.9          | 7.6                 | 311.55 µg/L        | 311.55 ppb         | 11:21:16      |
| 1     | Sr 421.552†        | 11.5          | 7.4                 | 0.1875 µg/L        | 0.1875 ppb         | 11:20:56      |
| 1     | Sc 361.383         | 639858.7      | 639858.7            | 102.25 %           |                    | 11:22:13      |
| 1     | Y 371.029          | 725111.3      | 725111.3            | 102.12 %           |                    | 11:22:13      |
| 1     | Ag 328.068†        | -798.2        | 158.8               | 0.7914 µg/L        | 0.7914 ppb         | 11:22:13      |
| 1     | As 188.979†        | 24.9          | 2.2                 | 0.6562 µg/L        | 0.6562 ppb         | 11:22:33      |
| 1     | B 249.677†         | 274.9         | 76.8                | 1.4936 µg/L        | 1.4936 ppb         | 11:22:33      |
| 1     | Ba 233.527†        | 134.3         | 2.1                 | 0.0117 µg/L        | 0.0117 ppb         | 11:22:33      |
| 1     | Be 313.107†        | -5530.0       | 34.7                | 0.0156 µg/L        | 0.0156 ppb         | 11:22:13      |
| 1     | Cd 226.502†        | -212.2        | 45.6                | 0.2760 µg/L        | 0.2760 ppb         | 11:22:33      |
| 1     | Co 228.616†        | -353.2        | -17.9               | -0.2909 µg/L       | -0.2909 ppb        | 11:22:33      |
| 1     | Cr 267.716†        | 128.9         | 9.3                 | 0.1117 µg/L        | 0.1117 ppb         | 11:22:33      |
| 1     | Cu 324.752†        | 2621.6        | 70.2                | 0.2960 µg/L        | 0.2960 ppb         | 11:22:13      |
| 1     | Mn 257.610†        | 839.3         | -22.7               | -0.0217 µg/L       | -0.0217 ppb        | 11:22:33      |
| 1     | Mo 202.031†        | -5.7          | 11.0                | 0.4467 µg/L        | 0.4467 ppb         | 11:22:33      |
| 1     | Ni 231.604†        | -179.0        | 1.1                 | 0.0198 µg/L        | 0.0198 ppb         | 11:22:33      |
| 1     | P 214.914†         | 137.9         | -10.0               | -4.3592 µg/L       | -4.3592 ppb        | 11:22:33      |
| 1     | Pb 220.353†        | 104.9         | -3.8                | -0.3288 µg/L       | -0.3288 ppb        | 11:22:33      |
| 1     | S 181.975 Axial†   | 167.5         | 16.8                | 16.417 µg/L        | 16.417 ppb         | 11:22:33      |
| 1     | Sb 206.836†        | 110.3         | -7.4                | -1.6104 µg/L       | -1.6104 ppb        | 11:22:33      |
| 1     | Se 196.026†        | 0.4           | 18.5                | 6.7048 µg/L        | 6.7048 ppb         | 11:22:33      |
| 1     | SiO2†              | 1673.6        | 3.5                 | 0.3342 µg/L        | 0.3342 ppb         | 11:22:13      |
| 1     | Si 251.611†        | 351.2         | 48.6                | 1.6818 µg/L        | 1.6818 ppb         | 11:22:33      |
| 1     | Sn 189.927†        | 15.8          | -5.8                | -0.5548 µg/L       | -0.5548 ppb        | 11:22:33      |
| 1     | Ti 334.940†        | -700.5        | 112.6               | 0.2520 µg/L        | 0.2520 ppb         | 11:22:13      |
| 1     | Tl 190.801†        | -143.2        | 17.3                | 2.8422 µg/L        | 2.8422 ppb         | 11:22:33      |
| 1     | U 367.007†         | 1492.5        | 35.2                | 6.453 µg/L         | 6.453 ppb          | 11:22:13      |
| 1     | V 292.402†         | 476.6         | 46.9                | 0.3087 µg/L        | 0.3087 ppb         | 11:22:13      |
| 1     | Zn 213.857†        | 701.9         | -99.3               | -0.5403 µg/L       | -0.5403 ppb        | 11:22:33      |
| 2     | Sc RADIAL          | 8572.6        | 8572.6              | 102 %              |                    | 11:21:21      |
| 2     | Al 396.153Radial†  | -763.1        | -13.8               | -6.8114 µg/L       | -6.8114 ppb        | 11:21:21      |
| 2     | Ca 317.933Radial†  | 115.3         | 4.8                 | 2.3253 µg/L        | 2.3253 ppb         | 11:21:41      |
| 2     | Fe 238.204 Radial† | 8.9           | -2.3                | -3.5357 µg/L       | -3.5357 ppb        | 11:21:41      |
| 2     | K 766.490 Radial†  | 379.9         | -29.9               | -16.312 µg/L       | -16.312 ppb        | 11:21:21      |
| 2     | Mg 279.077 IEC†    | 12.2          | 0.8                 | 4.9367 µg/L        | 4.9367 ppb         | 11:21:41      |
| 2     | Na 589.592 Radial† | 3.3           | -1.7                | -70.562 µg/L       | -70.562 ppb        | 11:21:41      |
| 2     | Sr 421.552†        | 21.1          | 16.9                | 0.4316 µg/L        | 0.4316 ppb         | 11:21:21      |
| 2     | Sc 361.383         | 642541.0      | 642541.0            | 102.68 %           |                    | 11:22:39      |
| 2     | Y 371.029          | 728698.4      | 728698.4            | 102.63 %           |                    | 11:22:39      |
| 2     | Ag 328.068†        | -894.4        | 68.4                | 0.3406 µg/L        | 0.3406 ppb         | 11:22:39      |
| 2     | As 188.979†        | 18.3          | -4.3                | -1.2923 µg/L       | -1.2923 ppb        | 11:22:59      |
| 2     | B 249.677†         | 285.8         | 86.3                | 1.6662 µg/L        | 1.6662 ppb         | 11:22:59      |
| 2     | Ba 233.527†        | 127.9         | -4.8                | -0.0268 µg/L       | -0.0268 ppb        | 11:22:59      |
| 2     | Be 313.107†        | -5588.5       | 0.3                 | 0.0006 µg/L        | 0.0006 ppb         | 11:22:39      |
| 2     | Cd 226.502†        | -218.4        | 40.4                | 0.2449 µg/L        | 0.2449 ppb         | 11:22:59      |
| 2     | Co 228.616†        | -333.2        | 3.0                 | 0.0494 µg/L        | 0.0494 ppb         | 11:22:59      |
| 2     | Cr 267.716†        | 144.3         | 23.7                | 0.2965 µg/L        | 0.2965 ppb         | 11:22:59      |
| 2     | Cu 324.752†        | 2703.1        | 138.9               | 0.5798 µg/L        | 0.5798 ppb         | 11:22:39      |
| 2     | Mn 257.610†        | 800.2         | -64.1               | -0.0636 µg/L       | -0.0636 ppb        | 11:22:59      |
| 2     | Mo 202.031†        | -8.4          | 8.4                 | 0.3415 µg/L        | 0.3415 ppb         | 11:22:59      |
| 2     | Ni 231.604†        | -173.7        | 6.9                 | 0.1221 µg/L        | 0.1221 ppb         | 11:22:59      |
| 2     | P 214.914†         | 131.8         | -16.6               | -7.2088 µg/L       | -7.2088 ppb        | 11:22:59      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 127.8    | 18.1     | 1.5081 µg/L  | 1.5081 ppb  | 11:22:59 |
| 2 | S 181.975 Axial†   | 167.8    | 16.3     | 15.999 µg/L  | 15.999 ppb  | 11:22:59 |
| 2 | Sb 206.836†        | 112.3    | -5.8     | -1.2742 µg/L | -1.2742 ppb | 11:22:59 |
| 2 | Se 196.026†        | -12.5    | 5.9      | 2.1352 µg/L  | 2.1352 ppb  | 11:22:59 |
| 2 | SiO2†              | 1700.1   | 22.5     | 2.1241 µg/L  | 2.1241 ppb  | 11:22:39 |
| 2 | Si 251.611†        | 337.6    | 33.9     | 1.1739 µg/L  | 1.1739 ppb  | 11:22:59 |
| 2 | Sn 189.927†        | 21.5     | -0.3     | -0.0254 µg/L | -0.0254 ppb | 11:22:59 |
| 2 | Ti 334.940†        | -681.1   | 134.4    | 0.3035 µg/L  | 0.3035 ppb  | 11:22:39 |
| 2 | Tl 190.801†        | -141.5   | 19.5     | 3.2068 µg/L  | 3.2068 ppb  | 11:22:59 |
| 2 | U 367.007†         | 1470.8   | 8.0      | 1.479 µg/L   | 1.479 ppb   | 11:22:39 |
| 2 | V 292.402†         | 423.1    | -7.1     | -0.0414 µg/L | -0.0414 ppb | 11:22:39 |
| 2 | Zn 213.857†        | 675.9    | -127.5   | -0.6959 µg/L | -0.6959 ppb | 11:22:59 |
| 3 | Sc RADIAL          | 8721.6   | 8721.6   | 104 %        |             | 11:21:46 |
| 3 | Al 396.153Radial†  | -727.0   | 33.9     | 16.689 µg/L  | 16.689 ppb  | 11:21:46 |
| 3 | Ca 317.933Radial†  | 102.9    | -9.2     | -4.4720 µg/L | -4.4720 ppb | 11:22:06 |
| 3 | Fe 238.204 Radial† | 7.6      | -3.7     | -5.6309 µg/L | -5.6309 ppb | 11:22:06 |
| 3 | K 766.490 Radial†  | 416.2    | -1.2     | -0.6890 µg/L | -0.6890 ppb | 11:21:46 |
| 3 | Mg 279.077 IEC†    | 8.6      | -2.9     | -18.141 µg/L | -18.141 ppb | 11:22:06 |
| 3 | Na 589.592 Radial† | 11.6     | 6.3      | 257.20 µg/L  | 257.20 ppb  | 11:22:06 |
| 3 | Sr 421.552†        | 18.0     | 13.6     | 0.3470 µg/L  | 0.3470 ppb  | 11:21:46 |
| 3 | Sc 361.383         | 643028.2 | 643028.2 | 102.76 %     |             | 11:23:05 |
| 3 | Y 371.029          | 729197.6 | 729197.6 | 102.70 %     |             | 11:23:05 |
| 3 | Ag 328.068†        | -882.2   | 80.9     | 0.4077 µg/L  | 0.4077 ppb  | 11:23:05 |
| 3 | As 188.979†        | 21.0     | -1.7     | -0.4967 µg/L | -0.4967 ppb | 11:23:25 |
| 3 | B 249.677†         | 243.1    | 44.5     | 0.8452 µg/L  | 0.8452 ppb  | 11:23:25 |
| 3 | Ba 233.527†        | 125.1    | -7.6     | -0.0425 µg/L | -0.0425 ppb | 11:23:25 |
| 3 | Be 313.107†        | -5642.0  | -47.7    | -0.0212 µg/L | -0.0212 ppb | 11:23:05 |
| 3 | Cd 226.502†        | -212.9   | 45.9     | 0.2789 µg/L  | 0.2789 ppb  | 11:23:25 |
| 3 | Co 228.616†        | -341.8   | -5.1     | -0.0831 µg/L | -0.0831 ppb | 11:23:25 |
| 3 | Cr 267.716†        | 119.1    | -0.9     | -0.0054 µg/L | -0.0054 ppb | 11:23:25 |
| 3 | Cu 324.752†        | 2641.8   | 77.2     | 0.3172 µg/L  | 0.3172 ppb  | 11:23:05 |
| 3 | Mn 257.610†        | 790.7    | -74.0    | -0.0726 µg/L | -0.0726 ppb | 11:23:25 |
| 3 | Mo 202.031†        | -8.8     | 8.0      | 0.3234 µg/L  | 0.3234 ppb  | 11:23:25 |
| 3 | Ni 231.604†        | -146.3   | 33.8     | 0.5940 µg/L  | 0.5940 ppb  | 11:23:25 |
| 3 | P 214.914†         | 121.8    | -26.4    | -11.469 µg/L | -11.469 ppb | 11:23:25 |
| 3 | Pb 220.353†        | 104.8    | -4.3     | -0.3618 µg/L | -0.3618 ppb | 11:23:25 |
| 3 | S 181.975 Axial†   | 172.0    | 20.4     | 19.926 µg/L  | 19.926 ppb  | 11:23:25 |
| 3 | Sb 206.836†        | 124.1    | 5.6      | 1.2160 µg/L  | 1.2160 ppb  | 11:23:25 |
| 3 | Se 196.026†        | -15.3    | 3.3      | 1.1757 µg/L  | 1.1757 ppb  | 11:23:25 |
| 3 | SiO2†              | 1735.5   | 55.8     | 5.2460 µg/L  | 5.2460 ppb  | 11:23:05 |
| 3 | Si 251.611†        | 364.2    | 59.6     | 2.0668 µg/L  | 2.0668 ppb  | 11:23:25 |
| 3 | Sn 189.927†        | 17.7     | -4.0     | -0.3858 µg/L | -0.3858 ppb | 11:23:25 |
| 3 | Ti 334.940†        | -642.0   | 173.0    | 0.3953 µg/L  | 0.3953 ppb  | 11:23:05 |
| 3 | Tl 190.801†        | -158.0   | 3.6      | 0.5944 µg/L  | 0.5944 ppb  | 11:23:25 |
| 3 | U 367.007†         | 1415.7   | -46.8    | -8.552 µg/L  | -8.552 ppb  | 11:23:05 |
| 3 | V 292.402†         | 426.4    | -4.3     | -0.0306 µg/L | -0.0306 ppb | 11:23:05 |
| 3 | Zn 213.857†        | 663.9    | -139.6   | -0.7635 µg/L | -0.7635 ppb | 11:23:25 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 641809.3                 | 102.56 %           | 0.273    |                    |          | 0.27%   |
| Sc RADIAL   | 8644.9                   | 103 %              | 0.89     |                    |          | 0.86%   |
| Y 371.029   | 727669.1                 | 102.48 %           | 0.314    |                    |          | 0.31%   |
| Ag 328.068†   | 102.7                    | 0.5132 µg/L        | 0.24319  | 0.5132 ppb         | 0.24319  | 47.38%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 23.5                     | 11.584 µg/L        | 16.4478  | 11.584 ppb         | 16.4478  | 141.99% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | -1.3                     | -0.3776 µg/L       | 0.97965  | -0.3776 ppb        | 0.97965  | 259.45% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 69.2                     | 1.3350 µg/L        | 0.43287  | 1.3350 ppb         | 0.43287  | 32.43%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | -3.4                     | -0.0192 µg/L       | 0.02785  | -0.0192 ppb        | 0.02785  | 145.27% |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | -4.2                     | -0.0017 µg/L       | 0.01848  | -0.0017 ppb        | 0.01848  | >999.9% |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 3.4                      | 1.6363 µg/L        | 5.79459  | 1.6363 ppb         | 5.79459  | 354.13% |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| Cd 226.502†   | 44.0                     | 0.2666 µg/L        | 0.01885  | 0.2666 ppb         | 0.01885  | 7.07%   |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |                    |          |                    |          |         |

|                        |                       |                           |         |             |         |         |
|------------------------|-----------------------|---------------------------|---------|-------------|---------|---------|
| Co 228.616†            | -6.6                  | -0.1082 µg/L              | 0.17156 | -0.1082 ppb | 0.17156 | 158.55% |
| QC value within limits | for Co 228.616        | Recovery = Not calculated |         |             |         |         |
| Cr 267.716†            | 10.7                  | 0.1343 µg/L               | 0.15220 | 0.1343 ppb  | 0.15220 | 113.36% |
| QC value within limits | for Cr 267.716        | Recovery = Not calculated |         |             |         |         |
| Cu 324.752†            | 95.5                  | 0.3977 µg/L               | 0.15807 | 0.3977 ppb  | 0.15807 | 39.75%  |
| QC value within limits | for Cu 324.752        | Recovery = Not calculated |         |             |         |         |
| Fe 238.204 Radial†     | -2.1                  | -3.2305 µg/L              | 2.56668 | -3.2305 ppb | 2.56668 | 79.45%  |
| QC value within limits | for Fe 238.204 Radial | Recovery = Not calculated |         |             |         |         |
| K 766.490 Radial†      | -34.9                 | -19.053 µg/L              | 19.8759 | -19.053 ppb | 19.8759 | 104.32% |
| QC value within limits | for K 766.490 Radial  | Recovery = Not calculated |         |             |         |         |
| Mg 279.077 IEC†        | -1.7                  | -10.849 µg/L              | 13.6838 | -10.849 ppb | 13.6838 | 126.13% |
| QC value within limits | for Mg 279.077 IEC    | Recovery = Not calculated |         |             |         |         |
| Mn 257.610†            | -53.6                 | -0.0526 µg/L              | 0.02718 | -0.0526 ppb | 0.02718 | 51.65%  |
| QC value within limits | for Mn 257.610        | Recovery = Not calculated |         |             |         |         |
| Mo 202.031†            | 9.2                   | 0.3705 µg/L               | 0.06656 | 0.3705 ppb  | 0.06656 | 17.96%  |
| QC value within limits | for Mo 202.031        | Recovery = Not calculated |         |             |         |         |
| Na 589.592 Radial†     | 4.1                   | 166.06 µg/L               | 206.718 | 166.06 ppb  | 206.718 | 124.48% |
| QC value within limits | for Na 589.592 Radial | Recovery = Not calculated |         |             |         |         |
| Ni 231.604†            | 13.9                  | 0.2453 µg/L               | 0.30629 | 0.2453 ppb  | 0.30629 | 124.86% |
| QC value within limits | for Ni 231.604        | Recovery = Not calculated |         |             |         |         |
| P 214.914†             | -17.6                 | -7.6790 µg/L              | 3.57821 | -7.6790 ppb | 3.57821 | 46.60%  |
| QC value within limits | for P 214.914         | Recovery = Not calculated |         |             |         |         |
| Pb 220.353†            | 3.3                   | 0.2725 µg/L               | 1.07019 | 0.2725 ppb  | 1.07019 | 392.74% |
| QC value within limits | for Pb 220.353        | Recovery = Not calculated |         |             |         |         |
| S 181.975 Axial†       | 17.8                  | 17.447 µg/L               | 2.1568  | 17.447 ppb  | 2.1568  | 12.36%  |
| QC value within limits | for S 181.975 Axial   | Recovery = Not calculated |         |             |         |         |
| Sb 206.836†            | -2.6                  | -0.5562 µg/L              | 1.54396 | -0.5562 ppb | 1.54396 | 277.60% |
| QC value within limits | for Sb 206.836        | Recovery = Not calculated |         |             |         |         |
| Se 196.026†            | 9.2                   | 3.3386 µg/L               | 2.95449 | 3.3386 ppb  | 2.95449 | 88.50%  |
| QC value within limits | for Se 196.026        | Recovery = Not calculated |         |             |         |         |
| SiO2†                  | 27.3                  | 2.5681 µg/L               | 2.48585 | 2.5681 ppb  | 2.48585 | 96.80%  |
| QC value within limits | for SiO2              | Recovery = Not calculated |         |             |         |         |
| Si 251.611†            | 47.3                  | 1.6408 µg/L               | 0.44783 | 1.6408 ppb  | 0.44783 | 27.29%  |
| QC value within limits | for Si 251.611        | Recovery = Not calculated |         |             |         |         |
| Sn 189.927†            | -3.4                  | -0.3220 µg/L              | 0.27038 | -0.3220 ppb | 0.27038 | 83.96%  |
| QC value within limits | for Sn 189.927        | Recovery = Not calculated |         |             |         |         |
| Sr 421.552†            | 12.6                  | 0.3220 µg/L               | 0.12392 | 0.3220 ppb  | 0.12392 | 38.48%  |
| QC value within limits | for Sr 421.552        | Recovery = Not calculated |         |             |         |         |
| Ti 334.940†            | 140.0                 | 0.3169 µg/L               | 0.07258 | 0.3169 ppb  | 0.07258 | 22.90%  |
| QC value within limits | for Ti 334.940        | Recovery = Not calculated |         |             |         |         |
| Tl 190.801†            | 13.5                  | 2.2145 µg/L               | 1.41480 | 2.2145 ppb  | 1.41480 | 63.89%  |
| QC value within limits | for Tl 190.801        | Recovery = Not calculated |         |             |         |         |
| U 367.007†             | -1.2                  | -0.207 µg/L               | 7.6430  | -0.207 ppb  | 7.6430  | >999.9% |
| QC value within limits | for U 367.007         | Recovery = Not calculated |         |             |         |         |
| V 292.402†             | 11.8                  | 0.0789 µg/L               | 0.19904 | 0.0789 ppb  | 0.19904 | 252.26% |
| QC value within limits | for V 292.402         | Recovery = Not calculated |         |             |         |         |
| Zn 213.857†            | -122.1                | -0.6666 µg/L              | 0.11445 | -0.6666 ppb | 0.11445 | 17.17%  |
| QC value within limits | for Zn 213.857        | Recovery = Not calculated |         |             |         |         |

All analyte(s) passed QC.

Sequence No.: 3

Sample ID: 1203657600|1611119|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 301

Date Collected: 11/16/2016 11:23:34

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 1203657600|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8375.7        | 8375.7              | 99.4 %             |                    | 11:24:05      |
| 1     | Al 396.153Radial†  | -794.2        | -62.7               | -30.919 µg/L       | -30.919 ppb        | 11:24:05      |
| 1     | Ca 317.933Radial†  | 230.1         | 123.0               | 59.892 µg/L        | 59.892 ppb         | 11:24:25      |
| 1     | Fe 238.204 Radial† | 16.9          | 6.0                 | 9.2006 µg/L        | 9.2006 ppb         | 11:24:25      |
| 1     | K 766.490 Radial†  | 458.1         | 57.5                | 31.384 µg/L        | 31.384 ppb         | 11:24:05      |
| 1     | Mg 279.077 IEC†    | 15.0          | 3.9                 | 24.145 µg/L        | 24.145 ppb         | 11:24:25      |
| 1     | Na 589.592 Radial† | 12.4          | 7.6                 | 309.29 µg/L        | 309.29 ppb         | 11:24:25      |
| 1     | Sr 421.552†        | 40.9          | 37.3                | 0.9488 µg/L        | 0.9488 ppb         | 11:24:05      |
| 1     | Sc 361.383         | 638285.6      | 638285.6            | 102.00 %           |                    | 11:25:22      |
| 1     | Y 371.029          | 721107.0      | 721107.0            | 101.56 %           |                    | 11:25:22      |
| 1     | Ag 328.068†        | -907.6        | 49.7                | 0.2577 µg/L        | 0.2577 ppb         | 11:25:22      |
| 1     | As 188.979†        | 23.8          | 1.2                 | 0.3740 µg/L        | 0.3740 ppb         | 11:25:42      |
| 1     | B 249.677†         | 312.0         | 113.9               | 2.2527 µg/L        | 2.2527 ppb         | 11:25:42      |
| 1     | Ba 233.527†        | 168.9         | 36.3                | 0.2041 µg/L        | 0.2041 ppb         | 11:25:42      |
| 1     | Be 313.107†        | -5416.5       | 132.7               | 0.0497 µg/L        | 0.0497 ppb         | 11:25:22      |
| 1     | Cd 226.502†        | -220.8        | 36.6                | 0.2207 µg/L        | 0.2207 ppb         | 11:25:42      |
| 1     | Co 228.616†        | -338.3        | -4.2                | -0.0697 µg/L       | -0.0697 ppb        | 11:25:42      |
| 1     | Cr 267.716†        | 134.1         | 14.7                | 0.1968 µg/L        | 0.1968 ppb         | 11:25:42      |
| 1     | Cu 324.752†        | 2711.7        | 164.9               | 0.6787 µg/L        | 0.6787 ppb         | 11:25:22      |
| 1     | Mn 257.610†        | 1150.8        | 284.8               | 0.2804 µg/L        | 0.2804 ppb         | 11:25:42      |
| 1     | Mo 202.031†        | -9.6          | 7.2                 | 0.2925 µg/L        | 0.2925 ppb         | 11:25:42      |
| 1     | Ni 231.604†        | -176.2        | 3.4                 | 0.0598 µg/L        | 0.0598 ppb         | 11:25:42      |
| 1     | P 214.914†         | 115.5         | -31.6               | -13.793 µg/L       | -13.793 ppb        | 11:25:42      |
| 1     | Pb 220.353†        | 140.7         | 31.6                | 2.6615 µg/L        | 2.6615 ppb         | 11:25:42      |
| 1     | S 181.975 Axial†   | 360.5         | 206.4               | 202.01 µg/L        | 202.01 ppb         | 11:25:42      |
| 1     | Sb 206.836†        | 123.0         | 5.3                 | 1.1607 µg/L        | 1.1607 ppb         | 11:25:42      |
| 1     | Se 196.026†        | -7.3          | 11.0                | 3.9880 µg/L        | 3.9880 ppb         | 11:25:42      |
| 1     | SiO2†              | 1990.4        | 318.1               | 29.920 µg/L        | 29.920 ppb         | 11:25:22      |
| 1     | Si 251.611†        | 674.3         | 366.2               | 12.705 µg/L        | 12.705 ppb         | 11:25:42      |
| 1     | Sn 189.927†        | 44.3          | 22.2                | 2.1280 µg/L        | 2.1280 ppb         | 11:25:42      |
| 1     | Ti 334.940†        | -562.3        | 246.5               | 0.5693 µg/L        | 0.5693 ppb         | 11:25:22      |
| 1     | Tl 190.801†        | -130.2        | 29.7                | 4.8779 µg/L        | 4.8779 ppb         | 11:25:42      |
| 1     | U 367.007†         | 1354.3        | -96.8               | -17.80 µg/L        | -17.80 ppb         | 11:25:22      |
| 1     | V 292.402†         | 410.5         | -16.7               | -0.1142 µg/L       | -0.1142 ppb        | 11:25:22      |
| 1     | Zn 213.857†        | 1339.4        | 527.4               | 2.8701 µg/L        | 2.8701 ppb         | 11:25:42      |
| 2     | Sc RADIAL          | 8620.3        | 8620.3              | 102 %              |                    | 11:24:30      |
| 2     | Al 396.153Radial†  | -722.3        | 30.3                | 14.910 µg/L        | 14.910 ppb         | 11:24:30      |
| 2     | Ca 317.933Radial†  | 230.3         | 116.5               | 56.762 µg/L        | 56.762 ppb         | 11:24:50      |
| 2     | Fe 238.204 Radial† | 21.0          | 9.5                 | 14.631 µg/L        | 14.631 ppb         | 11:24:50      |
| 2     | K 766.490 Radial†  | 507.3         | 92.5                | 50.467 µg/L        | 50.467 ppb         | 11:24:30      |
| 2     | Mg 279.077 IEC†    | 10.0          | -1.4                | -8.9310 µg/L       | -8.9310 ppb        | 11:24:50      |
| 2     | Na 589.592 Radial† | 12.0          | 6.8                 | 277.92 µg/L        | 277.92 ppb         | 11:24:50      |
| 2     | Sr 421.552†        | 34.2          | 29.6                | 0.7522 µg/L        | 0.7522 ppb         | 11:24:30      |
| 2     | Sc 361.383         | 636803.0      | 636803.0            | 101.76 %           |                    | 11:25:47      |
| 2     | Y 371.029          | 719436.5      | 719436.5            | 101.32 %           |                    | 11:25:47      |
| 2     | Ag 328.068†        | -875.9        | 78.7                | 0.3960 µg/L        | 0.3960 ppb         | 11:25:47      |
| 2     | As 188.979†        | 26.3          | 3.7                 | 1.1125 µg/L        | 1.1125 ppb         | 11:26:08      |
| 2     | B 249.677†         | 310.0         | 112.6               | 2.2493 µg/L        | 2.2493 ppb         | 11:26:08      |
| 2     | Ba 233.527†        | 143.4         | 11.6                | 0.0650 µg/L        | 0.0650 ppb         | 11:26:08      |
| 2     | Be 313.107†        | -5484.4       | 53.5                | 0.0220 µg/L        | 0.0220 ppb         | 11:25:47      |
| 2     | Cd 226.502†        | -217.2        | 39.6                | 0.2385 µg/L        | 0.2385 ppb         | 11:26:08      |
| 2     | Co 228.616†        | -346.3        | -12.8               | -0.2098 µg/L       | -0.2098 ppb        | 11:26:08      |
| 2     | Cr 267.716†        | 119.0         | 0.1                 | 0.0015 µg/L        | 0.0015 ppb         | 11:26:08      |
| 2     | Cu 324.752†        | 2577.0        | 38.7                | 0.1616 µg/L        | 0.1616 ppb         | 11:25:47      |
| 2     | Mn 257.610†        | 1194.0        | 329.8               | 0.3263 µg/L        | 0.3263 ppb         | 11:26:08      |
| 2     | Mo 202.031†        | -6.3          | 10.4                | 0.4215 µg/L        | 0.4215 ppb         | 11:26:08      |
| 2     | Ni 231.604†        | -145.7        | 32.9                | 0.5784 µg/L        | 0.5784 ppb         | 11:26:08      |
| 2     | P 214.914†         | 128.3         | -18.8               | -8.2058 µg/L       | -8.2058 ppb        | 11:26:08      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 128.4    | 19.8     | 1.6513 µg/L  | 1.6513 ppb  | 11:26:08 |
| 2 | S 181.975 Axial†   | 363.0    | 209.7    | 205.21 µg/L  | 205.21 ppb  | 11:26:08 |
| 2 | Sb 206.836†        | 133.6    | 16.1     | 3.5077 µg/L  | 3.5077 ppb  | 11:26:08 |
| 2 | Se 196.026†        | -5.4     | 12.8     | 4.6260 µg/L  | 4.6260 ppb  | 11:26:08 |
| 2 | SiO2†              | 1937.9   | 271.1    | 25.490 µg/L  | 25.490 ppb  | 11:25:47 |
| 2 | Si 251.611†        | 677.3    | 370.7    | 12.858 µg/L  | 12.858 ppb  | 11:26:08 |
| 2 | Sn 189.927†        | 55.7     | 33.5     | 3.2058 µg/L  | 3.2058 ppb  | 11:26:08 |
| 2 | Ti 334.940†        | -635.0   | 173.7    | 0.3962 µg/L  | 0.3962 ppb  | 11:25:47 |
| 2 | Tl 190.801†        | -154.8   | 5.3      | 0.8694 µg/L  | 0.8694 ppb  | 11:26:08 |
| 2 | U 367.007†         | 1447.1   | -2.4     | -0.516 µg/L  | -0.516 ppb  | 11:25:47 |
| 2 | V 292.402†         | 452.6    | 25.5     | 0.1691 µg/L  | 0.1691 ppb  | 11:25:47 |
| 2 | Zn 213.857†        | 1326.1   | 517.4    | 2.8140 µg/L  | 2.8140 ppb  | 11:26:08 |
| 3 | Sc RADIAL          | 8632.4   | 8632.4   | 102 %        |             | 11:24:55 |
| 3 | Al 396.153Radial†  | -745.4   | 8.7      | 4.3087 µg/L  | 4.3087 ppb  | 11:24:55 |
| 3 | Ca 317.933Radial†  | 234.3    | 120.2    | 58.525 µg/L  | 58.525 ppb  | 11:25:15 |
| 3 | Fe 238.204 Radial† | 19.5     | 8.0      | 12.282 µg/L  | 12.282 ppb  | 11:25:15 |
| 3 | K 766.490 Radial†  | 459.2    | 44.9     | 24.489 µg/L  | 24.489 ppb  | 11:24:55 |
| 3 | Mg 279.077 IEC†    | 8.3      | -3.1     | -19.056 µg/L | -19.056 ppb | 11:25:15 |
| 3 | Na 589.592 Radial† | 6.9      | 1.8      | 73.848 µg/L  | 73.848 ppb  | 11:25:15 |
| 3 | Sr 421.552†        | 52.5     | 47.4     | 1.2061 µg/L  | 1.2061 ppb  | 11:24:55 |
| 3 | Sc 361.383         | 633903.7 | 633903.7 | 101.30 %     |             | 11:26:13 |
| 3 | Y 371.029          | 715920.1 | 715920.1 | 100.83 %     |             | 11:26:13 |
| 3 | Ag 328.068†        | -991.4   | -39.3    | -0.1887 µg/L | -0.1887 ppb | 11:26:13 |
| 3 | As 188.979†        | 31.2     | 8.6      | 2.5846 µg/L  | 2.5846 ppb  | 11:26:33 |
| 3 | B 249.677†         | 316.2    | 120.1    | 2.3862 µg/L  | 2.3862 ppb  | 11:26:33 |
| 3 | Ba 233.527†        | 159.3    | 27.9     | 0.1570 µg/L  | 0.1570 ppb  | 11:26:33 |
| 3 | Be 313.107†        | -5580.1  | -65.5    | -0.0285 µg/L | -0.0285 ppb | 11:26:13 |
| 3 | Cd 226.502†        | -247.9   | 8.3      | 0.0492 µg/L  | 0.0492 ppb  | 11:26:33 |
| 3 | Co 228.616†        | -348.9   | -16.9    | -0.2779 µg/L | -0.2779 ppb | 11:26:33 |
| 3 | Cr 267.716†        | 128.0    | 9.5      | 0.1280 µg/L  | 0.1280 ppb  | 11:26:33 |
| 3 | Cu 324.752†        | 2608.6   | 81.5     | 0.3342 µg/L  | 0.3342 ppb  | 11:26:13 |
| 3 | Mn 257.610†        | 1142.9   | 284.8    | 0.2822 µg/L  | 0.2822 ppb  | 11:26:33 |
| 3 | Mo 202.031†        | -23.7    | -6.8     | -0.2767 µg/L | -0.2767 ppb | 11:26:33 |
| 3 | Ni 231.604†        | -168.8   | 9.5      | 0.1658 µg/L  | 0.1658 ppb  | 11:26:33 |
| 3 | P 214.914†         | 109.7    | -36.6    | -15.937 µg/L | -15.937 ppb | 11:26:33 |
| 3 | Pb 220.353†        | 97.7     | -9.9     | -0.8178 µg/L | -0.8178 ppb | 11:26:33 |
| 3 | S 181.975 Axial†   | 372.0    | 220.2    | 215.49 µg/L  | 215.49 ppb  | 11:26:33 |
| 3 | Sb 206.836†        | 122.3    | 5.5      | 1.2035 µg/L  | 1.2035 ppb  | 11:26:33 |
| 3 | Se 196.026†        | -3.7     | 14.4     | 5.2315 µg/L  | 5.2315 ppb  | 11:26:33 |
| 3 | SiO2†              | 1948.5   | 290.3    | 27.302 µg/L  | 27.302 ppb  | 11:26:13 |
| 3 | Si 251.611†        | 671.4    | 368.0    | 12.773 µg/L  | 12.773 ppb  | 11:26:33 |
| 3 | Sn 189.927†        | 42.5     | 20.7     | 1.9817 µg/L  | 1.9817 ppb  | 11:26:33 |
| 3 | Ti 334.940†        | -524.8   | 279.6    | 0.6416 µg/L  | 0.6416 ppb  | 11:26:13 |
| 3 | Tl 190.801†        | -133.2   | 25.9     | 4.2456 µg/L  | 4.2456 ppb  | 11:26:33 |
| 3 | U 367.007†         | 1374.6   | -67.5    | -12.45 µg/L  | -12.45 ppb  | 11:26:13 |
| 3 | V 292.402†         | 452.3    | 27.3     | 0.1658 µg/L  | 0.1658 ppb  | 11:26:13 |
| 3 | Zn 213.857†        | 1331.6   | 528.8    | 2.8796 µg/L  | 2.8796 ppb  | 11:26:33 |

Mean Data: 1203657600|1611119|1|

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|-------------|--------------|----------|--------------------|----------|---------|
| Sc 361.383         | 636330.8                 | 101.69      | %            | 0.356    |                    |          | 0.35%   |
| Sc RADIAL          | 8542.8                   | 101         | %            | 1.72     |                    |          | 1.70%   |
| Y 371.029          | 718821.2                 | 101.24      | %            | 0.373    |                    |          | 0.37%   |
| Ag 328.068†        | 29.7                     | 0.1550      | µg/L         | 0.30559  | 0.1550 ppb         | 0.30559  | 197.16% |
| Al 396.153Radial†  | -7.9                     | -3.9000     | µg/L         | 23.99170 | -3.9000 ppb        | 23.99170 | 615.17% |
| As 188.979†        | 4.5                      | 1.3570      | µg/L         | 1.12541  | 1.3570 ppb         | 1.12541  | 82.93%  |
| B 249.677†         | 115.5                    | 2.2961      | µg/L         | 0.07810  | 2.2961 ppb         | 0.07810  | 3.40%   |
| Ba 233.527†        | 25.3                     | 0.1420      | µg/L         | 0.07077  | 0.1420 ppb         | 0.07077  | 49.83%  |
| Be 313.107†        | 40.2                     | 0.0144      | µg/L         | 0.03964  | 0.0144 ppb         | 0.03964  | 274.84% |
| Ca 317.933Radial†  | 119.9                    | 58.393      | µg/L         | 1.5694   | 58.393 ppb         | 1.5694   | 2.69%   |
| Cd 226.502†        | 28.2                     | 0.1695      | µg/L         | 0.10454  | 0.1695 ppb         | 0.10454  | 61.69%  |
| Co 228.616†        | -11.3                    | -0.1858     | µg/L         | 0.10615  | -0.1858 ppb        | 0.10615  | 57.12%  |
| Cr 267.716†        | 8.1                      | 0.1088      | µg/L         | 0.09906  | 0.1088 ppb         | 0.09906  | 91.07%  |
| Cu 324.752†        | 95.0                     | 0.3915      | µg/L         | 0.26327  | 0.3915 ppb         | 0.26327  | 67.25%  |
| Fe 238.204 Radial† | 7.8                      | 12.038      | µg/L         | 2.7232   | 12.038 ppb         | 2.7232   | 22.62%  |
| K 766.490 Radial†  | 65.0                     | 35.447      | µg/L         | 13.4570  | 35.447 ppb         | 13.4570  | 37.96%  |
| Mg 279.077 IEC†    | -0.2                     | -1.2805     | µg/L         | 22.59372 | -1.2805 ppb        | 22.59372 | >999.9% |
| Mn 257.610†        | 299.8                    | 0.2963      | µg/L         | 0.02600  | 0.2963 ppb         | 0.02600  | 8.78%   |
| Mo 202.031†        | 3.6                      | 0.1458      | µg/L         | 0.37150  | 0.1458 ppb         | 0.37150  | 254.85% |

|                    |       |              |         |             |         |         |
|--------------------|-------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial† | 5.4   | 220.35 µg/L  | 127.841 | 220.35 ppb  | 127.841 | 58.02%  |
| Ni 231.604†        | 15.3  | 0.2680 µg/L  | 0.27399 | 0.2680 ppb  | 0.27399 | 102.23% |
| P 214.914†         | -29.0 | -12.645 µg/L | 3.9912  | -12.645 ppb | 3.9912  | 31.56%  |
| Pb 220.353†        | 13.8  | 1.1650 µg/L  | 1.78989 | 1.1650 ppb  | 1.78989 | 153.64% |
| S 181.975 Axial†   | 212.1 | 207.57 µg/L  | 7.043   | 207.57 ppb  | 7.043   | 3.39%   |
| Sb 206.836†        | 9.0   | 1.9573 µg/L  | 1.34286 | 1.9573 ppb  | 1.34286 | 68.61%  |
| Se 196.026†        | 12.7  | 4.6151 µg/L  | 0.62183 | 4.6151 ppb  | 0.62183 | 13.47%  |
| SiO2†              | 293.2 | 27.571 µg/L  | 2.2272  | 27.571 ppb  | 2.2272  | 8.08%   |
| Si 251.611†        | 368.3 | 12.779 µg/L  | 0.0766  | 12.779 ppb  | 0.0766  | 0.60%   |
| Sn 189.927†        | 25.4  | 2.4385 µg/L  | 0.66855 | 2.4385 ppb  | 0.66855 | 27.42%  |
| Sr 421.552†        | 38.1  | 0.9691 µg/L  | 0.22761 | 0.9691 ppb  | 0.22761 | 23.49%  |
| Ti 334.940†        | 233.3 | 0.5357 µg/L  | 0.12611 | 0.5357 ppb  | 0.12611 | 23.54%  |
| Tl 190.801†        | 20.3  | 3.3310 µg/L  | 2.15513 | 3.3310 ppb  | 2.15513 | 64.70%  |
| U 367.007†         | -55.6 | -10.25 µg/L  | 8.847   | -10.25 ppb  | 8.847   | 86.28%  |
| V 292.402†         | 12.0  | 0.0735 µg/L  | 0.16263 | 0.0735 ppb  | 0.16263 | 221.12% |
| Zn 213.857†        | 524.5 | 2.8545 µg/L  | 0.03543 | 2.8545 ppb  | 0.03543 | 1.24%   |

Sequence No.: 4

Autosampler Location: 302

Sample ID: 1203657601|1611119|1|

Date Collected: 11/16/2016 11:26:43

Analyst: HSC

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Wash Time: 5

Auto Dilution Factor: 1

Replicate Data: 1203657601|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8453.8        | 8453.8              | 100 %              |                    | 11:27:32      |
| 1     | Al 396.153Radial†  | 9215.4        | 9922.0              | 4873.1 µg/L        | 4873.1 ppb         | 11:27:12      |
| 1     | Ca 317.933Radial†  | 10111.1       | 9969.9              | 4856.2 µg/L        | 4856.2 ppb         | 11:27:32      |
| 1     | Fe 238.204 Radial† | 3398.0        | 3376.1              | 5179.1 µg/L        | 5179.1 ppb         | 11:27:32      |
| 1     | K 766.490 Radial†  | 9239.2        | 8806.0              | 4805.0 µg/L        | 4805.0 ppb         | 11:27:12      |
| 1     | Mg 279.077 IEC†    | 831.8         | 817.9               | 5100.6 µg/L        | 5100.6 ppb         | 11:27:32      |
| 1     | Na 589.592 Radial† | 123.8         | 118.5               | 4850.0 µg/L        | 4850.0 ppb         | 11:27:32      |
| 1     | Sr 421.552†        | 19165.3       | 19099.7             | 487.03 µg/L        | 487.03 ppb         | 11:27:12      |
| 1     | Sc 361.383         | 638774.1      | 638774.1            | 102.08 %           |                    | 11:28:31      |
| 1     | Y 371.029          | 717461.6      | 717461.6            | 101.04 %           |                    | 11:28:31      |
| 1     | Ag 328.068†        | 95900.9       | 94890.4             | 476.01 µg/L        | 476.01 ppb         | 11:28:31      |
| 1     | As 188.979†        | 1617.3        | 1562.3              | 473.86 µg/L        | 473.86 ppb         | 11:28:51      |
| 1     | B 249.677†         | 25701.6       | 24987.0             | 504.52 µg/L        | 504.52 ppb         | 11:28:31      |
| 1     | Ba 233.527†        | 87094.8       | 85194.6             | 479.50 µg/L        | 479.50 ppb         | 11:28:31      |
| 1     | Be 313.107†        | 1232695.8     | 1213074.4           | 486.39 µg/L        | 486.39 ppb         | 11:28:31      |
| 1     | Cd 226.502†        | 80110.1       | 78734.3             | 476.59 µg/L        | 476.59 ppb         | 11:28:31      |
| 1     | Co 228.616†        | 28626.1       | 28371.6             | 461.76 µg/L        | 461.76 ppb         | 11:28:51      |
| 1     | Cr 267.716†        | 38414.5       | 37516.6             | 470.71 µg/L        | 470.71 ppb         | 11:28:31      |
| 1     | Cu 324.752†        | 120137.0      | 115200.6            | 480.82 µg/L        | 480.82 ppb         | 11:28:31      |
| 1     | Mn 257.610†        | 489570.6      | 478772.7            | 472.10 µg/L        | 472.10 ppb         | 11:28:31      |
| 1     | Mo 202.031†        | 11665.1       | 11444.5             | 463.42 µg/L        | 463.42 ppb         | 11:28:51      |
| 1     | Ni 231.604†        | 26556.8       | 26193.0             | 460.50 µg/L        | 460.50 ppb         | 11:28:51      |
| 1     | P 214.914†         | 1235.6        | 1065.6              | 450.09 µg/L        | 450.09 ppb         | 11:28:51      |
| 1     | Pb 220.353†        | 5891.3        | 5665.2              | 471.80 µg/L        | 471.80 ppb         | 11:28:51      |
| 1     | S 181.975 Axial†   | 5180.6        | 4928.2              | 4826.8 µg/L        | 4826.8 ppb         | 11:28:51      |
| 1     | Sb 206.836†        | 2329.9        | 2167.3              | 468.58 µg/L        | 468.58 ppb         | 11:28:51      |
| 1     | Se 196.026†        | 1295.5        | 1287.2              | 468.65 µg/L        | 468.65 ppb         | 11:28:51      |
| 1     | SiO2†              | 108384.0      | 104547.0            | 9839.9 µg/L        | 9839.9 ppb         | 11:28:31      |
| 1     | Si 251.611†        | 135144.2      | 132101.4            | 4579.4 µg/L        | 4579.4 ppb         | 11:28:31      |
| 1     | Sn 189.927†        | 5027.7        | 4904.2              | 471.53 µg/L        | 471.53 ppb         | 11:28:51      |
| 1     | Ti 334.940†        | 211890.3      | 208379.7            | 471.28 µg/L        | 471.28 ppb         | 11:28:31      |
| 1     | Tl 190.801†        | 2818.9        | 2919.0              | 479.83 µg/L        | 479.83 ppb         | 11:28:51      |
| 1     | U 367.007†         | 4051.4        | 2544.5              | 443.9 µg/L         | 443.9 ppb          | 11:28:31      |
| 1     | V 292.402†         | 75078.6       | 73132.8             | 474.45 µg/L        | 474.45 ppb         | 11:28:31      |
| 1     | Zn 213.857†        | 88792.6       | 86201.4             | 465.18 µg/L        | 465.18 ppb         | 11:28:31      |
| 2     | Sc RADIAL          | 8466.9        | 8466.9              | 100 %              |                    | 11:27:57      |
| 2     | Al 396.153Radial†  | 9301.3        | 9993.3              | 4908.0 µg/L        | 4908.0 ppb         | 11:27:37      |
| 2     | Ca 317.933Radial†  | 10135.2       | 9978.4              | 4860.3 µg/L        | 4860.3 ppb         | 11:27:57      |
| 2     | Fe 238.204 Radial† | 3401.7        | 3374.5              | 5176.7 µg/L        | 5176.7 ppb         | 11:27:57      |
| 2     | K 766.490 Radial†  | 9402.8        | 8954.7              | 4886.0 µg/L        | 4886.0 ppb         | 11:27:37      |
| 2     | Mg 279.077 IEC†    | 833.3         | 818.2               | 5102.4 µg/L        | 5102.4 ppb         | 11:27:57      |
| 2     | Na 589.592 Radial† | 126.4         | 120.9               | 4948.5 µg/L        | 4948.5 ppb         | 11:27:57      |
| 2     | Sr 421.552†        | 19664.9       | 19567.4             | 498.96 µg/L        | 498.96 ppb         | 11:27:37      |
| 2     | Sc 361.383         | 636004.2      | 636004.2            | 101.63 %           |                    | 11:28:59      |
| 2     | Y 371.029          | 715474.7      | 715474.7            | 100.76 %           |                    | 11:28:59      |
| 2     | Ag 328.068†        | 95492.3       | 94897.6             | 476.04 µg/L        | 476.04 ppb         | 11:28:59      |
| 2     | As 188.979†        | 1622.7        | 1574.5              | 477.57 µg/L        | 477.57 ppb         | 11:29:19      |
| 2     | B 249.677†         | 25616.4       | 25012.8             | 504.99 µg/L        | 504.99 ppb         | 11:28:59      |
| 2     | Ba 233.527†        | 86313.2       | 84797.2             | 477.26 µg/L        | 477.26 ppb         | 11:28:59      |
| 2     | Be 313.107†        | 1224223.2     | 1209997.3           | 485.16 µg/L        | 485.16 ppb         | 11:28:59      |
| 2     | Cd 226.502†        | 79442.2       | 78418.9             | 474.68 µg/L        | 474.68 ppb         | 11:28:59      |
| 2     | Co 228.616†        | 28726.2       | 28592.1             | 465.35 µg/L        | 465.35 ppb         | 11:29:19      |
| 2     | Cr 267.716†        | 38202.5       | 37471.9             | 470.15 µg/L        | 470.15 ppb         | 11:28:59      |
| 2     | Cu 324.752†        | 119298.6      | 114888.1            | 479.51 µg/L        | 479.51 ppb         | 11:28:59      |
| 2     | Mn 257.610†        | 485790.2      | 477141.8            | 470.49 µg/L        | 470.49 ppb         | 11:28:59      |
| 2     | Mo 202.031†        | 11733.1       | 11561.2             | 468.15 µg/L        | 468.15 ppb         | 11:29:19      |
| 2     | Ni 231.604†        | 26710.1       | 26457.1             | 465.14 µg/L        | 465.14 ppb         | 11:29:19      |
| 2     | P 214.914†         | 1229.2        | 1064.6              | 449.63 µg/L        | 449.63 ppb         | 11:29:19      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 5890.0    | 5689.0    | 473.78 µg/L | 473.78 ppb | 11:29:19 |
| 2 | S 181.975 Axial†   | 5187.7    | 4957.2    | 4855.3 µg/L | 4855.3 ppb | 11:29:19 |
| 2 | Sb 206.836†        | 2347.6    | 2194.7    | 474.62 µg/L | 474.62 ppb | 11:29:19 |
| 2 | Se 196.026†        | 1315.2    | 1312.2    | 477.68 µg/L | 477.68 ppb | 11:29:19 |
| 2 | SiO2†              | 107773.6  | 104408.8  | 9826.9 µg/L | 9826.9 ppb | 11:28:59 |
| 2 | Si 251.611†        | 134385.1  | 131931.2  | 4573.4 µg/L | 4573.4 ppb | 11:28:59 |
| 2 | Sn 189.927†        | 5059.3    | 4956.8    | 476.56 µg/L | 476.56 ppb | 11:29:19 |
| 2 | Ti 334.940†        | 210828.7  | 208239.2  | 470.96 µg/L | 470.96 ppb | 11:28:59 |
| 2 | Tl 190.801†        | 2824.1    | 2936.1    | 482.62 µg/L | 482.62 ppb | 11:29:19 |
| 2 | U 367.007†         | 4017.8    | 2528.7    | 441.0 µg/L  | 441.0 ppb  | 11:28:59 |
| 2 | V 292.402†         | 74504.9   | 72888.7   | 472.93 µg/L | 472.93 ppb | 11:28:59 |
| 2 | Zn 213.857†        | 88290.9   | 86086.6   | 464.52 µg/L | 464.52 ppb | 11:28:59 |
| 3 | Sc RADIAL          | 8454.2    | 8454.2    | 100 %       |            | 11:28:22 |
| 3 | Al 396.153Radial†  | 9343.9    | 10049.7   | 4936.0 µg/L | 4936.0 ppb | 11:28:02 |
| 3 | Ca 317.933Radial†  | 10119.1   | 9977.5    | 4859.9 µg/L | 4859.9 ppb | 11:28:22 |
| 3 | Fe 238.204 Radial† | 3380.9    | 3358.8    | 5152.6 µg/L | 5152.6 ppb | 11:28:22 |
| 3 | K 766.490 Radial†  | 9450.6    | 9016.4    | 4919.7 µg/L | 4919.7 ppb | 11:28:02 |
| 3 | Mg 279.077 IEC†    | 822.6     | 808.7     | 5043.3 µg/L | 5043.3 ppb | 11:28:22 |
| 3 | Na 589.592 Radial† | 130.4     | 125.1     | 5120.3 µg/L | 5120.3 ppb | 11:28:22 |
| 3 | Sr 421.552†        | 19705.3   | 19637.0   | 500.73 µg/L | 500.73 ppb | 11:28:02 |
| 3 | Sc 361.383         | 641716.7  | 641716.7  | 102.55 %    |            | 11:29:26 |
| 3 | Y 371.029          | 720870.9  | 720870.9  | 101.52 %    |            | 11:29:26 |
| 3 | Ag 328.068†        | 96178.7   | 94730.5   | 475.21 µg/L | 475.21 ppb | 11:29:26 |
| 3 | As 188.979†        | 1617.4    | 1555.1    | 471.71 µg/L | 471.71 ppb | 11:29:46 |
| 3 | B 249.677†         | 25757.5   | 24926.0   | 503.23 µg/L | 503.23 ppb | 11:29:26 |
| 3 | Ba 233.527†        | 87150.0   | 84857.1   | 477.60 µg/L | 477.60 ppb | 11:29:26 |
| 3 | Be 313.107†        | 1236211.0 | 1210964.5 | 485.54 µg/L | 485.54 ppb | 11:29:26 |
| 3 | Cd 226.502†        | 80282.1   | 78542.2   | 475.42 µg/L | 475.42 ppb | 11:29:26 |
| 3 | Co 228.616†        | 28746.1   | 28360.0   | 461.57 µg/L | 461.57 ppb | 11:29:46 |
| 3 | Cr 267.716†        | 38605.3   | 37530.1   | 470.90 µg/L | 470.90 ppb | 11:29:26 |
| 3 | Cu 324.752†        | 120290.1  | 114810.1  | 479.17 µg/L | 479.17 ppb | 11:29:26 |
| 3 | Mn 257.610†        | 490626.8  | 477603.3  | 470.95 µg/L | 470.95 ppb | 11:29:26 |
| 3 | Mo 202.031†        | 11725.0   | 11450.5   | 463.67 µg/L | 463.67 ppb | 11:29:46 |
| 3 | Ni 231.604†        | 26727.0   | 26239.6   | 461.32 µg/L | 461.32 ppb | 11:29:46 |
| 3 | P 214.914†         | 1245.2    | 1069.4    | 451.80 µg/L | 451.80 ppb | 11:29:46 |
| 3 | Pb 220.353†        | 5922.0    | 5668.6    | 472.08 µg/L | 472.08 ppb | 11:29:46 |
| 3 | S 181.975 Axial†   | 5209.5    | 4933.1    | 4831.7 µg/L | 4831.7 ppb | 11:29:46 |
| 3 | Sb 206.836†        | 2329.6    | 2156.5    | 466.23 µg/L | 466.23 ppb | 11:29:46 |
| 3 | Se 196.026†        | 1307.1    | 1292.7    | 470.62 µg/L | 470.62 ppb | 11:29:46 |
| 3 | SiO2†              | 108609.0  | 104279.4  | 9814.7 µg/L | 9814.7 ppb | 11:29:26 |
| 3 | Si 251.611†        | 135609.3  | 131947.9  | 4574.1 µg/L | 4574.1 ppb | 11:29:26 |
| 3 | Sn 189.927†        | 5056.8    | 4910.0    | 472.08 µg/L | 472.08 ppb | 11:29:46 |
| 3 | Ti 334.940†        | 212505.0  | 208027.2  | 470.50 µg/L | 470.50 ppb | 11:29:26 |
| 3 | Tl 190.801†        | 2813.7    | 2901.3    | 476.91 µg/L | 476.91 ppb | 11:29:46 |
| 3 | U 367.007†         | 3902.4    | 2381.0    | 414.0 µg/L  | 414.0 ppb  | 11:29:26 |
| 3 | V 292.402†         | 75277.6   | 72989.6   | 473.51 µg/L | 473.51 ppb | 11:29:26 |
| 3 | Zn 213.857†        | 89058.4   | 86061.8   | 464.42 µg/L | 464.42 ppb | 11:29:26 |

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Mean Data: 1203657601|1611119|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383         | 638831.7                 | 102.08 %           | 0.457    |                    |          | 0.45% |
| Sc RADIAL          | 8458.3                   | 100 %              | 0.09     |                    |          | 0.09% |
| Y 371.029          | 717935.8                 | 101.11 %           | 0.384    |                    |          | 0.38% |
| Ag 328.068†        | 94839.5                  | 475.75 µg/L        | 0.467    | 475.75 ppb         | 0.467    | 0.10% |
| Al 396.153Radial†  | 9988.3                   | 4905.7 µg/L        | 31.53    | 4905.7 ppb         | 31.53    | 0.64% |
| As 188.979†        | 1564.0                   | 474.38 µg/L        | 2.961    | 474.38 ppb         | 2.961    | 0.62% |
| B 249.677†         | 24975.3                  | 504.24 µg/L        | 0.914    | 504.24 ppb         | 0.914    | 0.18% |
| Ba 233.527†        | 84949.6                  | 478.12 µg/L        | 1.206    | 478.12 ppb         | 1.206    | 0.25% |
| Be 313.107†        | 1211345.4                | 485.70 µg/L        | 0.632    | 485.70 ppb         | 0.632    | 0.13% |
| Ca 317.933Radial†  | 9975.3                   | 4858.8 µg/L        | 2.25     | 4858.8 ppb         | 2.25     | 0.05% |
| Cd 226.502†        | 78565.1                  | 475.56 µg/L        | 0.961    | 475.56 ppb         | 0.961    | 0.20% |
| Co 228.616†        | 28441.2                  | 462.89 µg/L        | 2.134    | 462.89 ppb         | 2.134    | 0.46% |
| Cr 267.716†        | 37506.2                  | 470.59 µg/L        | 0.389    | 470.59 ppb         | 0.389    | 0.08% |
| Cu 324.752†        | 114966.3                 | 479.83 µg/L        | 0.869    | 479.83 ppb         | 0.869    | 0.18% |
| Fe 238.204 Radial† | 3369.8                   | 5169.5 µg/L        | 14.64    | 5169.5 ppb         | 14.64    | 0.28% |
| K 766.490 Radial†  | 8925.7                   | 4870.2 µg/L        | 58.97    | 4870.2 ppb         | 58.97    | 1.21% |
| Mg 279.077 IEC†    | 814.9                    | 5082.1 µg/L        | 33.60    | 5082.1 ppb         | 33.60    | 0.66% |
| Mn 257.610†        | 477839.3                 | 471.18 µg/L        | 0.829    | 471.18 ppb         | 0.829    | 0.18% |
| Mo 202.031†        | 11485.4                  | 465.08 µg/L        | 2.659    | 465.08 ppb         | 2.659    | 0.57% |



|                    |          |             |        |            |        |       |
|--------------------|----------|-------------|--------|------------|--------|-------|
| Na 589.592 Radial† | 121.5    | 4972.9 µg/L | 136.80 | 4972.9 ppb | 136.80 | 2.75% |
| Ni 231.604†        | 26296.6  | 462.32 µg/L | 2.480  | 462.32 ppb | 2.480  | 0.54% |
| P 214.914†         | 1066.5   | 450.51 µg/L | 1.148  | 450.51 ppb | 1.148  | 0.25% |
| Pb 220.353†        | 5674.3   | 472.55 µg/L | 1.072  | 472.55 ppb | 1.072  | 0.23% |
| S 181.975 Axial†   | 4939.5   | 4837.9 µg/L | 15.25  | 4837.9 ppb | 15.25  | 0.32% |
| Sb 206.836†        | 2172.8   | 469.81 µg/L | 4.328  | 469.81 ppb | 4.328  | 0.92% |
| Se 196.026†        | 1297.4   | 472.31 µg/L | 4.749  | 472.31 ppb | 4.749  | 1.01% |
| SiO2†              | 104411.8 | 9827.2 µg/L | 12.59  | 9827.2 ppb | 12.59  | 0.13% |
| Si 251.611†        | 131993.5 | 4575.6 µg/L | 3.28   | 4575.6 ppb | 3.28   | 0.07% |
| Sn 189.927†        | 4923.7   | 473.39 µg/L | 2.760  | 473.39 ppb | 2.760  | 0.58% |
| Sr 421.552†        | 19434.7  | 495.57 µg/L | 7.454  | 495.57 ppb | 7.454  | 1.50% |
| Ti 334.940†        | 208215.3 | 470.91 µg/L | 0.394  | 470.91 ppb | 0.394  | 0.08% |
| Tl 190.801†        | 2918.8   | 479.79 µg/L | 2.852  | 479.79 ppb | 2.852  | 0.59% |
| U 367.007†         | 2484.7   | 432.9 µg/L  | 16.48  | 432.9 ppb  | 16.48  | 3.81% |
| V 292.402†         | 73003.7  | 473.63 µg/L | 0.767  | 473.63 ppb | 0.767  | 0.16% |
| Zn 213.857†        | 86116.6  | 464.71 µg/L | 0.411  | 464.71 ppb | 0.411  | 0.09% |

Sequence No.: 5

Sample ID: 409254022|1611119|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 303

Date Collected: 11/16/2016 11:29:55

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 409254022|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8852.5        | 8852.5              | 105 %              |                    | 11:30:45      |
| 1     | Al 396.153Radial†  | 168962.8      | 161570.2            | 79626 µg/L         | 79626 ppb          | 11:30:25      |
| 1     | Ca 317.933Radial†  | 282006.8      | 268330.6            | 130700 µg/L        | 130700 ppb         | 11:30:25      |
| 1     | Fe 238.204 Radial† | 107289.8      | 102116.9            | 156650 µg/L        | 156650 ppb         | 11:30:25      |
| 1     | K 766.490 Radial†  | 28794.3       | 27005.6             | 14841 µg/L         | 14841 ppb          | 11:30:25      |
| 1     | Mg 279.077 IEC†    | 9702.3        | 9224.3              | 57526 µg/L         | 57526 ppb          | 11:30:45      |
| 1     | Na 589.592 Radial† | 162.4         | 149.7               | 6145.8 µg/L        | 6145.8 ppb         | 11:30:45      |
| 1     | Sr 421.552†        | 18812.1       | 17903.2             | 452.26 µg/L        | 452.26 ppb         | 11:30:25      |
| 1     | Sc 361.383         | 643460.7      | 643460.7            | 102.82 %           |                    | 11:31:44      |
| 1     | Y 371.029          | 814647.7      | 814647.7            | 114.73 %           |                    | 11:31:44      |
| 1     | Ag 328.068†        | -5039.6       | -3961.7             | 6.8021 µg/L        | 6.8021 ppb         | 11:31:49      |
| 1     | As 188.979†        | 269.6         | 240.0               | 64.522 µg/L        | 64.522 ppb         | 11:32:09      |
| 1     | B 249.677†         | -25509.5      | -25000.8            | 126.50 µg/L        | 126.50 ppb         | 11:31:49      |
| 1     | Ba 233.527†        | 451068.8      | 438549.3            | 2464.8 µg/L        | 2464.8 ppb         | 11:31:49      |
| 1     | Be 313.107†        | 5515.5        | 10807.0             | 6.0997 µg/L        | 6.0997 ppb         | 11:31:49      |
| 1     | Cd 226.502†        | 2858.6        | 3033.2              | 2.4754 µg/L        | 2.4754 ppb         | 11:32:09      |
| 1     | Co 228.616†        | 4268.6        | 4478.9              | 60.189 µg/L        | 60.189 ppb         | 11:32:09      |
| 1     | Cr 267.716†        | 9450.5        | 9074.1              | 113.45 µg/L        | 113.45 ppb         | 11:32:09      |
| 1     | Cu 324.752†        | 38440.2       | 34890.5             | 153.86 µg/L        | 153.86 ppb         | 11:31:49      |
| 1     | Mn 257.610†        | 6421264.4     | 6244038.6           | 6162.1 µg/L        | 6162.1 ppb         | 11:31:44      |
| 1     | Mo 202.031†        | 89.1          | 103.2               | 10.624 µg/L        | 10.624 ppb         | 11:32:09      |
| 1     | Ni 231.604†        | 10543.7       | 10430.2             | 175.91 µg/L        | 175.91 ppb         | 11:32:09      |
| 1     | P 214.914†         | 13215.9       | 12707.9             | 5379.6 µg/L        | 5379.6 ppb         | 11:32:09      |
| 1     | Pb 220.353†        | 1489.0        | 1341.8              | 100.31 µg/L        | 100.31 ppb         | 11:32:09      |
| 1     | S 181.975 Axial†   | 6568.9        | 6241.4              | 6123.3 µg/L        | 6123.3 ppb         | 11:32:09      |
| 1     | Sb 206.836†        | 145.3         | 26.0                | 4.0559 µg/L        | 4.0559 ppb         | 11:32:09      |
| 1     | Se 196.026†        | -162.3        | -139.7              | 23.554 µg/L        | 23.554 ppb         | 11:32:09      |
| 1     | SiO2†              | 853925.6      | 828836.3            | 77968 µg/L         | 77968 ppb          | 11:31:44      |
| 1     | Si 251.611†        | 1072999.6     | 1043231.0           | 36194 µg/L         | 36194 ppb          | 11:31:44      |
| 1     | Sn 189.927†        | 13.8          | -7.8                | 9.8904 µg/L        | 9.8904 ppb         | 11:32:09      |
| 1     | Ti 334.940†        | 863586.4      | 840662.8            | 1908.3 µg/L        | 1908.3 ppb         | 11:31:44      |
| 1     | Tl 190.801†        | -287.9        | -122.6              | -2.0878 µg/L       | -2.0878 ppb        | 11:32:09      |
| 1     | U 367.007†         | 5162.2        | 3595.9              | -21.80 µg/L        | -21.80 ppb         | 11:31:49      |
| 1     | V 292.402†         | 39045.7       | 37553.9             | 260.90 µg/L        | 260.90 ppb         | 11:31:49      |
| 1     | Zn 213.857†        | 99204.7       | 95694.0             | 497.25 µg/L        | 497.25 ppb         | 11:31:49      |
| 2     | Sc RADIAL          | 8899.2        | 8899.2              | 106 %              |                    | 11:31:10      |
| 2     | Al 396.153Radial†  | 172028.3      | 163628.4            | 80641 µg/L         | 80641 ppb          | 11:30:50      |
| 2     | Ca 317.933Radial†  | 285767.6      | 270482.1            | 131750 µg/L        | 131750 ppb         | 11:30:50      |
| 2     | Fe 238.204 Radial† | 108922.4      | 103126.6            | 158200 µg/L        | 158200 ppb         | 11:30:50      |
| 2     | K 766.490 Radial†  | 29264.7       | 27307.1             | 15006 µg/L         | 15006 ppb          | 11:30:50      |
| 2     | Mg 279.077 IEC†    | 9726.0        | 9198.3              | 57364 µg/L         | 57364 ppb          | 11:31:10      |
| 2     | Na 589.592 Radial† | 157.8         | 144.5               | 5934.7 µg/L        | 5934.7 ppb         | 11:31:10      |
| 2     | Sr 421.552†        | 19172.2       | 18150.1             | 458.52 µg/L        | 458.52 ppb         | 11:30:50      |
| 2     | Sc 361.383         | 636380.3      | 636380.3            | 101.69 %           |                    | 11:32:16      |
| 2     | Y 371.029          | 806486.0      | 806486.0            | 113.58 %           |                    | 11:32:16      |
| 2     | Ag 328.068†        | -5046.3       | -4022.9             | 6.7728 µg/L        | 6.7728 ppb         | 11:32:22      |
| 2     | As 188.979†        | 266.6         | 240.0               | 64.436 µg/L        | 64.436 ppb         | 11:32:42      |
| 2     | B 249.677†         | -25443.8      | -25212.3            | 128.45 µg/L        | 128.45 ppb         | 11:32:22      |
| 2     | Ba 233.527†        | 451561.6      | 443914.7            | 2494.9 µg/L        | 2494.9 ppb         | 11:32:22      |
| 2     | Be 313.107†        | 5538.3        | 10889.1             | 6.1415 µg/L        | 6.1415 ppb         | 11:32:22      |
| 2     | Cd 226.502†        | 2851.2        | 3056.8              | 2.4629 µg/L        | 2.4629 ppb         | 11:32:42      |
| 2     | Co 228.616†        | 4262.6        | 4519.1              | 60.745 µg/L        | 60.745 ppb         | 11:32:42      |
| 2     | Cr 267.716†        | 9305.9        | 9034.1              | 112.96 µg/L        | 112.96 ppb         | 11:32:42      |
| 2     | Cu 324.752†        | 38566.4       | 35430.7             | 156.18 µg/L        | 156.18 ppb         | 11:32:22      |
| 2     | Mn 257.610†        | 6371659.7     | 6264740.4           | 6182.6 µg/L        | 6182.6 ppb         | 11:32:16      |
| 2     | Mo 202.031†        | 97.1          | 112.1               | 11.046 µg/L        | 11.046 ppb         | 11:32:42      |
| 2     | Ni 231.604†        | 10455.0       | 10457.1             | 176.31 µg/L        | 176.31 ppb         | 11:32:42      |
| 2     | P 214.914†         | 13101.2       | 12738.2             | 5391.3 µg/L        | 5391.3 ppb         | 11:32:42      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 1459.5    | 1328.9    | 99.050 µg/L | 99.050 ppb | 11:32:42 |
| 2 | S 181.975 Axial†   | 6508.6    | 6253.2    | 6134.8 µg/L | 6134.8 ppb | 11:32:42 |
| 2 | Sb 206.836†        | 138.4     | 20.9      | 2.9493 µg/L | 2.9493 ppb | 11:32:42 |
| 2 | Se 196.026†        | -168.1    | -147.2    | 21.570 µg/L | 21.570 ppb | 11:32:42 |
| 2 | SiO2†              | 846599.6  | 830872.1  | 78159 µg/L  | 78159 ppb  | 11:32:16 |
| 2 | Si 251.611†        | 1064036.2 | 1046027.2 | 36291 µg/L  | 36291 ppb  | 11:32:16 |
| 2 | Sn 189.927†        | 6.4       | -15.0     | 9.2811 µg/L | 9.2811 ppb | 11:32:42 |
| 2 | Ti 334.940†        | 858095.9  | 844608.1  | 1917.3 µg/L | 1917.3 ppb | 11:32:16 |
| 2 | Tl 190.801†        | -263.3    | -101.5    | 1.4480 µg/L | 1.4480 ppb | 11:32:42 |
| 2 | U 367.007†         | 5018.9    | 3510.9    | -44.06 µg/L | -44.06 ppb | 11:32:22 |
| 2 | V 292.402†         | 38994.4   | 37926.0   | 263.48 µg/L | 263.48 ppb | 11:32:22 |
| 2 | Zn 213.857†        | 99166.4   | 96729.7   | 502.71 µg/L | 502.71 ppb | 11:32:22 |
| 3 | Sc RADIAL          | 8904.7    | 8904.7    | 106 %       |            | 11:31:35 |
| 3 | Al 396.153Radial†  | 170687.4  | 162258.5  | 79966 µg/L  | 79966 ppb  | 11:31:15 |
| 3 | Ca 317.933Radial†  | 283069.3  | 267761.0  | 130420 µg/L | 130420 ppb | 11:31:15 |
| 3 | Fe 238.204 Radial† | 107863.1  | 102060.2  | 156570 µg/L | 156570 ppb | 11:31:15 |
| 3 | K 766.490 Radial†  | 29011.8   | 27050.7   | 14865 µg/L  | 14865 ppb  | 11:31:15 |
| 3 | Mg 279.077 IEC†    | 9761.9    | 9226.5    | 57540 µg/L  | 57540 ppb  | 11:31:35 |
| 3 | Na 589.592 Radial† | 162.4     | 148.7     | 6106.8 µg/L | 6106.8 ppb | 11:31:35 |
| 3 | Sr 421.552†        | 19120.9   | 18090.3   | 457.04 µg/L | 457.04 ppb | 11:31:15 |
| 3 | Sc 361.383         | 633515.8  | 633515.8  | 101.24 %    |            | 11:32:49 |
| 3 | Y 371.029          | 803053.6  | 803053.6  | 113.10 %    |            | 11:32:49 |
| 3 | Ag 328.068†        | -5007.3   | -4006.8   | 6.5673 µg/L | 6.5673 ppb | 11:32:54 |
| 3 | As 188.979†        | 271.8     | 246.4     | 66.432 µg/L | 66.432 ppb | 11:33:14 |
| 3 | B 249.677†         | -24941.7  | -24829.4  | 129.49 µg/L | 129.49 ppb | 11:32:54 |
| 3 | Ba 233.527†        | 446371.2  | 440795.4  | 2477.4 µg/L | 2477.4 ppb | 11:32:54 |
| 3 | Be 313.107†        | 5446.4    | 10823.0   | 6.1016 µg/L | 6.1016 ppb | 11:32:54 |
| 3 | Cd 226.502†        | 2866.2    | 3084.3    | 2.7923 µg/L | 2.7923 ppb | 11:33:14 |
| 3 | Co 228.616†        | 4251.2    | 4526.9    | 60.969 µg/L | 60.969 ppb | 11:33:14 |
| 3 | Cr 267.716†        | 9315.7    | 9085.2    | 113.59 µg/L | 113.59 ppb | 11:33:14 |
| 3 | Cu 324.752†        | 38230.2   | 35270.0   | 155.43 µg/L | 155.43 ppb | 11:32:54 |
| 3 | Mn 257.610†        | 6336538.7 | 6258378.3 | 6176.3 µg/L | 6176.3 ppb | 11:32:49 |
| 3 | Mo 202.031†        | 91.3      | 106.8     | 10.765 µg/L | 10.765 ppb | 11:33:14 |
| 3 | Ni 231.604†        | 10488.1   | 10536.3   | 177.78 µg/L | 177.78 ppb | 11:33:14 |
| 3 | P 214.914†         | 13053.5   | 12749.3   | 5397.8 µg/L | 5397.8 ppb | 11:33:14 |
| 3 | Pb 220.353†        | 1454.2    | 1330.1    | 99.214 µg/L | 99.214 ppb | 11:33:14 |
| 3 | S 181.975 Axial†   | 6519.7    | 6293.1    | 6174.0 µg/L | 6174.0 ppb | 11:33:14 |
| 3 | Sb 206.836†        | 148.1     | 31.1      | 5.1548 µg/L | 5.1548 ppb | 11:33:14 |
| 3 | Se 196.026†        | -179.5    | -159.2    | 16.437 µg/L | 16.437 ppb | 11:33:14 |
| 3 | SiO2†              | 841313.6  | 829414.9  | 78022 µg/L  | 78022 ppb  | 11:32:49 |
| 3 | Si 251.611†        | 1058032.3 | 1044827.6 | 36249 µg/L  | 36249 ppb  | 11:32:49 |
| 3 | Sn 189.927†        | 8.5       | -12.9     | 9.4412 µg/L | 9.4412 ppb | 11:33:14 |
| 3 | Ti 334.940†        | 854415.9  | 844788.3  | 1917.6 µg/L | 1917.6 ppb | 11:32:49 |
| 3 | Tl 190.801†        | -268.0    | -107.3    | 0.5000 µg/L | 0.5000 ppb | 11:33:14 |
| 3 | U 367.007†         | 5055.0    | 3568.8    | -26.33 µg/L | -26.33 ppb | 11:32:54 |
| 3 | V 292.402†         | 38505.5   | 37616.4   | 261.28 µg/L | 261.28 ppb | 11:32:54 |
| 3 | Zn 213.857†        | 98028.0   | 96046.1   | 499.16 µg/L | 499.16 ppb | 11:32:54 |

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Mean Data: 409254022|1611119|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383         | 637785.6                 | 101.92 %           | 0.818    |                    |          | 0.80% |
| Sc RADIAL          | 8885.5                   | 105 %              | 0.34     |                    |          | 0.32% |
| Y 371.029          | 808062.4                 | 113.80 %           | 0.839    |                    |          | 0.74% |
| Ag 328.068†        | -3997.1                  | 6.7141 µg/L        | 0.12797  | 6.7141 ppb         | 0.12797  | 1.91% |
| Al 396.153Radial†  | 162485.7                 | 80078 µg/L         | 516.36   | 80078 ppb          | 516.36   | 0.64% |
| As 188.979†        | 242.1                    | 65.130 µg/L        | 1.1286   | 65.130 ppb         | 1.1286   | 1.73% |
| B 249.677†         | -25014.2                 | 128.15 µg/L        | 1.518    | 128.15 ppb         | 1.518    | 1.18% |
| Ba 233.527†        | 441086.5                 | 2479.0 µg/L        | 15.15    | 2479.0 ppb         | 15.15    | 0.61% |
| Be 313.107†        | 10839.7                  | 6.1142 µg/L        | 0.02363  | 6.1142 ppb         | 0.02363  | 0.39% |
| Ca 317.933Radial†  | 268857.9                 | 130960 µg/L        | 699.04   | 130960 ppb         | 699.04   | 0.53% |
| Cd 226.502†        | 3058.1                   | 2.5769 µg/L        | 0.18667  | 2.5769 ppb         | 0.18667  | 7.24% |
| Co 228.616†        | 4508.3                   | 60.635 µg/L        | 0.4014   | 60.635 ppb         | 0.4014   | 0.66% |
| Cr 267.716†        | 9064.5                   | 113.33 µg/L        | 0.331    | 113.33 ppb         | 0.331    | 0.29% |
| Cu 324.752†        | 35197.1                  | 155.16 µg/L        | 1.186    | 155.16 ppb         | 1.186    | 0.76% |
| Fe 238.204 Radial† | 102434.6                 | 157140 µg/L        | 920.40   | 157140 ppb         | 920.40   | 0.59% |
| K 766.490 Radial†  | 27121.1                  | 14904 µg/L         | 89.36    | 14904 ppb          | 89.36    | 0.60% |
| Mg 279.077 IEC†    | 9216.4                   | 57477 µg/L         | 98.04    | 57477 ppb          | 98.04    | 0.17% |
| Mn 257.610†        | 6255719.1                | 6173.7 µg/L        | 10.49    | 6173.7 ppb         | 10.49    | 0.17% |
| Mo 202.031†        | 107.3                    | 10.812 µg/L        | 0.2148   | 10.812 ppb         | 0.2148   | 1.99% |

|                    |           |              |         |             |         |         |
|--------------------|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial† | 147.6     | 6062.4 µg/L  | 112.34  | 6062.4 ppb  | 112.34  | 1.85%   |
| Ni 231.604†        | 10474.5   | 176.67 µg/L  | 0.985   | 176.67 ppb  | 0.985   | 0.56%   |
| P 214.914†         | 12731.8   | 5389.6 µg/L  | 9.18    | 5389.6 ppb  | 9.18    | 0.17%   |
| Pb 220.353†        | 1333.6    | 99.526 µg/L  | 0.6869  | 99.526 ppb  | 0.6869  | 0.69%   |
| S 181.975 Axial†   | 6262.6    | 6144.0 µg/L  | 26.58   | 6144.0 ppb  | 26.58   | 0.43%   |
| Sb 206.836†        | 26.0      | 4.0534 µg/L  | 1.10274 | 4.0534 ppb  | 1.10274 | 27.21%  |
| Se 196.026†        | -148.7    | 20.520 µg/L  | 3.6725  | 20.520 ppb  | 3.6725  | 17.90%  |
| SiO2†              | 829707.8  | 78050 µg/L   | 98.68   | 78050 ppb   | 98.68   | 0.13%   |
| Si 251.611†        | 1044695.2 | 36244 µg/L   | 48.57   | 36244 ppb   | 48.57   | 0.13%   |
| Sn 189.927†        | -11.9     | 9.5375 µg/L  | 0.31587 | 9.5375 ppb  | 0.31587 | 3.31%   |
| Sr 421.552†        | 18047.9   | 455.94 µg/L  | 3.273   | 455.94 ppb  | 3.273   | 0.72%   |
| Ti 334.940†        | 843353.0  | 1914.4 µg/L  | 5.29    | 1914.4 ppb  | 5.29    | 0.28%   |
| Tl 190.801†        | -110.5    | -0.0466 µg/L | 1.83020 | -0.0466 ppb | 1.83020 | >999.9% |
| U 367.007†         | 3558.5    | -30.73 µg/L  | 11.759  | -30.73 ppb  | 11.759  | 38.27%  |
| V 292.402†         | 37698.8   | 261.89 µg/L  | 1.392   | 261.89 ppb  | 1.392   | 0.53%   |
| Zn 213.857†        | 96156.6   | 499.71 µg/L  | 2.769   | 499.71 ppb  | 2.769   | 0.55%   |

Sequence No.: 6

Autosampler Location: 304

Sample ID: 1203657602|1611119|1|

Date Collected: 11/16/2016 11:33:23

Analyst: HSC

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Wash Time: 5

Auto Dilution Factor: 1

Replicate Data: 1203657602|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8536.3        | 8536.3              | 101 %              |                    | 11:34:12      |
| 1     | Al 396.153Radial†  | 116381.2      | 115621.2            | 56981 µg/L         | 56981 ppb          | 11:33:52      |
| 1     | Ca 317.933Radial†  | 272653.3      | 269039.2            | 131050 µg/L        | 131050 ppb         | 11:33:52      |
| 1     | Fe 238.204 Radial† | 76964.2       | 75963.7             | 116530 µg/L        | 116530 ppb         | 11:33:52      |
| 1     | K 766.490 Radial†  | 21455.3       | 20776.1             | 11415 µg/L         | 11415 ppb          | 11:33:52      |
| 1     | Mg 279.077 IEC†    | 8683.1        | 8560.2              | 53385 µg/L         | 53385 ppb          | 11:34:12      |
| 1     | Na 589.592 Radial† | 123.3         | 116.7               | 4800.3 µg/L        | 4800.3 ppb         | 11:34:12      |
| 1     | Sr 421.552†        | 15119.3       | 14921.1             | 376.18 µg/L        | 376.18 ppb         | 11:33:52      |
| 1     | Sc 361.383         | 619881.9      | 619881.9            | 99.057 %           |                    | 11:35:16      |
| 1     | Y 371.029          | 775377.1      | 775377.1            | 109.20 %           |                    | 11:35:10      |
| 1     | Ag 328.068†        | -3926.0       | -3024.0             | 4.2537 µg/L        | 4.2537 ppb         | 11:35:16      |
| 1     | As 188.979†        | 187.2         | 166.8               | 44.481 µg/L        | 44.481 ppb         | 11:35:36      |
| 1     | B 249.677†         | -18912.7      | -19284.9            | 80.709 µg/L        | 80.709 ppb         | 11:35:16      |
| 1     | Ba 233.527†        | 308898.0      | 311710.7            | 1751.8 µg/L        | 1751.8 ppb         | 11:35:16      |
| 1     | Be 313.107†        | 1731.7        | 7191.3              | 4.6184 µg/L        | 4.6184 ppb         | 11:35:16      |
| 1     | Cd 226.502†        | 1952.5        | 2224.1              | 1.5811 µg/L        | 1.5811 ppb         | 11:35:36      |
| 1     | Co 228.616†        | 3232.2        | 3590.5              | 48.277 µg/L        | 48.277 ppb         | 11:35:36      |
| 1     | Cr 267.716†        | 7009.4        | 6959.3              | 87.026 µg/L        | 87.026 ppb         | 11:35:36      |
| 1     | Cu 324.752†        | 26787.6       | 24549.1             | 108.62 µg/L        | 108.62 ppb         | 11:35:16      |
| 1     | Mn 257.610†        | 5122096.4     | 5170037.0           | 5101.3 µg/L        | 5101.3 ppb         | 11:35:10      |
| 1     | Mo 202.031†        | 50.3          | 67.4                | 7.5228 µg/L        | 7.5228 ppb         | 11:35:36      |
| 1     | Ni 231.604†        | 7493.7        | 7741.2              | 130.55 µg/L        | 130.55 ppb         | 11:35:36      |
| 1     | P 214.914†         | 11032.8       | 10993.0             | 4671.6 µg/L        | 4671.6 ppb         | 11:35:36      |
| 1     | Pb 220.353†        | 1021.3        | 924.7               | 70.608 µg/L        | 70.608 ppb         | 11:35:36      |
| 1     | S 181.975 Axial†   | 3609.0        | 3496.3              | 3435.3 µg/L        | 3435.3 ppb         | 11:35:36      |
| 1     | Sb 206.836†        | 150.6         | 36.8                | 7.1724 µg/L        | 7.1724 ppb         | 11:35:36      |
| 1     | Se 196.026†        | -113.1        | -96.0               | 20.378 µg/L        | 20.378 ppb         | 11:35:36      |
| 1     | SiO2†              | 775535.3      | 781288.4            | 73495 µg/L         | 73495 ppb          | 11:35:16      |
| 1     | Si 251.611†        | 1000420.6     | 1009654.0           | 35035 µg/L         | 35035 ppb          | 11:35:10      |
| 1     | Sn 189.927†        | 2.2           | -19.1               | 6.8396 µg/L        | 6.8396 ppb         | 11:35:36      |
| 1     | Ti 334.940†        | 753027.9      | 760997.7            | 1728.1 µg/L        | 1728.1 ppb         | 11:35:16      |
| 1     | Tl 190.801†        | -263.2        | -108.3              | -1.3606 µg/L       | -1.3606 ppb        | 11:35:36      |
| 1     | U 367.007†         | 4264.7        | 2880.8              | 11.81 µg/L         | 11.81 ppb          | 11:35:16      |
| 1     | V 292.402†         | 28268.8       | 28118.8             | 195.05 µg/L        | 195.05 ppb         | 11:35:16      |
| 1     | Zn 213.857†        | 71632.0       | 71528.5             | 371.14 µg/L        | 371.14 ppb         | 11:35:16      |
| 2     | Sc RADIAL          | 8556.2        | 8556.2              | 102 %              |                    | 11:34:38      |
| 2     | Al 396.153Radial†  | 118925.4      | 117859.8            | 58085 µg/L         | 58085 ppb          | 11:34:18      |
| 2     | Ca 317.933Radial†  | 275894.5      | 271605.5            | 132300 µg/L        | 132300 ppb         | 11:34:18      |
| 2     | Fe 238.204 Radial† | 78021.1       | 76827.9             | 117860 µg/L        | 117860 ppb         | 11:34:18      |
| 2     | K 766.490 Radial†  | 21744.9       | 21012.0             | 11545 µg/L         | 11545 ppb          | 11:34:18      |
| 2     | Mg 279.077 IEC†    | 8677.7        | 8535.1              | 53228 µg/L         | 53228 ppb          | 11:34:38      |
| 2     | Na 589.592 Radial† | 121.9         | 115.1               | 4734.8 µg/L        | 4734.8 ppb         | 11:34:38      |
| 2     | Sr 421.552†        | 15509.7       | 15270.9             | 385.06 µg/L        | 385.06 ppb         | 11:34:18      |
| 2     | Sc 361.383         | 618291.9      | 618291.9            | 98.802 %           |                    | 11:35:47      |
| 2     | Y 371.029          | 771113.8      | 771113.8            | 108.60 %           |                    | 11:35:42      |
| 2     | Ag 328.068†        | -3928.7       | -3036.9             | 4.4080 µg/L        | 4.4080 ppb         | 11:35:47      |
| 2     | As 188.979†        | 198.3         | 178.6               | 47.939 µg/L        | 47.939 ppb         | 11:36:07      |
| 2     | B 249.677†         | -18746.3      | -19165.5            | 88.226 µg/L        | 88.226 ppb         | 11:35:47      |
| 2     | Ba 233.527†        | 307761.4      | 311362.3            | 1749.8 µg/L        | 1749.8 ppb         | 11:35:47      |
| 2     | Be 313.107†        | 1764.2        | 7228.7              | 4.6507 µg/L        | 4.6507 ppb         | 11:35:47      |
| 2     | Cd 226.502†        | 1989.2        | 2266.4              | 1.7050 µg/L        | 1.7050 ppb         | 11:36:07      |
| 2     | Co 228.616†        | 3211.9        | 3578.4              | 47.981 µg/L        | 47.981 ppb         | 11:36:07      |
| 2     | Cr 267.716†        | 6977.7        | 6945.4              | 86.856 µg/L        | 86.856 ppb         | 11:36:07      |
| 2     | Cu 324.752†        | 26739.0       | 24569.3             | 108.78 µg/L        | 108.78 ppb         | 11:35:47      |
| 2     | Mn 257.610†        | 5090973.8     | 5151835.0           | 5083.4 µg/L        | 5083.4 ppb         | 11:35:42      |
| 2     | Mo 202.031†        | 22.7          | 39.6                | 6.4533 µg/L        | 6.4533 ppb         | 11:36:07      |
| 2     | Ni 231.604†        | 7445.0        | 7711.4              | 129.96 µg/L        | 129.96 ppb         | 11:36:07      |
| 2     | P 214.914†         | 10967.7       | 10955.8             | 4654.2 µg/L        | 4654.2 ppb         | 11:36:07      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 1026.9    | 932.9     | 71.052 µg/L | 71.052 ppb | 11:36:07 |
| 2 | S 181.975 Axial†   | 3600.2    | 3496.8    | 3435.6 µg/L | 3435.6 ppb | 11:36:07 |
| 2 | Sb 206.836†        | 121.9     | 8.1       | 0.9048 µg/L | 0.9048 ppb | 11:36:07 |
| 2 | Se 196.026†        | -119.9    | -103.2    | 18.400 µg/L | 18.400 ppb | 11:36:07 |
| 2 | SiO2†              | 772733.8  | 780466.5  | 73417 µg/L  | 73417 ppb  | 11:35:47 |
| 2 | Si 251.611†        | 993319.9  | 1005064.5 | 34876 µg/L  | 34876 ppb  | 11:35:42 |
| 2 | Sn 189.927†        | 15.3      | -5.8      | 8.1498 µg/L | 8.1498 ppb | 11:36:07 |
| 2 | Ti 334.940†        | 751549.6  | 761456.4  | 1729.2 µg/L | 1729.2 ppb | 11:35:47 |
| 2 | Tl 190.801†        | -252.2    | -97.9     | 0.3569 µg/L | 0.3569 ppb | 11:36:07 |
| 2 | U 367.007†         | 4300.6    | 2928.2    | 14.69 µg/L  | 14.69 ppb  | 11:35:47 |
| 2 | V 292.402†         | 28196.8   | 28119.4   | 195.23 µg/L | 195.23 ppb | 11:35:47 |
| 2 | Zn 213.857†        | 71206.4   | 71283.8   | 369.65 µg/L | 369.65 ppb | 11:35:47 |
| 3 | Sc RADIAL          | 8620.5    | 8620.5    | 102 %       |            | 11:35:03 |
| 3 | Al 396.153Radial†  | 118129.1  | 116207.6  | 57270 µg/L  | 57270 ppb  | 11:34:43 |
| 3 | Ca 317.933Radial†  | 273265.5  | 267008.6  | 130060 µg/L | 130060 ppb | 11:34:43 |
| 3 | Fe 238.204 Radial† | 77431.6   | 75678.4   | 116090 µg/L | 116090 ppb | 11:34:43 |
| 3 | K 766.490 Radial†  | 21544.3   | 20656.2   | 11349 µg/L  | 11349 ppb  | 11:34:43 |
| 3 | Mg 279.077 IEC†    | 8725.5    | 8518.0    | 53121 µg/L  | 53121 ppb  | 11:35:03 |
| 3 | Na 589.592 Radial† | 127.7     | 119.9     | 4927.9 µg/L | 4927.9 ppb | 11:35:03 |
| 3 | Sr 421.552†        | 15397.7   | 15047.4   | 379.44 µg/L | 379.44 ppb | 11:34:43 |
| 3 | Sc 361.383         | 615343.4  | 615343.4  | 98.331 %    |            | 11:36:19 |
| 3 | Y 371.029          | 774051.4  | 774051.4  | 109.01 %    |            | 11:36:13 |
| 3 | Ag 328.068†        | -3899.4   | -3026.1   | 4.1745 µg/L | 4.1745 ppb | 11:36:19 |
| 3 | As 188.979†        | 182.3     | 163.3     | 43.422 µg/L | 43.422 ppb | 11:36:39 |
| 3 | B 249.677†         | -18569.9  | -19077.1  | 83.039 µg/L | 83.039 ppb | 11:36:19 |
| 3 | Ba 233.527†        | 306071.0  | 311135.8  | 1748.5 µg/L | 1748.5 ppb | 11:36:19 |
| 3 | Be 313.107†        | 1642.2    | 7113.1    | 4.5755 µg/L | 4.5755 ppb | 11:36:19 |
| 3 | Cd 226.502†        | 1947.9    | 2234.0    | 1.6842 µg/L | 1.6842 ppb | 11:36:39 |
| 3 | Co 228.616†        | 3218.4    | 3600.5    | 48.463 µg/L | 48.463 ppb | 11:36:39 |
| 3 | Cr 267.716†        | 6954.3    | 6955.5    | 86.964 µg/L | 86.964 ppb | 11:36:39 |
| 3 | Cu 324.752†        | 26623.2   | 24581.3   | 108.73 µg/L | 108.73 ppb | 11:36:19 |
| 3 | Mn 257.610†        | 5098207.3 | 5183881.1 | 5114.9 µg/L | 5114.9 ppb | 11:36:13 |
| 3 | Mo 202.031†        | 19.3      | 36.3      | 6.2450 µg/L | 6.2450 ppb | 11:36:39 |
| 3 | Ni 231.604†        | 7439.2    | 7741.6    | 130.58 µg/L | 130.58 ppb | 11:36:39 |
| 3 | P 214.914†         | 10924.8   | 10965.3   | 4660.0 µg/L | 4660.0 ppb | 11:36:39 |
| 3 | Pb 220.353†        | 1064.3    | 976.0     | 74.716 µg/L | 74.716 ppb | 11:36:39 |
| 3 | S 181.975 Axial†   | 3555.9    | 3469.2    | 3408.8 µg/L | 3408.8 ppb | 11:36:39 |
| 3 | Sb 206.836†        | 134.4     | 21.4      | 3.8115 µg/L | 3.8115 ppb | 11:36:39 |
| 3 | Se 196.026†        | -112.5    | -96.3     | 20.092 µg/L | 20.092 ppb | 11:36:39 |
| 3 | SiO2†              | 769259.3  | 780680.5  | 73437 µg/L  | 73437 ppb  | 11:36:19 |
| 3 | Si 251.611†        | 995076.7  | 1011668.4 | 35105 µg/L  | 35105 ppb  | 11:36:13 |
| 3 | Sn 189.927†        | 8.6       | -12.5     | 7.4642 µg/L | 7.4642 ppb | 11:36:39 |
| 3 | Ti 334.940†        | 748087.2  | 761580.1  | 1729.4 µg/L | 1729.4 ppb | 11:36:19 |
| 3 | Tl 190.801†        | -244.9    | -91.7     | 1.3831 µg/L | 1.3831 ppb | 11:36:39 |
| 3 | U 367.007†         | 4243.8    | 2891.3    | 15.82 µg/L  | 15.82 ppb  | 11:36:19 |
| 3 | V 292.402†         | 27996.1   | 28052.0   | 194.55 µg/L | 194.55 ppb | 11:36:19 |
| 3 | Zn 213.857†        | 70839.4   | 71255.9   | 369.72 µg/L | 369.72 ppb | 11:36:19 |

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Mean Data: 1203657602|1611119|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc 361.383         | 617839.0                 | 98.730 %           | 0.3680   |                    |          | 0.37%  |
| Sc RADIAL          | 8571.0                   | 102 %              | 0.52     |                    |          | 0.51%  |
| Y 371.029          | 773514.1                 | 108.94 %           | 0.307    |                    |          | 0.28%  |
| Ag 328.068†        | -3029.0                  | 4.2787 µg/L        | 0.11873  | 4.2787 ppb         | 0.11873  | 2.77%  |
| Al 396.153Radial†  | 116562.8                 | 57446 µg/L         | 572.10   | 57446 ppb          | 572.10   | 1.00%  |
| As 188.979†        | 169.6                    | 45.281 µg/L        | 2.3622   | 45.281 ppb         | 2.3622   | 5.22%  |
| B 249.677†         | -19175.8                 | 83.991 µg/L        | 3.8478   | 83.991 ppb         | 3.8478   | 4.58%  |
| Ba 233.527†        | 311402.9                 | 1750.0 µg/L        | 1.63     | 1750.0 ppb         | 1.63     | 0.09%  |
| Be 313.107†        | 7177.7                   | 4.6149 µg/L        | 0.03769  | 4.6149 ppb         | 0.03769  | 0.82%  |
| Ca 317.933Radial†  | 269217.8                 | 131130 µg/L        | 1122.08  | 131130 ppb         | 1122.08  | 0.86%  |
| Cd 226.502†        | 2241.5                   | 1.6568 µg/L        | 0.06632  | 1.6568 ppb         | 0.06632  | 4.00%  |
| Co 228.616†        | 3589.8                   | 48.240 µg/L        | 0.2427   | 48.240 ppb         | 0.2427   | 0.50%  |
| Cr 267.716†        | 6953.4                   | 86.948 µg/L        | 0.0861   | 86.948 ppb         | 0.0861   | 0.10%  |
| Cu 324.752†        | 24566.5                  | 108.71 µg/L        | 0.081    | 108.71 ppb         | 0.081    | 0.07%  |
| Fe 238.204 Radial† | 76156.7                  | 116830 µg/L        | 918.22   | 116830 ppb         | 918.22   | 0.79%  |
| K 766.490 Radial†  | 20814.8                  | 11436 µg/L         | 99.46    | 11436 ppb          | 99.46    | 0.87%  |
| Mg 279.077 IEC†    | 8537.7                   | 53245 µg/L         | 132.60   | 53245 ppb          | 132.60   | 0.25%  |
| Mn 257.610†        | 5168584.4                | 5099.9 µg/L        | 15.80    | 5099.9 ppb         | 15.80    | 0.31%  |
| Mo 202.031†        | 47.7                     | 6.7404 µg/L        | 0.68557  | 6.7404 ppb         | 0.68557  | 10.17% |

|                    |           |             |         |            |         |         |
|--------------------|-----------|-------------|---------|------------|---------|---------|
| Na 589.592 Radial† | 117.3     | 4821.0 µg/L | 98.24   | 4821.0 ppb | 98.24   | 2.04%   |
| Ni 231.604†        | 7731.4    | 130.36 µg/L | 0.347   | 130.36 ppb | 0.347   | 0.27%   |
| P 214.914†         | 10971.4   | 4661.9 µg/L | 8.85    | 4661.9 ppb | 8.85    | 0.19%   |
| Pb 220.353†        | 944.5     | 72.125 µg/L | 2.2544  | 72.125 ppb | 2.2544  | 3.13%   |
| S 181.975 Axial†   | 3487.4    | 3426.6 µg/L | 15.38   | 3426.6 ppb | 15.38   | 0.45%   |
| Sb 206.836†        | 22.1      | 3.9629 µg/L | 3.13655 | 3.9629 ppb | 3.13655 | 79.15%  |
| Se 196.026†        | -98.5     | 19.623 µg/L | 1.0690  | 19.623 ppb | 1.0690  | 5.45%   |
| SiO2†              | 780811.8  | 73450 µg/L  | 40.11   | 73450 ppb  | 40.11   | 0.05%   |
| Si 251.611†        | 1008795.6 | 35005 µg/L  | 117.69  | 35005 ppb  | 117.69  | 0.34%   |
| Sn 189.927†        | -12.5     | 7.4845 µg/L | 0.65531 | 7.4845 ppb | 0.65531 | 8.76%   |
| Sr 421.552†        | 15079.8   | 380.23 µg/L | 4.493   | 380.23 ppb | 4.493   | 1.18%   |
| Ti 334.940†        | 761344.7  | 1728.9 µg/L | 0.69    | 1728.9 ppb | 0.69    | 0.04%   |
| Tl 190.801†        | -99.3     | 0.1265 µg/L | 1.38630 | 0.1265 ppb | 1.38630 | >999.9% |
| U 367.007†         | 2900.1    | 14.11 µg/L  | 2.069   | 14.11 ppb  | 2.069   | 14.67%  |
| V 292.402†         | 28096.7   | 194.94 µg/L | 0.350   | 194.94 ppb | 0.350   | 0.18%   |
| Zn 213.857†        | 71356.0   | 370.17 µg/L | 0.838   | 370.17 ppb | 0.838   | 0.23%   |

Sequence No.: 7

Sample ID: 1203657603|1611119|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 305

Date Collected: 11/16/2016 11:36:47

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 1203657603|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8559.8        | 8559.8              | 102 %              |                    | 11:37:36      |
| 1     | Al 396.153Radial†  | 207562.3      | 205067.3            | 101050 µg/L        | 101050 ppb         | 11:37:16      |
| 1     | Ca 317.933Radial†  | 236132.1      | 232347.3            | 113170 µg/L        | 113170 ppb         | 11:37:16      |
| 1     | Fe 238.204 Radial† | 94803.9       | 93317.0             | 143150 µg/L        | 143150 ppb         | 11:37:16      |
| 1     | K 766.490 Radial†  | 36689.8       | 35715.3             | 19580 µg/L         | 19580 ppb          | 11:37:16      |
| 1     | Mg 279.077 IEC†    | 9394.1        | 9236.7              | 57603 µg/L         | 57603 ppb          | 11:37:36      |
| 1     | Na 589.592 Radial† | 260.9         | 251.9               | 10325 µg/L         | 10325 ppb          | 11:37:36      |
| 1     | Sr 421.552†        | 35195.0       | 34643.3             | 879.86 µg/L        | 879.86 ppb         | 11:37:16      |
| 1     | Sc 361.383         | 630174.9      | 630174.9            | 100.70 %           |                    | 11:38:42      |
| 1     | Y 371.029          | 776284.7      | 776284.7            | 109.33 %           |                    | 11:38:42      |
| 1     | Ag 328.068†        | 90132.2       | 90443.9             | 477.37 µg/L        | 477.37 ppb         | 11:38:42      |
| 1     | As 188.979†        | 1770.7        | 1736.2              | 519.36 µg/L        | 519.36 ppb         | 11:39:02      |
| 1     | B 249.677†         | 2857.7        | 2645.7              | 609.75 µg/L        | 609.75 ppb         | 11:38:42      |
| 1     | Ba 233.527†        | 472954.4      | 469531.0            | 2639.6 µg/L        | 2639.6 ppb         | 11:38:42      |
| 1     | Be 313.107†        | 1192696.9     | 1189833.0           | 478.55 µg/L        | 478.55 ppb         | 11:38:42      |
| 1     | Cd 226.502†        | 76867.5       | 76585.2             | 449.42 µg/L        | 449.42 ppb         | 11:38:42      |
| 1     | Co 228.616†        | 31281.3       | 31390.9             | 498.31 µg/L        | 498.31 ppb         | 11:38:42      |
| 1     | Cr 267.716†        | 46758.2       | 46315.7             | 580.32 µg/L        | 580.32 ppb         | 11:38:42      |
| 1     | Cu 324.752†        | 148049.7      | 144524.9            | 610.47 µg/L        | 610.47 ppb         | 11:38:42      |
| 1     | Mn 257.610†        | 7553601.5     | 7500147.9           | 7399.8 µg/L        | 7399.8 ppb         | 11:38:34      |
| 1     | Mo 202.031†        | 11224.6       | 11163.0             | 457.71 µg/L        | 457.71 ppb         | 11:39:02      |
| 1     | Ni 231.604†        | 34421.1       | 34357.5             | 597.46 µg/L        | 597.46 ppb         | 11:38:42      |
| 1     | P 214.914†         | 11919.6       | 11691.7             | 4945.1 µg/L        | 4945.1 ppb         | 11:39:02      |
| 1     | Pb 220.353†        | 6722.2        | 6569.1              | 527.73 µg/L        | 527.73 ppb         | 11:39:02      |
| 1     | S 181.975 Axial†   | 9682.5        | 9468.0              | 9287.7 µg/L        | 9287.7 ppb         | 11:39:02      |
| 1     | Sb 206.836†        | 1855.7        | 1727.6              | 371.37 µg/L        | 371.37 ppb         | 11:39:02      |
| 1     | Se 196.026†        | 1108.5        | 1118.9              | 472.94 µg/L        | 472.94 ppb         | 11:39:02      |
| 1     | SiO2†              | 883225.8      | 875441.0            | 82357 µg/L         | 82357 ppb          | 11:38:42      |
| 1     | Si 251.611†        | 1111214.8     | 1103180.4           | 38272 µg/L         | 38272 ppb          | 11:38:42      |
| 1     | Sn 189.927†        | 4669.9        | 4616.2              | 455.63 µg/L        | 455.63 ppb         | 11:39:02      |
| 1     | Ti 334.940†        | 1242975.8     | 1235116.3           | 2799.4 µg/L        | 2799.4 ppb         | 11:38:42      |
| 1     | Tl 190.801†        | 2464.2        | 2604.4              | 450.22 µg/L        | 450.22 ppb         | 11:39:02      |
| 1     | U 367.007†         | 7124.6        | 5650.5              | 415.4 µg/L         | 415.4 ppb          | 11:38:42      |
| 1     | V 292.402†         | 115449.1      | 114225.8            | 754.98 µg/L        | 754.98 ppb         | 11:38:42      |
| 1     | Zn 213.857†        | 164775.5      | 162842.1            | 861.50 µg/L        | 861.50 ppb         | 11:38:42      |
| 2     | Sc RADIAL          | 8612.9        | 8612.9              | 102 %              |                    | 11:38:02      |
| 2     | Al 396.153Radial†  | 212665.8      | 208802.0            | 102890 µg/L        | 102890 ppb         | 11:37:42      |
| 2     | Ca 317.933Radial†  | 240377.0      | 235068.9            | 114500 µg/L        | 114500 ppb         | 11:37:42      |
| 2     | Fe 238.204 Radial† | 96798.9       | 94694.1             | 145270 µg/L        | 145270 ppb         | 11:37:42      |
| 2     | K 766.490 Radial†  | 37386.3       | 36174.2             | 19832 µg/L         | 19832 ppb          | 11:37:42      |
| 2     | Mg 279.077 IEC†    | 9389.7        | 9175.4              | 57221 µg/L         | 57221 ppb          | 11:38:02      |
| 2     | Na 589.592 Radial† | 259.0         | 248.4               | 10185 µg/L         | 10185 ppb          | 11:38:02      |
| 2     | Sr 421.552†        | 36099.1       | 35314.4             | 896.93 µg/L        | 896.93 ppb         | 11:37:42      |
| 2     | Sc 361.383         | 629471.3      | 629471.3            | 100.59 %           |                    | 11:39:16      |
| 2     | Y 371.029          | 775471.5      | 775471.5            | 109.21 %           |                    | 11:39:16      |
| 2     | Ag 328.068†        | 89848.0       | 90261.4             | 476.82 µg/L        | 476.82 ppb         | 11:39:16      |
| 2     | As 188.979†        | 1771.7        | 1739.2              | 520.13 µg/L        | 520.13 ppb         | 11:39:36      |
| 2     | B 249.677†         | 2661.7        | 2454.1              | 614.30 µg/L        | 614.30 ppb         | 11:39:16      |
| 2     | Ba 233.527†        | 471952.2      | 469059.7            | 2636.8 µg/L        | 2636.8 ppb         | 11:39:16      |
| 2     | Be 313.107†        | 1189174.5     | 1187655.1           | 477.70 µg/L        | 477.70 ppb         | 11:39:16      |
| 2     | Cd 226.502†        | 76765.8       | 76569.5             | 449.11 µg/L        | 449.11 ppb         | 11:39:16      |
| 2     | Co 228.616†        | 31131.4       | 31276.7             | 496.31 µg/L        | 496.31 ppb         | 11:39:16      |
| 2     | Cr 267.716†        | 46632.9       | 46243.1             | 579.40 µg/L        | 579.40 ppb         | 11:39:16      |
| 2     | Cu 324.752†        | 147607.0      | 144249.1            | 609.43 µg/L        | 609.43 ppb         | 11:39:16      |
| 2     | Mn 257.610†        | 7580611.3     | 7535383.8           | 7434.6 µg/L        | 7434.6 ppb         | 11:39:08      |
| 2     | Mo 202.031†        | 11174.0       | 11125.2             | 456.27 µg/L        | 456.27 ppb         | 11:39:36      |
| 2     | Ni 231.604†        | 34354.4       | 34329.4             | 596.86 µg/L        | 596.86 ppb         | 11:39:16      |
| 2     | P 214.914†         | 11864.7       | 11650.3             | 4925.2 µg/L        | 4925.2 ppb         | 11:39:36      |



|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 6654.9    | 6509.5    | 522.33 µg/L | 522.33 ppb | 11:39:36 |
| 2 | S 181.975 Axial†   | 9620.4    | 9417.0    | 9237.8 µg/L | 9237.8 ppb | 11:39:36 |
| 2 | Sb 206.836†        | 1837.2    | 1711.2    | 367.77 µg/L | 367.77 ppb | 11:39:36 |
| 2 | Se 196.026†        | 1120.8    | 1132.4    | 478.82 µg/L | 478.82 ppb | 11:39:36 |
| 2 | SiO2†              | 881898.0  | 875101.3  | 82325 µg/L  | 82325 ppb  | 11:39:16 |
| 2 | Si 251.611†        | 1107863.0 | 1101081.7 | 38198 µg/L  | 38198 ppb  | 11:39:16 |
| 2 | Sn 189.927†        | 4691.3    | 4642.5    | 458.20 µg/L | 458.20 ppb | 11:39:36 |
| 2 | Ti 334.940†        | 1239315.9 | 1232857.6 | 2794.3 µg/L | 2794.3 ppb | 11:39:16 |
| 2 | Tl 190.801†        | 2463.9    | 2606.8    | 450.56 µg/L | 450.56 ppb | 11:39:36 |
| 2 | U 367.007†         | 7118.3    | 5652.1    | 406.6 µg/L  | 406.6 ppb  | 11:39:16 |
| 2 | V 292.402†         | 115188.7  | 114095.1  | 754.41 µg/L | 754.41 ppb | 11:39:16 |
| 2 | Zn 213.857†        | 164216.5  | 162469.3  | 859.24 µg/L | 859.24 ppb | 11:39:16 |
| 3 | Sc RADIAL          | 8647.7    | 8647.7    | 103 %       |            | 11:38:27 |
| 3 | Al 396.153Radial†  | 213172.7  | 208458.6  | 102720 µg/L | 102720 ppb | 11:38:07 |
| 3 | Ca 317.933Radial†  | 240074.2  | 233827.3  | 113890 µg/L | 113890 ppb | 11:38:07 |
| 3 | Fe 238.204 Radial† | 96765.1   | 94280.0   | 144630 µg/L | 144630 ppb | 11:38:07 |
| 3 | K 766.490 Radial†  | 37401.9   | 36042.3   | 19759 µg/L  | 19759 ppb  | 11:38:07 |
| 3 | Mg 279.077 IEC†    | 9430.1    | 9177.8    | 57236 µg/L  | 57236 ppb  | 11:38:27 |
| 3 | Na 589.592 Radial† | 254.3     | 242.9     | 9957.1 µg/L | 9957.1 ppb | 11:38:27 |
| 3 | Sr 421.552†        | 36270.3   | 35339.1   | 897.58 µg/L | 897.58 ppb | 11:38:07 |
| 3 | Sc 361.383         | 627644.3  | 627644.3  | 100.30 %    |            | 11:39:50 |
| 3 | Y 371.029          | 773132.6  | 773132.6  | 108.89 %    |            | 11:39:50 |
| 3 | Ag 328.068†        | 89710.5   | 90384.3   | 477.34 µg/L | 477.34 ppb | 11:39:50 |
| 3 | As 188.979†        | 1781.8    | 1754.4    | 524.74 µg/L | 524.74 ppb | 11:40:10 |
| 3 | B 249.677†         | 2790.6    | 2590.3    | 614.46 µg/L | 614.46 ppb | 11:39:50 |
| 3 | Ba 233.527†        | 470021.3  | 468500.2  | 2633.7 µg/L | 2633.7 ppb | 11:39:50 |
| 3 | Be 313.107†        | 1183458.5 | 1185397.3 | 476.78 µg/L | 476.78 ppb | 11:39:50 |
| 3 | Cd 226.502†        | 76182.9   | 76210.3   | 447.00 µg/L | 447.00 ppb | 11:39:50 |
| 3 | Co 228.616†        | 31008.6   | 31244.3   | 495.82 µg/L | 495.82 ppb | 11:39:50 |
| 3 | Cr 267.716†        | 46365.0   | 46110.9   | 577.76 µg/L | 577.76 ppb | 11:39:50 |
| 3 | Cu 324.752†        | 147344.5  | 144414.5  | 610.07 µg/L | 610.07 ppb | 11:39:50 |
| 3 | Mn 257.610†        | 7532807.9 | 7509659.3 | 7409.2 µg/L | 7409.2 ppb | 11:39:42 |
| 3 | Mo 202.031†        | 11153.5   | 11137.0   | 456.72 µg/L | 456.72 ppb | 11:40:10 |
| 3 | Ni 231.604†        | 34043.9   | 34119.2   | 593.20 µg/L | 593.20 ppb | 11:39:50 |
| 3 | P 214.914†         | 11796.5   | 11616.7   | 4911.2 µg/L | 4911.2 ppb | 11:40:10 |
| 3 | Pb 220.353†        | 6656.2    | 6530.1    | 524.05 µg/L | 524.05 ppb | 11:40:10 |
| 3 | S 181.975 Axial†   | 9603.9    | 9428.4    | 9248.8 µg/L | 9248.8 ppb | 11:40:10 |
| 3 | Sb 206.836†        | 1842.5    | 1721.8    | 370.12 µg/L | 370.12 ppb | 11:40:10 |
| 3 | Se 196.026†        | 1102.4    | 1117.2    | 473.03 µg/L | 473.03 ppb | 11:40:10 |
| 3 | SiO2†              | 876261.8  | 872033.9  | 82037 µg/L  | 82037 ppb  | 11:39:50 |
| 3 | Si 251.611†        | 1101452.1 | 1097895.7 | 38088 µg/L  | 38088 ppb  | 11:39:50 |
| 3 | Sn 189.927†        | 4678.0    | 4642.9    | 458.21 µg/L | 458.21 ppb | 11:40:10 |
| 3 | Ti 334.940†        | 1235674.9 | 1232813.8 | 2794.2 µg/L | 2794.2 ppb | 11:39:50 |
| 3 | Tl 190.801†        | 2438.9    | 2589.1    | 447.66 µg/L | 447.66 ppb | 11:40:10 |
| 3 | U 367.007†         | 6983.3    | 5538.1    | 388.5 µg/L  | 388.5 ppb  | 11:39:50 |
| 3 | V 292.402†         | 114647.3  | 113888.6  | 752.99 µg/L | 752.99 ppb | 11:39:50 |
| 3 | Zn 213.857†        | 163270.7  | 162001.5  | 856.79 µg/L | 856.79 ppb | 11:39:50 |

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Mean Data: 1203657603|1611119|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383         | 629096.9                 | 100.53 %           | 0.209    |                    |          | 0.21% |
| Sc RADIAL          | 8606.8                   | 102 %              | 0.52     |                    |          | 0.51% |
| Y 371.029          | 774963.0                 | 109.14 %           | 0.230    |                    |          | 0.21% |
| Ag 328.068†        | 90363.2                  | 477.18 µg/L        | 0.308    | 477.18 ppb         | 0.308    | 0.06% |
| Al 396.153Radial†  | 207442.6                 | 102220 µg/L        | 1017.35  | 102220 ppb         | 1017.35  | 1.00% |
| As 188.979†        | 1743.3                   | 521.41 µg/L        | 2.910    | 521.41 ppb         | 2.910    | 0.56% |
| B 249.677†         | 2563.4                   | 612.83 µg/L        | 2.677    | 612.83 ppb         | 2.677    | 0.44% |
| Ba 233.527†        | 469030.3                 | 2636.7 µg/L        | 2.92     | 2636.7 ppb         | 2.92     | 0.11% |
| Be 313.107†        | 1187628.4                | 477.68 µg/L        | 0.887    | 477.68 ppb         | 0.887    | 0.19% |
| Ca 317.933Radial†  | 233747.9                 | 113850 µg/L        | 663.67   | 113850 ppb         | 663.67   | 0.58% |
| Cd 226.502†        | 76455.0                  | 448.51 µg/L        | 1.317    | 448.51 ppb         | 1.317    | 0.29% |
| Co 228.616†        | 31304.0                  | 496.81 µg/L        | 1.318    | 496.81 ppb         | 1.318    | 0.27% |
| Cr 267.716†        | 46223.2                  | 579.16 µg/L        | 1.297    | 579.16 ppb         | 1.297    | 0.22% |
| Cu 324.752†        | 144396.2                 | 609.99 µg/L        | 0.527    | 609.99 ppb         | 0.527    | 0.09% |
| Fe 238.204 Radial† | 94097.0                  | 144350 µg/L        | 1083.84  | 144350 ppb         | 1083.84  | 0.75% |
| K 766.490 Radial†  | 35977.3                  | 19724 µg/L         | 129.74   | 19724 ppb          | 129.74   | 0.66% |
| Mg 279.077 IEC†    | 9196.6                   | 57354 µg/L         | 216.34   | 57354 ppb          | 216.34   | 0.38% |
| Mn 257.610†        | 7515063.7                | 7414.5 µg/L        | 18.03    | 7414.5 ppb         | 18.03    | 0.24% |
| Mo 202.031†        | 11141.7                  | 456.90 µg/L        | 0.739    | 456.90 ppb         | 0.739    | 0.16% |

|                    |           |             |        |            |        |       |
|--------------------|-----------|-------------|--------|------------|--------|-------|
| Na 589.592 Radial† | 247.7     | 10156 µg/L  | 185.51 | 10156 ppb  | 185.51 | 1.83% |
| Ni 231.604†        | 34268.7   | 595.84 µg/L | 2.308  | 595.84 ppb | 2.308  | 0.39% |
| P 214.914†         | 11652.9   | 4927.2 µg/L | 17.03  | 4927.2 ppb | 17.03  | 0.35% |
| Pb 220.353†        | 6536.2    | 524.70 µg/L | 2.759  | 524.70 ppb | 2.759  | 0.53% |
| S 181.975 Axial†   | 9437.8    | 9258.1 µg/L | 26.24  | 9258.1 ppb | 26.24  | 0.28% |
| Sb 206.836†        | 1720.2    | 369.75 µg/L | 1.826  | 369.75 ppb | 1.826  | 0.49% |
| Se 196.026†        | 1122.8    | 474.93 µg/L | 3.369  | 474.93 ppb | 3.369  | 0.71% |
| SiO2†              | 874192.0  | 82240 µg/L  | 176.56 | 82240 ppb  | 176.56 | 0.21% |
| Si 251.611†        | 1100719.3 | 38186 µg/L  | 92.51  | 38186 ppb  | 92.51  | 0.24% |
| Sn 189.927†        | 4633.9    | 457.35 µg/L | 1.490  | 457.35 ppb | 1.490  | 0.33% |
| Sr 421.552†        | 35098.9   | 891.46 µg/L | 10.051 | 891.46 ppb | 10.051 | 1.13% |
| Ti 334.940†        | 1233595.9 | 2796.0 µg/L | 2.95   | 2796.0 ppb | 2.95   | 0.11% |
| Tl 190.801†        | 2600.1    | 449.48 µg/L | 1.587  | 449.48 ppb | 1.587  | 0.35% |
| U 367.007†         | 5613.6    | 403.5 µg/L  | 13.71  | 403.5 ppb  | 13.71  | 3.40% |
| V 292.402†         | 114069.8  | 754.13 µg/L | 1.022  | 754.13 ppb | 1.022  | 0.14% |
| Zn 213.857†        | 162437.6  | 859.18 µg/L | 2.357  | 859.18 ppb | 2.357  | 0.27% |

Sequence No.: 8

Sample ID: 1203657604|1611119|5|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 306

Date Collected: 11/16/2016 11:40:18

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 1203657604|1611119|5|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8724.7        | 8724.7              | 104 %              |                    | 11:41:07      |
| 1     | Al 396.153Radial†  | 35062.0       | 34600.3             | 17052 µg/L         | 17052 ppb          | 11:40:47      |
| 1     | Ca 317.933Radial†  | 57426.9       | 55356.0             | 26963 µg/L         | 26963 ppb          | 11:40:47      |
| 1     | Fe 238.204 Radial† | 22106.8       | 21340.4             | 32737 µg/L         | 32737 ppb          | 11:41:07      |
| 1     | K 766.490 Radial†  | 6069.6        | 5458.9              | 3000.5 µg/L        | 3000.5 ppb         | 11:40:47      |
| 1     | Mg 279.077 IEC†    | 2018.6        | 1938.4              | 12089 µg/L         | 12089 ppb          | 11:41:07      |
| 1     | Na 589.592 Radial† | 41.7          | 35.3                | 1447.5 µg/L        | 1447.5 ppb         | 11:41:07      |
| 1     | Sr 421.552†        | 4002.4        | 3861.8              | 97.597 µg/L        | 97.597 ppb         | 11:41:07      |
| 1     | Sc 361.383         | 633841.4      | 633841.4            | 101.29 %           |                    | 11:42:06      |
| 1     | Y 371.029          | 731543.6      | 731543.6            | 103.03 %           |                    | 11:42:06      |
| 1     | Ag 328.068†        | -1809.4       | -847.0              | 1.3161 µg/L        | 1.3161 ppb         | 11:42:06      |
| 1     | As 188.979†        | 65.6          | 42.7                | 11.236 µg/L        | 11.236 ppb         | 11:42:26      |
| 1     | B 249.677†         | -5082.7       | -5210.2             | 26.715 µg/L        | 26.715 ppb         | 11:42:06      |
| 1     | Ba 233.527†        | 95010.0       | 93673.2             | 526.49 µg/L        | 526.49 ppb         | 11:42:06      |
| 1     | Be 313.107†        | -3071.2       | 2410.9              | 1.3378 µg/L        | 1.3378 ppb         | 11:42:06      |
| 1     | Cd 226.502†        | 440.8         | 688.3               | 0.8483 µg/L        | 0.8483 ppb         | 11:42:26      |
| 1     | Co 228.616†        | 655.9         | 975.1               | 13.230 µg/L        | 13.230 ppb         | 11:42:26      |
| 1     | Cr 267.716†        | 2148.2        | 2004.1              | 25.024 µg/L        | 25.024 ppb         | 11:42:26      |
| 1     | Cu 324.752†        | 9688.5        | 7071.7              | 31.250 µg/L        | 31.250 ppb         | 11:42:06      |
| 1     | Mn 257.610†        | 1383165.5     | 1364743.1           | 1346.8 µg/L        | 1346.8 ppb         | 11:42:06      |
| 1     | Mo 202.031†        | 22.3          | 38.6                | 2.9104 µg/L        | 2.9104 ppb         | 11:42:26      |
| 1     | Ni 231.604†        | 2166.1        | 2314.7              | 39.136 µg/L        | 39.136 ppb         | 11:42:26      |
| 1     | P 214.914†         | 2806.6        | 2626.0              | 1111.4 µg/L        | 1111.4 ppb         | 11:42:26      |
| 1     | Pb 220.353†        | 403.3         | 291.8               | 21.746 µg/L        | 21.746 ppb         | 11:42:26      |
| 1     | S 181.975 Axial†   | 1458.1        | 1292.5              | 1268.3 µg/L        | 1268.3 ppb         | 11:42:26      |
| 1     | Sb 206.836†        | 131.5         | 14.5                | 2.7914 µg/L        | 2.7914 ppb         | 11:42:26      |
| 1     | Se 196.026†        | -35.5         | -16.9               | 9.3738 µg/L        | 9.3738 ppb         | 11:42:26      |
| 1     | SiO2†              | 175283.9      | 171422.9            | 16126 µg/L         | 16126 ppb          | 11:42:06      |
| 1     | Si 251.611†        | 218763.0      | 215687.8            | 7483.0 µg/L        | 7483.0 ppb         | 11:42:06      |
| 1     | Sn 189.927†        | 24.0          | 2.5                 | 2.4551 µg/L        | 2.4551 ppb         | 11:42:26      |
| 1     | Ti 334.940†        | 176318.2      | 174875.1            | 396.93 µg/L        | 396.93 ppb         | 11:42:06      |
| 1     | Tl 190.801†        | -183.0        | -23.3               | -0.0611 µg/L       | -0.0611 ppb        | 11:42:26      |
| 1     | U 367.007†         | 2342.8        | 888.5               | 20.68 µg/L         | 20.68 ppb          | 11:42:06      |
| 1     | V 292.402†         | 8132.8        | 7610.2              | 53.026 µg/L        | 53.026 ppb         | 11:42:26      |
| 1     | Zn 213.857†        | 21093.4       | 20039.6             | 104.12 µg/L        | 104.12 ppb         | 11:42:26      |
| 2     | Sc RADIAL          | 8734.2        | 8734.2              | 104 %              |                    | 11:41:32      |
| 2     | Al 396.153Radial†  | 35337.8       | 34829.7             | 17165 µg/L         | 17165 ppb          | 11:41:12      |
| 2     | Ca 317.933Radial†  | 57981.1       | 55830.7             | 27194 µg/L         | 27194 ppb          | 11:41:12      |
| 2     | Fe 238.204 Radial† | 22191.4       | 21399.0             | 32827 µg/L         | 32827 ppb          | 11:41:32      |
| 2     | K 766.490 Radial†  | 6111.9        | 5493.3              | 3019.4 µg/L        | 3019.4 ppb         | 11:41:12      |
| 2     | Mg 279.077 IEC†    | 2022.3        | 1939.9              | 12098 µg/L         | 12098 ppb          | 11:41:32      |
| 2     | Na 589.592 Radial† | 39.3          | 33.0                | 1353.8 µg/L        | 1353.8 ppb         | 11:41:32      |
| 2     | Sr 421.552†        | 3997.6        | 3853.0              | 97.363 µg/L        | 97.363 ppb         | 11:41:32      |
| 2     | Sc 361.383         | 639073.2      | 639073.2            | 102.12 %           |                    | 11:42:33      |
| 2     | Y 371.029          | 737177.3      | 737177.3            | 103.82 %           |                    | 11:42:33      |
| 2     | Ag 328.068†        | -1828.5       | -851.0              | 1.3136 µg/L        | 1.3136 ppb         | 11:42:33      |
| 2     | As 188.979†        | 62.7          | 39.3                | 10.219 µg/L        | 10.219 ppb         | 11:42:53      |
| 2     | B 249.677†         | -5186.9       | -5271.1             | 25.883 µg/L        | 25.883 ppb         | 11:42:33      |
| 2     | Ba 233.527†        | 95676.4       | 93557.8             | 525.84 µg/L        | 525.84 ppb         | 11:42:33      |
| 2     | Be 313.107†        | -3105.0       | 2402.6              | 1.3348 µg/L        | 1.3348 ppb         | 11:42:33      |
| 2     | Cd 226.502†        | 451.6         | 695.3               | 0.8816 µg/L        | 0.8816 ppb         | 11:42:53      |
| 2     | Co 228.616†        | 643.5         | 957.6               | 12.941 µg/L        | 12.941 ppb         | 11:42:53      |
| 2     | Cr 267.716†        | 2140.5        | 1979.2              | 24.719 µg/L        | 24.719 ppb         | 11:42:53      |
| 2     | Cu 324.752†        | 9585.2        | 6892.2              | 30.500 µg/L        | 30.500 ppb         | 11:42:33      |
| 2     | Mn 257.610†        | 1392645.6     | 1362846.7           | 1344.9 µg/L        | 1344.9 ppb         | 11:42:33      |
| 2     | Mo 202.031†        | 15.0          | 31.3                | 2.6171 µg/L        | 2.6171 ppb         | 11:42:53      |
| 2     | Ni 231.604†        | 2135.1        | 2266.8              | 38.290 µg/L        | 38.290 ppb         | 11:42:53      |
| 2     | P 214.914†         | 2808.0        | 2604.7              | 1102.0 µg/L        | 1102.0 ppb         | 11:42:53      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 359.0     | 245.2     | 17.839 µg/L | 17.839 ppb | 11:42:53 |
| 2 | S 181.975 Axial†   | 1461.0    | 1283.6    | 1259.6 µg/L | 1259.6 ppb | 11:42:53 |
| 2 | Sb 206.836†        | 121.0     | 3.2       | 0.3352 µg/L | 0.3352 ppb | 11:42:53 |
| 2 | Se 196.026†        | -33.5     | -14.7     | 10.226 µg/L | 10.226 ppb | 11:42:53 |
| 2 | SiO2†              | 176300.3  | 171001.4  | 16086 µg/L  | 16086 ppb  | 11:42:33 |
| 2 | Si 251.611†        | 220338.7  | 215462.6  | 7475.1 µg/L | 7475.1 ppb | 11:42:33 |
| 2 | Sn 189.927†        | 30.9      | 9.0       | 3.0827 µg/L | 3.0827 ppb | 11:42:53 |
| 2 | Ti 334.940†        | 177248.0  | 174360.4  | 395.79 µg/L | 395.79 ppb | 11:42:33 |
| 2 | Tl 190.801†        | -159.5    | 1.2       | 3.9453 µg/L | 3.9453 ppb | 11:42:53 |
| 2 | U 367.007†         | 2306.3    | 833.8     | 10.20 µg/L  | 10.20 ppb  | 11:42:33 |
| 2 | V 292.402†         | 8146.5    | 7557.9    | 52.694 µg/L | 52.694 ppb | 11:42:53 |
| 2 | Zn 213.857†        | 21136.0   | 19910.8   | 103.42 µg/L | 103.42 ppb | 11:42:53 |
| 3 | Sc RADIAL          | 8710.1    | 8710.1    | 103 %       |            | 11:41:58 |
| 3 | Al 396.153Radial†  | 35142.5   | 34735.0   | 17118 µg/L  | 17118 ppb  | 11:41:37 |
| 3 | Ca 317.933Radial†  | 57546.2   | 55564.6   | 27065 µg/L  | 27065 ppb  | 11:41:37 |
| 3 | Fe 238.204 Radial† | 22076.2   | 21346.7   | 32747 µg/L  | 32747 ppb  | 11:41:58 |
| 3 | K 766.490 Radial†  | 6088.7    | 5487.2    | 3016.0 µg/L | 3016.0 ppb | 11:41:37 |
| 3 | Mg 279.077 IEC†    | 2009.9    | 1933.3    | 12057 µg/L  | 12057 ppb  | 11:41:58 |
| 3 | Na 589.592 Radial† | 33.8      | 27.7      | 1138.0 µg/L | 1138.0 ppb | 11:41:58 |
| 3 | Sr 421.552†        | 3964.3    | 3831.4    | 96.817 µg/L | 96.817 ppb | 11:41:58 |
| 3 | Sc 361.383         | 635765.0  | 635765.0  | 101.59 %    |            | 11:43:00 |
| 3 | Y 371.029          | 733166.8  | 733166.8  | 103.26 %    |            | 11:43:00 |
| 3 | Ag 328.068†        | -1948.1   | -978.1    | 0.6607 µg/L | 0.6607 ppb | 11:43:00 |
| 3 | As 188.979†        | 74.0      | 50.7      | 13.659 µg/L | 13.659 ppb | 11:43:20 |
| 3 | B 249.677†         | -5188.2   | -5298.8   | 25.030 µg/L | 25.030 ppb | 11:43:00 |
| 3 | Ba 233.527†        | 95245.9   | 93621.6   | 526.20 µg/L | 526.20 ppb | 11:43:00 |
| 3 | Be 313.107†        | -3206.9   | 2286.5    | 1.2888 µg/L | 1.2888 ppb | 11:43:00 |
| 3 | Cd 226.502†        | 418.4     | 664.9     | 0.7058 µg/L | 0.7058 ppb | 11:43:20 |
| 3 | Co 228.616†        | 618.0     | 935.8     | 12.592 µg/L | 12.592 ppb | 11:43:20 |
| 3 | Cr 267.716†        | 2085.1    | 1935.5    | 24.164 µg/L | 24.164 ppb | 11:43:20 |
| 3 | Cu 324.752†        | 9734.8    | 7088.3    | 31.319 µg/L | 31.319 ppb | 11:43:00 |
| 3 | Mn 257.610†        | 1386174.1 | 1363572.9 | 1345.6 µg/L | 1345.6 ppb | 11:43:00 |
| 3 | Mo 202.031†        | 31.6      | 47.7      | 3.2787 µg/L | 3.2787 ppb | 11:43:20 |
| 3 | Ni 231.604†        | 2143.9    | 2286.4    | 38.638 µg/L | 38.638 ppb | 11:43:20 |
| 3 | P 214.914†         | 2830.2    | 2640.9    | 1117.8 µg/L | 1117.8 ppb | 11:43:20 |
| 3 | Pb 220.353†        | 386.8     | 274.3     | 20.268 µg/L | 20.268 ppb | 11:43:20 |
| 3 | S 181.975 Axial†   | 1447.2    | 1277.4    | 1253.5 µg/L | 1253.5 ppb | 11:43:20 |
| 3 | Sb 206.836†        | 143.1     | 25.6      | 5.2224 µg/L | 5.2224 ppb | 11:43:20 |
| 3 | Se 196.026†        | -36.8     | -18.1     | 8.9269 µg/L | 8.9269 ppb | 11:43:20 |
| 3 | SiO2†              | 175777.8  | 171385.5  | 16122 µg/L  | 16122 ppb  | 11:43:00 |
| 3 | Si 251.611†        | 219422.1  | 215683.1  | 7482.8 µg/L | 7482.8 ppb | 11:43:00 |
| 3 | Sn 189.927†        | 28.6      | 6.8       | 2.8696 µg/L | 2.8696 ppb | 11:43:20 |
| 3 | Ti 334.940†        | 176153.9  | 174186.7  | 395.38 µg/L | 395.38 ppb | 11:43:00 |
| 3 | Tl 190.801†        | -176.6    | -16.4     | 1.0497 µg/L | 1.0497 ppb | 11:43:20 |
| 3 | U 367.007†         | 2346.1    | 884.8     | 19.92 µg/L  | 19.92 ppb  | 11:43:00 |
| 3 | V 292.402†         | 8119.9    | 7573.2    | 52.793 µg/L | 52.793 ppb | 11:43:20 |
| 3 | Zn 213.857†        | 21026.0   | 19910.3   | 103.42 µg/L | 103.42 ppb | 11:43:20 |

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Mean Data: 1203657604|1611119|5|

| Analyte            | Mean Corrected Intensity | Conc.  | Calib. Units | Std.Dev. | Sample Conc. | Units | Std.Dev. | RSD    |
|--------------------|--------------------------|--------|--------------|----------|--------------|-------|----------|--------|
| Sc 361.383         | 636226.5                 | 101.67 | %            | 0.423    |              |       |          | 0.42%  |
| Sc RADIAL          | 8723.0                   | 104    | %            | 0.14     |              |       |          | 0.14%  |
| Y 371.029          | 733962.6                 | 103.37 | %            | 0.408    |              |       |          | 0.40%  |
| Ag 328.068†        | -892.0                   | 1.0968 | µg/L         | 0.37768  | 1.0968       | ppb   | 0.37768  | 34.43% |
| Al 396.153Radial†  | 34721.7                  | 17112  | µg/L         | 56.82    | 17112        | ppb   | 56.82    | 0.33%  |
| As 188.979†        | 44.2                     | 11.705 | µg/L         | 1.7676   | 11.705       | ppb   | 1.7676   | 15.10% |
| B 249.677†         | -5260.0                  | 25.876 | µg/L         | 0.8427   | 25.876       | ppb   | 0.8427   | 3.26%  |
| Ba 233.527†        | 93617.5                  | 526.18 | µg/L         | 0.327    | 526.18       | ppb   | 0.327    | 0.06%  |
| Be 313.107†        | 2366.7                   | 1.3205 | µg/L         | 0.02745  | 1.3205       | ppb   | 0.02745  | 2.08%  |
| Ca 317.933Radial†  | 55583.8                  | 27074  | µg/L         | 115.88   | 27074        | ppb   | 115.88   | 0.43%  |
| Cd 226.502†        | 682.8                    | 0.8119 | µg/L         | 0.09335  | 0.8119       | ppb   | 0.09335  | 11.50% |
| Co 228.616†        | 956.2                    | 12.921 | µg/L         | 0.3192   | 12.921       | ppb   | 0.3192   | 2.47%  |
| Cr 267.716†        | 1972.9                   | 24.636 | µg/L         | 0.4361   | 24.636       | ppb   | 0.4361   | 1.77%  |
| Cu 324.752†        | 7017.4                   | 31.023 | µg/L         | 0.4539   | 31.023       | ppb   | 0.4539   | 1.46%  |
| Fe 238.204 Radial† | 21362.0                  | 32770  | µg/L         | 49.33    | 32770        | ppb   | 49.33    | 0.15%  |
| K 766.490 Radial†  | 5479.8                   | 3012.0 | µg/L         | 10.06    | 3012.0       | ppb   | 10.06    | 0.33%  |
| Mg 279.077 IEC†    | 1937.2                   | 12081  | µg/L         | 21.68    | 12081        | ppb   | 21.68    | 0.18%  |
| Mn 257.610†        | 1363720.9                | 1345.8 | µg/L         | 0.94     | 1345.8       | ppb   | 0.94     | 0.07%  |
| Mo 202.031†        | 39.2                     | 2.9354 | µg/L         | 0.33151  | 2.9354       | ppb   | 0.33151  | 11.29% |

|                    |          |             |         |            |         |         |
|--------------------|----------|-------------|---------|------------|---------|---------|
| Na 589.592 Radial† | 32.0     | 1313.1 µg/L | 158.72  | 1313.1 ppb | 158.72  | 12.09%  |
| Ni 231.604†        | 2289.3   | 38.688 µg/L | 0.4252  | 38.688 ppb | 0.4252  | 1.10%   |
| P 214.914†         | 2623.9   | 1110.4 µg/L | 7.94    | 1110.4 ppb | 7.94    | 0.72%   |
| Pb 220.353†        | 270.5    | 19.951 µg/L | 1.9726  | 19.951 ppb | 1.9726  | 9.89%   |
| S 181.975 Axial†   | 1284.5   | 1260.5 µg/L | 7.41    | 1260.5 ppb | 7.41    | 0.59%   |
| Sb 206.836†        | 14.5     | 2.7830 µg/L | 2.44361 | 2.7830 ppb | 2.44361 | 87.80%  |
| Se 196.026†        | -16.6    | 9.5089 µg/L | 0.65996 | 9.5089 ppb | 0.65996 | 6.94%   |
| SiO2†              | 171270.0 | 16111 µg/L  | 21.95   | 16111 ppb  | 21.95   | 0.14%   |
| Si 251.611†        | 215611.2 | 7480.3 µg/L | 4.47    | 7480.3 ppb | 4.47    | 0.06%   |
| Sn 189.927†        | 6.1      | 2.8025 µg/L | 0.31914 | 2.8025 ppb | 0.31914 | 11.39%  |
| Sr 421.552†        | 3848.7   | 97.259 µg/L | 0.4003  | 97.259 ppb | 0.4003  | 0.41%   |
| Ti 334.940†        | 174474.1 | 396.03 µg/L | 0.805   | 396.03 ppb | 0.805   | 0.20%   |
| Tl 190.801†        | -12.8    | 1.6446 µg/L | 2.06837 | 1.6446 ppb | 2.06837 | 125.76% |
| U 367.007†         | 869.1    | 16.93 µg/L  | 5.841   | 16.93 ppb  | 5.841   | 34.49%  |
| V 292.402†         | 7580.4   | 52.837 µg/L | 0.1703  | 52.837 ppb | 0.1703  | 0.32%   |
| Zn 213.857†        | 19953.5  | 103.65 µg/L | 0.406   | 103.65 ppb | 0.406   | 0.39%   |

Sequence No.: 9

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 7

Date Collected: 11/16/2016 11:43:29

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8576.1        | 8576.1              | 102 %              |                    | 11:44:20      |
| 1     | Al 396.153Radial†  | 10026.5       | 10587.9             | 5200.0 µg/L        | 5200.0 ppb         | 11:44:00      |
| 1     | Ca 317.933Radial†  | 10851.8       | 10553.9             | 5140.7 µg/L        | 5140.7 ppb         | 11:44:20      |
| 1     | Fe 238.204 Radial† | 3659.4        | 3584.6              | 5498.9 µg/L        | 5498.9 ppb         | 11:44:20      |
| 1     | K 766.490 Radial†  | 9827.6        | 9252.9              | 5048.6 µg/L        | 5048.6 ppb         | 11:44:00      |
| 1     | Mg 279.077 IEC†    | 872.2         | 845.8               | 5274.5 µg/L        | 5274.5 ppb         | 11:44:20      |
| 1     | Na 589.592 Radial† | 269.7         | 260.0               | 10647 µg/L         | 10647 ppb          | 11:44:20      |
| 1     | Sr 421.552†        | 21329.0       | 20953.2             | 534.30 µg/L        | 534.30 ppb         | 11:44:00      |
| 1     | Sc 361.383         | 631004.3      | 631004.3            | 100.83 %           |                    | 11:45:19      |
| 1     | Y 371.029          | 708313.1      | 708313.1            | 99.756 %           |                    | 11:45:19      |
| 1     | Ag 328.068†        | 98981.6       | 99102.5             | 497.16 µg/L        | 497.16 ppb         | 11:45:19      |
| 1     | As 188.979†        | 1683.5        | 1647.4              | 499.74 µg/L        | 499.74 ppb         | 11:45:39      |
| 1     | B 249.677†         | 25693.2       | 25288.6             | 511.51 µg/L        | 511.51 ppb         | 11:45:19      |
| 1     | Ba 233.527†        | 88922.8       | 88058.1             | 495.61 µg/L        | 495.61 ppb         | 11:45:19      |
| 1     | Be 313.107†        | 1238234.7     | 1233437.4           | 494.56 µg/L        | 494.56 ppb         | 11:45:19      |
| 1     | Cd 226.502†        | 82222.9       | 81796.0             | 495.11 µg/L        | 495.11 ppb         | 11:45:19      |
| 1     | Co 228.616†        | 29992.5       | 30071.9             | 489.43 µg/L        | 489.43 ppb         | 11:45:39      |
| 1     | Cr 267.716†        | 39813.7       | 39367.6             | 493.94 µg/L        | 493.94 ppb         | 11:45:19      |
| 1     | Cu 324.752†        | 122478.8      | 118972.2            | 496.56 µg/L        | 496.56 ppb         | 11:45:19      |
| 1     | Mn 257.610†        | 506813.2      | 501778.4            | 494.79 µg/L        | 494.79 ppb         | 11:45:19      |
| 1     | Mo 202.031†        | 12373.9       | 12288.1             | 497.58 µg/L        | 497.58 ppb         | 11:45:39      |
| 1     | Ni 231.604†        | 27822.0       | 27768.1             | 488.19 µg/L        | 488.19 ppb         | 11:45:39      |
| 1     | P 214.914†         | 5848.5        | 5655.2              | 2446.3 µg/L        | 2446.3 ppb         | 11:45:39      |
| 1     | Pb 220.353†        | 6098.8        | 5942.0              | 494.85 µg/L        | 494.85 ppb         | 11:45:39      |
| 1     | S 181.975 Axial†   | 1155.8        | 999.1               | 981.82 µg/L        | 981.82 ppb         | 11:45:39      |
| 1     | Sb 206.836†        | 2376.3        | 2241.4              | 484.73 µg/L        | 484.73 ppb         | 11:45:39      |
| 1     | Se 196.026†        | 1378.2        | 1384.9              | 504.16 µg/L        | 504.16 ppb         | 11:45:39      |
| 1     | SiO2†              | 58061.3       | 55947.9             | 5268.6 µg/L        | 5268.6 ppb         | 11:45:19      |
| 1     | Si 251.611†        | 71672.8       | 70785.2             | 2449.9 µg/L        | 2449.9 ppb         | 11:45:19      |
| 1     | Sn 189.927†        | 5265.3        | 5200.5              | 500.00 µg/L        | 500.00 ppb         | 11:45:39      |
| 1     | Ti 334.940†        | 221067.4      | 220036.9            | 497.65 µg/L        | 497.65 ppb         | 11:45:19      |
| 1     | Tl 190.801†        | 2914.7        | 3047.9              | 501.04 µg/L        | 501.04 ppb         | 11:45:39      |
| 1     | U 367.007†         | 4060.9        | 2602.9              | 453.2 µg/L         | 453.2 ppb          | 11:45:19      |
| 1     | V 292.402†         | 77761.0       | 76698.7             | 497.69 µg/L        | 497.69 ppb         | 11:45:19      |
| 1     | Zn 213.857†        | 92400.4       | 90850.5             | 490.26 µg/L        | 490.26 ppb         | 11:45:19      |
| 2     | Sc RADIAL          | 8564.1        | 8564.1              | 102 %              |                    | 11:44:45      |
| 2     | Al 396.153Radial†  | 9825.2        | 10403.8             | 5109.3 µg/L        | 5109.3 ppb         | 11:44:25      |
| 2     | Ca 317.933Radial†  | 10870.6       | 10587.6             | 5157.0 µg/L        | 5157.0 ppb         | 11:44:45      |
| 2     | Fe 238.204 Radial† | 3671.0        | 3601.0              | 5524.2 µg/L        | 5524.2 ppb         | 11:44:45      |
| 2     | K 766.490 Radial†  | 9591.9        | 9034.6              | 4929.6 µg/L        | 4929.6 ppb         | 11:44:25      |
| 2     | Mg 279.077 IEC†    | 872.9         | 847.7               | 5286.8 µg/L        | 5286.8 ppb         | 11:44:45      |
| 2     | Na 589.592 Radial† | 265.1         | 255.9               | 10477 µg/L         | 10477 ppb          | 11:44:45      |
| 2     | Sr 421.552†        | 21215.2       | 20870.8             | 532.20 µg/L        | 532.20 ppb         | 11:44:25      |
| 2     | Sc 361.383         | 632637.1      | 632637.1            | 101.09 %           |                    | 11:45:47      |
| 2     | Y 371.029          | 710315.2      | 710315.2            | 100.04 %           |                    | 11:45:47      |
| 2     | Ag 328.068†        | 99548.7       | 99410.1             | 498.71 µg/L        | 498.71 ppb         | 11:45:47      |
| 2     | As 188.979†        | 1693.3        | 1652.8              | 501.36 µg/L        | 501.36 ppb         | 11:46:07      |
| 2     | B 249.677†         | 25903.6       | 25431.1             | 514.39 µg/L        | 514.39 ppb         | 11:45:47      |
| 2     | Ba 233.527†        | 89229.0       | 88133.4             | 496.03 µg/L        | 496.03 ppb         | 11:45:47      |
| 2     | Be 313.107†        | 1242074.4     | 1234066.1           | 494.81 µg/L        | 494.81 ppb         | 11:45:47      |
| 2     | Cd 226.502†        | 82527.5       | 81886.8             | 495.66 µg/L        | 495.66 ppb         | 11:45:47      |
| 2     | Co 228.616†        | 30035.1       | 30037.4             | 488.87 µg/L        | 488.87 ppb         | 11:46:07      |
| 2     | Cr 267.716†        | 39971.4       | 39421.7             | 494.63 µg/L        | 494.63 ppb         | 11:45:47      |
| 2     | Cu 324.752†        | 122812.9      | 118989.2            | 496.62 µg/L        | 496.62 ppb         | 11:45:47      |
| 2     | Mn 257.610†        | 508385.1      | 502036.0            | 495.05 µg/L        | 495.05 ppb         | 11:45:47      |
| 2     | Mo 202.031†        | 12377.0       | 12259.6             | 496.43 µg/L        | 496.43 ppb         | 11:46:07      |
| 2     | Ni 231.604†        | 27864.8       | 27739.2             | 487.68 µg/L        | 487.68 ppb         | 11:46:07      |
| 2     | P 214.914†         | 5844.8        | 5636.6              | 2438.2 µg/L        | 2438.2 ppb         | 11:46:07      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 6120.8    | 5948.1    | 495.39 µg/L | 495.39 ppb | 11:46:07 |
| 2 | S 181.975 Axial†   | 1167.0    | 1007.3    | 989.80 µg/L | 989.80 ppb | 11:46:07 |
| 2 | Sb 206.836†        | 2370.8    | 2229.9    | 482.18 µg/L | 482.18 ppb | 11:46:07 |
| 2 | Se 196.026†        | 1366.6    | 1369.9    | 498.75 µg/L | 498.75 ppb | 11:46:07 |
| 2 | SiO2†              | 58212.2   | 55948.6   | 5268.7 µg/L | 5268.7 ppb | 11:45:47 |
| 2 | Si 251.611†        | 71843.7   | 70770.7   | 2449.4 µg/L | 2449.4 ppb | 11:45:47 |
| 2 | Sn 189.927†        | 5256.3    | 5178.1    | 497.87 µg/L | 497.87 ppb | 11:46:07 |
| 2 | Ti 334.940†        | 221670.9  | 220068.0  | 497.73 µg/L | 497.73 ppb | 11:45:47 |
| 2 | Tl 190.801†        | 2919.5    | 3045.2    | 500.59 µg/L | 500.59 ppb | 11:46:07 |
| 2 | U 367.007†         | 4008.3    | 2540.4    | 441.6 µg/L  | 441.6 ppb  | 11:45:47 |
| 2 | V 292.402†         | 77975.2   | 76711.5   | 497.76 µg/L | 497.76 ppb | 11:45:47 |
| 2 | Zn 213.857†        | 92887.5   | 91095.8   | 491.59 µg/L | 491.59 ppb | 11:45:47 |
| 3 | Sc RADIAL          | 8572.6    | 8572.6    | 102 %       |            | 11:45:10 |
| 3 | Al 396.153Radial†  | 9846.6    | 10415.2   | 5115.0 µg/L | 5115.0 ppb | 11:44:50 |
| 3 | Ca 317.933Radial†  | 10887.9   | 10593.8   | 5160.1 µg/L | 5160.1 ppb | 11:45:10 |
| 3 | Fe 238.204 Radial† | 3673.1    | 3599.5    | 5521.8 µg/L | 5521.8 ppb | 11:45:10 |
| 3 | K 766.490 Radial†  | 9741.6    | 9172.3    | 5004.7 µg/L | 5004.7 ppb | 11:44:50 |
| 3 | Mg 279.077 IEC†    | 868.3     | 842.3     | 5252.9 µg/L | 5252.9 ppb | 11:45:10 |
| 3 | Na 589.592 Radial† | 272.9     | 263.3     | 10782 µg/L  | 10782 ppb  | 11:45:10 |
| 3 | Sr 421.552†        | 21361.2   | 20993.5   | 535.33 µg/L | 535.33 ppb | 11:44:50 |
| 3 | Sc 361.383         | 634600.4  | 634600.4  | 101.41 %    |            | 11:46:14 |
| 3 | Y 371.029          | 712177.2  | 712177.2  | 100.30 %    |            | 11:46:14 |
| 3 | Ag 328.068†        | 99722.2   | 99276.5   | 498.03 µg/L | 498.03 ppb | 11:46:14 |
| 3 | As 188.979†        | 1684.9    | 1639.3    | 497.29 µg/L | 497.29 ppb | 11:46:34 |
| 3 | B 249.677†         | 25983.8   | 25430.9   | 514.38 µg/L | 514.38 ppb | 11:46:14 |
| 3 | Ba 233.527†        | 89494.6   | 88122.2   | 495.97 µg/L | 495.97 ppb | 11:46:14 |
| 3 | Be 313.107†        | 1247675.0 | 1235788.0 | 495.51 µg/L | 495.51 ppb | 11:46:14 |
| 3 | Cd 226.502†        | 82812.2   | 81915.0   | 495.83 µg/L | 495.83 ppb | 11:46:14 |
| 3 | Co 228.616†        | 30060.8   | 29970.8   | 487.78 µg/L | 487.78 ppb | 11:46:34 |
| 3 | Cr 267.716†        | 40118.6   | 39444.5   | 494.91 µg/L | 494.91 ppb | 11:46:14 |
| 3 | Cu 324.752†        | 123359.3  | 119152.1  | 497.31 µg/L | 497.31 ppb | 11:46:14 |
| 3 | Mn 257.610†        | 510226.3  | 502295.9  | 495.31 µg/L | 495.31 ppb | 11:46:14 |
| 3 | Mo 202.031†        | 12392.9   | 12237.3   | 495.53 µg/L | 495.53 ppb | 11:46:34 |
| 3 | Ni 231.604†        | 27973.9   | 27761.5   | 488.07 µg/L | 488.07 ppb | 11:46:34 |
| 3 | P 214.914†         | 5852.7    | 5626.6    | 2433.8 µg/L | 2433.8 ppb | 11:46:34 |
| 3 | Pb 220.353†        | 6151.7    | 5959.9    | 496.36 µg/L | 496.36 ppb | 11:46:34 |
| 3 | S 181.975 Axial†   | 1164.2    | 1001.0    | 983.61 µg/L | 983.61 ppb | 11:46:34 |
| 3 | Sb 206.836†        | 2369.2    | 2221.1    | 480.25 µg/L | 480.25 ppb | 11:46:34 |
| 3 | Se 196.026†        | 1356.8    | 1356.1    | 493.74 µg/L | 493.74 ppb | 11:46:34 |
| 3 | SiO2†              | 58457.8   | 56012.6   | 5274.7 µg/L | 5274.7 ppb | 11:46:14 |
| 3 | Si 251.611†        | 72168.1   | 70870.8   | 2452.9 µg/L | 2452.9 ppb | 11:46:14 |
| 3 | Sn 189.927†        | 5267.0    | 5172.6    | 497.34 µg/L | 497.34 ppb | 11:46:34 |
| 3 | Ti 334.940†        | 222369.8  | 220078.8  | 497.75 µg/L | 497.75 ppb | 11:46:14 |
| 3 | Tl 190.801†        | 2914.3    | 3031.2    | 498.30 µg/L | 498.30 ppb | 11:46:34 |
| 3 | U 367.007†         | 4111.3    | 2629.7    | 458.0 µg/L  | 458.0 ppb  | 11:46:14 |
| 3 | V 292.402†         | 78367.1   | 76859.4   | 498.71 µg/L | 498.71 ppb | 11:46:14 |
| 3 | Zn 213.857†        | 93209.3   | 91128.9   | 491.77 µg/L | 491.77 ppb | 11:46:14 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 632747.3                 | 101.11 %           | 0.288    |                    |          | 0.28% |
| Sc RADIAL  | 8570.9                   | 102 %              | 0.07     |                    |          | 0.07% |
| Y 371.029  | 710268.5                 | 100.03 %           | 0.272    |                    |          | 0.27% |
| Ag 328.068†  | 99263.0                  | 497.97 µg/L        | 0.777    | 497.97 ppb         | 0.777    | 0.16% |
| QC value within limits for Ag 328.068 Recovery = 99.59%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 10469.0                  | 5141.5 µg/L        | 50.81    | 5141.5 ppb         | 50.81    | 0.99% |
| QC value within limits for Al 396.153Radial Recovery = 102.83% |                          |                    |          |                    |          |       |
| As 188.979†  | 1646.5                   | 499.46 µg/L        | 2.046    | 499.46 ppb         | 2.046    | 0.41% |
| QC value within limits for As 188.979 Recovery = 99.89%        |                          |                    |          |                    |          |       |
| B 249.677†   | 25383.5                  | 513.43 µg/L        | 1.657    | 513.43 ppb         | 1.657    | 0.32% |
| QC value within limits for B 249.677 Recovery = 102.69%        |                          |                    |          |                    |          |       |
| Ba 233.527†  | 88104.6                  | 495.87 µg/L        | 0.228    | 495.87 ppb         | 0.228    | 0.05% |
| QC value within limits for Ba 233.527 Recovery = 99.17%        |                          |                    |          |                    |          |       |
| Be 313.107†  | 1234430.5                | 494.96 µg/L        | 0.489    | 494.96 ppb         | 0.489    | 0.10% |
| QC value within limits for Be 313.107 Recovery = 98.99%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 10578.4                  | 5152.6 µg/L        | 10.45    | 5152.6 ppb         | 10.45    | 0.20% |
| QC value within limits for Ca 317.933Radial Recovery = 103.05% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 81866.0                  | 495.53 µg/L        | 0.375    | 495.53 ppb         | 0.375    | 0.08% |
| QC value within limits for Cd 226.502 Recovery = 99.11%        |                          |                    |          |                    |          |       |

|  |          |             |        |            |        |       |
|--|----------|-------------|--------|------------|--------|-------|
| Co 228.616†  | 30026.7  | 488.69 µg/L | 0.840  | 488.69 ppb | 0.840  | 0.17% |
| QC value within limits for Co 228.616 Recovery = 97.74%                        |          |             |        |            |        |       |
| Cr 267.716†  | 39411.3  | 494.49 µg/L | 0.495  | 494.49 ppb | 0.495  | 0.10% |
| QC value within limits for Cr 267.716 Recovery = 98.90%                        |          |             |        |            |        |       |
| Cu 324.752†  | 119037.8 | 496.83 µg/L | 0.418  | 496.83 ppb | 0.418  | 0.08% |
| QC value within limits for Cu 324.752 Recovery = 99.37%                        |          |             |        |            |        |       |
| Fe 238.204 Radial†   | 3595.0   | 5515.0 µg/L | 13.96  | 5515.0 ppb | 13.96  | 0.25% |
| QC value greater than the upper limit for Fe 238.204 Radial Recovery = 110.30% |          |             |        |            |        |       |
| K 766.490 Radial†  | 9153.3   | 4994.3 µg/L | 60.20  | 4994.3 ppb | 60.20  | 1.21% |
| QC value within limits for K 766.490 Radial Recovery = 99.89%                  |          |             |        |            |        |       |
| Mg 279.077 IEC†  | 845.3    | 5271.4 µg/L | 17.18  | 5271.4 ppb | 17.18  | 0.33% |
| QC value within limits for Mg 279.077 IEC Recovery = 105.43%                   |          |             |        |            |        |       |
| Mn 257.610†  | 502036.7 | 495.05 µg/L | 0.256  | 495.05 ppb | 0.256  | 0.05% |
| QC value within limits for Mn 257.610 Recovery = 99.01%                        |          |             |        |            |        |       |
| Mo 202.031†  | 12261.7  | 496.51 µg/L | 1.030  | 496.51 ppb | 1.030  | 0.21% |
| QC value within limits for Mo 202.031 Recovery = 99.30%                        |          |             |        |            |        |       |
| Na 589.592 Radial†   | 259.7    | 10635 µg/L  | 153.08 | 10635 ppb  | 153.08 | 1.44% |
| QC value within limits for Na 589.592 Radial Recovery = 106.35%                |          |             |        |            |        |       |
| Ni 231.604†  | 27756.3  | 487.98 µg/L | 0.267  | 487.98 ppb | 0.267  | 0.05% |
| QC value within limits for Ni 231.604 Recovery = 97.60%                        |          |             |        |            |        |       |
| P 214.914†   | 5639.5   | 2439.5 µg/L | 6.34   | 2439.5 ppb | 6.34   | 0.26% |
| QC value within limits for P 214.914 Recovery = 97.58%                         |          |             |        |            |        |       |
| Pb 220.353†  | 5950.0   | 495.53 µg/L | 0.767  | 495.53 ppb | 0.767  | 0.15% |
| QC value within limits for Pb 220.353 Recovery = 99.11%                        |          |             |        |            |        |       |
| S 181.975 Axial†   | 1002.5   | 985.07 µg/L | 4.187  | 985.07 ppb | 4.187  | 0.43% |
| QC value within limits for S 181.975 Axial Recovery = 98.51%                   |          |             |        |            |        |       |
| Sb 206.836†  | 2230.8   | 482.39 µg/L | 2.246  | 482.39 ppb | 2.246  | 0.47% |
| QC value within limits for Sb 206.836 Recovery = 96.48%                        |          |             |        |            |        |       |
| Se 196.026†  | 1370.3   | 498.88 µg/L | 5.213  | 498.88 ppb | 5.213  | 1.04% |
| QC value within limits for Se 196.026 Recovery = 99.78%                        |          |             |        |            |        |       |
| SiO2†  | 55969.7  | 5270.7 µg/L | 3.50   | 5270.7 ppb | 3.50   | 0.07% |
| QC value within limits for SiO2 Recovery = 98.56%                              |          |             |        |            |        |       |
| Si 251.611†  | 70808.9  | 2450.7 µg/L | 1.89   | 2450.7 ppb | 1.89   | 0.08% |
| QC value within limits for Si 251.611 Recovery = 98.03%                        |          |             |        |            |        |       |
| Sn 189.927†  | 5183.7   | 498.40 µg/L | 1.411  | 498.40 ppb | 1.411  | 0.28% |
| QC value within limits for Sn 189.927 Recovery = 99.68%                        |          |             |        |            |        |       |
| Sr 421.552†  | 20939.2  | 533.94 µg/L | 1.595  | 533.94 ppb | 1.595  | 0.30% |
| QC value within limits for Sr 421.552 Recovery = 106.79%                       |          |             |        |            |        |       |
| Ti 334.940†  | 220061.2 | 497.71 µg/L | 0.050  | 497.71 ppb | 0.050  | 0.01% |
| QC value within limits for Ti 334.940 Recovery = 99.54%                        |          |             |        |            |        |       |
| Tl 190.801†  | 3041.5   | 499.98 µg/L | 1.467  | 499.98 ppb | 1.467  | 0.29% |
| QC value within limits for Tl 190.801 Recovery = 100.00%                       |          |             |        |            |        |       |
| U 367.007†   | 2591.0   | 450.9 µg/L  | 8.41   | 450.9 ppb  | 8.41   | 1.87% |
| QC value within limits for U 367.007 Recovery = 90.18%                         |          |             |        |            |        |       |
| V 292.402†   | 76756.5  | 498.05 µg/L | 0.568  | 498.05 ppb | 0.568  | 0.11% |
| QC value within limits for V 292.402 Recovery = 99.61%                         |          |             |        |            |        |       |
| Zn 213.857†  | 91025.0  | 491.21 µg/L | 0.828  | 491.21 ppb | 0.828  | 0.17% |
| QC value within limits for Zn 213.857 Recovery = 98.24%                        |          |             |        |            |        |       |
| QC Failed. Continue with analysis.   |          |             |        |            |        |       |



Sequence No.: 10

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 8

Date Collected: 11/16/2016 11:46:43

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8662.7        | 8662.7              | 103 %              |                    | 11:47:12      |
| 1     | Al 396.153Radial†  | -698.3        | 57.1                | 28.111 µg/L        | 28.111 ppb         | 11:47:12      |
| 1     | Ca 317.933Radial†  | 114.9         | 3.2                 | 1.5605 µg/L        | 1.5605 ppb         | 11:47:32      |
| 1     | Fe 238.204 Radial† | 10.3          | -1.0                | -1.4934 µg/L       | -1.4934 ppb        | 11:47:32      |
| 1     | K 766.490 Radial†  | 548.7         | 130.4               | 71.137 µg/L        | 71.137 ppb         | 11:47:12      |
| 1     | Mg 279.077 IEC†    | 7.3           | -4.1                | -25.831 µg/L       | -25.831 ppb        | 11:47:32      |
| 1     | Na 589.592 Radial† | 9.8           | 4.5                 | 186.18 µg/L        | 186.18 ppb         | 11:47:32      |
| 1     | Sr 421.552†        | 41.7          | 36.7                | 0.9359 µg/L        | 0.9359 ppb         | 11:47:12      |
| 1     | Sc 361.383         | 633958.7      | 633958.7            | 101.31 %           |                    | 11:48:29      |
| 1     | Y 371.029          | 718095.2      | 718095.2            | 101.13 %           |                    | 11:48:29      |
| 1     | Ag 328.068†        | -897.5        | 53.5                | 0.2648 µg/L        | 0.2648 ppb         | 11:48:29      |
| 1     | As 188.979†        | 18.5          | -3.9                | -1.1758 µg/L       | -1.1758 ppb        | 11:48:49      |
| 1     | B 249.677†         | 302.0         | 106.1               | 2.0596 µg/L        | 2.0596 ppb         | 11:48:49      |
| 1     | Ba 233.527†        | 151.4         | 20.1                | 0.1134 µg/L        | 0.1134 ppb         | 11:48:49      |
| 1     | Be 313.107†        | -5418.5       | 94.5                | 0.0391 µg/L        | 0.0391 ppb         | 11:48:29      |
| 1     | Cd 226.502†        | -196.9        | 58.7                | 0.3556 µg/L        | 0.3556 ppb         | 11:48:49      |
| 1     | Co 228.616†        | -341.5        | -9.6                | -0.1553 µg/L       | -0.1553 ppb        | 11:48:49      |
| 1     | Cr 267.716†        | 121.9         | 3.5                 | 0.0398 µg/L        | 0.0398 ppb         | 11:48:49      |
| 1     | Cu 324.752†        | 2518.7        | -7.5                | -0.0292 µg/L       | -0.0292 ppb        | 11:48:29      |
| 1     | Mn 257.610†        | 978.1         | 122.0               | 0.1211 µg/L        | 0.1211 ppb         | 11:48:49      |
| 1     | Mo 202.031†        | 4.1           | 20.7                | 0.8364 µg/L        | 0.8364 ppb         | 11:48:49      |
| 1     | Ni 231.604†        | -177.9        | 0.6                 | 0.0103 µg/L        | 0.0103 ppb         | 11:48:49      |
| 1     | P 214.914†         | 139.9         | -6.8                | -2.9745 µg/L       | -2.9745 ppb        | 11:48:49      |
| 1     | Pb 220.353†        | 98.4          | -9.3                | -0.7875 µg/L       | -0.7875 ppb        | 11:48:49      |
| 1     | S 181.975 Axial†   | 161.9         | 12.8                | 12.486 µg/L        | 12.486 ppb         | 11:48:49      |
| 1     | Sb 206.836†        | 96.8          | -19.7               | -4.2668 µg/L       | -4.2668 ppb        | 11:48:49      |
| 1     | Se 196.026†        | -5.0          | 13.2                | 4.7773 µg/L        | 4.7773 ppb         | 11:48:49      |
| 1     | SiO2†              | 1757.6        | 101.7               | 9.5663 µg/L        | 9.5663 ppb         | 11:48:29      |
| 1     | Si 251.611†        | 404.1         | 104.0               | 3.6033 µg/L        | 3.6033 ppb         | 11:48:49      |
| 1     | Sn 189.927†        | 18.2          | -3.3                | -0.3168 µg/L       | -0.3168 ppb        | 11:48:49      |
| 1     | Ti 334.940†        | -613.5        | 192.2               | 0.4323 µg/L        | 0.4323 ppb         | 11:48:29      |
| 1     | Tl 190.801†        | -142.6        | 16.7                | 2.7391 µg/L        | 2.7391 ppb         | 11:48:49      |
| 1     | U 367.007†         | 1471.3        | 27.8                | 5.109 µg/L         | 5.109 ppb          | 11:48:29      |
| 1     | V 292.402†         | 411.8         | -12.7               | -0.0703 µg/L       | -0.0703 ppb        | 11:48:29      |
| 1     | Zn 213.857†        | 680.6         | -113.9              | -0.6187 µg/L       | -0.6187 ppb        | 11:48:49      |
| 2     | Sc RADIAL          | 8618.6        | 8618.6              | 102 %              |                    | 11:47:37      |
| 2     | Al 396.153Radial†  | -738.5        | 14.3                | 7.0095 µg/L        | 7.0095 ppb         | 11:47:37      |
| 2     | Ca 317.933Radial†  | 122.7         | 11.4                | 5.5485 µg/L        | 5.5485 ppb         | 11:47:57      |
| 2     | Fe 238.204 Radial† | 9.5           | -1.8                | -2.6913 µg/L       | -2.6913 ppb        | 11:47:57      |
| 2     | K 766.490 Radial†  | 438.3         | 25.2                | 13.721 µg/L        | 13.721 ppb         | 11:47:37      |
| 2     | Mg 279.077 IEC†    | 16.7          | 5.2                 | 32.241 µg/L        | 32.241 ppb         | 11:47:57      |
| 2     | Na 589.592 Radial† | 5.2           | 0.1                 | 2.9738 µg/L        | 2.9738 ppb         | 11:47:57      |
| 2     | Sr 421.552†        | 19.3          | 15.0                | 0.3819 µg/L        | 0.3819 ppb         | 11:47:37      |
| 2     | Sc 361.383         | 634579.9      | 634579.9            | 101.41 %           |                    | 11:48:54      |
| 2     | Y 371.029          | 719587.7      | 719587.7            | 101.34 %           |                    | 11:48:54      |
| 2     | Ag 328.068†        | -906.9        | 45.2                | 0.2267 µg/L        | 0.2267 ppb         | 11:48:54      |
| 2     | As 188.979†        | 20.2          | -2.3                | -0.6783 µg/L       | -0.6783 ppb        | 11:49:14      |
| 2     | B 249.677†         | 271.3         | 75.5                | 1.4605 µg/L        | 1.4605 ppb         | 11:49:14      |
| 2     | Ba 233.527†        | 140.3         | 9.0                 | 0.0509 µg/L        | 0.0509 ppb         | 11:49:14      |
| 2     | Be 313.107†        | -5350.0       | 167.2               | 0.0666 µg/L        | 0.0666 ppb         | 11:48:54      |
| 2     | Cd 226.502†        | -197.7        | 58.1                | 0.3521 µg/L        | 0.3521 ppb         | 11:49:14      |
| 2     | Co 228.616†        | -345.3        | -13.0               | -0.2119 µg/L       | -0.2119 ppb        | 11:49:14      |
| 2     | Cr 267.716†        | 110.9         | -7.5                | -0.0917 µg/L       | -0.0917 ppb        | 11:49:14      |
| 2     | Cu 324.752†        | 2526.1        | -2.6                | -0.0124 µg/L       | -0.0124 ppb        | 11:48:54      |
| 2     | Mn 257.610†        | 952.6         | 95.9                | 0.0933 µg/L        | 0.0933 ppb         | 11:49:14      |
| 2     | Mo 202.031†        | -5.1          | 11.5                | 0.4673 µg/L        | 0.4673 ppb         | 11:49:14      |
| 2     | Ni 231.604†        | -156.8        | 21.5                | 0.3781 µg/L        | 0.3781 ppb         | 11:49:14      |
| 2     | P 214.914†         | 134.9         | -11.8               | -5.1491 µg/L       | -5.1491 ppb        | 11:49:14      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 102.7    | -5.1     | -0.4250 µg/L | -0.4250 ppb | 11:49:14 |
| 2 | S 181.975 Axial†   | 167.3    | 17.9     | 17.506 µg/L  | 17.506 ppb  | 11:49:14 |
| 2 | Sb 206.836†        | 112.8    | -4.0     | -0.8530 µg/L | -0.8530 ppb | 11:49:14 |
| 2 | Se 196.026†        | -0.8     | 17.3     | 6.2742 µg/L  | 6.2742 ppb  | 11:49:14 |
| 2 | SiO2†              | 1721.8   | 64.7     | 6.0828 µg/L  | 6.0828 ppb  | 11:48:54 |
| 2 | Si 251.611†        | 378.6    | 78.5     | 2.7207 µg/L  | 2.7207 ppb  | 11:49:14 |
| 2 | Sn 189.927†        | 18.2     | -3.3     | -0.3111 µg/L | -0.3111 ppb | 11:49:14 |
| 2 | Ti 334.940†        | -613.6   | 192.7    | 0.4372 µg/L  | 0.4372 ppb  | 11:48:54 |
| 2 | Tl 190.801†        | -141.7   | 17.6     | 2.8998 µg/L  | 2.8998 ppb  | 11:49:14 |
| 2 | U 367.007†         | 1433.4   | -10.9    | -1.995 µg/L  | -1.995 ppb  | 11:48:54 |
| 2 | V 292.402†         | 460.7    | 35.1     | 0.2272 µg/L  | 0.2272 ppb  | 11:48:54 |
| 2 | Zn 213.857†        | 660.9    | -134.0   | -0.7343 µg/L | -0.7343 ppb | 11:49:14 |
| 3 | Sc RADIAL          | 8568.3   | 8568.3   | 102 %        |             | 11:48:02 |
| 3 | Al 396.153Radial†  | -754.8   | -6.0     | -2.9523 µg/L | -2.9523 ppb | 11:48:02 |
| 3 | Ca 317.933Radial†  | 116.3    | 5.8      | 2.8165 µg/L  | 2.8165 ppb  | 11:48:22 |
| 3 | Fe 238.204 Radial† | 10.3     | -0.8     | -1.2938 µg/L | -1.2938 ppb | 11:48:22 |
| 3 | K 766.490 Radial†  | 451.3    | 40.4     | 22.049 µg/L  | 22.049 ppb  | 11:48:02 |
| 3 | Mg 279.077 IEC†    | 5.2      | -6.1     | -37.867 µg/L | -37.867 ppb | 11:48:22 |
| 3 | Na 589.592 Radial† | 11.4     | 6.2      | 255.67 µg/L  | 255.67 ppb  | 11:48:22 |
| 3 | Sr 421.552†        | 32.2     | 27.8     | 0.7090 µg/L  | 0.7090 ppb  | 11:48:02 |
| 3 | Sc 361.383         | 635809.8 | 635809.8 | 101.60 %     |             | 11:49:20 |
| 3 | Y 371.029          | 721473.5 | 721473.5 | 101.61 %     |             | 11:49:20 |
| 3 | Ag 328.068†        | -883.3   | 70.1     | 0.3583 µg/L  | 0.3583 ppb  | 11:49:20 |
| 3 | As 188.979†        | 25.2     | 2.6      | 0.7979 µg/L  | 0.7979 ppb  | 11:49:40 |
| 3 | B 249.677†         | 271.0    | 74.7     | 1.4472 µg/L  | 1.4472 ppb  | 11:49:40 |
| 3 | Ba 233.527†        | 141.9    | 10.4     | 0.0586 µg/L  | 0.0586 ppb  | 11:49:40 |
| 3 | Be 313.107†        | -5296.9  | 229.7    | 0.0884 µg/L  | 0.0884 ppb  | 11:49:20 |
| 3 | Cd 226.502†        | -207.1   | 49.2     | 0.2984 µg/L  | 0.2984 ppb  | 11:49:40 |
| 3 | Co 228.616†        | -306.7   | 25.7     | 0.4179 µg/L  | 0.4179 ppb  | 11:49:40 |
| 3 | Cr 267.716†        | 130.1    | 11.3     | 0.1518 µg/L  | 0.1518 ppb  | 11:49:40 |
| 3 | Cu 324.752†        | 2509.2   | -24.0    | -0.1088 µg/L | -0.1088 ppb | 11:49:20 |
| 3 | Mn 257.610†        | 900.8    | 43.1     | 0.0438 µg/L  | 0.0438 ppb  | 11:49:40 |
| 3 | Mo 202.031†        | -10.6    | 6.1      | 0.2473 µg/L  | 0.2473 ppb  | 11:49:40 |
| 3 | Ni 231.604†        | -160.1   | 18.5     | 0.3263 µg/L  | 0.3263 ppb  | 11:49:40 |
| 3 | P 214.914†         | 119.0    | -27.8    | -12.089 µg/L | -12.089 ppb | 11:49:40 |
| 3 | Pb 220.353†        | 102.3    | -5.6     | -0.4580 µg/L | -0.4580 ppb | 11:49:40 |
| 3 | S 181.975 Axial†   | 170.6    | 20.8     | 20.367 µg/L  | 20.367 ppb  | 11:49:40 |
| 3 | Sb 206.836†        | 121.8    | 4.6      | 1.0081 µg/L  | 1.0081 ppb  | 11:49:40 |
| 3 | Se 196.026†        | -4.0     | 14.1     | 5.1233 µg/L  | 5.1233 ppb  | 11:49:40 |
| 3 | SiO2†              | 1693.5   | 33.6     | 3.1635 µg/L  | 3.1635 ppb  | 11:49:20 |
| 3 | Si 251.611†        | 377.3    | 76.4     | 2.6510 µg/L  | 2.6510 ppb  | 11:49:40 |
| 3 | Sn 189.927†        | 18.2     | -3.4     | -0.3189 µg/L | -0.3189 ppb | 11:49:40 |
| 3 | Ti 334.940†        | -580.5   | 226.4    | 0.5199 µg/L  | 0.5199 ppb  | 11:49:20 |
| 3 | Tl 190.801†        | -151.5   | 8.2      | 1.3468 µg/L  | 1.3468 ppb  | 11:49:40 |
| 3 | U 367.007†         | 1360.2   | -85.8    | -15.73 µg/L  | -15.73 ppb  | 11:49:20 |
| 3 | V 292.402†         | 464.3    | 37.8     | 0.2345 µg/L  | 0.2345 ppb  | 11:49:20 |
| 3 | Zn 213.857†        | 662.7    | -133.5   | -0.7269 µg/L | -0.7269 ppb | 11:49:40 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 634782.8                 | 101.44 %           | 0.151    |                    |          | 0.15%   |
| Sc RADIAL   | 8616.5                   | 102 %              | 0.56     |                    |          | 0.55%   |
| Y 371.029   | 719718.8                 | 101.36 %           | 0.238    |                    |          | 0.24%   |
| Ag 328.068†   | 56.3                     | 0.2833 µg/L        | 0.06774  | 0.2833 ppb         | 0.06774  | 23.91%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 21.8                     | 10.723 µg/L        | 15.8611  | 10.723 ppb         | 15.8611  | 147.92% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | -1.2                     | -0.3521 µg/L       | 1.02649  | -0.3521 ppb        | 1.02649  | 291.57% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 85.4                     | 1.6558 µg/L        | 0.34981  | 1.6558 ppb         | 0.34981  | 21.13%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | 13.2                     | 0.0743 µg/L        | 0.03408  | 0.0743 ppb         | 0.03408  | 45.86%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 163.8                    | 0.0647 µg/L        | 0.02469  | 0.0647 ppb         | 0.02469  | 38.17%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 6.8                      | 3.3085 µg/L        | 2.03902  | 3.3085 ppb         | 2.03902  | 61.63%  |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| Cd 226.502†   | 55.3                     | 0.3354 µg/L        | 0.03209  | 0.3354 ppb         | 0.03209  | 9.57%   |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |                    |          |                    |          |         |

|                        |                       |                           |         |             |         |         |
|------------------------|-----------------------|---------------------------|---------|-------------|---------|---------|
| Co 228.616†            | 1.0                   | 0.0169 µg/L               | 0.34845 | 0.0169 ppb  | 0.34845 | >999.9% |
| QC value within limits | for Co 228.616        | Recovery = Not calculated |         |             |         |         |
| Cr 267.716†            | 2.4                   | 0.0333 µg/L               | 0.12185 | 0.0333 ppb  | 0.12185 | 366.07% |
| QC value within limits | for Cr 267.716        | Recovery = Not calculated |         |             |         |         |
| Cu 324.752†            | -11.4                 | -0.0501 µg/L              | 0.05148 | -0.0501 ppb | 0.05148 | 102.67% |
| QC value within limits | for Cu 324.752        | Recovery = Not calculated |         |             |         |         |
| Fe 238.204 Radial†     | -1.2                  | -1.8262 µg/L              | 0.75584 | -1.8262 ppb | 0.75584 | 41.39%  |
| QC value within limits | for Fe 238.204 Radial | Recovery = Not calculated |         |             |         |         |
| K 766.490 Radial†      | 65.3                  | 35.635 µg/L               | 31.0257 | 35.635 ppb  | 31.0257 | 87.06%  |
| QC value within limits | for K 766.490 Radial  | Recovery = Not calculated |         |             |         |         |
| Mg 279.077 IEC†        | -1.7                  | -10.485 µg/L              | 37.4883 | -10.485 ppb | 37.4883 | 357.53% |
| QC value within limits | for Mg 279.077 IEC    | Recovery = Not calculated |         |             |         |         |
| Mn 257.610†            | 87.0                  | 0.0861 µg/L               | 0.03919 | 0.0861 ppb  | 0.03919 | 45.54%  |
| QC value within limits | for Mn 257.610        | Recovery = Not calculated |         |             |         |         |
| Mo 202.031†            | 12.8                  | 0.5170 µg/L               | 0.29767 | 0.5170 ppb  | 0.29767 | 57.58%  |
| QC value within limits | for Mo 202.031        | Recovery = Not calculated |         |             |         |         |
| Na 589.592 Radial†     | 3.6                   | 148.28 µg/L               | 130.544 | 148.28 ppb  | 130.544 | 88.04%  |
| QC value within limits | for Na 589.592 Radial | Recovery = Not calculated |         |             |         |         |
| Ni 231.604†            | 13.5                  | 0.2382 µg/L               | 0.19909 | 0.2382 ppb  | 0.19909 | 83.57%  |
| QC value within limits | for Ni 231.604        | Recovery = Not calculated |         |             |         |         |
| P 214.914†             | -15.5                 | -6.7376 µg/L              | 4.76046 | -6.7376 ppb | 4.76046 | 70.65%  |
| QC value within limits | for P 214.914         | Recovery = Not calculated |         |             |         |         |
| Pb 220.353†            | -6.7                  | -0.5568 µg/L              | 0.20041 | -0.5568 ppb | 0.20041 | 35.99%  |
| QC value within limits | for Pb 220.353        | Recovery = Not calculated |         |             |         |         |
| S 181.975 Axial†       | 17.1                  | 16.786 µg/L               | 3.9891  | 16.786 ppb  | 3.9891  | 23.76%  |
| QC value within limits | for S 181.975 Axial   | Recovery = Not calculated |         |             |         |         |
| Sb 206.836†            | -6.3                  | -1.3706 µg/L              | 2.67525 | -1.3706 ppb | 2.67525 | 195.19% |
| QC value within limits | for Sb 206.836        | Recovery = Not calculated |         |             |         |         |
| Se 196.026†            | 14.9                  | 5.3916 µg/L               | 0.78370 | 5.3916 ppb  | 0.78370 | 14.54%  |
| QC value within limits | for Se 196.026        | Recovery = Not calculated |         |             |         |         |
| SiO2†                  | 66.6                  | 6.2708 µg/L               | 3.20553 | 6.2708 ppb  | 3.20553 | 51.12%  |
| QC value within limits | for SiO2              | Recovery = Not calculated |         |             |         |         |
| Si 251.611†            | 86.3                  | 2.9917 µg/L               | 0.53080 | 2.9917 ppb  | 0.53080 | 17.74%  |
| QC value within limits | for Si 251.611        | Recovery = Not calculated |         |             |         |         |
| Sn 189.927†            | -3.3                  | -0.3156 µg/L              | 0.00403 | -0.3156 ppb | 0.00403 | 1.28%   |
| QC value within limits | for Sn 189.927        | Recovery = Not calculated |         |             |         |         |
| Sr 421.552†            | 26.5                  | 0.6756 µg/L               | 0.27850 | 0.6756 ppb  | 0.27850 | 41.22%  |
| QC value within limits | for Sr 421.552        | Recovery = Not calculated |         |             |         |         |
| Ti 334.940†            | 203.8                 | 0.4631 µg/L               | 0.04923 | 0.4631 ppb  | 0.04923 | 10.63%  |
| QC value within limits | for Ti 334.940        | Recovery = Not calculated |         |             |         |         |
| Tl 190.801†            | 14.2                  | 2.3286 µg/L               | 0.85402 | 2.3286 ppb  | 0.85402 | 36.68%  |
| QC value within limits | for Tl 190.801        | Recovery = Not calculated |         |             |         |         |
| U 367.007†             | -23.0                 | -4.204 µg/L               | 10.5911 | -4.204 ppb  | 10.5911 | 251.93% |
| QC value within limits | for U 367.007         | Recovery = Not calculated |         |             |         |         |
| V 292.402†             | 20.1                  | 0.1304 µg/L               | 0.17389 | 0.1304 ppb  | 0.17389 | 133.31% |
| QC value within limits | for V 292.402         | Recovery = Not calculated |         |             |         |         |
| Zn 213.857†            | -127.1                | -0.6933 µg/L              | 0.06469 | -0.6933 ppb | 0.06469 | 9.33%   |
| QC value within limits | for Zn 213.857        | Recovery = Not calculated |         |             |         |         |

All analyte(s) passed QC.

Sequence No.: 11

Sample ID: 1203671682|1611119|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 307

Date Collected: 11/16/2016 11:49:49

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 1203671682|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8628.2        | 8628.2              | 102 %              |                    | 11:50:40      |
| 1     | Al 396.153Radial†  | 170874.7      | 167618.3            | 82590 µg/L         | 82590 ppb          | 11:50:20      |
| 1     | Ca 317.933Radial†  | 279465.9      | 272827.2            | 132890 µg/L        | 132890 ppb         | 11:50:20      |
| 1     | Fe 238.204 Radial† | 107541.3      | 105017.5            | 161100 µg/L        | 161100 ppb         | 11:50:20      |
| 1     | K 766.490 Radial†  | 36360.3       | 35107.3             | 19261 µg/L         | 19261 ppb          | 11:50:20      |
| 1     | Mg 279.077 IEC†    | 10357.1       | 10103.9             | 63012 µg/L         | 63012 ppb          | 11:50:40      |
| 1     | Na 589.592 Radial† | 291.9         | 280.1               | 11487 µg/L         | 11487 ppb          | 11:50:40      |
| 1     | Sr 421.552†        | 37407.9       | 36530.0             | 927.32 µg/L        | 927.32 ppb         | 11:50:20      |
| 1     | Sc 361.383         | 616960.3      | 616960.3            | 98.590 %           |                    | 11:51:44      |
| 1     | Y 371.029          | 792958.3      | 792958.3            | 111.68 %           |                    | 11:51:39      |
| 1     | Ag 328.068†        | 88712.9       | 90921.3             | 482.69 µg/L        | 482.69 ppb         | 11:51:44      |
| 1     | As 188.979†        | 1875.5        | 1880.2              | 561.91 µg/L        | 561.91 ppb         | 11:52:04      |
| 1     | B 249.677†         | 590.5         | 406.9               | 636.35 µg/L        | 636.35 ppb         | 11:51:44      |
| 1     | Ba 233.527†        | 499000.0      | 506008.8            | 2844.4 µg/L        | 2844.4 ppb         | 11:51:44      |
| 1     | Be 313.107†        | 1192868.2     | 1215375.1           | 489.06 µg/L        | 489.06 ppb         | 11:51:39      |
| 1     | Cd 226.502†        | 78011.9       | 79380.9             | 464.67 µg/L        | 464.67 ppb         | 11:51:44      |
| 1     | Co 228.616†        | 32070.5       | 32856.8             | 521.94 µg/L        | 521.94 ppb         | 11:51:44      |
| 1     | Cr 267.716†        | 46194.6       | 46738.6             | 586.00 µg/L        | 586.00 ppb         | 11:51:44      |
| 1     | Cu 324.752†        | 156133.8      | 155873.5            | 658.76 µg/L        | 658.76 ppb         | 11:51:44      |
| 1     | Mn 257.610†        | 6689300.5     | 6784146.3           | 6694.6 µg/L        | 6694.6 ppb         | 11:51:39      |
| 1     | Mo 202.031†        | 11627.6       | 11810.5             | 484.66 µg/L        | 484.66 ppb         | 11:52:04      |
| 1     | Ni 231.604†        | 36153.7       | 36847.0             | 640.38 µg/L        | 640.38 ppb         | 11:51:44      |
| 1     | P 214.914†         | 14100.8       | 14157.6             | 5997.0 µg/L        | 5997.0 ppb         | 11:52:04      |
| 1     | Pb 220.353†        | 6455.4        | 6441.3              | 525.46 µg/L        | 525.46 ppb         | 11:52:04      |
| 1     | S 181.975 Axial†   | 11204.2       | 11217.4             | 10997 µg/L         | 10997 ppb          | 11:52:04      |
| 1     | Sb 206.836†        | 2291.6        | 2209.1              | 476.27 µg/L        | 476.27 ppb         | 11:52:04      |
| 1     | Se 196.026†        | 1118.3        | 1152.4              | 493.61 µg/L        | 493.61 ppb         | 11:52:04      |
| 1     | SiO2†              | 938221.7      | 950009.6            | 89372 µg/L         | 89372 ppb          | 11:51:39      |
| 1     | Si 251.611†        | 1180403.1     | 1196993.7           | 41525 µg/L         | 41525 ppb          | 11:51:39      |
| 1     | Sn 189.927†        | 4769.4        | 4816.4              | 473.90 µg/L        | 473.90 ppb         | 11:52:04      |
| 1     | Ti 334.940†        | 1052422.4     | 1068274.9           | 2422.9 µg/L        | 2422.9 ppb         | 11:51:39      |
| 1     | Tl 190.801†        | 2533.8        | 2727.5              | 466.85 µg/L        | 466.85 ppb         | 11:52:04      |
| 1     | U 367.007†         | 7522.9        | 6206.0              | 437.8 µg/L         | 437.8 ppb          | 11:51:44      |
| 1     | V 292.402†         | 111804.7      | 112984.8            | 750.05 µg/L        | 750.05 ppb         | 11:51:44      |
| 1     | Zn 213.857†        | 181001.8      | 182805.3            | 967.40 µg/L        | 967.40 ppb         | 11:51:44      |
| 2     | Sc RADIAL          | 8704.4        | 8704.4              | 103 %              |                    | 11:51:05      |
| 2     | Al 396.153Radial†  | 176998.5      | 172086.4            | 84792 µg/L         | 84792 ppb          | 11:50:45      |
| 2     | Ca 317.933Radial†  | 286974.4      | 277707.7            | 135270 µg/L        | 135270 ppb         | 11:50:45      |
| 2     | Fe 238.204 Radial† | 110341.9      | 106809.6            | 163850 µg/L        | 163850 ppb         | 11:50:45      |
| 2     | K 766.490 Radial†  | 37286.0       | 35692.8             | 19583 µg/L         | 19583 ppb          | 11:50:45      |
| 2     | Mg 279.077 IEC†    | 10354.1       | 10012.5             | 62442 µg/L         | 62442 ppb          | 11:51:05      |
| 2     | Na 589.592 Radial† | 288.6         | 274.4               | 11254 µg/L         | 11254 ppb          | 11:51:05      |
| 2     | Sr 421.552†        | 38848.9       | 37605.3             | 954.66 µg/L        | 954.66 ppb         | 11:50:45      |
| 2     | Sc 361.383         | 614711.7      | 614711.7            | 98.230 %           |                    | 11:52:17      |
| 2     | Y 371.029          | 794301.3      | 794301.3            | 111.87 %           |                    | 11:52:12      |
| 2     | Ag 328.068†        | 88351.1       | 90882.3             | 482.95 µg/L        | 482.95 ppb         | 11:52:17      |
| 2     | As 188.979†        | 1850.1        | 1861.3              | 556.09 µg/L        | 556.09 ppb         | 11:52:37      |
| 2     | B 249.677†         | 392.7         | 207.8               | 643.24 µg/L        | 643.24 ppb         | 11:52:17      |
| 2     | Ba 233.527†        | 496973.8      | 505797.5            | 2843.2 µg/L        | 2843.2 ppb         | 11:52:17      |
| 2     | Be 313.107†        | 1194436.6     | 1221397.5           | 491.50 µg/L        | 491.50 ppb         | 11:52:12      |
| 2     | Cd 226.502†        | 77467.1       | 79115.7             | 462.78 µg/L        | 462.78 ppb         | 11:52:17      |
| 2     | Co 228.616†        | 31870.4       | 32772.1             | 520.34 µg/L        | 520.34 ppb         | 11:52:17      |
| 2     | Cr 267.716†        | 45992.6       | 46704.4             | 585.55 µg/L        | 585.55 ppb         | 11:52:17      |
| 2     | Cu 324.752†        | 155593.9      | 155903.2            | 659.03 µg/L        | 659.03 ppb         | 11:52:17      |
| 2     | Mn 257.610†        | 6701042.4     | 6820918.9           | 6731.1 µg/L        | 6731.1 ppb         | 11:52:12      |
| 2     | Mo 202.031†        | 11589.7       | 11815.1             | 484.95 µg/L        | 484.95 ppb         | 11:52:37      |
| 2     | Ni 231.604†        | 35967.4       | 36791.5             | 639.27 µg/L        | 639.27 ppb         | 11:52:17      |
| 2     | P 214.914†         | 14018.9       | 14126.6             | 5981.0 µg/L        | 5981.0 ppb         | 11:52:37      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 6434.5    | 6444.0    | 525.19 µg/L | 525.19 ppb | 11:52:37 |
| 2 | S 181.975 Axial†   | 11166.2   | 11220.3   | 11000 µg/L  | 11000 ppb  | 11:52:37 |
| 2 | Sb 206.836†        | 2262.6    | 2188.1    | 471.69 µg/L | 471.69 ppb | 11:52:37 |
| 2 | Se 196.026†        | 1111.1    | 1149.2    | 493.77 µg/L | 493.77 ppb | 11:52:37 |
| 2 | SiO2†              | 940741.4  | 956055.7  | 89940 µg/L  | 89940 ppb  | 11:52:12 |
| 2 | Si 251.611†        | 1182621.3 | 1203631.5 | 41755 µg/L  | 41755 ppb  | 11:52:12 |
| 2 | Sn 189.927†        | 4759.8    | 4824.3    | 474.78 µg/L | 474.78 ppb | 11:52:37 |
| 2 | Ti 334.940†        | 1054140.1 | 1073928.3 | 2435.8 µg/L | 2435.8 ppb | 11:52:12 |
| 2 | Tl 190.801†        | 2503.7    | 2706.2    | 463.48 µg/L | 463.48 ppb | 11:52:37 |
| 2 | U 367.007†         | 7573.1    | 6285.0    | 440.4 µg/L  | 440.4 ppb  | 11:52:17 |
| 2 | V 292.402†         | 111452.6  | 113041.3  | 750.78 µg/L | 750.78 ppb | 11:52:17 |
| 2 | Zn 213.857†        | 180093.3  | 182551.9  | 965.72 µg/L | 965.72 ppb | 11:52:17 |
| 3 | Sc RADIAL          | 8727.8    | 8727.8    | 104 %       |            | 11:51:30 |
| 3 | Al 396.153Radial†  | 177112.1  | 171736.5  | 84620 µg/L  | 84620 ppb  | 11:51:10 |
| 3 | Ca 317.933Radial†  | 286294.0  | 276305.7  | 134580 µg/L | 134580 ppb | 11:51:10 |
| 3 | Fe 238.204 Radial† | 110238.8  | 106423.6  | 163260 µg/L | 163260 ppb | 11:51:10 |
| 3 | K 766.490 Radial†  | 37257.7   | 35568.6   | 19515 µg/L  | 19515 ppb  | 11:51:10 |
| 3 | Mg 279.077 IEC†    | 10373.7   | 10004.5   | 62392 µg/L  | 62392 ppb  | 11:51:30 |
| 3 | Na 589.592 Radial† | 290.5     | 275.6     | 11300 µg/L  | 11300 ppb  | 11:51:30 |
| 3 | Sr 421.552†        | 38841.7   | 37497.5   | 951.94 µg/L | 951.94 ppb | 11:51:10 |
| 3 | Sc 361.383         | 613374.1  | 613374.1  | 98.017 %    |            | 11:52:50 |
| 3 | Y 371.029          | 794607.8  | 794607.8  | 111.91 %    |            | 11:52:44 |
| 3 | Ag 328.068†        | 88196.0   | 90920.1   | 483.04 µg/L | 483.04 ppb | 11:52:50 |
| 3 | As 188.979†        | 1865.8    | 1881.4    | 562.14 µg/L | 562.14 ppb | 11:53:10 |
| 3 | B 249.677†         | 521.6     | 340.1     | 643.50 µg/L | 643.50 ppb | 11:52:50 |
| 3 | Ba 233.527†        | 494506.9  | 504384.0  | 2835.2 µg/L | 2835.2 ppb | 11:52:50 |
| 3 | Be 313.107†        | 1191696.2 | 1221253.3 | 491.43 µg/L | 491.43 ppb | 11:52:44 |
| 3 | Cd 226.502†        | 76900.1   | 78709.2   | 460.38 µg/L | 460.38 ppb | 11:52:50 |
| 3 | Co 228.616†        | 31753.4   | 32723.4   | 519.57 µg/L | 519.57 ppb | 11:52:50 |
| 3 | Cr 267.716†        | 45776.4   | 46585.9   | 584.07 µg/L | 584.07 ppb | 11:52:50 |
| 3 | Cu 324.752†        | 155129.0  | 155774.4  | 658.46 µg/L | 658.46 ppb | 11:52:50 |
| 3 | Mn 257.610†        | 6685356.2 | 6819791.7 | 6729.9 µg/L | 6729.9 ppb | 11:52:44 |
| 3 | Mo 202.031†        | 11524.4   | 11774.2   | 483.28 µg/L | 483.28 ppb | 11:53:10 |
| 3 | Ni 231.604†        | 35685.7   | 36584.0   | 635.65 µg/L | 635.65 ppb | 11:52:50 |
| 3 | P 214.914†         | 13907.9   | 14044.4   | 5945.9 µg/L | 5945.9 ppb | 11:53:10 |
| 3 | Pb 220.353†        | 6363.6    | 6386.0    | 520.35 µg/L | 520.35 ppb | 11:53:10 |
| 3 | S 181.975 Axial†   | 11143.0   | 11221.4   | 11001 µg/L  | 11001 ppb  | 11:53:10 |
| 3 | Sb 206.836†        | 2258.0    | 2188.4    | 471.76 µg/L | 471.76 ppb | 11:53:10 |
| 3 | Se 196.026†        | 1107.6    | 1148.1    | 493.08 µg/L | 493.08 ppb | 11:53:10 |
| 3 | SiO2†              | 938233.2  | 955585.2  | 89896 µg/L  | 89896 ppb  | 11:52:44 |
| 3 | Si 251.611†        | 1179207.3 | 1202773.8 | 41726 µg/L  | 41726 ppb  | 11:52:44 |
| 3 | Sn 189.927†        | 4687.8    | 4761.4    | 468.75 µg/L | 468.75 ppb | 11:53:10 |
| 3 | Ti 334.940†        | 1052708.8 | 1074808.3 | 2437.8 µg/L | 2437.8 ppb | 11:52:44 |
| 3 | Tl 190.801†        | 2523.6    | 2732.1    | 467.75 µg/L | 467.75 ppb | 11:53:10 |
| 3 | U 367.007†         | 7502.8    | 6230.1    | 432.9 µg/L  | 432.9 ppb  | 11:52:50 |
| 3 | V 292.402†         | 110845.5  | 112669.3  | 748.29 µg/L | 748.29 ppb | 11:52:50 |
| 3 | Zn 213.857†        | 179007.9  | 181844.5  | 961.97 µg/L | 961.97 ppb | 11:52:50 |

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Mean Data: 1203671682|1611119|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383         | 615015.4                 | 98.279 %           | 0.2896   |                    |          | 0.29% |
| Sc RADIAL          | 8686.8                   | 103 %              | 0.62     |                    |          | 0.60% |
| Y 371.029          | 793955.8                 | 111.82 %           | 0.124    |                    |          | 0.11% |
| Ag 328.068†        | 90907.9                  | 482.89 µg/L        | 0.185    | 482.89 ppb         | 0.185    | 0.04% |
| Al 396.153Radial†  | 170480.4                 | 84000 µg/L         | 1224.59  | 84000 ppb          | 1224.59  | 1.46% |
| As 188.979†        | 1874.3                   | 560.04 µg/L        | 3.430    | 560.04 ppb         | 3.430    | 0.61% |
| B 249.677†         | 318.2                    | 641.03 µg/L        | 4.060    | 641.03 ppb         | 4.060    | 0.63% |
| Ba 233.527†        | 505396.8                 | 2841.0 µg/L        | 4.99     | 2841.0 ppb         | 4.99     | 0.18% |
| Be 313.107†        | 1219342.0                | 490.66 µg/L        | 1.393    | 490.66 ppb         | 1.393    | 0.28% |
| Ca 317.933Radial†  | 275613.6                 | 134250 µg/L        | 1223.95  | 134250 ppb         | 1223.95  | 0.91% |
| Cd 226.502†        | 79068.6                  | 462.61 µg/L        | 2.150    | 462.61 ppb         | 2.150    | 0.46% |
| Co 228.616†        | 32784.1                  | 520.62 µg/L        | 1.206    | 520.62 ppb         | 1.206    | 0.23% |
| Cr 267.716†        | 46676.3                  | 585.21 µg/L        | 1.012    | 585.21 ppb         | 1.012    | 0.17% |
| Cu 324.752†        | 155850.4                 | 658.75 µg/L        | 0.286    | 658.75 ppb         | 0.286    | 0.04% |
| Fe 238.204 Radial† | 106083.6                 | 162740 µg/L        | 1446.96  | 162740 ppb         | 1446.96  | 0.89% |
| K 766.490 Radial†  | 35456.3                  | 19453 µg/L         | 169.40   | 19453 ppb          | 169.40   | 0.87% |
| Mg 279.077 IEC†    | 10040.3                  | 62615 µg/L         | 344.26   | 62615 ppb          | 344.26   | 0.55% |
| Mn 257.610†        | 6808285.7                | 6718.5 µg/L        | 20.71    | 6718.5 ppb         | 20.71    | 0.31% |
| Mo 202.031†        | 11799.9                  | 484.30 µg/L        | 0.895    | 484.30 ppb         | 0.895    | 0.18% |

|                    |           |             |        |            |        |       |
|--------------------|-----------|-------------|--------|------------|--------|-------|
| Na 589.592 Radial† | 276.7     | 11347 µg/L  | 123.25 | 11347 ppb  | 123.25 | 1.09% |
| Ni 231.604†        | 36740.8   | 638.44 µg/L | 2.474  | 638.44 ppb | 2.474  | 0.39% |
| P 214.914†         | 14109.5   | 5974.6 µg/L | 26.17  | 5974.6 ppb | 26.17  | 0.44% |
| Pb 220.353†        | 6423.8    | 523.67 µg/L | 2.875  | 523.67 ppb | 2.875  | 0.55% |
| S 181.975 Axial†   | 11219.7   | 11000 µg/L  | 1.95   | 11000 ppb  | 1.95   | 0.02% |
| Sb 206.836†        | 2195.2    | 473.24 µg/L | 2.624  | 473.24 ppb | 2.624  | 0.55% |
| Se 196.026†        | 1149.9    | 493.48 µg/L | 0.359  | 493.48 ppb | 0.359  | 0.07% |
| SiO2†              | 953883.5  | 89736 µg/L  | 316.36 | 89736 ppb  | 316.36 | 0.35% |
| Si 251.611†        | 1201133.0 | 41669 µg/L  | 125.09 | 41669 ppb  | 125.09 | 0.30% |
| Sn 189.927†        | 4800.7    | 472.48 µg/L | 3.257  | 472.48 ppb | 3.257  | 0.69% |
| Sr 421.552†        | 37210.9   | 944.64 µg/L | 15.064 | 944.64 ppb | 15.064 | 1.59% |
| Ti 334.940†        | 1072337.2 | 2432.2 µg/L | 8.08   | 2432.2 ppb | 8.08   | 0.33% |
| Tl 190.801†        | 2721.9    | 466.03 µg/L | 2.252  | 466.03 ppb | 2.252  | 0.48% |
| U 367.007†         | 6240.4    | 437.0 µg/L  | 3.79   | 437.0 ppb  | 3.79   | 0.87% |
| V 292.402†         | 112898.5  | 749.71 µg/L | 1.279  | 749.71 ppb | 1.279  | 0.17% |
| Zn 213.857†        | 182400.6  | 965.03 µg/L | 2.782  | 965.03 ppb | 2.782  | 0.29% |

Sequence No.: 12

Sample ID: 409254024|1611119|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 308

Date Collected: 11/16/2016 11:53:18

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 409254024|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8390.0        | 8390.0              | 99.6 %             |                    | 11:54:07      |
| 1     | Al 396.153Radial†  | 78624.8       | 79703.9             | 39280 µg/L         | 39280 ppb          | 11:53:47      |
| 1     | Ca 317.933Radial†  | 565320.2      | 567676.5            | 276510 µg/L        | 276510 ppb         | 11:53:47      |
| 1     | Fe 238.204 Radial† | 61448.1       | 61705.0             | 94659 µg/L         | 94659 ppb          | 11:53:47      |
| 1     | K 766.490 Radial†  | 15058.6       | 14720.9             | 8096.6 µg/L        | 8096.6 ppb         | 11:53:47      |
| 1     | Mg 279.077 IEC†    | 8511.3        | 8537.2              | 53242 µg/L         | 53242 ppb          | 11:54:07      |
| 1     | Na 589.592 Radial† | 49.6          | 44.8                | 1904.2 µg/L        | 1904.2 ppb         | 11:54:07      |
| 1     | Sr 421.552†        | 28624.4       | 28745.4             | 723.90 µg/L        | 723.90 ppb         | 11:53:47      |
| 1     | Sc 361.383         | 611554.7      | 611554.7            | 97.726 %           |                    | 11:55:06      |
| 1     | Y 371.029          | 743853.4      | 743853.4            | 104.76 %           |                    | 11:55:06      |
| 1     | Ag 328.068†        | -3299.4       | -2436.7             | 1.4685 µg/L        | 1.4685 ppb         | 11:55:06      |
| 1     | As 188.979†        | 207.2         | 189.9               | 52.762 µg/L        | 52.762 ppb         | 11:55:26      |
| 1     | B 249.677†         | -14537.3      | -15067.7            | 77.189 µg/L        | 77.189 ppb         | 11:55:06      |
| 1     | Ba 233.527†        | 244507.4      | 250067.9            | 1405.3 µg/L        | 1405.3 ppb         | 11:55:06      |
| 1     | Be 313.107†        | -5021.2       | 305.1               | 3.6196 µg/L        | 3.6196 ppb         | 11:55:06      |
| 1     | Cd 226.502†        | 1643.9        | 1935.2              | 2.0865 µg/L        | 2.0865 ppb         | 11:55:26      |
| 1     | Co 228.616†        | 2505.6        | 2891.4              | 38.898 µg/L        | 38.898 ppb         | 11:55:26      |
| 1     | Cr 267.716†        | 10736.1       | 10869.1             | 137.01 µg/L        | 137.01 ppb         | 11:55:26      |
| 1     | Cu 324.752†        | 20063.8       | 18037.0             | 80.306 µg/L        | 80.306 ppb         | 11:55:06      |
| 1     | Mn 257.610†        | 2106757.1     | 2154938.9           | 2127.7 µg/L        | 2127.7 ppb         | 11:55:06      |
| 1     | Mo 202.031†        | 285.3         | 308.5               | 16.383 µg/L        | 16.383 ppb         | 11:55:26      |
| 1     | Ni 231.604†        | 7841.4        | 8200.0              | 139.67 µg/L        | 139.67 ppb         | 11:55:26      |
| 1     | P 214.914†         | 9615.9        | 9694.8              | 4126.8 µg/L        | 4126.8 ppb         | 11:55:26      |
| 1     | Pb 220.353†        | 699.4         | 609.3               | 54.720 µg/L        | 54.720 ppb         | 11:55:26      |
| 1     | S 181.975 Axial†   | 3388.1        | 3319.9              | 3252.0 µg/L        | 3252.0 ppb         | 11:55:26      |
| 1     | Sb 206.836†        | 143.5         | 31.6                | 4.7719 µg/L        | 4.7719 ppb         | 11:55:26      |
| 1     | Se 196.026†        | -112.2        | -96.7               | 9.8120 µg/L        | 9.8120 ppb         | 11:55:26      |
| 1     | SiO2†              | 734705.0      | 750168.7            | 70568 µg/L         | 70568 ppb          | 11:55:06      |
| 1     | Si 251.611†        | 924032.0      | 945239.7            | 32803 µg/L         | 32803 ppb          | 11:55:06      |
| 1     | Sn 189.927†        | 52.1          | 32.0                | 8.5706 µg/L        | 8.5706 ppb         | 11:55:26      |
| 1     | Ti 334.940†        | 579740.6      | 594029.1            | 1358.0 µg/L        | 1358.0 ppb         | 11:55:06      |
| 1     | Tl 190.801†        | -252.7        | -101.2              | -3.6312 µg/L       | -3.6312 ppb        | 11:55:26      |
| 1     | U 367.007†         | 3810.9        | 2475.1              | -14.51 µg/L        | -14.51 ppb         | 11:55:06      |
| 1     | V 292.402†         | 19169.5       | 19196.3             | 135.38 µg/L        | 135.38 ppb         | 11:55:26      |
| 1     | Zn 213.857†        | 55704.7       | 56215.2             | 290.37 µg/L        | 290.37 ppb         | 11:55:06      |
| 2     | Sc RADIAL          | 8429.0        | 8429.0              | 100 %              |                    | 11:54:33      |
| 2     | Al 396.153Radial†  | 80532.7       | 81246.3             | 40040 µg/L         | 40040 ppb          | 11:54:13      |
| 2     | Ca 317.933Radial†  | 576304.0      | 576032.6            | 280580 µg/L        | 280580 ppb         | 11:54:13      |
| 2     | Fe 238.204 Radial† | 62783.3       | 62754.6             | 96269 µg/L         | 96269 ppb          | 11:54:13      |
| 2     | K 766.490 Radial†  | 15437.4       | 15029.7             | 8266.3 µg/L        | 8266.3 ppb         | 11:54:13      |
| 2     | Mg 279.077 IEC†    | 8498.3        | 8484.7              | 52914 µg/L         | 52914 ppb          | 11:54:33      |
| 2     | Na 589.592 Radial† | 52.3          | 47.3                | 2007.5 µg/L        | 2007.5 ppb         | 11:54:33      |
| 2     | Sr 421.552†        | 29237.0       | 29224.9             | 735.99 µg/L        | 735.99 ppb         | 11:54:13      |
| 2     | Sc 361.383         | 609340.4      | 609340.4            | 97.372 %           |                    | 11:55:34      |
| 2     | Y 371.029          | 740779.4      | 740779.4            | 104.33 %           |                    | 11:55:34      |
| 2     | Ag 328.068†        | -3465.4       | -2619.5             | 0.7885 µg/L        | 0.7885 ppb         | 11:55:34      |
| 2     | As 188.979†        | 208.2         | 191.7               | 53.205 µg/L        | 53.205 ppb         | 11:55:54      |
| 2     | B 249.677†         | -14553.8      | -15138.6            | 82.113 µg/L        | 82.113 ppb         | 11:55:34      |
| 2     | Ba 233.527†        | 244231.0      | 250693.2            | 1408.8 µg/L        | 1408.8 ppb         | 11:55:34      |
| 2     | Be 313.107†        | -5000.7       | 307.4               | 3.6738 µg/L        | 3.6738 ppb         | 11:55:34      |
| 2     | Cd 226.502†        | 1589.5        | 1885.5              | 1.6255 µg/L        | 1.6255 ppb         | 11:55:54      |
| 2     | Co 228.616†        | 2511.3        | 2906.6              | 39.033 µg/L        | 39.033 ppb         | 11:55:54      |
| 2     | Cr 267.716†        | 10731.8       | 10904.6             | 137.45 µg/L        | 137.45 ppb         | 11:55:54      |
| 2     | Cu 324.752†        | 20037.5       | 18084.6             | 80.594 µg/L        | 80.594 ppb         | 11:55:34      |
| 2     | Mn 257.610†        | 2103775.1     | 2159710.1           | 2132.5 µg/L        | 2132.5 ppb         | 11:55:34      |
| 2     | Mo 202.031†        | 260.9         | 284.6               | 15.480 µg/L        | 15.480 ppb         | 11:55:54      |
| 2     | Ni 231.604†        | 7853.3        | 8241.4              | 140.32 µg/L        | 140.32 ppb         | 11:55:54      |
| 2     | P 214.914†         | 9634.0        | 9749.2              | 4148.9 µg/L        | 4148.9 ppb         | 11:55:54      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 711.6     | 624.4     | 55.985 µg/L  | 55.985 ppb  | 11:55:54 |
| 2 | S 181.975 Axial†   | 3389.2    | 3333.6    | 3265.3 µg/L  | 3265.3 ppb  | 11:55:54 |
| 2 | Sb 206.836†        | 148.6     | 37.3      | 5.9737 µg/L  | 5.9737 ppb  | 11:55:54 |
| 2 | Se 196.026†        | -102.9    | -87.5     | 13.885 µg/L  | 13.885 ppb  | 11:55:54 |
| 2 | SiO2†              | 733015.5  | 751165.5  | 70662 µg/L   | 70662 ppb   | 11:55:34 |
| 2 | Si 251.611†        | 922391.8  | 946991.2  | 32863 µg/L   | 32863 ppb   | 11:55:34 |
| 2 | Sn 189.927†        | 45.4      | 25.4      | 7.9663 µg/L  | 7.9663 ppb  | 11:55:54 |
| 2 | Ti 334.940†        | 577932.8  | 594328.3  | 1358.9 µg/L  | 1358.9 ppb  | 11:55:34 |
| 2 | Tl 190.801†        | -257.1    | -106.6    | -4.5236 µg/L | -4.5236 ppb | 11:55:54 |
| 2 | U 367.007†         | 3879.1    | 2559.3    | -6.850 µg/L  | -6.850 ppb  | 11:55:34 |
| 2 | V 292.402†         | 19198.6   | 19297.5   | 136.24 µg/L  | 136.24 ppb  | 11:55:54 |
| 2 | Zn 213.857†        | 55649.7   | 56365.9   | 291.01 µg/L  | 291.01 ppb  | 11:55:34 |
| 3 | Sc RADIAL          | 8457.3    | 8457.3    | 100 %        |             | 11:54:58 |
| 3 | Al 396.153Radial†  | 80385.8   | 80830.4   | 39835 µg/L   | 39835 ppb   | 11:54:38 |
| 3 | Ca 317.933Radial†  | 572640.3  | 570453.7  | 277860 µg/L  | 277860 ppb  | 11:54:38 |
| 3 | Fe 238.204 Radial† | 62386.7   | 62149.3   | 95340 µg/L   | 95340 ppb   | 11:54:38 |
| 3 | K 766.490 Radial†  | 15251.9   | 14793.2   | 8136.6 µg/L  | 8136.6 ppb  | 11:54:38 |
| 3 | Mg 279.077 IEC†    | 8515.8    | 8473.7    | 52846 µg/L   | 52846 ppb   | 11:54:58 |
| 3 | Na 589.592 Radial† | 49.2      | 44.1      | 1875.3 µg/L  | 1875.3 ppb  | 11:54:58 |
| 3 | Sr 421.552†        | 29147.9   | 29038.3   | 731.32 µg/L  | 731.32 ppb  | 11:54:38 |
| 3 | Sc 361.383         | 614200.3  | 614200.3  | 98.149 %     |             | 11:56:01 |
| 3 | Y 371.029          | 746729.0  | 746729.0  | 105.17 %     |             | 11:56:01 |
| 3 | Ag 328.068†        | -3502.7   | -2629.4   | 0.6149 µg/L  | 0.6149 ppb  | 11:56:01 |
| 3 | As 188.979†        | 207.8     | 189.6     | 52.621 µg/L  | 52.621 ppb  | 11:56:21 |
| 3 | B 249.677†         | -14614.6  | -15082.3  | 79.575 µg/L  | 79.575 ppb  | 11:56:01 |
| 3 | Ba 233.527†        | 246336.1  | 250853.4  | 1409.7 µg/L  | 1409.7 ppb  | 11:56:01 |
| 3 | Be 313.107†        | -4982.6   | 366.5     | 3.6581 µg/L  | 3.6581 ppb  | 11:56:01 |
| 3 | Cd 226.502†        | 1608.5    | 1891.9    | 1.7556 µg/L  | 1.7556 ppb  | 11:56:21 |
| 3 | Co 228.616†        | 2495.1    | 2869.7    | 38.496 µg/L  | 38.496 ppb  | 11:56:21 |
| 3 | Cr 267.716†        | 10668.9   | 10753.3   | 135.56 µg/L  | 135.56 ppb  | 11:56:21 |
| 3 | Cu 324.752†        | 20227.3   | 18115.1   | 80.662 µg/L  | 80.662 ppb  | 11:56:01 |
| 3 | Mn 257.610†        | 2120078.1 | 2159225.2 | 2131.9 µg/L  | 2131.9 ppb  | 11:56:01 |
| 3 | Mo 202.031†        | 260.6     | 282.1     | 15.340 µg/L  | 15.340 ppb  | 11:56:21 |
| 3 | Ni 231.604†        | 7802.0    | 8125.3    | 138.32 µg/L  | 138.32 ppb  | 11:56:21 |
| 3 | P 214.914†         | 9567.0    | 9602.5    | 4086.0 µg/L  | 4086.0 ppb  | 11:56:21 |
| 3 | Pb 220.353†        | 689.1     | 595.8     | 53.511 µg/L  | 53.511 ppb  | 11:56:21 |
| 3 | S 181.975 Axial†   | 3360.2    | 3276.6    | 3209.5 µg/L  | 3209.5 ppb  | 11:56:21 |
| 3 | Sb 206.836†        | 141.2     | 28.7      | 4.1403 µg/L  | 4.1403 ppb  | 11:56:21 |
| 3 | Se 196.026†        | -83.2     | -66.7     | 21.004 µg/L  | 21.004 ppb  | 11:56:21 |
| 3 | SiO2†              | 739652.8  | 751971.5  | 70738 µg/L   | 70738 ppb   | 11:56:01 |
| 3 | Si 251.611†        | 930095.7  | 947345.0  | 32876 µg/L   | 32876 ppb   | 11:56:01 |
| 3 | Sn 189.927†        | 52.4      | 32.2      | 8.6056 µg/L  | 8.6056 ppb  | 11:56:21 |
| 3 | Ti 334.940†        | 582831.2  | 594622.7  | 1359.5 µg/L  | 1359.5 ppb  | 11:56:01 |
| 3 | Tl 190.801†        | -237.4    | -84.5     | -0.8867 µg/L | -0.8867 ppb | 11:56:21 |
| 3 | U 367.007†         | 3775.9    | 2422.6    | -27.32 µg/L  | -27.32 ppb  | 11:56:01 |
| 3 | V 292.402†         | 19164.3   | 19106.5   | 134.87 µg/L  | 134.87 ppb  | 11:56:21 |
| 3 | Zn 213.857†        | 56094.4   | 56366.7   | 291.15 µg/L  | 291.15 ppb  | 11:56:01 |

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Mean Data: 409254024|1611119|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc 361.383         | 611698.5                 | 97.749 %           | 0.3888   |                    |          | 0.40%  |
| Sc RADIAL          | 8425.4                   | 100.0 %            | 0.40     |                    |          | 0.40%  |
| Y 371.029          | 743787.3                 | 104.75 %           | 0.419    |                    |          | 0.40%  |
| Ag 328.068†        | -2561.9                  | 0.9573 µg/L        | 0.45113  | 0.9573 ppb         | 0.45113  | 47.13% |
| Al 396.153Radial†  | 80593.6                  | 39718 µg/L         | 393.29   | 39718 ppb          | 393.29   | 0.99%  |
| As 188.979†        | 190.4                    | 52.862 µg/L        | 0.3048   | 52.862 ppb         | 0.3048   | 0.58%  |
| B 249.677†         | -15096.2                 | 79.626 µg/L        | 2.4621   | 79.626 ppb         | 2.4621   | 3.09%  |
| Ba 233.527†        | 250538.2                 | 1407.9 µg/L        | 2.32     | 1407.9 ppb         | 2.32     | 0.16%  |
| Be 313.107†        | 326.3                    | 3.6505 µg/L        | 0.02789  | 3.6505 ppb         | 0.02789  | 0.76%  |
| Ca 317.933Radial†  | 571387.6                 | 278320 µg/L        | 2072.88  | 278320 ppb         | 2072.88  | 0.74%  |
| Cd 226.502†        | 1904.2                   | 1.8226 µg/L        | 0.23770  | 1.8226 ppb         | 0.23770  | 13.04% |
| Co 228.616†        | 2889.2                   | 38.809 µg/L        | 0.2795   | 38.809 ppb         | 0.2795   | 0.72%  |
| Cr 267.716†        | 10842.3                  | 136.67 µg/L        | 0.989    | 136.67 ppb         | 0.989    | 0.72%  |
| Cu 324.752†        | 18078.9                  | 80.521 µg/L        | 0.1889   | 80.521 ppb         | 0.1889   | 0.23%  |
| Fe 238.204 Radial† | 62203.0                  | 95423 µg/L         | 808.19   | 95423 ppb          | 808.19   | 0.85%  |
| K 766.490 Radial†  | 14847.9                  | 8166.5 µg/L        | 88.71    | 8166.5 ppb         | 88.71    | 1.09%  |
| Mg 279.077 IEC†    | 8498.6                   | 53000 µg/L         | 211.60   | 53000 ppb          | 211.60   | 0.40%  |
| Mn 257.610†        | 2157958.1                | 2130.7 µg/L        | 2.63     | 2130.7 ppb         | 2.63     | 0.12%  |
| Mo 202.031†        | 291.7                    | 15.735 µg/L        | 0.5662   | 15.735 ppb         | 0.5662   | 3.60%  |



|                    |          |              |         |             |         |        |
|--------------------|----------|--------------|---------|-------------|---------|--------|
| Na 589.592 Radial† | 45.4     | 1929.0 µg/L  | 69.54   | 1929.0 ppb  | 69.54   | 3.60%  |
| Ni 231.604†        | 8188.9   | 139.44 µg/L  | 1.019   | 139.44 ppb  | 1.019   | 0.73%  |
| P 214.914†         | 9682.2   | 4120.6 µg/L  | 31.90   | 4120.6 ppb  | 31.90   | 0.77%  |
| Pb 220.353†        | 609.8    | 54.739 µg/L  | 1.2372  | 54.739 ppb  | 1.2372  | 2.26%  |
| S 181.975 Axial†   | 3310.0   | 3242.3 µg/L  | 29.13   | 3242.3 ppb  | 29.13   | 0.90%  |
| Sb 206.836†        | 32.5     | 4.9620 µg/L  | 0.93137 | 4.9620 ppb  | 0.93137 | 18.77% |
| Se 196.026†        | -83.6    | 14.900 µg/L  | 5.6646  | 14.900 ppb  | 5.6646  | 38.02% |
| SiO2†              | 751101.9 | 70656 µg/L   | 84.94   | 70656 ppb   | 84.94   | 0.12%  |
| Si 251.611†        | 946525.3 | 32847 µg/L   | 39.04   | 32847 ppb   | 39.04   | 0.12%  |
| Sn 189.927†        | 29.9     | 8.3809 µg/L  | 0.35943 | 8.3809 ppb  | 0.35943 | 4.29%  |
| Sr 421.552†        | 29002.9  | 730.40 µg/L  | 6.099   | 730.40 ppb  | 6.099   | 0.83%  |
| Ti 334.940†        | 594326.7 | 1358.8 µg/L  | 0.72    | 1358.8 ppb  | 0.72    | 0.05%  |
| Tl 190.801†        | -97.4    | -3.0138 µg/L | 1.89544 | -3.0138 ppb | 1.89544 | 62.89% |
| U 367.007†         | 2485.7   | -16.23 µg/L  | 10.344  | -16.23 ppb  | 10.344  | 63.74% |
| V 292.402†         | 19200.1  | 135.50 µg/L  | 0.692   | 135.50 ppb  | 0.692   | 0.51%  |
| Zn 213.857†        | 56315.9  | 290.84 µg/L  | 0.413   | 290.84 ppb  | 0.413   | 0.14%  |

Sequence No.: 13

Sample ID: 409254029|1611119|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 309

Date Collected: 11/16/2016 11:56:30

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 409254029|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8632.9        | 8632.9              | 102 %              |                    | 11:57:19      |
| 1     | Al 396.153Radial†  | 233386.6      | 228544.6            | 112630 µg/L        | 112630 ppb         | 11:56:59      |
| 1     | Ca 317.933Radial†  | 143827.8      | 140281.5            | 68328 µg/L         | 68328 ppb          | 11:56:59      |
| 1     | Fe 238.204 Radial† | 130375.6      | 127248.4            | 195210 µg/L        | 195210 ppb         | 11:56:59      |
| 1     | K 766.490 Radial†  | 40980.6       | 39597.7             | 21741 µg/L         | 21741 ppb          | 11:56:59      |
| 1     | Mg 279.077 IEC†    | 8520.0        | 8305.1              | 51794 µg/L         | 51794 ppb          | 11:57:19      |
| 1     | Na 589.592 Radial† | 57.7          | 51.4                | 2102.4 µg/L        | 2102.4 ppb         | 11:57:19      |
| 1     | Sr 421.552†        | 22126.1       | 21593.4             | 548.50 µg/L        | 548.50 ppb         | 11:56:59      |
| 1     | Sc 361.383         | 623566.6      | 623566.6            | 99.645 %           |                    | 11:58:23      |
| 1     | Y 371.029          | 830107.6      | 830107.6            | 116.91 %           |                    | 11:58:18      |
| 1     | Ag 328.068†        | -5978.7       | -5060.5             | 9.0230 µg/L        | 9.0230 ppb         | 11:58:23      |
| 1     | As 188.979†        | 318.5         | 297.5               | 79.902 µg/L        | 79.902 ppb         | 11:58:43      |
| 1     | B 249.677†         | -30833.5      | -31135.3            | 158.02 µg/L        | 158.02 ppb         | 11:58:23      |
| 1     | Ba 233.527†        | 366914.5      | 368091.0            | 2067.1 µg/L        | 2067.1 ppb         | 11:58:23      |
| 1     | Be 313.107†        | 12960.9       | 18450.1             | 8.4439 µg/L        | 8.4439 ppb         | 11:58:23      |
| 1     | Cd 226.502†        | 3161.1        | 3425.5              | 1.0442 µg/L        | 1.0442 ppb         | 11:58:43      |
| 1     | Co 228.616†        | 4779.5        | 5124.0              | 67.714 µg/L        | 67.714 ppb         | 11:58:43      |
| 1     | Cr 267.716†        | 11779.1       | 11704.2             | 147.32 µg/L        | 147.32 ppb         | 11:58:43      |
| 1     | Cu 324.752†        | 49647.0       | 47330.0             | 207.77 µg/L        | 207.77 ppb         | 11:58:23      |
| 1     | Mn 257.610†        | 3802841.2     | 3815531.4           | 3770.2 µg/L        | 3770.2 ppb         | 11:58:18      |
| 1     | Mo 202.031†        | -45.3         | -28.8               | 6.8669 µg/L        | 6.8669 ppb         | 11:58:43      |
| 1     | Ni 231.604†        | 12527.0       | 12747.8             | 214.82 µg/L        | 214.82 ppb         | 11:58:43      |
| 1     | P 214.914†         | 16035.9       | 15948.0             | 6754.1 µg/L        | 6754.1 ppb         | 11:58:43      |
| 1     | Pb 220.353†        | 2110.3        | 2011.5              | 144.91 µg/L        | 144.91 ppb         | 11:58:43      |
| 1     | S 181.975 Axial†   | 2547.2        | 2409.2              | 2358.9 µg/L        | 2358.9 ppb         | 11:58:43      |
| 1     | Sb 206.836†        | 134.5         | 19.8                | 1.1885 µg/L        | 1.1885 ppb         | 11:58:43      |
| 1     | Se 196.026†        | -202.0        | -184.7              | 25.502 µg/L        | 25.502 ppb         | 11:58:43      |
| 1     | SiO2†              | 866466.7      | 867917.1            | 81644 µg/L         | 81644 ppb          | 11:58:18      |
| 1     | Si 251.611†        | 1088776.1     | 1092355.9           | 37892 µg/L         | 37892 ppb          | 11:58:18      |
| 1     | Sn 189.927†        | -4.2          | -25.5               | 9.8942 µg/L        | 9.8942 ppb         | 11:58:43      |
| 1     | Ti 334.940†        | 821007.6      | 824727.2            | 1868.9 µg/L        | 1868.9 ppb         | 11:58:18      |
| 1     | Tl 190.801†        | -267.4        | -111.0              | -0.7006 µg/L       | -0.7006 ppb        | 11:58:43      |
| 1     | U 367.007†         | 5762.5        | 4358.5              | -22.45 µg/L        | -22.45 ppb         | 11:58:23      |
| 1     | V 292.402†         | 49420.7       | 49177.4             | 340.66 µg/L        | 340.66 ppb         | 11:58:23      |
| 1     | Zn 213.857†        | 126340.8      | 126004.7            | 657.68 µg/L        | 657.68 ppb         | 11:58:23      |
| 2     | Sc RADIAL          | 8655.5        | 8655.5              | 103 %              |                    | 11:57:44      |
| 2     | Al 396.153Radial†  | 236605.5      | 231085.3            | 113890 µg/L        | 113890 ppb         | 11:57:24      |
| 2     | Ca 317.933Radial†  | 145016.8      | 141073.6            | 68714 µg/L         | 68714 ppb          | 11:57:24      |
| 2     | Fe 238.204 Radial† | 131717.0      | 128223.0            | 196700 µg/L        | 196700 ppb         | 11:57:24      |
| 2     | K 766.490 Radial†  | 41378.2       | 39880.7             | 21897 µg/L         | 21897 ppb          | 11:57:24      |
| 2     | Mg 279.077 IEC†    | 8515.7        | 8279.3              | 51633 µg/L         | 51633 ppb          | 11:57:44      |
| 2     | Na 589.592 Radial† | 55.8          | 49.4                | 2020.6 µg/L        | 2020.6 ppb         | 11:57:44      |
| 2     | Sr 421.552†        | 22678.2       | 22074.7             | 560.76 µg/L        | 560.76 ppb         | 11:57:24      |
| 2     | Sc 361.383         | 622234.5      | 622234.5            | 99.433 %           |                    | 11:58:56      |
| 2     | Y 371.029          | 829199.9      | 829199.9            | 116.78 %           |                    | 11:58:50      |
| 2     | Ag 328.068†        | -6204.2       | -5300.1             | 8.0900 µg/L        | 8.0900 ppb         | 11:58:56      |
| 2     | As 188.979†        | 333.9         | 313.6               | 84.666 µg/L        | 84.666 ppb         | 11:59:16      |
| 2     | B 249.677†         | -30893.6      | -31262.0            | 161.41 µg/L        | 161.41 ppb         | 11:58:56      |
| 2     | Ba 233.527†        | 366096.2      | 368056.4            | 2066.8 µg/L        | 2066.8 ppb         | 11:58:56      |
| 2     | Be 313.107†        | 12858.9       | 18375.4             | 8.4184 µg/L        | 8.4184 ppb         | 11:58:56      |
| 2     | Cd 226.502†        | 3179.1        | 3450.3              | 1.0456 µg/L        | 1.0456 ppb         | 11:59:16      |
| 2     | Co 228.616†        | 4818.8        | 5173.8              | 68.411 µg/L        | 68.411 ppb         | 11:59:16      |
| 2     | Cr 267.716†        | 11760.0       | 11710.3             | 147.40 µg/L        | 147.40 ppb         | 11:59:16      |
| 2     | Cu 324.752†        | 49417.9       | 47206.2             | 207.32 µg/L        | 207.32 ppb         | 11:58:56      |
| 2     | Mn 257.610†        | 3806193.0     | 3827072.9           | 3781.7 µg/L        | 3781.7 ppb         | 11:58:50      |
| 2     | Mo 202.031†        | -46.3         | -30.0               | 6.8819 µg/L        | 6.8819 ppb         | 11:59:16      |
| 2     | Ni 231.604†        | 12542.5       | 12790.2             | 215.49 µg/L        | 215.49 ppb         | 11:59:16      |
| 2     | P 214.914†         | 16036.5       | 15983.1             | 6768.0 µg/L        | 6768.0 ppb         | 11:59:16      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 2113.1    | 2018.8    | 145.21 µg/L  | 145.21 ppb  | 11:59:16 |
| 2 | S 181.975 Axial†   | 2537.2    | 2404.6    | 2354.4 µg/L  | 2354.4 ppb  | 11:59:16 |
| 2 | Sb 206.836†        | 155.6     | 41.2      | 5.8389 µg/L  | 5.8389 ppb  | 11:59:16 |
| 2 | Se 196.026†        | -213.7    | -196.8    | 21.796 µg/L  | 21.796 ppb  | 11:59:16 |
| 2 | SiO2†              | 866406.1  | 869717.8  | 81814 µg/L   | 81814 ppb   | 11:58:50 |
| 2 | Si 251.611†        | 1089260.8 | 1095182.7 | 37990 µg/L   | 37990 ppb   | 11:58:50 |
| 2 | Sn 189.927†        | 2.1       | -19.2     | 10.564 µg/L  | 10.564 ppb  | 11:59:16 |
| 2 | Ti 334.940†        | 821187.1  | 826671.7  | 1873.3 µg/L  | 1873.3 ppb  | 11:58:50 |
| 2 | Tl 190.801†        | -261.0    | -105.1    | 0.2894 µg/L  | 0.2894 ppb  | 11:59:16 |
| 2 | U 367.007†         | 5744.0    | 4352.3    | -29.83 µg/L  | -29.83 ppb  | 11:58:56 |
| 2 | V 292.402†         | 49418.1   | 49281.0   | 341.52 µg/L  | 341.52 ppb  | 11:58:56 |
| 2 | Zn 213.857†        | 126062.4  | 125996.2  | 657.45 µg/L  | 657.45 ppb  | 11:58:56 |
| 3 | Sc RADIAL          | 8701.0    | 8701.0    | 103 %        |             | 11:58:10 |
| 3 | Al 396.153Radial†  | 238001.4  | 231231.4  | 113960 µg/L  | 113960 ppb  | 11:57:50 |
| 3 | Ca 317.933Radial†  | 145766.0  | 141060.1  | 68707 µg/L   | 68707 ppb   | 11:57:50 |
| 3 | Fe 238.204 Radial† | 132634.0  | 128439.8  | 197030 µg/L  | 197030 ppb  | 11:57:50 |
| 3 | K 766.490 Radial†  | 41910.1   | 40184.9   | 22063 µg/L   | 22063 ppb   | 11:57:50 |
| 3 | Mg 279.077 IEC†    | 8525.1    | 8245.1    | 51419 µg/L   | 51419 ppb   | 11:58:10 |
| 3 | Na 589.592 Radial† | 57.2      | 50.5      | 2065.6 µg/L  | 2065.6 ppb  | 11:58:10 |
| 3 | Sr 421.552†        | 22789.0   | 22066.4   | 560.55 µg/L  | 560.55 ppb  | 11:57:50 |
| 3 | Sc 361.383         | 620073.8  | 620073.8  | 99.087 %     |             | 11:59:28 |
| 3 | Y 371.029          | 829598.0  | 829598.0  | 116.84 %     |             | 11:59:23 |
| 3 | Ag 328.068†        | -6237.9   | -5355.9   | 7.8677 µg/L  | 7.8677 ppb  | 11:59:28 |
| 3 | As 188.979†        | 319.3     | 300.1     | 80.588 µg/L  | 80.588 ppb  | 11:59:48 |
| 3 | B 249.677†         | -31019.0  | -31496.8  | 158.14 µg/L  | 158.14 ppb  | 11:59:28 |
| 3 | Ba 233.527†        | 365449.0  | 368686.2  | 2070.4 µg/L  | 2070.4 ppb  | 11:59:28 |
| 3 | Be 313.107†        | 12819.2   | 18380.4   | 8.4230 µg/L  | 8.4230 ppb  | 11:59:28 |
| 3 | Cd 226.502†        | 3170.6    | 3452.9    | 1.0269 µg/L  | 1.0269 ppb  | 11:59:48 |
| 3 | Co 228.616†        | 4805.5    | 5177.3    | 68.432 µg/L  | 68.432 ppb  | 11:59:48 |
| 3 | Cr 267.716†        | 11755.8   | 11747.3   | 147.85 µg/L  | 147.85 ppb  | 11:59:48 |
| 3 | Cu 324.752†        | 49347.2   | 47308.1   | 207.77 µg/L  | 207.77 ppb  | 11:59:28 |
| 3 | Mn 257.610†        | 3811517.7 | 3845785.4 | 3800.2 µg/L  | 3800.2 ppb  | 11:59:23 |
| 3 | Mo 202.031†        | -42.2     | -26.0     | 7.0574 µg/L  | 7.0574 ppb  | 11:59:48 |
| 3 | Ni 231.604†        | 12521.7   | 12813.2   | 215.88 µg/L  | 215.88 ppb  | 11:59:48 |
| 3 | P 214.914†         | 16050.7   | 16053.7   | 6798.4 µg/L  | 6798.4 ppb  | 11:59:48 |
| 3 | Pb 220.353†        | 2143.6    | 2056.9    | 148.38 µg/L  | 148.38 ppb  | 11:59:48 |
| 3 | S 181.975 Axial†   | 2554.7    | 2431.2    | 2380.4 µg/L  | 2380.4 ppb  | 11:59:48 |
| 3 | Sb 206.836†        | 158.8     | 45.0      | 6.6661 µg/L  | 6.6661 ppb  | 11:59:48 |
| 3 | Se 196.026†        | -218.9    | -202.8    | 19.776 µg/L  | 19.776 ppb  | 11:59:48 |
| 3 | SiO2†              | 868334.6  | 874700.3  | 82283 µg/L   | 82283 ppb   | 11:59:23 |
| 3 | Si 251.611†        | 1091282.0 | 1101039.9 | 38194 µg/L   | 38194 ppb   | 11:59:23 |
| 3 | Sn 189.927†        | 25.7      | 4.6       | 12.886 µg/L  | 12.886 ppb  | 11:59:48 |
| 3 | Ti 334.940†        | 821604.5  | 829970.7  | 1880.8 µg/L  | 1880.8 ppb  | 11:59:23 |
| 3 | Tl 190.801†        | -275.0    | -120.1    | -2.1035 µg/L | -2.1035 ppb | 11:59:48 |
| 3 | U 367.007†         | 5780.4    | 4409.1    | -20.78 µg/L  | -20.78 ppb  | 11:59:28 |
| 3 | V 292.402†         | 49452.5   | 49488.9   | 342.90 µg/L  | 342.90 ppb  | 11:59:28 |
| 3 | Zn 213.857†        | 125689.1  | 126061.2  | 657.77 µg/L  | 657.77 ppb  | 11:59:28 |

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Mean Data: 409254029|1611119|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383         | 621958.3                 | 99.388 %           | 0.2817   |                    |          | 0.28% |
| Sc RADIAL          | 8663.1                   | 103 %              | 0.41     |                    |          | 0.40% |
| Y 371.029          | 829635.2                 | 116.84 %           | 0.064    |                    |          | 0.05% |
| Ag 328.068†        | -5238.9                  | 8.3269 µg/L        | 0.61301  | 8.3269 ppb         | 0.61301  | 7.36% |
| Al 396.153Radial†  | 230287.1                 | 113490 µg/L        | 744.59   | 113490 ppb         | 744.59   | 0.66% |
| As 188.979†        | 303.8                    | 81.719 µg/L        | 2.5756   | 81.719 ppb         | 2.5756   | 3.15% |
| B 249.677†         | -31298.0                 | 159.19 µg/L        | 1.922    | 159.19 ppb         | 1.922    | 1.21% |
| Ba 233.527†        | 368277.9                 | 2068.1 µg/L        | 1.98     | 2068.1 ppb         | 1.98     | 0.10% |
| Be 313.107†        | 18401.9                  | 8.4284 µg/L        | 0.01361  | 8.4284 ppb         | 0.01361  | 0.16% |
| Ca 317.933Radial†  | 140805.1                 | 68583 µg/L         | 220.88   | 68583 ppb          | 220.88   | 0.32% |
| Cd 226.502†        | 3442.9                   | 1.0389 µg/L        | 0.01042  | 1.0389 ppb         | 0.01042  | 1.00% |
| Co 228.616†        | 5158.4                   | 68.186 µg/L        | 0.4089   | 68.186 ppb         | 0.4089   | 0.60% |
| Cr 267.716†        | 11720.6                  | 147.52 µg/L        | 0.285    | 147.52 ppb         | 0.285    | 0.19% |
| Cu 324.752†        | 47281.4                  | 207.62 µg/L        | 0.256    | 207.62 ppb         | 0.256    | 0.12% |
| Fe 238.204 Radial† | 127970.4                 | 196310 µg/L        | 973.55   | 196310 ppb         | 973.55   | 0.50% |
| K 766.490 Radial†  | 39887.8                  | 21900 µg/L         | 160.89   | 21900 ppb          | 160.89   | 0.73% |
| Mg 279.077 IEC†    | 8276.5                   | 51615 µg/L         | 187.88   | 51615 ppb          | 187.88   | 0.36% |
| Mn 257.610†        | 3829463.2                | 3784.0 µg/L        | 15.10    | 3784.0 ppb         | 15.10    | 0.40% |
| Mo 202.031†        | -28.3                    | 6.9354 µg/L        | 0.10595  | 6.9354 ppb         | 0.10595  | 1.53% |

|                    |           |              |         |             |         |         |
|--------------------|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial† | 50.4      | 2062.9 µg/L  | 41.01   | 2062.9 ppb  | 41.01   | 1.99%   |
| Ni 231.604†        | 12783.7   | 215.40 µg/L  | 0.538   | 215.40 ppb  | 0.538   | 0.25%   |
| P 214.914†         | 15994.9   | 6773.5 µg/L  | 22.64   | 6773.5 ppb  | 22.64   | 0.33%   |
| Pb 220.353†        | 2029.1    | 146.17 µg/L  | 1.924   | 146.17 ppb  | 1.924   | 1.32%   |
| S 181.975 Axial†   | 2415.0    | 2364.6 µg/L  | 13.92   | 2364.6 ppb  | 13.92   | 0.59%   |
| Sb 206.836†        | 35.3      | 4.5645 µg/L  | 2.95282 | 4.5645 ppb  | 2.95282 | 64.69%  |
| Se 196.026†        | -194.8    | 22.358 µg/L  | 2.9040  | 22.358 ppb  | 2.9040  | 12.99%  |
| SiO2†              | 870778.4  | 81914 µg/L   | 330.53  | 81914 ppb   | 330.53  | 0.40%   |
| Si 251.611†        | 1096192.9 | 38025 µg/L   | 153.63  | 38025 ppb   | 153.63  | 0.40%   |
| Sn 189.927†        | -13.3     | 11.115 µg/L  | 1.5701  | 11.115 ppb  | 1.5701  | 14.13%  |
| Sr 421.552†        | 21911.5   | 556.60 µg/L  | 7.020   | 556.60 ppb  | 7.020   | 1.26%   |
| Ti 334.940†        | 827123.2  | 1874.3 µg/L  | 6.00    | 1874.3 ppb  | 6.00    | 0.32%   |
| Tl 190.801†        | -112.1    | -0.8382 µg/L | 1.20240 | -0.8382 ppb | 1.20240 | 143.44% |
| U 367.007†         | 4373.3    | -24.35 µg/L  | 4.815   | -24.35 ppb  | 4.815   | 19.77%  |
| V 292.402†         | 49315.7   | 341.69 µg/L  | 1.130   | 341.69 ppb  | 1.130   | 0.33%   |
| Zn 213.857†        | 126020.7  | 657.63 µg/L  | 0.166   | 657.63 ppb  | 0.166   | 0.03%   |

Sequence No.: 14

Sample ID: 409254032|1611119|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 310

Date Collected: 11/16/2016 11:59:57

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 409254032|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8536.2        | 8536.2              | 101 %              |                    | 12:00:46      |
| 1     | Al 396.153Radial†  | 121834.1      | 121006.1            | 59635 µg/L         | 59635 ppb          | 12:00:26      |
| 1     | Ca 317.933Radial†  | 323795.8      | 319529.8            | 155640 µg/L        | 155640 ppb         | 12:00:26      |
| 1     | Fe 238.204 Radial† | 85137.5       | 84033.4             | 128910 µg/L        | 128910 ppb         | 12:00:26      |
| 1     | K 766.490 Radial†  | 24842.8       | 24120.4             | 13248 µg/L         | 13248 ppb          | 12:00:26      |
| 1     | Mg 279.077 IEC†    | 9955.9        | 9816.9              | 61222 µg/L         | 61222 ppb          | 12:00:46      |
| 1     | Na 589.592 Radial† | 50.7          | 45.1                | 1870.1 µg/L        | 1870.1 ppb         | 12:00:46      |
| 1     | Sr 421.552†        | 20902.5       | 20630.3             | 520.98 µg/L        | 520.98 ppb         | 12:00:26      |
| 1     | Sc 361.383         | 616173.1      | 616173.1            | 98.464 %           |                    | 12:01:50      |
| 1     | Y 371.029          | 783474.9      | 783474.9            | 110.34 %           |                    | 12:01:45      |
| 1     | Ag 328.068†        | -4244.3       | -3371.1             | 4.4557 µg/L        | 4.4557 ppb         | 12:01:50      |
| 1     | As 188.979†        | 335.0         | 318.1               | 89.322 µg/L        | 89.322 ppb         | 12:02:10      |
| 1     | B 249.677†         | -19900.0      | -20402.5            | 107.41 µg/L        | 107.41 ppb         | 12:01:50      |
| 1     | Ba 233.527†        | 337118.9      | 342248.9            | 1923.4 µg/L        | 1923.4 ppb         | 12:01:50      |
| 1     | Be 313.107†        | 2714.1        | 8199.5              | 5.3296 µg/L        | 5.3296 ppb         | 12:01:50      |
| 1     | Cd 226.502†        | 2240.4        | 2528.4              | 2.1331 µg/L        | 2.1331 ppb         | 12:02:10      |
| 1     | Co 228.616†        | 3563.0        | 3946.1              | 52.673 µg/L        | 52.673 ppb         | 12:02:10      |
| 1     | Cr 267.716†        | 7437.5        | 7436.8              | 93.700 µg/L        | 93.700 ppb         | 12:02:10      |
| 1     | Cu 324.752†        | 36740.8       | 34820.3             | 152.11 µg/L        | 152.11 ppb         | 12:01:50      |
| 1     | Mn 257.610†        | 3721448.5     | 3778662.3           | 3730.0 µg/L        | 3730.0 ppb         | 12:01:45      |
| 1     | Mo 202.031†        | 23.3          | 40.2                | 6.9333 µg/L        | 6.9333 ppb         | 12:02:10      |
| 1     | Ni 231.604†        | 8702.2        | 9014.1              | 152.34 µg/L        | 152.34 ppb         | 12:02:10      |
| 1     | P 214.914†         | 11817.8       | 11857.3             | 5035.1 µg/L        | 5035.1 ppb         | 12:02:10      |
| 1     | Pb 220.353†        | 1164.0        | 1075.7              | 84.131 µg/L        | 84.131 ppb         | 12:02:10      |
| 1     | S 181.975 Axial†   | 5414.1        | 5351.5              | 5244.4 µg/L        | 5244.4 ppb         | 12:02:10      |
| 1     | Sb 206.836†        | 123.8         | 10.5                | 1.6729 µg/L        | 1.6729 ppb         | 12:02:10      |
| 1     | Se 196.026†        | -146.4        | -130.6              | 13.738 µg/L        | 13.738 ppb         | 12:02:10      |
| 1     | SiO2†              | 759129.7      | 769339.4            | 72371 µg/L         | 72371 ppb          | 12:01:50      |
| 1     | Si 251.611†        | 978641.9      | 993614.6            | 34476 µg/L         | 34476 ppb          | 12:01:45      |
| 1     | Sn 189.927†        | 16.6          | -4.4                | 9.5755 µg/L        | 9.5755 ppb         | 12:02:10      |
| 1     | Ti 334.940†        | 890597.1      | 905288.8            | 2055.8 µg/L        | 2055.8 ppb         | 12:01:45      |
| 1     | Tl 190.801†        | -274.5        | -121.4              | -0.3962 µg/L       | -0.3962 ppb        | 12:02:10      |
| 1     | U 367.007†         | 4395.3        | 3039.4              | -17.03 µg/L        | -17.03 ppb         | 12:01:50      |
| 1     | V 292.402†         | 30493.8       | 30550.3             | 212.07 µg/L        | 212.07 ppb         | 12:01:50      |
| 1     | Zn 213.857†        | 79958.9       | 80420.6             | 417.39 µg/L        | 417.39 ppb         | 12:01:50      |
| 2     | Sc RADIAL          | 8540.5        | 8540.5              | 101 %              |                    | 12:01:12      |
| 2     | Al 396.153Radial†  | 124603.1      | 123676.8            | 60952 µg/L         | 60952 ppb          | 12:00:51      |
| 2     | Ca 317.933Radial†  | 330265.2      | 325749.7            | 158670 µg/L        | 158670 ppb         | 12:00:51      |
| 2     | Fe 238.204 Radial† | 87071.7       | 85898.8             | 131770 µg/L        | 131770 ppb         | 12:00:51      |
| 2     | K 766.490 Radial†  | 25505.1       | 24761.4             | 13600 µg/L         | 13600 ppb          | 12:00:51      |
| 2     | Mg 279.077 IEC†    | 9968.1        | 9823.9              | 61266 µg/L         | 61266 ppb          | 12:01:12      |
| 2     | Na 589.592 Radial† | 44.6          | 39.1                | 1625.5 µg/L        | 1625.5 ppb         | 12:01:12      |
| 2     | Sr 421.552†        | 21497.8       | 21207.1             | 535.59 µg/L        | 535.59 ppb         | 12:00:51      |
| 2     | Sc 361.383         | 613082.0      | 613082.0            | 97.970 %           |                    | 12:02:22      |
| 2     | Y 371.029          | 778385.2      | 778385.2            | 109.62 %           |                    | 12:02:17      |
| 2     | Ag 328.068†        | -4125.7       | -3271.7             | 5.4277 µg/L        | 5.4277 ppb         | 12:02:22      |
| 2     | As 188.979†        | 323.1         | 307.6               | 86.022 µg/L        | 86.022 ppb         | 12:02:42      |
| 2     | B 249.677†         | -19691.2      | -20291.3            | 120.78 µg/L        | 120.78 ppb         | 12:02:22      |
| 2     | Ba 233.527†        | 335281.0      | 342099.1            | 1922.4 µg/L        | 1922.4 ppb         | 12:02:22      |
| 2     | Be 313.107†        | 2660.1        | 8158.3              | 5.3517 µg/L        | 5.3517 ppb         | 12:02:22      |
| 2     | Cd 226.502†        | 2231.8        | 2531.2              | 1.8669 µg/L        | 1.8669 ppb         | 12:02:42      |
| 2     | Co 228.616†        | 3576.3        | 3977.9              | 52.994 µg/L        | 52.994 ppb         | 12:02:42      |
| 2     | Cr 267.716†        | 7481.4        | 7519.6              | 94.757 µg/L        | 94.757 ppb         | 12:02:42      |
| 2     | Cu 324.752†        | 36496.2       | 34758.7             | 152.01 µg/L        | 152.01 ppb         | 12:02:22      |
| 2     | Mn 257.610†        | 3687990.6     | 3763566.6           | 3715.3 µg/L        | 3715.3 ppb         | 12:02:17      |
| 2     | Mo 202.031†        | -15.0         | 1.3                 | 5.4754 µg/L        | 5.4754 ppb         | 12:02:42      |
| 2     | Ni 231.604†        | 8768.5        | 9126.3              | 154.18 µg/L        | 154.18 ppb         | 12:02:42      |
| 2     | P 214.914†         | 11899.5       | 12001.2             | 5095.0 µg/L        | 5095.0 ppb         | 12:02:42      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 1165.5    | 1083.3    | 84.621 µg/L  | 84.621 ppb  | 12:02:42 |
| 2 | S 181.975 Axial†   | 5438.1    | 5403.8    | 5295.3 µg/L  | 5295.3 ppb  | 12:02:42 |
| 2 | Sb 206.836†        | 144.1     | 31.9      | 6.2544 µg/L  | 6.2544 ppb  | 12:02:42 |
| 2 | Se 196.026†        | -128.4    | -113.0    | 21.477 µg/L  | 21.477 ppb  | 12:02:42 |
| 2 | SiO2†              | 754345.7  | 768343.4  | 72277 µg/L   | 72277 ppb   | 12:02:22 |
| 2 | Si 251.611†        | 970047.4  | 989853.0  | 34345 µg/L   | 34345 ppb   | 12:02:17 |
| 2 | Sn 189.927†        | 17.7      | -3.2      | 9.7551 µg/L  | 9.7551 ppb  | 12:02:42 |
| 2 | Ti 334.940†        | 884696.9  | 903826.6  | 2052.7 µg/L  | 2052.7 ppb  | 12:02:17 |
| 2 | Tl 190.801†        | -266.5    | -114.7    | 0.6749 µg/L  | 0.6749 ppb  | 12:02:42 |
| 2 | U 367.007†         | 4407.4    | 3074.2    | -23.29 µg/L  | -23.29 ppb  | 12:02:22 |
| 2 | V 292.402†         | 30364.5   | 30574.5   | 212.61 µg/L  | 212.61 ppb  | 12:02:22 |
| 2 | Zn 213.857†        | 79366.8   | 80225.6   | 415.96 µg/L  | 415.96 ppb  | 12:02:22 |
| 3 | Sc RADIAL          | 8570.5    | 8570.5    | 102 %        |             | 12:01:37 |
| 3 | Al 396.153Radial†  | 124200.6  | 122851.7  | 60545 µg/L   | 60545 ppb   | 12:01:17 |
| 3 | Ca 317.933Radial†  | 328601.9  | 322976.2  | 157320 µg/L  | 157320 ppb  | 12:01:17 |
| 3 | Fe 238.204 Radial† | 86569.3   | 85104.8   | 130560 µg/L  | 130560 ppb  | 12:01:17 |
| 3 | K 766.490 Radial†  | 25301.1   | 24472.9   | 13441 µg/L   | 13441 ppb   | 12:01:17 |
| 3 | Mg 279.077 IEC†    | 10012.4   | 9833.1    | 61323 µg/L   | 61323 ppb   | 12:01:37 |
| 3 | Na 589.592 Radial† | 43.3      | 37.6      | 1562.9 µg/L  | 1562.9 ppb  | 12:01:37 |
| 3 | Sr 421.552†        | 21564.7   | 21198.8   | 535.42 µg/L  | 535.42 ppb  | 12:01:17 |
| 3 | Sc 361.383         | 612804.1  | 612804.1  | 97.926 %     |             | 12:02:54 |
| 3 | Y 371.029          | 780702.4  | 780702.4  | 109.95 %     |             | 12:02:49 |
| 3 | Ag 328.068†        | -4196.2   | -3345.7   | 4.8407 µg/L  | 4.8407 ppb  | 12:02:54 |
| 3 | As 188.979†        | 318.7     | 303.3     | 84.795 µg/L  | 84.795 ppb  | 12:03:14 |
| 3 | B 249.677†         | -19749.9  | -20360.3  | 114.66 µg/L  | 114.66 ppb  | 12:02:54 |
| 3 | Ba 233.527†        | 335395.5  | 342371.2  | 1924.0 µg/L  | 1924.0 ppb  | 12:02:54 |
| 3 | Be 313.107†        | 2667.4    | 8167.0    | 5.3459 µg/L  | 5.3459 ppb  | 12:02:54 |
| 3 | Cd 226.502†        | 2210.8    | 2510.7    | 1.8625 µg/L  | 1.8625 ppb  | 12:03:14 |
| 3 | Co 228.616†        | 3583.7    | 3987.2    | 53.220 µg/L  | 53.220 ppb  | 12:03:14 |
| 3 | Cr 267.716†        | 7454.2    | 7495.3    | 94.418 µg/L  | 94.418 ppb  | 12:03:14 |
| 3 | Cu 324.752†        | 36631.7   | 34914.0   | 152.61 µg/L  | 152.61 ppb  | 12:02:54 |
| 3 | Mn 257.610†        | 3705306.0 | 3782956.2 | 3734.3 µg/L  | 3734.3 ppb  | 12:02:49 |
| 3 | Mo 202.031†        | 14.5      | 31.4      | 6.6441 µg/L  | 6.6441 ppb  | 12:03:14 |
| 3 | Ni 231.604†        | 8738.6    | 9099.9    | 153.77 µg/L  | 153.77 ppb  | 12:03:14 |
| 3 | P 214.914†         | 11922.1   | 12029.8   | 5108.6 µg/L  | 5108.6 ppb  | 12:03:14 |
| 3 | Pb 220.353†        | 1165.4    | 1083.7    | 84.644 µg/L  | 84.644 ppb  | 12:03:14 |
| 3 | S 181.975 Axial†   | 5420.0    | 5387.7    | 5279.8 µg/L  | 5279.8 ppb  | 12:03:14 |
| 3 | Sb 206.836†        | 143.5     | 31.3      | 6.1647 µg/L  | 6.1647 ppb  | 12:03:14 |
| 3 | Se 196.026†        | -134.6    | -119.4    | 18.571 µg/L  | 18.571 ppb  | 12:03:14 |
| 3 | SiO2†              | 755356.9  | 769725.2  | 72407 µg/L   | 72407 ppb   | 12:02:54 |
| 3 | Si 251.611†        | 974493.0  | 994841.9  | 34518 µg/L   | 34518 ppb   | 12:02:49 |
| 3 | Sn 189.927†        | 5.0       | -16.2     | 8.4976 µg/L  | 8.4976 ppb  | 12:03:14 |
| 3 | Ti 334.940†        | 887054.4  | 906643.6  | 2059.0 µg/L  | 2059.0 ppb  | 12:02:49 |
| 3 | Tl 190.801†        | -280.5    | -129.1    | -1.6139 µg/L | -1.6139 ppb | 12:03:14 |
| 3 | U 367.007†         | 4566.5    | 3238.8    | 12.28 µg/L   | 12.28 ppb   | 12:02:54 |
| 3 | V 292.402†         | 30331.2   | 30554.5   | 212.34 µg/L  | 212.34 ppb  | 12:02:54 |
| 3 | Zn 213.857†        | 79481.3   | 80379.3   | 416.95 µg/L  | 416.95 ppb  | 12:02:54 |

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Mean Data: 409254032|1611119|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc 361.383         | 614019.7                 | 98.120 %           | 0.2988   |                    |          | 0.30%  |
| Sc RADIAL          | 8549.1                   | 101 %              | 0.22     |                    |          | 0.22%  |
| Y 371.029          | 780854.2                 | 109.97 %           | 0.359    |                    |          | 0.33%  |
| Ag 328.068†        | -3329.5                  | 4.9080 µg/L        | 0.48945  | 4.9080 ppb         | 0.48945  | 9.97%  |
| Al 396.153Radial†  | 122511.5                 | 60377 µg/L         | 673.94   | 60377 ppb          | 673.94   | 1.12%  |
| As 188.979†        | 309.7                    | 86.713 µg/L        | 2.3417   | 86.713 ppb         | 2.3417   | 2.70%  |
| B 249.677†         | -20351.4                 | 114.28 µg/L        | 6.693    | 114.28 ppb         | 6.693    | 5.86%  |
| Ba 233.527†        | 342239.8                 | 1923.3 µg/L        | 0.79     | 1923.3 ppb         | 0.79     | 0.04%  |
| Be 313.107†        | 8174.9                   | 5.3424 µg/L        | 0.01142  | 5.3424 ppb         | 0.01142  | 0.21%  |
| Ca 317.933Radial†  | 322751.9                 | 157210 µg/L        | 1517.77  | 157210 ppb         | 1517.77  | 0.97%  |
| Cd 226.502†        | 2523.4                   | 1.9542 µg/L        | 0.15500  | 1.9542 ppb         | 0.15500  | 7.93%  |
| Co 228.616†        | 3970.4                   | 52.962 µg/L        | 0.2748   | 52.962 ppb         | 0.2748   | 0.52%  |
| Cr 267.716†        | 7483.9                   | 94.291 µg/L        | 0.5397   | 94.291 ppb         | 0.5397   | 0.57%  |
| Cu 324.752†        | 34831.0                  | 152.24 µg/L        | 0.321    | 152.24 ppb         | 0.321    | 0.21%  |
| Fe 238.204 Radial† | 85012.3                  | 130410 µg/L        | 1436.08  | 130410 ppb         | 1436.08  | 1.10%  |
| K 766.490 Radial†  | 24451.6                  | 13430 µg/L         | 176.22   | 13430 ppb          | 176.22   | 1.31%  |
| Mg 279.077 IEC†    | 9824.6                   | 61270 µg/L         | 50.80    | 61270 ppb          | 50.80    | 0.08%  |
| Mn 257.610†        | 3775061.7                | 3726.5 µg/L        | 9.99     | 3726.5 ppb         | 9.99     | 0.27%  |
| Mo 202.031†        | 24.3                     | 6.3509 µg/L        | 0.77194  | 6.3509 ppb         | 0.77194  | 12.15% |

|                    |          |              |         |             |         |         |
|--------------------|----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial† | 40.6     | 1686.2 µg/L  | 162.34  | 1686.2 ppb  | 162.34  | 9.63%   |
| Ni 231.604†        | 9080.1   | 153.43 µg/L  | 0.965   | 153.43 ppb  | 0.965   | 0.63%   |
| P 214.914†         | 11962.7  | 5079.6 µg/L  | 39.09   | 5079.6 ppb  | 39.09   | 0.77%   |
| Pb 220.353†        | 1080.9   | 84.465 µg/L  | 0.2896  | 84.465 ppb  | 0.2896  | 0.34%   |
| S 181.975 Axial†   | 5381.0   | 5273.1 µg/L  | 26.09   | 5273.1 ppb  | 26.09   | 0.49%   |
| Sb 206.836†        | 24.5     | 4.6974 µg/L  | 2.61960 | 4.6974 ppb  | 2.61960 | 55.77%  |
| Se 196.026†        | -121.0   | 17.929 µg/L  | 3.9090  | 17.929 ppb  | 3.9090  | 21.80%  |
| SiO2†              | 769136.0 | 72352 µg/L   | 67.07   | 72352 ppb   | 67.07   | 0.09%   |
| Si 251.611†        | 992769.8 | 34447 µg/L   | 90.43   | 34447 ppb   | 90.43   | 0.26%   |
| Sn 189.927†        | -7.9     | 9.2761 µg/L  | 0.68016 | 9.2761 ppb  | 0.68016 | 7.33%   |
| Sr 421.552†        | 21012.1  | 530.67 µg/L  | 8.388   | 530.67 ppb  | 8.388   | 1.58%   |
| Ti 334.940†        | 905253.0 | 2055.8 µg/L  | 3.14    | 2055.8 ppb  | 3.14    | 0.15%   |
| Tl 190.801†        | -121.7   | -0.4451 µg/L | 1.14519 | -0.4451 ppb | 1.14519 | 257.31% |
| U 367.007†         | 3117.5   | -9.345 µg/L  | 18.9908 | -9.345 ppb  | 18.9908 | 203.21% |
| V 292.402†         | 30559.8  | 212.34 µg/L  | 0.267   | 212.34 ppb  | 0.267   | 0.13%   |
| Zn 213.857†        | 80341.9  | 416.77 µg/L  | 0.733   | 416.77 ppb  | 0.733   | 0.18%   |

Sequence No.: 15

Sample ID: 409254034|1611119|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 311

Date Collected: 11/16/2016 12:03:23

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 409254034|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8635.3        | 8635.3              | 102 %              |                    | 12:04:12      |
| 1     | Al 396.153Radial†  | 165945.4      | 162670.2            | 80169 µg/L         | 80169 ppb          | 12:03:52      |
| 1     | Ca 317.933Radial†  | 346471.4      | 337987.2            | 164630 µg/L        | 164630 ppb         | 12:03:52      |
| 1     | Fe 238.204 Radial† | 113160.7      | 110414.1            | 169380 µg/L        | 169380 ppb         | 12:03:52      |
| 1     | K 766.490 Radial†  | 32578.9       | 31388.0             | 17242 µg/L         | 17242 ppb          | 12:03:52      |
| 1     | Mg 279.077 IEC†    | 10687.7       | 10418.2             | 64972 µg/L         | 64972 ppb          | 12:04:12      |
| 1     | Na 589.592 Radial† | 54.0          | 47.7                | 1978.3 µg/L        | 1978.3 ppb         | 12:04:12      |
| 1     | Sr 421.552†        | 27435.4       | 26768.3             | 677.24 µg/L        | 677.24 ppb         | 12:03:52      |
| 1     | Sc 361.383         | 616326.9      | 616326.9            | 98.488 %           |                    | 12:05:16      |
| 1     | Y 371.029          | 794431.2      | 794431.2            | 111.88 %           |                    | 12:05:11      |
| 1     | Ag 328.068†        | -5306.5       | -4448.5             | 6.2343 µg/L        | 6.2343 ppb         | 12:05:16      |
| 1     | As 188.979†        | 445.6         | 430.2               | 121.04 µg/L        | 121.04 ppb         | 12:05:36      |
| 1     | B 249.677†         | -26134.7      | -26727.8            | 142.71 µg/L        | 142.71 ppb         | 12:05:16      |
| 1     | Ba 233.527†        | 407208.7      | 413329.0            | 2322.4 µg/L        | 2322.4 ppb         | 12:05:16      |
| 1     | Be 313.107†        | 6057.4        | 11593.5             | 6.8454 µg/L        | 6.8454 ppb         | 12:05:16      |
| 1     | Cd 226.502†        | 2829.5        | 3126.0              | 1.7895 µg/L        | 1.7895 ppb         | 12:05:36      |
| 1     | Co 228.616†        | 4340.3        | 4734.4              | 63.474 µg/L        | 63.474 ppb         | 12:05:36      |
| 1     | Cr 267.716†        | 9756.3        | 9789.2              | 122.77 µg/L        | 122.77 ppb         | 12:05:36      |
| 1     | Cu 324.752†        | 51677.7       | 49977.1             | 217.48 µg/L        | 217.48 ppb         | 12:05:16      |
| 1     | Mn 257.610†        | 5665663.7     | 5751772.1           | 5677.2 µg/L        | 5677.2 ppb         | 12:05:11      |
| 1     | Mo 202.031†        | -23.0         | -6.7                | 6.6974 µg/L        | 6.6974 ppb         | 12:05:36      |
| 1     | Ni 231.604†        | 10250.2       | 10583.6             | 178.00 µg/L        | 178.00 ppb         | 12:05:36      |
| 1     | P 214.914†         | 12475.6       | 12522.2             | 5285.5 µg/L        | 5285.5 ppb         | 12:05:36      |
| 1     | Pb 220.353†        | 1496.4        | 1413.0              | 108.28 µg/L        | 108.28 ppb         | 12:05:36      |
| 1     | S 181.975 Axial†   | 1626.9        | 1504.8              | 1485.1 µg/L        | 1485.1 ppb         | 12:05:36      |
| 1     | Sb 206.836†        | 144.2         | 31.2                | 4.8300 µg/L        | 4.8300 ppb         | 12:05:36      |
| 1     | Se 196.026†        | -180.0        | -164.6              | 20.567 µg/L        | 20.567 ppb         | 12:05:36      |
| 1     | SiO2†              | 803768.3      | 814470.7            | 76617 µg/L         | 76617 ppb          | 12:05:16      |
| 1     | Si 251.611†        | 1043835.4     | 1059560.4           | 36758 µg/L         | 36758 ppb          | 12:05:11      |
| 1     | Sn 189.927†        | 35.0          | 14.3                | 11.886 µg/L        | 11.886 ppb         | 12:05:36      |
| 1     | Ti 334.940†        | 796674.1      | 809698.6            | 1840.0 µg/L        | 1840.0 ppb         | 12:05:11      |
| 1     | Tl 190.801†        | -266.9        | -113.6              | -1.1663 µg/L       | -1.1663 ppb        | 12:05:36      |
| 1     | U 367.007†         | 5309.6        | 3966.5              | -15.88 µg/L        | -15.88 ppb         | 12:05:16      |
| 1     | V 292.402†         | 39435.6       | 39621.6             | 275.92 µg/L        | 275.92 ppb         | 12:05:16      |
| 1     | Zn 213.857†        | 106381.9      | 107228.8            | 558.00 µg/L        | 558.00 ppb         | 12:05:16      |
| 2     | Sc RADIAL          | 8696.0        | 8696.0              | 103 %              |                    | 12:04:38      |
| 2     | Al 396.153Radial†  | 169288.5      | 164779.3            | 81208 µg/L         | 81208 ppb          | 12:04:17      |
| 2     | Ca 317.933Radial†  | 351604.0      | 340600.6            | 165900 µg/L        | 165900 ppb         | 12:04:17      |
| 2     | Fe 238.204 Radial† | 115138.4      | 111559.7            | 171140 µg/L        | 171140 ppb         | 12:04:17      |
| 2     | K 766.490 Radial†  | 33106.6       | 31677.4             | 17401 µg/L         | 17401 ppb          | 12:04:17      |
| 2     | Mg 279.077 IEC†    | 10746.0       | 10401.9             | 64870 µg/L         | 64870 ppb          | 12:04:38      |
| 2     | Na 589.592 Radial† | 46.3          | 39.9                | 1658.6 µg/L        | 1658.6 ppb         | 12:04:38      |
| 2     | Sr 421.552†        | 28079.7       | 27205.8             | 688.36 µg/L        | 688.36 ppb         | 12:04:17      |
| 2     | Sc 361.383         | 616694.7      | 616694.7            | 98.547 %           |                    | 12:05:48      |
| 2     | Y 371.029          | 797013.6      | 797013.6            | 112.25 %           |                    | 12:05:43      |
| 2     | Ag 328.068†        | -5280.8       | -4419.2             | 6.6769 µg/L        | 6.6769 ppb         | 12:05:48      |
| 2     | As 188.979†        | 445.9         | 430.3               | 120.98 µg/L        | 120.98 ppb         | 12:06:08      |
| 2     | B 249.677†         | -26132.9      | -26710.2            | 149.93 µg/L        | 149.93 ppb         | 12:05:48      |
| 2     | Ba 233.527†        | 406198.2      | 412057.0            | 2315.2 µg/L        | 2315.2 ppb         | 12:05:48      |
| 2     | Be 313.107†        | 6040.9        | 11573.0             | 6.8547 µg/L        | 6.8547 ppb         | 12:05:48      |
| 2     | Cd 226.502†        | 2849.8        | 3144.9              | 1.7295 µg/L        | 1.7295 ppb         | 12:06:08      |
| 2     | Co 228.616†        | 4349.6        | 4741.3              | 63.457 µg/L        | 63.457 ppb         | 12:06:08      |
| 2     | Cr 267.716†        | 9799.3        | 9827.0              | 123.25 µg/L        | 123.25 ppb         | 12:06:08      |
| 2     | Cu 324.752†        | 51861.8       | 50132.6             | 218.22 µg/L        | 218.22 ppb         | 12:05:48      |
| 2     | Mn 257.610†        | 5657149.1     | 5739701.9           | 5665.4 µg/L        | 5665.4 ppb         | 12:05:43      |
| 2     | Mo 202.031†        | -3.8          | 12.7                | 7.5570 µg/L        | 7.5570 ppb         | 12:06:08      |
| 2     | Ni 231.604†        | 10292.8       | 10620.7             | 178.57 µg/L        | 178.57 ppb         | 12:06:08      |
| 2     | P 214.914†         | 12473.0       | 12512.0             | 5279.4 µg/L        | 5279.4 ppb         | 12:06:08      |



|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 1497.9    | 1413.6    | 108.14 µg/L  | 108.14 ppb  | 12:06:08 |
| 2 | S 181.975 Axial†   | 1623.6    | 1500.5    | 1480.6 µg/L  | 1480.6 ppb  | 12:06:08 |
| 2 | Sb 206.836†        | 147.3     | 34.2      | 5.4516 µg/L  | 5.4516 ppb  | 12:06:08 |
| 2 | Se 196.026†        | -191.6    | -176.3    | 17.155 µg/L  | 17.155 ppb  | 12:06:08 |
| 2 | SiO2†              | 802093.5  | 812284.5  | 76411 µg/L   | 76411 ppb   | 12:05:48 |
| 2 | Si 251.611†        | 1042323.0 | 1057393.8 | 36683 µg/L   | 36683 ppb   | 12:05:43 |
| 2 | Sn 189.927†        | 16.0      | -5.0      | 10.089 µg/L  | 10.089 ppb  | 12:06:08 |
| 2 | Ti 334.940†        | 797421.0  | 809974.1  | 1840.6 µg/L  | 1840.6 ppb  | 12:05:43 |
| 2 | Tl 190.801†        | -255.8    | -102.2    | 0.7042 µg/L  | 0.7042 ppb  | 12:06:08 |
| 2 | U 367.007†         | 5357.7    | 4012.2    | -15.10 µg/L  | -15.10 ppb  | 12:05:48 |
| 2 | V 292.402†         | 39398.0   | 39559.6   | 275.78 µg/L  | 275.78 ppb  | 12:05:48 |
| 2 | Zn 213.857†        | 106295.5  | 107076.7  | 556.95 µg/L  | 556.95 ppb  | 12:05:48 |
| 3 | Sc RADIAL          | 8667.2    | 8667.2    | 103 %        |             | 12:05:03 |
| 3 | Al 396.153Radial†  | 169541.7  | 165571.3  | 81598 µg/L   | 81598 ppb   | 12:04:43 |
| 3 | Ca 317.933Radial†  | 351952.0  | 342072.8  | 166620 µg/L  | 166620 ppb  | 12:04:43 |
| 3 | Fe 238.204 Radial† | 115119.3  | 111912.5  | 171680 µg/L  | 171680 ppb  | 12:04:43 |
| 3 | K 766.490 Radial†  | 33255.2   | 31928.6   | 17538 µg/L   | 17538 ppb   | 12:04:43 |
| 3 | Mg 279.077 IEC†    | 10721.1   | 10412.3   | 64935 µg/L   | 64935 ppb   | 12:05:03 |
| 3 | Na 589.592 Radial† | 51.8      | 45.4      | 1885.3 µg/L  | 1885.3 ppb  | 12:05:03 |
| 3 | Sr 421.552†        | 28187.8   | 27401.5   | 693.33 µg/L  | 693.33 ppb  | 12:04:43 |
| 3 | Sc 361.383         | 622006.4  | 622006.4  | 99.396 %     |             | 12:06:20 |
| 3 | Y 371.029          | 791591.4  | 791591.4  | 111.48 %     |             | 12:06:15 |
| 3 | Ag 328.068†        | -5282.5   | -4375.2   | 6.9818 µg/L  | 6.9818 ppb  | 12:06:20 |
| 3 | As 188.979†        | 453.3     | 433.9     | 122.03 µg/L  | 122.03 ppb  | 12:06:40 |
| 3 | B 249.677†         | -26456.6  | -26809.4  | 150.13 µg/L  | 150.13 ppb  | 12:06:20 |
| 3 | Ba 233.527†        | 409873.7  | 412234.9  | 2316.2 µg/L  | 2316.2 ppb  | 12:06:20 |
| 3 | Be 313.107†        | 6067.1    | 11547.0   | 6.8542 µg/L  | 6.8542 ppb  | 12:06:20 |
| 3 | Cd 226.502†        | 2850.3    | 3120.7    | 1.5335 µg/L  | 1.5335 ppb  | 12:06:40 |
| 3 | Co 228.616†        | 4301.3    | 4655.0    | 62.068 µg/L  | 62.068 ppb  | 12:06:40 |
| 3 | Cr 267.716†        | 9733.0    | 9675.4    | 121.37 µg/L  | 121.37 ppb  | 12:06:40 |
| 3 | Cu 324.752†        | 52131.2   | 49954.2   | 217.50 µg/L  | 217.50 ppb  | 12:06:20 |
| 3 | Mn 257.610†        | 5626933.8 | 5660280.4 | 5587.2 µg/L  | 5587.2 ppb  | 12:06:15 |
| 3 | Mo 202.031†        | 6.9       | 23.5      | 8.0162 µg/L  | 8.0162 ppb  | 12:06:40 |
| 3 | Ni 231.604†        | 10260.8   | 10499.3   | 176.40 µg/L  | 176.40 ppb  | 12:06:40 |
| 3 | P 214.914†         | 12441.2   | 12371.9   | 5218.0 µg/L  | 5218.0 ppb  | 12:06:40 |
| 3 | Pb 220.353†        | 1554.4    | 1457.4    | 111.72 µg/L  | 111.72 ppb  | 12:06:40 |
| 3 | S 181.975 Axial†   | 1624.9    | 1487.7    | 1467.8 µg/L  | 1467.8 ppb  | 12:06:40 |
| 3 | Sb 206.836†        | 156.8     | 42.5      | 7.2753 µg/L  | 7.2753 ppb  | 12:06:40 |
| 3 | Se 196.026†        | -184.2    | -167.2    | 20.720 µg/L  | 20.720 ppb  | 12:06:40 |
| 3 | SiO2†              | 808303.4  | 811581.5  | 76345 µg/L   | 76345 ppb   | 12:06:20 |
| 3 | Si 251.611†        | 1036982.1 | 1042988.1 | 36183 µg/L   | 36183 ppb   | 12:06:15 |
| 3 | Sn 189.927†        | 17.4      | -3.8      | 10.132 µg/L  | 10.132 ppb  | 12:06:40 |
| 3 | Ti 334.940†        | 793197.2  | 798814.5  | 1815.4 µg/L  | 1815.4 ppb  | 12:06:15 |
| 3 | Tl 190.801†        | -261.9    | -106.1    | -0.1535 µg/L | -0.1535 ppb | 12:06:40 |
| 3 | U 367.007†         | 5437.7    | 4046.2    | -11.29 µg/L  | -11.29 ppb  | 12:06:20 |
| 3 | V 292.402†         | 39647.4   | 39469.1   | 275.29 µg/L  | 275.29 ppb  | 12:06:20 |
| 3 | Zn 213.857†        | 107152.5  | 107017.8  | 556.58 µg/L  | 556.58 ppb  | 12:06:20 |

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Mean Data: 409254034|1611119|1|

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--------------------|--------------------------|-------------|--------------|----------|--------------------|----------|-------|
| Sc 361.383         | 618342.7                 | 98.811      | %            | 0.5079   |                    |          | 0.51% |
| Sc RADIAL          | 8666.2                   | 103         | %            | 0.36     |                    |          | 0.35% |
| Y 371.029          | 794345.4                 | 111.87      | %            | 0.382    |                    |          | 0.34% |
| Ag 328.068†        | -4414.3                  | 6.6310      | µg/L         | 0.37589  | 6.6310 ppb         | 0.37589  | 5.67% |
| Al 396.153Radial†  | 164340.3                 | 80992       | µg/L         | 739.01   | 80992 ppb          | 739.01   | 0.91% |
| As 188.979†        | 431.5                    | 121.35      | µg/L         | 0.592    | 121.35 ppb         | 0.592    | 0.49% |
| B 249.677†         | -26749.1                 | 147.59      | µg/L         | 4.229    | 147.59 ppb         | 4.229    | 2.87% |
| Ba 233.527†        | 412540.3                 | 2318.0      | µg/L         | 3.91     | 2318.0 ppb         | 3.91     | 0.17% |
| Be 313.107†        | 11571.2                  | 6.8514      | µg/L         | 0.00525  | 6.8514 ppb         | 0.00525  | 0.08% |
| Ca 317.933Radial†  | 340220.2                 | 165720      | µg/L         | 1007.87  | 165720 ppb         | 1007.87  | 0.61% |
| Cd 226.502†        | 3130.5                   | 1.6842      | µg/L         | 0.13391  | 1.6842 ppb         | 0.13391  | 7.95% |
| Co 228.616†        | 4710.2                   | 63.000      | µg/L         | 0.8066   | 63.000 ppb         | 0.8066   | 1.28% |
| Cr 267.716†        | 9763.8                   | 122.46      | µg/L         | 0.975    | 122.46 ppb         | 0.975    | 0.80% |
| Cu 324.752†        | 50021.3                  | 217.73      | µg/L         | 0.420    | 217.73 ppb         | 0.420    | 0.19% |
| Fe 238.204 Radial† | 111295.4                 | 170730      | µg/L         | 1201.72  | 170730 ppb         | 1201.72  | 0.70% |
| K 766.490 Radial†  | 31664.7                  | 17394       | µg/L         | 148.49   | 17394 ppb          | 148.49   | 0.85% |
| Mg 279.077 IEC†    | 10410.8                  | 64926       | µg/L         | 51.47    | 64926 ppb          | 51.47    | 0.08% |
| Mn 257.610†        | 5717251.4                | 5643.3      | µg/L         | 48.95    | 5643.3 ppb         | 48.95    | 0.87% |
| Mo 202.031†        | 9.8                      | 7.4235      | µg/L         | 0.66944  | 7.4235 ppb         | 0.66944  | 9.02% |

|                    |           |              |         |             |         |         |
|--------------------|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial† | 44.3      | 1840.7 µg/L  | 164.43  | 1840.7 ppb  | 164.43  | 8.93%   |
| Ni 231.604†        | 10567.9   | 177.66 µg/L  | 1.121   | 177.66 ppb  | 1.121   | 0.63%   |
| P 214.914†         | 12468.7   | 5261.0 µg/L  | 37.37   | 5261.0 ppb  | 37.37   | 0.71%   |
| Pb 220.353†        | 1428.0    | 109.38 µg/L  | 2.029   | 109.38 ppb  | 2.029   | 1.86%   |
| S 181.975 Axial†   | 1497.7    | 1477.8 µg/L  | 9.00    | 1477.8 ppb  | 9.00    | 0.61%   |
| Sb 206.836†        | 36.0      | 5.8523 µg/L  | 1.27096 | 5.8523 ppb  | 1.27096 | 21.72%  |
| Se 196.026†        | -169.4    | 19.480 µg/L  | 2.0156  | 19.480 ppb  | 2.0156  | 10.35%  |
| SiO2†              | 812778.9  | 76457 µg/L   | 141.73  | 76457 ppb   | 141.73  | 0.19%   |
| Si 251.611†        | 1053314.1 | 36541 µg/L   | 312.95  | 36541 ppb   | 312.95  | 0.86%   |
| Sn 189.927†        | 1.8       | 10.703 µg/L  | 1.0252  | 10.703 ppb  | 1.0252  | 9.58%   |
| Sr 421.552†        | 27125.2   | 686.31 µg/L  | 8.235   | 686.31 ppb  | 8.235   | 1.20%   |
| Ti 334.940†        | 806162.4  | 1832.0 µg/L  | 14.36   | 1832.0 ppb  | 14.36   | 0.78%   |
| Tl 190.801†        | -107.3    | -0.2052 µg/L | 0.93632 | -0.2052 ppb | 0.93632 | 456.38% |
| U 367.007†         | 4008.3    | -14.09 µg/L  | 2.455   | -14.09 ppb  | 2.455   | 17.42%  |
| V 292.402†         | 39550.1   | 275.66 µg/L  | 0.330   | 275.66 ppb  | 0.330   | 0.12%   |
| Zn 213.857†        | 107107.8  | 557.18 µg/L  | 0.736   | 557.18 ppb  | 0.736   | 0.13%   |

Sequence No.: 16

Sample ID: 409254036|1611119|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 312

Date Collected: 11/16/2016 12:06:49

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 409254036|1611119|1|

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 8448.6           | 8448.6                 | 100 %                 |                       | 12:07:38         |
| 1     | Al 396.153Radial†  | 94727.4          | 95216.6                | 46925 µg/L            | 46925 ppb             | 12:07:18         |
| 1     | Ca 317.933Radial†  | 322071.5         | 321122.6               | 156420 µg/L           | 156420 ppb            | 12:07:18         |
| 1     | Fe 238.204 Radial† | 77404.4          | 77191.4                | 118420 µg/L           | 118420 ppb            | 12:07:18         |
| 1     | K 766.490 Radial†  | 18577.9          | 18126.1                | 9969.1 µg/L           | 9969.1 ppb            | 12:07:18         |
| 1     | Mg 279.077 IEC†    | 10046.2          | 10008.8                | 62419 µg/L            | 62419 ppb             | 12:07:38         |
| 1     | Na 589.592 Radial† | 53.3             | 48.2                   | 1997.0 µg/L           | 1997.0 ppb            | 12:07:38         |
| 1     | Sr 421.552†        | 17109.0          | 17060.5                | 429.90 µg/L           | 429.90 ppb            | 12:07:18         |
| 1     | Sc 361.383         | 613498.8         | 613498.8               | 98.037 %              |                       | 12:08:37         |
| 1     | Y 371.029          | 754500.1         | 754500.1               | 106.26 %              |                       | 12:08:37         |
| 1     | Ag 328.068†        | -3923.5          | -3062.7                | 4.0577 µg/L           | 4.0577 ppb            | 12:08:37         |
| 1     | As 188.979†        | 296.9            | 280.7                  | 78.594 µg/L           | 78.594 ppb            | 12:08:57         |
| 1     | B 249.677†         | -18708.8         | -19275.5               | 88.296 µg/L           | 88.296 ppb            | 12:08:37         |
| 1     | Ba 233.527†        | 369137.8         | 376401.5               | 2115.9 µg/L           | 2115.9 ppb            | 12:08:37         |
| 1     | Be 313.107†        | -399.1           | 5036.0                 | 4.0642 µg/L           | 4.0642 ppb            | 12:08:37         |
| 1     | Cd 226.502†        | 1797.6           | 2086.7                 | 0.5481 µg/L           | 0.5481 ppb            | 12:08:57         |
| 1     | Co 228.616†        | 2824.5           | 3208.6                 | 42.177 µg/L           | 42.177 ppb            | 12:08:57         |
| 1     | Cr 267.716†        | 6634.5           | 6650.6                 | 83.910 µg/L           | 83.910 ppb            | 12:08:57         |
| 1     | Cu 324.752†        | 18574.6          | 16452.9                | 74.955 µg/L           | 74.955 ppb            | 12:08:37         |
| 1     | Mn 257.610†        | 3370357.9        | 3437015.1              | 3392.6 µg/L           | 3392.6 ppb            | 12:08:37         |
| 1     | Mo 202.031†        | 75.3             | 93.4                   | 8.6543 µg/L           | 8.6543 ppb            | 12:08:57         |
| 1     | Ni 231.604†        | 6615.0           | 6923.6                 | 116.08 µg/L           | 116.08 ppb            | 12:08:57         |
| 1     | P 214.914†         | 11532.8          | 11618.9                | 4941.1 µg/L           | 4941.1 ppb            | 12:08:57         |
| 1     | Pb 220.353†        | 902.5            | 814.2                  | 65.980 µg/L           | 65.980 ppb            | 12:08:57         |
| 1     | S 181.975 Axial†   | 1214.4           | 1091.7                 | 1075.2 µg/L           | 1075.2 ppb            | 12:08:57         |
| 1     | Sb 206.836†        | 137.9            | 25.4                   | 5.0272 µg/L           | 5.0272 ppb            | 12:08:57         |
| 1     | Se 196.026†        | -132.6           | -117.1                 | 13.663 µg/L           | 13.663 ppb            | 12:08:57         |
| 1     | SiO2†              | 747828.3         | 761172.4               | 71602 µg/L            | 71602 ppb             | 12:08:37         |
| 1     | Si 251.611†        | 939834.4         | 958362.2               | 33254 µg/L            | 33254 ppb             | 12:08:37         |
| 1     | Sn 189.927†        | 15.8             | -5.1                   | 8.0987 µg/L           | 8.0987 ppb            | 12:08:57         |
| 1     | Ti 334.940†        | 759832.7         | 775848.2               | 1763.1 µg/L           | 1763.1 ppb            | 12:08:37         |
| 1     | Tl 190.801†        | -258.3           | -106.1                 | -0.4854 µg/L          | -0.4854 ppb           | 12:08:57         |
| 1     | U 367.007†         | 4260.8           | 2921.6                 | 4.266 µg/L            | 4.266 ppb             | 12:08:37         |
| 1     | V 292.402†         | 24563.1          | 24635.8                | 172.98 µg/L           | 172.98 ppb            | 12:08:37         |
| 1     | Zn 213.857†        | 64026.2          | 64522.8                | 332.31 µg/L           | 332.31 ppb            | 12:08:37         |
| 2     | Sc RADIAL          | 8431.6           | 8431.6                 | 100 %                 |                       | 12:08:03         |
| 2     | Al 396.153Radial†  | 96423.6          | 97102.4                | 47855 µg/L            | 47855 ppb             | 12:07:43         |
| 2     | Ca 317.933Radial†  | 326687.4         | 326384.1               | 158980 µg/L           | 158980 ppb            | 12:07:43         |
| 2     | Fe 238.204 Radial† | 78590.3          | 78532.4                | 120470 µg/L           | 120470 ppb            | 12:07:43         |
| 2     | K 766.490 Radial†  | 18831.9          | 18417.3                | 10130 µg/L            | 10130 ppb             | 12:07:43         |
| 2     | Mg 279.077 IEC†    | 9982.6           | 9965.4                 | 62148 µg/L            | 62148 ppb             | 12:08:03         |
| 2     | Na 589.592 Radial† | 52.0             | 47.0                   | 1948.6 µg/L           | 1948.6 ppb            | 12:08:03         |
| 2     | Sr 421.552†        | 17432.1          | 17417.8                | 438.92 µg/L           | 438.92 ppb            | 12:07:43         |
| 2     | Sc 361.383         | 614917.4         | 614917.4               | 98.263 %              |                       | 12:09:05         |
| 2     | Y 371.029          | 756169.2         | 756169.2               | 106.50 %              |                       | 12:09:05         |
| 2     | Ag 328.068†        | -3970.6          | -3101.3                | 4.2087 µg/L           | 4.2087 ppb            | 12:09:05         |
| 2     | As 188.979†        | 300.7            | 283.8                  | 79.428 µg/L           | 79.428 ppb            | 12:09:25         |
| 2     | B 249.677†         | -18742.0         | -19265.3               | 96.551 µg/L           | 96.551 ppb            | 12:09:05         |
| 2     | Ba 233.527†        | 369768.0         | 376174.3               | 2114.6 µg/L           | 2114.6 ppb            | 12:09:05         |
| 2     | Be 313.107†        | -196.0           | 5243.6                 | 4.1757 µg/L           | 4.1757 ppb            | 12:09:05         |
| 2     | Cd 226.502†        | 1852.6           | 2138.4                 | 0.6569 µg/L           | 0.6569 ppb            | 12:09:25         |
| 2     | Co 228.616†        | 2829.9           | 3207.4                 | 42.015 µg/L           | 42.015 ppb            | 12:09:25         |
| 2     | Cr 267.716†        | 6612.9           | 6612.9                 | 83.452 µg/L           | 83.452 ppb            | 12:09:25         |
| 2     | Cu 324.752†        | 18644.0          | 16479.8                | 75.165 µg/L           | 75.165 ppb            | 12:09:05         |
| 2     | Mn 257.610†        | 3376832.2        | 3435673.1              | 3391.4 µg/L           | 3391.4 ppb            | 12:09:05         |
| 2     | Mo 202.031†        | 69.9             | 87.8                   | 8.5098 µg/L           | 8.5098 ppb            | 12:09:25         |
| 2     | Ni 231.604†        | 6594.4           | 6887.1                 | 115.34 µg/L           | 115.34 ppb            | 12:09:25         |
| 2     | P 214.914†         | 11468.9          | 11526.7                | 4899.0 µg/L           | 4899.0 ppb            | 12:09:25         |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 925.1     | 835.1     | 67.655 µg/L | 67.655 ppb | 12:09:25 |
| 2 | S 181.975 Axial†   | 1197.6    | 1071.7    | 1055.5 µg/L | 1055.5 ppb | 12:09:25 |
| 2 | Sb 206.836†        | 143.7     | 31.0      | 6.2263 µg/L | 6.2263 ppb | 12:09:25 |
| 2 | Se 196.026†        | -121.5    | -105.5    | 18.833 µg/L | 18.833 ppb | 12:09:25 |
| 2 | SiO2†              | 749442.9  | 761055.8  | 71591 µg/L  | 71591 ppb  | 12:09:05 |
| 2 | Si 251.611†        | 941532.4  | 957878.8  | 33237 µg/L  | 33237 ppb  | 12:09:05 |
| 2 | Sn 189.927†        | 23.5      | 2.7       | 8.8966 µg/L | 8.8966 ppb | 12:09:25 |
| 2 | Ti 334.940†        | 761224.7  | 775476.8  | 1762.4 µg/L | 1762.4 ppb | 12:09:05 |
| 2 | Tl 190.801†        | -244.3    | -91.2     | 1.9466 µg/L | 1.9466 ppb | 12:09:25 |
| 2 | U 367.007†         | 4207.6    | 2857.5    | -16.69 µg/L | -16.69 ppb | 12:09:05 |
| 2 | V 292.402†         | 24617.5   | 24633.4   | 173.23 µg/L | 173.23 ppb | 12:09:05 |
| 2 | Zn 213.857†        | 64047.6   | 64393.9   | 331.38 µg/L | 331.38 ppb | 12:09:05 |
| 3 | Sc RADIAL          | 8471.0    | 8471.0    | 101 %       |            | 12:08:29 |
| 3 | Al 396.153Radial†  | 95593.8   | 95828.8   | 47227 µg/L  | 47227 ppb  | 12:08:09 |
| 3 | Ca 317.933Radial†  | 323935.9  | 322128.5  | 156910 µg/L | 156910 ppb | 12:08:09 |
| 3 | Fe 238.204 Radial† | 78066.6   | 77646.2   | 119110 µg/L | 119110 ppb | 12:08:09 |
| 3 | K 766.490 Radial†  | 18795.3   | 18293.4   | 10061 µg/L  | 10061 ppb  | 12:08:09 |
| 3 | Mg 279.077 IEC†    | 10067.5   | 10003.5   | 62386 µg/L  | 62386 ppb  | 12:08:29 |
| 3 | Na 589.592 Radial† | 56.4      | 51.1      | 2116.6 µg/L | 2116.6 ppb | 12:08:29 |
| 3 | Sr 421.552†        | 17310.5   | 17215.9   | 433.84 µg/L | 433.84 ppb | 12:08:09 |
| 3 | Sc 361.383         | 612946.8  | 612946.8  | 97.948 %    |            | 12:09:32 |
| 3 | Y 371.029          | 754385.2  | 754385.2  | 106.24 %    |            | 12:09:32 |
| 3 | Ag 328.068†        | -3878.7   | -3020.5   | 4.3943 µg/L | 4.3943 ppb | 12:09:32 |
| 3 | As 188.979†        | 297.3     | 281.4     | 78.761 µg/L | 78.761 ppb | 12:09:52 |
| 3 | B 249.677†         | -18516.0  | -19095.9  | 94.524 µg/L | 94.524 ppb | 12:09:32 |
| 3 | Ba 233.527†        | 368454.7  | 376043.2  | 2113.9 µg/L | 2113.9 ppb | 12:09:32 |
| 3 | Be 313.107†        | -313.5    | 5123.1    | 4.1018 µg/L | 4.1018 ppb | 12:09:32 |
| 3 | Cd 226.502†        | 1822.4    | 2113.6    | 0.6416 µg/L | 0.6416 ppb | 12:09:52 |
| 3 | Co 228.616†        | 2836.2    | 3223.2    | 42.360 µg/L | 42.360 ppb | 12:09:52 |
| 3 | Cr 267.716†        | 6641.7    | 6664.0    | 84.093 µg/L | 84.093 ppb | 12:09:52 |
| 3 | Cu 324.752†        | 18656.1   | 16553.2   | 75.402 µg/L | 75.402 ppb | 12:09:32 |
| 3 | Mn 257.610†        | 3362392.0 | 3431978.4 | 3387.6 µg/L | 3387.6 ppb | 12:09:32 |
| 3 | Mo 202.031†        | 69.2      | 87.2      | 8.4324 µg/L | 8.4324 ppb | 12:09:52 |
| 3 | Ni 231.604†        | 6574.9    | 6888.7    | 115.43 µg/L | 115.43 ppb | 12:09:52 |
| 3 | P 214.914†         | 11475.3   | 11570.8   | 4919.5 µg/L | 4919.5 ppb | 12:09:52 |
| 3 | Pb 220.353†        | 876.4     | 788.4     | 63.806 µg/L | 63.806 ppb | 12:09:52 |
| 3 | S 181.975 Axial†   | 1196.7    | 1074.7    | 1058.5 µg/L | 1058.5 ppb | 12:09:52 |
| 3 | Sb 206.836†        | 119.4     | 6.6       | 0.9280 µg/L | 0.9280 ppb | 12:09:52 |
| 3 | Se 196.026†        | -109.2    | -93.4     | 22.576 µg/L | 22.576 ppb | 12:09:52 |
| 3 | SiO2†              | 746066.3  | 760060.4  | 71498 µg/L  | 71498 ppb  | 12:09:32 |
| 3 | Si 251.611†        | 937781.3  | 957129.5  | 33211 µg/L  | 33211 ppb  | 12:09:32 |
| 3 | Sn 189.927†        | 13.2      | -7.8      | 7.8691 µg/L | 7.8691 ppb | 12:09:52 |
| 3 | Ti 334.940†        | 759823.1  | 776536.4  | 1764.6 µg/L | 1764.6 ppb | 12:09:32 |
| 3 | Tl 190.801†        | -254.6    | -102.5    | 0.1107 µg/L | 0.1107 ppb | 12:09:52 |
| 3 | U 367.007†         | 4182.7    | 2845.8    | -12.64 µg/L | -12.64 ppb | 12:09:32 |
| 3 | V 292.402†         | 24505.5   | 24599.6   | 172.83 µg/L | 172.83 ppb | 12:09:32 |
| 3 | Zn 213.857†        | 63733.5   | 64282.7   | 330.93 µg/L | 330.93 ppb | 12:09:32 |

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Mean Data: 409254036|1611119|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383         | 613787.7                 | 98.083 %           | 0.1624   |                    |          | 0.17% |
| Sc RADIAL          | 8450.4                   | 100 %              | 0.23     |                    |          | 0.23% |
| Y 371.029          | 755018.2                 | 106.33 %           | 0.141    |                    |          | 0.13% |
| Ag 328.068†        | -3061.5                  | 4.2202 µg/L        | 0.16859  | 4.2202 ppb         | 0.16859  | 3.99% |
| Al 396.153Radial†  | 96049.3                  | 47336 µg/L         | 474.14   | 47336 ppb          | 474.14   | 1.00% |
| As 188.979†        | 282.0                    | 78.928 µg/L        | 0.4415   | 78.928 ppb         | 0.4415   | 0.56% |
| B 249.677†         | -19212.2                 | 93.123 µg/L        | 4.3019   | 93.123 ppb         | 4.3019   | 4.62% |
| Ba 233.527†        | 376206.3                 | 2114.8 µg/L        | 1.03     | 2114.8 ppb         | 1.03     | 0.05% |
| Be 313.107†        | 5134.2                   | 4.1139 µg/L        | 0.05672  | 4.1139 ppb         | 0.05672  | 1.38% |
| Ca 317.933Radial†  | 323211.7                 | 157430 µg/L        | 1360.43  | 157430 ppb         | 1360.43  | 0.86% |
| Cd 226.502†        | 2112.9                   | 0.6155 µg/L        | 0.05888  | 0.6155 ppb         | 0.05888  | 9.57% |
| Co 228.616†        | 3213.1                   | 42.184 µg/L        | 0.1729   | 42.184 ppb         | 0.1729   | 0.41% |
| Cr 267.716†        | 6642.5                   | 83.819 µg/L        | 0.3301   | 83.819 ppb         | 0.3301   | 0.39% |
| Cu 324.752†        | 16495.3                  | 75.174 µg/L        | 0.2233   | 75.174 ppb         | 0.2233   | 0.30% |
| Fe 238.204 Radial† | 77790.0                  | 119330 µg/L        | 1046.19  | 119330 ppb         | 1046.19  | 0.88% |
| K 766.490 Radial†  | 18278.9                  | 10053 µg/L         | 80.51    | 10053 ppb          | 80.51    | 0.80% |
| Mg 279.077 IEC†    | 9992.6                   | 62318 µg/L         | 147.72   | 62318 ppb          | 147.72   | 0.24% |
| Mn 257.610†        | 3434888.9                | 3390.5 µg/L        | 2.57     | 3390.5 ppb         | 2.57     | 0.08% |
| Mo 202.031†        | 89.5                     | 8.5322 µg/L        | 0.11261  | 8.5322 ppb         | 0.11261  | 1.32% |

|                    |          |             |         |            |         |         |
|--------------------|----------|-------------|---------|------------|---------|---------|
| Na 589.592 Radial† | 48.8     | 2020.7 µg/L | 86.45   | 2020.7 ppb | 86.45   | 4.28%   |
| Ni 231.604†        | 6899.8   | 115.62 µg/L | 0.403   | 115.62 ppb | 0.403   | 0.35%   |
| P 214.914†         | 11572.1  | 4919.9 µg/L | 21.04   | 4919.9 ppb | 21.04   | 0.43%   |
| Pb 220.353†        | 812.6    | 65.814 µg/L | 1.9299  | 65.814 ppb | 1.9299  | 2.93%   |
| S 181.975 Axial†   | 1079.4   | 1063.1 µg/L | 10.65   | 1063.1 ppb | 10.65   | 1.00%   |
| Sb 206.836†        | 21.0     | 4.0605 µg/L | 2.77829 | 4.0605 ppb | 2.77829 | 68.42%  |
| Se 196.026†        | -105.3   | 18.357 µg/L | 4.4757  | 18.357 ppb | 4.4757  | 24.38%  |
| SiO2†              | 760762.9 | 71564 µg/L  | 57.48   | 71564 ppb  | 57.48   | 0.08%   |
| Si 251.611†        | 957790.2 | 33234 µg/L  | 21.61   | 33234 ppb  | 21.61   | 0.07%   |
| Sn 189.927†        | -3.4     | 8.2881 µg/L | 0.53933 | 8.2881 ppb | 0.53933 | 6.51%   |
| Sr 421.552†        | 17231.4  | 434.22 µg/L | 4.526   | 434.22 ppb | 4.526   | 1.04%   |
| Ti 334.940†        | 775953.8 | 1763.4 µg/L | 1.17    | 1763.4 ppb | 1.17    | 0.07%   |
| Tl 190.801†        | -99.9    | 0.5240 µg/L | 1.26758 | 0.5240 ppb | 1.26758 | 241.91% |
| U 367.007†         | 2875.0   | -8.352 µg/L | 11.1134 | -8.352 ppb | 11.1134 | 133.07% |
| V 292.402†         | 24622.9  | 173.01 µg/L | 0.203   | 173.01 ppb | 0.203   | 0.12%   |
| Zn 213.857†        | 64399.8  | 331.54 µg/L | 0.708   | 331.54 ppb | 0.708   | 0.21%   |

Sequence No.: 17

Sample ID: 409254038|1611119|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 313

Date Collected: 11/16/2016 12:10:01

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

Replicate Data: 409254038|1611119|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8236.3        | 8236.3              | 97.7 %             |                    | 12:10:50      |
| 1     | Al 396.153Radial†  | 26651.8       | 28004.1             | 13801 µg/L         | 13801 ppb          | 12:10:30      |
| 1     | Ca 317.933Radial†  | 108754.7      | 111159.2            | 54144 µg/L         | 54144 ppb          | 12:10:30      |
| 1     | Fe 238.204 Radial† | 35110.0       | 35910.3             | 55088 µg/L         | 55088 ppb          | 12:10:50      |
| 1     | K 766.490 Radial†  | 6530.7        | 6278.2              | 3464.0 µg/L        | 3464.0 ppb         | 12:10:30      |
| 1     | Mg 279.077 IEC†    | 2663.0        | 2713.4              | 16922 µg/L         | 16922 ppb          | 12:10:50      |
| 1     | Na 589.592 Radial† | 33.7          | 29.5                | 1217.9 µg/L        | 1217.9 ppb         | 12:10:50      |
| 1     | Sr 421.552†        | 5352.4        | 5472.3              | 137.76 µg/L        | 137.76 ppb         | 12:10:50      |
| 1     | Sc 361.383         | 607050.8      | 607050.8            | 97.006 %           |                    | 12:11:48      |
| 1     | Y 371.029          | 716374.9      | 716374.9            | 100.89 %           |                    | 12:11:48      |
| 1     | Ag 328.068†        | -2215.7       | -1344.6             | 2.4837 µg/L        | 2.4837 ppb         | 12:11:48      |
| 1     | As 188.979†        | 158.4         | 141.2               | 39.742 µg/L        | 39.742 ppb         | 12:12:08      |
| 1     | B 249.677†         | -8878.9       | -9345.0             | 33.712 µg/L        | 33.712 ppb         | 12:11:48      |
| 1     | Ba 233.527†        | 123218.6      | 126892.1            | 712.91 µg/L        | 712.91 ppb         | 12:11:48      |
| 1     | Be 313.107†        | -3647.2       | 1683.3              | 1.3962 µg/L        | 1.3962 ppb         | 12:11:48      |
| 1     | Cd 226.502†        | 684.9         | 959.1               | 0.2240 µg/L        | 0.2240 ppb         | 12:12:08      |
| 1     | Co 228.616†        | 1272.6        | 1639.4              | 22.167 µg/L        | 22.167 ppb         | 12:12:08      |
| 1     | Cr 267.716†        | 2506.2        | 2466.7              | 31.070 µg/L        | 31.070 ppb         | 12:12:08      |
| 1     | Cu 324.752†        | 4788.5        | 2442.5              | 13.114 µg/L        | 13.114 ppb         | 12:11:48      |
| 1     | Mn 257.610†        | 1124559.9     | 1158423.0           | 1144.4 µg/L        | 1144.4 ppb         | 12:11:48      |
| 1     | Mo 202.031†        | 97.4          | 117.0               | 7.0041 µg/L        | 7.0041 ppb         | 12:12:08      |
| 1     | Ni 231.604†        | 2848.2        | 3112.2              | 52.090 µg/L        | 52.090 ppb         | 12:12:08      |
| 1     | P 214.914†         | 4262.4        | 4249.1              | 1794.8 µg/L        | 1794.8 ppb         | 12:12:08      |
| 1     | Pb 220.353†        | 378.3         | 283.6               | 24.790 µg/L        | 24.790 ppb         | 12:12:08      |
| 1     | S 181.975 Axial†   | 614.6         | 486.5               | 477.97 µg/L        | 477.97 ppb         | 12:12:08      |
| 1     | Sb 206.836†        | 128.6         | 17.4                | 3.6753 µg/L        | 3.6753 ppb         | 12:12:08      |
| 1     | Se 196.026†        | -75.2         | -59.4               | 4.5854 µg/L        | 4.5854 ppb         | 12:12:08      |
| 1     | SiO2†              | 382100.0      | 392259.3            | 36899 µg/L         | 36899 ppb          | 12:11:48      |
| 1     | Si 251.611†        | 479196.5      | 493690.7            | 17132 µg/L         | 17132 ppb          | 12:11:48      |
| 1     | Sn 189.927†        | 24.0          | 3.5                 | 3.9077 µg/L        | 3.9077 ppb         | 12:12:08      |
| 1     | Ti 334.940†        | 269850.3      | 278976.2            | 633.82 µg/L        | 633.82 ppb         | 12:11:48      |
| 1     | Tl 190.801†        | -197.0        | -45.7               | -1.5252 µg/L       | -1.5252 ppb        | 12:12:08      |
| 1     | U 367.007†         | 2651.6        | 1308.9              | -1.880 µg/L        | -1.880 ppb         | 12:11:48      |
| 1     | V 292.402†         | 8192.8        | 8026.4              | 58.619 µg/L        | 58.619 ppb         | 12:12:08      |
| 1     | Zn 213.857†        | 22156.4       | 22054.4             | 111.98 µg/L        | 111.98 ppb         | 12:12:08      |
| 2     | Sc RADIAL          | 8307.2        | 8307.2              | 98.6 %             |                    | 12:11:15      |
| 2     | Al 396.153Radial†  | 26975.1       | 28099.1             | 13848 µg/L         | 13848 ppb          | 12:10:55      |
| 2     | Ca 317.933Radial†  | 109142.7      | 110602.3            | 53873 µg/L         | 53873 ppb          | 12:10:55      |
| 2     | Fe 238.204 Radial† | 35246.6       | 35742.0             | 54830 µg/L         | 54830 ppb          | 12:11:15      |
| 2     | K 766.490 Radial†  | 6570.7        | 6261.7              | 3454.8 µg/L        | 3454.8 ppb         | 12:10:55      |
| 2     | Mg 279.077 IEC†    | 2664.0        | 2691.1              | 16783 µg/L         | 16783 ppb          | 12:11:15      |
| 2     | Na 589.592 Radial† | 34.2          | 29.7                | 1225.9 µg/L        | 1225.9 ppb         | 12:11:15      |
| 2     | Sr 421.552†        | 5380.8        | 5454.2              | 137.31 µg/L        | 137.31 ppb         | 12:11:15      |
| 2     | Sc 361.383         | 605665.6      | 605665.6            | 96.785 %           |                    | 12:12:14      |
| 2     | Y 371.029          | 715342.3      | 715342.3            | 100.75 %           |                    | 12:12:14      |
| 2     | Ag 328.068†        | -2229.5       | -1364.1             | 2.3327 µg/L        | 2.3327 ppb         | 12:12:14      |
| 2     | As 188.979†        | 154.0         | 137.0               | 38.488 µg/L        | 38.488 ppb         | 12:12:34      |
| 2     | B 249.677†         | -8782.8       | -9266.6             | 34.227 µg/L        | 34.227 ppb         | 12:12:14      |
| 2     | Ba 233.527†        | 123060.6      | 127019.3            | 713.63 µg/L        | 713.63 ppb         | 12:12:14      |
| 2     | Be 313.107†        | -3629.4       | 1693.1              | 1.4025 µg/L        | 1.4025 ppb         | 12:12:14      |
| 2     | Cd 226.502†        | 655.3         | 930.1               | 0.0740 µg/L        | 0.0740 ppb         | 12:12:34      |
| 2     | Co 228.616†        | 1257.3        | 1626.6              | 21.976 µg/L        | 21.976 ppb         | 12:12:34      |
| 2     | Cr 267.716†        | 2518.8        | 2485.6              | 31.286 µg/L        | 31.286 ppb         | 12:12:34      |
| 2     | Cu 324.752†        | 4751.6        | 2415.7              | 13.001 µg/L        | 13.001 ppb         | 12:12:14      |
| 2     | Mn 257.610†        | 1122570.9     | 1159019.2           | 1145.0 µg/L        | 1145.0 ppb         | 12:12:14      |
| 2     | Mo 202.031†        | 93.1          | 112.7               | 6.8199 µg/L        | 6.8199 ppb         | 12:12:34      |
| 2     | Ni 231.604†        | 2849.6        | 3120.4              | 52.245 µg/L        | 52.245 ppb         | 12:12:34      |
| 2     | P 214.914†         | 4283.4        | 4280.8              | 1808.9 µg/L        | 1808.9 ppb         | 12:12:34      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 358.0     | 263.5     | 23.049 µg/L | 23.049 ppb | 12:12:34 |
| 2 | S 181.975 Axial†   | 639.0     | 513.2     | 504.08 µg/L | 504.08 ppb | 12:12:34 |
| 2 | Sb 206.836†        | 128.5     | 17.6      | 3.7089 µg/L | 3.7089 ppb | 12:12:34 |
| 2 | Se 196.026†        | -69.4     | -53.6     | 6.5732 µg/L | 6.5732 ppb | 12:12:34 |
| 2 | SiO2†              | 381461.3  | 392500.2  | 36922 µg/L  | 36922 ppb  | 12:12:14 |
| 2 | Si 251.611†        | 478538.6  | 494140.8  | 17147 µg/L  | 17147 ppb  | 12:12:14 |
| 2 | Sn 189.927†        | 23.4      | 2.9       | 3.8426 µg/L | 3.8426 ppb | 12:12:34 |
| 2 | Ti 334.940†        | 269008.5  | 278742.7  | 633.27 µg/L | 633.27 ppb | 12:12:14 |
| 2 | Tl 190.801†        | -175.1    | -23.5     | 2.1196 µg/L | 2.1196 ppb | 12:12:34 |
| 2 | U 367.007†         | 2769.7    | 1437.2    | 22.78 µg/L  | 22.78 ppb  | 12:12:14 |
| 2 | V 292.402†         | 8270.8    | 8126.4    | 59.239 µg/L | 59.239 ppb | 12:12:34 |
| 2 | Zn 213.857†        | 22190.0   | 22141.4   | 112.49 µg/L | 112.49 ppb | 12:12:34 |
| 3 | Sc RADIAL          | 8346.1    | 8346.1    | 99.0 %      |            | 12:11:40 |
| 3 | Al 396.153Radial†  | 27157.9   | 28156.0   | 13876 µg/L  | 13876 ppb  | 12:11:20 |
| 3 | Ca 317.933Radial†  | 109407.4  | 110353.5  | 53752 µg/L  | 53752 ppb  | 12:11:20 |
| 3 | Fe 238.204 Radial† | 35390.0   | 35720.1   | 54797 µg/L  | 54797 ppb  | 12:11:40 |
| 3 | K 766.490 Radial†  | 6539.7    | 6199.4    | 3420.7 µg/L | 3420.7 ppb | 12:11:20 |
| 3 | Mg 279.077 IEC†    | 2674.8    | 2689.4    | 16772 µg/L  | 16772 ppb  | 12:11:40 |
| 3 | Na 589.592 Radial† | 41.5      | 36.9      | 1522.2 µg/L | 1522.2 ppb | 12:11:40 |
| 3 | Sr 421.552†        | 5384.5    | 5432.6    | 136.76 µg/L | 136.76 ppb | 12:11:40 |
| 3 | Sc 361.383         | 607460.8  | 607460.8  | 97.072 %    |            | 12:12:40 |
| 3 | Y 371.029          | 717357.7  | 717357.7  | 101.03 %    |            | 12:12:40 |
| 3 | Ag 328.068†        | -2224.9   | -1352.6   | 2.3777 µg/L | 2.3777 ppb | 12:12:40 |
| 3 | As 188.979†        | 145.9     | 128.1     | 35.823 µg/L | 35.823 ppb | 12:13:00 |
| 3 | B 249.677†         | -8854.8   | -9313.9   | 33.173 µg/L | 33.173 ppb | 12:12:40 |
| 3 | Ba 233.527†        | 123374.9  | 126967.4  | 713.34 µg/L | 713.34 ppb | 12:12:40 |
| 3 | Be 313.107†        | -3567.0   | 1768.5    | 1.4347 µg/L | 1.4347 ppb | 12:12:40 |
| 3 | Cd 226.502†        | 672.0     | 945.4     | 0.1698 µg/L | 0.1698 ppb | 12:13:00 |
| 3 | Co 228.616†        | 1292.2    | 1658.7    | 22.500 µg/L | 22.500 ppb | 12:13:00 |
| 3 | Cr 267.716†        | 2498.6    | 2457.2    | 30.918 µg/L | 30.918 ppb | 12:13:00 |
| 3 | Cu 324.752†        | 4795.0    | 2445.9    | 13.133 µg/L | 13.133 ppb | 12:12:40 |
| 3 | Mn 257.610†        | 1126543.0 | 1159683.4 | 1145.6 µg/L | 1145.6 ppb | 12:12:40 |
| 3 | Mo 202.031†        | 78.2      | 97.1      | 6.1863 µg/L | 6.1863 ppb | 12:13:00 |
| 3 | Ni 231.604†        | 2856.0    | 3118.3    | 52.210 µg/L | 52.210 ppb | 12:13:00 |
| 3 | P 214.914†         | 4279.0    | 4263.2    | 1801.2 µg/L | 1801.2 ppb | 12:13:00 |
| 3 | Pb 220.353†        | 354.7     | 259.0     | 22.652 µg/L | 22.652 ppb | 12:13:00 |
| 3 | S 181.975 Axial†   | 625.0     | 496.8     | 488.03 µg/L | 488.03 ppb | 12:13:00 |
| 3 | Sb 206.836†        | 130.5     | 19.2      | 4.0765 µg/L | 4.0765 ppb | 12:13:00 |
| 3 | Se 196.026†        | -68.1     | -52.1     | 7.0984 µg/L | 7.0984 ppb | 12:13:00 |
| 3 | SiO2†              | 383198.9  | 393125.5  | 36981 µg/L  | 36981 ppb  | 12:12:40 |
| 3 | Si 251.611†        | 480173.7  | 494363.9  | 17155 µg/L  | 17155 ppb  | 12:12:40 |
| 3 | Sn 189.927†        | 35.0      | 14.8      | 4.9815 µg/L | 4.9815 ppb | 12:13:00 |
| 3 | Ti 334.940†        | 270031.7  | 278975.4  | 633.78 µg/L | 633.78 ppb | 12:12:40 |
| 3 | Tl 190.801†        | -187.6    | -35.9     | 0.0902 µg/L | 0.0902 ppb | 12:13:00 |
| 3 | U 367.007†         | 2855.7    | 1517.3    | 37.64 µg/L  | 37.64 ppb  | 12:12:40 |
| 3 | V 292.402†         | 8164.6    | 7991.6    | 58.373 µg/L | 58.373 ppb | 12:13:00 |
| 3 | Zn 213.857†        | 22197.1   | 22081.0   | 112.17 µg/L | 112.17 ppb | 12:13:00 |

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Mean Data: 409254038|1611119|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc 361.383         | 606725.8                 | 96.954 %           | 0.1503   |                    |          | 0.16%  |
| Sc RADIAL          | 8296.5                   | 98.5 %             | 0.66     |                    |          | 0.67%  |
| Y 371.029          | 716358.3                 | 100.89 %           | 0.142    |                    |          | 0.14%  |
| Ag 328.068†        | -1353.8                  | 2.3980 µg/L        | 0.07753  | 2.3980 ppb         | 0.07753  | 3.23%  |
| Al 396.153Radial†  | 28086.4                  | 13842 µg/L         | 37.86    | 13842 ppb          | 37.86    | 0.27%  |
| As 188.979†        | 135.4                    | 38.018 µg/L        | 2.0014   | 38.018 ppb         | 2.0014   | 5.26%  |
| B 249.677†         | -9308.5                  | 33.704 µg/L        | 0.5271   | 33.704 ppb         | 0.5271   | 1.56%  |
| Ba 233.527†        | 126959.6                 | 713.29 µg/L        | 0.364    | 713.29 ppb         | 0.364    | 0.05%  |
| Be 313.107†        | 1715.0                   | 1.4112 µg/L        | 0.02062  | 1.4112 ppb         | 0.02062  | 1.46%  |
| Ca 317.933Radial†  | 110705.0                 | 53923 µg/L         | 200.96   | 53923 ppb          | 200.96   | 0.37%  |
| Cd 226.502†        | 944.9                    | 0.1559 µg/L        | 0.07593  | 0.1559 ppb         | 0.07593  | 48.69% |
| Co 228.616†        | 1641.6                   | 22.214 µg/L        | 0.2652   | 22.214 ppb         | 0.2652   | 1.19%  |
| Cr 267.716†        | 2469.9                   | 31.091 µg/L        | 0.1851   | 31.091 ppb         | 0.1851   | 0.60%  |
| Cu 324.752†        | 2434.7                   | 13.083 µg/L        | 0.0714   | 13.083 ppb         | 0.0714   | 0.55%  |
| Fe 238.204 Radial† | 35790.8                  | 54905 µg/L         | 159.64   | 54905 ppb          | 159.64   | 0.29%  |
| K 766.490 Radial†  | 6246.5                   | 3446.5 µg/L        | 22.77    | 3446.5 ppb         | 22.77    | 0.66%  |
| Mg 279.077 IEC†    | 2697.9                   | 16825 µg/L         | 83.44    | 16825 ppb          | 83.44    | 0.50%  |
| Mn 257.610†        | 1159041.8                | 1145.0 µg/L        | 0.62     | 1145.0 ppb         | 0.62     | 0.05%  |
| Mo 202.031†        | 109.0                    | 6.6701 µg/L        | 0.42899  | 6.6701 ppb         | 0.42899  | 6.43%  |

|                    |          |             |         |            |         |         |
|--------------------|----------|-------------|---------|------------|---------|---------|
| Na 589.592 Radial† | 32.0     | 1322.0 µg/L | 173.47  | 1322.0 ppb | 173.47  | 13.12%  |
| Ni 231.604†        | 3117.0   | 52.182 µg/L | 0.0815  | 52.182 ppb | 0.0815  | 0.16%   |
| P 214.914†         | 4264.4   | 1801.6 µg/L | 7.04    | 1801.6 ppb | 7.04    | 0.39%   |
| Pb 220.353†        | 268.7    | 23.497 µg/L | 1.1370  | 23.497 ppb | 1.1370  | 4.84%   |
| S 181.975 Axial†   | 498.8    | 490.03 µg/L | 13.171  | 490.03 ppb | 13.171  | 2.69%   |
| Sb 206.836†        | 18.1     | 3.8202 µg/L | 0.22258 | 3.8202 ppb | 0.22258 | 5.83%   |
| Se 196.026†        | -55.0    | 6.0856 µg/L | 1.32555 | 6.0856 ppb | 1.32555 | 21.78%  |
| SiO2†              | 392628.3 | 36934 µg/L  | 42.05   | 36934 ppb  | 42.05   | 0.11%   |
| Si 251.611†        | 494065.1 | 17145 µg/L  | 11.94   | 17145 ppb  | 11.94   | 0.07%   |
| Sn 189.927†        | 7.1      | 4.2440 µg/L | 0.63956 | 4.2440 ppb | 0.63956 | 15.07%  |
| Sr 421.552†        | 5453.0   | 137.27 µg/L | 0.500   | 137.27 ppb | 0.500   | 0.36%   |
| Ti 334.940†        | 278898.1 | 633.62 µg/L | 0.309   | 633.62 ppb | 0.309   | 0.05%   |
| Tl 190.801†        | -35.0    | 0.2282 µg/L | 1.82627 | 0.2282 ppb | 1.82627 | 800.28% |
| U 367.007†         | 1421.2   | 19.51 µg/L  | 19.963  | 19.51 ppb  | 19.963  | 102.30% |
| V 292.402†         | 8048.1   | 58.744 µg/L | 0.4459  | 58.744 ppb | 0.4459  | 0.76%   |
| Zn 213.857†        | 22092.3  | 112.21 µg/L | 0.260   | 112.21 ppb | 0.260   | 0.23%   |



Sequence No.: 18

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 7

Date Collected: 11/16/2016 12:13:08

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8625.5        | 8625.5              | 102 %              |                    | 12:13:58      |
| 1     | Al 396.153Radial†  | 9845.5        | 10354.7             | 5085.5 µg/L        | 5085.5 ppb         | 12:13:38      |
| 1     | Ca 317.933Radial†  | 10710.7       | 10355.1             | 5043.8 µg/L        | 5043.8 ppb         | 12:13:58      |
| 1     | Fe 238.204 Radial† | 3627.0        | 3532.3              | 5418.7 µg/L        | 5418.7 ppb         | 12:13:58      |
| 1     | K 766.490 Radial†  | 9690.8        | 9063.9              | 4945.5 µg/L        | 4945.5 ppb         | 12:13:38      |
| 1     | Mg 279.077 IEC†    | 847.2         | 816.4               | 5091.5 µg/L        | 5091.5 ppb         | 12:13:58      |
| 1     | Na 589.592 Radial† | 267.9         | 256.7               | 10513 µg/L         | 10513 ppb          | 12:13:58      |
| 1     | Sr 421.552†        | 21249.0       | 20755.0             | 529.25 µg/L        | 529.25 ppb         | 12:13:38      |
| 1     | Sc 361.383         | 635106.6      | 635106.6            | 101.49 %           |                    | 12:14:57      |
| 1     | Y 371.029          | 712732.0      | 712732.0            | 100.38 %           |                    | 12:14:57      |
| 1     | Ag 328.068†        | 98673.1       | 98164.4             | 492.45 µg/L        | 492.45 ppb         | 12:14:57      |
| 1     | As 188.979†        | 1657.6        | 1611.1              | 488.73 µg/L        | 488.73 ppb         | 12:15:18      |
| 1     | B 249.677†         | 25446.9       | 24881.4             | 503.32 µg/L        | 503.32 ppb         | 12:14:57      |
| 1     | Ba 233.527†        | 88167.6       | 86744.3             | 488.21 µg/L        | 488.21 ppb         | 12:14:57      |
| 1     | Be 313.107†        | 1225689.6     | 1213144.5           | 486.43 µg/L        | 486.43 ppb         | 12:14:57      |
| 1     | Cd 226.502†        | 80659.8       | 79729.2             | 482.59 µg/L        | 482.59 ppb         | 12:14:57      |
| 1     | Co 228.616†        | 29461.3       | 29356.5             | 477.78 µg/L        | 477.78 ppb         | 12:15:18      |
| 1     | Cr 267.716†        | 39310.8       | 38617.1             | 484.52 µg/L        | 484.52 ppb         | 12:14:57      |
| 1     | Cu 324.752†        | 122362.1      | 118072.6            | 492.80 µg/L        | 492.80 ppb         | 12:14:57      |
| 1     | Mn 257.610†        | 502574.6      | 494355.4            | 487.48 µg/L        | 487.48 ppb         | 12:14:57      |
| 1     | Mo 202.031†        | 12192.5       | 12030.1             | 487.14 µg/L        | 487.14 ppb         | 12:15:18      |
| 1     | Ni 231.604†        | 27228.8       | 27005.3             | 474.78 µg/L        | 474.78 ppb         | 12:15:18      |
| 1     | P 214.914†         | 5702.5        | 5474.0              | 2367.7 µg/L        | 2367.7 ppb         | 12:15:18      |
| 1     | Pb 220.353†        | 5965.0        | 5771.1              | 480.60 µg/L        | 480.60 ppb         | 12:15:18      |
| 1     | S 181.975 Axial†   | 1130.7        | 967.1               | 950.36 µg/L        | 950.36 ppb         | 12:15:18      |
| 1     | Sb 206.836†        | 2334.7        | 2185.2              | 472.53 µg/L        | 472.53 ppb         | 12:15:18      |
| 1     | Se 196.026†        | 1331.7        | 1330.3              | 484.36 µg/L        | 484.36 ppb         | 12:15:18      |
| 1     | SiO2†              | 57689.0       | 55209.1             | 5199.0 µg/L        | 5199.0 ppb         | 12:14:57      |
| 1     | Si 251.611†        | 71172.8       | 69833.4             | 2417.0 µg/L        | 2417.0 ppb         | 12:14:57      |
| 1     | Sn 189.927†        | 5133.6        | 5037.0              | 484.33 µg/L        | 484.33 ppb         | 12:15:18      |
| 1     | Ti 334.940†        | 219868.5      | 217439.5            | 491.78 µg/L        | 491.78 ppb         | 12:14:57      |
| 1     | Tl 190.801†        | 2864.2        | 2979.6              | 489.85 µg/L        | 489.85 ppb         | 12:15:18      |
| 1     | U 367.007†         | 4058.1        | 2574.0              | 448.2 µg/L         | 448.2 ppb          | 12:14:57      |
| 1     | V 292.402†         | 77262.1       | 75709.0             | 491.22 µg/L        | 491.22 ppb         | 12:14:57      |
| 1     | Zn 213.857†        | 91329.3       | 89203.2             | 481.40 µg/L        | 481.40 ppb         | 12:14:57      |
| 2     | Sc RADIAL          | 8540.0        | 8540.0              | 101 %              |                    | 12:14:23      |
| 2     | Al 396.153Radial†  | 9899.9        | 10504.7             | 5159.2 µg/L        | 5159.2 ppb         | 12:14:03      |
| 2     | Ca 317.933Radial†  | 10617.9       | 10368.4             | 5050.3 µg/L        | 5050.3 ppb         | 12:14:23      |
| 2     | Fe 238.204 Radial† | 3608.8        | 3549.8              | 5445.6 µg/L        | 5445.6 ppb         | 12:14:23      |
| 2     | K 766.490 Radial†  | 9748.4        | 9215.6              | 5028.3 µg/L        | 5028.3 ppb         | 12:14:03      |
| 2     | Mg 279.077 IEC†    | 841.1         | 818.7               | 5106.0 µg/L        | 5106.0 ppb         | 12:14:23      |
| 2     | Na 589.592 Radial† | 263.3         | 254.8               | 10433 µg/L         | 10433 ppb          | 12:14:23      |
| 2     | Sr 421.552†        | 21288.5       | 21002.1             | 535.55 µg/L        | 535.55 ppb         | 12:14:03      |
| 2     | Sc 361.383         | 633078.4      | 633078.4            | 101.17 %           |                    | 12:15:25      |
| 2     | Y 371.029          | 710506.4      | 710506.4            | 100.07 %           |                    | 12:15:25      |
| 2     | Ag 328.068†        | 98558.7       | 98362.8             | 493.44 µg/L        | 493.44 ppb         | 12:15:25      |
| 2     | As 188.979†        | 1661.7        | 1620.4              | 491.55 µg/L        | 491.55 ppb         | 12:15:45      |
| 2     | B 249.677†         | 25403.7       | 24919.0             | 504.13 µg/L        | 504.13 ppb         | 12:15:25      |
| 2     | Ba 233.527†        | 87897.6       | 86755.8             | 488.28 µg/L        | 488.28 ppb         | 12:15:25      |
| 2     | Be 313.107†        | 1222133.0     | 1213497.9           | 486.57 µg/L        | 486.57 ppb         | 12:15:25      |
| 2     | Cd 226.502†        | 80558.5       | 79883.6             | 483.53 µg/L        | 483.53 ppb         | 12:15:25      |
| 2     | Co 228.616†        | 29750.3       | 29735.1             | 483.95 µg/L        | 483.95 ppb         | 12:15:45      |
| 2     | Cr 267.716†        | 39364.3       | 38794.0             | 486.74 µg/L        | 486.74 ppb         | 12:15:25      |
| 2     | Cu 324.752†        | 121888.5      | 117990.7            | 492.46 µg/L        | 492.46 ppb         | 12:15:25      |
| 2     | Mn 257.610†        | 501212.4      | 494595.3            | 487.72 µg/L        | 487.72 ppb         | 12:15:25      |
| 2     | Mo 202.031†        | 12290.5       | 12165.5             | 492.62 µg/L        | 492.62 ppb         | 12:15:45      |
| 2     | Ni 231.604†        | 27523.0       | 27382.1             | 481.40 µg/L        | 481.40 ppb         | 12:15:45      |
| 2     | P 214.914†         | 5794.2        | 5582.6              | 2414.9 µg/L        | 2414.9 ppb         | 12:15:45      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 6071.5    | 5895.2    | 490.94 µg/L | 490.94 ppb | 12:15:45 |
| 2 | S 181.975 Axial†   | 1138.7    | 978.5     | 961.55 µg/L | 961.55 ppb | 12:15:45 |
| 2 | Sb 206.836†        | 2359.7    | 2217.3    | 479.54 µg/L | 479.54 ppb | 12:15:45 |
| 2 | Se 196.026†        | 1352.6    | 1355.1    | 493.35 µg/L | 493.35 ppb | 12:15:45 |
| 2 | SiO2†              | 57584.9   | 55288.4   | 5206.5 µg/L | 5206.5 ppb | 12:15:25 |
| 2 | Si 251.611†        | 70986.8   | 69874.2   | 2418.3 µg/L | 2418.3 ppb | 12:15:25 |
| 2 | Sn 189.927†        | 5179.2    | 5098.3    | 490.19 µg/L | 490.19 ppb | 12:15:45 |
| 2 | Ti 334.940†        | 219238.8  | 217511.1  | 491.94 µg/L | 491.94 ppb | 12:15:25 |
| 2 | Tl 190.801†        | 2882.7    | 3006.8    | 494.28 µg/L | 494.28 ppb | 12:15:45 |
| 2 | U 367.007†         | 4055.2    | 2584.0    | 449.9 µg/L  | 449.9 ppb  | 12:15:25 |
| 2 | V 292.402†         | 76990.8   | 75684.7   | 491.13 µg/L | 491.13 ppb | 12:15:25 |
| 2 | Zn 213.857†        | 91099.4   | 89264.3   | 481.68 µg/L | 481.68 ppb | 12:15:25 |
| 3 | Sc RADIAL          | 8506.5    | 8506.5    | 101 %       |            | 12:14:48 |
| 3 | Al 396.153Radial†  | 9876.7    | 10520.2   | 5166.9 µg/L | 5166.9 ppb | 12:14:28 |
| 3 | Ca 317.933Radial†  | 10572.0   | 10364.0   | 5048.2 µg/L | 5048.2 ppb | 12:14:48 |
| 3 | Fe 238.204 Radial† | 3586.6    | 3541.9    | 5433.4 µg/L | 5433.4 ppb | 12:14:48 |
| 3 | K 766.490 Radial†  | 9591.6    | 9098.1    | 4964.2 µg/L | 4964.2 ppb | 12:14:28 |
| 3 | Mg 279.077 IEC†    | 838.2     | 819.1     | 5108.4 µg/L | 5108.4 ppb | 12:14:48 |
| 3 | Na 589.592 Radial† | 263.6     | 256.2     | 10489 µg/L  | 10489 ppb  | 12:14:48 |
| 3 | Sr 421.552†        | 21330.5   | 21126.2   | 538.71 µg/L | 538.71 ppb | 12:14:28 |
| 3 | Sc 361.383         | 632451.3  | 632451.3  | 101.07 %    |            | 12:15:53 |
| 3 | Y 371.029          | 709330.8  | 709330.8  | 99.900 %    |            | 12:15:53 |
| 3 | Ag 328.068†        | 98345.4   | 98248.4   | 492.87 µg/L | 492.87 ppb | 12:15:53 |
| 3 | As 188.979†        | 1658.4    | 1618.7    | 491.06 µg/L | 491.06 ppb | 12:16:13 |
| 3 | B 249.677†         | 25417.3   | 24957.4   | 504.84 µg/L | 504.84 ppb | 12:15:53 |
| 3 | Ba 233.527†        | 88007.5   | 86950.7   | 489.38 µg/L | 489.38 ppb | 12:15:53 |
| 3 | Be 313.107†        | 1222876.8 | 1215431.7 | 487.35 µg/L | 487.35 ppb | 12:15:53 |
| 3 | Cd 226.502†        | 80705.2   | 80107.7   | 484.89 µg/L | 484.89 ppb | 12:15:53 |
| 3 | Co 228.616†        | 29603.2   | 29618.7   | 482.05 µg/L | 482.05 ppb | 12:16:13 |
| 3 | Cr 267.716†        | 39335.4   | 38804.0   | 486.87 µg/L | 486.87 ppb | 12:15:53 |
| 3 | Cu 324.752†        | 121645.8  | 117870.0  | 491.96 µg/L | 491.96 ppb | 12:15:53 |
| 3 | Mn 257.610†        | 501531.8  | 495402.7  | 488.51 µg/L | 488.51 ppb | 12:15:53 |
| 3 | Mo 202.031†        | 12270.4   | 12157.7   | 492.30 µg/L | 492.30 ppb | 12:16:13 |
| 3 | Ni 231.604†        | 27397.2   | 27284.6   | 479.69 µg/L | 479.69 ppb | 12:16:13 |
| 3 | P 214.914†         | 5777.1    | 5571.4    | 2410.0 µg/L | 2410.0 ppb | 12:16:13 |
| 3 | Pb 220.353†        | 6033.9    | 5864.0    | 488.33 µg/L | 488.33 ppb | 12:16:13 |
| 3 | S 181.975 Axial†   | 1133.2    | 974.2     | 957.34 µg/L | 957.34 ppb | 12:16:13 |
| 3 | Sb 206.836†        | 2350.5    | 2210.5    | 478.06 µg/L | 478.06 ppb | 12:16:13 |
| 3 | Se 196.026†        | 1348.7    | 1352.6    | 492.44 µg/L | 492.44 ppb | 12:16:13 |
| 3 | SiO2†              | 57527.4   | 55287.9   | 5206.4 µg/L | 5206.4 ppb | 12:15:53 |
| 3 | Si 251.611†        | 71073.0   | 70029.0   | 2423.7 µg/L | 2423.7 ppb | 12:15:53 |
| 3 | Sn 189.927†        | 5161.4    | 5085.8    | 489.00 µg/L | 489.00 ppb | 12:16:13 |
| 3 | Ti 334.940†        | 219289.6  | 217776.2  | 492.54 µg/L | 492.54 ppb | 12:15:53 |
| 3 | Tl 190.801†        | 2873.8    | 3000.9    | 493.32 µg/L | 493.32 ppb | 12:16:13 |
| 3 | U 367.007†         | 4049.3    | 2582.2    | 449.7 µg/L  | 449.7 ppb  | 12:15:53 |
| 3 | V 292.402†         | 77166.7   | 75934.2   | 492.72 µg/L | 492.72 ppb | 12:15:53 |
| 3 | Zn 213.857†        | 91223.4   | 89476.2   | 482.85 µg/L | 482.85 ppb | 12:15:53 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 633545.5                 | 101.24 %           | 0.222    |                    |          | 0.22% |
| Sc RADIAL  | 8557.3                   | 102 %              | 0.73     |                    |          | 0.72% |
| Y 371.029  | 710856.4                 | 100.11 %           | 0.243    |                    |          | 0.24% |
| Ag 328.068†  | 98258.5                  | 492.92 µg/L        | 0.500    | 492.92 ppb         | 0.500    | 0.10% |
| QC value within limits for Ag 328.068 Recovery = 98.58%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 10459.9                  | 5137.2 µg/L        | 44.95    | 5137.2 ppb         | 44.95    | 0.87% |
| QC value within limits for Al 396.153Radial Recovery = 102.74% |                          |                    |          |                    |          |       |
| As 188.979†  | 1616.8                   | 490.45 µg/L        | 1.506    | 490.45 ppb         | 1.506    | 0.31% |
| QC value within limits for As 188.979 Recovery = 98.09%        |                          |                    |          |                    |          |       |
| B 249.677†   | 24919.3                  | 504.10 µg/L        | 0.759    | 504.10 ppb         | 0.759    | 0.15% |
| QC value within limits for B 249.677 Recovery = 100.82%        |                          |                    |          |                    |          |       |
| Ba 233.527†  | 86816.9                  | 488.62 µg/L        | 0.653    | 488.62 ppb         | 0.653    | 0.13% |
| QC value within limits for Ba 233.527 Recovery = 97.72%        |                          |                    |          |                    |          |       |
| Be 313.107†  | 1214024.7                | 486.78 µg/L        | 0.494    | 486.78 ppb         | 0.494    | 0.10% |
| QC value within limits for Be 313.107 Recovery = 97.36%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 10362.5                  | 5047.4 µg/L        | 3.31     | 5047.4 ppb         | 3.31     | 0.07% |
| QC value within limits for Ca 317.933Radial Recovery = 100.95% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 79906.8                  | 483.67 µg/L        | 1.153    | 483.67 ppb         | 1.153    | 0.24% |
| QC value within limits for Cd 226.502 Recovery = 96.73%        |                          |                    |          |                    |          |       |

|  |          |             |       |            |       |       |
|--|----------|-------------|-------|------------|-------|-------|
| Co 228.616†  | 29570.1  | 481.26 µg/L | 3.162 | 481.26 ppb | 3.162 | 0.66% |
| QC value within limits for Co 228.616 Recovery = 96.25%            |          |             |       |            |       |       |
| Cr 267.716†  | 38738.4  | 486.05 µg/L | 1.319 | 486.05 ppb | 1.319 | 0.27% |
| QC value within limits for Cr 267.716 Recovery = 97.21%            |          |             |       |            |       |       |
| Cu 324.752†  | 117977.8 | 492.41 µg/L | 0.426 | 492.41 ppb | 0.426 | 0.09% |
| QC value within limits for Cu 324.752 Recovery = 98.48%            |          |             |       |            |       |       |
| Fe 238.204 Radial†   | 3541.3   | 5432.6 µg/L | 13.48 | 5432.6 ppb | 13.48 | 0.25% |
| QC value within limits for Fe 238.204 Radial Recovery = 108.65%    |          |             |       |            |       |       |
| K 766.490 Radial†  | 9125.9   | 4979.3 µg/L | 43.42 | 4979.3 ppb | 43.42 | 0.87% |
| QC value within limits for K 766.490 Radial Recovery = 99.59%      |          |             |       |            |       |       |
| Mg 279.077 IEC†  | 818.1    | 5102.0 µg/L | 9.15  | 5102.0 ppb | 9.15  | 0.18% |
| QC value within limits for Mg 279.077 IEC Recovery = 102.04%       |          |             |       |            |       |       |
| Mn 257.610†  | 494784.5 | 487.90 µg/L | 0.541 | 487.90 ppb | 0.541 | 0.11% |
| QC value within limits for Mn 257.610 Recovery = 97.58%            |          |             |       |            |       |       |
| Mo 202.031†  | 12117.8  | 490.69 µg/L | 3.077 | 490.69 ppb | 3.077 | 0.63% |
| QC value within limits for Mo 202.031 Recovery = 98.14%            |          |             |       |            |       |       |
| Na 589.592 Radial†   | 255.9    | 10478 µg/L  | 40.65 | 10478 ppb  | 40.65 | 0.39% |
| QC value within limits for Na 589.592 Radial Recovery = 104.78%    |          |             |       |            |       |       |
| Ni 231.604†  | 27224.0  | 478.62 µg/L | 3.440 | 478.62 ppb | 3.440 | 0.72% |
| QC value within limits for Ni 231.604 Recovery = 95.72%            |          |             |       |            |       |       |
| P 214.914†   | 5542.6   | 2397.5 µg/L | 25.96 | 2397.5 ppb | 25.96 | 1.08% |
| QC value within limits for P 214.914 Recovery = 95.90%             |          |             |       |            |       |       |
| Pb 220.353†  | 5843.4   | 486.62 µg/L | 5.376 | 486.62 ppb | 5.376 | 1.10% |
| QC value within limits for Pb 220.353 Recovery = 97.32%            |          |             |       |            |       |       |
| S 181.975 Axial†   | 973.3    | 956.42 µg/L | 5.653 | 956.42 ppb | 5.653 | 0.59% |
| QC value within limits for S 181.975 Axial Recovery = 95.64%       |          |             |       |            |       |       |
| Sb 206.836†  | 2204.3   | 476.71 µg/L | 3.699 | 476.71 ppb | 3.699 | 0.78% |
| QC value within limits for Sb 206.836 Recovery = 95.34%            |          |             |       |            |       |       |
| Se 196.026†  | 1346.0   | 490.05 µg/L | 4.952 | 490.05 ppb | 4.952 | 1.01% |
| QC value within limits for Se 196.026 Recovery = 98.01%            |          |             |       |            |       |       |
| SiO2†  | 55261.8  | 5204.0 µg/L | 4.30  | 5204.0 ppb | 4.30  | 0.08% |
| QC value within limits for SiO2 Recovery = 97.32%                  |          |             |       |            |       |       |
| Si 251.611†  | 69912.2  | 2419.7 µg/L | 3.56  | 2419.7 ppb | 3.56  | 0.15% |
| QC value within limits for Si 251.611 Recovery = 96.79%            |          |             |       |            |       |       |
| Sn 189.927†  | 5073.7   | 487.84 µg/L | 3.101 | 487.84 ppb | 3.101 | 0.64% |
| QC value within limits for Sn 189.927 Recovery = 97.57%            |          |             |       |            |       |       |
| Sr 421.552†  | 20961.1  | 534.50 µg/L | 4.820 | 534.50 ppb | 4.820 | 0.90% |
| QC value within limits for Sr 421.552 Recovery = 106.90%           |          |             |       |            |       |       |
| Ti 334.940†  | 217575.6 | 492.09 µg/L | 0.401 | 492.09 ppb | 0.401 | 0.08% |
| QC value within limits for Ti 334.940 Recovery = 98.42%            |          |             |       |            |       |       |
| Tl 190.801†  | 2995.8   | 492.48 µg/L | 2.334 | 492.48 ppb | 2.334 | 0.47% |
| QC value within limits for Tl 190.801 Recovery = 98.50%            |          |             |       |            |       |       |
| U 367.007†   | 2580.1   | 449.3 µg/L  | 0.92  | 449.3 ppb  | 0.92  | 0.20% |
| QC value less than the lower limit for U 367.007 Recovery = 89.86% |          |             |       |            |       |       |
| V 292.402†   | 75776.0  | 491.69 µg/L | 0.894 | 491.69 ppb | 0.894 | 0.18% |
| QC value within limits for V 292.402 Recovery = 98.34%             |          |             |       |            |       |       |
| Zn 213.857†  | 89314.6  | 481.98 µg/L | 0.770 | 481.98 ppb | 0.770 | 0.16% |
| QC value within limits for Zn 213.857 Recovery = 96.40%            |          |             |       |            |       |       |
| QC Failed. Continue with analysis.                                 |          |             |       |            |       |       |

Sequence No.: 19

Sample ID: PQL

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 101

Date Collected: 11/16/2016 12:16:22

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: PQL

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 8392.8           | 8392.8                 | 99.6 %                |                       | 12:16:52         |
| 1     | Al 396.153Radial†  | -317.4           | 417.6                  | 205.44 µg/L           | 205.44 ppb            | 12:16:52         |
| 1     | Ca 317.933Radial†  | 548.8            | 442.4                  | 215.47 µg/L           | 215.47 ppb            | 12:17:12         |
| 1     | Fe 238.204 Radial† | 88.4             | 77.7                   | 119.25 µg/L           | 119.25 ppb            | 12:17:12         |
| 1     | K 766.490 Radial†  | 679.8            | 279.2                  | 152.36 µg/L           | 152.36 ppb            | 12:16:52         |
| 1     | Mg 279.077 IEC†    | 63.6             | 52.7                   | 328.56 µg/L           | 328.56 ppb            | 12:17:12         |
| 1     | Na 589.592 Radial† | 12.1             | 7.2                    | 295.29 µg/L           | 295.29 ppb            | 12:17:12         |
| 1     | Sr 421.552†        | 250.0            | 247.1                  | 6.2961 µg/L           | 6.2961 ppb            | 12:16:52         |
| 1     | Sc 361.383         | 613981.0         | 613981.0               | 98.114 %              |                       | 12:18:09         |
| 1     | Y 371.029          | 695772.7         | 695772.7               | 97.990 %              |                       | 12:18:09         |
| 1     | Ag 328.068†        | 212.0            | 1155.6                 | 5.7815 µg/L           | 5.7815 ppb            | 12:18:09         |
| 1     | As 188.979†        | 121.3            | 101.5                  | 30.583 µg/L           | 30.583 ppb            | 12:18:29         |
| 1     | B 249.677†         | 2788.5           | 2650.1                 | 52.026 µg/L           | 52.026 ppb            | 12:18:09         |
| 1     | Ba 233.527†        | 1042.6           | 933.4                  | 5.2515 µg/L           | 5.2515 ppb            | 12:18:29         |
| 1     | Be 313.107†        | 7095.3           | 12674.8                | 5.0955 µg/L           | 5.0955 ppb            | 12:18:09         |
| 1     | Cd 226.502†        | 641.2            | 906.6                  | 5.4815 µg/L           | 5.4815 ppb            | 12:18:29         |
| 1     | Co 228.616†        | -11.7            | 315.6                  | 5.1390 µg/L           | 5.1390 ppb            | 12:18:29         |
| 1     | Cr 267.716†        | 525.8            | 419.1                  | 5.2291 µg/L           | 5.2291 ppb            | 12:18:29         |
| 1     | Cu 324.752†        | 5048.7           | 2652.1                 | 11.092 µg/L           | 11.092 ppb            | 12:18:09         |
| 1     | Mn 257.610†        | 11504.6          | 10882.4                | 10.723 µg/L           | 10.723 ppb            | 12:18:09         |
| 1     | Mo 202.031†        | 231.7            | 252.8                  | 10.235 µg/L           | 10.235 ppb            | 12:18:29         |
| 1     | Ni 231.604†        | 119.8            | 298.3                  | 5.2410 µg/L           | 5.2410 ppb            | 12:18:29         |
| 1     | P 214.914†         | 454.7            | 318.6                  | 138.33 µg/L           | 138.33 ppb            | 12:18:29         |
| 1     | Pb 220.353†        | 210.1            | 107.8                  | 8.9086 µg/L           | 8.9086 ppb            | 12:18:29         |
| 1     | S 181.975 Axial†   | 252.4            | 110.2                  | 107.90 µg/L           | 107.90 ppb            | 12:18:29         |
| 1     | Sb 206.836†        | 157.7            | 45.5                   | 9.9309 µg/L           | 9.9309 ppb            | 12:18:29         |
| 1     | Se 196.026†        | 88.6             | 108.4                  | 39.330 µg/L           | 39.330 ppb            | 12:18:29         |
| 1     | SiO2†              | 3905.1           | 2346.9                 | 220.81 µg/L           | 220.81 ppb            | 12:18:09         |
| 1     | Si 251.611†        | 3102.4           | 2867.2                 | 99.391 µg/L           | 99.391 ppb            | 12:18:29         |
| 1     | Sn 189.927†        | 117.5            | 98.5                   | 9.4558 µg/L           | 9.4558 ppb            | 12:18:29         |
| 1     | Ti 334.940†        | 1601.6           | 2430.1                 | 5.4818 µg/L           | 5.4818 ppb            | 12:18:09         |
| 1     | Tl 190.801†        | -19.3            | 137.7                  | 22.622 µg/L           | 22.622 ppb            | 12:18:29         |
| 1     | U 367.007†         | 1677.1           | 284.8                  | 51.67 µg/L            | 51.67 ppb             | 12:18:09         |
| 1     | V 292.402†         | 1157.3           | 760.3                  | 5.0239 µg/L           | 5.0239 ppb            | 12:18:09         |
| 1     | Zn 213.857†        | 2554.4           | 1817.8                 | 9.8240 µg/L           | 9.8240 ppb            | 12:18:29         |
| 2     | Sc RADIAL          | 8333.1           | 8333.1                 | 98.9 %                |                       | 12:17:17         |
| 2     | Al 396.153Radial†  | -282.2           | 451.0                  | 221.89 µg/L           | 221.89 ppb            | 12:17:17         |
| 2     | Ca 317.933Radial†  | 566.0            | 463.8                  | 225.90 µg/L           | 225.90 ppb            | 12:17:37         |
| 2     | Fe 238.204 Radial† | 94.6             | 84.7                   | 129.90 µg/L           | 129.90 ppb            | 12:17:37         |
| 2     | K 766.490 Radial†  | 702.1            | 306.6                  | 167.32 µg/L           | 167.32 ppb            | 12:17:17         |
| 2     | Mg 279.077 IEC†    | 62.6             | 52.1                   | 324.64 µg/L           | 324.64 ppb            | 12:17:37         |
| 2     | Na 589.592 Radial† | 10.0             | 5.2                    | 211.27 µg/L           | 211.27 ppb            | 12:17:37         |
| 2     | Sr 421.552†        | 240.4            | 239.3                  | 6.0960 µg/L           | 6.0960 ppb            | 12:17:17         |
| 2     | Sc 361.383         | 612586.6         | 612586.6               | 97.891 %              |                       | 12:18:35         |
| 2     | Y 371.029          | 694798.8         | 694798.8               | 97.853 %              |                       | 12:18:35         |
| 2     | Ag 328.068†        | 119.1            | 1061.1                 | 5.3085 µg/L           | 5.3085 ppb            | 12:18:35         |
| 2     | As 188.979†        | 123.1            | 103.6                  | 31.220 µg/L           | 31.220 ppb            | 12:18:55         |
| 2     | B 249.677†         | 2736.8           | 2603.7                 | 51.164 µg/L           | 51.164 ppb            | 12:18:35         |
| 2     | Ba 233.527†        | 1051.6           | 945.0                  | 5.3167 µg/L           | 5.3167 ppb            | 12:18:55         |
| 2     | Be 313.107†        | 7042.8           | 12637.6                | 5.0818 µg/L           | 5.0818 ppb            | 12:18:35         |
| 2     | Cd 226.502†        | 635.5            | 902.3                  | 5.4543 µg/L           | 5.4543 ppb            | 12:18:55         |
| 2     | Co 228.616†        | 5.6              | 333.3                  | 5.4268 µg/L           | 5.4268 ppb            | 12:18:55         |
| 2     | Cr 267.716†        | 549.3            | 444.4                  | 5.5427 µg/L           | 5.5427 ppb            | 12:18:55         |
| 2     | Cu 324.752†        | 4945.2           | 2558.0                 | 10.702 µg/L           | 10.702 ppb            | 12:18:35         |
| 2     | Mn 257.610†        | 11497.8          | 10902.0                | 10.743 µg/L           | 10.743 ppb            | 12:18:35         |
| 2     | Mo 202.031†        | 232.4            | 254.0                  | 10.286 µg/L           | 10.286 ppb            | 12:18:55         |
| 2     | Ni 231.604†        | 100.2            | 278.5                  | 4.8932 µg/L           | 4.8932 ppb            | 12:18:55         |
| 2     | P 214.914†         | 458.3            | 323.3                  | 140.36 µg/L           | 140.36 ppb            | 12:18:55         |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | Pb 220.353†        | 235.1    | 133.8    | 11.067 µg/L | 11.067 ppb | 12:18:55 |
| 2 | S 181.975 Axial†   | 247.9    | 106.2    | 104.02 µg/L | 104.02 ppb | 12:18:55 |
| 2 | Sb 206.836†        | 154.6    | 42.6     | 9.3181 µg/L | 9.3181 ppb | 12:18:55 |
| 2 | Se 196.026†        | 78.6     | 98.4     | 35.692 µg/L | 35.692 ppb | 12:18:55 |
| 2 | SiO2†              | 3905.3   | 2356.2   | 221.68 µg/L | 221.68 ppb | 12:18:35 |
| 2 | Si 251.611†        | 3046.4   | 2817.2   | 97.648 µg/L | 97.648 ppb | 12:18:55 |
| 2 | Sn 189.927†        | 140.4    | 122.2    | 11.726 µg/L | 11.726 ppb | 12:18:55 |
| 2 | Ti 334.940†        | 1565.6   | 2397.1   | 5.4053 µg/L | 5.4053 ppb | 12:18:35 |
| 2 | Tl 190.801†        | -11.6    | 145.5    | 23.901 µg/L | 23.901 ppb | 12:18:55 |
| 2 | U 367.007†         | 1698.7   | 310.8    | 56.38 µg/L  | 56.38 ppb  | 12:18:35 |
| 2 | V 292.402†         | 1155.6   | 761.3    | 5.0353 µg/L | 5.0353 ppb | 12:18:35 |
| 2 | Zn 213.857†        | 2528.9   | 1797.6   | 9.7155 µg/L | 9.7155 ppb | 12:18:55 |
| 3 | Sc RADIAL          | 8372.0   | 8372.0   | 99.4 %      |            | 12:17:42 |
| 3 | Al 396.153Radial†  | -278.6   | 455.9    | 224.32 µg/L | 224.32 ppb | 12:17:42 |
| 3 | Ca 317.933Radial†  | 564.3    | 459.4    | 223.75 µg/L | 223.75 ppb | 12:18:02 |
| 3 | Fe 238.204 Radial† | 91.8     | 81.3     | 124.79 µg/L | 124.79 ppb | 12:18:02 |
| 3 | K 766.490 Radial†  | 704.9    | 306.1    | 167.03 µg/L | 167.03 ppb | 12:17:42 |
| 3 | Mg 279.077 IEC†    | 61.0     | 50.2     | 313.18 µg/L | 313.18 ppb | 12:18:02 |
| 3 | Na 589.592 Radial† | 9.2      | 4.3      | 176.15 µg/L | 176.15 ppb | 12:18:02 |
| 3 | Sr 421.552†        | 268.6    | 266.5    | 6.7894 µg/L | 6.7894 ppb | 12:17:42 |
| 3 | Sc 361.383         | 613937.9 | 613937.9 | 98.107 %    |            | 12:19:01 |
| 3 | Y 371.029          | 696032.1 | 696032.1 | 98.027 %    |            | 12:19:01 |
| 3 | Ag 328.068†        | 130.6    | 1072.6   | 5.3739 µg/L | 5.3739 ppb | 12:19:01 |
| 3 | As 188.979†        | 126.3    | 106.6    | 32.123 µg/L | 32.123 ppb | 12:19:21 |
| 3 | B 249.677†         | 2833.7   | 2696.4   | 52.949 µg/L | 52.949 ppb | 12:19:01 |
| 3 | Ba 233.527†        | 1051.0   | 942.0    | 5.3000 µg/L | 5.3000 ppb | 12:19:21 |
| 3 | Be 313.107†        | 7170.0   | 12751.4  | 5.1230 µg/L | 5.1230 ppb | 12:19:01 |
| 3 | Cd 226.502†        | 612.3    | 877.2    | 5.3029 µg/L | 5.3029 ppb | 12:19:21 |
| 3 | Co 228.616†        | -14.1    | 313.2    | 5.1001 µg/L | 5.1001 ppb | 12:19:21 |
| 3 | Cr 267.716†        | 522.4    | 415.6    | 5.1949 µg/L | 5.1949 ppb | 12:19:21 |
| 3 | Cu 324.752†        | 5030.8   | 2634.2   | 11.010 µg/L | 11.010 ppb | 12:19:01 |
| 3 | Mn 257.610†        | 11601.4  | 10981.8  | 10.822 µg/L | 10.822 ppb | 12:19:01 |
| 3 | Mo 202.031†        | 238.9    | 260.1    | 10.533 µg/L | 10.533 ppb | 12:19:21 |
| 3 | Ni 231.604†        | 127.9    | 306.6    | 5.3864 µg/L | 5.3864 ppb | 12:19:21 |
| 3 | P 214.914†         | 465.3    | 329.4    | 143.03 µg/L | 143.03 ppb | 12:19:21 |
| 3 | Pb 220.353†        | 227.0    | 125.1    | 10.352 µg/L | 10.352 ppb | 12:19:21 |
| 3 | S 181.975 Axial†   | 254.5    | 112.4    | 110.07 µg/L | 110.07 ppb | 12:19:21 |
| 3 | Sb 206.836†        | 159.1    | 46.9     | 10.247 µg/L | 10.247 ppb | 12:19:21 |
| 3 | Se 196.026†        | 68.9     | 88.3     | 32.035 µg/L | 32.035 ppb | 12:19:21 |
| 3 | SiO2†              | 3953.1   | 2396.1   | 225.43 µg/L | 225.43 ppb | 12:19:01 |
| 3 | Si 251.611†        | 3075.9   | 2840.3   | 98.453 µg/L | 98.453 ppb | 12:19:21 |
| 3 | Sn 189.927†        | 123.0    | 104.2    | 9.9975 µg/L | 9.9975 ppb | 12:19:21 |
| 3 | Ti 334.940†        | 1592.8   | 2421.3   | 5.4690 µg/L | 5.4690 ppb | 12:19:01 |
| 3 | Tl 190.801†        | -21.0    | 136.0    | 22.334 µg/L | 22.334 ppb | 12:19:21 |
| 3 | U 367.007†         | 1603.7   | 210.1    | 37.95 µg/L  | 37.95 ppb  | 12:19:01 |
| 3 | V 292.402†         | 1172.6   | 776.0    | 5.1195 µg/L | 5.1195 ppb | 12:19:01 |
| 3 | Zn 213.857†        | 2507.0   | 1769.7   | 9.5611 µg/L | 9.5611 ppb | 12:19:21 |

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Mean Data: PQL

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 613501.8                 | 98.037 %           | 0.1267   |                    |          | 0.13% |
| Sc RADIAL  | 8366.0                   | 99.3 %             | 0.36     |                    |          | 0.36% |
| Y 371.029  | 695534.5                 | 97.957 %           | 0.0916   |                    |          | 0.09% |
| Ag 328.068†  | 1096.4                   | 5.4880 µg/L        | 0.25630  | 5.4880 ppb         | 0.25630  | 4.67% |
| QC value within limits for Ag 328.068 Recovery = 109.76%       |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 441.5                    | 217.22 µg/L        | 10.273   | 217.22 ppb         | 10.273   | 4.73% |
| QC value within limits for Al 396.153Radial Recovery = 108.61% |                          |                    |          |                    |          |       |
| As 188.979†  | 103.9                    | 31.309 µg/L        | 0.7736   | 31.309 ppb         | 0.7736   | 2.47% |
| QC value within limits for As 188.979 Recovery = 104.36%       |                          |                    |          |                    |          |       |
| B 249.677†   | 2650.1                   | 52.046 µg/L        | 0.8929   | 52.046 ppb         | 0.8929   | 1.72% |
| QC value within limits for B 249.677 Recovery = 104.09%        |                          |                    |          |                    |          |       |
| Ba 233.527†  | 940.1                    | 5.2894 µg/L        | 0.03385  | 5.2894 ppb         | 0.03385  | 0.64% |
| QC value within limits for Ba 233.527 Recovery = 105.79%       |                          |                    |          |                    |          |       |
| Be 313.107†  | 12688.0                  | 5.1001 µg/L        | 0.02096  | 5.1001 ppb         | 0.02096  | 0.41% |
| QC value within limits for Be 313.107 Recovery = 102.00%       |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 455.2                    | 221.71 µg/L        | 5.504    | 221.71 ppb         | 5.504    | 2.48% |
| QC value within limits for Ca 317.933Radial Recovery = 110.85% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 895.3                    | 5.4129 µg/L        | 0.09622  | 5.4129 ppb         | 0.09622  | 1.78% |
| QC value within limits for Cd 226.502 Recovery = 108.26%       |                          |                    |          |                    |          |       |

|   |         |             |         |            |         |        |
|---|---------|-------------|---------|------------|---------|--------|
| Co 228.616†   | 320.7   | 5.2220 µg/L | 0.17847 | 5.2220 ppb | 0.17847 | 3.42%  |
| QC value within limits for Co 228.616 Recovery = 104.44%        |         |             |         |            |         |        |
| Cr 267.716†   | 426.4   | 5.3222 µg/L | 0.19170 | 5.3222 ppb | 0.19170 | 3.60%  |
| QC value within limits for Cr 267.716 Recovery = 106.44%        |         |             |         |            |         |        |
| Cu 324.752†   | 2614.8  | 10.935 µg/L | 0.2052  | 10.935 ppb | 0.2052  | 1.88%  |
| QC value within limits for Cu 324.752 Recovery = 109.35%        |         |             |         |            |         |        |
| Fe 238.204 Radial†  | 81.3    | 124.65 µg/L | 5.328   | 124.65 ppb | 5.328   | 4.27%  |
| QC value within limits for Fe 238.204 Radial Recovery = 124.65% |         |             |         |            |         |        |
| K 766.490 Radial†   | 297.3   | 162.24 µg/L | 8.555   | 162.24 ppb | 8.555   | 5.27%  |
| QC value within limits for K 766.490 Radial Recovery = 108.16%  |         |             |         |            |         |        |
| Mg 279.077 IEC†   | 51.7    | 322.13 µg/L | 7.993   | 322.13 ppb | 7.993   | 2.48%  |
| QC value within limits for Mg 279.077 IEC Recovery = 107.38%    |         |             |         |            |         |        |
| Mn 257.610†   | 10922.1 | 10.763 µg/L | 0.0523  | 10.763 ppb | 0.0523  | 0.49%  |
| QC value within limits for Mn 257.610 Recovery = 107.63%        |         |             |         |            |         |        |
| Mo 202.031†   | 255.6   | 10.351 µg/L | 0.1591  | 10.351 ppb | 0.1591  | 1.54%  |
| QC value within limits for Mo 202.031 Recovery = 103.51%        |         |             |         |            |         |        |
| Na 589.592 Radial†  | 5.6     | 227.57 µg/L | 61.222  | 227.57 ppb | 61.222  | 26.90% |
| QC value within limits for Na 589.592 Radial Recovery = 75.86%  |         |             |         |            |         |        |
| Ni 231.604†   | 294.5   | 5.1735 µg/L | 0.25347 | 5.1735 ppb | 0.25347 | 4.90%  |
| QC value within limits for Ni 231.604 Recovery = 103.47%        |         |             |         |            |         |        |
| P 214.914†  | 323.8   | 140.57 µg/L | 2.358   | 140.57 ppb | 2.358   | 1.68%  |
| QC value within limits for P 214.914 Recovery = 93.71%          |         |             |         |            |         |        |
| Pb 220.353†   | 122.2   | 10.109 µg/L | 1.0993  | 10.109 ppb | 1.0993  | 10.87% |
| QC value within limits for Pb 220.353 Recovery = 101.09%        |         |             |         |            |         |        |
| S 181.975 Axial†  | 109.6   | 107.33 µg/L | 3.064   | 107.33 ppb | 3.064   | 2.85%  |
| QC value within limits for S 181.975 Axial Recovery = 107.33%   |         |             |         |            |         |        |
| Sb 206.836†   | 45.0    | 9.8320 µg/L | 0.47224 | 9.8320 ppb | 0.47224 | 4.80%  |
| QC value within limits for Sb 206.836 Recovery = 98.32%         |         |             |         |            |         |        |
| Se 196.026†   | 98.4    | 35.686 µg/L | 3.6474  | 35.686 ppb | 3.6474  | 10.22% |
| QC value within limits for Se 196.026 Recovery = 118.95%        |         |             |         |            |         |        |
| SiO2†   | 2366.4  | 222.64 µg/L | 2.457   | 222.64 ppb | 2.457   | 1.10%  |
| QC value within limits for SiO2 Recovery = 104.53%              |         |             |         |            |         |        |
| Si 251.611†   | 2841.6  | 98.497 µg/L | 0.8722  | 98.497 ppb | 0.8722  | 0.89%  |
| QC value within limits for Si 251.611 Recovery = 98.50%         |         |             |         |            |         |        |
| Sn 189.927†   | 108.3   | 10.393 µg/L | 1.1856  | 10.393 ppb | 1.1856  | 11.41% |
| QC value within limits for Sn 189.927 Recovery = 103.93%        |         |             |         |            |         |        |
| Sr 421.552†   | 251.0   | 6.3939 µg/L | 0.35688 | 6.3939 ppb | 0.35688 | 5.58%  |
| QC value within limits for Sr 421.552 Recovery = 127.88%        |         |             |         |            |         |        |
| Ti 334.940†   | 2416.2  | 5.4520 µg/L | 0.04096 | 5.4520 ppb | 0.04096 | 0.75%  |
| QC value within limits for Ti 334.940 Recovery = 109.04%        |         |             |         |            |         |        |
| Tl 190.801†   | 139.7   | 22.952 µg/L | 0.8342  | 22.952 ppb | 0.8342  | 3.63%  |
| QC value within limits for Tl 190.801 Recovery = 114.76%        |         |             |         |            |         |        |
| U 367.007†  | 268.6   | 48.66 µg/L  | 9.576   | 48.66 ppb  | 9.576   | 19.68% |
| QC value within limits for U 367.007 Recovery = 97.33%          |         |             |         |            |         |        |
| V 292.402†  | 765.9   | 5.0596 µg/L | 0.05223 | 5.0596 ppb | 0.05223 | 1.03%  |
| QC value within limits for V 292.402 Recovery = 101.19%         |         |             |         |            |         |        |
| Zn 213.857†   | 1795.0  | 9.7002 µg/L | 0.13214 | 9.7002 ppb | 0.13214 | 1.36%  |
| QC value within limits for Zn 213.857 Recovery = 97.00%         |         |             |         |            |         |        |
| All analyte(s) passed QC.                                       |         |             |         |            |         |        |

Sequence No.: 20

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Wash Time: 5

Autosampler Location: 8

Date Collected: 11/16/2016 12:19:30

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Auto Dilution Factor: 1

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 8633.5        | 8633.5              | 102 %              |                    | 12:20:00      |
| 1     | Al 396.153Radial†  | -713.4        | 40.1                | 19.759 µg/L        | 19.759 ppb         | 12:20:00      |
| 1     | Ca 317.933Radial†  | 121.6         | 10.1                | 4.9197 µg/L        | 4.9197 ppb         | 12:20:20      |
| 1     | Fe 238.204 Radial† | 13.2          | 1.9                 | 2.9320 µg/L        | 2.9320 ppb         | 12:20:20      |
| 1     | K 766.490 Radial†  | 511.0         | 95.4                | 52.069 µg/L        | 52.069 ppb         | 12:20:00      |
| 1     | Mg 279.077 IEC†    | 8.3           | -3.1                | -19.340 µg/L       | -19.340 ppb        | 12:20:20      |
| 1     | Na 589.592 Radial† | 3.5           | -1.6                | -64.921 µg/L       | -64.921 ppb        | 12:20:20      |
| 1     | Sr 421.552†        | 8.3           | 4.3                 | 0.1089 µg/L        | 0.1089 ppb         | 12:20:00      |
| 1     | Sc 361.383         | 628742.9      | 628742.9            | 100.47 %           |                    | 12:21:17      |
| 1     | Y 371.029          | 711831.8      | 711831.8            | 100.25 %           |                    | 12:21:17      |
| 1     | Ag 328.068†        | -1018.3       | -74.0               | -0.3646 µg/L       | -0.3646 ppb        | 12:21:17      |
| 1     | As 188.979†        | 23.6          | 1.3                 | 0.3900 µg/L        | 0.3900 ppb         | 12:21:37      |
| 1     | B 249.677†         | 235.1         | 41.9                | 0.8263 µg/L        | 0.8263 ppb         | 12:21:37      |
| 1     | Ba 233.527†        | 151.8         | 21.8                | 0.1229 µg/L        | 0.1229 ppb         | 12:21:37      |
| 1     | Be 313.107†        | -5326.0       | 142.1               | 0.0539 µg/L        | 0.0539 ppb         | 12:21:17      |
| 1     | Cd 226.502†        | -239.1        | 15.1                | 0.0915 µg/L        | 0.0915 ppb         | 12:21:37      |
| 1     | Co 228.616†        | -306.6        | 22.3                | 0.3624 µg/L        | 0.3624 ppb         | 12:21:37      |
| 1     | Cr 267.716†        | 82.7          | -34.6               | -0.4254 µg/L       | -0.4254 ppb        | 12:21:37      |
| 1     | Cu 324.752†        | 2566.8        | 61.0                | 0.2481 µg/L        | 0.2481 ppb         | 12:21:17      |
| 1     | Mn 257.610†        | 869.9         | 22.4                | 0.0229 µg/L        | 0.0229 ppb         | 12:21:37      |
| 1     | Mo 202.031†        | -31.4         | -14.7               | -0.5938 µg/L       | -0.5938 ppb        | 12:21:37      |
| 1     | Ni 231.604†        | -160.0        | 16.9                | 0.2979 µg/L        | 0.2979 ppb         | 12:21:37      |
| 1     | P 214.914†         | 124.3         | -21.2               | -9.2230 µg/L       | -9.2230 ppb        | 12:21:37      |
| 1     | Pb 220.353†        | 93.4          | -13.4               | -1.1145 µg/L       | -1.1145 ppb        | 12:21:37      |
| 1     | S 181.975 Axial†   | 154.2         | 6.5                 | 6.3124 µg/L        | 6.3124 ppb         | 12:21:37      |
| 1     | Sb 206.836†        | 106.0         | -9.8                | -2.1189 µg/L       | -2.1189 ppb        | 12:21:37      |
| 1     | Se 196.026†        | -13.8         | 4.4                 | 1.5976 µg/L        | 1.5976 ppb         | 12:21:37      |
| 1     | SiO2†              | 1682.9        | 41.7                | 3.9148 µg/L        | 3.9148 ppb         | 12:21:17      |
| 1     | Si 251.611†        | 338.5         | 42.0                | 1.4660 µg/L        | 1.4660 ppb         | 12:21:37      |
| 1     | Sn 189.927†        | 20.8          | -0.5                | -0.0504 µg/L       | -0.0504 ppb        | 12:21:37      |
| 1     | Ti 334.940†        | -680.0        | 120.9               | 0.2800 µg/L        | 0.2800 ppb         | 12:21:17      |
| 1     | Tl 190.801†        | -155.2        | 2.9                 | 0.4713 µg/L        | 0.4713 ppb         | 12:21:37      |
| 1     | U 367.007†         | 1362.4        | -68.5               | -12.57 µg/L        | -12.57 ppb         | 12:21:17      |
| 1     | V 292.402†         | 338.4         | -82.4               | -0.5421 µg/L       | -0.5421 ppb        | 12:21:17      |
| 1     | Zn 213.857†        | 649.0         | -139.8              | -0.7634 µg/L       | -0.7634 ppb        | 12:21:37      |
| 2     | Sc RADIAL          | 8640.5        | 8640.5              | 103 %              |                    | 12:20:25      |
| 2     | Al 396.153Radial†  | -693.1        | 60.4                | 29.753 µg/L        | 29.753 ppb         | 12:20:25      |
| 2     | Ca 317.933Radial†  | 109.9         | -1.4                | -0.6736 µg/L       | -0.6736 ppb        | 12:20:45      |
| 2     | Fe 238.204 Radial† | 8.6           | -2.6                | -3.9713 µg/L       | -3.9713 ppb        | 12:20:45      |
| 2     | K 766.490 Radial†  | 413.8         | 0.2                 | 0.0969 µg/L        | 0.0969 ppb         | 12:20:25      |
| 2     | Mg 279.077 IEC†    | 13.5          | 2.0                 | 12.373 µg/L        | 12.373 ppb         | 12:20:45      |
| 2     | Na 589.592 Radial† | 7.5           | 2.3                 | 94.232 µg/L        | 94.232 ppb         | 12:20:45      |
| 2     | Sr 421.552†        | 25.4          | 21.0                | 0.5345 µg/L        | 0.5345 ppb         | 12:20:25      |
| 2     | Sc 361.383         | 629715.4      | 629715.4            | 100.63 %           |                    | 12:21:42      |
| 2     | Y 371.029          | 712781.0      | 712781.0            | 100.39 %           |                    | 12:21:42      |
| 2     | Ag 328.068†        | -1024.8       | -78.9               | -0.3961 µg/L       | -0.3961 ppb        | 12:21:42      |
| 2     | As 188.979†        | 18.7          | -3.6                | -1.0710 µg/L       | -1.0710 ppb        | 12:22:03      |
| 2     | B 249.677†         | 250.6         | 57.0                | 1.0945 µg/L        | 1.0945 ppb         | 12:22:03      |
| 2     | Ba 233.527†        | 136.0         | 5.9                 | 0.0332 µg/L        | 0.0332 ppb         | 12:22:03      |
| 2     | Be 313.107†        | -5367.1       | 109.5               | 0.0441 µg/L        | 0.0441 ppb         | 12:21:42      |
| 2     | Cd 226.502†        | -232.7        | 21.9                | 0.1329 µg/L        | 0.1329 ppb         | 12:22:03      |
| 2     | Co 228.616†        | -328.3        | 1.3                 | 0.0203 µg/L        | 0.0203 ppb         | 12:22:03      |
| 2     | Cr 267.716†        | 139.8         | 22.1                | 0.2769 µg/L        | 0.2769 ppb         | 12:22:03      |
| 2     | Cu 324.752†        | 2543.6        | 34.0                | 0.1420 µg/L        | 0.1420 ppb         | 12:21:42      |
| 2     | Mn 257.610†        | 965.3         | 115.9               | 0.1136 µg/L        | 0.1136 ppb         | 12:22:03      |
| 2     | Mo 202.031†        | -19.2         | -2.5                | -0.1000 µg/L       | -0.1000 ppb        | 12:22:03      |
| 2     | Ni 231.604†        | -163.3        | 13.9                | 0.2449 µg/L        | 0.2449 ppb         | 12:22:03      |
| 2     | P 214.914†         | 123.9         | -21.8               | -9.4740 µg/L       | -9.4740 ppb        | 12:22:03      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | Pb 220.353†        | 88.6     | -18.3    | -1.5341 µg/L | -1.5341 ppb | 12:22:03 |
| 2 | S 181.975 Axial†   | 156.7    | 8.6      | 8.4519 µg/L  | 8.4519 ppb  | 12:22:03 |
| 2 | Sb 206.836†        | 114.5    | -1.5     | -0.3293 µg/L | -0.3293 ppb | 12:22:03 |
| 2 | Se 196.026†        | -15.6    | 2.7      | 0.9585 µg/L  | 0.9585 ppb  | 12:22:03 |
| 2 | SiO2†              | 1707.4   | 63.5     | 5.9784 µg/L  | 5.9784 ppb  | 12:21:42 |
| 2 | Si 251.611†        | 367.4    | 70.2     | 2.4382 µg/L  | 2.4382 ppb  | 12:22:03 |
| 2 | Sn 189.927†        | 21.0     | -0.4     | -0.0371 µg/L | -0.0371 ppb | 12:22:03 |
| 2 | Ti 334.940†        | -674.2   | 127.8    | 0.2887 µg/L  | 0.2887 ppb  | 12:21:42 |
| 2 | Tl 190.801†        | -150.2   | 8.2      | 1.3399 µg/L  | 1.3399 ppb  | 12:22:03 |
| 2 | U 367.007†         | 1436.2   | 2.7      | 0.519 µg/L   | 0.519 ppb   | 12:21:42 |
| 2 | V 292.402†         | 388.0    | -33.7    | -0.2165 µg/L | -0.2165 ppb | 12:21:42 |
| 2 | Zn 213.857†        | 640.1    | -149.7   | -0.8176 µg/L | -0.8176 ppb | 12:22:03 |
| 3 | Sc RADIAL          | 8593.0   | 8593.0   | 102 %        |             | 12:20:50 |
| 3 | Al 396.153Radial†  | -724.4   | 25.9     | 12.773 µg/L  | 12.773 ppb  | 12:20:50 |
| 3 | Ca 317.933Radial†  | 116.6    | 5.8      | 2.8061 µg/L  | 2.8061 ppb  | 12:21:10 |
| 3 | Fe 238.204 Radial† | 13.8     | 2.6      | 3.9406 µg/L  | 3.9406 ppb  | 12:21:10 |
| 3 | K 766.490 Radial†  | 426.0    | 14.4     | 7.8758 µg/L  | 7.8758 ppb  | 12:20:50 |
| 3 | Mg 279.077 IEC†    | 4.7      | -6.6     | -40.951 µg/L | -40.951 ppb | 12:21:10 |
| 3 | Na 589.592 Radial† | 6.2      | 1.2      | 47.224 µg/L  | 47.224 ppb  | 12:21:10 |
| 3 | Sr 421.552†        | 26.0     | 21.7     | 0.5530 µg/L  | 0.5530 ppb  | 12:20:50 |
| 3 | Sc 361.383         | 627239.7 | 627239.7 | 100.23 %     |             | 12:22:08 |
| 3 | Y 371.029          | 710694.2 | 710694.2 | 100.09 %     |             | 12:22:08 |
| 3 | Ag 328.068†        | -839.2   | 102.2    | 0.5137 µg/L  | 0.5137 ppb  | 12:22:08 |
| 3 | As 188.979†        | 23.6     | 1.4      | 0.4115 µg/L  | 0.4115 ppb  | 12:22:28 |
| 3 | B 249.677†         | 239.9    | 47.3     | 0.9373 µg/L  | 0.9373 ppb  | 12:22:28 |
| 3 | Ba 233.527†        | 163.5    | 33.8     | 0.1901 µg/L  | 0.1901 ppb  | 12:22:28 |
| 3 | Be 313.107†        | -5385.5  | 70.1     | 0.0273 µg/L  | 0.0273 ppb  | 12:22:08 |
| 3 | Cd 226.502†        | -212.7   | 40.9     | 0.2473 µg/L  | 0.2473 ppb  | 12:22:28 |
| 3 | Co 228.616†        | -344.5   | -16.2    | -0.2646 µg/L | -0.2646 ppb | 12:22:28 |
| 3 | Cr 267.716†        | 103.6    | -13.5    | -0.1675 µg/L | -0.1675 ppb | 12:22:28 |
| 3 | Cu 324.752†        | 2531.2   | 31.6     | 0.1303 µg/L  | 0.1303 ppb  | 12:22:08 |
| 3 | Mn 257.610†        | 875.0    | 29.5     | 0.0307 µg/L  | 0.0307 ppb  | 12:22:28 |
| 3 | Mo 202.031†        | -13.3    | 3.3      | 0.1346 µg/L  | 0.1346 ppb  | 12:22:28 |
| 3 | Ni 231.604†        | -142.6   | 33.9     | 0.5958 µg/L  | 0.5958 ppb  | 12:22:28 |
| 3 | P 214.914†         | 132.2    | -13.0    | -5.6681 µg/L | -5.6681 ppb | 12:22:28 |
| 3 | Pb 220.353†        | 100.7    | -5.9     | -0.4969 µg/L | -0.4969 ppb | 12:22:28 |
| 3 | S 181.975 Axial†   | 159.2    | 11.8     | 11.571 µg/L  | 11.571 ppb  | 12:22:28 |
| 3 | Sb 206.836†        | 112.1    | -3.4     | -0.7333 µg/L | -0.7333 ppb | 12:22:28 |
| 3 | Se 196.026†        | -6.3     | 11.9     | 4.2970 µg/L  | 4.2970 ppb  | 12:22:28 |
| 3 | SiO2†              | 1715.6   | 78.3     | 7.3667 µg/L  | 7.3667 ppb  | 12:22:08 |
| 3 | Si 251.611†        | 347.7    | 52.0     | 1.8037 µg/L  | 1.8037 ppb  | 12:22:28 |
| 3 | Sn 189.927†        | 18.7     | -2.6     | -0.2508 µg/L | -0.2508 ppb | 12:22:28 |
| 3 | Ti 334.940†        | -680.9   | 118.4    | 0.2697 µg/L  | 0.2697 ppb  | 12:22:08 |
| 3 | Tl 190.801†        | -150.1   | 7.6      | 1.2528 µg/L  | 1.2528 ppb  | 12:22:28 |
| 3 | U 367.007†         | 1409.0   | -18.7    | -3.452 µg/L  | -3.452 ppb  | 12:22:08 |
| 3 | V 292.402†         | 443.4    | 23.2     | 0.1479 µg/L  | 0.1479 ppb  | 12:22:08 |
| 3 | Zn 213.857†        | 643.0    | -144.3   | -0.7882 µg/L | -0.7882 ppb | 12:22:28 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 628566.0                 | 100.44 %           | 0.199    |                    |          | 0.20%   |
| Sc RADIAL   | 8622.3                   | 102 %              | 0.30     |                    |          | 0.30%   |
| Y 371.029   | 711769.0                 | 100.24 %           | 0.147    |                    |          | 0.15%   |
| Ag 328.068†   | -16.9                    | -0.0823 µg/L       | 0.51638  | -0.0823 ppb        | 0.51638  | 627.24% |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 42.1                     | 20.762 µg/L        | 8.5339   | 20.762 ppb         | 8.5339   | 41.10%  |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | -0.3                     | -0.0898 µg/L       | 0.84978  | -0.0898 ppb        | 0.84978  | 946.11% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 48.8                     | 0.9527 µg/L        | 0.13478  | 0.9527 ppb         | 0.13478  | 14.15%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | 20.5                     | 0.1154 µg/L        | 0.07871  | 0.1154 ppb         | 0.07871  | 68.22%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 107.2                    | 0.0418 µg/L        | 0.01348  | 0.0418 ppb         | 0.01348  | 32.29%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 4.8                      | 2.3508 µg/L        | 2.82431  | 2.3508 ppb         | 2.82431  | 120.14% |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| Cd 226.502†   | 26.0                     | 0.1572 µg/L        | 0.08071  | 0.1572 ppb         | 0.08071  | 51.33%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |                    |          |                    |          |         |

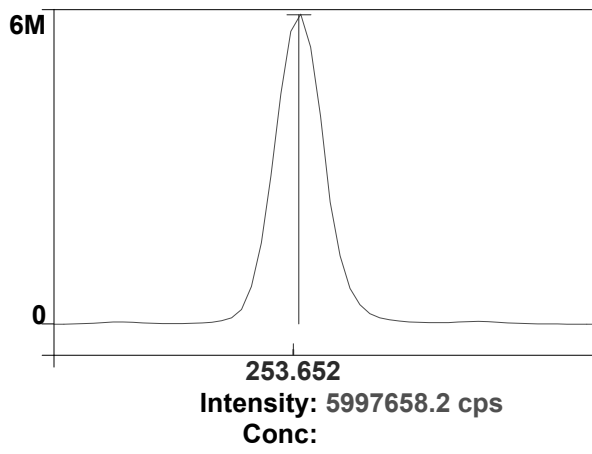


|                        |                       |                           |         |             |         |         |
|------------------------|-----------------------|---------------------------|---------|-------------|---------|---------|
| Co 228.616†            | 2.5                   | 0.0394 µg/L               | 0.31395 | 0.0394 ppb  | 0.31395 | 797.77% |
| QC value within limits | for Co 228.616        | Recovery = Not calculated |         |             |         |         |
| Cr 267.716†            | -8.6                  | -0.1053 µg/L              | 0.35525 | -0.1053 ppb | 0.35525 | 337.25% |
| QC value within limits | for Cr 267.716        | Recovery = Not calculated |         |             |         |         |
| Cu 324.752†            | 42.2                  | 0.1735 µg/L               | 0.06493 | 0.1735 ppb  | 0.06493 | 37.43%  |
| QC value within limits | for Cu 324.752        | Recovery = Not calculated |         |             |         |         |
| Fe 238.204 Radial†     | 0.6                   | 0.9671 µg/L               | 4.30641 | 0.9671 ppb  | 4.30641 | 445.29% |
| QC value within limits | for Fe 238.204 Radial | Recovery = Not calculated |         |             |         |         |
| K 766.490 Radial†      | 36.7                  | 20.014 µg/L               | 28.0314 | 20.014 ppb  | 28.0314 | 140.06% |
| QC value within limits | for K 766.490 Radial  | Recovery = Not calculated |         |             |         |         |
| Mg 279.077 IEC†        | -2.6                  | -15.973 µg/L              | 26.8212 | -15.973 ppb | 26.8212 | 167.92% |
| QC value within limits | for Mg 279.077 IEC    | Recovery = Not calculated |         |             |         |         |
| Mn 257.610†            | 55.9                  | 0.0557 µg/L               | 0.05024 | 0.0557 ppb  | 0.05024 | 90.14%  |
| QC value within limits | for Mn 257.610        | Recovery = Not calculated |         |             |         |         |
| Mo 202.031†            | -4.6                  | -0.1864 µg/L              | 0.37180 | -0.1864 ppb | 0.37180 | 199.50% |
| QC value within limits | for Mo 202.031        | Recovery = Not calculated |         |             |         |         |
| Na 589.592 Radial†     | 0.6                   | 25.512 µg/L               | 81.7676 | 25.512 ppb  | 81.7676 | 320.51% |
| QC value within limits | for Na 589.592 Radial | Recovery = Not calculated |         |             |         |         |
| Ni 231.604†            | 21.6                  | 0.3795 µg/L               | 0.18918 | 0.3795 ppb  | 0.18918 | 49.84%  |
| QC value within limits | for Ni 231.604        | Recovery = Not calculated |         |             |         |         |
| P 214.914†             | -18.7                 | -8.1217 µg/L              | 2.12859 | -8.1217 ppb | 2.12859 | 26.21%  |
| QC value within limits | for P 214.914         | Recovery = Not calculated |         |             |         |         |
| Pb 220.353†            | -12.5                 | -1.0485 µg/L              | 0.52170 | -1.0485 ppb | 0.52170 | 49.76%  |
| QC value within limits | for Pb 220.353        | Recovery = Not calculated |         |             |         |         |
| S 181.975 Axial†       | 9.0                   | 8.7784 µg/L               | 2.64450 | 8.7784 ppb  | 2.64450 | 30.13%  |
| QC value within limits | for S 181.975 Axial   | Recovery = Not calculated |         |             |         |         |
| Sb 206.836†            | -4.9                  | -1.0605 µg/L              | 0.93860 | -1.0605 ppb | 0.93860 | 88.51%  |
| QC value within limits | for Sb 206.836        | Recovery = Not calculated |         |             |         |         |
| Se 196.026†            | 6.3                   | 2.2844 µg/L               | 1.77206 | 2.2844 ppb  | 1.77206 | 77.57%  |
| QC value within limits | for Se 196.026        | Recovery = Not calculated |         |             |         |         |
| SiO2†                  | 61.2                  | 5.7533 µg/L               | 1.73693 | 5.7533 ppb  | 1.73693 | 30.19%  |
| QC value within limits | for SiO2              | Recovery = Not calculated |         |             |         |         |
| Si 251.611†            | 54.7                  | 1.9026 µg/L               | 0.49355 | 1.9026 ppb  | 0.49355 | 25.94%  |
| QC value within limits | for Si 251.611        | Recovery = Not calculated |         |             |         |         |
| Sn 189.927†            | -1.2                  | -0.1128 µg/L              | 0.11977 | -0.1128 ppb | 0.11977 | 106.22% |
| QC value within limits | for Sn 189.927        | Recovery = Not calculated |         |             |         |         |
| Sr 421.552†            | 15.6                  | 0.3988 µg/L               | 0.25122 | 0.3988 ppb  | 0.25122 | 62.99%  |
| QC value within limits | for Sr 421.552        | Recovery = Not calculated |         |             |         |         |
| Ti 334.940†            | 122.4                 | 0.2795 µg/L               | 0.00953 | 0.2795 ppb  | 0.00953 | 3.41%   |
| QC value within limits | for Ti 334.940        | Recovery = Not calculated |         |             |         |         |
| Tl 190.801†            | 6.2                   | 1.0213 µg/L               | 0.47836 | 1.0213 ppb  | 0.47836 | 46.84%  |
| QC value within limits | for Tl 190.801        | Recovery = Not calculated |         |             |         |         |
| U 367.007†             | -28.2                 | -5.167 µg/L               | 6.7099  | -5.167 ppb  | 6.7099  | 129.87% |
| QC value within limits | for U 367.007         | Recovery = Not calculated |         |             |         |         |
| V 292.402†             | -31.0                 | -0.2036 µg/L              | 0.34517 | -0.2036 ppb | 0.34517 | 169.54% |
| QC value within limits | for V 292.402         | Recovery = Not calculated |         |             |         |         |
| Zn 213.857†            | -144.6                | -0.7897 µg/L              | 0.02712 | -0.7897 ppb | 0.02712 | 3.43%   |
| QC value within limits | for Zn 213.857        | Recovery = Not calculated |         |             |         |         |

All analyte(s) passed QC.

Hg 253.652

Rep: 1



1

## =====

Reprocessing Begun

Logged In Analyst: lab

Technique: ICP Continuous

Results Data Set (original): 111116

Results Library (original): C:\pe\optima4\Results\Results.mdb

Results Data Set (reprocessed): 111116

Results Library (reprocessed): C:\pe\optima4\Results\Results.mdb

## =====

Method Loaded

Method Name: Gen Eng fast\_new SiU

Method Last Saved: 11/11/2016 09:54:24

IEC File: 101816.iec

MSF File:

Method Description:

| Analyte           | Calibration Equation | Processing | View   | Internal Standard | IEC |
|-------------------|----------------------|------------|--------|-------------------|-----|
| Ag 328.068        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Al 396.153Radial  | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | Yes |
| As 188.979        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| B 249.677         | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Ba 233.527        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Be 313.107        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Ca 317.933Radial  | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | No  |
| Cd 226.502        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Co 228.616        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Cr 267.716        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Cu 324.752        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Fe 238.204 Radial | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | No  |
| K 766.490 Radial  | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | Yes |
| Mg 279.077 IEC    | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | Yes |
| Mn 257.610        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Mo 202.031        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Na 589.592 Radial | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | No  |
| Ni 231.604        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| P 214.914         | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Pb 220.353        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| S 181.975 Axial   | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Sb 206.836        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Sc 361.383        | Lin Thru 0           | Peak Area  | Axial  | n/a               | n/a |
| Sc RADIAL         | Lin, Calc Int        | Peak Area  | Radial | n/a               | n/a |
| Se 196.026        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| SiO2              | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Si 251.611        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Sn 189.927        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Sr 421.552        | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | Yes |
| Ti 334.940        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Tl 190.801        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| U 367.007         | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| V 292.402         | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |
| Y 371.029         | Lin, Calc Int        | Peak Area  | Axial  | n/a               | n/a |
| Zn 213.857        | Lin Thru 0           | Peak Area  | Axial  | Sc 361.383        | Yes |

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Sequence No.: 1

Autosampler Location: 8

Sample ID: S0

Date Collected: 11/11/2016 09:06:49

Analyst:

Data Type: Reprocessed on 11/11/2016 09:56:25

Logged In Analyst (Original) : lab

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

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Replicate Data: S0

| Repl# | Analyte           | Net Intensity | Corrected Intensity | Conc.  | Calib. Units | Analysis Time |
|-------|-------------------|---------------|---------------------|--------|--------------|---------------|
| 1     | Sc 361.383        | 1333918.1     | 1333918.1           | 100.20 | %            | 09:08:28      |
| 1     | Sc RADIAL         | 72181.7       | 72181.7             | 100    | %            | 09:07:20      |
| 1     | Y 371.029         | 726137.2      | 726137.2            | 100.23 | %            | 09:08:28      |
| 1     | Ag 328.068†       | -1909.3       | -1905.4             | [0.00] | µg/L         | 09:08:30      |
| 1     | Al 396.153Radial† | 98.1          | 97.9                | [0.00] | µg/L         | 09:07:40      |
| 1     | As 188.979†       | -24.5         | -24.4               | [0.00] | µg/L         | 09:08:50      |

|   |                    |           |           |        |      |          |
|---|--------------------|-----------|-----------|--------|------|----------|
| 1 | B 249.677†         | 913.1     | 911.3     | [0.00] | µg/L | 09:08:30 |
| 1 | Ba 233.527†        | -238.4    | -238.0    | [0.00] | µg/L | 09:08:50 |
| 1 | Be 313.107†        | -3685.1   | -3677.6   | [0.00] | µg/L | 09:08:30 |
| 1 | Ca 317.933Radial†  | 349.6     | 348.9     | [0.00] | µg/L | 09:07:40 |
| 1 | Cd 226.502†        | -176.7    | -176.3    | [0.00] | µg/L | 09:08:50 |
| 1 | Co 228.616†        | -78.1     | -78.0     | [0.00] | µg/L | 09:08:50 |
| 1 | Cr 267.716†        | 124.8     | 124.6     | [0.00] | µg/L | 09:08:50 |
| 1 | Cu 324.752†        | 5919.7    | 5907.6    | [0.00] | µg/L | 09:08:30 |
| 1 | Fe 238.204 Radial† | -501.1    | -500.1    | [0.00] | µg/L | 09:07:40 |
| 1 | K 766.490 Radial†  | 1059.1    | 1057.0    | [0.00] | µg/L | 09:07:20 |
| 1 | Mg 279.077 IEC†    | 22.7      | 22.7      | [0.00] | µg/L | 09:07:40 |
| 1 | Mn 257.610†        | 118.5     | 118.3     | [0.00] | µg/L | 09:08:50 |
| 1 | Mo 202.031†        | -21.5     | -21.5     | [0.00] | µg/L | 09:08:50 |
| 1 | Na 589.592 Radial† | 130.2     | 130.0     | [0.00] | µg/L | 09:07:20 |
| 1 | Ni 231.604†        | -206.9    | -206.5    | [0.00] | µg/L | 09:08:50 |
| 1 | P 214.914†         | -98.8     | -98.6     | [0.00] | µg/L | 09:08:50 |
| 1 | Pb 220.353†        | 58.8      | 58.6      | [0.00] | µg/L | 09:08:50 |
| 1 | S 181.975 Axial†   | 99.8      | 99.6      | [0.00] | µg/L | 09:08:50 |
| 1 | Sb 206.836†        | 48.5      | 48.4      | [0.00] | µg/L | 09:08:50 |
| 1 | Se 196.026†        | 4.1       | 4.1       | [0.00] | µg/L | 09:08:50 |
| 1 | SiO2†              | 3015.6    | 3009.4    | [0.00] | µg/L | 09:08:30 |
| 1 | Si 251.611†        | 583.7     | 582.5     | [0.00] | µg/L | 09:08:30 |
| 1 | Sn 189.927†        | -36.4     | -36.3     | [0.00] | µg/L | 09:08:50 |
| 1 | Sr 421.552†        | -475.6    | -474.6    | [0.00] | µg/L | 09:07:40 |
| 1 | Ti 334.940†        | -840.7    | -839.0    | [0.00] | µg/L | 09:08:30 |
| 1 | Tl 190.801†        | -97.6     | -97.4     | [0.00] | µg/L | 09:08:50 |
| 1 | U 367.007†         | -366.1    | -365.3    | [0.00] | µg/L | 09:08:30 |
| 1 | V 292.402†         | 205.4     | 205.0     | [0.00] | µg/L | 09:08:30 |
| 1 | Zn 213.857†        | 51.5      | 51.4      | [0.00] | µg/L | 09:08:50 |
| 2 | Sc 361.383         | 1338514.0 | 1338514.0 | 100.55 | %    | 09:08:52 |
| 2 | Sc RADIAL          | 71837.9   | 71837.9   | 99.7   | %    | 09:07:42 |
| 2 | Y 371.029          | 728356.5  | 728356.5  | 100.54 | %    | 09:08:52 |
| 2 | Ag 328.068†        | -1839.0   | -1828.9   | [0.00] | µg/L | 09:08:54 |
| 2 | Al 396.153Radial†  | 112.3     | 112.6     | [0.00] | µg/L | 09:08:02 |
| 2 | As 188.979†        | -34.5     | -34.3     | [0.00] | µg/L | 09:09:14 |
| 2 | B 249.677†         | 897.8     | 892.9     | [0.00] | µg/L | 09:08:54 |
| 2 | Ba 233.527†        | -252.9    | -251.6    | [0.00] | µg/L | 09:09:14 |
| 2 | Be 313.107†        | -3680.9   | -3660.8   | [0.00] | µg/L | 09:08:54 |
| 2 | Ca 317.933Radial†  | 335.5     | 336.5     | [0.00] | µg/L | 09:08:02 |
| 2 | Cd 226.502†        | -180.0    | -179.1    | [0.00] | µg/L | 09:09:14 |
| 2 | Co 228.616†        | -104.1    | -103.5    | [0.00] | µg/L | 09:09:14 |
| 2 | Cr 267.716†        | 140.7     | 139.9     | [0.00] | µg/L | 09:09:14 |
| 2 | Cu 324.752†        | 5674.2    | 5643.2    | [0.00] | µg/L | 09:08:54 |
| 2 | Fe 238.204 Radial† | -521.2    | -522.6    | [0.00] | µg/L | 09:08:02 |
| 2 | K 766.490 Radial†  | 1106.8    | 1109.9    | [0.00] | µg/L | 09:07:42 |
| 2 | Mg 279.077 IEC†    | 33.1      | 33.2      | [0.00] | µg/L | 09:08:02 |
| 2 | Mn 257.610†        | 165.9     | 165.0     | [0.00] | µg/L | 09:09:14 |
| 2 | Mo 202.031†        | -36.2     | -36.0     | [0.00] | µg/L | 09:09:14 |
| 2 | Na 589.592 Radial† | 37.3      | 37.4      | [0.00] | µg/L | 09:07:42 |
| 2 | Ni 231.604†        | -218.3    | -217.1    | [0.00] | µg/L | 09:09:14 |
| 2 | P 214.914†         | -108.8    | -108.2    | [0.00] | µg/L | 09:09:14 |
| 2 | Pb 220.353†        | 83.1      | 82.7      | [0.00] | µg/L | 09:09:14 |
| 2 | S 181.975 Axial†   | 102.0     | 101.4     | [0.00] | µg/L | 09:09:14 |
| 2 | Sb 206.836†        | 34.2      | 34.0      | [0.00] | µg/L | 09:09:14 |
| 2 | Se 196.026†        | -1.1      | -1.1      | [0.00] | µg/L | 09:09:14 |
| 2 | SiO2†              | 3070.7    | 3054.0    | [0.00] | µg/L | 09:08:54 |
| 2 | Si 251.611†        | 542.8     | 539.8     | [0.00] | µg/L | 09:08:54 |
| 2 | Sn 189.927†        | -22.2     | -22.0     | [0.00] | µg/L | 09:09:14 |
| 2 | Sr 421.552†        | -446.3    | -447.6    | [0.00] | µg/L | 09:08:02 |
| 2 | Ti 334.940†        | -856.5    | -851.8    | [0.00] | µg/L | 09:08:54 |
| 2 | Tl 190.801†        | -77.0     | -76.6     | [0.00] | µg/L | 09:09:14 |
| 2 | U 367.007†         | -192.0    | -190.9    | [0.00] | µg/L | 09:08:54 |
| 2 | V 292.402†         | 45.6      | 45.4      | [0.00] | µg/L | 09:08:54 |
| 2 | Zn 213.857†        | 55.5      | 55.2      | [0.00] | µg/L | 09:09:14 |
| 3 | Sc 361.383         | 1321180.6 | 1321180.6 | 99.247 | %    | 09:09:16 |
| 3 | Sc RADIAL          | 72094.0   | 72094.0   | 100    | %    | 09:08:04 |
| 3 | Y 371.029          | 718845.5  | 718845.5  | 99.227 | %    | 09:09:16 |
| 3 | Ag 328.068†        | -1923.5   | -1938.1   | [0.00] | µg/L | 09:09:18 |
| 3 | Al 396.153Radial†  | 94.6      | 94.6      | [0.00] | µg/L | 09:08:24 |
| 3 | As 188.979†        | -30.9     | -31.2     | [0.00] | µg/L | 09:09:38 |
| 3 | B 249.677†         | 844.1     | 850.5     | [0.00] | µg/L | 09:09:18 |

|   |                    |         |         |        |      |          |
|---|--------------------|---------|---------|--------|------|----------|
| 3 | Ba 233.527†        | -231.0  | -232.8  | [0.00] | µg/L | 09:09:38 |
| 3 | Be 313.107†        | -3602.1 | -3629.4 | [0.00] | µg/L | 09:09:18 |
| 3 | Ca 317.933Radial†  | 344.4   | 344.2   | [0.00] | µg/L | 09:08:24 |
| 3 | Cd 226.502†        | -183.3  | -184.7  | [0.00] | µg/L | 09:09:38 |
| 3 | Co 228.616†        | -92.4   | -93.1   | [0.00] | µg/L | 09:09:38 |
| 3 | Cr 267.716†        | 121.6   | 122.5   | [0.00] | µg/L | 09:09:38 |
| 3 | Cu 324.752†        | 5736.4  | 5779.9  | [0.00] | µg/L | 09:09:18 |
| 3 | Fe 238.204 Radial† | -531.9  | -531.5  | [0.00] | µg/L | 09:08:24 |
| 3 | K 766.490 Radial†  | 1044.6  | 1043.8  | [0.00] | µg/L | 09:08:04 |
| 3 | Mg 279.077 IEC†    | 24.5    | 24.5    | [0.00] | µg/L | 09:08:24 |
| 3 | Mn 257.610†        | 171.3   | 172.6   | [0.00] | µg/L | 09:09:38 |
| 3 | Mo 202.031†        | -31.5   | -31.7   | [0.00] | µg/L | 09:09:38 |
| 3 | Na 589.592 Radial† | -48.2   | -48.1   | [0.00] | µg/L | 09:08:04 |
| 3 | Ni 231.604†        | -168.3  | -169.6  | [0.00] | µg/L | 09:09:38 |
| 3 | P 214.914†         | -77.9   | -78.5   | [0.00] | µg/L | 09:09:38 |
| 3 | Pb 220.353†        | 79.2    | 79.8    | [0.00] | µg/L | 09:09:38 |
| 3 | S 181.975 Axial†   | 106.2   | 107.0   | [0.00] | µg/L | 09:09:38 |
| 3 | Sb 206.836†        | 50.1    | 50.5    | [0.00] | µg/L | 09:09:38 |
| 3 | Se 196.026†        | 20.8    | 21.0    | [0.00] | µg/L | 09:09:38 |
| 3 | SiO2†              | 2973.4  | 2995.9  | [0.00] | µg/L | 09:09:18 |
| 3 | Si 251.611†        | 626.3   | 631.1   | [0.00] | µg/L | 09:09:18 |
| 3 | Sn 189.927†        | -23.9   | -24.1   | [0.00] | µg/L | 09:09:38 |
| 3 | Sr 421.552†        | -455.3  | -454.9  | [0.00] | µg/L | 09:08:24 |
| 3 | Ti 334.940†        | -969.6  | -977.0  | [0.00] | µg/L | 09:09:18 |
| 3 | Tl 190.801†        | -83.5   | -84.1   | [0.00] | µg/L | 09:09:38 |
| 3 | U 367.007†         | -294.2  | -296.4  | [0.00] | µg/L | 09:09:18 |
| 3 | V 292.402†         | 59.2    | 59.6    | [0.00] | µg/L | 09:09:18 |
| 3 | Zn 213.857†        | 32.7    | 33.0    | [0.00] | µg/L | 09:09:38 |

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Mean Data: S0

| Analyte            | Mean Corrected<br>Intensity | Std.Dev. | RSD     | Conc.  | Calib<br>Units |
|--------------------|-----------------------------|----------|---------|--------|----------------|
| Sc 361.383         | 1331204.2                   | 8979.71  | 0.67%   | 100.00 | %              |
| Sc RADIAL          | 72037.9                     | 178.61   | 0.25%   | 100    | %              |
| Y 371.029          | 724446.4                    | 4975.84  | 0.69%   | 100.00 | %              |
| Ag 328.068†        | -1890.8                     | 56.03    | 2.96%   | [0.00] | µg/L           |
| Al 396.153Radial†  | 101.7                       | 9.58     | 9.42%   | [0.00] | µg/L           |
| As 188.979†        | -29.9                       | 5.05     | 16.85%  | [0.00] | µg/L           |
| B 249.677†         | 884.9                       | 31.17    | 3.52%   | [0.00] | µg/L           |
| Ba 233.527†        | -240.8                      | 9.70     | 4.03%   | [0.00] | µg/L           |
| Be 313.107†        | -3655.9                     | 24.47    | 0.67%   | [0.00] | µg/L           |
| Ca 317.933Radial†  | 343.2                       | 6.30     | 1.84%   | [0.00] | µg/L           |
| Cd 226.502†        | -180.0                      | 4.26     | 2.36%   | [0.00] | µg/L           |
| Co 228.616†        | -91.5                       | 12.82    | 14.01%  | [0.00] | µg/L           |
| Cr 267.716†        | 129.0                       | 9.50     | 7.36%   | [0.00] | µg/L           |
| Cu 324.752†        | 5776.9                      | 132.24   | 2.29%   | [0.00] | µg/L           |
| Fe 238.204 Radial† | -518.1                      | 16.17    | 3.12%   | [0.00] | µg/L           |
| K 766.490 Radial†  | 1070.2                      | 34.97    | 3.27%   | [0.00] | µg/L           |
| Mg 279.077 IEC†    | 26.8                        | 5.65     | 21.06%  | [0.00] | µg/L           |
| Mn 257.610†        | 152.0                       | 29.42    | 19.36%  | [0.00] | µg/L           |
| Mo 202.031†        | -29.7                       | 7.45     | 25.05%  | [0.00] | µg/L           |
| Na 589.592 Radial† | 39.8                        | 89.08    | 224.03% | [0.00] | µg/L           |
| Ni 231.604†        | -197.7                      | 24.95    | 12.62%  | [0.00] | µg/L           |
| P 214.914†         | -95.1                       | 15.17    | 15.96%  | [0.00] | µg/L           |
| Pb 220.353†        | 73.7                        | 13.13    | 17.81%  | [0.00] | µg/L           |
| S 181.975 Axial†   | 102.7                       | 3.86     | 3.76%   | [0.00] | µg/L           |
| Sb 206.836†        | 44.3                        | 8.99     | 20.29%  | [0.00] | µg/L           |
| Se 196.026†        | 8.0                         | 11.55    | 144.14% | [0.00] | µg/L           |
| SiO2†              | 3019.8                      | 30.37    | 1.01%   | [0.00] | µg/L           |
| Si 251.611†        | 584.5                       | 45.65    | 7.81%   | [0.00] | µg/L           |
| Sn 189.927†        | -27.5                       | 7.72     | 28.08%  | [0.00] | µg/L           |
| Sr 421.552†        | -459.0                      | 13.98    | 3.05%   | [0.00] | µg/L           |
| Ti 334.940†        | -889.3                      | 76.22    | 8.57%   | [0.00] | µg/L           |
| Tl 190.801†        | -86.1                       | 10.56    | 12.27%  | [0.00] | µg/L           |
| U 367.007†         | -284.2                      | 87.82    | 30.90%  | [0.00] | µg/L           |
| V 292.402†         | 103.3                       | 88.31    | 85.46%  | [0.00] | µg/L           |
| Zn 213.857†        | 46.5                        | 11.88    | 25.55%  | [0.00] | µg/L           |

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|             |        |       |        |        |      |
|-------------|--------|-------|--------|--------|------|
| U 367.007†  | -284.2 | 87.82 | 30.90% | [0.00] | µg/L |
| V 292.402†  | 103.3  | 88.31 | 85.46% | [0.00] | µg/L |
| Zn 213.857† | 46.5   | 11.88 | 25.55% | [0.00] | µg/L |

Sequence No.: 2

Sample ID: S0.1

Analyst:

Logged In Analyst (Original) : lab

Initial Sample Wt:

Dilution:

Autosampler Location: 2

Date Collected: 11/11/2016 09:09:46

Data Type: Reprocessed on 11/11/2016 09:56:26

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: S0.1

| Repl# | Analyte           | Net Intensity | Corrected Intensity | Conc. Units   | Analysis Time |
|-------|-------------------|---------------|---------------------|---------------|---------------|
| 1     | Sc 361.383        | 1349630.6     | 1349630.6           | 101.38 %      | 09:10:20      |
| 1     | Sc RADIAL         | 71594.9       | 71594.9             | 99.4 %        | 09:10:12      |
| 1     | Y 371.029         | 733093.0      | 733093.0            | 101.19 %      | 09:10:20      |
| 1     | Ag 328.068†       | 17617.4       | 19267.7             | [100] µg/L    | 09:10:20      |
| 1     | As 188.979†       | 151.4         | 179.3               | [100] µg/L    | 09:10:40      |
| 1     | B 249.677†        | 7735.1        | 6744.6              | [100] µg/L    | 09:10:20      |
| 1     | Ba 233.527†       | 11167.2       | 11255.5             | [100] µg/L    | 09:10:40      |
| 1     | Be 313.107†       | 370466.2      | 369064.2            | [100] µg/L    | 09:10:20      |
| 1     | Cd 226.502†       | 13567.8       | 13562.6             | [100] µg/L    | 09:10:20      |
| 1     | Co 228.616†       | 6808.6        | 6807.1              | [100] µg/L    | 09:10:40      |
| 1     | Cr 267.716†       | 8946.3        | 8695.1              | [100] µg/L    | 09:10:20      |
| 1     | Cu 324.752†       | 28197.0       | 22035.1             | [100] µg/L    | 09:10:20      |
| 1     | K 766.490 Radial† | 2920.7        | 1868.5              | [1000] µg/L   | 09:10:12      |
| 1     | Mn 257.610†       | 59733.0       | 58765.6             | [100] µg/L    | 09:10:20      |
| 1     | Mo 202.031†       | 1922.0        | 1925.5              | [100] µg/L    | 09:10:40      |
| 1     | Ni 231.604†       | 6230.0        | 6342.7              | [100] µg/L    | 09:10:40      |
| 1     | P 214.914†        | 1300.2        | 1377.6              | [500] µg/L    | 09:10:40      |
| 1     | Pb 220.353†       | 1105.6        | 1016.8              | [100] µg/L    | 09:10:40      |
| 1     | S 181.975 Axial†  | 271.4         | 165.1               | [200] µg/L    | 09:10:40      |
| 1     | Sb 206.836†       | 544.7         | 492.9               | [100] µg/L    | 09:10:40      |
| 1     | Se 196.026†       | 184.7         | 174.2               | [100] µg/L    | 09:10:40      |
| 1     | SiO2†             | 12613.1       | 9421.1              | [1069.5] µg/L | 09:10:20      |
| 1     | Si 251.611†       | 30002.9       | 29008.8             | [500] µg/L    | 09:10:20      |
| 1     | Sn 189.927†       | 762.5         | 779.5               | [100] µg/L    | 09:10:40      |
| 1     | Sr 421.552†       | 34418.7       | 35090.7             | [100] µg/L    | 09:10:12      |
| 1     | Ti 334.940†       | 70228.9       | 70159.3             | [100] µg/L    | 09:10:20      |
| 1     | Tl 190.801†       | 237.8         | 320.6               | [100] µg/L    | 09:10:40      |
| 1     | U 367.007†        | 547.8         | 824.6               | [100] µg/L    | 09:10:20      |
| 1     | V 292.402†        | 22557.6       | 22146.3             | [100] µg/L    | 09:10:20      |
| 1     | Zn 213.857†       | 18271.5       | 17975.5             | [100] µg/L    | 09:10:20      |
| 2     | Sc 361.383        | 1346498.3     | 1346498.3           | 101.15 %      | 09:10:42      |
| 2     | Sc RADIAL         | 71408.8       | 71408.8             | 99.1 %        | 09:10:14      |
| 2     | Y 371.029         | 731333.1      | 731333.1            | 100.95 %      | 09:10:42      |
| 2     | Ag 328.068†       | 17598.1       | 19289.1             | [100] µg/L    | 09:10:42      |
| 2     | As 188.979†       | 153.6         | 181.8               | [100] µg/L    | 09:11:03      |
| 2     | B 249.677†        | 7685.0        | 6712.8              | [100] µg/L    | 09:10:42      |
| 2     | Ba 233.527†       | 11191.8       | 11305.5             | [100] µg/L    | 09:11:03      |
| 2     | Be 313.107†       | 368119.9      | 367594.5            | [100] µg/L    | 09:10:42      |
| 2     | Cd 226.502†       | 13356.2       | 13384.5             | [100] µg/L    | 09:10:42      |
| 2     | Co 228.616†       | 6807.4        | 6821.6              | [100] µg/L    | 09:11:03      |
| 2     | Cr 267.716†       | 8780.7        | 8552.0              | [100] µg/L    | 09:10:42      |
| 2     | Cu 324.752†       | 28156.8       | 22060.0             | [100] µg/L    | 09:10:42      |
| 2     | K 766.490 Radial† | 2991.8        | 1947.9              | [1000] µg/L   | 09:10:14      |
| 2     | Mn 257.610†       | 59014.5       | 58192.3             | [100] µg/L    | 09:10:42      |
| 2     | Mo 202.031†       | 1906.3        | 1914.4              | [100] µg/L    | 09:11:03      |
| 2     | Ni 231.604†       | 6213.9        | 6341.0              | [100] µg/L    | 09:11:03      |
| 2     | P 214.914†        | 1312.4        | 1392.6              | [500] µg/L    | 09:11:03      |
| 2     | Pb 220.353†       | 1090.0        | 1003.9              | [100] µg/L    | 09:11:03      |
| 2     | S 181.975 Axial†  | 271.4         | 165.6               | [200] µg/L    | 09:11:03      |
| 2     | Sb 206.836†       | 559.4         | 508.7               | [100] µg/L    | 09:11:03      |
| 2     | Se 196.026†       | 189.1         | 179.0               | [100] µg/L    | 09:11:03      |
| 2     | SiO2†             | 12649.7       | 9486.2              | [1069.5] µg/L | 09:10:42      |
| 2     | Si 251.611†       | 29896.0       | 28972.0             | [500] µg/L    | 09:10:42      |
| 2     | Sn 189.927†       | 767.1         | 785.8               | [100] µg/L    | 09:11:03      |
| 2     | Sr 421.552†       | 33930.3       | 34688.3             | [100] µg/L    | 09:10:14      |
| 2     | Ti 334.940†       | 69908.9       | 70004.1             | [100] µg/L    | 09:10:42      |
| 2     | Tl 190.801†       | 243.1         | 326.4               | [100] µg/L    | 09:11:03      |
| 2     | U 367.007†        | 508.6         | 787.1               | [100] µg/L    | 09:10:42      |

|   |                   |           |           |          |      |          |
|---|-------------------|-----------|-----------|----------|------|----------|
| 2 | V 292.402†        | 22386.7   | 22029.1   | [100]    | µg/L | 09:10:42 |
| 2 | Zn 213.857†       | 18160.9   | 17908.1   | [100]    | µg/L | 09:10:42 |
| 3 | Sc 361.383        | 1351469.7 | 1351469.7 | 101.52   | %    | 09:11:05 |
| 3 | Sc RADIAL         | 71484.1   | 71484.1   | 99.2     | %    | 09:10:16 |
| 3 | Y 371.029         | 733402.1  | 733402.1  | 101.24   | %    | 09:11:05 |
| 3 | Ag 328.068†       | 17621.4   | 19248.0   | [100]    | µg/L | 09:11:05 |
| 3 | As 188.979†       | 153.5     | 181.1     | [100]    | µg/L | 09:11:25 |
| 3 | B 249.677†        | 7673.2    | 6673.3    | [100]    | µg/L | 09:11:05 |
| 3 | Ba 233.527†       | 11185.6   | 11258.6   | [100]    | µg/L | 09:11:25 |
| 3 | Be 313.107†       | 368174.7  | 366309.8  | [100]    | µg/L | 09:11:05 |
| 3 | Cd 226.502†       | 13405.5   | 13384.5   | [100]    | µg/L | 09:11:05 |
| 3 | Co 228.616†       | 6804.0    | 6793.5    | [100]    | µg/L | 09:11:25 |
| 3 | Cr 267.716†       | 8910.4    | 8647.8    | [100]    | µg/L | 09:11:05 |
| 3 | Cu 324.752†       | 28176.0   | 21976.6   | [100]    | µg/L | 09:11:05 |
| 3 | K 766.490 Radial† | 2937.2    | 1889.8    | [1000]   | µg/L | 09:10:16 |
| 3 | Mn 257.610†       | 59244.2   | 58203.9   | [100]    | µg/L | 09:11:05 |
| 3 | Mo 202.031†       | 1916.1    | 1917.1    | [100]    | µg/L | 09:11:25 |
| 3 | Ni 231.604†       | 6272.0    | 6375.7    | [100]    | µg/L | 09:11:25 |
| 3 | P 214.914†        | 1316.6    | 1391.9    | [500]    | µg/L | 09:11:25 |
| 3 | Pb 220.353†       | 1111.9    | 1021.5    | [100]    | µg/L | 09:11:25 |
| 3 | S 181.975 Axial†  | 276.0     | 169.1     | [200]    | µg/L | 09:11:25 |
| 3 | Sb 206.836†       | 531.8     | 479.5     | [100]    | µg/L | 09:11:25 |
| 3 | Se 196.026†       | 195.1     | 184.2     | [100]    | µg/L | 09:11:25 |
| 3 | SiO2†             | 12587.3   | 9378.8    | [1069.5] | µg/L | 09:11:05 |
| 3 | Si 251.611†       | 29905.3   | 28872.4   | [500]    | µg/L | 09:11:05 |
| 3 | Sn 189.927†       | 770.8     | 786.8     | [100]    | µg/L | 09:11:25 |
| 3 | Sr 421.552†       | 34303.4   | 35028.2   | [100]    | µg/L | 09:10:16 |
| 3 | Ti 334.940†       | 70027.8   | 69867.0   | [100]    | µg/L | 09:11:05 |
| 3 | Tl 190.801†       | 228.6     | 311.2     | [100]    | µg/L | 09:11:25 |
| 3 | U 367.007†        | 567.4     | 843.1     | [100]    | µg/L | 09:11:05 |
| 3 | V 292.402†        | 22510.6   | 22069.7   | [100]    | µg/L | 09:11:05 |
| 3 | Zn 213.857†       | 18135.6   | 17817.2   | [100]    | µg/L | 09:11:05 |

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Mean Data: S0.1

| Analyte           | Mean Corrected Intensity | Std.Dev. | RSD   | Conc.    | Calib Units |
|-------------------|--------------------------|----------|-------|----------|-------------|
| Sc 361.383        | 1349199.5                | 2513.56  | 0.19% | 101.35   | %           |
| Sc RADIAL         | 71495.9                  | 93.64    | 0.13% | 99.2     | %           |
| Y 371.029         | 732609.4                 | 1116.04  | 0.15% | 101.13   | %           |
| Ag 328.068†       | 19268.3                  | 20.52    | 0.11% | [100]    | µg/L        |
| As 188.979†       | 180.7                    | 1.29     | 0.71% | [100]    | µg/L        |
| B 249.677†        | 6710.2                   | 35.71    | 0.53% | [100]    | µg/L        |
| Ba 233.527†       | 11273.2                  | 28.02    | 0.25% | [100]    | µg/L        |
| Be 313.107†       | 367656.2                 | 1378.25  | 0.37% | [100]    | µg/L        |
| Cd 226.502†       | 13443.9                  | 102.79   | 0.76% | [100]    | µg/L        |
| Co 228.616†       | 6807.4                   | 14.04    | 0.21% | [100]    | µg/L        |
| Cr 267.716†       | 8631.6                   | 72.93    | 0.84% | [100]    | µg/L        |
| Cu 324.752†       | 22023.9                  | 42.85    | 0.19% | [100]    | µg/L        |
| K 766.490 Radial† | 1902.1                   | 41.11    | 2.16% | [1000]   | µg/L        |
| Mn 257.610†       | 58387.2                  | 327.68   | 0.56% | [100]    | µg/L        |
| Mo 202.031†       | 1919.0                   | 5.80     | 0.30% | [100]    | µg/L        |
| Ni 231.604†       | 6353.1                   | 19.53    | 0.31% | [100]    | µg/L        |
| P 214.914†        | 1387.3                   | 8.48     | 0.61% | [500]    | µg/L        |
| Pb 220.353†       | 1014.1                   | 9.13     | 0.90% | [100]    | µg/L        |
| S 181.975 Axial†  | 166.6                    | 2.20     | 1.32% | [200]    | µg/L        |
| Sb 206.836†       | 493.7                    | 14.62    | 2.96% | [100]    | µg/L        |
| Se 196.026†       | 179.1                    | 5.01     | 2.80% | [100]    | µg/L        |
| SiO2†             | 9428.7                   | 54.13    | 0.57% | [1069.5] | µg/L        |
| Si 251.611†       | 28951.0                  | 70.58    | 0.24% | [500]    | µg/L        |
| Sn 189.927†       | 784.0                    | 3.93     | 0.50% | [100]    | µg/L        |
| Sr 421.552†       | 34935.7                  | 216.55   | 0.62% | [100]    | µg/L        |
| Ti 334.940†       | 70010.1                  | 146.26   | 0.21% | [100]    | µg/L        |
| Tl 190.801†       | 319.4                    | 7.66     | 2.40% | [100]    | µg/L        |
| U 367.007†        | 818.2                    | 28.56    | 3.49% | [100]    | µg/L        |
| V 292.402†        | 22081.7                  | 59.50    | 0.27% | [100]    | µg/L        |
| Zn 213.857†       | 17900.3                  | 79.46    | 0.44% | [100]    | µg/L        |



Sequence No.: 3  
 Sample ID: S0.5  
 Analyst:  
 Logged In Analyst (Original) : lab  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 3  
 Date Collected: 11/11/2016 09:11:32  
 Data Type: Reprocessed on 11/11/2016 09:56:27  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: S0.5

| Repl# | Analyte           | Net<br>Intensity | Corrected<br>Intensity | Conc.<br>Units | Calib. | Analysis<br>Time |
|-------|-------------------|------------------|------------------------|----------------|--------|------------------|
| 1     | Sc 361.383        | 1372805.2        | 1372805.2              | 103.13 %       |        | 09:12:10         |
| 1     | Sc RADIAL         | 72442.9          | 72442.9                | 101 %          |        | 09:11:59         |
| 1     | Y 371.029         | 737043.1         | 737043.1               | 101.74 %       |        | 09:12:10         |
| 1     | Ag 328.068†       | 94888.3          | 93903.6                | [500] µg/L     |        | 09:12:13         |
| 1     | Al 396.153Radial† | 14038.8          | 13858.7                | [5000] µg/L    |        | 09:11:59         |
| 1     | As 188.979†       | 900.7            | 903.4                  | [500] µg/L     |        | 09:12:33         |
| 1     | B 249.677†        | 35746.5          | 33778.4                | [500] µg/L     |        | 09:12:13         |
| 1     | Ba 233.527†       | 55698.8          | 54251.7                | [500] µg/L     |        | 09:12:13         |
| 1     | Be 313.107†       | 1862339.1        | 1809559.5              | [500] µg/L     |        | 09:12:10         |
| 1     | Ca 317.933Radial† | 46335.4          | 45733.2                | [5000] µg/L    |        | 09:11:59         |
| 1     | Cd 226.502†       | 65766.7          | 63953.7                | [500] µg/L     |        | 09:12:13         |
| 1     | Co 228.616†       | 33697.3          | 32767.7                | [500] µg/L     |        | 09:12:13         |
| 1     | Cr 267.716†       | 42526.1          | 41108.4                | [500] µg/L     |        | 09:12:13         |
| 1     | Cu 324.752†       | 118303.5         | 108941.6               | [500] µg/L     |        | 09:12:13         |
| 1     | K 766.490 Radial† | 10604.0          | 9474.5                 | [5000] µg/L    |        | 09:11:59         |
| 1     | Mg 279.077 IEC†   | 9446.4           | 9366.8                 | [5000] µg/L    |        | 09:11:59         |
| 1     | Mn 257.610†       | 285247.0         | 276451.1               | [500] µg/L     |        | 09:12:13         |
| 1     | Mo 202.031†       | 9610.8           | 9349.3                 | [500] µg/L     |        | 09:12:33         |
| 1     | Ni 231.604†       | 31316.8          | 30565.6                | [500] µg/L     |        | 09:12:13         |
| 1     | P 214.914†        | 6886.7           | 6773.1                 | [2500] µg/L    |        | 09:12:33         |
| 1     | Pb 220.353†       | 5064.9           | 4837.7                 | [500] µg/L     |        | 09:12:33         |
| 1     | S 181.975 Axial†  | 992.9            | 860.2                  | [1000] µg/L    |        | 09:12:33         |
| 1     | Sb 206.836†       | 2636.6           | 2512.4                 | [500] µg/L     |        | 09:12:33         |
| 1     | Se 196.026†       | 965.0            | 927.8                  | [500] µg/L     |        | 09:12:33         |
| 1     | SiO2†             | 52693.8          | 48077.3                | [5347.5] µg/L  |        | 09:12:13         |
| 1     | Si 251.611†       | 152064.2         | 146871.7               | [2500] µg/L    |        | 09:12:13         |
| 1     | Sn 189.927†       | 3923.8           | 3832.4                 | [500] µg/L     |        | 09:12:33         |
| 1     | Sr 421.552†       | 169188.9         | 168702.1               | [500] µg/L     |        | 09:11:57         |
| 1     | Ti 334.940†       | 354708.9         | 344849.2               | [500] µg/L     |        | 09:12:10         |
| 1     | Tl 190.801†       | 1557.6           | 1596.5                 | [500] µg/L     |        | 09:12:33         |
| 1     | U 367.007†        | 3682.0           | 3854.6                 | [500] µg/L     |        | 09:12:13         |
| 1     | V 292.402†        | 111384.6         | 107905.9               | [500] µg/L     |        | 09:12:13         |
| 1     | Zn 213.857†       | 88461.4          | 85734.2                | [500] µg/L     |        | 09:12:13         |
| 2     | Sc 361.383        | 1348205.6        | 1348205.6              | 101.28 %       |        | 09:12:35         |
| 2     | Sc RADIAL         | 71341.1          | 71341.1                | 99.0 %         |        | 09:12:03         |
| 2     | Y 371.029         | 723715.4         | 723715.4               | 99.899 %       |        | 09:12:35         |
| 2     | Ag 328.068†       | 94804.1          | 95499.4                | [500] µg/L     |        | 09:12:37         |
| 2     | Al 396.153Radial† | 13651.6          | 13683.3                | [5000] µg/L    |        | 09:12:03         |
| 2     | As 188.979†       | 888.3            | 907.0                  | [500] µg/L     |        | 09:12:57         |
| 2     | B 249.677†        | 35870.4          | 34533.2                | [500] µg/L     |        | 09:12:37         |
| 2     | Ba 233.527†       | 55852.4          | 55388.9                | [500] µg/L     |        | 09:12:37         |
| 2     | Be 313.107†       | 1842934.8        | 1823350.6              | [500] µg/L     |        | 09:12:35         |
| 2     | Ca 317.933Radial† | 44684.4          | 44777.6                | [5000] µg/L    |        | 09:12:03         |
| 2     | Cd 226.502†       | 65998.8          | 65346.6                | [500] µg/L     |        | 09:12:37         |
| 2     | Co 228.616†       | 33591.8          | 33259.8                | [500] µg/L     |        | 09:12:37         |
| 2     | Cr 267.716†       | 42599.8          | 41933.6                | [500] µg/L     |        | 09:12:37         |
| 2     | Cu 324.752†       | 118682.3         | 111408.8               | [500] µg/L     |        | 09:12:37         |
| 2     | K 766.490 Radial† | 10288.8          | 9319.1                 | [5000] µg/L    |        | 09:12:03         |
| 2     | Mg 279.077 IEC†   | 9103.4           | 9165.5                 | [5000] µg/L    |        | 09:12:03         |
| 2     | Mn 257.610†       | 286137.8         | 282377.5               | [500] µg/L     |        | 09:12:37         |
| 2     | Mo 202.031†       | 9619.0           | 9527.5                 | [500] µg/L     |        | 09:12:57         |
| 2     | Ni 231.604†       | 31319.3          | 31122.0                | [500] µg/L     |        | 09:12:37         |
| 2     | P 214.914†        | 6870.0           | 6878.4                 | [2500] µg/L    |        | 09:12:57         |
| 2     | Pb 220.353†       | 5041.3           | 4904.1                 | [500] µg/L     |        | 09:12:57         |
| 2     | S 181.975 Axial†  | 1015.4           | 899.9                  | [1000] µg/L    |        | 09:12:57         |
| 2     | Sb 206.836†       | 2639.1           | 2561.6                 | [500] µg/L     |        | 09:12:57         |
| 2     | Se 196.026†       | 972.2            | 951.9                  | [500] µg/L     |        | 09:12:57         |
| 2     | SiO2†             | 52715.4          | 49030.9                | [5347.5] µg/L  |        | 09:12:37         |

|   |                   |           |           |          |      |          |
|---|-------------------|-----------|-----------|----------|------|----------|
| 2 | Si 251.611†       | 152815.2  | 150303.7  | [2500]   | µg/L | 09:12:37 |
| 2 | Sn 189.927†       | 3928.1    | 3906.0    | [500]    | µg/L | 09:12:57 |
| 2 | Sr 421.552†       | 170544.9  | 172669.7  | [500]    | µg/L | 09:12:01 |
| 2 | Ti 334.940†       | 350985.5  | 347448.7  | [500]    | µg/L | 09:12:35 |
| 2 | Tl 190.801†       | 1553.5    | 1619.9    | [500]    | µg/L | 09:12:57 |
| 2 | U 367.007†        | 3691.2    | 3928.9    | [500]    | µg/L | 09:12:37 |
| 2 | V 292.402†        | 111291.0  | 109784.2  | [500]    | µg/L | 09:12:37 |
| 2 | Zn 213.857†       | 88576.3   | 87412.8   | [500]    | µg/L | 09:12:37 |
| 3 | Sc 361.383        | 1351401.6 | 1351401.6 | 101.52   | %    | 09:12:59 |
| 3 | Sc RADIAL         | 71733.5   | 71733.5   | 99.6     | %    | 09:12:07 |
| 3 | Y 371.029         | 724487.9  | 724487.9  | 100.01   | %    | 09:12:59 |
| 3 | Ag 328.068†       | 93544.1   | 94036.9   | [500]    | µg/L | 09:13:01 |
| 3 | Al 396.153Radial† | 13940.2   | 13897.6   | [5000]   | µg/L | 09:12:07 |
| 3 | As 188.979†       | 905.6     | 922.0     | [500]    | µg/L | 09:13:22 |
| 3 | B 249.677†        | 35455.2   | 34040.5   | [500]    | µg/L | 09:13:01 |
| 3 | Ba 233.527†       | 55190.2   | 54606.1   | [500]    | µg/L | 09:13:01 |
| 3 | Be 313.107†       | 1826062.8 | 1802427.2 | [500]    | µg/L | 09:12:59 |
| 3 | Ca 317.933Radial† | 45607.9   | 45458.3   | [5000]   | µg/L | 09:12:07 |
| 3 | Cd 226.502†       | 64955.5   | 64164.7   | [500]    | µg/L | 09:13:01 |
| 3 | Co 228.616†       | 33236.5   | 32831.3   | [500]    | µg/L | 09:13:01 |
| 3 | Cr 267.716†       | 42198.2   | 41438.5   | [500]    | µg/L | 09:13:01 |
| 3 | Cu 324.752†       | 116951.3  | 109426.5  | [500]    | µg/L | 09:13:01 |
| 3 | K 766.490 Radial† | 10551.3   | 9525.9    | [5000]   | µg/L | 09:12:07 |
| 3 | Mg 279.077 IEC†   | 9254.0    | 9266.4    | [5000]   | µg/L | 09:12:07 |
| 3 | Mn 257.610†       | 282064.6  | 277697.1  | [500]    | µg/L | 09:13:01 |
| 3 | Mo 202.031†       | 9607.2    | 9493.4    | [500]    | µg/L | 09:13:22 |
| 3 | Ni 231.604†       | 30955.3   | 30690.4   | [500]    | µg/L | 09:13:01 |
| 3 | P 214.914†        | 6866.2    | 6858.7    | [2500]   | µg/L | 09:13:22 |
| 3 | Pb 220.353†       | 5049.6    | 4900.4    | [500]    | µg/L | 09:13:22 |
| 3 | S 181.975 Axial†  | 999.3     | 881.7     | [1000]   | µg/L | 09:13:22 |
| 3 | Sb 206.836†       | 2644.5    | 2560.6    | [500]    | µg/L | 09:13:22 |
| 3 | Se 196.026†       | 973.4     | 950.9     | [500]    | µg/L | 09:13:22 |
| 3 | SiO2†             | 52180.5   | 48380.9   | [5347.5] | µg/L | 09:13:01 |
| 3 | Si 251.611†       | 150552.3  | 147717.7  | [2500]   | µg/L | 09:13:01 |
| 3 | Sn 189.927†       | 3911.2    | 3880.2    | [500]    | µg/L | 09:13:22 |
| 3 | Sr 421.552†       | 168752.0  | 169927.0  | [500]    | µg/L | 09:12:05 |
| 3 | Ti 334.940†       | 348682.3  | 344360.3  | [500]    | µg/L | 09:12:59 |
| 3 | Tl 190.801†       | 1551.8    | 1614.6    | [500]    | µg/L | 09:13:22 |
| 3 | U 367.007†        | 3693.6    | 3922.6    | [500]    | µg/L | 09:13:01 |
| 3 | V 292.402†        | 110192.5  | 108442.3  | [500]    | µg/L | 09:13:01 |
| 3 | Zn 213.857†       | 87465.5   | 86111.7   | [500]    | µg/L | 09:13:01 |

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Mean Data: S0.5

| Analyte           | Mean Corrected Intensity | Std.Dev. | RSD   | Conc.    | Calib Units |
|-------------------|--------------------------|----------|-------|----------|-------------|
| Sc 361.383        | 1357470.8                | 13375.75 | 0.99% | 101.97   | %           |
| Sc RADIAL         | 71839.1                  | 558.45   | 0.78% | 99.7     | %           |
| Y 371.029         | 728415.5                 | 7481.71  | 1.03% | 100.55   | %           |
| Ag 328.068†       | 94480.0                  | 885.37   | 0.94% | [500]    | µg/L        |
| Al 396.153Radial† | 13813.2                  | 114.17   | 0.83% | [5000]   | µg/L        |
| As 188.979†       | 910.8                    | 9.85     | 1.08% | [500]    | µg/L        |
| B 249.677†        | 34117.4                  | 383.20   | 1.12% | [500]    | µg/L        |
| Ba 233.527†       | 54748.9                  | 581.87   | 1.06% | [500]    | µg/L        |
| Be 313.107†       | 1811779.1                | 10636.81 | 0.59% | [500]    | µg/L        |
| Ca 317.933Radial† | 45323.0                  | 491.92   | 1.09% | [5000]   | µg/L        |
| Cd 226.502†       | 64488.3                  | 750.69   | 1.16% | [500]    | µg/L        |
| Co 228.616†       | 32952.9                  | 267.63   | 0.81% | [500]    | µg/L        |
| Cr 267.716†       | 41493.5                  | 415.32   | 1.00% | [500]    | µg/L        |
| Cu 324.752†       | 109925.6                 | 1307.13  | 1.19% | [500]    | µg/L        |
| K 766.490 Radial† | 9439.8                   | 107.66   | 1.14% | [5000]   | µg/L        |
| Mg 279.077 IEC†   | 9266.2                   | 100.64   | 1.09% | [5000]   | µg/L        |
| Mn 257.610†       | 278841.9                 | 3124.68  | 1.12% | [500]    | µg/L        |
| Mo 202.031†       | 9456.7                   | 94.56    | 1.00% | [500]    | µg/L        |
| Ni 231.604†       | 30792.7                  | 292.01   | 0.95% | [500]    | µg/L        |
| P 214.914†        | 6836.8                   | 55.97    | 0.82% | [2500]   | µg/L        |
| Pb 220.353†       | 4880.7                   | 37.30    | 0.76% | [500]    | µg/L        |
| S 181.975 Axial†  | 880.6                    | 19.91    | 2.26% | [1000]   | µg/L        |
| Sb 206.836†       | 2544.9                   | 28.10    | 1.10% | [500]    | µg/L        |
| Se 196.026†       | 943.5                    | 13.64    | 1.45% | [500]    | µg/L        |
| SiO2†             | 48496.3                  | 487.18   | 1.00% | [5347.5] | µg/L        |

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|             |          |         |       |        |      |
|-------------|----------|---------|-------|--------|------|
| Si 251.611† | 148297.7 | 1788.00 | 1.21% | [2500] | µg/L |
| Sn 189.927† | 3872.9   | 37.37   | 0.96% | [500]  | µg/L |
| Sr 421.552† | 170432.9 | 2031.61 | 1.19% | [500]  | µg/L |
| Ti 334.940† | 345552.7 | 1660.03 | 0.48% | [500]  | µg/L |
| Tl 190.801† | 1610.3   | 12.30   | 0.76% | [500]  | µg/L |
| U 367.007†  | 3902.0   | 41.22   | 1.06% | [500]  | µg/L |
| V 292.402†  | 108710.8 | 967.53  | 0.89% | [500]  | µg/L |
| Zn 213.857† | 86419.6  | 880.65  | 1.02% | [500]  | µg/L |

Sequence No.: 4  
Sample ID: SCAL  
Analyst:  
Logged In Analyst (Original) : lab  
Initial Sample Wt:  
Dilution:

Autosampler Location: 4  
Date Collected: 11/11/2016 09:13:29  
Data Type: Reprocessed on 11/11/2016 09:56:28  
Initial Sample Vol:  
Sample Prep Vol:

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Replicate Data: SCAL

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Conc.<br>Units | Calib. | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|----------------|--------|------------------|
| 1     | Sc 361.383         | 1336156.4        | 1336156.4              | 100.37         | %      | 09:14:08         |
| 1     | Sc RADIAL          | 72485.2          | 72485.2                | 101            | %      | 09:13:56         |
| 1     | Y 371.029          | 734995.4         | 734995.4               | 101.46         | %      | 09:14:10         |
| 1     | Ag 328.068†        | 198982.2         | 200135.6               | [1000]         | µg/L   | 09:14:10         |
| 1     | Al 396.153Radial†  | 27932.1          | 27658.0                | [10000]        | µg/L   | 09:13:56         |
| 1     | As 188.979†        | 1853.0           | 1876.1                 | [1000]         | µg/L   | 09:14:30         |
| 1     | B 249.677†         | 72868.4          | 71713.5                | [1000]         | µg/L   | 09:14:10         |
| 1     | Ba 233.527†        | 115961.7         | 115772.7               | [1000]         | µg/L   | 09:14:10         |
| 1     | Be 313.107†        | 3686617.7        | 3676610.0              | [1000]         | µg/L   | 09:14:08         |
| 1     | Ca 317.933Radial†  | 92516.8          | 91602.6                | [10000]        | µg/L   | 09:13:56         |
| 1     | Cd 226.502†        | 137090.3         | 136762.3               | [1000]         | µg/L   | 09:14:10         |
| 1     | Co 228.616†        | 69687.5          | 69520.8                | [1000]         | µg/L   | 09:14:10         |
| 1     | Cr 267.716†        | 88243.4          | 87787.3                | [1000]         | µg/L   | 09:14:10         |
| 1     | Cu 324.752†        | 240569.2         | 233900.7               | [1000]         | µg/L   | 09:14:10         |
| 1     | Fe 238.204 Radial† | 108923.8         | 108769.6               | [10000]        | µg/L   | 09:13:56         |
| 1     | K 766.490 Radial†  | 20134.1          | 18939.6                | [10000]        | µg/L   | 09:13:56         |
| 1     | Mg 279.077 IEC†    | 18950.9          | 18807.1                | [10000]        | µg/L   | 09:13:56         |
| 1     | Mn 257.610†        | 591182.4         | 588839.4               | [1000]         | µg/L   | 09:14:10         |
| 1     | Mo 202.031†        | 19662.8          | 19619.7                | [1000]         | µg/L   | 09:14:30         |
| 1     | Na 589.592 Radial† | 59732.8          | 59324.4                | [10000]        | µg/L   | 09:13:56         |
| 1     | Ni 231.604†        | 65047.4          | 65004.1                | [1000]         | µg/L   | 09:14:10         |
| 1     | P 214.914†         | 14068.8          | 14111.7                | [5000]         | µg/L   | 09:14:30         |
| 1     | Pb 220.353†        | 10171.8          | 10060.4                | [1000]         | µg/L   | 09:14:30         |
| 1     | S 181.975 Axial†   | 1955.0           | 1845.0                 | [2000]         | µg/L   | 09:14:30         |
| 1     | Sb 206.836†        | 5340.1           | 5276.0                 | [1000]         | µg/L   | 09:14:30         |
| 1     | Se 196.026†        | 1964.3           | 1949.0                 | [1000]         | µg/L   | 09:14:30         |
| 1     | SiO2†              | 102400.2         | 99000.9                | [10695]        | µg/L   | 09:14:10         |
| 1     | Si 251.611†        | 303242.5         | 301534.1               | [5000]         | µg/L   | 09:14:10         |
| 1     | Sn 189.927†        | 7964.8           | 7962.8                 | [1000]         | µg/L   | 09:14:30         |
| 1     | Sr 421.552†        | 342246.9         | 340593.6               | [1000]         | µg/L   | 09:13:54         |
| 1     | Ti 334.940†        | 709113.9         | 707375.0               | [1000]         | µg/L   | 09:14:08         |
| 1     | Tl 190.801†        | 3251.7           | 3325.7                 | [1000]         | µg/L   | 09:14:30         |
| 1     | U 367.007†         | 8148.0           | 8402.0                 | [1000]         | µg/L   | 09:14:10         |
| 1     | V 292.402†         | 231388.2         | 230427.2               | [1000]         | µg/L   | 09:14:10         |
| 1     | Zn 213.857†        | 182526.9         | 181803.9               | [1000]         | µg/L   | 09:14:10         |
| 2     | Sc 361.383         | 1350248.6        | 1350248.6              | 101.43         | %      | 09:14:33         |
| 2     | Sc RADIAL          | 71410.1          | 71410.1                | 99.1           | %      | 09:14:00         |
| 2     | Y 371.029          | 718796.9         | 718796.9               | 99.220         | %      | 09:14:35         |
| 2     | Ag 328.068†        | 195768.6         | 194898.3               | [1000]         | µg/L   | 09:14:35         |
| 2     | Al 396.153Radial†  | 27397.9          | 27537.1                | [10000]        | µg/L   | 09:14:00         |
| 2     | As 188.979†        | 1841.6           | 1845.6                 | [1000]         | µg/L   | 09:14:55         |
| 2     | B 249.677†         | 71578.5          | 69684.1                | [1000]         | µg/L   | 09:14:35         |
| 2     | Ba 233.527†        | 114174.4         | 112804.9               | [1000]         | µg/L   | 09:14:35         |
| 2     | Be 313.107†        | 3724282.7        | 3675410.2              | [1000]         | µg/L   | 09:14:33         |
| 2     | Ca 317.933Radial†  | 90672.5          | 91126.5                | [10000]        | µg/L   | 09:14:00         |
| 2     | Cd 226.502†        | 134427.8         | 132711.8               | [1000]         | µg/L   | 09:14:35         |
| 2     | Co 228.616†        | 68289.3          | 67417.7                | [1000]         | µg/L   | 09:14:35         |
| 2     | Cr 267.716†        | 86798.2          | 85445.0                | [1000]         | µg/L   | 09:14:35         |
| 2     | Cu 324.752†        | 237724.2         | 228594.4               | [1000]         | µg/L   | 09:14:35         |
| 2     | Fe 238.204 Radial† | 106661.5         | 108117.3               | [10000]        | µg/L   | 09:14:00         |
| 2     | K 766.490 Radial†  | 20053.3          | 19159.4                | [10000]        | µg/L   | 09:14:00         |
| 2     | Mg 279.077 IEC†    | 18524.1          | 18660.1                | [10000]        | µg/L   | 09:14:00         |
| 2     | Mn 257.610†        | 581281.6         | 572931.1               | [1000]         | µg/L   | 09:14:35         |
| 2     | Mo 202.031†        | 19706.7          | 19458.4                | [1000]         | µg/L   | 09:14:55         |
| 2     | Na 589.592 Radial† | 58960.9          | 59439.5                | [10000]        | µg/L   | 09:14:00         |
| 2     | Ni 231.604†        | 63746.3          | 63044.9                | [1000]         | µg/L   | 09:14:35         |
| 2     | P 214.914†         | 14117.8          | 14013.8                | [5000]         | µg/L   | 09:14:55         |
| 2     | Pb 220.353†        | 10180.6          | 9963.3                 | [1000]         | µg/L   | 09:14:55         |

|   |                    |           |           |         |      |          |
|---|--------------------|-----------|-----------|---------|------|----------|
| 2 | S 181.975 Axial†   | 1938.6    | 1808.6    | [2000]  | µg/L | 09:14:55 |
| 2 | Sb 206.836†        | 5365.4    | 5245.5    | [1000]  | µg/L | 09:14:55 |
| 2 | Se 196.026†        | 1958.4    | 1922.8    | [1000]  | µg/L | 09:14:55 |
| 2 | SiO2†              | 100937.8  | 96494.4   | [10695] | µg/L | 09:14:35 |
| 2 | Si 251.611†        | 299264.6  | 294459.2  | [5000]  | µg/L | 09:14:35 |
| 2 | Sn 189.927†        | 7966.8    | 7882.0    | [1000]  | µg/L | 09:14:55 |
| 2 | Sr 421.552†        | 345148.1  | 348641.5  | [1000]  | µg/L | 09:13:58 |
| 2 | Ti 334.940†        | 715473.1  | 706271.1  | [1000]  | µg/L | 09:14:33 |
| 2 | Tl 190.801†        | 3232.8    | 3273.3    | [1000]  | µg/L | 09:14:55 |
| 2 | U 367.007†         | 8046.1    | 8216.8    | [1000]  | µg/L | 09:14:35 |
| 2 | V 292.402†         | 227745.1  | 224429.6  | [1000]  | µg/L | 09:14:35 |
| 2 | Zn 213.857†        | 179434.7  | 176857.4  | [1000]  | µg/L | 09:14:35 |
| 3 | Sc 361.383         | 1387260.1 | 1387260.1 | 104.21  | %    | 09:14:57 |
| 3 | Sc RADIAL          | 70554.5   | 70554.5   | 97.9    | %    | 09:14:04 |
| 3 | Y 371.029          | 722788.6  | 722788.6  | 99.771  | %    | 09:15:00 |
| 3 | Ag 328.068†        | 195963.9  | 189936.3  | [1000]  | µg/L | 09:15:00 |
| 3 | Al 396.153Radial†  | 27285.8   | 27757.8   | [10000] | µg/L | 09:14:04 |
| 3 | As 188.979†        | 1860.4    | 1815.2    | [1000]  | µg/L | 09:15:20 |
| 3 | B 249.677†         | 72049.7   | 68253.5   | [1000]  | µg/L | 09:15:00 |
| 3 | Ba 233.527†        | 114215.2  | 109840.9  | [1000]  | µg/L | 09:15:00 |
| 3 | Be 313.107†        | 3831650.4 | 3680478.4 | [1000]  | µg/L | 09:14:57 |
| 3 | Ca 317.933Radial†  | 89711.4   | 91254.3   | [10000] | µg/L | 09:14:04 |
| 3 | Cd 226.502†        | 134595.1  | 129336.4  | [1000]  | µg/L | 09:15:00 |
| 3 | Co 228.616†        | 68735.0   | 66049.1   | [1000]  | µg/L | 09:15:00 |
| 3 | Cr 267.716†        | 87002.0   | 83357.5   | [1000]  | µg/L | 09:15:00 |
| 3 | Cu 324.752†        | 237979.0  | 222585.9  | [1000]  | µg/L | 09:15:00 |
| 3 | Fe 238.204 Radial† | 105651.7  | 108391.0  | [10000] | µg/L | 09:14:04 |
| 3 | K 766.490 Radial†  | 19755.9   | 19101.0   | [10000] | µg/L | 09:14:04 |
| 3 | Mg 279.077 IEC†    | 18479.3   | 18841.0   | [10000] | µg/L | 09:14:04 |
| 3 | Mn 257.610†        | 582936.8  | 559229.7  | [1000]  | µg/L | 09:15:00 |
| 3 | Mo 202.031†        | 19656.8   | 18892.3   | [1000]  | µg/L | 09:15:20 |
| 3 | Na 589.592 Radial† | 58407.1   | 59595.3   | [10000] | µg/L | 09:14:04 |
| 3 | Ni 231.604†        | 64008.7   | 61619.9   | [1000]  | µg/L | 09:15:00 |
| 3 | P 214.914†         | 14114.0   | 13638.7   | [5000]  | µg/L | 09:15:20 |
| 3 | Pb 220.353†        | 10200.3   | 9714.4    | [1000]  | µg/L | 09:15:20 |
| 3 | S 181.975 Axial†   | 1928.4    | 1747.8    | [2000]  | µg/L | 09:15:20 |
| 3 | Sb 206.836†        | 5338.8    | 5078.8    | [1000]  | µg/L | 09:15:20 |
| 3 | Se 196.026†        | 1962.3    | 1875.0    | [1000]  | µg/L | 09:15:20 |
| 3 | SiO2†              | 101315.6  | 94201.9   | [10695] | µg/L | 09:15:00 |
| 3 | Si 251.611†        | 300310.3  | 287591.0  | [5000]  | µg/L | 09:15:00 |
| 3 | Sn 189.927†        | 7969.2    | 7674.7    | [1000]  | µg/L | 09:15:20 |
| 3 | Sr 421.552†        | 339899.6  | 347504.6  | [1000]  | µg/L | 09:14:02 |
| 3 | Ti 334.940†        | 735135.5  | 706319.7  | [1000]  | µg/L | 09:14:57 |
| 3 | Tl 190.801†        | 3240.4    | 3195.5    | [1000]  | µg/L | 09:15:20 |
| 3 | U 367.007†         | 85529.9   | 8007.4    | [1000]  | µg/L | 09:15:00 |
| 3 | V 292.402†         | 228338.6  | 219008.7  | [1000]  | µg/L | 09:15:00 |
| 3 | Zn 213.857†        | 179908.5  | 172592.3  | [1000]  | µg/L | 09:15:00 |

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Mean Data: SCAL

| Analyte            | Mean Corrected Intensity | Std.Dev. | RSD   | Calib Conc. Units |
|--------------------|--------------------------|----------|-------|-------------------|
| Sc 361.383         | 1357888.4                | 26394.55 | 1.94% | 102.00 %          |
| Sc RADIAL          | 71483.3                  | 967.43   | 1.35% | 99.2 %            |
| Y 371.029          | 725527.0                 | 8439.32  | 1.16% | 100.15 %          |
| Ag 328.068†        | 194990.0                 | 5100.27  | 2.62% | [1000] µg/L       |
| Al 396.153Radial†  | 27650.9                  | 110.53   | 0.40% | [10000] µg/L      |
| As 188.979†        | 1845.6                   | 30.44    | 1.65% | [1000] µg/L       |
| B 249.677†         | 69883.7                  | 1738.62  | 2.49% | [1000] µg/L       |
| Ba 233.527†        | 112806.1                 | 2965.90  | 2.63% | [1000] µg/L       |
| Be 313.107†        | 3677499.5                | 2648.61  | 0.07% | [1000] µg/L       |
| Ca 317.933Radial†  | 91327.8                  | 246.43   | 0.27% | [10000] µg/L      |
| Cd 226.502†        | 132936.8                 | 3718.02  | 2.80% | [1000] µg/L       |
| Co 228.616†        | 67662.5                  | 1748.73  | 2.58% | [1000] µg/L       |
| Cr 267.716†        | 85529.9                  | 2216.14  | 2.59% | [1000] µg/L       |
| Cu 324.752†        | 228360.3                 | 5661.04  | 2.48% | [1000] µg/L       |
| Fe 238.204 Radial† | 108426.0                 | 327.57   | 0.30% | [10000] µg/L      |
| K 766.490 Radial†  | 19066.7                  | 113.83   | 0.60% | [10000] µg/L      |
| Mg 279.077 IEC†    | 18769.4                  | 96.14    | 0.51% | [10000] µg/L      |
| Mn 257.610†        | 573666.7                 | 14818.52 | 2.58% | [1000] µg/L       |
| Mo 202.031†        | 19323.5                  | 382.05   | 1.98% | [1000] µg/L       |

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|                    |          |         |       |         |      |
|--------------------|----------|---------|-------|---------|------|
| Na 589.592 Radial† | 59453.0  | 135.97  | 0.23% | [10000] | µg/L |
| Ni 231.604†        | 63223.0  | 1699.08 | 2.69% | [1000]  | µg/L |
| P 214.914†         | 13921.4  | 249.65  | 1.79% | [5000]  | µg/L |
| Pb 220.353†        | 9912.7   | 178.45  | 1.80% | [1000]  | µg/L |
| S 181.975 Axial†   | 1800.5   | 49.13   | 2.73% | [2000]  | µg/L |
| Sb 206.836†        | 5200.1   | 106.13  | 2.04% | [1000]  | µg/L |
| Se 196.026†        | 1915.6   | 37.52   | 1.96% | [1000]  | µg/L |
| SiO2†              | 96565.7  | 2400.29 | 2.49% | [10695] | µg/L |
| Si 251.611†        | 294528.1 | 6971.79 | 2.37% | [5000]  | µg/L |
| Sn 189.927†        | 7839.8   | 148.59  | 1.90% | [1000]  | µg/L |
| Sr 421.552†        | 345579.9 | 4355.53 | 1.26% | [1000]  | µg/L |
| Ti 334.940†        | 706655.3 | 623.77  | 0.09% | [1000]  | µg/L |
| Tl 190.801†        | 3264.8   | 65.53   | 2.01% | [1000]  | µg/L |
| U 367.007†         | 8208.8   | 197.41  | 2.40% | [1000]  | µg/L |
| V 292.402†         | 224621.8 | 5711.71 | 2.54% | [1000]  | µg/L |
| Zn 213.857†        | 177084.5 | 4609.96 | 2.60% | [1000]  | µg/L |

Sequence No.: 5

Autosampler Location: 5

Sample ID: S10

Date Collected: 11/11/2016 09:15:27

Analyst:

Data Type: Reprocessed on 11/11/2016 09:56:28

Logged In Analyst (Original) : lab

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: S10

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units  | Calib. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------|--------------|---------------|
| 1     | Sc 361.383         | 1334502.3     | 1334502.3           | 100.25 %     |              | 09:15:59      |
| 1     | Sc RADIAL          | 70187.4       | 70187.4             | 97.4 %       |              | 09:15:52      |
| 1     | Y 371.029          | 713482.1      | 713482.1            | 98.487 %     |              | 09:15:59      |
| 1     | Al 396.153Radial†  | 133997.4      | 137428.4            | [50000] µg/L |              | 09:15:52      |
| 1     | Ca 317.933Radial†  | 438396.0      | 449610.6            | [50000] µg/L |              | 09:15:52      |
| 1     | Fe 238.204 Radial† | 204761.9      | 210678.4            | [20000] µg/L |              | 09:15:52      |
| 1     | Mg 279.077 IEC†    | 90286.6       | 92640.1             | [50000] µg/L |              | 09:15:52      |
| 1     | Na 589.592 Radial† | 117313.0      | 120366.0            | [20000] µg/L |              | 09:15:52      |
| 2     | Sc 361.383         | 1317485.7     | 1317485.7           | 98.969 %     |              | 09:16:02      |
| 2     | Sc RADIAL          | 69877.0       | 69877.0             | 97.0 %       |              | 09:15:54      |
| 2     | Y 371.029          | 705239.3      | 705239.3            | 97.349 %     |              | 09:16:02      |
| 2     | Al 396.153Radial†  | 133166.3      | 137182.6            | [50000] µg/L |              | 09:15:54      |
| 2     | Ca 317.933Radial†  | 436453.8      | 449607.3            | [50000] µg/L |              | 09:15:54      |
| 2     | Fe 238.204 Radial† | 203439.0      | 210248.1            | [20000] µg/L |              | 09:15:54      |
| 2     | Mg 279.077 IEC†    | 90013.6       | 92770.3             | [50000] µg/L |              | 09:15:54      |
| 2     | Na 589.592 Radial† | 116833.1      | 120406.3            | [20000] µg/L |              | 09:15:54      |
| 3     | Sc 361.383         | 1302453.2     | 1302453.2           | 97.840 %     |              | 09:16:04      |
| 3     | Sc RADIAL          | 71105.7       | 71105.7             | 98.7 %       |              | 09:15:56      |
| 3     | Y 371.029          | 696447.7      | 696447.7            | 96.135 %     |              | 09:16:04      |
| 3     | Al 396.153Radial†  | 134419.9      | 136080.4            | [50000] µg/L |              | 09:15:56      |
| 3     | Ca 317.933Radial†  | 441775.1      | 447223.4            | [50000] µg/L |              | 09:15:56      |
| 3     | Fe 238.204 Radial† | 206066.1      | 209285.6            | [20000] µg/L |              | 09:15:56      |
| 3     | Mg 279.077 IEC†    | 91508.0       | 92680.9             | [50000] µg/L |              | 09:15:56      |
| 3     | Na 589.592 Radial† | 118299.4      | 119810.5            | [20000] µg/L |              | 09:15:56      |

## Mean Data: S10

| Analyte            | Mean Corrected Intensity | Std.Dev. | RSD   | Conc. Units  | Calib. Units |
|--------------------|--------------------------|----------|-------|--------------|--------------|
| Sc 361.383         | 1318147.1                | 16034.74 | 1.22% | 99.019 %     |              |
| Sc RADIAL          | 70390.0                  | 638.90   | 0.91% | 97.7 %       |              |
| Y 371.029          | 705056.3                 | 8518.66  | 1.21% | 97.323 %     |              |
| Al 396.153Radial†  | 136897.1                 | 717.89   | 0.52% | [50000] µg/L |              |
| Ca 317.933Radial†  | 448813.8                 | 1377.31  | 0.31% | [50000] µg/L |              |
| Fe 238.204 Radial† | 210070.7                 | 713.12   | 0.34% | [20000] µg/L |              |
| Mg 279.077 IEC†    | 92697.1                  | 66.62    | 0.07% | [50000] µg/L |              |
| Na 589.592 Radial† | 120194.3                 | 332.96   | 0.28% | [20000] µg/L |              |

## Calibration Summary

| Analyte          | Stds. | Equation   | Intercept | Slope | Curvature | Corr. Coef. | Reslope |
|------------------|-------|------------|-----------|-------|-----------|-------------|---------|
| Ag 328.068       | 3     | Lin Thru 0 | 0.0       | 193.8 | 0.00000   | 0.999923    |         |
| Al 396.153Radial | 3     | Lin Thru 0 | 0.0       | 2.739 | 0.00000   | 0.999998    |         |
| As 188.979       | 3     | Lin Thru 0 | 0.0       | 1.841 | 0.00000   | 0.999985    |         |
| B 249.677        | 3     | Lin Thru 0 | 0.0       | 69.53 | 0.00000   | 0.999950    |         |
| Ba 233.527       | 3     | Lin Thru 0 | 0.0       | 112.1 | 0.00000   | 0.999931    |         |
| Be 313.107       | 3     | Lin Thru 0 | 0.0       | 3667  | 0.00000   | 0.999983    |         |
| Ca 317.933Radial | 3     | Lin Thru 0 | 0.0       | 8.983 | 0.00000   | 0.999994    |         |
| Cd 226.502       | 3     | Lin Thru 0 | 0.0       | 132.2 | 0.00000   | 0.999928    |         |
| Co 228.616       | 3     | Lin Thru 0 | 0.0       | 67.32 | 0.00000   | 0.999945    |         |
| Cr 267.716       | 3     | Lin Thru 0 | 0.0       | 85.03 | 0.00000   | 0.999928    |         |
| Cu 324.752       | 3     | Lin Thru 0 | 0.0       | 226.6 | 0.00000   | 0.999885    |         |
| Fe 238.204 Radia | 2     | Lin Thru 0 | 0.0       | 10.57 | 0.00000   | 0.999918    |         |
| K 766.490 Radial | 3     | Lin Thru 0 | 0.0       | 1.903 | 0.00000   | 0.999992    |         |
| Mg 279.077 IEC   | 3     | Lin Thru 0 | 0.0       | 1.855 | 0.00000   | 0.999997    |         |
| Mn 257.610       | 3     | Lin Thru 0 | 0.0       | 570.6 | 0.00000   | 0.999936    |         |
| Mo 202.031       | 3     | Lin Thru 0 | 0.0       | 19.24 | 0.00000   | 0.999964    |         |

|                  |   |            |     |        |         |          |
|------------------|---|------------|-----|--------|---------|----------|
| Na 589.592 Radia | 2 | Lin Thru 0 | 0.0 | 5.997  | 0.00000 | 0.999991 |
| Ni 231.604       | 3 | Lin Thru 0 | 0.0 | 62.90  | 0.00000 | 0.999946 |
| P 214.914        | 3 | Lin Thru 0 | 0.0 | 2.774  | 0.00000 | 0.999975 |
| Pb 220.353       | 3 | Lin Thru 0 | 0.0 | 9.885  | 0.00000 | 0.999979 |
| S 181.975 Axial  | 3 | Lin Thru 0 | 0.0 | 0.8958 | 0.00000 | 0.999942 |
| Sb 206.836       | 3 | Lin Thru 0 | 0.0 | 5.176  | 0.00000 | 0.999955 |
| Se 196.026       | 3 | Lin Thru 0 | 0.0 | 1.909  | 0.00000 | 0.999967 |
| SiO2             | 3 | Lin Thru 0 | 0.0 | 9.035  | 0.00000 | 0.999996 |
| Si 251.611       | 3 | Lin Thru 0 | 0.0 | 58.98  | 0.00000 | 0.999995 |
| Sn 189.927       | 3 | Lin Thru 0 | 0.0 | 7.821  | 0.00000 | 0.999989 |
| Sr 421.552       | 3 | Lin Thru 0 | 0.0 | 344.7  | 0.00000 | 0.999984 |
| Ti 334.940       | 3 | Lin Thru 0 | 0.0 | 703.5  | 0.00000 | 0.999961 |
| Tl 190.801       | 3 | Lin Thru 0 | 0.0 | 3.256  | 0.00000 | 0.999984 |
| U 367.007        | 3 | Lin Thru 0 | 0.0 | 8.128  | 0.00000 | 0.999803 |
| V 292.402        | 3 | Lin Thru 0 | 0.0 | 223.2  | 0.00000 | 0.999917 |
| Zn 213.857       | 3 | Lin Thru 0 | 0.0 | 176.3  | 0.00000 | 0.999953 |



Sequence No.: 6

Autosampler Location: 9

Sample ID: ICV

Date Collected: 11/11/2016 09:16:11

Analyst:

Data Type: Reprocessed on 11/11/2016 09:56:29

Logged In Analyst (Original) : lab

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

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Replicate Data: ICV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units | Calib. Units | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|-------------|--------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1338220.6     | 1338220.6           | 100.53      | %            |             |              | 09:16:56      |
| 1     | Sc RADIAL          | 72452.2       | 72452.2             | 101         | %            |             |              | 09:16:44      |
| 1     | Y 371.029          | 720087.9      | 720087.9            | 99.398      | %            |             |              | 09:16:56      |
| 1     | Ag 328.068†        | 47327.5       | 48970.2             | 252.68      | µg/L         | 252.68      | ppb          | 09:16:56      |
| 1     | Al 396.153Radial†  | 14144.2       | 13961.6             | 5097.8      | µg/L         | 5097.8      | ppb          | 09:16:44      |
| 1     | As 188.979†        | 909.5         | 934.7               | 513.00      | µg/L         | 513.00      | ppb          | 09:17:17      |
| 1     | B 249.677†         | 35253.0       | 34183.3             | 495.38      | µg/L         | 495.38      | ppb          | 09:16:56      |
| 1     | Ba 233.527†        | 56669.1       | 56612.7             | 504.82      | µg/L         | 504.82      | ppb          | 09:16:56      |
| 1     | Be 313.107†        | 933038.6      | 931802.6            | 241.89      | µg/L         | 241.89      | ppb          | 09:16:56      |
| 1     | Ca 317.933Radial†  | 46835.6       | 46224.6             | 5145.7      | µg/L         | 5145.7      | ppb          | 09:16:44      |
| 1     | Cd 226.502†        | 67514.7       | 67340.8             | 508.94      | µg/L         | 508.94      | ppb          | 09:16:56      |
| 1     | Co 228.616†        | 34022.7       | 33935.8             | 504.65      | µg/L         | 504.65      | ppb          | 09:16:56      |
| 1     | Cr 267.716†        | 42884.8       | 42530.9             | 499.78      | µg/L         | 499.78      | ppb          | 09:16:56      |
| 1     | Cu 324.752†        | 119948.6      | 113542.8            | 501.85      | µg/L         | 501.85      | ppb          | 09:16:56      |
| 1     | Fe 238.204 Radial† | 54286.1       | 54493.7             | 5154.9      | µg/L         | 5154.9      | ppb          | 09:16:44      |
| 1     | K 766.490 Radial†  | 6057.5        | 4952.6              | 2604.1      | µg/L         | 2604.1      | ppb          | 09:16:44      |
| 1     | Mg 279.077 IEC†    | 9595.1        | 9513.4              | 5130.7      | µg/L         | 5130.7      | ppb          | 09:16:44      |
| 1     | Mn 257.610†        | 290768.2      | 289091.7            | 506.48      | µg/L         | 506.48      | ppb          | 09:16:56      |
| 1     | Mo 202.031†        | 9851.8        | 9829.9              | 511.06      | µg/L         | 511.06      | ppb          | 09:17:17      |
| 1     | Na 589.592 Radial† | 15164.0       | 15037.5             | 2507.6      | µg/L         | 2507.6      | ppb          | 09:16:44      |
| 1     | Ni 231.604†        | 32052.6       | 32082.3             | 510.05      | µg/L         | 510.05      | ppb          | 09:17:17      |
| 1     | P 214.914†         | 6971.7        | 7030.2              | 2533.7      | µg/L         | 2533.7      | ppb          | 09:17:17      |
| 1     | Pb 220.353†        | 5261.4        | 5160.1              | 521.54      | µg/L         | 521.54      | ppb          | 09:17:17      |
| 1     | S 181.975 Axial†   | 2430.4        | 2315.0              | 2583.1      | µg/L         | 2583.1      | ppb          | 09:17:17      |
| 1     | Sb 206.836†        | 2714.4        | 2655.9              | 504.97      | µg/L         | 504.97      | ppb          | 09:17:17      |
| 1     | Se 196.026†        | 4971.1        | 4937.0              | 2590        | µg/L         | 2590        | ppb          | 09:17:17      |
| 1     | SiO2†              | 97258.7       | 93729.0             | 10374       | µg/L         | 10374       | ppb          | 09:16:56      |
| 1     | Si 251.611†        | 288070.1      | 285975.2            | 4849.4      | µg/L         | 4849.4      | ppb          | 09:16:56      |
| 1     | Sn 189.927†        | 4015.5        | 4021.9              | 514.26      | µg/L         | 514.26      | ppb          | 09:17:17      |
| 1     | Sr 421.552†        | 175792.0      | 175245.7            | 508.26      | µg/L         | 508.26      | ppb          | 09:16:42      |
| 1     | Ti 334.940†        | 349920.6      | 348975.2            | 495.70      | µg/L         | 495.70      | ppb          | 09:16:56      |
| 1     | Tl 190.801†        | 1618.3        | 1695.9              | 521.02      | µg/L         | 521.02      | ppb          | 09:17:17      |
| 1     | U 367.007†         | 3852.3        | 4116.3              | 477.95      | µg/L         | 477.95      | ppb          | 09:16:56      |
| 1     | V 292.402†         | 111790.6      | 111101.1            | 499.21      | µg/L         | 499.21      | ppb          | 09:16:56      |
| 1     | Zn 213.857†        | 90034.1       | 89515.6             | 506.53      | µg/L         | 506.53      | ppb          | 09:16:56      |
| 2     | Sc 361.383         | 1339980.6     | 1339980.6           | 100.66      | %            |             |              | 09:17:20      |
| 2     | Sc RADIAL          | 72998.4       | 72998.4             | 101         | %            |             |              | 09:16:48      |
| 2     | Y 371.029          | 720228.3      | 720228.3            | 99.418      | %            |             |              | 09:17:20      |
| 2     | Ag 328.068†        | 47268.6       | 48849.9             | 252.06      | µg/L         | 252.06      | ppb          | 09:17:20      |
| 2     | Al 396.153Radial†  | 14329.8       | 14039.6             | 5126.3      | µg/L         | 5126.3      | ppb          | 09:16:48      |
| 2     | As 188.979†        | 900.3         | 924.4               | 507.41      | µg/L         | 507.41      | ppb          | 09:17:40      |
| 2     | B 249.677†         | 35486.1       | 34368.8             | 498.10      | µg/L         | 498.10      | ppb          | 09:17:20      |
| 2     | Ba 233.527†        | 56963.3       | 56831.0             | 506.77      | µg/L         | 506.77      | ppb          | 09:17:20      |
| 2     | Be 313.107†        | 937647.5      | 935162.2            | 242.76      | µg/L         | 242.76      | ppb          | 09:17:20      |
| 2     | Ca 317.933Radial†  | 47863.1       | 46890.1             | 5219.8      | µg/L         | 5219.8      | ppb          | 09:16:48      |
| 2     | Cd 226.502†        | 67772.1       | 67508.2             | 510.20      | µg/L         | 510.20      | ppb          | 09:17:20      |
| 2     | Co 228.616†        | 34247.4       | 34114.6             | 507.30      | µg/L         | 507.30      | ppb          | 09:17:20      |
| 2     | Cr 267.716†        | 42989.3       | 42578.8             | 500.35      | µg/L         | 500.35      | ppb          | 09:17:20      |
| 2     | Cu 324.752†        | 120210.8      | 113646.6            | 502.32      | µg/L         | 502.32      | ppb          | 09:17:20      |
| 2     | Fe 238.204 Radial† | 55387.4       | 55176.7             | 5219.5      | µg/L         | 5219.5      | ppb          | 09:16:48      |
| 2     | K 766.490 Radial†  | 6184.2        | 5032.6              | 2646.1      | µg/L         | 2646.1      | ppb          | 09:16:48      |
| 2     | Mg 279.077 IEC†    | 9902.7        | 9745.6              | 5255.9      | µg/L         | 5255.9      | ppb          | 09:16:48      |
| 2     | Mn 257.610†        | 292266.3      | 290200.1            | 508.42      | µg/L         | 508.42      | ppb          | 09:17:20      |
| 2     | Mo 202.031†        | 9876.3        | 9841.3              | 511.66      | µg/L         | 511.66      | ppb          | 09:17:40      |
| 2     | Na 589.592 Radial† | 15428.4       | 15185.6             | 2532.3      | µg/L         | 2532.3      | ppb          | 09:16:48      |
| 2     | Ni 231.604†        | 32131.0       | 32118.3             | 510.62      | µg/L         | 510.62      | ppb          | 09:17:40      |
| 2     | P 214.914†         | 6982.8        | 7032.2              | 2534.4      | µg/L         | 2534.4      | ppb          | 09:17:40      |
| 2     | Pb 220.353†        | 5274.5        | 5166.2              | 522.16      | µg/L         | 522.16      | ppb          | 09:17:40      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 2428.9    | 2310.4    | 2577.8 µg/L | 2577.8 ppb | 09:17:40 |
| 2 | Sb 206.836†        | 2716.3    | 2654.2    | 504.63 µg/L | 504.63 ppb | 09:17:40 |
| 2 | Se 196.026†        | 4993.4    | 4952.7    | 2600 µg/L   | 2600 ppb   | 09:17:40 |
| 2 | SiO2†              | 97981.6   | 94320.1   | 10439 µg/L  | 10439 ppb  | 09:17:20 |
| 2 | Si 251.611†        | 289814.3  | 287331.7  | 4872.4 µg/L | 4872.4 ppb | 09:17:20 |
| 2 | Sn 189.927†        | 4019.7    | 4020.9    | 514.12 µg/L | 514.12 ppb | 09:17:40 |
| 2 | Sr 421.552†        | 176818.9  | 174951.2  | 507.40 µg/L | 507.40 ppb | 09:16:46 |
| 2 | Ti 334.940†        | 351470.4  | 350057.7  | 497.24 µg/L | 497.24 ppb | 09:17:20 |
| 2 | Tl 190.801†        | 1633.9    | 1709.3    | 525.13 µg/L | 525.13 ppb | 09:17:40 |
| 2 | U 367.007†         | 3882.6    | 4141.4    | 480.68 µg/L | 480.68 ppb | 09:17:20 |
| 2 | V 292.402†         | 111961.8  | 111125.2  | 499.33 µg/L | 499.33 ppb | 09:17:20 |
| 2 | Zn 213.857†        | 90544.9   | 89905.3   | 508.72 µg/L | 508.72 ppb | 09:17:20 |
| 3 | Sc 361.383         | 1364204.4 | 1364204.4 | 102.48 %    |            | 09:17:43 |
| 3 | Sc RADIAL          | 73546.4   | 73546.4   | 102 %       |            | 09:16:52 |
| 3 | Y 371.029          | 733106.9  | 733106.9  | 101.20 %    |            | 09:17:43 |
| 3 | Ag 328.068†        | 48236.6   | 48960.6   | 252.64 µg/L | 252.64 ppb | 09:17:43 |
| 3 | Al 396.153Radial†  | 14318.2   | 13922.9   | 5083.7 µg/L | 5083.7 ppb | 09:16:52 |
| 3 | As 188.979†        | 899.9     | 908.1     | 498.59 µg/L | 498.59 ppb | 09:18:03 |
| 3 | B 249.677†         | 36394.9   | 34629.6   | 501.80 µg/L | 501.80 ppb | 09:17:43 |
| 3 | Ba 233.527†        | 58140.8   | 56975.1   | 508.06 µg/L | 508.06 ppb | 09:17:43 |
| 3 | Be 313.107†        | 957905.1  | 938389.2  | 243.60 µg/L | 243.60 ppb | 09:17:43 |
| 3 | Ca 317.933Radial†  | 47679.0   | 46357.8   | 5160.6 µg/L | 5160.6 ppb | 09:16:52 |
| 3 | Cd 226.502†        | 69466.2   | 67965.8   | 513.67 µg/L | 513.67 ppb | 09:17:43 |
| 3 | Co 228.616†        | 34916.7   | 34163.6   | 508.03 µg/L | 508.03 ppb | 09:17:43 |
| 3 | Cr 267.716†        | 44034.8   | 42840.6   | 503.43 µg/L | 503.43 ppb | 09:17:43 |
| 3 | Cu 324.752†        | 122927.5  | 114177.0  | 504.65 µg/L | 504.65 ppb | 09:17:43 |
| 3 | Fe 238.204 Radial† | 55160.8   | 54547.4   | 5159.9 µg/L | 5159.9 ppb | 09:16:52 |
| 3 | K 766.490 Radial†  | 6082.3    | 4887.3    | 2569.8 µg/L | 2569.8 ppb | 09:16:52 |
| 3 | Mg 279.077 IEC†    | 9808.8    | 9580.8    | 5167.0 µg/L | 5167.0 ppb | 09:16:52 |
| 3 | Mn 257.610†        | 298573.5  | 291199.0  | 510.17 µg/L | 510.17 ppb | 09:17:43 |
| 3 | Mo 202.031†        | 9759.3    | 9553.0    | 496.67 µg/L | 496.67 ppb | 09:18:03 |
| 3 | Na 589.592 Radial† | 15316.0   | 14962.1   | 2495.0 µg/L | 2495.0 ppb | 09:16:52 |
| 3 | Ni 231.604†        | 31769.6   | 31198.8   | 496.00 µg/L | 496.00 ppb | 09:18:03 |
| 3 | P 214.914†         | 6923.5    | 6851.1    | 2469.2 µg/L | 2469.2 ppb | 09:18:03 |
| 3 | Pb 220.353†        | 5198.9    | 4999.4    | 505.29 µg/L | 505.29 ppb | 09:18:03 |
| 3 | S 181.975 Axial†   | 2395.2    | 2234.6    | 2493.3 µg/L | 2493.3 ppb | 09:18:03 |
| 3 | Sb 206.836†        | 2691.3    | 2581.9    | 490.60 µg/L | 490.60 ppb | 09:18:03 |
| 3 | Se 196.026†        | 4919.3    | 4792.3    | 2510 µg/L   | 2510 ppb   | 09:18:03 |
| 3 | SiO2†              | 100288.6  | 94842.9   | 10497 µg/L  | 10497 ppb  | 09:17:43 |
| 3 | Si 251.611†        | 296514.9  | 288757.7  | 4896.5 µg/L | 4896.5 ppb | 09:17:43 |
| 3 | Sn 189.927†        | 3992.7    | 3923.6    | 501.68 µg/L | 501.68 ppb | 09:18:03 |
| 3 | Sr 421.552†        | 176877.5  | 173708.5  | 503.80 µg/L | 503.80 ppb | 09:16:50 |
| 3 | Ti 334.940†        | 359264.9  | 351463.5  | 499.24 µg/L | 499.24 ppb | 09:17:43 |
| 3 | Tl 190.801†        | 1608.8    | 1656.0    | 508.75 µg/L | 508.75 ppb | 09:18:03 |
| 3 | U 367.007†         | 3881.4    | 4071.7    | 472.43 µg/L | 472.43 ppb | 09:17:43 |
| 3 | V 292.402†         | 114598.5  | 111723.1  | 502.00 µg/L | 502.00 ppb | 09:17:43 |
| 3 | Zn 213.857†        | 92595.6   | 90309.2   | 511.02 µg/L | 511.02 ppb | 09:17:43 |

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Mean Data: ICV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 1347468.5                | 101.22 %           | 1.091    |                    |          | 1.08% |
| Sc RADIAL  | 72999.0                  | 101 %              | 0.8      |                    |          | 0.75% |
| Y 371.029  | 724474.4                 | 100.00 %           | 1.032    |                    |          | 1.03% |
| Ag 328.068†  | 48926.9                  | 252.46 µg/L        | 0.345    | 252.46 ppb         | 0.345    | 0.14% |
| QC value within limits for Ag 328.068 Recovery = 100.99%       |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 13974.7                  | 5102.6 µg/L        | 21.71    | 5102.6 ppb         | 21.71    | 0.43% |
| QC value within limits for Al 396.153Radial Recovery = 102.05% |                          |                    |          |                    |          |       |
| As 188.979†  | 922.4                    | 506.33 µg/L        | 7.267    | 506.33 ppb         | 7.267    | 1.44% |
| QC value within limits for As 188.979 Recovery = 101.27%       |                          |                    |          |                    |          |       |
| B 249.677†   | 34393.9                  | 498.43 µg/L        | 3.224    | 498.43 ppb         | 3.224    | 0.65% |
| QC value within limits for B 249.677 Recovery = 99.69%         |                          |                    |          |                    |          |       |
| Ba 233.527†  | 56806.3                  | 506.55 µg/L        | 1.627    | 506.55 ppb         | 1.627    | 0.32% |
| QC value within limits for Ba 233.527 Recovery = 101.31%       |                          |                    |          |                    |          |       |
| Be 313.107†  | 935118.0                 | 242.75 µg/L        | 0.857    | 242.75 ppb         | 0.857    | 0.35% |
| QC value within limits for Be 313.107 Recovery = 97.10%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 46490.8                  | 5175.4 µg/L        | 39.20    | 5175.4 ppb         | 39.20    | 0.76% |
| QC value within limits for Ca 317.933Radial Recovery = 103.51% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 67604.9                  | 510.93 µg/L        | 2.449    | 510.93 ppb         | 2.449    | 0.48% |
| QC value within limits for Cd 226.502 Recovery = 102.19%       |                          |                    |          |                    |          |       |

|   |          |             |       |            |       |       |
|---|----------|-------------|-------|------------|-------|-------|
| Co 228.616†   | 34071.3  | 506.66 µg/L | 1.783 | 506.66 ppb | 1.783 | 0.35% |
| QC value within limits for Co 228.616 Recovery = 101.33%        |          |             |       |            |       |       |
| Cr 267.716†   | 42650.1  | 501.19 µg/L | 1.963 | 501.19 ppb | 1.963 | 0.39% |
| QC value within limits for Cr 267.716 Recovery = 100.24%        |          |             |       |            |       |       |
| Cu 324.752†   | 113788.8 | 502.94 µg/L | 1.497 | 502.94 ppb | 1.497 | 0.30% |
| QC value within limits for Cu 324.752 Recovery = 100.59%        |          |             |       |            |       |       |
| Fe 238.204 Radial†  | 54739.3  | 5178.1 µg/L | 35.92 | 5178.1 ppb | 35.92 | 0.69% |
| QC value within limits for Fe 238.204 Radial Recovery = 103.56% |          |             |       |            |       |       |
| K 766.490 Radial†   | 4957.5   | 2606.7 µg/L | 38.25 | 2606.7 ppb | 38.25 | 1.47% |
| QC value within limits for K 766.490 Radial Recovery = 104.27%  |          |             |       |            |       |       |
| Mg 279.077 IEC†   | 9613.2   | 5184.5 µg/L | 64.41 | 5184.5 ppb | 64.41 | 1.24% |
| QC value within limits for Mg 279.077 IEC Recovery = 103.69%    |          |             |       |            |       |       |
| Mn 257.610†   | 290163.6 | 508.36 µg/L | 1.847 | 508.36 ppb | 1.847 | 0.36% |
| QC value within limits for Mn 257.610 Recovery = 101.67%        |          |             |       |            |       |       |
| Mo 202.031†   | 9741.4   | 506.46 µg/L | 8.487 | 506.46 ppb | 8.487 | 1.68% |
| QC value within limits for Mo 202.031 Recovery = 101.29%        |          |             |       |            |       |       |
| Na 589.592 Radial†  | 15061.7  | 2511.6 µg/L | 18.96 | 2511.6 ppb | 18.96 | 0.75% |
| QC value within limits for Na 589.592 Radial Recovery = 100.46% |          |             |       |            |       |       |
| Ni 231.604†   | 31799.8  | 505.56 µg/L | 8.279 | 505.56 ppb | 8.279 | 1.64% |
| QC value within limits for Ni 231.604 Recovery = 101.11%        |          |             |       |            |       |       |
| P 214.914†  | 6971.2   | 2512.4 µg/L | 37.47 | 2512.4 ppb | 37.47 | 1.49% |
| QC value within limits for P 214.914 Recovery = 100.50%         |          |             |       |            |       |       |
| Pb 220.353†   | 5108.6   | 516.33 µg/L | 9.567 | 516.33 ppb | 9.567 | 1.85% |
| QC value within limits for Pb 220.353 Recovery = 103.27%        |          |             |       |            |       |       |
| S 181.975 Axial†  | 2286.7   | 2551.4 µg/L | 50.39 | 2551.4 ppb | 50.39 | 1.98% |
| QC value within limits for S 181.975 Axial Recovery = 102.06%   |          |             |       |            |       |       |
| Sb 206.836†   | 2630.7   | 500.07 µg/L | 8.198 | 500.07 ppb | 8.198 | 1.64% |
| QC value within limits for Sb 206.836 Recovery = 100.01%        |          |             |       |            |       |       |
| Se 196.026†   | 4894.0   | 2570 µg/L   | 46.3  | 2570 ppb   | 46.3  | 1.81% |
| QC value within limits for Se 196.026 Recovery = 102.66%        |          |             |       |            |       |       |
| SiO2†   | 94297.3  | 10437 µg/L  | 61.7  | 10437 ppb  | 61.7  | 0.59% |
| QC value within limits for SiO2 Recovery = 97.58%               |          |             |       |            |       |       |
| Si 251.611†   | 287354.9 | 4872.7 µg/L | 23.59 | 4872.7 ppb | 23.59 | 0.48% |
| QC value within limits for Si 251.611 Recovery = 97.45%         |          |             |       |            |       |       |
| Sn 189.927†   | 3988.8   | 510.02 µg/L | 7.219 | 510.02 ppb | 7.219 | 1.42% |
| QC value within limits for Sn 189.927 Recovery = 102.00%        |          |             |       |            |       |       |
| Sr 421.552†   | 174635.1 | 506.49 µg/L | 2.367 | 506.49 ppb | 2.367 | 0.47% |
| QC value within limits for Sr 421.552 Recovery = 101.30%        |          |             |       |            |       |       |
| Ti 334.940†   | 350165.5 | 497.39 µg/L | 1.775 | 497.39 ppb | 1.775 | 0.36% |
| QC value within limits for Ti 334.940 Recovery = 99.48%         |          |             |       |            |       |       |
| Tl 190.801†   | 1687.0   | 518.30 µg/L | 8.522 | 518.30 ppb | 8.522 | 1.64% |
| QC value within limits for Tl 190.801 Recovery = 103.66%        |          |             |       |            |       |       |
| U 367.007†  | 4109.8   | 477.02 µg/L | 4.201 | 477.02 ppb | 4.201 | 0.88% |
| QC value within limits for U 367.007 Recovery = 95.40%          |          |             |       |            |       |       |
| V 292.402†  | 111316.5 | 500.18 µg/L | 1.580 | 500.18 ppb | 1.580 | 0.32% |
| QC value within limits for V 292.402 Recovery = 100.04%         |          |             |       |            |       |       |
| Zn 213.857†   | 89910.1  | 508.76 µg/L | 2.249 | 508.76 ppb | 2.249 | 0.44% |
| QC value within limits for Zn 213.857 Recovery = 101.75%        |          |             |       |            |       |       |

All analyte(s) passed QC.

Sequence No.: 7

Autosampler Location: 10

Sample ID: ICB

Date Collected: 11/11/2016 09:18:10

Analyst:

Data Type: Reprocessed on 11/11/2016 09:56:30

Logged In Analyst (Original) : lab

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: ICB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units | Calib. Units | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|-------------|--------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1322662.0     | 1322662.0           | 99.358      | %            |             |              | 09:19:42      |
| 1     | Sc RADIAL          | 72696.9       | 72696.9             | 101         | %            |             |              | 09:18:35      |
| 1     | Y 371.029          | 720684.5      | 720684.5            | 99.481      | %            |             |              | 09:19:42      |
| 1     | Ag 328.068†        | -1795.1       | 84.1                | 0.4332      | µg/L         | 0.4332      | ppb          | 09:19:44      |
| 1     | Al 396.153Radial†  | 148.8         | 45.8                | 16.717      | µg/L         | 16.717      | ppb          | 09:18:55      |
| 1     | As 188.979†        | -29.9         | -0.1                | -0.0808     | µg/L         | -0.0808     | ppb          | 09:20:04      |
| 1     | B 249.677†         | 915.9         | 36.9                | 0.5343      | µg/L         | 0.5343      | ppb          | 09:19:44      |
| 1     | Ba 233.527†        | -238.1        | 1.1                 | 0.0099      | µg/L         | 0.0099      | ppb          | 09:20:04      |
| 1     | Be 313.107†        | -3645.3       | -12.9               | -0.0031     | µg/L         | -0.0031     | ppb          | 09:19:44      |
| 1     | Ca 317.933Radial†  | 391.0         | 44.3                | 4.9304      | µg/L         | 4.9304      | ppb          | 09:18:55      |
| 1     | Cd 226.502†        | -157.6        | 21.3                | 0.1611      | µg/L         | 0.1611      | ppb          | 09:20:04      |
| 1     | Co 228.616†        | -85.2         | 5.8                 | 0.0864      | µg/L         | 0.0864      | ppb          | 09:20:04      |
| 1     | Cr 267.716†        | 130.0         | 1.8                 | 0.0194      | µg/L         | 0.0194      | ppb          | 09:20:04      |
| 1     | Cu 324.752†        | 5557.4        | -183.6              | -0.8084     | µg/L         | -0.8084     | ppb          | 09:19:44      |
| 1     | Fe 238.204 Radial† | -479.6        | 42.8                | 4.0476      | µg/L         | 4.0476      | ppb          | 09:18:55      |
| 1     | K 766.490 Radial†  | 1094.6        | 14.5                | 7.6165      | µg/L         | 7.6165      | ppb          | 09:18:35      |
| 1     | Mg 279.077 IEC†    | 33.4          | 6.3                 | 3.3912      | µg/L         | 3.3912      | ppb          | 09:18:55      |
| 1     | Mn 257.610†        | 168.8         | 18.0                | 0.0314      | µg/L         | 0.0314      | ppb          | 09:20:04      |
| 1     | Mo 202.031†        | -4.0          | 25.7                | 1.3379      | µg/L         | 1.3379      | ppb          | 09:20:04      |
| 1     | Na 589.592 Radial† | 162.2         | 121.0               | 20.179      | µg/L         | 20.179      | ppb          | 09:18:35      |
| 1     | Ni 231.604†        | -207.3        | -10.9               | -0.1729     | µg/L         | -0.1729     | ppb          | 09:20:04      |
| 1     | P 214.914†         | -85.3         | 9.2                 | 3.3286      | µg/L         | 3.3286      | ppb          | 09:20:04      |
| 1     | Pb 220.353†        | 76.1          | 2.9                 | 0.2928      | µg/L         | 0.2928      | ppb          | 09:20:04      |
| 1     | S 181.975 Axial†   | 99.2          | -2.9                | -3.2073     | µg/L         | -3.2073     | ppb          | 09:20:04      |
| 1     | Sb 206.836†        | 63.9          | 20.0                | 3.8570      | µg/L         | 3.8570      | ppb          | 09:20:04      |
| 1     | Se 196.026†        | 8.4           | 0.5                 | 0.258       | µg/L         | 0.258       | ppb          | 09:20:04      |
| 1     | SiO2†              | 2783.2        | -218.6              | -24.191     | µg/L         | -24.191     | ppb          | 09:19:44      |
| 1     | Si 251.611†        | 449.2         | -132.4              | -2.2438     | µg/L         | -2.2438     | ppb          | 09:19:44      |
| 1     | Sn 189.927†        | -25.6         | 1.7                 | 0.2152      | µg/L         | 0.2152      | ppb          | 09:20:04      |
| 1     | Sr 421.552†        | -389.6        | 73.0                | 0.2116      | µg/L         | 0.2116      | ppb          | 09:18:55      |
| 1     | Ti 334.940†        | -492.1        | 393.9               | 0.5590      | µg/L         | 0.5590      | ppb          | 09:19:44      |
| 1     | Tl 190.801†        | -75.1         | 10.4                | 3.2075      | µg/L         | 3.2075      | ppb          | 09:20:04      |
| 1     | U 367.007†         | -267.2        | 15.3                | 1.8644      | µg/L         | 1.8644      | ppb          | 09:19:44      |
| 1     | V 292.402†         | 125.5         | 22.9                | 0.1038      | µg/L         | 0.1038      | ppb          | 09:19:44      |
| 1     | Zn 213.857†        | 75.5          | 29.4                | 0.1673      | µg/L         | 0.1673      | ppb          | 09:20:04      |
| 2     | Sc 361.383         | 1336038.8     | 1336038.8           | 100.36      | %            |             |              | 09:20:06      |
| 2     | Sc RADIAL          | 70572.0       | 70572.0             | 98.0        | %            |             |              | 09:18:57      |
| 2     | Y 371.029          | 727236.6      | 727236.6            | 100.39      | %            |             |              | 09:20:06      |
| 2     | Ag 328.068†        | -1904.2       | -6.5                | -0.0332     | µg/L         | -0.0332     | ppb          | 09:20:09      |
| 2     | Al 396.153Radial†  | 119.7         | 20.5                | 7.4884      | µg/L         | 7.4884      | ppb          | 09:19:17      |
| 2     | As 188.979†        | -26.7         | 3.3                 | 1.8073      | µg/L         | 1.8073      | ppb          | 09:20:29      |
| 2     | B 249.677†         | 857.0         | -31.0               | -0.4424     | µg/L         | -0.4424     | ppb          | 09:20:09      |
| 2     | Ba 233.527†        | -220.4        | 21.1                | 0.1886      | µg/L         | 0.1886      | ppb          | 09:20:29      |
| 2     | Be 313.107†        | -3193.2       | 474.3               | 0.1248      | µg/L         | 0.1248      | ppb          | 09:20:09      |
| 2     | Ca 317.933Radial†  | 348.9         | 12.9                | 1.4412      | µg/L         | 1.4412      | ppb          | 09:19:17      |
| 2     | Cd 226.502†        | -149.0        | 31.5                | 0.2381      | µg/L         | 0.2381      | ppb          | 09:20:29      |
| 2     | Co 228.616†        | -77.7         | 14.1                | 0.2099      | µg/L         | 0.2099      | ppb          | 09:20:29      |
| 2     | Cr 267.716†        | 100.1         | -29.2               | -0.3438     | µg/L         | -0.3438     | ppb          | 09:20:29      |
| 2     | Cu 324.752†        | 5669.0        | -128.4              | -0.5661     | µg/L         | -0.5661     | ppb          | 09:20:09      |
| 2     | Fe 238.204 Radial† | -459.5        | 49.1                | 4.6422      | µg/L         | 4.6422      | ppb          | 09:19:17      |
| 2     | K 766.490 Radial†  | 923.2         | -127.9              | -67.185     | µg/L         | -67.185     | ppb          | 09:18:57      |
| 2     | Mg 279.077 IEC†    | 36.5          | 10.5                | 5.6473      | µg/L         | 5.6473      | ppb          | 09:19:17      |
| 2     | Mn 257.610†        | 174.7         | 22.1                | 0.0385      | µg/L         | 0.0385      | ppb          | 09:20:29      |
| 2     | Mo 202.031†        | -25.6         | 4.3                 | 0.2213      | µg/L         | 0.2213      | ppb          | 09:20:29      |
| 2     | Na 589.592 Radial† | 141.5         | 104.7               | 17.457      | µg/L         | 17.457      | ppb          | 09:18:57      |
| 2     | Ni 231.604†        | -214.7        | -16.2               | -0.2577     | µg/L         | -0.2577     | ppb          | 09:20:29      |
| 2     | P 214.914†         | -84.3         | 11.1                | 3.9836      | µg/L         | 3.9836      | ppb          | 09:20:29      |
| 2     | Pb 220.353†        | 75.0          | 1.0                 | 0.1018      | µg/L         | 0.1018      | ppb          | 09:20:29      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 94.1      | -8.9      | -9.9534 µg/L | -9.9534 ppb | 09:20:29 |
| 2 | Sb 206.836†        | 77.7      | 33.2      | 6.4108 µg/L  | 6.4108 ppb  | 09:20:29 |
| 2 | Se 196.026†        | 0.3       | -7.7      | -4.04 µg/L   | -4.04 ppb   | 09:20:29 |
| 2 | SiO2†              | 2835.6    | -194.4    | -21.518 µg/L | -21.518 ppb | 09:20:09 |
| 2 | Si 251.611†        | 534.7     | -51.7     | -0.8767 µg/L | -0.8767 ppb | 09:20:09 |
| 2 | Sn 189.927†        | -33.3     | -5.7      | -0.7247 µg/L | -0.7247 ppb | 09:20:29 |
| 2 | Sr 421.552†        | -435.2    | 14.8      | 0.0429 µg/L  | 0.0429 ppb  | 09:19:17 |
| 2 | Ti 334.940†        | -220.8    | 669.2     | 0.9512 µg/L  | 0.9512 ppb  | 09:20:09 |
| 2 | Tl 190.801†        | -71.9     | 14.4      | 4.4169 µg/L  | 4.4169 ppb  | 09:20:29 |
| 2 | U 367.007†         | -283.4    | 1.8       | 0.1970 µg/L  | 0.1970 ppb  | 09:20:09 |
| 2 | V 292.402†         | -10.2     | -113.5    | -0.5088 µg/L | -0.5088 ppb | 09:20:09 |
| 2 | Zn 213.857†        | 65.1      | 18.4      | 0.1041 µg/L  | 0.1041 ppb  | 09:20:29 |
| 3 | Sc 361.383         | 1324922.7 | 1324922.7 | 99.528 %     |             | 09:20:31 |
| 3 | Sc RADIAL          | 70929.2   | 70929.2   | 98.5 %       |             | 09:19:19 |
| 3 | Y 371.029          | 721029.6  | 721029.6  | 99.528 %     |             | 09:20:31 |
| 3 | Ag 328.068†        | -1768.5   | 113.9     | 0.5950 µg/L  | 0.5950 ppb  | 09:20:33 |
| 3 | Al 396.153Radial†  | 107.3     | 7.3       | 2.6761 µg/L  | 2.6761 ppb  | 09:19:39 |
| 3 | As 188.979†        | -30.7     | -0.9      | -0.4607 µg/L | -0.4607 ppb | 09:20:53 |
| 3 | B 249.677†         | 836.2     | -44.7     | -0.6390 µg/L | -0.6390 ppb | 09:20:33 |
| 3 | Ba 233.527†        | -227.2    | 12.5      | 0.1113 µg/L  | 0.1113 ppb  | 09:20:53 |
| 3 | Be 313.107†        | -3542.5   | 96.6      | 0.0193 µg/L  | 0.0193 ppb  | 09:20:33 |
| 3 | Ca 317.933Radial†  | 364.2     | 26.7      | 2.9685 µg/L  | 2.9685 ppb  | 09:19:39 |
| 3 | Cd 226.502†        | -167.0    | 12.3      | 0.0921 µg/L  | 0.0921 ppb  | 09:20:53 |
| 3 | Co 228.616†        | -86.1     | 5.1       | 0.0752 µg/L  | 0.0752 ppb  | 09:20:53 |
| 3 | Cr 267.716†        | 138.0     | 9.6       | 0.1243 µg/L  | 0.1243 ppb  | 09:20:53 |
| 3 | Cu 324.752†        | 5541.9    | -208.7    | -0.9302 µg/L | -0.9302 ppb | 09:20:33 |
| 3 | Fe 238.204 Radial† | -445.2    | 65.9      | 6.2344 µg/L  | 6.2344 ppb  | 09:19:39 |
| 3 | K 766.490 Radial†  | 982.9     | -71.9     | -37.791 µg/L | -37.791 ppb | 09:19:19 |
| 3 | Mg 279.077 IEC†    | 31.9      | 5.6       | 3.0060 µg/L  | 3.0060 ppb  | 09:19:39 |
| 3 | Mn 257.610†        | 184.3     | 33.2      | 0.0581 µg/L  | 0.0581 ppb  | 09:20:53 |
| 3 | Mo 202.031†        | -21.9     | 7.7       | 0.4003 µg/L  | 0.4003 ppb  | 09:20:53 |
| 3 | Na 589.592 Radial† | 10.3      | -29.3     | -4.8851 µg/L | -4.8851 ppb | 09:19:19 |
| 3 | Ni 231.604†        | -191.3    | 5.5       | 0.0875 µg/L  | 0.0875 ppb  | 09:20:53 |
| 3 | P 214.914†         | -58.8     | 36.0      | 12.980 µg/L  | 12.980 ppb  | 09:20:53 |
| 3 | Pb 220.353†        | 73.9      | 0.5       | 0.0663 µg/L  | 0.0663 ppb  | 09:20:53 |
| 3 | S 181.975 Axial†   | 92.1      | -10.1     | -11.304 µg/L | -11.304 ppb | 09:20:53 |
| 3 | Sb 206.836†        | 68.6      | 24.6      | 4.7557 µg/L  | 4.7557 ppb  | 09:20:53 |
| 3 | Se 196.026†        | 7.9       | -0.1      | -0.039 µg/L  | -0.039 ppb  | 09:20:53 |
| 3 | SiO2†              | 2942.9    | -63.0     | -6.9674 µg/L | -6.9674 ppb | 09:20:33 |
| 3 | Si 251.611†        | 459.4     | -122.9    | -2.0826 µg/L | -2.0826 ppb | 09:20:33 |
| 3 | Sn 189.927†        | -17.5     | 9.9       | 1.2684 µg/L  | 1.2684 ppb  | 09:20:53 |
| 3 | Sr 421.552†        | -435.1    | 17.1      | 0.0496 µg/L  | 0.0496 ppb  | 09:19:39 |
| 3 | Ti 334.940†        | -331.4    | 556.2     | 0.7969 µg/L  | 0.7969 ppb  | 09:20:33 |
| 3 | Tl 190.801†        | -68.1     | 17.6      | 5.4072 µg/L  | 5.4072 ppb  | 09:20:53 |
| 3 | U 367.007†         | -379.2    | -96.8     | -11.938 µg/L | -11.938 ppb | 09:20:33 |
| 3 | V 292.402†         | 84.7      | -18.3     | -0.0856 µg/L | -0.0856 ppb | 09:20:33 |
| 3 | Zn 213.857†        | 65.7      | 19.5      | 0.1107 µg/L  | 0.1107 ppb  | 09:20:53 |

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Mean Data: ICB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 1327874.5                | 99.750 %           | 0.5379   |                    |          | 0.54%   |
| Sc RADIAL   | 71399.4                  | 99.1 %             | 1.58     |                    |          | 1.59%   |
| Y 371.029   | 722983.6                 | 99.798 %           | 0.5090   |                    |          | 0.51%   |
| Ag 328.068†   | 63.9                     | 0.3317 µg/L        | 0.32620  | 0.3317 ppb         | 0.32620  | 98.34%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 24.5                     | 8.9605 µg/L        | 7.13523  | 8.9605 ppb         | 7.13523  | 79.63%  |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | 0.8                      | 0.4219 µg/L        | 1.21470  | 0.4219 ppb         | 1.21470  | 287.89% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | -12.9                    | -0.1823 µg/L       | 0.62840  | -0.1823 ppb        | 0.62840  | 344.62% |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | 11.6                     | 0.1033 µg/L        | 0.08963  | 0.1033 ppb         | 0.08963  | 86.78%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 186.0                    | 0.0470 µg/L        | 0.06828  | 0.0470 ppb         | 0.06828  | 145.28% |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 28.0                     | 3.1134 µg/L        | 1.74909  | 3.1134 ppb         | 1.74909  | 56.18%  |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| Cd 226.502†   | 21.7                     | 0.1638 µg/L        | 0.07308  | 0.1638 ppb         | 0.07308  | 44.63%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |                    |          |                    |          |         |

|  |        |              |         |             |         |         |
|--|--------|--------------|---------|-------------|---------|---------|
| Co 228.616†  | 8.3    | 0.1238 µg/L  | 0.07475 | 0.1238 ppb  | 0.07475 | 60.36%  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |         |             |         |         |
| Cr 267.716†  | -5.9   | -0.0667 µg/L | 0.24562 | -0.0667 ppb | 0.24562 | 368.32% |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |         |             |         |         |
| Cu 324.752†  | -173.6 | -0.7682 µg/L | 0.18535 | -0.7682 ppb | 0.18535 | 24.13%  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |         |             |         |         |
| Fe 238.204 Radial†   | 52.6   | 4.9747 µg/L  | 1.13067 | 4.9747 ppb  | 1.13067 | 22.73%  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |         |             |         |         |
| K 766.490 Radial†  | -61.8  | -32.453 µg/L | 37.6855 | -32.453 ppb | 37.6855 | 116.12% |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |         |             |         |         |
| Mg 279.077 IEC†  | 7.4    | 4.0148 µg/L  | 1.42680 | 4.0148 ppb  | 1.42680 | 35.54%  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |         |             |         |         |
| Mn 257.610†  | 24.4   | 0.0426 µg/L  | 0.01384 | 0.0426 ppb  | 0.01384 | 32.45%  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |         |             |         |         |
| Mo 202.031†  | 12.6   | 0.6532 µg/L  | 0.59970 | 0.6532 ppb  | 0.59970 | 91.81%  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |         |             |         |         |
| Na 589.592 Radial†   | 65.5   | 10.917 µg/L  | 13.7524 | 10.917 ppb  | 13.7524 | 125.97% |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |         |             |         |         |
| Ni 231.604†  | -7.2   | -0.1144 µg/L | 0.17990 | -0.1144 ppb | 0.17990 | 157.30% |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |         |             |         |         |
| P 214.914†   | 18.8   | 6.7641 µg/L  | 5.39318 | 6.7641 ppb  | 5.39318 | 79.73%  |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |         |             |         |         |
| Pb 220.353†  | 1.5    | 0.1536 µg/L  | 0.12179 | 0.1536 ppb  | 0.12179 | 79.28%  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |         |             |         |         |
| S 181.975 Axial†   | -7.3   | -8.1551 µg/L | 4.33776 | -8.1551 ppb | 4.33776 | 53.19%  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |         |             |         |         |
| Sb 206.836†  | 25.9   | 5.0078 µg/L  | 1.29543 | 5.0078 ppb  | 1.29543 | 25.87%  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |         |             |         |         |
| Se 196.026†  | -2.4   | -1.28 µg/L   | 2.403   | -1.28 ppb   | 2.403   | 188.39% |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |         |             |         |         |
| SiO2†  | -158.6 | -17.559 µg/L | 9.2690  | -17.559 ppb | 9.2690  | 52.79%  |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |         |             |         |         |
| Si 251.611†  | -102.3 | -1.7344 µg/L | 0.74712 | -1.7344 ppb | 0.74712 | 43.08%  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |         |             |         |         |
| Sn 189.927†  | 2.0    | 0.2530 µg/L  | 0.99710 | 0.2530 ppb  | 0.99710 | 394.12% |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |         |             |         |         |
| Sr 421.552†  | 35.0   | 0.1014 µg/L  | 0.09556 | 0.1014 ppb  | 0.09556 | 94.28%  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |         |             |         |         |
| Ti 334.940†  | 539.8  | 0.7691 µg/L  | 0.19758 | 0.7691 ppb  | 0.19758 | 25.69%  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |         |             |         |         |
| Tl 190.801†  | 14.1   | 4.3439 µg/L  | 1.10166 | 4.3439 ppb  | 1.10166 | 25.36%  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |         |             |         |         |
| U 367.007†   | -26.5  | -3.2921 µg/L | 7.53354 | -3.2921 ppb | 7.53354 | 228.84% |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |         |             |         |         |
| V 292.402†   | -36.3  | -0.1635 µg/L | 0.31362 | -0.1635 ppb | 0.31362 | 191.77% |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |         |             |         |         |
| Zn 213.857†  | 22.4   | 0.1274 µg/L  | 0.03471 | 0.1274 ppb  | 0.03471 | 27.25%  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |         |             |         |         |

All analyte(s) passed QC.

Sequence No.: 8

Autosampler Location: 101

Sample ID: PQL

Date Collected: 11/11/2016 09:21:00

Analyst:

Data Type: Reprocessed on 11/11/2016 09:56:31

Logged In Analyst (Original) : lab

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: PQL

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1368966.1     | 1368966.1           | 102.84 %           |             |              | 09:22:32      |
| 1     | Sc RADIAL          | 73226.8       | 73226.8             | 102 %              |             |              | 09:21:25      |
| 1     | Y 371.029          | 746701.0      | 746701.0            | 103.07 %           |             |              | 09:22:32      |
| 1     | Ag 328.068†        | -917.6        | 998.6               | 5.1397 µg/L        | 5.1397      | ppb          | 09:22:34      |
| 1     | Al 396.153Radial†  | 690.7         | 577.8               | 210.97 µg/L        | 210.97      | ppb          | 09:21:45      |
| 1     | As 188.979†        | 25.2          | 54.5                | 29.648 µg/L        | 29.648      | ppb          | 09:22:54      |
| 1     | B 249.677†         | 4281.4        | 3278.5              | 47.228 µg/L        | 47.228      | ppb          | 09:22:34      |
| 1     | Ba 233.527†        | 361.8         | 592.6               | 5.2844 µg/L        | 5.2844      | ppb          | 09:22:54      |
| 1     | Be 313.107†        | 15104.9       | 18344.2             | 4.8841 µg/L        | 4.8841      | ppb          | 09:22:34      |
| 1     | Ca 317.933Radial†  | 2333.7        | 1952.6              | 217.37 µg/L        | 217.37      | ppb          | 09:21:45      |
| 1     | Cd 226.502†        | 504.5         | 670.6               | 5.0616 µg/L        | 5.0616      | ppb          | 09:22:54      |
| 1     | Co 228.616†        | 284.3         | 368.0               | 5.4714 µg/L        | 5.4714      | ppb          | 09:22:54      |
| 1     | Cr 267.716†        | 610.0         | 464.2               | 5.4306 µg/L        | 5.4306      | ppb          | 09:22:54      |
| 1     | Cu 324.752†        | 8052.4        | 2053.4              | 9.0974 µg/L        | 9.0974      | ppb          | 09:22:34      |
| 1     | Fe 238.204 Radial† | 630.6         | 1138.4              | 107.69 µg/L        | 107.69      | ppb          | 09:21:45      |
| 1     | K 766.490 Radial†  | 1245.6        | 155.1               | 81.537 µg/L        | 81.537      | ppb          | 09:21:25      |
| 1     | Mg 279.077 IEC†    | 609.7         | 573.0               | 308.94 µg/L        | 308.94      | ppb          | 09:21:45      |
| 1     | Mn 257.610†        | 6161.8        | 5839.9              | 10.224 µg/L        | 10.224      | ppb          | 09:22:34      |
| 1     | Mo 202.031†        | 161.5         | 186.8               | 9.7141 µg/L        | 9.7141      | ppb          | 09:22:54      |
| 1     | Na 589.592 Radial† | 1909.3        | 1838.5              | 306.58 µg/L        | 306.58      | ppb          | 09:21:25      |
| 1     | Ni 231.604†        | 123.3         | 317.6               | 5.0498 µg/L        | 5.0498      | ppb          | 09:22:54      |
| 1     | P 214.914†         | 336.5         | 422.3               | 152.19 µg/L        | 152.19      | ppb          | 09:22:54      |
| 1     | Pb 220.353†        | 172.7         | 94.3                | 9.5057 µg/L        | 9.5057      | ppb          | 09:22:54      |
| 1     | S 181.975 Axial†   | 174.4         | 66.9                | 74.606 µg/L        | 74.606      | ppb          | 09:22:54      |
| 1     | Sb 206.836†        | 94.1          | 47.2                | 9.0361 µg/L        | 9.0361      | ppb          | 09:22:54      |
| 1     | Se 196.026†        | 64.7          | 54.9                | 28.9 µg/L          | 28.9        | ppb          | 09:22:54      |
| 1     | SiO2†              | 4778.5        | 1627.0              | 180.07 µg/L        | 180.07      | ppb          | 09:22:34      |
| 1     | Si 251.611†        | 6074.4        | 5322.4              | 90.254 µg/L        | 90.254      | ppb          | 09:22:34      |
| 1     | Sn 189.927†        | 61.4          | 87.2                | 11.149 µg/L        | 11.149      | ppb          | 09:22:54      |
| 1     | Sr 421.552†        | 1363.1        | 1800.0              | 5.2149 µg/L        | 5.2149      | ppb          | 09:21:45      |
| 1     | Ti 334.940†        | 2737.0        | 3550.7              | 5.0320 µg/L        | 5.0320      | ppb          | 09:22:34      |
| 1     | Tl 190.801†        | -26.3         | 60.5                | 18.572 µg/L        | 18.572      | ppb          | 09:22:54      |
| 1     | U 367.007†         | -31.4         | 253.7               | 30.605 µg/L        | 30.605      | ppb          | 09:22:34      |
| 1     | V 292.402†         | 1350.0        | 1209.4              | 5.4470 µg/L        | 5.4470      | ppb          | 09:22:34      |
| 1     | Zn 213.857†        | 1944.7        | 1844.6              | 10.429 µg/L        | 10.429      | ppb          | 09:22:54      |
| 2     | Sc 361.383         | 1374309.4     | 1374309.4           | 103.24 %           |             |              | 09:22:56      |
| 2     | Sc RADIAL          | 72122.5       | 72122.5             | 100 %              |             |              | 09:21:47      |
| 2     | Y 371.029          | 747984.6      | 747984.6            | 103.25 %           |             |              | 09:22:56      |
| 2     | Ag 328.068†        | -580.7        | 1328.3              | 6.8401 µg/L        | 6.8401      | ppb          | 09:22:58      |
| 2     | Al 396.153Radial†  | 715.6         | 613.1               | 223.87 µg/L        | 223.87      | ppb          | 09:22:07      |
| 2     | As 188.979†        | 25.0          | 54.2                | 29.482 µg/L        | 29.482      | ppb          | 09:23:19      |
| 2     | B 249.677†         | 4400.4        | 3377.5              | 48.654 µg/L        | 48.654      | ppb          | 09:22:58      |
| 2     | Ba 233.527†        | 347.0         | 576.9               | 5.1445 µg/L        | 5.1445      | ppb          | 09:23:19      |
| 2     | Be 313.107†        | 15348.9       | 18523.4             | 4.9375 µg/L        | 4.9375      | ppb          | 09:22:58      |
| 2     | Ca 317.933Radial†  | 2335.9        | 1990.0              | 221.52 µg/L        | 221.52      | ppb          | 09:22:07      |
| 2     | Cd 226.502†        | 526.5         | 690.0               | 5.2086 µg/L        | 5.2086      | ppb          | 09:23:19      |
| 2     | Co 228.616†        | 249.4         | 333.1               | 4.9532 µg/L        | 4.9532      | ppb          | 09:23:19      |
| 2     | Cr 267.716†        | 600.3         | 452.4               | 5.2903 µg/L        | 5.2903      | ppb          | 09:23:19      |
| 2     | Cu 324.752†        | 8032.0        | 2003.2              | 8.8781 µg/L        | 8.8781      | ppb          | 09:22:58      |
| 2     | Fe 238.204 Radial† | 644.5         | 1161.8              | 109.90 µg/L        | 109.90      | ppb          | 09:22:07      |
| 2     | K 766.490 Radial†  | 1349.7        | 277.9               | 146.06 µg/L        | 146.06      | ppb          | 09:21:47      |
| 2     | Mg 279.077 IEC†    | 621.4         | 593.9               | 320.23 µg/L        | 320.23      | ppb          | 09:22:07      |
| 2     | Mn 257.610†        | 6152.3        | 5807.3              | 10.166 µg/L        | 10.166      | ppb          | 09:22:58      |
| 2     | Mo 202.031†        | 163.1         | 187.8               | 9.7643 µg/L        | 9.7643      | ppb          | 09:23:19      |
| 2     | Na 589.592 Radial† | 1804.6        | 1762.7              | 293.93 µg/L        | 293.93      | ppb          | 09:21:47      |
| 2     | Ni 231.604†        | 144.2         | 337.4               | 5.3634 µg/L        | 5.3634      | ppb          | 09:23:19      |
| 2     | P 214.914†         | 329.0         | 413.8               | 149.15 µg/L        | 149.15      | ppb          | 09:23:19      |
| 2     | Pb 220.353†        | 179.1         | 99.8                | 10.059 µg/L        | 10.059      | ppb          | 09:23:19      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 189.3     | 80.6      | 89.985 µg/L | 89.985 ppb | 09:23:19 |
| 2 | Sb 206.836†        | 96.6      | 49.2      | 9.4219 µg/L | 9.4219 ppb | 09:23:19 |
| 2 | Se 196.026†        | 77.0      | 66.6      | 35.0 µg/L   | 35.0 ppb   | 09:23:19 |
| 2 | SiO2†              | 4782.0    | 1612.3    | 178.44 µg/L | 178.44 ppb | 09:22:58 |
| 2 | Si 251.611†        | 6167.1    | 5389.2    | 91.387 µg/L | 91.387 ppb | 09:22:58 |
| 2 | Sn 189.927†        | 59.6      | 85.2      | 10.894 µg/L | 10.894 ppb | 09:23:19 |
| 2 | Sr 421.552†        | 1414.4    | 1871.7    | 5.4228 µg/L | 5.4228 ppb | 09:22:07 |
| 2 | Ti 334.940†        | 2731.7    | 3535.2    | 5.0086 µg/L | 5.0086 ppb | 09:22:58 |
| 2 | Tl 190.801†        | -8.9      | 77.5      | 23.792 µg/L | 23.792 ppb | 09:23:19 |
| 2 | U 367.007†         | -8.3      | 276.1     | 33.357 µg/L | 33.357 ppb | 09:22:58 |
| 2 | V 292.402†         | 1202.5    | 1061.4    | 4.7849 µg/L | 4.7849 ppb | 09:22:58 |
| 2 | Zn 213.857†        | 1920.2    | 1813.5    | 10.252 µg/L | 10.252 ppb | 09:23:19 |
| 3 | Sc 361.383         | 1323781.0 | 1323781.0 | 99.442 %    |            | 09:23:21 |
| 3 | Sc RADIAL          | 72084.8   | 72084.8   | 100 %       |            | 09:22:09 |
| 3 | Y 371.029          | 721660.9  | 721660.9  | 99.616 %    |            | 09:23:21 |
| 3 | Ag 328.068†        | -832.4    | 1053.8    | 5.4110 µg/L | 5.4110 ppb | 09:23:23 |
| 3 | Al 396.153Radial†  | 691.5     | 589.3     | 215.19 µg/L | 215.19 ppb | 09:22:29 |
| 3 | As 188.979†        | 30.1      | 60.2      | 32.779 µg/L | 32.779 ppb | 09:23:43 |
| 3 | B 249.677†         | 4433.0    | 3573.0    | 51.464 µg/L | 51.464 ppb | 09:23:23 |
| 3 | Ba 233.527†        | 358.8     | 601.6     | 5.3646 µg/L | 5.3646 ppb | 09:23:43 |
| 3 | Be 313.107†        | 15292.4   | 19034.0   | 5.0788 µg/L | 5.0788 ppb | 09:23:23 |
| 3 | Ca 317.933Radial†  | 2361.3    | 2016.6    | 224.49 µg/L | 224.49 ppb | 09:22:29 |
| 3 | Cd 226.502†        | 522.4     | 705.3     | 5.3244 µg/L | 5.3244 ppb | 09:23:43 |
| 3 | Co 228.616†        | 263.8     | 356.8     | 5.3048 µg/L | 5.3048 ppb | 09:23:43 |
| 3 | Cr 267.716†        | 594.0     | 468.4     | 5.4586 µg/L | 5.4586 ppb | 09:23:43 |
| 3 | Cu 324.752†        | 8131.9    | 2400.7    | 10.649 µg/L | 10.649 ppb | 09:23:23 |
| 3 | Fe 238.204 Radial† | 630.2     | 1147.8    | 108.58 µg/L | 108.58 ppb | 09:22:29 |
| 3 | K 766.490 Radial†  | 1317.3    | 246.3     | 129.43 µg/L | 129.43 ppb | 09:22:09 |
| 3 | Mg 279.077 IEC†    | 628.0     | 600.8     | 323.92 µg/L | 323.92 ppb | 09:22:29 |
| 3 | Mn 257.610†        | 6222.9    | 6105.8    | 10.689 µg/L | 10.689 ppb | 09:23:23 |
| 3 | Mo 202.031†        | 179.0     | 209.8     | 10.909 µg/L | 10.909 ppb | 09:23:43 |
| 3 | Na 589.592 Radial† | 1943.4    | 1902.4    | 317.23 µg/L | 317.23 ppb | 09:22:09 |
| 3 | Ni 231.604†        | 126.7     | 325.1     | 5.1689 µg/L | 5.1689 ppb | 09:23:43 |
| 3 | P 214.914†         | 350.8     | 447.8     | 161.41 µg/L | 161.41 ppb | 09:23:43 |
| 3 | Pb 220.353†        | 184.1     | 111.4     | 11.219 µg/L | 11.219 ppb | 09:23:43 |
| 3 | S 181.975 Axial†   | 181.3     | 79.6      | 88.848 µg/L | 88.848 ppb | 09:23:43 |
| 3 | Sb 206.836†        | 91.0      | 47.2      | 9.0280 µg/L | 9.0280 ppb | 09:23:43 |
| 3 | Se 196.026†        | 60.6      | 52.9      | 27.8 µg/L   | 27.8 ppb   | 09:23:43 |
| 3 | SiO2†              | 4819.1    | 1826.4    | 202.14 µg/L | 202.14 ppb | 09:23:23 |
| 3 | Si 251.611†        | 6067.3    | 5516.8    | 93.551 µg/L | 93.551 ppb | 09:23:23 |
| 3 | Sn 189.927†        | 58.2      | 86.0      | 11.001 µg/L | 11.001 ppb | 09:23:43 |
| 3 | Sr 421.552†        | 1377.4    | 1835.5    | 5.3176 µg/L | 5.3176 ppb | 09:22:29 |
| 3 | Ti 334.940†        | 2926.8    | 3832.5    | 5.4203 µg/L | 5.4203 ppb | 09:23:23 |
| 3 | Tl 190.801†        | -16.6     | 69.3      | 21.303 µg/L | 21.303 ppb | 09:23:43 |
| 3 | U 367.007†         | 160.3     | 445.4     | 54.191 µg/L | 54.191 ppb | 09:23:23 |
| 3 | V 292.402†         | 1327.2    | 1231.3    | 5.5542 µg/L | 5.5542 ppb | 09:23:23 |
| 3 | Zn 213.857†        | 1912.0    | 1876.2    | 10.606 µg/L | 10.606 ppb | 09:23:43 |

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Mean Data: PQL

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc 361.383   | 1355685.5                | 101.84 %           | 2.085    |                    |          | 2.05%  |
| Sc RADIAL  | 72478.0                  | 101 %              | 0.9      |                    |          | 0.90%  |
| Y 371.029  | 738782.2                 | 101.98 %           | 2.049    |                    |          | 2.01%  |
| Ag 328.068†  | 1126.9                   | 5.7969 µg/L        | 0.91350  | 5.7969 ppb         | 0.91350  | 15.76% |
| QC value within limits for Ag 328.068 Recovery = 115.94%       |                          |                    |          |                    |          |        |
| Al 396.153Radial†  | 593.4                    | 216.68 µg/L        | 6.574    | 216.68 ppb         | 6.574    | 3.03%  |
| QC value within limits for Al 396.153Radial Recovery = 108.34% |                          |                    |          |                    |          |        |
| As 188.979†  | 56.3                     | 30.636 µg/L        | 1.8572   | 30.636 ppb         | 1.8572   | 6.06%  |
| QC value within limits for As 188.979 Recovery = 102.12%       |                          |                    |          |                    |          |        |
| B 249.677†   | 3409.7                   | 49.115 µg/L        | 2.1555   | 49.115 ppb         | 2.1555   | 4.39%  |
| QC value within limits for B 249.677 Recovery = 98.23%         |                          |                    |          |                    |          |        |
| Ba 233.527†  | 590.3                    | 5.2645 µg/L        | 0.11138  | 5.2645 ppb         | 0.11138  | 2.12%  |
| QC value within limits for Ba 233.527 Recovery = 105.29%       |                          |                    |          |                    |          |        |
| Be 313.107†  | 18633.9                  | 4.9668 µg/L        | 0.10061  | 4.9668 ppb         | 0.10061  | 2.03%  |
| QC value within limits for Be 313.107 Recovery = 99.34%        |                          |                    |          |                    |          |        |
| Ca 317.933Radial†  | 1986.4                   | 221.13 µg/L        | 3.579    | 221.13 ppb         | 3.579    | 1.62%  |
| QC value within limits for Ca 317.933Radial Recovery = 110.56% |                          |                    |          |                    |          |        |
| Cd 226.502†  | 688.7                    | 5.1982 µg/L        | 0.13171  | 5.1982 ppb         | 0.13171  | 2.53%  |
| QC value within limits for Cd 226.502 Recovery = 103.96%       |                          |                    |          |                    |          |        |



|   |        |             |         |            |         |        |
|---|--------|-------------|---------|------------|---------|--------|
| Co 228.616†   | 352.6  | 5.2431 µg/L | 0.26458 | 5.2431 ppb | 0.26458 | 5.05%  |
| QC value within limits for Co 228.616 Recovery = 104.86%        |        |             |         |            |         |        |
| Cr 267.716†   | 461.6  | 5.3932 µg/L | 0.09019 | 5.3932 ppb | 0.09019 | 1.67%  |
| QC value within limits for Cr 267.716 Recovery = 107.86%        |        |             |         |            |         |        |
| Cu 324.752†   | 2152.4 | 9.5414 µg/L | 0.96522 | 9.5414 ppb | 0.96522 | 10.12% |
| QC value within limits for Cu 324.752 Recovery = 95.41%         |        |             |         |            |         |        |
| Fe 238.204 Radial†  | 1149.4 | 108.72 µg/L | 1.112   | 108.72 ppb | 1.112   | 1.02%  |
| QC value within limits for Fe 238.204 Radial Recovery = 108.72% |        |             |         |            |         |        |
| K 766.490 Radial†   | 226.4  | 119.01 µg/L | 33.500  | 119.01 ppb | 33.500  | 28.15% |
| QC value within limits for K 766.490 Radial Recovery = 79.34%   |        |             |         |            |         |        |
| Mg 279.077 IEC†   | 589.2  | 317.70 µg/L | 7.808   | 317.70 ppb | 7.808   | 2.46%  |
| QC value within limits for Mg 279.077 IEC Recovery = 105.90%    |        |             |         |            |         |        |
| Mn 257.610†   | 5917.7 | 10.360 µg/L | 0.2868  | 10.360 ppb | 0.2868  | 2.77%  |
| QC value within limits for Mn 257.610 Recovery = 103.60%        |        |             |         |            |         |        |
| Mo 202.031†   | 194.8  | 10.129 µg/L | 0.6760  | 10.129 ppb | 0.6760  | 6.67%  |
| QC value within limits for Mo 202.031 Recovery = 101.29%        |        |             |         |            |         |        |
| Na 589.592 Radial†  | 1834.5 | 305.92 µg/L | 11.661  | 305.92 ppb | 11.661  | 3.81%  |
| QC value within limits for Na 589.592 Radial Recovery = 101.97% |        |             |         |            |         |        |
| Ni 231.604†   | 326.7  | 5.1940 µg/L | 0.15831 | 5.1940 ppb | 0.15831 | 3.05%  |
| QC value within limits for Ni 231.604 Recovery = 103.88%        |        |             |         |            |         |        |
| P 214.914†  | 428.0  | 154.25 µg/L | 6.385   | 154.25 ppb | 6.385   | 4.14%  |
| QC value within limits for P 214.914 Recovery = 102.83%         |        |             |         |            |         |        |
| Pb 220.353†   | 101.8  | 10.261 µg/L | 0.8741  | 10.261 ppb | 0.8741  | 8.52%  |
| QC value within limits for Pb 220.353 Recovery = 102.61%        |        |             |         |            |         |        |
| S 181.975 Axial†  | 75.7   | 84.480 µg/L | 8.5698  | 84.480 ppb | 8.5698  | 10.14% |
| QC value within limits for S 181.975 Axial Recovery = 84.48%    |        |             |         |            |         |        |
| Sb 206.836†   | 47.9   | 9.1620 µg/L | 0.22515 | 9.1620 ppb | 0.22515 | 2.46%  |
| QC value within limits for Sb 206.836 Recovery = 91.62%         |        |             |         |            |         |        |
| Se 196.026†   | 58.1   | 30.5 µg/L   | 3.85    | 30.5 ppb   | 3.85    | 12.62% |
| QC value within limits for Se 196.026 Recovery = 101.81%        |        |             |         |            |         |        |
| SiO2†   | 1688.5 | 186.88 µg/L | 13.237  | 186.88 ppb | 13.237  | 7.08%  |
| QC value within limits for SiO2 Recovery = 87.74%               |        |             |         |            |         |        |
| Si 251.611†   | 5409.5 | 91.731 µg/L | 1.6751  | 91.731 ppb | 1.6751  | 1.83%  |
| QC value within limits for Si 251.611 Recovery = 91.73%         |        |             |         |            |         |        |
| Sn 189.927†   | 86.1   | 11.015 µg/L | 0.1281  | 11.015 ppb | 0.1281  | 1.16%  |
| QC value within limits for Sn 189.927 Recovery = 110.15%        |        |             |         |            |         |        |
| Sr 421.552†   | 1835.8 | 5.3184 µg/L | 0.10395 | 5.3184 ppb | 0.10395 | 1.95%  |
| QC value within limits for Sr 421.552 Recovery = 106.37%        |        |             |         |            |         |        |
| Ti 334.940†   | 3639.5 | 5.1536 µg/L | 0.23122 | 5.1536 ppb | 0.23122 | 4.49%  |
| QC value within limits for Ti 334.940 Recovery = 103.07%        |        |             |         |            |         |        |
| Tl 190.801†   | 69.1   | 21.223 µg/L | 2.6110  | 21.223 ppb | 2.6110  | 12.30% |
| QC value within limits for Tl 190.801 Recovery = 106.11%        |        |             |         |            |         |        |
| U 367.007†  | 325.1  | 39.384 µg/L | 12.8967 | 39.384 ppb | 12.8967 | 32.75% |
| QC value within limits for U 367.007 Recovery = 78.77%          |        |             |         |            |         |        |
| V 292.402†  | 1167.4 | 5.2621 µg/L | 0.41666 | 5.2621 ppb | 0.41666 | 7.92%  |
| QC value within limits for V 292.402 Recovery = 105.24%         |        |             |         |            |         |        |
| Zn 213.857†   | 1844.8 | 10.429 µg/L | 0.1771  | 10.429 ppb | 0.1771  | 1.70%  |
| QC value within limits for Zn 213.857 Recovery = 104.29%        |        |             |         |            |         |        |

All analyte(s) passed QC.

Sequence No.: 9

Autosampler Location: 103

Sample ID: ICSEA

Date Collected: 11/11/2016 09:23:51

Analyst:

Data Type: Reprocessed on 11/11/2016 09:56:31

Logged In Analyst (Original) : lab

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: ICSEA

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units  | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1181899.3     | 1181899.3           | 88.784 %     |             |              | 09:24:32      |
| 1     | Sc RADIAL          | 66327.9       | 66327.9             | 92.1 %       |             |              | 09:24:20      |
| 1     | Y 371.029          | 633740.0      | 633740.0            | 87.479 %     |             |              | 09:24:32      |
| 1     | Ag 328.068†        | -2849.8       | -1318.9             | -0.3555 µg/L | -0.3555     | ppb          | 09:24:32      |
| 1     | Al 396.153Radial†  | 1273645.7     | 1383187.9           | 505040 µg/L  | 505040      | ppb          | 09:24:18      |
| 1     | As 188.979†        | -61.7         | -39.6               | 1.8623 µg/L  | 1.8623      | ppb          | 09:24:52      |
| 1     | B 249.677†         | -8966.3       | -10983.8            | -17.955 µg/L | -17.955     | ppb          | 09:24:32      |
| 1     | Ba 233.527†        | -99.0         | 129.3               | 2.0784 µg/L  | 2.0784      | ppb          | 09:24:52      |
| 1     | Be 313.107†        | -3818.9       | -645.4              | 0.1909 µg/L  | 0.1909      | ppb          | 09:24:32      |
| 1     | Ca 317.933Radial†  | 4013093.6     | 4358224.1           | 485160 µg/L  | 485160      | ppb          | 09:24:18      |
| 1     | Cd 226.502†        | 2725.0        | 3249.2              | 2.7294 µg/L  | 2.7294      | ppb          | 09:24:52      |
| 1     | Co 228.616†        | 35.2          | 131.2               | -0.3884 µg/L | -0.3884     | ppb          | 09:24:52      |
| 1     | Cr 267.716†        | 161.6         | 53.1                | 0.2849 µg/L  | 0.2849      | ppb          | 09:24:52      |
| 1     | Cu 324.752†        | 963.0         | -4692.2             | -1.0482 µg/L | -1.0482     | ppb          | 09:24:52      |
| 1     | Fe 238.204 Radial† | 1857269.4     | 2017673.4           | 190860 µg/L  | 190860      | ppb          | 09:24:18      |
| 1     | K 766.490 Radial†  | 1003.0        | 19.1                | 41.385 µg/L  | 41.385      | ppb          | 09:24:20      |
| 1     | Mg 279.077 IEC†    | 854850.3      | 928414.7            | 500610 µg/L  | 500610      | ppb          | 09:24:18      |
| 1     | Mn 257.610†        | 8373.9        | 9279.8              | -1.8357 µg/L | -1.8357     | ppb          | 09:24:32      |
| 1     | Mo 202.031†        | -259.2        | -262.2              | -3.6815 µg/L | -3.6815     | ppb          | 09:24:52      |
| 1     | Na 589.592 Radial† | -23.9         | -65.7               | -10.958 µg/L | -10.958     | ppb          | 09:24:20      |
| 1     | Ni 231.604†        | -242.6        | -75.5               | -1.1998 µg/L | -1.1998     | ppb          | 09:24:52      |
| 1     | P 214.914†         | -37.9         | 52.4                | 8.8678 µg/L  | 8.8678      | ppb          | 09:24:52      |
| 1     | Pb 220.353†        | -88.4         | -173.3              | 2.1493 µg/L  | 2.1493      | ppb          | 09:24:52      |
| 1     | S 181.975 Axial†   | 142.2         | 57.4                | 13.532 µg/L  | 13.532      | ppb          | 09:24:52      |
| 1     | Sb 206.836†        | 93.5          | 61.1                | 3.8446 µg/L  | 3.8446      | ppb          | 09:24:52      |
| 1     | Se 196.026†        | -134.3        | -159.3              | -6.91 µg/L   | -6.91       | ppb          | 09:24:52      |
| 1     | SiO2†              | 3472.6        | 891.5               | 98.664 µg/L  | 98.664      | ppb          | 09:24:52      |
| 1     | Si 251.611†        | 1735.0        | 1369.7              | 47.354 µg/L  | 47.354      | ppb          | 09:24:52      |
| 1     | Sn 189.927†        | -28.8         | -4.9                | 0.9305 µg/L  | 0.9305      | ppb          | 09:24:52      |
| 1     | Sr 421.552†        | 4615.3        | 5471.6              | -0.8633 µg/L | -0.8633     | ppb          | 09:24:20      |
| 1     | Ti 334.940†        | -4434.8       | -4105.7             | -0.3577 µg/L | -0.3577     | ppb          | 09:24:32      |
| 1     | Tl 190.801†        | -108.9        | -36.6               | -8.0041 µg/L | -8.0041     | ppb          | 09:24:52      |
| 1     | U 367.007†         | 7642.0        | 8891.6              | 13.727 µg/L  | 13.727      | ppb          | 09:24:32      |
| 1     | V 292.402†         | -2235.3       | -2621.0             | 1.3897 µg/L  | 1.3897      | ppb          | 09:24:52      |
| 1     | Zn 213.857†        | 7904.4        | 8856.5              | 5.0303 µg/L  | 5.0303      | ppb          | 09:24:52      |
| 2     | Sc 361.383         | 1223481.8     | 1223481.8           | 91.908 %     |             |              | 09:24:54      |
| 2     | Sc RADIAL          | 68085.4       | 68085.4             | 94.5 %       |             |              | 09:24:24      |
| 2     | Y 371.029          | 654984.7      | 654984.7            | 90.412 %     |             |              | 09:24:54      |
| 2     | Ag 328.068†        | -3124.6       | -1508.9             | -1.5910 µg/L | -1.5910     | ppb          | 09:24:54      |
| 2     | Al 396.153Radial†  | 1257668.2     | 1330576.1           | 485830 µg/L  | 485830      | ppb          | 09:24:22      |
| 2     | As 188.979†        | -75.0         | -51.6               | -5.5726 µg/L | -5.5726     | ppb          | 09:25:14      |
| 2     | B 249.677†         | -9004.2       | -10681.9            | -18.886 µg/L | -18.886     | ppb          | 09:24:54      |
| 2     | Ba 233.527†        | -72.5         | 161.8               | 2.3338 µg/L  | 2.3338      | ppb          | 09:25:14      |
| 2     | Be 313.107†        | -4414.5       | -1147.3             | 0.0385 µg/L  | 0.0385      | ppb          | 09:24:54      |
| 2     | Ca 317.933Radial†  | 3966287.9     | 4196193.8           | 467120 µg/L  | 467120      | ppb          | 09:24:22      |
| 2     | Cd 226.502†        | 2691.0        | 3108.0              | 2.4838 µg/L  | 2.4838      | ppb          | 09:25:14      |
| 2     | Co 228.616†        | 50.8          | 146.8               | -0.0674 µg/L | -0.0674     | ppb          | 09:25:14      |
| 2     | Cr 267.716†        | 158.5         | 43.5                | 0.1696 µg/L  | 0.1696      | ppb          | 09:25:14      |
| 2     | Cu 324.752†        | 935.4         | -4759.1             | -2.0714 µg/L | -2.0714     | ppb          | 09:25:14      |
| 2     | Fe 238.204 Radial† | 1834659.0     | 1941681.9           | 183670 µg/L  | 183670      | ppb          | 09:24:22      |
| 2     | K 766.490 Radial†  | 941.9         | -73.6               | -8.5460 µg/L | -8.5460     | ppb          | 09:24:24      |
| 2     | Mg 279.077 IEC†    | 844212.4      | 893193.4            | 481610 µg/L  | 481610      | ppb          | 09:24:22      |
| 2     | Mn 257.610†        | 8740.2        | 9357.7              | -1.0125 µg/L | -1.0125     | ppb          | 09:24:54      |
| 2     | Mo 202.031†        | -256.9        | -249.8              | -3.4113 µg/L | -3.4113     | ppb          | 09:25:14      |
| 2     | Na 589.592 Radial† | -137.7        | -185.4              | -30.918 µg/L | -30.918     | ppb          | 09:24:24      |
| 2     | Ni 231.604†        | -241.1        | -64.6               | -1.0269 µg/L | -1.0269     | ppb          | 09:25:14      |
| 2     | P 214.914†         | -67.1         | 22.1                | -1.6844 µg/L | -1.6844     | ppb          | 09:25:14      |
| 2     | Pb 220.353†        | -102.2        | -184.9              | 0.2097 µg/L  | 0.2097      | ppb          | 09:25:14      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 133.3     | 42.3      | -1.4097 µg/L | -1.4097 ppb | 09:25:14 |
| 2 | Sb 206.836†        | 92.3      | 56.2      | 3.1949 µg/L  | 3.1949 ppb  | 09:25:14 |
| 2 | Se 196.026†        | -124.2    | -143.2    | -1.33 µg/L   | -1.33 ppb   | 09:25:14 |
| 2 | SiO2†              | 3480.6    | 767.3     | 84.917 µg/L  | 84.917 ppb  | 09:25:14 |
| 2 | Si 251.611†        | 1677.0    | 1240.1    | 44.249 µg/L  | 44.249 ppb  | 09:25:14 |
| 2 | Sn 189.927†        | -26.3     | -1.1      | 1.3549 µg/L  | 1.3549 ppb  | 09:25:14 |
| 2 | Sr 421.552†        | 4827.4    | 5566.6    | 0.0347 µg/L  | 0.0347 ppb  | 09:24:24 |
| 2 | Ti 334.940†        | -4810.5   | -4344.8   | -0.9102 µg/L | -0.9102 ppb | 09:24:54 |
| 2 | Tl 190.801†        | -116.5    | -40.8     | -9.4078 µg/L | -9.4078 ppb | 09:25:14 |
| 2 | U 367.007†         | 7736.0    | 8701.3    | 30.980 µg/L  | 30.980 ppb  | 09:24:54 |
| 2 | V 292.402†         | -2263.4   | -2566.1   | 1.1475 µg/L  | 1.1475 ppb  | 09:25:14 |
| 2 | Zn 213.857†        | 7929.4    | 8581.1    | 5.1787 µg/L  | 5.1787 ppb  | 09:25:14 |
| 3 | Sc 361.383         | 1219903.5 | 1219903.5 | 91.639 %     |             | 09:25:16 |
| 3 | Sc RADIAL          | 66371.3   | 66371.3   | 92.1 %       |             | 09:24:28 |
| 3 | Y 371.029          | 653451.9  | 653451.9  | 90.200 %     |             | 09:25:16 |
| 3 | Ag 328.068†        | -3005.7   | -1389.1   | -0.6146 µg/L | -0.6146 ppb | 09:25:16 |
| 3 | Al 396.153Radial†  | 1295184.7 | 1405661.0 | 513250 µg/L  | 513250 ppb  | 09:24:26 |
| 3 | As 188.979†        | -77.1     | -54.2     | -5.7302 µg/L | -5.7302 ppb | 09:25:37 |
| 3 | B 249.677†         | -9013.9   | -10721.2  | -12.092 µg/L | -12.092 ppb | 09:25:16 |
| 3 | Ba 233.527†        | -85.1     | 147.9     | 2.2581 µg/L  | 2.2581 ppb  | 09:25:37 |
| 3 | Be 313.107†        | -4501.6   | -1256.5   | 0.0179 µg/L  | 0.0179 ppb  | 09:25:16 |
| 3 | Ca 317.933Radial†  | 4081344.1 | 4429450.6 | 493090 µg/L  | 493090 ppb  | 09:24:26 |
| 3 | Cd 226.502†        | 2734.0    | 3163.4    | 1.7544 µg/L  | 1.7544 ppb  | 09:25:37 |
| 3 | Co 228.616†        | 52.2      | 148.5     | -0.1661 µg/L | -0.1661 ppb | 09:25:37 |
| 3 | Cr 267.716†        | 140.4     | 24.3      | -0.0392 µg/L | -0.0392 ppb | 09:25:37 |
| 3 | Cu 324.752†        | 896.1     | -4799.1   | -1.2426 µg/L | -1.2426 ppb | 09:25:37 |
| 3 | Fe 238.204 Radial† | 1886183.9 | 2047737.1 | 193710 µg/L  | 193710 ppb  | 09:24:26 |
| 3 | K 766.490 Radial†  | 878.3     | -117.0    | -29.698 µg/L | -29.698 ppb | 09:24:28 |
| 3 | Mg 279.077 IEC†    | 868437.3  | 942554.4  | 508230 µg/L  | 508230 ppb  | 09:24:26 |
| 3 | Mn 257.610†        | 8558.6    | 9187.5    | -2.2731 µg/L | -2.2731 ppb | 09:25:16 |
| 3 | Mo 202.031†        | -266.4    | -261.0    | -3.4671 µg/L | -3.4671 ppb | 09:25:37 |
| 3 | Na 589.592 Radial† | -92.6     | -140.3    | -23.390 µg/L | -23.390 ppb | 09:24:28 |
| 3 | Ni 231.604†        | -236.3    | -60.1     | -0.9553 µg/L | -0.9553 ppb | 09:25:37 |
| 3 | P 214.914†         | -66.9     | 22.1      | -2.1988 µg/L | -2.1988 ppb | 09:25:37 |
| 3 | Pb 220.353†        | -64.3     | -143.9    | 5.4764 µg/L  | 5.4764 ppb  | 09:25:37 |
| 3 | S 181.975 Axial†   | 126.3     | 35.1      | -12.116 µg/L | -12.116 ppb | 09:25:37 |
| 3 | Sb 206.836†        | 102.5     | 67.5      | 4.9928 µg/L  | 4.9928 ppb  | 09:25:37 |
| 3 | Se 196.026†        | -134.1    | -154.4    | -3.23 µg/L   | -3.23 ppb   | 09:25:37 |
| 3 | SiO2†              | 3489.5    | 788.1     | 87.221 µg/L  | 87.221 ppb  | 09:25:37 |
| 3 | Si 251.611†        | 1728.5    | 1301.7    | 46.561 µg/L  | 46.561 ppb  | 09:25:37 |
| 3 | Sn 189.927†        | -27.4     | -2.4      | 1.2794 µg/L  | 1.2794 ppb  | 09:25:37 |
| 3 | Sr 421.552†        | 4801.4    | 5670.4    | -0.5601 µg/L | -0.5601 ppb | 09:24:28 |
| 3 | Ti 334.940†        | -4416.8   | -3930.5   | -0.0063 µg/L | -0.0063 ppb | 09:25:16 |
| 3 | Tl 190.801†        | -101.4    | -24.7     | -4.2933 µg/L | -4.2933 ppb | 09:25:37 |
| 3 | U 367.007†         | 7840.0    | 8839.5    | -8.8389 µg/L | -8.8389 ppb | 09:25:16 |
| 3 | V 292.402†         | -2166.4   | -2467.3   | 2.2649 µg/L  | 2.2649 ppb  | 09:25:37 |
| 3 | Zn 213.857†        | 7954.0    | 8633.2    | 3.0820 µg/L  | 3.0820 ppb  | 09:25:37 |

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Mean Data: ICSCA

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 1208428.2                | 90.777 %           | 1.7311   |                    |          | 1.91%   |
| Sc RADIAL   | 66928.2                  | 92.9 %             | 1.39     |                    |          | 1.50%   |
| Y 371.029   | 647392.2                 | 89.364 %           | 1.6354   |                    |          | 1.83%   |
| Ag 328.068†   | -1405.7                  | -0.8537 µg/L       | 0.65153  | -0.8537 ppb        | 0.65153  | 76.32%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 1373141.7                | 501370 µg/L        | 14071.1  | 501370 ppb         | 14071.1  | 2.81%   |
| QC value within limits for Al 396.153Radial Recovery = 100.27%  |                          |                    |          |                    |          |         |
| As 188.979†   | -48.5                    | -3.1468 µg/L       | 4.33873  | -3.1468 ppb        | 4.33873  | 137.88% |
| QC value within limits for As 188.979 Recovery = Not calculated |                          |                    |          |                    |          |         |
| B 249.677†  | -10795.6                 | -16.311 µg/L       | 3.6832   | -16.311 ppb        | 3.6832   | 22.58%  |
| QC value within limits for B 249.677 Recovery = Not calculated  |                          |                    |          |                    |          |         |
| Ba 233.527†   | 146.3                    | 2.2234 µg/L        | 0.13119  | 2.2234 ppb         | 0.13119  | 5.90%   |
| QC value within limits for Ba 233.527 Recovery = Not calculated |                          |                    |          |                    |          |         |
| Be 313.107†   | -1016.4                  | 0.0824 µg/L        | 0.09453  | 0.0824 ppb         | 0.09453  | 114.65% |
| QC value within limits for Be 313.107 Recovery = Not calculated |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 4327956.1                | 481790 µg/L        | 13307.0  | 481790 ppb         | 13307.0  | 2.76%   |
| QC value within limits for Ca 317.933Radial Recovery = 96.36%   |                          |                    |          |                    |          |         |
| Cd 226.502†   | 3173.6                   | 2.3226 µg/L        | 0.50713  | 2.3226 ppb         | 0.50713  | 21.83%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated |                          |                    |          |                    |          |         |

|  |           |              |          |             |          |         |
|--|-----------|--------------|----------|-------------|----------|---------|
| Co 228.616†  | 142.1     | -0.2073 µg/L | 0.16441  | -0.2073 ppb | 0.16441  | 79.30%  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |           |              |          |             |          |         |
| Cr 267.716†  | 40.3      | 0.1384 µg/L  | 0.16429  | 0.1384 ppb  | 0.16429  | 118.68% |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |           |              |          |             |          |         |
| Cu 324.752†  | -4750.1   | -1.4541 µg/L | 0.54338  | -1.4541 ppb | 0.54338  | 37.37%  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |           |              |          |             |          |         |
| Fe 238.204 Radial†   | 2002364.2 | 189410 µg/L  | 5170.6   | 189410 ppb  | 5170.6   | 2.73%   |
| QC value within limits for Fe 238.204 Radial Recovery = 94.71%         |           |              |          |             |          |         |
| K 766.490 Radial†  | -57.2     | 1.0469 µg/L  | 36.49943 | 1.0469 ppb  | 36.49943 | >999.9% |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |           |              |          |             |          |         |
| Mg 279.077 IEC†  | 921387.5  | 496820 µg/L  | 13706.4  | 496820 ppb  | 13706.4  | 2.76%   |
| QC value within limits for Mg 279.077 IEC Recovery = 99.36%            |           |              |          |             |          |         |
| Mn 257.610†  | 9275.0    | -1.7071 µg/L | 0.64006  | -1.7071 ppb | 0.64006  | 37.49%  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |           |              |          |             |          |         |
| Mo 202.031†  | -257.7    | -3.5200 µg/L | 0.14269  | -3.5200 ppb | 0.14269  | 4.05%   |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |           |              |          |             |          |         |
| Na 589.592 Radial†   | -130.5    | -21.755 µg/L | 10.0801  | -21.755 ppb | 10.0801  | 46.33%  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |           |              |          |             |          |         |
| Ni 231.604†  | -66.7     | -1.0607 µg/L | 0.12572  | -1.0607 ppb | 0.12572  | 11.85%  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |           |              |          |             |          |         |
| P 214.914†   | 32.2      | 1.6615 µg/L  | 6.24613  | 1.6615 ppb  | 6.24613  | 375.93% |
| QC value within limits for P 214.914 Recovery = Not calculated         |           |              |          |             |          |         |
| Pb 220.353†  | -167.4    | 2.6118 µg/L  | 2.66361  | 2.6118 ppb  | 2.66361  | 101.98% |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |           |              |          |             |          |         |
| S 181.975 Axial†   | 45.0      | 0.0020 µg/L  | 12.88221 | 0.0020 ppb  | 12.88221 | >999.9% |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |           |              |          |             |          |         |
| Sb 206.836†  | 61.6      | 4.0108 µg/L  | 0.91039  | 4.0108 ppb  | 0.91039  | 22.70%  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |           |              |          |             |          |         |
| Se 196.026†  | -152.3    | -3.82 µg/L   | 2.836    | -3.82 ppb   | 2.836    | 74.22%  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |           |              |          |             |          |         |
| SiO2†  | 815.6     | 90.268 µg/L  | 7.3625   | 90.268 ppb  | 7.3625   | 8.16%   |
| QC value within limits for SiO2 Recovery = Not calculated              |           |              |          |             |          |         |
| Si 251.611†  | 1303.9    | 46.055 µg/L  | 1.6136   | 46.055 ppb  | 1.6136   | 3.50%   |
| QC value within limits for Si 251.611 Recovery = Not calculated        |           |              |          |             |          |         |
| Sn 189.927†  | -2.8      | 1.1883 µg/L  | 0.22640  | 1.1883 ppb  | 0.22640  | 19.05%  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |           |              |          |             |          |         |
| Sr 421.552†  | 5569.5    | -0.4629 µg/L | 0.45683  | -0.4629 ppb | 0.45683  | 98.69%  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |           |              |          |             |          |         |
| Ti 334.940†  | -4127.0   | -0.4247 µg/L | 0.45568  | -0.4247 ppb | 0.45568  | 107.29% |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |           |              |          |             |          |         |
| Tl 190.801†  | -34.0     | -7.2351 µg/L | 2.64254  | -7.2351 ppb | 2.64254  | 36.52%  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |           |              |          |             |          |         |
| U 367.007†   | 8810.8    | 11.956 µg/L  | 19.9683  | 11.956 ppb  | 19.9683  | 167.02% |
| QC value within limits for U 367.007 Recovery = Not calculated         |           |              |          |             |          |         |
| V 292.402†   | -2551.5   | 1.6007 µg/L  | 0.58785  | 1.6007 ppb  | 0.58785  | 36.72%  |
| QC value within limits for V 292.402 Recovery = Not calculated         |           |              |          |             |          |         |
| Zn 213.857†  | 8690.3    | 4.4303 µg/L  | 1.17008  | 4.4303 ppb  | 1.17008  | 26.41%  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |           |              |          |             |          |         |

All analyte(s) passed QC.

Sequence No.: 10

Autosampler Location: 104

Sample ID: ICSAB

Date Collected: 11/11/2016 09:25:45

Analyst:

Data Type: Reprocessed on 11/11/2016 09:56:32

Logged In Analyst (Original) : lab

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

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Replicate Data: ICSAB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units | Calib. Units | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|-------------|--------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1219334.5     | 1219334.5           | 91.596      | %            |             |              | 09:26:24      |
| 1     | Sc RADIAL          | 67152.7       | 67152.7             | 93.2        | %            |             |              | 09:26:12      |
| 1     | Y 371.029          | 653759.6      | 653759.6            | 90.243      | %            |             |              | 09:26:24      |
| 1     | Ag 328.068†        | 45059.9       | 51084.8             | 269.82      | µg/L         | 269.82      | ppb          | 09:26:24      |
| 1     | Al 396.153Radial†  | 1292530.3     | 1386457.1           | 506240      | µg/L         | 506240      | ppb          | 09:26:10      |
| 1     | As 188.979†        | 774.4         | 875.4               | 503.52      | µg/L         | 503.52      | ppb          | 09:26:44      |
| 1     | B 249.677†         | 23978.6       | 25293.7             | 504.37      | µg/L         | 504.37      | ppb          | 09:26:24      |
| 1     | Ba 233.527†        | 51391.6       | 56347.4             | 503.36      | µg/L         | 503.36      | ppb          | 09:26:24      |
| 1     | Be 313.107†        | 805766.2      | 883348.4            | 229.13      | µg/L         | 229.13      | ppb          | 09:26:24      |
| 1     | Ca 317.933Radial†  | 4080818.6     | 4377345.3           | 487290      | µg/L         | 487290      | ppb          | 09:26:10      |
| 1     | Cd 226.502†        | 60309.2       | 66022.4             | 477.60      | µg/L         | 477.60      | ppb          | 09:26:24      |
| 1     | Co 228.616†        | 28991.0       | 31742.3             | 469.77      | µg/L         | 469.77      | ppb          | 09:26:44      |
| 1     | Cr 267.716†        | 38133.0       | 41502.5             | 487.32      | µg/L         | 487.32      | ppb          | 09:26:24      |
| 1     | Cu 324.752†        | 121889.9      | 127295.9            | 581.82      | µg/L         | 581.82      | ppb          | 09:26:24      |
| 1     | Fe 238.204 Radial† | 1888509.0     | 2026411.6           | 191690      | µg/L         | 191690      | ppb          | 09:26:10      |
| 1     | K 766.490 Radial†  | 11039.1       | 10772.0             | 5692.2      | µg/L         | 5692.2      | ppb          | 09:26:12      |
| 1     | Mg 279.077 IEC†    | 860237.1      | 922790.5            | 497570      | µg/L         | 497570      | ppb          | 09:26:12      |
| 1     | Mn 257.610†        | 264224.2      | 288313.9            | 487.31      | µg/L         | 487.31      | ppb          | 09:26:24      |
| 1     | Mo 202.031†        | 8486.9        | 9295.3              | 493.03      | µg/L         | 493.03      | ppb          | 09:26:44      |
| 1     | Na 589.592 Radial† | 29462.0       | 31565.6             | 5263.7      | µg/L         | 5263.7      | ppb          | 09:26:12      |
| 1     | Ni 231.604†        | 26297.2       | 28907.6             | 459.58      | µg/L         | 459.58      | ppb          | 09:26:44      |
| 1     | P 214.914†         | 6431.3        | 7116.5              | 2555.0      | µg/L         | 2555.0      | ppb          | 09:26:44      |
| 1     | Pb 220.353†        | 4355.5        | 4681.4              | 492.66      | µg/L         | 492.66      | ppb          | 09:26:44      |
| 1     | S 181.975 Axial†   | 2271.4        | 2377.2              | 2602.9      | µg/L         | 2602.9      | ppb          | 09:26:44      |
| 1     | Sb 206.836†        | 2516.4        | 2703.0              | 506.66      | µg/L         | 506.66      | ppb          | 09:26:44      |
| 1     | Se 196.026†        | 3951.3        | 4305.8              | 2330        | µg/L         | 2330        | ppb          | 09:26:44      |
| 1     | SiO2†              | 90470.4       | 95751.0             | 10597       | µg/L         | 10597       | ppb          | 09:26:24      |
| 1     | Si 251.611†        | 268112.8      | 292126.8            | 4977.2      | µg/L         | 4977.2      | ppb          | 09:26:24      |
| 1     | Sn 189.927†        | 3429.0        | 3771.1              | 483.73      | µg/L         | 483.73      | ppb          | 09:26:44      |
| 1     | Sr 421.552†        | 167218.2      | 179842.0            | 504.96      | µg/L         | 504.96      | ppb          | 09:26:12      |
| 1     | Ti 334.940†        | 319916.4      | 350156.9            | 502.83      | µg/L         | 502.83      | ppb          | 09:26:24      |
| 1     | Tl 190.801†        | 1349.7        | 1559.6              | 482.32      | µg/L         | 482.32      | ppb          | 09:26:44      |
| 1     | U 367.007†         | 11623.3       | 12973.9             | 511.29      | µg/L         | 511.29      | ppb          | 09:26:24      |
| 1     | V 292.402†         | 99845.3       | 108902.4            | 502.18      | µg/L         | 502.18      | ppb          | 09:26:24      |
| 1     | Zn 213.857†        | 89358.0       | 97509.8             | 507.45      | µg/L         | 507.45      | ppb          | 09:26:24      |
| 2     | Sc 361.383         | 1196991.1     | 1196991.1           | 89.918      | %            |             |              | 09:26:47      |
| 2     | Sc RADIAL          | 65588.0       | 65588.0             | 91.0        | %            |             |              | 09:26:16      |
| 2     | Y 371.029          | 642299.7      | 642299.7            | 88.661      | %            |             |              | 09:26:47      |
| 2     | Ag 328.068†        | 43926.1       | 50742.2             | 268.13      | µg/L         | 268.13      | ppb          | 09:26:47      |
| 2     | Al 396.153Radial†  | 1273444.5     | 1398571.3           | 510660      | µg/L         | 510660      | ppb          | 09:26:14      |
| 2     | As 188.979†        | 781.1         | 898.6               | 516.29      | µg/L         | 516.29      | ppb          | 09:27:07      |
| 2     | B 249.677†         | 23398.3       | 25137.0             | 503.22      | µg/L         | 503.22      | ppb          | 09:26:47      |
| 2     | Ba 233.527†        | 50259.7       | 56135.9             | 501.48      | µg/L         | 501.48      | ppb          | 09:26:47      |
| 2     | Be 313.107†        | 784325.1      | 875923.8            | 227.14      | µg/L         | 227.14      | ppb          | 09:26:47      |
| 2     | Ca 317.933Radial†  | 4017310.0     | 4412022.7           | 491150      | µg/L         | 491150      | ppb          | 09:26:14      |
| 2     | Cd 226.502†        | 58514.3       | 65255.3             | 471.62      | µg/L         | 471.62      | ppb          | 09:26:47      |
| 2     | Co 228.616†        | 29207.1       | 32573.5             | 482.10      | µg/L         | 482.10      | ppb          | 09:27:07      |
| 2     | Cr 267.716†        | 37163.0       | 41200.9             | 483.85      | µg/L         | 483.85      | ppb          | 09:26:47      |
| 2     | Cu 324.752†        | 118853.4      | 126403.0            | 577.90      | µg/L         | 577.90      | ppb          | 09:26:47      |
| 2     | Fe 238.204 Radial† | 1859056.0     | 2042390.7           | 193200      | µg/L         | 193200      | ppb          | 09:26:14      |
| 2     | K 766.490 Radial†  | 10635.8       | 10611.5             | 5608.2      | µg/L         | 5608.2      | ppb          | 09:26:16      |
| 2     | Mg 279.077 IEC†    | 834261.2      | 916274.3            | 494060      | µg/L         | 494060      | ppb          | 09:26:16      |
| 2     | Mn 257.610†        | 257590.1      | 286320.6            | 483.95      | µg/L         | 483.95      | ppb          | 09:26:47      |
| 2     | Mo 202.031†        | 8537.4        | 9524.4              | 504.94      | µg/L         | 504.94      | ppb          | 09:27:07      |
| 2     | Na 589.592 Radial† | 28755.0       | 31543.0             | 5259.9      | µg/L         | 5259.9      | ppb          | 09:26:16      |
| 2     | Ni 231.604†        | 26483.9       | 29651.1             | 471.40      | µg/L         | 471.40      | ppb          | 09:27:07      |
| 2     | P 214.914†         | 6460.9        | 7280.4              | 2614.0      | µg/L         | 2614.0      | ppb          | 09:27:07      |
| 2     | Pb 220.353†        | 4392.3        | 4811.1              | 506.07      | µg/L         | 506.07      | ppb          | 09:27:07      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 2265.9    | 2417.3    | 2647.3 µg/L | 2647.3 ppb | 09:27:07 |
| 2 | Sb 206.836†        | 2512.5    | 2749.9    | 515.73 µg/L | 515.73 ppb | 09:27:07 |
| 2 | Se 196.026†        | 4015.1    | 4457.3    | 2410 µg/L   | 2410 ppb   | 09:27:07 |
| 2 | SiO2†              | 88123.4   | 94984.5   | 10513 µg/L  | 10513 ppb  | 09:26:47 |
| 2 | Si 251.611†        | 261404.7  | 290130.4  | 4943.6 µg/L | 4943.6 ppb | 09:26:47 |
| 2 | Sn 189.927†        | 3468.6    | 3885.0    | 498.31 µg/L | 498.31 ppb | 09:27:07 |
| 2 | Sr 421.552†        | 162735.6  | 179197.8  | 502.96 µg/L | 502.96 ppb | 09:26:16 |
| 2 | Ti 334.940†        | 312143.7  | 348032.2  | 499.87 µg/L | 499.87 ppb | 09:26:47 |
| 2 | Tl 190.801†        | 1370.4    | 1610.1    | 497.84 µg/L | 497.84 ppb | 09:27:07 |
| 2 | U 367.007†         | 11181.1   | 12719.0   | 471.37 µg/L | 471.37 ppb | 09:26:47 |
| 2 | V 292.402†         | 97329.5   | 108139.3  | 498.85 µg/L | 498.85 ppb | 09:26:47 |
| 2 | Zn 213.857†        | 87190.5   | 96920.2   | 504.12 µg/L | 504.12 ppb | 09:26:47 |
| 3 | Sc 361.383         | 1211786.1 | 1211786.1 | 91.029 %    |            | 09:27:09 |
| 3 | Sc RADIAL          | 67842.3   | 67842.3   | 94.2 %      |            | 09:26:21 |
| 3 | Y 371.029          | 649931.9  | 649931.9  | 89.714 %    |            | 09:27:09 |
| 3 | Ag 328.068†        | 44008.1   | 50235.8   | 265.29 µg/L | 265.29 ppb | 09:27:09 |
| 3 | Al 396.153Radial†  | 1280703.0 | 1359803.2 | 496500 µg/L | 496500 ppb | 09:26:18 |
| 3 | As 188.979†        | 777.0     | 883.5     | 507.29 µg/L | 507.29 ppb | 09:27:29 |
| 3 | B 249.677†         | 23659.1   | 25105.7   | 498.25 µg/L | 498.25 ppb | 09:27:09 |
| 3 | Ba 233.527†        | 50591.6   | 55818.0   | 498.62 µg/L | 498.62 ppb | 09:27:09 |
| 3 | Be 313.107†        | 791839.0  | 873528.4  | 226.55 µg/L | 226.55 ppb | 09:27:09 |
| 3 | Ca 317.933Radial†  | 4022769.3 | 4271204.2 | 475470 µg/L | 475470 ppb | 09:26:18 |
| 3 | Cd 226.502†        | 59285.3   | 65307.8   | 472.73 µg/L | 472.73 ppb | 09:27:09 |
| 3 | Co 228.616†        | 28813.4   | 31744.5   | 469.86 µg/L | 469.86 ppb | 09:27:29 |
| 3 | Cr 267.716†        | 37488.0   | 41053.3   | 482.00 µg/L | 482.00 ppb | 09:27:09 |
| 3 | Cu 324.752†        | 120185.9  | 126253.0  | 576.86 µg/L | 576.86 ppb | 09:27:09 |
| 3 | Fe 238.204 Radial† | 1861482.0 | 1977118.8 | 187030 µg/L | 187030 ppb | 09:26:18 |
| 3 | K 766.490 Radial†  | 11075.9   | 10690.6   | 5648.7 µg/L | 5648.7 ppb | 09:26:21 |
| 3 | Mg 279.077 IEC†    | 865874.6  | 919395.7  | 495740 µg/L | 495740 ppb | 09:26:21 |
| 3 | Mn 257.610†        | 259928.1  | 285391.3  | 482.26 µg/L | 482.26 ppb | 09:27:09 |
| 3 | Mo 202.031†        | 8460.8    | 9324.4    | 494.41 µg/L | 494.41 ppb | 09:27:29 |
| 3 | Na 589.592 Radial† | 29615.7   | 31407.5   | 5237.3 µg/L | 5237.3 ppb | 09:26:21 |
| 3 | Ni 231.604†        | 26154.3   | 28929.5   | 459.92 µg/L | 459.92 ppb | 09:27:29 |
| 3 | P 214.914†         | 6394.9    | 7120.2    | 2556.6 µg/L | 2556.6 ppb | 09:27:29 |
| 3 | Pb 220.353†        | 4351.9    | 4707.1    | 494.82 µg/L | 494.82 ppb | 09:27:29 |
| 3 | S 181.975 Axial†   | 2230.0    | 2347.1    | 2570.5 µg/L | 2570.5 ppb | 09:27:29 |
| 3 | Sb 206.836†        | 2476.4    | 2676.1    | 501.81 µg/L | 501.81 ppb | 09:27:29 |
| 3 | Se 196.026†        | 3956.9    | 4338.8    | 2350 µg/L   | 2350 ppb   | 09:27:29 |
| 3 | SiO2†              | 88907.3   | 94649.1   | 10476 µg/L  | 10476 ppb  | 09:27:09 |
| 3 | Si 251.611†        | 263825.3  | 289240.1  | 4927.7 µg/L | 4927.7 ppb | 09:27:09 |
| 3 | Sn 189.927†        | 3427.2    | 3792.5    | 486.43 µg/L | 486.43 ppb | 09:27:29 |
| 3 | Sr 421.552†        | 168095.2  | 178949.7  | 502.78 µg/L | 502.78 ppb | 09:26:21 |
| 3 | Ti 334.940†        | 315167.4  | 347115.5  | 498.38 µg/L | 498.38 ppb | 09:27:09 |
| 3 | Tl 190.801†        | 1333.7    | 1551.2    | 479.65 µg/L | 479.65 ppb | 09:27:29 |
| 3 | U 367.007†         | 11275.2   | 12670.5   | 500.35 µg/L | 500.35 ppb | 09:27:09 |
| 3 | V 292.402†         | 98161.1   | 107731.3  | 496.60 µg/L | 496.60 ppb | 09:27:09 |
| 3 | Zn 213.857†        | 88250.0   | 96900.3   | 504.59 µg/L | 504.59 ppb | 09:27:09 |

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Mean Data: ICSAB

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 1209370.6                | 90.848 %           | 0.8538   |                    |          | 0.94% |
| Sc RADIAL  | 66861.0                  | 92.8 %             | 1.60     |                    |          | 1.73% |
| Y 371.029  | 648663.8                 | 89.539 %           | 0.8053   |                    |          | 0.90% |
| Ag 328.068†  | 50687.6                  | 267.75 µg/L        | 2.291    | 267.75 ppb         | 2.291    | 0.86% |
| QC value within limits for Ag 328.068 Recovery = 107.10%       |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 1381610.5                | 504470 µg/L        | 7241.9   | 504470 ppb         | 7241.9   | 1.44% |
| QC value within limits for Al 396.153Radial Recovery = 100.89% |                          |                    |          |                    |          |       |
| As 188.979†  | 885.9                    | 509.03 µg/L        | 6.562    | 509.03 ppb         | 6.562    | 1.29% |
| QC value within limits for As 188.979 Recovery = 101.81%       |                          |                    |          |                    |          |       |
| B 249.677†   | 25178.8                  | 501.95 µg/L        | 3.256    | 501.95 ppb         | 3.256    | 0.65% |
| QC value within limits for B 249.677 Recovery = 100.39%        |                          |                    |          |                    |          |       |
| Ba 233.527†  | 56100.4                  | 501.16 µg/L        | 2.388    | 501.16 ppb         | 2.388    | 0.48% |
| QC value within limits for Ba 233.527 Recovery = 100.23%       |                          |                    |          |                    |          |       |
| Be 313.107†  | 877600.2                 | 227.60 µg/L        | 1.350    | 227.60 ppb         | 1.350    | 0.59% |
| QC value within limits for Be 313.107 Recovery = 91.04%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 4353524.1                | 484640 µg/L        | 8167.5   | 484640 ppb         | 8167.5   | 1.69% |
| QC value within limits for Ca 317.933Radial Recovery = 96.93%  |                          |                    |          |                    |          |       |
| Cd 226.502†  | 65528.5                  | 473.99 µg/L        | 3.180    | 473.99 ppb         | 3.180    | 0.67% |
| QC value within limits for Cd 226.502 Recovery = 94.80%        |                          |                    |          |                    |          |       |

|   |           |             |        |            |        |       |
|---|-----------|-------------|--------|------------|--------|-------|
| Co 228.616†   | 32020.1   | 473.91 µg/L | 7.093  | 473.91 ppb | 7.093  | 1.50% |
| QC value within limits for Co 228.616 Recovery = 94.78%         |           |             |        |            |        |       |
| Cr 267.716†   | 41252.2   | 484.39 µg/L | 2.702  | 484.39 ppb | 2.702  | 0.56% |
| QC value within limits for Cr 267.716 Recovery = 96.88%         |           |             |        |            |        |       |
| Cu 324.752†   | 126650.6  | 578.86 µg/L | 2.612  | 578.86 ppb | 2.612  | 0.45% |
| QC value within limits for Cu 324.752 Recovery = 115.77%        |           |             |        |            |        |       |
| Fe 238.204 Radial†  | 2015307.0 | 190640 µg/L | 3218.4 | 190640 ppb | 3218.4 | 1.69% |
| QC value within limits for Fe 238.204 Radial Recovery = 95.32%  |           |             |        |            |        |       |
| K 766.490 Radial†   | 10691.4   | 5649.7 µg/L | 42.05  | 5649.7 ppb | 42.05  | 0.74% |
| QC value within limits for K 766.490 Radial Recovery = 112.99%  |           |             |        |            |        |       |
| Mg 279.077 IEC†   | 919486.8  | 495790 µg/L | 1756.9 | 495790 ppb | 1756.9 | 0.35% |
| QC value within limits for Mg 279.077 IEC Recovery = 99.16%     |           |             |        |            |        |       |
| Mn 257.610†   | 286675.3  | 484.51 µg/L | 2.574  | 484.51 ppb | 2.574  | 0.53% |
| QC value within limits for Mn 257.610 Recovery = 96.90%         |           |             |        |            |        |       |
| Mo 202.031†   | 9381.4    | 497.46 µg/L | 6.514  | 497.46 ppb | 6.514  | 1.31% |
| QC value within limits for Mo 202.031 Recovery = 99.49%         |           |             |        |            |        |       |
| Na 589.592 Radial†  | 31505.3   | 5253.7 µg/L | 14.26  | 5253.7 ppb | 14.26  | 0.27% |
| QC value within limits for Na 589.592 Radial Recovery = 105.07% |           |             |        |            |        |       |
| Ni 231.604†   | 29162.7   | 463.63 µg/L | 6.726  | 463.63 ppb | 6.726  | 1.45% |
| QC value within limits for Ni 231.604 Recovery = 92.73%         |           |             |        |            |        |       |
| P 214.914†  | 7172.3    | 2575.2 µg/L | 33.62  | 2575.2 ppb | 33.62  | 1.31% |
| QC value within limits for P 214.914 Recovery = 103.01%         |           |             |        |            |        |       |
| Pb 220.353†   | 4733.2    | 497.85 µg/L | 7.200  | 497.85 ppb | 7.200  | 1.45% |
| QC value within limits for Pb 220.353 Recovery = 99.57%         |           |             |        |            |        |       |
| S 181.975 Axial†  | 2380.5    | 2606.9 µg/L | 38.56  | 2606.9 ppb | 38.56  | 1.48% |
| QC value within limits for S 181.975 Axial Recovery = 104.28%   |           |             |        |            |        |       |
| Sb 206.836†   | 2709.7    | 508.07 µg/L | 7.067  | 508.07 ppb | 7.067  | 1.39% |
| QC value within limits for Sb 206.836 Recovery = 101.61%        |           |             |        |            |        |       |
| Se 196.026†   | 4367.3    | 2360 µg/L   | 42.4   | 2360 ppb   | 42.4   | 1.79% |
| QC value within limits for Se 196.026 Recovery = 94.59%         |           |             |        |            |        |       |
| SiO2†   | 95128.2   | 10529 µg/L  | 62.5   | 10529 ppb  | 62.5   | 0.59% |
| QC value within limits for SiO2 Recovery = 98.44%               |           |             |        |            |        |       |
| Si 251.611†   | 290499.1  | 4949.5 µg/L | 25.29  | 4949.5 ppb | 25.29  | 0.51% |
| QC value within limits for Si 251.611 Recovery = 98.99%         |           |             |        |            |        |       |
| Sn 189.927†   | 3816.2    | 489.49 µg/L | 7.756  | 489.49 ppb | 7.756  | 1.58% |
| QC value within limits for Sn 189.927 Recovery = 97.90%         |           |             |        |            |        |       |
| Sr 421.552†   | 179329.8  | 503.57 µg/L | 1.211  | 503.57 ppb | 1.211  | 0.24% |
| QC value within limits for Sr 421.552 Recovery = 100.71%        |           |             |        |            |        |       |
| Ti 334.940†   | 348434.9  | 500.36 µg/L | 2.264  | 500.36 ppb | 2.264  | 0.45% |
| QC value within limits for Ti 334.940 Recovery = 100.07%        |           |             |        |            |        |       |
| Tl 190.801†   | 1573.6    | 486.60 µg/L | 9.824  | 486.60 ppb | 9.824  | 2.02% |
| QC value within limits for Tl 190.801 Recovery = 97.32%         |           |             |        |            |        |       |
| U 367.007†  | 12787.8   | 494.34 µg/L | 20.627 | 494.34 ppb | 20.627 | 4.17% |
| QC value within limits for U 367.007 Recovery = 98.87%          |           |             |        |            |        |       |
| V 292.402†  | 108257.7  | 499.21 µg/L | 2.808  | 499.21 ppb | 2.808  | 0.56% |
| QC value within limits for V 292.402 Recovery = 99.84%          |           |             |        |            |        |       |
| Zn 213.857†   | 97110.1   | 505.38 µg/L | 1.803  | 505.38 ppb | 1.803  | 0.36% |
| QC value within limits for Zn 213.857 Recovery = 101.08%        |           |             |        |            |        |       |

All analyte(s) passed QC.

Sequence No.: 11

Sample ID: LR1

Analyst:

Logged In Analyst (Original) : lab

Initial Sample Wt:

Dilution:

Autosampler Location: 105

Date Collected: 11/11/2016 09:27:37

Data Type: Reprocessed on 11/11/2016 09:56:33

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: LR1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units  | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1161737.6     | 1161737.6           | 87.270 %     |             |              | 09:28:17      |
| 1     | Sc RADIAL          | 65193.7       | 65193.7             | 90.5 %       |             |              | 09:28:04      |
| 1     | Y 371.029          | 620626.5      | 620626.5            | 85.669 %     |             |              | 09:28:17      |
| 1     | Ag 328.068†        | 2128.6        | 4329.9              | 36.485 µg/L  | 36.485      | ppb          | 09:28:17      |
| 1     | Al 396.153Radial†  | 1265306.9     | 1398040.3           | 510470 µg/L  | 510470      | ppb          | 09:28:02      |
| 1     | As 188.979†        | -81.7         | -63.6               | 24.824 µg/L  | 24.824      | ppb          | 09:28:37      |
| 1     | B 249.677†         | -23920.5      | -28294.7            | -51.694 µg/L | -51.694     | ppb          | 09:28:17      |
| 1     | Ba 233.527†        | 69.9          | 320.9               | 5.2096 µg/L  | 5.2096      | ppb          | 09:28:37      |
| 1     | Be 313.107†        | -20675.6      | -20035.7            | 0.7355 µg/L  | 0.7355      | ppb          | 09:28:17      |
| 1     | Ca 317.933Radial†  | 4085999.2     | 4514614.5           | 502570 µg/L  | 502570      | ppb          | 09:28:02      |
| 1     | Cd 226.502†        | 7291.1        | 8534.6              | 9.1249 µg/L  | 9.1249      | ppb          | 09:28:17      |
| 1     | Co 228.616†        | 2251.4        | 2671.3              | 33.754 µg/L  | 33.754      | ppb          | 09:28:37      |
| 1     | Cr 267.716†        | 1152.9        | 1192.1              | 4.3641 µg/L  | 4.3641      | ppb          | 09:28:37      |
| 1     | Cu 324.752†        | -4612.6       | -11062.4            | 2.3362 µg/L  | 2.3362      | ppb          | 09:28:17      |
| 1     | Fe 238.204 Radial† | 4632360.8     | 5119195.8           | 484250 µg/L  | 484250      | ppb          | 09:28:02      |
| 1     | K 766.490 Radial†  | 604900.5      | 667334.3            | 350820 µg/L  | 350820      | ppb          | 09:28:02      |
| 1     | Mg 279.077 IEC†    | 819353.9      | 905345.0            | 488260 µg/L  | 488260      | ppb          | 09:28:04      |
| 1     | Mn 257.610†        | 11747.0       | 13308.7             | 5.6750 µg/L  | 5.6750      | ppb          | 09:28:17      |
| 1     | Mo 202.031†        | -369.6        | -393.8              | -3.5148 µg/L | -3.5148     | ppb          | 09:28:17      |
| 1     | Na 589.592 Radial† | 2746141.5     | 3034398.6           | 506000 µg/L  | 506000      | ppb          | 09:28:02      |
| 1     | Ni 231.604†        | 1072.6        | 1426.8              | 22.683 µg/L  | 22.683      | ppb          | 09:28:37      |
| 1     | P 214.914†         | 580.1         | 759.8               | 248.42 µg/L  | 248.42      | ppb          | 09:28:37      |
| 1     | Pb 220.353†        | 63.0          | -1.6                | 1.7285 µg/L  | 1.7285      | ppb          | 09:28:37      |
| 1     | S 181.975 Axial†   | 42715.6       | 48844.0             | 54410 µg/L   | 54410       | ppb          | 09:28:37      |
| 1     | Sb 206.836†        | 107.2         | 78.5                | -23.644 µg/L | -23.644     | ppb          | 09:28:37      |
| 1     | Se 196.026†        | -378.1        | -441.3              | -3.02 µg/L   | -3.02       | ppb          | 09:28:37      |
| 1     | SiO2†              | 3648.7        | 1161.2              | 128.52 µg/L  | 128.52      | ppb          | 09:28:37      |
| 1     | Si 251.611†        | 1107.5        | 684.6               | 72.832 µg/L  | 72.832      | ppb          | 09:28:37      |
| 1     | Sn 189.927†        | 39.5          | 72.7                | 10.878 µg/L  | 10.878      | ppb          | 09:28:37      |
| 1     | Sr 421.552†        | 14902.7       | 16926.2             | 31.769 µg/L  | 31.769      | ppb          | 09:28:04      |
| 1     | Ti 334.940†        | 55.1          | 952.5               | -1.4470 µg/L | -1.4470     | ppb          | 09:28:17      |
| 1     | Tl 190.801†        | -121.4        | -53.1               | -8.1033 µg/L | -8.1033     | ppb          | 09:28:37      |
| 1     | U 367.007†         | 122827.5      | 141029.0            | 14674 µg/L   | 14674       | ppb          | 09:28:17      |
| 1     | V 292.402†         | -6875.4       | -7981.7             | 2.9205 µg/L  | 2.9205      | ppb          | 09:28:17      |
| 1     | Zn 213.857†        | 15440.6       | 17646.5             | 23.990 µg/L  | 23.990      | ppb          | 09:28:37      |
| 2     | Sc 361.383         | 1161316.5     | 1161316.5           | 87.238 %     |             |              | 09:28:39      |
| 2     | Sc RADIAL          | 65500.1       | 65500.1             | 90.9 %       |             |              | 09:28:09      |
| 2     | Y 371.029          | 620796.9      | 620796.9            | 85.693 %     |             |              | 09:28:39      |
| 2     | Ag 328.068†        | 1968.9        | 4147.7              | 34.400 µg/L  | 34.400      | ppb          | 09:28:39      |
| 2     | Al 396.153Radial†  | 1212734.9     | 1333680.3           | 486970 µg/L  | 486970      | ppb          | 09:28:07      |
| 2     | As 188.979†        | -90.3         | -73.6               | 16.470 µg/L  | 16.470      | ppb          | 09:29:00      |
| 2     | B 249.677†         | -23893.9      | -28274.1            | -68.996 µg/L | -68.996     | ppb          | 09:28:39      |
| 2     | Ba 233.527†        | 60.3          | 309.9               | 4.9953 µg/L  | 4.9953      | ppb          | 09:29:00      |
| 2     | Be 313.107†        | -20559.8      | -19911.6            | 0.7485 µg/L  | 0.7485      | ppb          | 09:28:39      |
| 2     | Ca 317.933Radial†  | 3890499.8     | 4278480.2           | 476280 µg/L  | 476280      | ppb          | 09:28:07      |
| 2     | Cd 226.502†        | 7295.4        | 8542.6              | 11.933 µg/L  | 11.933      | ppb          | 09:28:39      |
| 2     | Co 228.616†        | 2267.6        | 2690.8              | 34.337 µg/L  | 34.337      | ppb          | 09:29:00      |
| 2     | Cr 267.716†        | 1120.2        | 1155.1              | 3.5382 µg/L  | 3.5382      | ppb          | 09:29:00      |
| 2     | Cu 324.752†        | -4441.4       | -10868.1            | 1.6479 µg/L  | 1.6479      | ppb          | 09:28:39      |
| 2     | Fe 238.204 Radial† | 4423529.8     | 4865575.0           | 460260 µg/L  | 460260      | ppb          | 09:28:07      |
| 2     | K 766.490 Radial†  | 577670.6      | 634259.6            | 333440 µg/L  | 333440      | ppb          | 09:28:07      |
| 2     | Mg 279.077 IEC†    | 827686.4      | 910273.7            | 490910 µg/L  | 490910      | ppb          | 09:28:09      |
| 2     | Mn 257.610†        | 11788.7       | 13361.3             | 5.6711 µg/L  | 5.6711      | ppb          | 09:28:39      |
| 2     | Mo 202.031†        | -425.0        | -457.5              | -7.3812 µg/L | -7.3812     | ppb          | 09:28:39      |
| 2     | Na 589.592 Radial† | 2640596.1     | 2904122.9           | 484280 µg/L  | 484280      | ppb          | 09:28:07      |
| 2     | Ni 231.604†        | 1038.7        | 1388.4              | 22.073 µg/L  | 22.073      | ppb          | 09:29:00      |
| 2     | P 214.914†         | 559.2         | 736.1               | 241.14 µg/L  | 241.14      | ppb          | 09:29:00      |
| 2     | Pb 220.353†        | 38.0          | -30.2               | -2.3165 µg/L | -2.3165     | ppb          | 09:29:00      |



|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 42544.8   | 48666.0   | 54217 µg/L   | 54217 ppb   | 09:29:00 |
| 2 | Sb 206.836†        | 112.8     | 85.0      | -20.423 µg/L | -20.423 ppb | 09:29:00 |
| 2 | Se 196.026†        | -393.2    | -458.7    | -22.6 µg/L   | -22.6 ppb   | 09:29:00 |
| 2 | SiO2†              | 3600.8    | 1107.7    | 122.60 µg/L  | 122.60 ppb  | 09:29:00 |
| 2 | Si 251.611†        | 1116.1    | 694.9     | 69.973 µg/L  | 69.973 ppb  | 09:29:00 |
| 2 | Sn 189.927†        | 55.2      | 90.7      | 13.103 µg/L  | 13.103 ppb  | 09:29:00 |
| 2 | Sr 421.552†        | 14942.7   | 16893.2   | 32.580 µg/L  | 32.580 ppb  | 09:28:09 |
| 2 | Ti 334.940†        | 289.6     | 1221.2    | -1.3590 µg/L | -1.3590 ppb | 09:28:39 |
| 2 | Tl 190.801†        | -114.9    | -45.6     | -6.2284 µg/L | -6.2284 ppb | 09:29:00 |
| 2 | U 367.007†         | 122327.0  | 140506.2  | 14742 µg/L   | 14742 ppb   | 09:28:39 |
| 2 | V 292.402†         | -6857.5   | -7964.0   | 1.3752 µg/L  | 1.3752 ppb  | 09:28:39 |
| 2 | Zn 213.857†        | 15431.7   | 17642.7   | 26.417 µg/L  | 26.417 ppb  | 09:29:00 |
| 3 | Sc 361.383         | 1166930.3 | 1166930.3 | 87.660 %     |             | 09:29:02 |
| 3 | Sc RADIAL          | 66236.4   | 66236.4   | 91.9 %       |             | 09:28:13 |
| 3 | Y 371.029          | 623924.6  | 623924.6  | 86.124 %     |             | 09:29:02 |
| 3 | Ag 328.068†        | 2090.9    | 4276.1    | 35.619 µg/L  | 35.619 ppb  | 09:29:02 |
| 3 | Al 396.153Radial†  | 1248227.8 | 1357454.8 | 495650 µg/L  | 495650 ppb  | 09:28:11 |
| 3 | As 188.979†        | -96.5     | -80.1     | 14.062 µg/L  | 14.062 ppb  | 09:29:22 |
| 3 | B 249.677†         | -24158.9  | -28444.7  | -64.623 µg/L | -64.623 ppb | 09:29:02 |
| 3 | Ba 233.527†        | 46.3      | 293.6     | 4.8951 µg/L  | 4.8951 ppb  | 09:29:22 |
| 3 | Be 313.107†        | -20708.2  | -19967.4  | 0.6724 µg/L  | 0.6724 ppb  | 09:29:02 |
| 3 | Ca 317.933Radial†  | 4022594.8 | 4374578.9 | 486980 µg/L  | 486980 ppb  | 09:28:11 |
| 3 | Cd 226.502†        | 7086.5    | 8264.1    | 8.7595 µg/L  | 8.7595 ppb  | 09:29:02 |
| 3 | Co 228.616†        | 2309.5    | 2726.1    | 34.748 µg/L  | 34.748 ppb  | 09:29:22 |
| 3 | Cr 267.716†        | 1145.2    | 1177.4    | 4.1417 µg/L  | 4.1417 ppb  | 09:29:22 |
| 3 | Cu 324.752†        | -4496.2   | -10906.1  | 1.9042 µg/L  | 1.9042 ppb  | 09:29:02 |
| 3 | Fe 238.204 Radial† | 4563718.6 | 4963959.5 | 469570 µg/L  | 469570 ppb  | 09:28:11 |
| 3 | K 766.490 Radial†  | 594691.1  | 645708.1  | 339460 µg/L  | 339460 ppb  | 09:28:11 |
| 3 | Mg 279.077 IEC†    | 833490.8  | 906467.0  | 488860 µg/L  | 488860 ppb  | 09:28:13 |
| 3 | Mn 257.610†        | 11664.7   | 13154.8   | 5.3835 µg/L  | 5.3835 ppb  | 09:29:02 |
| 3 | Mo 202.031†        | -312.6    | -326.8    | -0.3858 µg/L | -0.3858 ppb | 09:29:02 |
| 3 | Na 589.592 Radial† | 2715828.8 | 2953660.6 | 492540 µg/L  | 492540 ppb  | 09:28:11 |
| 3 | Ni 231.604†        | 1149.7    | 1509.3    | 23.995 µg/L  | 23.995 ppb  | 09:29:22 |
| 3 | P 214.914†         | 601.1     | 780.8     | 256.76 µg/L  | 256.76 ppb  | 09:29:22 |
| 3 | Pb 220.353†        | 70.2      | 6.4       | 2.0418 µg/L  | 2.0418 ppb  | 09:29:22 |
| 3 | S 181.975 Axial†   | 42695.5   | 48603.3   | 54145 µg/L   | 54145 ppb   | 09:29:22 |
| 3 | Sb 206.836†        | 127.8     | 101.5     | -18.018 µg/L | -18.018 ppb | 09:29:22 |
| 3 | Se 196.026†        | -377.0    | -438.1    | -7.96 µg/L   | -7.96 ppb   | 09:29:22 |
| 3 | SiO2†              | 3676.8    | 1174.7    | 130.01 µg/L  | 130.01 ppb  | 09:29:22 |
| 3 | Si 251.611†        | 1072.7    | 639.3     | 70.207 µg/L  | 70.207 ppb  | 09:29:22 |
| 3 | Sn 189.927†        | 51.0      | 85.6      | 12.480 µg/L  | 12.480 ppb  | 09:29:22 |
| 3 | Sr 421.552†        | 15059.7   | 16837.8   | 32.051 µg/L  | 32.051 ppb  | 09:28:13 |
| 3 | Ti 334.940†        | 16.4      | 907.9     | -1.5778 µg/L | -1.5778 ppb | 09:29:02 |
| 3 | Tl 190.801†        | -119.3    | -50.1     | -7.4388 µg/L | -7.4388 ppb | 09:29:22 |
| 3 | U 367.007†         | 121647.4  | 139056.5  | 14512 µg/L   | 14512 ppb   | 09:29:02 |
| 3 | V 292.402†         | -6783.0   | -7841.2   | 2.4812 µg/L  | 2.4812 ppb  | 09:29:02 |
| 3 | Zn 213.857†        | 15485.5   | 17619.0   | 25.383 µg/L  | 25.383 ppb  | 09:29:22 |

## Mean Data: LR1

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc 361.383   | 1163328.1                | 87.389 %           | 0.2349   |                    |          | 0.27%  |
| Sc RADIAL  | 65643.4                  | 91.1 %             | 0.74     |                    |          | 0.82%  |
| Y 371.029  | 621782.6                 | 85.829 %           | 0.2563   |                    |          | 0.30%  |
| Ag 328.068†  | 4251.2                   | 35.502 µg/L        | 1.0476   | 35.502 ppb         | 1.0476   | 2.95%  |
| Al 396.153Radial†  | 1363058.5                | 497700 µg/L        | 11883.1  | 497700 ppb         | 11883.1  | 2.39%  |
| QC value within limits for Al 396.153Radial Recovery = 99.54%  |                          |                    |          |                    |          |        |
| As 188.979†  | -72.5                    | 18.452 µg/L        | 5.6480   | 18.452 ppb         | 5.6480   | 30.61% |
| B 249.677†   | -28337.9                 | -61.771 µg/L       | 8.9969   | -61.771 ppb        | 8.9969   | 14.56% |
| Ba 233.527†  | 308.1                    | 5.0333 µg/L        | 0.16064  | 5.0333 ppb         | 0.16064  | 3.19%  |
| Be 313.107†  | -19971.6                 | 0.7188 µg/L        | 0.04071  | 0.7188 ppb         | 0.04071  | 5.66%  |
| Ca 317.933Radial†  | 4389224.5                | 488610 µg/L        | 13218.9  | 488610 ppb         | 13218.9  | 2.71%  |
| QC value within limits for Ca 317.933Radial Recovery = 97.72%  |                          |                    |          |                    |          |        |
| Cd 226.502†  | 8447.1                   | 9.9391 µg/L        | 1.73624  | 9.9391 ppb         | 1.73624  | 17.47% |
| Co 228.616†  | 2696.1                   | 34.280 µg/L        | 0.4993   | 34.280 ppb         | 0.4993   | 1.46%  |
| Cr 267.716†  | 1174.9                   | 4.0147 µg/L        | 0.42736  | 4.0147 ppb         | 0.42736  | 10.64% |
| Cu 324.752†  | -10945.5                 | 1.9628 µg/L        | 0.34786  | 1.9628 ppb         | 0.34786  | 17.72% |
| Fe 238.204 Radial†   | 4982910.1                | 471360 µg/L        | 12095.7  | 471360 ppb         | 12095.7  | 2.57%  |
| QC value within limits for Fe 238.204 Radial Recovery = 94.27% |                          |                    |          |                    |          |        |
| K 766.490 Radial†  | 649100.6                 | 341240 µg/L        | 8829.9   | 341240 ppb         | 8829.9   | 2.59%  |

QC value greater than the upper limit for K 766.490 Radial Recovery = 113.75%

|  |           |              |         |             |         |         |
|--|-----------|--------------|---------|-------------|---------|---------|
| Mg 279.077 IEC†  | 907361.9  | 489350 µg/L  | 1389.2  | 489350 ppb  | 1389.2  | 0.28%   |
| QC value within limits for Mg 279.077 IEC Recovery = 97.87%    |           |              |         |             |         |         |
| Mn 257.610†  | 13274.9   | 5.5765 µg/L  | 0.16720 | 5.5765 ppb  | 0.16720 | 3.00%   |
| Mo 202.031†  | -392.7    | -3.7606 µg/L | 3.50415 | -3.7606 ppb | 3.50415 | 93.18%  |
| Na 589.592 Radial†   | 2964060.7 | 494270 µg/L  | 10965.4 | 494270 ppb  | 10965.4 | 2.22%   |
| QC value within limits for Na 589.592 Radial Recovery = 98.85% |           |              |         |             |         |         |
| Ni 231.604†  | 1441.5    | 22.917 µg/L  | 0.9823  | 22.917 ppb  | 0.9823  | 4.29%   |
| P 214.914†   | 758.9     | 248.77 µg/L  | 7.817   | 248.77 ppb  | 7.817   | 3.14%   |
| Pb 220.353†  | -8.4      | 0.4846 µg/L  | 2.43087 | 0.4846 ppb  | 2.43087 | 501.63% |
| S 181.975 Axial†   | 48704.4   | 54257 µg/L   | 137.1   | 54257 ppb   | 137.1   | 0.25%   |
| QC value within limits for S 181.975 Axial Recovery = 108.51%  |           |              |         |             |         |         |
| Sb 206.836†  | 88.4      | -20.695 µg/L | 2.8231  | -20.695 ppb | 2.8231  | 13.64%  |
| Se 196.026†  | -446.0    | -11.2 µg/L   | 10.19   | -11.2 ppb   | 10.19   | 90.98%  |
| SiO2†  | 1147.9    | 127.04 µg/L  | 3.917   | 127.04 ppb  | 3.917   | 3.08%   |
| Si 251.611†  | 672.9     | 71.004 µg/L  | 1.5872  | 71.004 ppb  | 1.5872  | 2.24%   |
| Sn 189.927†  | 83.0      | 12.154 µg/L  | 1.1475  | 12.154 ppb  | 1.1475  | 9.44%   |
| Sr 421.552†  | 16885.8   | 32.133 µg/L  | 0.4119  | 32.133 ppb  | 0.4119  | 1.28%   |
| Ti 334.940†  | 1027.2    | -1.4613 µg/L | 0.11008 | -1.4613 ppb | 0.11008 | 7.53%   |
| Tl 190.801†  | -49.6     | -7.2568 µg/L | 0.95058 | -7.2568 ppb | 0.95058 | 13.10%  |
| U 367.007†   | 140197.2  | 14643 µg/L   | 118.0   | 14643 ppb   | 118.0   | 0.81%   |
| QC value within limits for U 367.007 Recovery = 97.62%         |           |              |         |             |         |         |
| V 292.402†   | -7929.0   | 2.2590 µg/L  | 0.79628 | 2.2590 ppb  | 0.79628 | 35.25%  |
| Zn 213.857†  | 17636.1   | 25.263 µg/L  | 1.2176  | 25.263 ppb  | 1.2176  | 4.82%   |

QC Failed. Continue with analysis.

Sequence No.: 12

Sample ID: LR2

Analyst:

Logged In Analyst (Original) : lab

Initial Sample Wt:

Dilution:

Autosampler Location: 108

Date Collected: 11/11/2016 09:29:29

Data Type: Reprocessed on 11/11/2016 09:56:34

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: LR2

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units  | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1341844.8     | 1341844.8           | 100.80 %     |             |              | 09:30:15      |
| 1     | Sc RADIAL          | 73768.8       | 73768.8             | 102 %        |             |              | 09:29:55      |
| 1     | Y 371.029          | 718921.9      | 718921.9            | 99.237 %     |             |              | 09:30:15      |
| 1     | Ag 328.068†        | -2817.6       | -904.5              | -4.6542 µg/L | -4.6542     | ppb          | 09:30:17      |
| 1     | Al 396.153Radial†  | 1744.3        | 1601.7              | 584.30 µg/L  | 584.30      | ppb          | 09:29:58      |
| 1     | As 188.979†        | 18001.1       | 17888.3             | 9945.1 µg/L  | 9945.1      | ppb          | 09:30:17      |
| 1     | B 249.677†         | 347728.4      | 344086.2            | 4948.4 µg/L  | 4948.4      | ppb          | 09:30:15      |
| 1     | Ba 233.527†        | 1692292.7     | 1679113.9           | 14972 µg/L   | 14972       | ppb          | 09:30:15      |
| 1     | Be 313.107†        | 11356744.4    | 11270343.4          | 2705.4 µg/L  | 2705.4      | ppb          | 09:30:12      |
| 1     | Ca 317.933Radial†  | 2687.8        | 2281.6              | 253.98 µg/L  | 253.98      | ppb          | 09:29:58      |
| 1     | Cd 226.502†        | 1320047.0     | 1309759.2           | 9910.2 µg/L  | 9910.2      | ppb          | 09:30:15      |
| 1     | Co 228.616†        | 679873.6      | 674573.9            | 10038 µg/L   | 10038       | ppb          | 09:30:15      |
| 1     | Cr 267.716†        | 2139228.8     | 2122136.1           | 24957 µg/L   | 24957       | ppb          | 09:30:15      |
| 1     | Cu 324.752†        | 4774937.6     | 4731296.4           | 20879 µg/L   | 20879       | ppb          | 09:30:15      |
| 1     | Fe 238.204 Radial† | -18.1         | 500.4               | 47.336 µg/L  | 47.336      | ppb          | 09:29:58      |
| 1     | K 766.490 Radial†  | 1087.9        | -7.8                | -4.1250 µg/L | -4.1250     | ppb          | 09:29:58      |
| 1     | Mg 279.077 IEC†    | 236.1         | 203.7               | 109.85 µg/L  | 109.85      | ppb          | 09:29:58      |
| 1     | Mn 257.610†        | 5673919.5     | 5628774.3           | 9865.1 µg/L  | 9865.1      | ppb          | 09:30:15      |
| 1     | Mo 202.031†        | 194500.2      | 192987.6            | 10030 µg/L   | 10030       | ppb          | 09:30:17      |
| 1     | Na 589.592 Radial† | 989.3         | 926.3               | 154.47 µg/L  | 154.47      | ppb          | 09:29:58      |
| 1     | Ni 231.604†        | 638516.2      | 633650.6            | 10074 µg/L   | 10074       | ppb          | 09:30:15      |
| 1     | P 214.914†         | 41762.8       | 41526.8             | 14968 µg/L   | 14968       | ppb          | 09:30:17      |
| 1     | Pb 220.353†        | 257299.8      | 255185.7            | 25811 µg/L   | 25811       | ppb          | 09:30:17      |
| 1     | S 181.975 Axial†   | 103.4         | -0.1                | -0.0791 µg/L | -0.0791     | ppb          | 09:30:38      |
| 1     | Sb 206.836†        | 53967.3       | 53495.0             | 9949.2 µg/L  | 9949.2      | ppb          | 09:30:17      |
| 1     | Se 196.026†        | 19182.1       | 19021.9             | 9960 µg/L    | 9960        | ppb          | 09:30:17      |
| 1     | SiO2†              | 884186.0      | 874154.8            | 96749 µg/L   | 96749       | ppb          | 09:30:15      |
| 1     | Si 251.611†        | 2682433.2     | 2660577.5           | 45110 µg/L   | 45110       | ppb          | 09:30:15      |
| 1     | Sn 189.927†        | 78710.9       | 78114.3             | 9987.6 µg/L  | 9987.6      | ppb          | 09:30:17      |
| 1     | Sr 421.552†        | 3527263.5     | 3444958.1           | 9994.8 µg/L  | 9994.8      | ppb          | 09:29:55      |
| 1     | Ti 334.940†        | 7188287.1     | 7132174.6           | 10131 µg/L   | 10131       | ppb          | 09:30:12      |
| 1     | Tl 190.801†        | 33413.3       | 33234.4             | 10209 µg/L   | 10209       | ppb          | 09:30:17      |
| 1     | U 367.007†         | -371.7        | -84.5               | -10.676 µg/L | -10.676     | ppb          | 09:30:17      |
| 1     | V 292.402†         | 2250692.0     | 2232741.0           | 10047 µg/L   | 10047       | ppb          | 09:30:15      |
| 1     | Zn 213.857†        | 2540351.9     | 2520160.9           | 14276 µg/L   | 14276       | ppb          | 09:30:15      |
| 2     | Sc 361.383         | 1371907.8     | 1371907.8           | 103.06 %     |             |              | 09:30:45      |
| 2     | Sc RADIAL          | 71599.5       | 71599.5             | 99.4 %       |             |              | 09:30:00      |
| 2     | Y 371.029          | 734152.2      | 734152.2            | 101.34 %     |             |              | 09:30:45      |
| 2     | Ag 328.068†        | -2621.4       | -652.8              | -3.3506 µg/L | -3.3506     | ppb          | 09:30:47      |
| 2     | Al 396.153Radial†  | 1800.1        | 1709.5              | 623.66 µg/L  | 623.66      | ppb          | 09:30:02      |
| 2     | As 188.979†        | 17924.4       | 17422.6             | 9692.6 µg/L  | 9692.6      | ppb          | 09:30:47      |
| 2     | B 249.677†         | 357588.8      | 346094.5            | 4977.3 µg/L  | 4977.3      | ppb          | 09:30:45      |
| 2     | Ba 233.527†        | 1734952.9     | 1683718.8           | 15013 µg/L   | 15013       | ppb          | 09:30:45      |
| 2     | Be 313.107†        | 11375287.8    | 11041447.0          | 2642.0 µg/L  | 2642.0      | ppb          | 09:30:41      |
| 2     | Ca 317.933Radial†  | 2647.2        | 2320.3              | 258.29 µg/L  | 258.29      | ppb          | 09:30:02      |
| 2     | Cd 226.502†        | 1357976.1     | 1317865.9           | 9971.5 µg/L  | 9971.5      | ppb          | 09:30:45      |
| 2     | Co 228.616†        | 698332.0      | 677704.5            | 10085 µg/L   | 10085       | ppb          | 09:30:45      |
| 2     | Cr 267.716†        | 2192813.3     | 2127625.1           | 25022 µg/L   | 25022       | ppb          | 09:30:45      |
| 2     | Cu 324.752†        | 4884930.8     | 4734221.4           | 20892 µg/L   | 20892       | ppb          | 09:30:45      |
| 2     | Fe 238.204 Radial† | 29.8          | 548.0               | 51.842 µg/L  | 51.842      | ppb          | 09:30:02      |
| 2     | K 766.490 Radial†  | 1210.6        | 147.8               | 77.679 µg/L  | 77.679      | ppb          | 09:30:02      |
| 2     | Mg 279.077 IEC†    | 121.7         | 95.6                | 51.585 µg/L  | 51.585      | ppb          | 09:30:02      |
| 2     | Mn 257.610†        | 5813011.5     | 5640391.6           | 9885.4 µg/L  | 9885.4      | ppb          | 09:30:45      |
| 2     | Mo 202.031†        | 193913.7      | 188190.1            | 9780.7 µg/L  | 9780.7      | ppb          | 09:30:47      |
| 2     | Na 589.592 Radial† | 1145.1        | 1112.4              | 185.49 µg/L  | 185.49      | ppb          | 09:30:02      |
| 2     | Ni 231.604†        | 655644.0      | 636389.2            | 10117 µg/L   | 10117       | ppb          | 09:30:45      |
| 2     | P 214.914†         | 41651.2       | 40510.5             | 14602 µg/L   | 14602       | ppb          | 09:30:47      |
| 2     | Pb 220.353†        | 255816.2      | 248152.6            | 25099 µg/L   | 25099       | ppb          | 09:30:47      |

|   |                    |            |            |              |             |          |
|---|--------------------|------------|------------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 92.6       | -12.9      | -14.296 µg/L | -14.296 ppb | 09:31:07 |
| 2 | Sb 206.836†        | 53772.9    | 52133.2    | 9685.1 µg/L  | 9685.1 ppb  | 09:30:47 |
| 2 | Se 196.026†        | 19029.2    | 18456.6    | 9670 µg/L    | 9670 ppb    | 09:30:47 |
| 2 | SiO2†              | 912775.2   | 882674.0   | 97692 µg/L   | 97692 ppb   | 09:30:45 |
| 2 | Si 251.611†        | 2767870.7  | 2685165.4  | 45527 µg/L   | 45527 ppb   | 09:30:45 |
| 2 | Sn 189.927†        | 78561.1    | 76257.7    | 9750.2 µg/L  | 9750.2 ppb  | 09:30:47 |
| 2 | Sr 421.552†        | 3456123.7  | 3477744.4  | 10090 µg/L   | 10090 ppb   | 09:30:00 |
| 2 | Ti 334.940†        | 7193241.1  | 6980711.9  | 9915.5 µg/L  | 9915.5 ppb  | 09:30:41 |
| 2 | Tl 190.801†        | 33408.7    | 32503.5    | 9984.2 µg/L  | 9984.2 ppb  | 09:30:47 |
| 2 | U 367.007†         | -444.9     | -147.5     | -18.451 µg/L | -18.451 ppb | 09:30:47 |
| 2 | V 292.402†         | 2304896.2  | 2236408.2  | 10063 µg/L   | 10063 ppb   | 09:30:45 |
| 2 | Zn 213.857†        | 2605040.8  | 2527704.6  | 14319 µg/L   | 14319 ppb   | 09:30:45 |
| 3 | Sc 361.383         | 1356987.2  | 1356987.2  | 101.94 %     |             | 09:31:15 |
| 3 | Sc RADIAL          | 73230.0    | 73230.0    | 102 %        |             | 09:30:04 |
| 3 | Y 371.029          | 726894.4   | 726894.4   | 100.34 %     |             | 09:31:15 |
| 3 | Ag 328.068†        | -2778.9    | -835.2     | -4.2915 µg/L | -4.2915 ppb | 09:31:17 |
| 3 | Al 396.153Radial†  | 1810.7     | 1679.6     | 612.73 µg/L  | 612.73 ppb  | 09:30:06 |
| 3 | As 188.979†        | 18624.7    | 18300.8    | 10171 µg/L   | 10171 ppb   | 09:31:17 |
| 3 | B 249.677†         | 355766.1   | 348121.6   | 5006.5 µg/L  | 5006.5 ppb  | 09:31:15 |
| 3 | Ba 233.527†        | 1726893.1  | 1694322.6  | 15108 µg/L   | 15108 ppb   | 09:31:15 |
| 3 | Be 313.107†        | 11214973.2 | 11005542.9 | 2629.9 µg/L  | 2629.9 ppb  | 09:31:11 |
| 3 | Ca 317.933Radial†  | 2669.7     | 2283.1     | 254.15 µg/L  | 254.15 ppb  | 09:30:06 |
| 3 | Cd 226.502†        | 1348743.9  | 1323297.6  | 10013 µg/L   | 10013 ppb   | 09:31:15 |
| 3 | Co 228.616†        | 694278.0   | 681178.1   | 10137 µg/L   | 10137 ppb   | 09:31:15 |
| 3 | Cr 267.716†        | 2182062.9  | 2140474.4  | 25173 µg/L   | 25173 ppb   | 09:31:15 |
| 3 | Cu 324.752†        | 4872323.2  | 4773971.4  | 21067 µg/L   | 21067 ppb   | 09:31:15 |
| 3 | Fe 238.204 Radial† | -42.4      | 476.3      | 45.060 µg/L  | 45.060 ppb  | 09:30:06 |
| 3 | K 766.490 Radial†  | 1183.7     | 94.2       | 49.482 µg/L  | 49.482 ppb  | 09:30:06 |
| 3 | Mg 279.077 IEC†    | 252.3      | 221.3      | 119.35 µg/L  | 119.35 ppb  | 09:30:06 |
| 3 | Mn 257.610†        | 5785307.3  | 5675233.6  | 9946.5 µg/L  | 9946.5 ppb  | 09:31:15 |
| 3 | Mo 202.031†        | 200144.6   | 196371.6   | 10206 µg/L   | 10206 ppb   | 09:31:17 |
| 3 | Na 589.592 Radial† | 963.9      | 908.4      | 151.49 µg/L  | 151.49 ppb  | 09:30:06 |
| 3 | Ni 231.604†        | 652631.7   | 640429.3   | 10182 µg/L   | 10182 ppb   | 09:31:15 |
| 3 | P 214.914†         | 43083.4    | 42359.9    | 15268 µg/L   | 15268 ppb   | 09:31:17 |
| 3 | Pb 220.353†        | 264922.9   | 259815.6   | 26279 µg/L   | 26279 ppb   | 09:31:17 |
| 3 | S 181.975 Axial†   | 89.9       | -14.5      | -16.117 µg/L | -16.117 ppb | 09:31:37 |
| 3 | Sb 206.836†        | 55610.8    | 54509.9    | 10142 µg/L   | 10142 ppb   | 09:31:17 |
| 3 | Se 196.026†        | 19641.5    | 19260.3    | 10100 µg/L   | 10100 ppb   | 09:31:17 |
| 3 | SiO2†              | 910371.5   | 890054.5   | 98509 µg/L   | 98509 ppb   | 09:31:15 |
| 3 | Si 251.611†        | 2759762.6  | 2706742.2  | 45893 µg/L   | 45893 ppb   | 09:31:15 |
| 3 | Sn 189.927†        | 81584.1    | 80061.5    | 10237 µg/L   | 10237 ppb   | 09:31:17 |
| 3 | Sr 421.552†        | 3525472.8  | 3468540.9  | 10063 µg/L   | 10063 ppb   | 09:30:04 |
| 3 | Ti 334.940†        | 7100742.9  | 6966716.9  | 9895.6 µg/L  | 9895.6 ppb  | 09:31:11 |
| 3 | Tl 190.801†        | 34570.6    | 33999.8    | 10444 µg/L   | 10444 ppb   | 09:31:17 |
| 3 | U 367.007†         | -455.2     | -162.3     | -20.238 µg/L | -20.238 ppb | 09:31:17 |
| 3 | V 292.402†         | 2297413.0  | 2253658.4  | 10141 µg/L   | 10141 ppb   | 09:31:15 |
| 3 | Zn 213.857†        | 2592365.4  | 2543063.6  | 14406 µg/L   | 14406 ppb   | 09:31:15 |

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Mean Data: LR2

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc 361.383  | 1356913.3                | 101.93 %           | 1.129    |                    |          | 1.11%  |
| Sc RADIAL   | 72866.1                  | 101 %              | 1.6      |                    |          | 1.55%  |
| Y 371.029   | 726656.2                 | 100.31 %           | 1.052    |                    |          | 1.05%  |
| Ag 328.068†   | -797.5                   | -4.0987 µg/L       | 0.67282  | -4.0987 ppb        | 0.67282  | 16.42% |
| Al 396.153Radial†   | 1663.6                   | 606.90 µg/L        | 20.320   | 606.90 ppb         | 20.320   | 3.35%  |
| As 188.979†   | 17870.5                  | 9936.3 µg/L        | 239.39   | 9936.3 ppb         | 239.39   | 2.41%  |
| QC value within limits for As 188.979 Recovery = 99.36%             |                          |                    |          |                    |          |        |
| B 249.677†  | 346100.8                 | 4977.4 µg/L        | 29.02    | 4977.4 ppb         | 29.02    | 0.58%  |
| QC value within limits for B 249.677 Recovery = 99.55%              |                          |                    |          |                    |          |        |
| Ba 233.527†   | 1685718.5                | 15031 µg/L         | 69.5     | 15031 ppb          | 69.5     | 0.46%  |
| QC value within limits for Ba 233.527 Recovery = 100.21%            |                          |                    |          |                    |          |        |
| Be 313.107†   | 11105777.8               | 2659.1 µg/L        | 40.58    | 2659.1 ppb         | 40.58    | 1.53%  |
| QC value less than the lower limit for Be 313.107 Recovery = 88.64% |                          |                    |          |                    |          |        |
| Ca 317.933Radial†   | 2295.0                   | 255.48 µg/L        | 2.439    | 255.48 ppb         | 2.439    | 0.95%  |
| Cd 226.502†   | 1316974.2                | 9964.8 µg/L        | 51.55    | 9964.8 ppb         | 51.55    | 0.52%  |
| QC value within limits for Cd 226.502 Recovery = 99.65%             |                          |                    |          |                    |          |        |
| Co 228.616†   | 677818.8                 | 10087 µg/L         | 49.2     | 10087 ppb          | 49.2     | 0.49%  |
| QC value within limits for Co 228.616 Recovery = 100.87%            |                          |                    |          |                    |          |        |
| Cr 267.716†   | 2130078.5                | 25050 µg/L         | 110.7    | 25050 ppb          | 110.7    | 0.44%  |

|  |           |              |         |             |         |         |  |
|--|-----------|--------------|---------|-------------|---------|---------|--|
| QC value within limits for Cr 267.716 Recovery = 100.20% |           |              |         |             |         |         |  |
| Cu 324.752†  | 4746496.4 | 20946 µg/L   | 105.2   | 20946 ppb   | 105.2   | 0.50%   |  |
| QC value within limits for Cu 324.752 Recovery = 104.73% |           |              |         |             |         |         |  |
| Fe 238.204 Radial†                                       | 508.3     | 48.080 µg/L  | 3.4516  | 48.080 ppb  | 3.4516  | 7.18%   |  |
| K 766.490 Radial†  | 78.0      | 41.012 µg/L  | 41.5545 | 41.012 ppb  | 41.5545 | 101.32% |  |
| Mg 279.077 IEC†  | 173.6     | 93.596 µg/L  | 36.6912 | 93.596 ppb  | 36.6912 | 39.20%  |  |
| Mn 257.610†  | 5648133.2 | 9899.0 µg/L  | 42.37   | 9899.0 ppb  | 42.37   | 0.43%   |  |
| QC value within limits for Mn 257.610 Recovery = 98.99%  |           |              |         |             |         |         |  |
| Mo 202.031†  | 192516.5  | 10006 µg/L   | 213.7   | 10006 ppb   | 213.7   | 2.14%   |  |
| QC value within limits for Mo 202.031 Recovery = 100.06% |           |              |         |             |         |         |  |
| Na 589.592 Radial†                                       | 982.4     | 163.82 µg/L  | 18.833  | 163.82 ppb  | 18.833  | 11.50%  |  |
| Ni 231.604†  | 636823.0  | 10124 µg/L   | 54.2    | 10124 ppb   | 54.2    | 0.54%   |  |
| QC value within limits for Ni 231.604 Recovery = 101.24% |           |              |         |             |         |         |  |
| P 214.914†   | 41465.7   | 14946 µg/L   | 333.8   | 14946 ppb   | 333.8   | 2.23%   |  |
| QC value within limits for P 214.914 Recovery = 99.64%   |           |              |         |             |         |         |  |
| Pb 220.353†  | 254384.7  | 25730 µg/L   | 594.1   | 25730 ppb   | 594.1   | 2.31%   |  |
| QC value within limits for Pb 220.353 Recovery = 102.92% |           |              |         |             |         |         |  |
| S 181.975 Axial†   | -9.2      | -10.164 µg/L | 8.7813  | -10.164 ppb | 8.7813  | 86.39%  |  |
| Sb 206.836†  | 53379.4   | 9925.5 µg/L  | 229.35  | 9925.5 ppb  | 229.35  | 2.31%   |  |
| QC value within limits for Sb 206.836 Recovery = 99.25%  |           |              |         |             |         |         |  |
| Se 196.026†  | 18912.9   | 9910 µg/L    | 216.2   | 9910 ppb    | 216.2   | 2.18%   |  |
| QC value within limits for Se 196.026 Recovery = 99.08%  |           |              |         |             |         |         |  |
| SiO2†  | 882294.5  | 97650 µg/L   | 880.6   | 97650 ppb   | 880.6   | 0.90%   |  |
| QC value within limits for SiO2 Recovery = 91.26%        |           |              |         |             |         |         |  |
| Si 251.611†  | 2684161.7 | 45510 µg/L   | 391.6   | 45510 ppb   | 391.6   | 0.86%   |  |
| QC value within limits for Si 251.611 Recovery = 91.02%  |           |              |         |             |         |         |  |
| Sn 189.927†  | 78144.5   | 9991.4 µg/L  | 243.19  | 9991.4 ppb  | 243.19  | 2.43%   |  |
| QC value within limits for Sn 189.927 Recovery = 99.91%  |           |              |         |             |         |         |  |
| Sr 421.552†  | 3463747.8 | 10049 µg/L   | 49.1    | 10049 ppb   | 49.1    | 0.49%   |  |
| QC value within limits for Sr 421.552 Recovery = 100.49% |           |              |         |             |         |         |  |
| Ti 334.940†  | 7026534.5 | 9980.6 µg/L  | 130.44  | 9980.6 ppb  | 130.44  | 1.31%   |  |
| QC value within limits for Ti 334.940 Recovery = 99.81%  |           |              |         |             |         |         |  |
| Tl 190.801†  | 33245.9   | 10212 µg/L   | 229.8   | 10212 ppb   | 229.8   | 2.25%   |  |
| QC value within limits for Tl 190.801 Recovery = 102.12% |           |              |         |             |         |         |  |
| U 367.007†   | -131.4    | -16.455 µg/L | 5.0837  | -16.455 ppb | 5.0837  | 30.89%  |  |
| V 292.402†   | 2240935.9 | 10083 µg/L   | 50.2    | 10083 ppb   | 50.2    | 0.50%   |  |
| QC value within limits for V 292.402 Recovery = 100.83%  |           |              |         |             |         |         |  |
| Zn 213.857†  | 2530309.7 | 14333 µg/L   | 66.1    | 14333 ppb   | 66.1    | 0.46%   |  |
| QC value within limits for Zn 213.857 Recovery = 95.56%  |           |              |         |             |         |         |  |
| QC Failed. Continue with analysis.                       |           |              |         |             |         |         |  |

Sequence No.: 13

Sample ID: CCV

Analyst:

Logged In Analyst (Original) : lab

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 11/11/2016 09:31:44

Data Type: Reprocessed on 11/11/2016 09:56:35

Initial Sample Vol:

Sample Prep Vol:

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Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|-------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1372097.0     | 1372097.0           | 103.07 %    |             |              | 09:32:24      |
| 1     | Sc RADIAL          | 73488.3       | 73488.3             | 102 %       |             |              | 09:32:13      |
| 1     | Y 371.029          | 738252.3      | 738252.3            | 101.91 %    |             |              | 09:32:24      |
| 1     | Ag 328.068†        | 98249.7       | 97212.4             | 501.64 µg/L | 501.64      | ppb          | 09:32:27      |
| 1     | Al 396.153Radial†  | 14383.3       | 13997.8             | 5111.0 µg/L | 5111.0      | ppb          | 09:32:13      |
| 1     | As 188.979†        | 900.9         | 904.0               | 496.40 µg/L | 496.40      | ppb          | 09:32:47      |
| 1     | B 249.677†         | 37860.4       | 35847.2             | 519.29 µg/L | 519.29      | ppb          | 09:32:27      |
| 1     | Ba 233.527†        | 58369.1       | 56870.3             | 507.12 µg/L | 507.12      | ppb          | 09:32:27      |
| 1     | Be 313.107†        | 1887205.0     | 1834616.2           | 488.05 µg/L | 488.05      | ppb          | 09:32:24      |
| 1     | Ca 317.933Radial†  | 47360.6       | 46082.6             | 5129.9 µg/L | 5129.9      | ppb          | 09:32:13      |
| 1     | Cd 226.502†        | 68681.5       | 66814.6             | 504.96 µg/L | 504.96      | ppb          | 09:32:27      |
| 1     | Co 228.616†        | 35039.7       | 34087.0             | 506.89 µg/L | 506.89      | ppb          | 09:32:27      |
| 1     | Cr 267.716†        | 44717.4       | 43255.7             | 508.30 µg/L | 508.30      | ppb          | 09:32:27      |
| 1     | Cu 324.752†        | 123661.3      | 114198.9            | 504.75 µg/L | 504.75      | ppb          | 09:32:27      |
| 1     | Fe 238.204 Radial† | 54743.2       | 54180.8             | 5125.3 µg/L | 5125.3      | ppb          | 09:32:13      |
| 1     | K 766.490 Radial†  | 10648.9       | 9368.5              | 4924.7 µg/L | 4924.7      | ppb          | 09:32:13      |
| 1     | Mg 279.077 IEC†    | 9578.6        | 9362.8              | 5049.5 µg/L | 5049.5      | ppb          | 09:32:13      |
| 1     | Mn 257.610†        | 297382.2      | 288367.3            | 505.21 µg/L | 505.21      | ppb          | 09:32:27      |
| 1     | Mo 202.031†        | 9811.3        | 9548.6              | 496.44 µg/L | 496.44      | ppb          | 09:32:47      |
| 1     | Na 589.592 Radial† | 58929.5       | 57726.7             | 9626.2 µg/L | 9626.2      | ppb          | 09:32:11      |
| 1     | Ni 231.604†        | 32601.8       | 31827.9             | 506.00 µg/L | 506.00      | ppb          | 09:32:27      |
| 1     | P 214.914†         | 6903.2        | 6792.6              | 2448.1 µg/L | 2448.1      | ppb          | 09:32:47      |
| 1     | Pb 220.353†        | 5112.3        | 4886.2              | 493.83 µg/L | 493.83      | ppb          | 09:32:47      |
| 1     | S 181.975 Axial†   | 1019.3        | 886.2               | 988.07 µg/L | 988.07      | ppb          | 09:32:47      |
| 1     | Sb 206.836†        | 2689.0        | 2564.5              | 487.18 µg/L | 487.18      | ppb          | 09:32:47      |
| 1     | Se 196.026†        | 993.2         | 955.6               | 503 µg/L    | 503         | ppb          | 09:32:47      |
| 1     | SiO2†              | 55275.5       | 50608.4             | 5601.2 µg/L | 5601.2      | ppb          | 09:32:27      |
| 1     | Si 251.611†        | 160313.8      | 154951.5            | 2627.8 µg/L | 2627.8      | ppb          | 09:32:27      |
| 1     | Sn 189.927†        | 3955.8        | 3865.4              | 494.23 µg/L | 494.23      | ppb          | 09:32:47      |
| 1     | Sr 421.552†        | 172806.3      | 169854.7            | 492.62 µg/L | 492.62      | ppb          | 09:32:11      |
| 1     | Ti 334.940†        | 364376.2      | 354405.9            | 503.41 µg/L | 503.41      | ppb          | 09:32:27      |
| 1     | Tl 190.801†        | 1597.9        | 1636.4              | 502.73 µg/L | 502.73      | ppb          | 09:32:47      |
| 1     | U 367.007†         | 4014.4        | 4179.0              | 485.81 µg/L | 485.81      | ppb          | 09:32:27      |
| 1     | V 292.402†         | 116091.9      | 112528.7            | 505.62 µg/L | 505.62      | ppb          | 09:32:27      |
| 1     | Zn 213.857†        | 92482.3       | 89679.5             | 507.46 µg/L | 507.46      | ppb          | 09:32:27      |
| 2     | Sc 361.383         | 1335065.4     | 1335065.4           | 100.29 %    |             |              | 09:32:49      |
| 2     | Sc RADIAL          | 73161.0       | 73161.0             | 102 %       |             |              | 09:32:17      |
| 2     | Y 371.029          | 717267.7      | 717267.7            | 99.009 %    |             |              | 09:32:49      |
| 2     | Ag 328.068†        | 96613.0       | 98224.4             | 506.86 µg/L | 506.86      | ppb          | 09:32:51      |
| 2     | Al 396.153Radial†  | 14280.4       | 13959.5             | 5097.0 µg/L | 5097.0      | ppb          | 09:32:17      |
| 2     | As 188.979†        | 906.1         | 933.4               | 512.40 µg/L | 512.40      | ppb          | 09:33:11      |
| 2     | B 249.677†         | 37067.3       | 36075.3             | 522.56 µg/L | 522.56      | ppb          | 09:32:51      |
| 2     | Ba 233.527†        | 57203.9       | 57279.2             | 510.77 µg/L | 510.77      | ppb          | 09:32:51      |
| 2     | Be 313.107†        | 1823141.0     | 1821524.3           | 484.39 µg/L | 484.39      | ppb          | 09:32:49      |
| 2     | Ca 317.933Radial†  | 46921.8       | 45858.3             | 5105.0 µg/L | 5105.0      | ppb          | 09:32:17      |
| 2     | Cd 226.502†        | 67269.0       | 67254.5             | 508.29 µg/L | 508.29      | ppb          | 09:32:51      |
| 2     | Co 228.616†        | 34192.5       | 34185.2             | 508.36 µg/L | 508.36      | ppb          | 09:32:51      |
| 2     | Cr 267.716†        | 43696.7       | 43441.3             | 510.49 µg/L | 510.49      | ppb          | 09:32:51      |
| 2     | Cu 324.752†        | 120949.3      | 114822.6            | 507.50 µg/L | 507.50      | ppb          | 09:32:51      |
| 2     | Fe 238.204 Radial† | 54378.6       | 54061.9             | 5114.0 µg/L | 5114.0      | ppb          | 09:32:17      |
| 2     | K 766.490 Radial†  | 10748.7       | 9513.4              | 5000.8 µg/L | 5000.8      | ppb          | 09:32:17      |
| 2     | Mg 279.077 IEC†    | 9571.2        | 9397.5              | 5068.2 µg/L | 5068.2      | ppb          | 09:32:17      |
| 2     | Mn 257.610†        | 291314.5      | 290320.0            | 508.64 µg/L | 508.64      | ppb          | 09:32:51      |
| 2     | Mo 202.031†        | 9870.0        | 9871.2              | 513.21 µg/L | 513.21      | ppb          | 09:33:11      |
| 2     | Na 589.592 Radial† | 59053.2       | 58106.9             | 9689.6 µg/L | 9689.6      | ppb          | 09:32:15      |
| 2     | Ni 231.604†        | 32059.5       | 32164.5             | 511.36 µg/L | 511.36      | ppb          | 09:32:51      |
| 2     | P 214.914†         | 6909.8        | 6984.9              | 2517.4 µg/L | 2517.4      | ppb          | 09:33:11      |
| 2     | Pb 220.353†        | 5125.8        | 5037.3              | 509.11 µg/L | 509.11      | ppb          | 09:33:11      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 1035.9    | 930.2     | 1037.2 µg/L | 1037.2 ppb | 09:33:11 |
| 2 | Sb 206.836†        | 2729.4    | 2677.2    | 508.91 µg/L | 508.91 ppb | 09:33:11 |
| 2 | Se 196.026†        | 996.6     | 985.7     | 519 µg/L    | 519 ppb    | 09:33:11 |
| 2 | SiO2†              | 53973.8   | 50797.9   | 5622.2 µg/L | 5622.2 ppb | 09:32:51 |
| 2 | Si 251.611†        | 156219.3  | 155183.1  | 2631.8 µg/L | 2631.8 ppb | 09:32:51 |
| 2 | Sn 189.927†        | 3962.9    | 3978.9    | 508.76 µg/L | 508.76 ppb | 09:33:11 |
| 2 | Sr 421.552†        | 173239.4  | 171038.9  | 496.06 µg/L | 496.06 ppb | 09:32:15 |
| 2 | Ti 334.940†        | 356997.4  | 356854.2  | 506.90 µg/L | 506.90 ppb | 09:32:51 |
| 2 | Tl 190.801†        | 1608.3    | 1689.7    | 519.10 µg/L | 519.10 ppb | 09:33:11 |
| 2 | U 367.007†         | 3855.6    | 4128.7    | 479.70 µg/L | 479.70 ppb | 09:32:51 |
| 2 | V 292.402†         | 113606.8  | 113174.9  | 508.52 µg/L | 508.52 ppb | 09:32:51 |
| 2 | Zn 213.857†        | 90434.2   | 90126.2   | 509.99 µg/L | 509.99 ppb | 09:32:51 |
| 3 | Sc 361.383         | 1339410.5 | 1339410.5 | 100.62 %    |            | 09:33:13 |
| 3 | Sc RADIAL          | 71264.1   | 71264.1   | 98.9 %      |            | 09:32:21 |
| 3 | Y 371.029          | 720069.0  | 720069.0  | 99.396 %    |            | 09:33:13 |
| 3 | Ag 328.068†        | 94811.6   | 96121.5   | 496.01 µg/L | 496.01 ppb | 09:33:15 |
| 3 | Al 396.153Radial†  | 14004.0   | 14054.3   | 5131.7 µg/L | 5131.7 ppb | 09:32:21 |
| 3 | As 188.979†        | 903.1     | 927.5     | 509.08 µg/L | 509.08 ppb | 09:33:35 |
| 3 | B 249.677†         | 36400.6   | 35292.7   | 511.33 µg/L | 511.33 ppb | 09:33:15 |
| 3 | Ba 233.527†        | 55973.2   | 55871.0   | 498.21 µg/L | 498.21 ppb | 09:33:15 |
| 3 | Be 313.107†        | 1827175.4 | 1819636.6 | 484.18 µg/L | 484.18 ppb | 09:33:13 |
| 3 | Ca 317.933Radial†  | 46059.8   | 46216.7   | 5144.9 µg/L | 5144.9 ppb | 09:32:21 |
| 3 | Cd 226.502†        | 66048.4   | 65823.8   | 497.46 µg/L | 497.46 ppb | 09:33:15 |
| 3 | Co 228.616†        | 33641.5   | 33526.9   | 498.57 µg/L | 498.57 ppb | 09:33:15 |
| 3 | Cr 267.716†        | 42780.8   | 42389.7   | 498.13 µg/L | 498.13 ppb | 09:33:15 |
| 3 | Cu 324.752†        | 118837.1  | 112332.1  | 496.51 µg/L | 496.51 ppb | 09:33:15 |
| 3 | Fe 238.204 Radial† | 53251.1   | 54347.4   | 5141.0 µg/L | 5141.0 ppb | 09:32:21 |
| 3 | K 766.490 Radial†  | 10514.5   | 9558.4    | 5024.5 µg/L | 5024.5 ppb | 09:32:21 |
| 3 | Mg 279.077 IEC†    | 9338.1    | 9412.7    | 5076.4 µg/L | 5076.4 ppb | 09:32:21 |
| 3 | Mn 257.610†        | 286266.6  | 284360.7  | 498.19 µg/L | 498.19 ppb | 09:33:15 |
| 3 | Mo 202.031†        | 9876.7    | 9845.9    | 511.89 µg/L | 511.89 ppb | 09:33:35 |
| 3 | Na 589.592 Radial† | 58147.2   | 58738.8   | 9795.0 µg/L | 9795.0 ppb | 09:32:19 |
| 3 | Ni 231.604†        | 31404.9   | 31410.2   | 499.36 µg/L | 499.36 ppb | 09:33:15 |
| 3 | P 214.914†         | 6940.3    | 6992.9    | 2520.3 µg/L | 2520.3 ppb | 09:33:35 |
| 3 | Pb 220.353†        | 5138.5    | 5033.3    | 508.72 µg/L | 508.72 ppb | 09:33:35 |
| 3 | S 181.975 Axial†   | 1023.0    | 914.1     | 1019.2 µg/L | 1019.2 ppb | 09:33:35 |
| 3 | Sb 206.836†        | 2716.7    | 2655.8    | 504.97 µg/L | 504.97 ppb | 09:33:35 |
| 3 | Se 196.026†        | 1003.3    | 989.2     | 521 µg/L    | 521 ppb    | 09:33:35 |
| 3 | SiO2†              | 52860.5   | 49516.9   | 5480.4 µg/L | 5480.4 ppb | 09:33:15 |
| 3 | Si 251.611†        | 153234.5  | 151711.2  | 2572.9 µg/L | 2572.9 ppb | 09:33:15 |
| 3 | Sn 189.927†        | 3970.7    | 3973.8    | 508.10 µg/L | 508.10 ppb | 09:33:35 |
| 3 | Sr 421.552†        | 169943.1  | 172247.3  | 499.56 µg/L | 499.56 ppb | 09:32:19 |
| 3 | Ti 334.940†        | 351586.8  | 350322.0  | 497.62 µg/L | 497.62 ppb | 09:33:15 |
| 3 | Tl 190.801†        | 1598.9    | 1675.2    | 514.65 µg/L | 514.65 ppb | 09:33:35 |
| 3 | U 367.007†         | 3843.5    | 4104.1    | 476.52 µg/L | 476.52 ppb | 09:33:15 |
| 3 | V 292.402†         | 111718.1  | 110930.3  | 498.44 µg/L | 498.44 ppb | 09:33:15 |
| 3 | Zn 213.857†        | 88987.9   | 88396.2   | 500.18 µg/L | 500.18 ppb | 09:33:15 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 1348857.6                | 101.33 %           | 1.521    |                    |          | 1.50% |
| Sc RADIAL  | 72637.8                  | 101 %              | 1.7      |                    |          | 1.65% |
| Y 371.029  | 725196.3                 | 100.10 %           | 1.573    |                    |          | 1.57% |
| Ag 328.068†  | 97186.1                  | 501.51 µg/L        | 5.426    | 501.51 ppb         | 5.426    | 1.08% |
| QC value within limits for Ag 328.068 Recovery = 100.30%       |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 14003.9                  | 5113.2 µg/L        | 17.42    | 5113.2 ppb         | 17.42    | 0.34% |
| QC value within limits for Al 396.153Radial Recovery = 102.26% |                          |                    |          |                    |          |       |
| As 188.979†  | 921.7                    | 505.96 µg/L        | 8.442    | 505.96 ppb         | 8.442    | 1.67% |
| QC value within limits for As 188.979 Recovery = 101.19%       |                          |                    |          |                    |          |       |
| B 249.677†   | 35738.4                  | 517.73 µg/L        | 5.778    | 517.73 ppb         | 5.778    | 1.12% |
| QC value within limits for B 249.677 Recovery = 103.55%        |                          |                    |          |                    |          |       |
| Ba 233.527†  | 56673.5                  | 505.37 µg/L        | 6.460    | 505.37 ppb         | 6.460    | 1.28% |
| QC value within limits for Ba 233.527 Recovery = 101.07%       |                          |                    |          |                    |          |       |
| Be 313.107†  | 1825259.0                | 485.54 µg/L        | 2.177    | 485.54 ppb         | 2.177    | 0.45% |
| QC value within limits for Be 313.107 Recovery = 97.11%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 46052.5                  | 5126.6 µg/L        | 20.16    | 5126.6 ppb         | 20.16    | 0.39% |
| QC value within limits for Ca 317.933Radial Recovery = 102.53% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 66631.0                  | 503.57 µg/L        | 5.546    | 503.57 ppb         | 5.546    | 1.10% |
| QC value within limits for Cd 226.502 Recovery = 100.71%       |                          |                    |          |                    |          |       |

|   |          |             |        |            |        |       |
|---|----------|-------------|--------|------------|--------|-------|
| Co 228.616†   | 33933.0  | 504.61 µg/L | 5.283  | 504.61 ppb | 5.283  | 1.05% |
| QC value within limits for Co 228.616 Recovery = 100.92%        |          |             |        |            |        |       |
| Cr 267.716†   | 43028.9  | 505.64 µg/L | 6.598  | 505.64 ppb | 6.598  | 1.30% |
| QC value within limits for Cr 267.716 Recovery = 101.13%        |          |             |        |            |        |       |
| Cu 324.752†   | 113784.5 | 502.92 µg/L | 5.720  | 502.92 ppb | 5.720  | 1.14% |
| QC value within limits for Cu 324.752 Recovery = 100.58%        |          |             |        |            |        |       |
| Fe 238.204 Radial†  | 54196.7  | 5126.8 µg/L | 13.56  | 5126.8 ppb | 13.56  | 0.26% |
| QC value within limits for Fe 238.204 Radial Recovery = 102.54% |          |             |        |            |        |       |
| K 766.490 Radial†   | 9480.1   | 4983.3 µg/L | 52.16  | 4983.3 ppb | 52.16  | 1.05% |
| QC value within limits for K 766.490 Radial Recovery = 99.67%   |          |             |        |            |        |       |
| Mg 279.077 IEC†   | 9391.0   | 5064.7 µg/L | 13.79  | 5064.7 ppb | 13.79  | 0.27% |
| QC value within limits for Mg 279.077 IEC Recovery = 101.29%    |          |             |        |            |        |       |
| Mn 257.610†   | 287682.7 | 504.01 µg/L | 5.325  | 504.01 ppb | 5.325  | 1.06% |
| QC value within limits for Mn 257.610 Recovery = 100.80%        |          |             |        |            |        |       |
| Mo 202.031†   | 9755.2   | 507.18 µg/L | 9.325  | 507.18 ppb | 9.325  | 1.84% |
| QC value within limits for Mo 202.031 Recovery = 101.44%        |          |             |        |            |        |       |
| Na 589.592 Radial†  | 58190.8  | 9703.6 µg/L | 85.25  | 9703.6 ppb | 85.25  | 0.88% |
| QC value within limits for Na 589.592 Radial Recovery = 97.04%  |          |             |        |            |        |       |
| Ni 231.604†   | 31800.9  | 505.57 µg/L | 6.007  | 505.57 ppb | 6.007  | 1.19% |
| QC value within limits for Ni 231.604 Recovery = 101.11%        |          |             |        |            |        |       |
| P 214.914†  | 6923.4   | 2495.2 µg/L | 40.88  | 2495.2 ppb | 40.88  | 1.64% |
| QC value within limits for P 214.914 Recovery = 99.81%          |          |             |        |            |        |       |
| Pb 220.353†   | 4985.6   | 503.89 µg/L | 8.716  | 503.89 ppb | 8.716  | 1.73% |
| QC value within limits for Pb 220.353 Recovery = 100.78%        |          |             |        |            |        |       |
| S 181.975 Axial†  | 910.2    | 1014.8 µg/L | 24.84  | 1014.8 ppb | 24.84  | 2.45% |
| QC value within limits for S 181.975 Axial Recovery = 101.48%   |          |             |        |            |        |       |
| Sb 206.836†   | 2632.5   | 500.35 µg/L | 11.577 | 500.35 ppb | 11.577 | 2.31% |
| QC value within limits for Sb 206.836 Recovery = 100.07%        |          |             |        |            |        |       |
| Se 196.026†   | 976.8    | 514 µg/L    | 9.7    | 514 ppb    | 9.7    | 1.88% |
| QC value within limits for Se 196.026 Recovery = 102.90%        |          |             |        |            |        |       |
| SiO2†   | 50307.7  | 5567.9 µg/L | 76.52  | 5567.9 ppb | 76.52  | 1.37% |
| QC value within limits for SiO2 Recovery = 104.12%              |          |             |        |            |        |       |
| Si 251.611†   | 153948.6 | 2610.8 µg/L | 32.91  | 2610.8 ppb | 32.91  | 1.26% |
| QC value within limits for Si 251.611 Recovery = 104.43%        |          |             |        |            |        |       |
| Sn 189.927†   | 3939.4   | 503.70 µg/L | 8.203  | 503.70 ppb | 8.203  | 1.63% |
| QC value within limits for Sn 189.927 Recovery = 100.74%        |          |             |        |            |        |       |
| Sr 421.552†   | 171047.0 | 496.08 µg/L | 3.471  | 496.08 ppb | 3.471  | 0.70% |
| QC value within limits for Sr 421.552 Recovery = 99.22%         |          |             |        |            |        |       |
| Ti 334.940†   | 353860.7 | 502.64 µg/L | 4.688  | 502.64 ppb | 4.688  | 0.93% |
| QC value within limits for Ti 334.940 Recovery = 100.53%        |          |             |        |            |        |       |
| Tl 190.801†   | 1667.1   | 512.16 µg/L | 8.463  | 512.16 ppb | 8.463  | 1.65% |
| QC value within limits for Tl 190.801 Recovery = 102.43%        |          |             |        |            |        |       |
| U 367.007†  | 4137.3   | 480.68 µg/L | 4.723  | 480.68 ppb | 4.723  | 0.98% |
| QC value within limits for U 367.007 Recovery = 96.14%          |          |             |        |            |        |       |
| V 292.402†  | 112211.3 | 504.19 µg/L | 5.189  | 504.19 ppb | 5.189  | 1.03% |
| QC value within limits for V 292.402 Recovery = 100.84%         |          |             |        |            |        |       |
| Zn 213.857†   | 89400.6  | 505.88 µg/L | 5.091  | 505.88 ppb | 5.091  | 1.01% |
| QC value within limits for Zn 213.857 Recovery = 101.18%        |          |             |        |            |        |       |

All analyte(s) passed QC.



Sequence No.: 14

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/11/2016 09:33:43

Analyst:

Data Type: Reprocessed on 11/11/2016 09:56:36

Logged In Analyst (Original) : lab

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units | Calib. Units | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|-------------|--------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1374142.3     | 1374142.3           | 103.23      | %            |             |              | 09:35:15      |
| 1     | Sc RADIAL          | 72386.5       | 72386.5             | 100         | %            |             |              | 09:34:08      |
| 1     | Y 371.029          | 748903.6      | 748903.6            | 103.38      | %            |             |              | 09:35:15      |
| 1     | Ag 328.068†        | -1627.7       | 314.0               | 1.6259      | µg/L         | 1.6259      | ppb          | 09:35:17      |
| 1     | Al 396.153Radial†  | 142.0         | 39.7                | 14.489      | µg/L         | 14.489      | ppb          | 09:34:28      |
| 1     | As 188.979†        | -27.7         | 3.1                 | 1.7098      | µg/L         | 1.7098      | ppb          | 09:35:37      |
| 1     | B 249.677†         | 1129.7        | 209.5               | 3.0223      | µg/L         | 3.0223      | ppb          | 09:35:17      |
| 1     | Ba 233.527†        | -186.3        | 60.3                | 0.5375      | µg/L         | 0.5375      | ppb          | 09:35:37      |
| 1     | Be 313.107†        | -3254.5       | 503.1               | 0.1208      | µg/L         | 0.1208      | ppb          | 09:35:17      |
| 1     | Ca 317.933Radial†  | 436.0         | 90.7                | 10.096      | µg/L         | 10.096      | ppb          | 09:34:28      |
| 1     | Cd 226.502†        | -91.8         | 91.1                | 0.6880      | µg/L         | 0.6880      | ppb          | 09:35:37      |
| 1     | Co 228.616†        | -59.4         | 34.0                | 0.5059      | µg/L         | 0.5059      | ppb          | 09:35:37      |
| 1     | Cr 267.716†        | 213.1         | 77.4                | 0.9188      | µg/L         | 0.9188      | ppb          | 09:35:37      |
| 1     | Cu 324.752†        | 5897.4        | -63.8               | -0.2875     | µg/L         | -0.2875     | ppb          | 09:35:17      |
| 1     | Fe 238.204 Radial† | -388.6        | 131.3               | 12.424      | µg/L         | 12.424      | ppb          | 09:34:28      |
| 1     | K 766.490 Radial†  | 982.1         | -92.9               | -48.817     | µg/L         | -48.817     | ppb          | 09:34:08      |
| 1     | Mg 279.077 IEC†    | 36.2          | 9.2                 | 4.9573      | µg/L         | 4.9573      | ppb          | 09:34:28      |
| 1     | Mn 257.610†        | 387.0         | 222.9               | 0.3905      | µg/L         | 0.3905      | ppb          | 09:35:37      |
| 1     | Mo 202.031†        | -0.4          | 29.4                | 1.5274      | µg/L         | 1.5274      | ppb          | 09:35:37      |
| 1     | Na 589.592 Radial† | 14.7          | -25.1               | -4.1907     | µg/L         | -4.1907     | ppb          | 09:34:08      |
| 1     | Ni 231.604†        | -157.7        | 44.9                | 0.7146      | µg/L         | 0.7146      | ppb          | 09:35:37      |
| 1     | P 214.914†         | -93.5         | 4.5                 | 1.6318      | µg/L         | 1.6318      | ppb          | 09:35:37      |
| 1     | Pb 220.353†        | 80.7          | 4.5                 | 0.4631      | µg/L         | 0.4631      | ppb          | 09:35:37      |
| 1     | S 181.975 Axial†   | 113.2         | 7.0                 | 7.7962      | µg/L         | 7.7962      | ppb          | 09:35:37      |
| 1     | Sb 206.836†        | 72.5          | 25.9                | 4.9932      | µg/L         | 4.9932      | ppb          | 09:35:37      |
| 1     | Se 196.026†        | -0.5          | -8.5                | -4.48       | µg/L         | -4.48       | ppb          | 09:35:37      |
| 1     | SiO2†              | 3119.4        | 2.1                 | 0.2370      | µg/L         | 0.2370      | ppb          | 09:35:17      |
| 1     | Si 251.611†        | 678.3         | 72.7                | 1.2336      | µg/L         | 1.2336      | ppb          | 09:35:17      |
| 1     | Sn 189.927†        | -11.0         | 16.9                | 2.1561      | µg/L         | 2.1561      | ppb          | 09:35:37      |
| 1     | Sr 421.552†        | -273.7        | 186.7               | 0.5413      | µg/L         | 0.5413      | ppb          | 09:34:28      |
| 1     | Ti 334.940†        | 255.6         | 1136.9              | 1.6205      | µg/L         | 1.6205      | ppb          | 09:35:17      |
| 1     | Tl 190.801†        | -72.5         | 15.8                | 4.8535      | µg/L         | 4.8535      | ppb          | 09:35:37      |
| 1     | U 367.007†         | -366.5        | -70.8               | -8.7829     | µg/L         | -8.7829     | ppb          | 09:35:17      |
| 1     | V 292.402†         | 163.4         | 54.9                | 0.2452      | µg/L         | 0.2452      | ppb          | 09:35:17      |
| 1     | Zn 213.857†        | 204.5         | 151.6               | 0.8590      | µg/L         | 0.8590      | ppb          | 09:35:37      |
| 2     | Sc 361.383         | 1347207.9     | 1347207.9           | 101.20      | %            |             |              | 09:35:39      |
| 2     | Sc RADIAL          | 72974.0       | 72974.0             | 101         | %            |             |              | 09:34:30      |
| 2     | Y 371.029          | 734920.6      | 734920.6            | 101.45      | %            |             |              | 09:35:39      |
| 2     | Ag 328.068†        | -1746.6       | 164.9               | 0.8471      | µg/L         | 0.8471      | ppb          | 09:35:42      |
| 2     | Al 396.153Radial†  | 167.0         | 63.2                | 23.084      | µg/L         | 23.084      | ppb          | 09:34:50      |
| 2     | As 188.979†        | -27.7         | 2.6                 | 1.4190      | µg/L         | 1.4190      | ppb          | 09:36:02      |
| 2     | B 249.677†         | 1067.4        | 169.8               | 2.4533      | µg/L         | 2.4533      | ppb          | 09:35:42      |
| 2     | Ba 233.527†        | -182.2        | 60.7                | 0.5416      | µg/L         | 0.5416      | ppb          | 09:36:02      |
| 2     | Be 313.107†        | -3104.0       | 588.8               | 0.1503      | µg/L         | 0.1503      | ppb          | 09:35:42      |
| 2     | Ca 317.933Radial†  | 481.8         | 132.5               | 14.747      | µg/L         | 14.747      | ppb          | 09:34:50      |
| 2     | Cd 226.502†        | -106.3        | 75.0                | 0.5654      | µg/L         | 0.5654      | ppb          | 09:36:02      |
| 2     | Co 228.616†        | -62.0         | 30.2                | 0.4495      | µg/L         | 0.4495      | ppb          | 09:36:02      |
| 2     | Cr 267.716†        | 192.6         | 61.4                | 0.7141      | µg/L         | 0.7141      | ppb          | 09:36:02      |
| 2     | Cu 324.752†        | 6061.3        | 212.4               | 0.9454      | µg/L         | 0.9454      | ppb          | 09:35:42      |
| 2     | Fe 238.204 Radial† | -367.5        | 155.3               | 14.690      | µg/L         | 14.690      | ppb          | 09:34:50      |
| 2     | K 766.490 Radial†  | 1089.9        | 5.7                 | 2.9896      | µg/L         | 2.9896      | ppb          | 09:34:30      |
| 2     | Mg 279.077 IEC†    | 57.2          | 29.7                | 16.006      | µg/L         | 16.006      | ppb          | 09:34:50      |
| 2     | Mn 257.610†        | 344.4         | 188.3               | 0.3295      | µg/L         | 0.3295      | ppb          | 09:36:02      |
| 2     | Mo 202.031†        | 7.8           | 37.4                | 1.9441      | µg/L         | 1.9441      | ppb          | 09:36:02      |
| 2     | Na 589.592 Radial† | 200.8         | 158.4               | 26.422      | µg/L         | 26.422      | ppb          | 09:34:30      |
| 2     | Ni 231.604†        | -188.5        | 11.5                | 0.1824      | µg/L         | 0.1824      | ppb          | 09:36:02      |
| 2     | P 214.914†         | -89.9         | 6.3                 | 2.2530      | µg/L         | 2.2530      | ppb          | 09:36:02      |
| 2     | Pb 220.353†        | 66.5          | -8.0                | -0.8208     | µg/L         | -0.8208     | ppb          | 09:36:02      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 101.8     | -2.1      | -2.3860 µg/L | -2.3860 ppb | 09:36:02 |
| 2 | Sb 206.836†        | 89.3      | 43.9      | 8.4734 µg/L  | 8.4734 ppb  | 09:36:02 |
| 2 | Se 196.026†        | 4.2       | -3.8      | -1.99 µg/L   | -1.99 ppb   | 09:36:02 |
| 2 | SiO2†              | 3155.5    | 98.3      | 10.878 µg/L  | 10.878 ppb  | 09:35:42 |
| 2 | Si 251.611†        | 754.5     | 161.1     | 2.7333 µg/L  | 2.7333 ppb  | 09:35:42 |
| 2 | Sn 189.927†        | -16.9     | 10.8      | 1.3786 µg/L  | 1.3786 ppb  | 09:36:02 |
| 2 | Sr 421.552†        | -293.1    | 169.7     | 0.4920 µg/L  | 0.4920 ppb  | 09:34:50 |
| 2 | Ti 334.940†        | 528.6     | 1411.6    | 2.0020 µg/L  | 2.0020 ppb  | 09:35:42 |
| 2 | Tl 190.801†        | -66.3     | 20.6      | 6.3201 µg/L  | 6.3201 ppb  | 09:36:02 |
| 2 | U 367.007†         | -218.5    | 68.4      | 8.3279 µg/L  | 8.3279 ppb  | 09:35:42 |
| 2 | V 292.402†         | 108.3     | 3.7       | 0.0220 µg/L  | 0.0220 ppb  | 09:35:42 |
| 2 | Zn 213.857†        | 176.0     | 127.4     | 0.7193 µg/L  | 0.7193 ppb  | 09:36:02 |
| 3 | Sc 361.383         | 1332189.6 | 1332189.6 | 100.07 %     |             | 09:36:04 |
| 3 | Sc RADIAL          | 71255.8   | 71255.8   | 98.9 %       |             | 09:34:52 |
| 3 | Y 371.029          | 727090.6  | 727090.6  | 100.37 %     |             | 09:36:04 |
| 3 | Ag 328.068†        | -1647.6   | 244.5     | 1.2731 µg/L  | 1.2731 ppb  | 09:36:06 |
| 3 | Al 396.153Radial†  | 152.9     | 52.9      | 19.303 µg/L  | 19.303 ppb  | 09:35:12 |
| 3 | As 188.979†        | -33.0     | -3.0      | -1.6399 µg/L | -1.6399 ppb | 09:36:26 |
| 3 | B 249.677†         | 1103.0    | 217.4     | 3.1379 µg/L  | 3.1379 ppb  | 09:36:06 |
| 3 | Ba 233.527†        | -174.8    | 66.0      | 0.5890 µg/L  | 0.5890 ppb  | 09:36:26 |
| 3 | Be 313.107†        | -3189.7   | 468.6     | 0.1065 µg/L  | 0.1065 ppb  | 09:36:06 |
| 3 | Ca 317.933Radial†  | 494.2     | 156.4     | 17.414 µg/L  | 17.414 ppb  | 09:35:12 |
| 3 | Cd 226.502†        | -109.6    | 70.5      | 0.5318 µg/L  | 0.5318 ppb  | 09:36:26 |
| 3 | Co 228.616†        | -68.4     | 23.2      | 0.3449 µg/L  | 0.3449 ppb  | 09:36:26 |
| 3 | Cr 267.716†        | 214.3     | 85.1      | 1.0185 µg/L  | 1.0185 ppb  | 09:36:26 |
| 3 | Cu 324.752†        | 5933.8    | 152.5     | 0.6592 µg/L  | 0.6592 ppb  | 09:36:06 |
| 3 | Fe 238.204 Radial† | -341.4    | 173.0     | 16.361 µg/L  | 16.361 ppb  | 09:35:12 |
| 3 | K 766.490 Radial†  | 973.4     | -86.1     | -45.242 µg/L | -45.242 ppb | 09:34:52 |
| 3 | Mg 279.077 IEC†    | 34.4      | 8.0       | 4.2969 µg/L  | 4.2969 ppb  | 09:35:12 |
| 3 | Mn 257.610†        | 368.4     | 216.2     | 0.3787 µg/L  | 0.3787 ppb  | 09:36:26 |
| 3 | Mo 202.031†        | 16.1      | 45.9      | 2.3836 µg/L  | 2.3836 ppb  | 09:36:26 |
| 3 | Na 589.592 Radial† | 88.7      | 49.9      | 8.3188 µg/L  | 8.3188 ppb  | 09:34:52 |
| 3 | Ni 231.604†        | -186.2    | 11.7      | 0.1853 µg/L  | 0.1853 ppb  | 09:36:26 |
| 3 | P 214.914†         | -80.4     | 14.8      | 5.3180 µg/L  | 5.3180 ppb  | 09:36:26 |
| 3 | Pb 220.353†        | 87.3      | 13.5      | 1.3919 µg/L  | 1.3919 ppb  | 09:36:26 |
| 3 | S 181.975 Axial†   | 105.7     | 3.0       | 3.2897 µg/L  | 3.2897 ppb  | 09:36:26 |
| 3 | Sb 206.836†        | 82.8      | 38.5      | 7.4122 µg/L  | 7.4122 ppb  | 09:36:26 |
| 3 | Se 196.026†        | 7.3       | -0.7      | -0.382 µg/L  | -0.382 ppb  | 09:36:26 |
| 3 | SiO2†              | 3025.9    | 3.9       | 0.4290 µg/L  | 0.4290 ppb  | 09:36:06 |
| 3 | Si 251.611†        | 682.3     | 97.3      | 1.6516 µg/L  | 1.6516 ppb  | 09:36:06 |
| 3 | Sn 189.927†        | -13.4     | 14.1      | 1.8041 µg/L  | 1.8041 ppb  | 09:36:26 |
| 3 | Sr 421.552†        | -298.0    | 157.7     | 0.4570 µg/L  | 0.4570 ppb  | 09:35:12 |
| 3 | Ti 334.940†        | 498.1     | 1387.0    | 1.9813 µg/L  | 1.9813 ppb  | 09:36:06 |
| 3 | Tl 190.801†        | -73.9     | 12.2      | 3.7426 µg/L  | 3.7426 ppb  | 09:36:26 |
| 3 | U 367.007†         | -437.2    | -152.7    | -18.875 µg/L | -18.875 ppb | 09:36:06 |
| 3 | V 292.402†         | 28.6      | -74.8     | -0.3392 µg/L | -0.3392 ppb | 09:36:06 |
| 3 | Zn 213.857†        | 171.7     | 125.1     | 0.7071 µg/L  | 0.7071 ppb  | 09:36:26 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 1351179.9                | 101.50 %           | 1.597    |                    |          | 1.57%   |
| Sc RADIAL   | 72205.4                  | 100 %              | 1.2      |                    |          | 1.21%   |
| Y 371.029   | 736971.6                 | 101.73 %           | 1.525    |                    |          | 1.50%   |
| Ag 328.068†   | 241.1                    | 1.2487 µg/L        | 0.38996  | 1.2487 ppb         | 0.38996  | 31.23%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 51.9                     | 18.959 µg/L        | 4.3077   | 18.959 ppb         | 4.3077   | 22.72%  |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | 0.9                      | 0.4963 µg/L        | 1.85571  | 0.4963 ppb         | 1.85571  | 373.88% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 198.9                    | 2.8712 µg/L        | 0.36647  | 2.8712 ppb         | 0.36647  | 12.76%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | 62.4                     | 0.5560 µg/L        | 0.02864  | 0.5560 ppb         | 0.02864  | 5.15%   |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 520.2                    | 0.1259 µg/L        | 0.02232  | 0.1259 ppb         | 0.02232  | 17.73%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 126.5                    | 14.086 µg/L        | 3.7037   | 14.086 ppb         | 3.7037   | 26.29%  |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| Cd 226.502†   | 78.9                     | 0.5951 µg/L        | 0.08219  | 0.5951 ppb         | 0.08219  | 13.81%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |                    |          |                    |          |         |

|  |        |              |          |             |          |         |
|--|--------|--------------|----------|-------------|----------|---------|
| Co 228.616†  | 29.1   | 0.4334 µg/L  | 0.08172  | 0.4334 ppb  | 0.08172  | 18.85%  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |          |             |          |         |
| Cr 267.716†  | 74.6   | 0.8838 µg/L  | 0.15516  | 0.8838 ppb  | 0.15516  | 17.56%  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |          |             |          |         |
| Cu 324.752†  | 100.4  | 0.4390 µg/L  | 0.64523  | 0.4390 ppb  | 0.64523  | 146.96% |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |          |             |          |         |
| Fe 238.204 Radial†   | 153.2  | 14.491 µg/L  | 1.9758   | 14.491 ppb  | 1.9758   | 13.63%  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |          |             |          |         |
| K 766.490 Radial†  | -57.8  | -30.356 µg/L | 28.9337  | -30.356 ppb | 28.9337  | 95.31%  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |          |             |          |         |
| Mg 279.077 IEC†  | 15.6   | 8.4200 µg/L  | 6.57773  | 8.4200 ppb  | 6.57773  | 78.12%  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |          |             |          |         |
| Mn 257.610†  | 209.1  | 0.3662 µg/L  | 0.03240  | 0.3662 ppb  | 0.03240  | 8.85%   |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |          |             |          |         |
| Mo 202.031†  | 37.5   | 1.9517 µg/L  | 0.42811  | 1.9517 ppb  | 0.42811  | 21.94%  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |          |             |          |         |
| Na 589.592 Radial†   | 61.1   | 10.183 µg/L  | 15.3912  | 10.183 ppb  | 15.3912  | 151.14% |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |          |             |          |         |
| Ni 231.604†  | 22.7   | 0.3608 µg/L  | 0.30640  | 0.3608 ppb  | 0.30640  | 84.93%  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |          |             |          |         |
| P 214.914†   | 8.5    | 3.0676 µg/L  | 1.97349  | 3.0676 ppb  | 1.97349  | 64.33%  |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |          |             |          |         |
| Pb 220.353†  | 3.3    | 0.3447 µg/L  | 1.11107  | 0.3447 ppb  | 1.11107  | 322.31% |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |          |             |          |         |
| S 181.975 Axial†   | 2.6    | 2.8999 µg/L  | 5.10227  | 2.8999 ppb  | 5.10227  | 175.94% |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |          |             |          |         |
| Sb 206.836†  | 36.1   | 6.9596 µg/L  | 1.78371  | 6.9596 ppb  | 1.78371  | 25.63%  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |          |             |          |         |
| Se 196.026†  | -4.4   | -2.28 µg/L   | 2.065    | -2.28 ppb   | 2.065    | 90.42%  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |          |             |          |         |
| SiO2†  | 34.8   | 3.8479 µg/L  | 6.08871  | 3.8479 ppb  | 6.08871  | 158.24% |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |          |             |          |         |
| Si 251.611†  | 110.4  | 1.8728 µg/L  | 0.77392  | 1.8728 ppb  | 0.77392  | 41.32%  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |          |             |          |         |
| Sn 189.927†  | 13.9   | 1.7796 µg/L  | 0.38932  | 1.7796 ppb  | 0.38932  | 21.88%  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |          |             |          |         |
| Sr 421.552†  | 171.4  | 0.4968 µg/L  | 0.04236  | 0.4968 ppb  | 0.04236  | 8.53%   |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |          |             |          |         |
| Ti 334.940†  | 1311.8 | 1.8679 µg/L  | 0.21455  | 1.8679 ppb  | 0.21455  | 11.49%  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |          |             |          |         |
| Tl 190.801†  | 16.2   | 4.9721 µg/L  | 1.29285  | 4.9721 ppb  | 1.29285  | 26.00%  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |          |             |          |         |
| U 367.007†   | -51.7  | -6.4433 µg/L | 13.75149 | -6.4433 ppb | 13.75149 | 213.42% |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |          |             |          |         |
| V 292.402†   | -5.4   | -0.0240 µg/L | 0.29490  | -0.0240 ppb | 0.29490  | >999.9% |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |          |             |          |         |
| Zn 213.857†  | 134.7  | 0.7618 µg/L  | 0.08439  | 0.7618 ppb  | 0.08439  | 11.08%  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |          |             |          |         |

All analyte(s) passed QC.

Sequence No.: 15

Autosampler Location: 113

Sample ID: LR3

Date Collected: 11/11/2016 09:36:46

Analyst:

Data Type: Reprocessed on 11/11/2016 09:56:37

Logged In Analyst (Original) : lab

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: LR3

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units | Calib. Units | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|-------------|--------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1341962.6     | 1341962.6           | 100.81      | %            |             |              | 09:38:21      |
| 1     | Sc RADIAL          | 71769.2       | 71769.2             | 99.6        | %            |             |              | 09:37:13      |
| 1     | Y 371.029          | 718724.4      | 718724.4            | 99.210      | %            |             |              | 09:38:21      |
| 1     | Ag 328.068†        | -1756.8       | 148.1               | 0.7690      | µg/L         | 0.7690      | ppb          | 09:38:23      |
| 1     | Al 396.153Radial†  | 116.7         | 15.5                | 5.6563      | µg/L         | 5.6563      | ppb          | 09:37:33      |
| 1     | As 188.979†        | -22.4         | 7.7                 | 4.1895      | µg/L         | 4.1895      | ppb          | 09:38:43      |
| 1     | B 249.677†         | 966.6         | 74.0                | 1.0677      | µg/L         | 1.0677      | ppb          | 09:38:23      |
| 1     | Ba 233.527†        | -197.2        | 45.1                | 0.4022      | µg/L         | 0.4022      | ppb          | 09:38:43      |
| 1     | Be 313.107†        | -3815.8       | -129.3              | -0.0481     | µg/L         | -0.0481     | ppb          | 09:38:23      |
| 1     | Ca 317.933Radial†  | 537.3         | 196.2               | 21.836      | µg/L         | 21.836      | ppb          | 09:37:33      |
| 1     | Cd 226.502†        | -100.3        | 80.5                | 0.6089      | µg/L         | 0.6089      | ppb          | 09:38:43      |
| 1     | Co 228.616†        | -71.4         | 20.7                | 0.3078      | µg/L         | 0.3078      | ppb          | 09:38:43      |
| 1     | Cr 267.716†        | 205.8         | 75.2                | 0.8918      | µg/L         | 0.8918      | ppb          | 09:38:43      |
| 1     | Cu 324.752†        | 5983.1        | 158.3               | 0.6923      | µg/L         | 0.6923      | ppb          | 09:38:23      |
| 1     | Fe 238.204 Radial† | -470.1        | 46.2                | 4.3738      | µg/L         | 4.3738      | ppb          | 09:37:33      |
| 1     | K 766.490 Radial†  | 363899.9      | 364191.7            | 191390      | µg/L         | 191390      | ppb          | 09:37:13      |
| 1     | Mg 279.077 IEC†    | 28.2          | 1.5                 | 0.7885      | µg/L         | 0.7885      | ppb          | 09:37:33      |
| 1     | Mn 257.610†        | 313.9         | 159.5               | 0.2795      | µg/L         | 0.2795      | ppb          | 09:38:43      |
| 1     | Mo 202.031†        | -23.0         | 6.9                 | 0.3574      | µg/L         | 0.3574      | ppb          | 09:38:43      |
| 1     | Na 589.592 Radial† | -6.0          | -45.8               | -7.6331     | µg/L         | -7.6331     | ppb          | 09:37:13      |
| 1     | Ni 231.604†        | -178.0        | 21.2                | 0.3368      | µg/L         | 0.3368      | ppb          | 09:38:43      |
| 1     | P 214.914†         | -89.6         | 6.2                 | 2.2326      | µg/L         | 2.2326      | ppb          | 09:38:43      |
| 1     | Pb 220.353†        | 76.6          | 2.3                 | 0.2444      | µg/L         | 0.2444      | ppb          | 09:38:43      |
| 1     | S 181.975 Axial†   | 92.3          | -11.1               | -12.442     | µg/L         | -12.442     | ppb          | 09:38:43      |
| 1     | Sb 206.836†        | 51.2          | 6.5                 | 1.2427      | µg/L         | 1.2427      | ppb          | 09:38:43      |
| 1     | Se 196.026†        | -3.0          | -11.0               | -5.75       | µg/L         | -5.75       | ppb          | 09:38:43      |
| 1     | Si02†              | 3252.0        | 206.2               | 22.822      | µg/L         | 22.822      | ppb          | 09:38:23      |
| 1     | Si 251.611†        | 1321.3        | 726.3               | 12.314      | µg/L         | 12.314      | ppb          | 09:38:23      |
| 1     | Sn 189.927†        | -20.2         | 7.5                 | 0.9559      | µg/L         | 0.9559      | ppb          | 09:38:43      |
| 1     | Sr 421.552†        | -420.6        | 36.9                | 0.1062      | µg/L         | 0.1062      | ppb          | 09:37:33      |
| 1     | Ti 334.940†        | -436.8        | 455.9               | 0.6523      | µg/L         | 0.6523      | ppb          | 09:38:23      |
| 1     | Tl 190.801†        | -73.7         | 13.0                | 3.9829      | µg/L         | 3.9829      | ppb          | 09:38:43      |
| 1     | U 367.007†         | -352.9        | -65.8               | -8.1224     | µg/L         | -8.1224     | ppb          | 09:38:23      |
| 1     | V 292.402†         | 172.7         | 68.0                | 0.3036      | µg/L         | 0.3036      | ppb          | 09:38:23      |
| 1     | Zn 213.857†        | 361.5         | 312.1               | 1.7694      | µg/L         | 1.7694      | ppb          | 09:38:43      |
| 2     | Sc 361.383         | 1335241.1     | 1335241.1           | 100.30      | %            |             |              | 09:38:45      |
| 2     | Sc RADIAL          | 72945.4       | 72945.4             | 101         | %            |             |              | 09:37:35      |
| 2     | Y 371.029          | 714671.3      | 714671.3            | 98.651      | %            |             |              | 09:38:45      |
| 2     | Ag 328.068†        | -1715.7       | 180.3               | 0.9381      | µg/L         | 0.9381      | ppb          | 09:38:47      |
| 2     | Al 396.153Radial†  | 133.5         | 30.2                | 11.018      | µg/L         | 11.018      | ppb          | 09:37:55      |
| 2     | As 188.979†        | -22.4         | 7.6                 | 4.1349      | µg/L         | 4.1349      | ppb          | 09:39:07      |
| 2     | B 249.677†         | 921.6         | 34.0                | 0.4930      | µg/L         | 0.4930      | ppb          | 09:38:47      |
| 2     | Ba 233.527†        | -188.7        | 52.7                | 0.4695      | µg/L         | 0.4695      | ppb          | 09:39:07      |
| 2     | Be 313.107†        | -3386.0       | 280.1               | 0.0602      | µg/L         | 0.0602      | ppb          | 09:38:47      |
| 2     | Ca 317.933Radial†  | 545.1         | 195.1               | 21.722      | µg/L         | 21.722      | ppb          | 09:37:55      |
| 2     | Cd 226.502†        | -114.7        | 65.6                | 0.4960      | µg/L         | 0.4960      | ppb          | 09:39:07      |
| 2     | Co 228.616†        | -66.2         | 25.5                | 0.3790      | µg/L         | 0.3790      | ppb          | 09:39:07      |
| 2     | Cr 267.716†        | 199.8         | 70.2                | 0.8372      | µg/L         | 0.8372      | ppb          | 09:39:07      |
| 2     | Cu 324.752†        | 5902.4        | 107.6               | 0.4652      | µg/L         | 0.4652      | ppb          | 09:38:47      |
| 2     | Fe 238.204 Radial† | -458.7        | 65.1                | 6.1537      | µg/L         | 6.1537      | ppb          | 09:37:55      |
| 2     | K 766.490 Radial†  | 368819.3      | 363160.3            | 190840      | µg/L         | 190840      | ppb          | 09:37:35      |
| 2     | Mg 279.077 IEC†    | 27.2          | 0.1                 | 0.0394      | µg/L         | 0.0394      | ppb          | 09:37:55      |
| 2     | Mn 257.610†        | 315.2         | 162.2               | 0.2843      | µg/L         | 0.2843      | ppb          | 09:39:07      |
| 2     | Mo 202.031†        | -10.5         | 19.2                | 0.9996      | µg/L         | 0.9996      | ppb          | 09:39:07      |
| 2     | Na 589.592 Radial† | 81.4          | 40.6                | 6.7710      | µg/L         | 6.7710      | ppb          | 09:37:35      |
| 2     | Ni 231.604†        | -215.4        | -17.0               | -0.2700     | µg/L         | -0.2700     | ppb          | 09:39:07      |
| 2     | P 214.914†         | -101.3        | -5.9                | -2.1444     | µg/L         | -2.1444     | ppb          | 09:39:07      |
| 2     | Pb 220.353†        | 85.6          | 11.6                | 1.1901      | µg/L         | 1.1901      | ppb          | 09:39:07      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 93.3      | -9.6      | -10.753 µg/L | -10.753 ppb | 09:39:07 |
| 2 | Sb 206.836†        | 51.6      | 7.2       | 1.3692 µg/L  | 1.3692 ppb  | 09:39:07 |
| 2 | Se 196.026†        | 10.5      | 2.4       | 1.25 µg/L    | 1.25 ppb    | 09:39:07 |
| 2 | SiO2†              | 3276.3    | 246.7     | 27.300 µg/L  | 27.300 ppb  | 09:38:47 |
| 2 | Si 251.611†        | 1432.0    | 843.2     | 14.298 µg/L  | 14.298 ppb  | 09:38:47 |
| 2 | Sn 189.927†        | -20.7     | 6.9       | 0.8787 µg/L  | 0.8787 ppb  | 09:39:07 |
| 2 | Sr 421.552†        | -404.1    | 60.0      | 0.1732 µg/L  | 0.1732 ppb  | 09:37:55 |
| 2 | Ti 334.940†        | -211.0    | 678.9     | 0.9717 µg/L  | 0.9717 ppb  | 09:38:47 |
| 2 | Tl 190.801†        | -71.2     | 15.0      | 4.6207 µg/L  | 4.6207 ppb  | 09:39:07 |
| 2 | U 367.007†         | -389.3    | -103.9    | -12.823 µg/L | -12.823 ppb | 09:38:47 |
| 2 | V 292.402†         | 87.5      | -16.1     | -0.0752 µg/L | -0.0752 ppb | 09:38:47 |
| 2 | Zn 213.857†        | 388.6     | 340.9     | 1.9332 µg/L  | 1.9332 ppb  | 09:39:07 |
| 3 | Sc 361.383         | 1332982.7 | 1332982.7 | 100.13 %     |             | 09:39:09 |
| 3 | Sc RADIAL          | 72038.2   | 72038.2   | 100 %        |             | 09:37:57 |
| 3 | Y 371.029          | 713060.9  | 713060.9  | 98.428 %     |             | 09:39:09 |
| 3 | Ag 328.068†        | -1871.4   | 21.9      | 0.1151 µg/L  | 0.1151 ppb  | 09:39:11 |
| 3 | Al 396.153Radial†  | 129.2     | 27.5      | 10.056 µg/L  | 10.056 ppb  | 09:38:17 |
| 3 | As 188.979†        | -25.6     | 4.4       | 2.4079 µg/L  | 2.4079 ppb  | 09:39:31 |
| 3 | B 249.677†         | 957.1     | 70.9      | 1.0245 µg/L  | 1.0245 ppb  | 09:39:11 |
| 3 | Ba 233.527†        | -211.3    | 29.7      | 0.2653 µg/L  | 0.2653 ppb  | 09:39:31 |
| 3 | Be 313.107†        | -3413.1   | 247.4     | 0.0597 µg/L  | 0.0597 ppb  | 09:39:11 |
| 3 | Ca 317.933Radial†  | 569.9     | 226.7     | 25.237 µg/L  | 25.237 ppb  | 09:38:17 |
| 3 | Cd 226.502†        | -107.5    | 72.6      | 0.5490 µg/L  | 0.5490 ppb  | 09:39:31 |
| 3 | Co 228.616†        | -84.5     | 7.1       | 0.1055 µg/L  | 0.1055 ppb  | 09:39:31 |
| 3 | Cr 267.716†        | 214.4     | 85.1      | 1.0039 µg/L  | 1.0039 ppb  | 09:39:31 |
| 3 | Cu 324.752†        | 5827.4    | 42.7      | 0.1861 µg/L  | 0.1861 ppb  | 09:39:11 |
| 3 | Fe 238.204 Radial† | -458.4    | 59.6      | 5.6416 µg/L  | 5.6416 ppb  | 09:38:17 |
| 3 | K 766.490 Radial†  | 366157.5  | 365085.7  | 191860 µg/L  | 191860 ppb  | 09:37:57 |
| 3 | Mg 279.077 IEC†    | 26.1      | -0.7      | -0.3740 µg/L | -0.3740 ppb | 09:38:17 |
| 3 | Mn 257.610†        | 315.3     | 163.0     | 0.2856 µg/L  | 0.2856 ppb  | 09:39:31 |
| 3 | Mo 202.031†        | -13.1     | 16.7      | 0.8665 µg/L  | 0.8665 ppb  | 09:39:31 |
| 3 | Na 589.592 Radial† | -36.8     | -76.6     | -12.771 µg/L | -12.771 ppb | 09:37:57 |
| 3 | Ni 231.604†        | -174.6    | 23.3      | 0.3710 µg/L  | 0.3710 ppb  | 09:39:31 |
| 3 | P 214.914†         | -87.7     | 7.5       | 2.7069 µg/L  | 2.7069 ppb  | 09:39:31 |
| 3 | Pb 220.353†        | 79.6      | 5.7       | 0.5856 µg/L  | 0.5856 ppb  | 09:39:31 |
| 3 | S 181.975 Axial†   | 86.2      | -16.6     | -18.519 µg/L | -18.519 ppb | 09:39:31 |
| 3 | Sb 206.836†        | 47.3      | 2.9       | 0.5485 µg/L  | 0.5485 ppb  | 09:39:31 |
| 3 | Se 196.026†        | -2.6      | -10.6     | -5.54 µg/L   | -5.54 ppb   | 09:39:31 |
| 3 | SiO2†              | 3241.0    | 216.9     | 24.009 µg/L  | 24.009 ppb  | 09:39:11 |
| 3 | Si 251.611†        | 1307.4    | 721.2     | 12.228 µg/L  | 12.228 ppb  | 09:39:11 |
| 3 | Sn 189.927†        | -20.2     | 7.3       | 0.9379 µg/L  | 0.9379 ppb  | 09:39:31 |
| 3 | Sr 421.552†        | -400.0    | 59.0      | 0.1704 µg/L  | 0.1704 ppb  | 09:38:17 |
| 3 | Ti 334.940†        | -42.7     | 846.7     | 1.2053 µg/L  | 1.2053 ppb  | 09:39:11 |
| 3 | Tl 190.801†        | -89.2     | -3.1      | -0.9415 µg/L | -0.9415 ppb | 09:39:31 |
| 3 | U 367.007†         | -313.1    | -28.5     | -3.5351 µg/L | -3.5351 ppb | 09:39:11 |
| 3 | V 292.402†         | 181.9     | 78.4      | 0.3519 µg/L  | 0.3519 ppb  | 09:39:11 |
| 3 | Zn 213.857†        | 349.7     | 302.7     | 1.7165 µg/L  | 1.7165 ppb  | 09:39:31 |

## Mean Data: LR3

| Analyte   | Mean Corrected Intensity | Conc.  | Calib. Units | Std.Dev. | Conc.  | Sample Units | Std.Dev. | RSD     |
|---|--------------------------|--------|--------------|----------|--------|--------------|----------|---------|
| Sc 361.383  | 1336728.8                | 100.42 | %            | 0.351    |        |              |          | 0.35%   |
| Sc RADIAL   | 72250.9                  | 100    | %            | 0.9      |        |              |          | 0.85%   |
| Y 371.029   | 715485.5                 | 98.763 | %            | 0.4028   |        |              |          | 0.41%   |
| Ag 328.068†   | 116.8                    | 0.6074 | µg/L         | 0.43461  | 0.6074 | ppb          | 0.43461  | 71.56%  |
| Al 396.153Radial†   | 24.4                     | 8.9102 | µg/L         | 2.85870  | 8.9102 | ppb          | 2.85870  | 32.08%  |
| As 188.979†   | 6.6                      | 3.5774 | µg/L         | 1.01319  | 3.5774 | ppb          | 1.01319  | 28.32%  |
| B 249.677†  | 59.6                     | 0.8617 | µg/L         | 0.32004  | 0.8617 | ppb          | 0.32004  | 37.14%  |
| Ba 233.527†   | 42.5                     | 0.3790 | µg/L         | 0.10407  | 0.3790 | ppb          | 0.10407  | 27.46%  |
| Be 313.107†   | 132.7                    | 0.0239 | µg/L         | 0.06238  | 0.0239 | ppb          | 0.06238  | 260.58% |
| Ca 317.933Radial†   | 206.0                    | 22.932 | µg/L         | 1.9975   | 22.932 | ppb          | 1.9975   | 8.71%   |
| Cd 226.502†   | 72.9                     | 0.5513 | µg/L         | 0.05648  | 0.5513 | ppb          | 0.05648  | 10.24%  |
| Co 228.616†   | 17.8                     | 0.2641 | µg/L         | 0.14187  | 0.2641 | ppb          | 0.14187  | 53.72%  |
| Cr 267.716†   | 76.8                     | 0.9109 | µg/L         | 0.08502  | 0.9109 | ppb          | 0.08502  | 9.33%   |
| Cu 324.752†   | 102.9                    | 0.4479 | µg/L         | 0.25356  | 0.4479 | ppb          | 0.25356  | 56.61%  |
| Fe 238.204 Radial†  | 57.0                     | 5.3897 | µg/L         | 0.91632  | 5.3897 | ppb          | 0.91632  | 17.00%  |
| K 766.490 Radial†   | 364145.9                 | 191360 | µg/L         | 506.3    | 191360 | ppb          | 506.3    | 0.26%   |
| QC value within limits for K 766.490 Radial Recovery = 95.68% |                          |        |              |          |        |              |          |         |
| Mg 279.077 IEC†   | 0.3                      | 0.1513 | µg/L         | 0.58925  | 0.1513 | ppb          | 0.58925  | 389.45% |
| Mn 257.610†   | 161.6                    | 0.2831 | µg/L         | 0.00325  | 0.2831 | ppb          | 0.00325  | 1.15%   |

|                    |       |              |          |             |          |         |
|--------------------|-------|--------------|----------|-------------|----------|---------|
| Mo 202.031†        | 14.3  | 0.7412 µg/L  | 0.33897  | 0.7412 ppb  | 0.33897  | 45.74%  |
| Na 589.592 Radial† | -27.3 | -4.5443 µg/L | 10.13045 | -4.5443 ppb | 10.13045 | 222.93% |
| Ni 231.604†        | 9.2   | 0.1459 µg/L  | 0.36059  | 0.1459 ppb  | 0.36059  | 247.10% |
| P 214.914†         | 2.6   | 0.9317 µg/L  | 2.67450  | 0.9317 ppb  | 2.67450  | 287.06% |
| Pb 220.353†        | 6.6   | 0.6734 µg/L  | 0.47895  | 0.6734 ppb  | 0.47895  | 71.13%  |
| S 181.975 Axial†   | -12.5 | -13.905 µg/L | 4.0847   | -13.905 ppb | 4.0847   | 29.38%  |
| Sb 206.836†        | 5.5   | 1.0535 µg/L  | 0.44184  | 1.0535 ppb  | 0.44184  | 41.94%  |
| Se 196.026†        | -6.4  | -3.35 µg/L   | 3.986    | -3.35 ppb   | 3.986    | 119.06% |
| SiO2†              | 223.3 | 24.710 µg/L  | 2.3202   | 24.710 ppb  | 2.3202   | 9.39%   |
| Si 251.611†        | 763.6 | 12.947 µg/L  | 1.1707   | 12.947 ppb  | 1.1707   | 9.04%   |
| Sn 189.927†        | 7.2   | 0.9242 µg/L  | 0.04041  | 0.9242 ppb  | 0.04041  | 4.37%   |
| Sr 421.552†        | 52.0  | 0.1499 µg/L  | 0.03790  | 0.1499 ppb  | 0.03790  | 25.27%  |
| Ti 334.940†        | 660.5 | 0.9431 µg/L  | 0.27762  | 0.9431 ppb  | 0.27762  | 29.44%  |
| Tl 190.801†        | 8.3   | 2.5540 µg/L  | 3.04401  | 2.5540 ppb  | 3.04401  | 119.18% |
| U 367.007†         | -66.1 | -8.1603 µg/L | 4.64427  | -8.1603 ppb | 4.64427  | 56.91%  |
| V 292.402†         | 43.4  | 0.1935 µg/L  | 0.23387  | 0.1935 ppb  | 0.23387  | 120.89% |
| Zn 213.857†        | 318.6 | 1.8064 µg/L  | 0.11297  | 1.8064 ppb  | 0.11297  | 6.25%   |

All analyte(s) passed QC.

Sequence No.: 16

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/11/2016 09:39:39

Analyst:

Data Type: Reprocessed on 11/11/2016 09:56:38

Logged In Analyst (Original) : lab

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|-------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1378881.0     | 1378881.0           | 103.58 %    |             |              | 09:40:19      |
| 1     | Sc RADIAL          | 74621.4       | 74621.4             | 104 %       |             |              | 09:40:07      |
| 1     | Y 371.029          | 740663.9      | 740663.9            | 102.24 %    |             |              | 09:40:19      |
| 1     | Ag 328.068†        | 97573.8       | 96090.9             | 495.85 µg/L | 495.85      | ppb          | 09:40:21      |
| 1     | Al 396.153Radial†  | 14411.9       | 13811.3             | 5042.9 µg/L | 5042.9      | ppb          | 09:40:07      |
| 1     | As 188.979†        | 894.4         | 893.4               | 490.49 µg/L | 490.49      | ppb          | 09:40:41      |
| 1     | B 249.677†         | 36947.0       | 34784.6             | 503.96 µg/L | 503.96      | ppb          | 09:40:21      |
| 1     | Ba 233.527†        | 57440.9       | 55695.6             | 496.65 µg/L | 496.65      | ppb          | 09:40:21      |
| 1     | Be 313.107†        | 1876641.0     | 1815409.3           | 483.07 µg/L | 483.07      | ppb          | 09:40:19      |
| 1     | Ca 317.933Radial†  | 47411.4       | 45426.7             | 5056.9 µg/L | 5056.9      | ppb          | 09:40:07      |
| 1     | Cd 226.502†        | 67701.1       | 65540.2             | 495.33 µg/L | 495.33      | ppb          | 09:40:21      |
| 1     | Co 228.616†        | 34428.9       | 33330.0             | 495.64 µg/L | 495.64      | ppb          | 09:40:21      |
| 1     | Cr 267.716†        | 43687.4       | 42047.9             | 494.10 µg/L | 494.10      | ppb          | 09:40:21      |
| 1     | Cu 324.752†        | 121801.1      | 111812.8            | 494.21 µg/L | 494.21      | ppb          | 09:40:21      |
| 1     | Fe 238.204 Radial† | 54841.4       | 53460.7             | 5057.1 µg/L | 5057.1      | ppb          | 09:40:07      |
| 1     | K 766.490 Radial†  | 11059.2       | 9606.0              | 5049.5 µg/L | 5049.5      | ppb          | 09:40:07      |
| 1     | Mg 279.077 IEC†    | 9693.8        | 9331.4              | 5032.5 µg/L | 5032.5      | ppb          | 09:40:07      |
| 1     | Mn 257.610†        | 293400.1      | 283103.4            | 495.99 µg/L | 495.99      | ppb          | 09:40:21      |
| 1     | Mo 202.031†        | 9757.9        | 9450.2              | 491.33 µg/L | 491.33      | ppb          | 09:40:41      |
| 1     | Na 589.592 Radial† | 59509.9       | 57409.8             | 9573.4 µg/L | 9573.4      | ppb          | 09:40:05      |
| 1     | Ni 231.604†        | 32021.8       | 31112.3             | 494.63 µg/L | 494.63      | ppb          | 09:40:21      |
| 1     | P 214.914†         | 6939.6        | 6794.7              | 2448.8 µg/L | 2448.8      | ppb          | 09:40:41      |
| 1     | Pb 220.353†        | 5112.1        | 4861.6              | 491.34 µg/L | 491.34      | ppb          | 09:40:41      |
| 1     | S 181.975 Axial†   | 1028.9        | 890.7               | 993.09 µg/L | 993.09      | ppb          | 09:40:41      |
| 1     | Sb 206.836†        | 2669.4        | 2532.8              | 481.27 µg/L | 481.27      | ppb          | 09:40:41      |
| 1     | Se 196.026†        | 985.5         | 943.4               | 497 µg/L    | 497         | ppb          | 09:40:41      |
| 1     | SiO2†              | 53984.5       | 49098.1             | 5434.0 µg/L | 5434.0      | ppb          | 09:40:21      |
| 1     | Si 251.611†        | 156370.9      | 150379.6            | 2550.3 µg/L | 2550.3      | ppb          | 09:40:21      |
| 1     | Sn 189.927†        | 3954.8        | 3845.6              | 491.71 µg/L | 491.71      | ppb          | 09:40:41      |
| 1     | Sr 421.552†        | 173916.8      | 168354.4            | 488.27 µg/L | 488.27      | ppb          | 09:40:05      |
| 1     | Ti 334.940†        | 357473.2      | 346002.3            | 491.48 µg/L | 491.48      | ppb          | 09:40:19      |
| 1     | Tl 190.801†        | 1575.2        | 1606.8              | 493.66 µg/L | 493.66      | ppb          | 09:40:41      |
| 1     | U 367.007†         | 3980.6        | 4127.1              | 479.82 µg/L | 479.82      | ppb          | 09:40:21      |
| 1     | V 292.402†         | 114498.6      | 110436.3            | 496.22 µg/L | 496.22      | ppb          | 09:40:21      |
| 1     | Zn 213.857†        | 90810.9       | 87624.5             | 495.82 µg/L | 495.82      | ppb          | 09:40:21      |
| 2     | Sc 361.383         | 1334218.0     | 1334218.0           | 100.23 %    |             |              | 09:40:44      |
| 2     | Sc RADIAL          | 73420.3       | 73420.3             | 102 %       |             |              | 09:40:11      |
| 2     | Y 371.029          | 717724.5      | 717724.5            | 99.072 %    |             |              | 09:40:44      |
| 2     | Ag 328.068†        | 94928.4       | 96604.8             | 498.50 µg/L | 498.50      | ppb          | 09:40:46      |
| 2     | Al 396.153Radial†  | 14103.0       | 13735.8             | 5015.4 µg/L | 5015.4      | ppb          | 09:40:11      |
| 2     | As 188.979†        | 900.5         | 928.5               | 509.55 µg/L | 509.55      | ppb          | 09:41:06      |
| 2     | B 249.677†         | 35904.2       | 34938.2             | 506.15 µg/L | 506.15      | ppb          | 09:40:46      |
| 2     | Ba 233.527†        | 55760.1       | 55874.9             | 498.24 µg/L | 498.24      | ppb          | 09:40:46      |
| 2     | Be 313.107†        | 1813160.0     | 1812720.3           | 482.29 µg/L | 482.29      | ppb          | 09:40:44      |
| 2     | Ca 317.933Radial†  | 46554.4       | 45334.7             | 5046.7 µg/L | 5046.7      | ppb          | 09:40:11      |
| 2     | Cd 226.502†        | 65575.0       | 65606.9             | 495.83 µg/L | 495.83      | ppb          | 09:40:46      |
| 2     | Co 228.616†        | 33523.3       | 33539.1             | 498.75 µg/L | 498.75      | ppb          | 09:40:46      |
| 2     | Cr 267.716†        | 42424.9       | 42200.1             | 495.89 µg/L | 495.89      | ppb          | 09:40:46      |
| 2     | Cu 324.752†        | 118605.6      | 112560.8            | 497.51 µg/L | 497.51      | ppb          | 09:40:46      |
| 2     | Fe 238.204 Radial† | 53711.4       | 53218.1             | 5034.2 µg/L | 5034.2      | ppb          | 09:40:11      |
| 2     | K 766.490 Radial†  | 10720.4       | 9448.3              | 4966.6 µg/L | 4966.6      | ppb          | 09:40:11      |
| 2     | Mg 279.077 IEC†    | 9449.7        | 9245.0              | 4986.0 µg/L | 4986.0      | ppb          | 09:40:11      |
| 2     | Mn 257.610†        | 285334.3      | 284537.8            | 498.50 µg/L | 498.50      | ppb          | 09:40:46      |
| 2     | Mo 202.031†        | 9727.5        | 9735.3              | 506.14 µg/L | 506.14      | ppb          | 09:41:06      |
| 2     | Na 589.592 Radial† | 59376.3       | 58218.5             | 9708.2 µg/L | 9708.2      | ppb          | 09:40:09      |
| 2     | Ni 231.604†        | 31184.1       | 31311.3             | 497.79 µg/L | 497.79      | ppb          | 09:40:46      |
| 2     | P 214.914†         | 6932.6        | 7012.0              | 2527.2 µg/L | 2527.2      | ppb          | 09:41:06      |
| 2     | Pb 220.353†        | 5106.6        | 5021.4              | 507.50 µg/L | 507.50      | ppb          | 09:41:06      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 1014.7    | 909.7     | 1014.3 µg/L | 1014.3 ppb | 09:41:06 |
| 2 | Sb 206.836†        | 2657.0    | 2606.7    | 495.53 µg/L | 495.53 ppb | 09:41:06 |
| 2 | Se 196.026†        | 982.3     | 972.1     | 512 µg/L    | 512 ppb    | 09:41:06 |
| 2 | SiO2†              | 52486.2   | 49347.9   | 5461.7 µg/L | 5461.7 ppb | 09:40:46 |
| 2 | Si 251.611†        | 151722.0  | 150794.9  | 2557.4 µg/L | 2557.4 ppb | 09:40:46 |
| 2 | Sn 189.927†        | 3940.1    | 3958.7    | 506.17 µg/L | 506.17 ppb | 09:41:06 |
| 2 | Sr 421.552†        | 173242.8  | 170439.9  | 494.32 µg/L | 494.32 ppb | 09:40:09 |
| 2 | Ti 334.940†        | 345809.9  | 345918.1  | 491.36 µg/L | 491.36 ppb | 09:40:44 |
| 2 | Tl 190.801†        | 1590.6    | 1673.0    | 514.00 µg/L | 514.00 ppb | 09:41:06 |
| 2 | U 367.007†         | 3836.1    | 4111.7    | 478.04 µg/L | 478.04 ppb | 09:40:46 |
| 2 | V 292.402†         | 111126.1  | 110771.7  | 497.72 µg/L | 497.72 ppb | 09:40:46 |
| 2 | Zn 213.857†        | 88243.9   | 87998.1   | 497.94 µg/L | 497.94 ppb | 09:40:46 |
| 3 | Sc 361.383         | 1341545.0 | 1341545.0 | 100.78 %    |            | 09:41:08 |
| 3 | Sc RADIAL          | 71485.2   | 71485.2   | 99.2 %      |            | 09:40:15 |
| 3 | Y 371.029          | 721010.3  | 721010.3  | 99.526 %    |            | 09:41:08 |
| 3 | Ag 328.068†        | 95892.4   | 97044.1   | 500.77 µg/L | 500.77 ppb | 09:41:10 |
| 3 | Al 396.153Radial†  | 13917.0   | 13922.9   | 5083.7 µg/L | 5083.7 ppb | 09:40:15 |
| 3 | As 188.979†        | 905.2     | 928.2     | 509.46 µg/L | 509.46 ppb | 09:41:30 |
| 3 | B 249.677†         | 36215.1   | 35051.0   | 507.80 µg/L | 507.80 ppb | 09:41:10 |
| 3 | Ba 233.527†        | 56267.2   | 56074.2   | 500.02 µg/L | 500.02 ppb | 09:41:10 |
| 3 | Be 313.107†        | 1842281.8 | 1831737.2 | 487.44 µg/L | 487.44 ppb | 09:41:08 |
| 3 | Ca 317.933Radial†  | 45581.9   | 45591.1   | 5075.2 µg/L | 5075.2 ppb | 09:40:15 |
| 3 | Cd 226.502†        | 66501.9   | 66169.3   | 500.08 µg/L | 500.08 ppb | 09:41:10 |
| 3 | Co 228.616†        | 33897.9   | 33728.1   | 501.56 µg/L | 501.56 ppb | 09:41:10 |
| 3 | Cr 267.716†        | 43074.4   | 42613.4   | 500.74 µg/L | 500.74 ppb | 09:41:10 |
| 3 | Cu 324.752†        | 119453.0  | 112755.4  | 498.38 µg/L | 498.38 ppb | 09:41:10 |
| 3 | Fe 238.204 Radial† | 52749.4   | 53675.3   | 5077.4 µg/L | 5077.4 ppb | 09:40:15 |
| 3 | K 766.490 Radial†  | 10536.3   | 9547.5    | 5018.7 µg/L | 5018.7 ppb | 09:40:15 |
| 3 | Mg 279.077 IEC†    | 9216.6    | 9261.0    | 4994.6 µg/L | 4994.6 ppb | 09:40:15 |
| 3 | Mn 257.610†        | 288285.9  | 285911.8  | 500.91 µg/L | 500.91 ppb | 09:41:10 |
| 3 | Mo 202.031†        | 9763.0    | 9717.4    | 505.21 µg/L | 505.21 ppb | 09:41:30 |
| 3 | Na 589.592 Radial† | 58490.8   | 58903.2   | 9822.4 µg/L | 9822.4 ppb | 09:40:13 |
| 3 | Ni 231.604†        | 31496.3   | 31451.2   | 500.02 µg/L | 500.02 ppb | 09:41:10 |
| 3 | P 214.914†         | 6973.6    | 7014.9    | 2528.2 µg/L | 2528.2 ppb | 09:41:30 |
| 3 | Pb 220.353†        | 5110.2    | 4997.1    | 505.04 µg/L | 505.04 ppb | 09:41:30 |
| 3 | S 181.975 Axial†   | 1010.4    | 899.9     | 1003.4 µg/L | 1003.4 ppb | 09:41:30 |
| 3 | Sb 206.836†        | 2675.0    | 2610.1    | 496.11 µg/L | 496.11 ppb | 09:41:30 |
| 3 | Se 196.026†        | 984.9     | 969.3     | 511 µg/L    | 511 ppb    | 09:41:30 |
| 3 | SiO2†              | 53078.8   | 49649.9   | 5495.1 µg/L | 5495.1 ppb | 09:41:10 |
| 3 | Si 251.611†        | 153778.6  | 152008.8  | 2577.9 µg/L | 2577.9 ppb | 09:41:10 |
| 3 | Sn 189.927†        | 3960.8    | 3957.7    | 506.05 µg/L | 506.05 ppb | 09:41:30 |
| 3 | Sr 421.552†        | 171045.8  | 172827.2  | 501.25 µg/L | 501.25 ppb | 09:40:13 |
| 3 | Ti 334.940†        | 351464.8  | 349645.0  | 496.65 µg/L | 496.65 ppb | 09:41:08 |
| 3 | Tl 190.801†        | 1579.5    | 1653.4    | 507.96 µg/L | 507.96 ppb | 09:41:30 |
| 3 | U 367.007†         | 3943.1    | 4197.0    | 488.29 µg/L | 488.29 ppb | 09:41:10 |
| 3 | V 292.402†         | 112394.9  | 111425.2  | 500.66 µg/L | 500.66 ppb | 09:41:10 |
| 3 | Zn 213.857†        | 89565.4   | 88828.6   | 502.65 µg/L | 502.65 ppb | 09:41:10 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 1351548.0                | 101.53 %           | 1.799    |                    |          | 1.77% |
| Sc RADIAL  | 73175.6                  | 102 %              | 2.2      |                    |          | 2.16% |
| Y 371.029  | 726466.3                 | 100.28 %           | 1.712    |                    |          | 1.71% |
| Ag 328.068†  | 96579.9                  | 498.37 µg/L        | 2.460    | 498.37 ppb         | 2.460    | 0.49% |
| QC value within limits for Ag 328.068 Recovery = 99.67%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 13823.3                  | 5047.3 µg/L        | 34.36    | 5047.3 ppb         | 34.36    | 0.68% |
| QC value within limits for Al 396.153Radial Recovery = 100.95% |                          |                    |          |                    |          |       |
| As 188.979†  | 916.7                    | 503.17 µg/L        | 10.979   | 503.17 ppb         | 10.979   | 2.18% |
| QC value within limits for As 188.979 Recovery = 100.63%       |                          |                    |          |                    |          |       |
| B 249.677†   | 34924.6                  | 505.97 µg/L        | 1.929    | 505.97 ppb         | 1.929    | 0.38% |
| QC value within limits for B 249.677 Recovery = 101.19%        |                          |                    |          |                    |          |       |
| Ba 233.527†  | 55881.6                  | 498.30 µg/L        | 1.689    | 498.30 ppb         | 1.689    | 0.34% |
| QC value within limits for Ba 233.527 Recovery = 99.66%        |                          |                    |          |                    |          |       |
| Be 313.107†  | 1819955.6                | 484.27 µg/L        | 2.775    | 484.27 ppb         | 2.775    | 0.57% |
| QC value within limits for Be 313.107 Recovery = 96.85%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 45450.8                  | 5059.6 µg/L        | 14.46    | 5059.6 ppb         | 14.46    | 0.29% |
| QC value within limits for Ca 317.933Radial Recovery = 101.19% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 65772.1                  | 497.08 µg/L        | 2.613    | 497.08 ppb         | 2.613    | 0.53% |
| QC value within limits for Cd 226.502 Recovery = 99.42%        |                          |                    |          |                    |          |       |



|   |          |             |        |            |        |       |
|---|----------|-------------|--------|------------|--------|-------|
| Co 228.616†   | 33532.4  | 498.65 µg/L | 2.960  | 498.65 ppb | 2.960  | 0.59% |
| QC value within limits for Co 228.616 Recovery = 99.73%         |          |             |        |            |        |       |
| Cr 267.716†   | 42287.1  | 496.91 µg/L | 3.437  | 496.91 ppb | 3.437  | 0.69% |
| QC value within limits for Cr 267.716 Recovery = 99.38%         |          |             |        |            |        |       |
| Cu 324.752†   | 112376.3 | 496.70 µg/L | 2.198  | 496.70 ppb | 2.198  | 0.44% |
| QC value within limits for Cu 324.752 Recovery = 99.34%         |          |             |        |            |        |       |
| Fe 238.204 Radial†  | 53451.4  | 5056.2 µg/L | 21.64  | 5056.2 ppb | 21.64  | 0.43% |
| QC value within limits for Fe 238.204 Radial Recovery = 101.12% |          |             |        |            |        |       |
| K 766.490 Radial†   | 9533.9   | 5011.6 µg/L | 41.91  | 5011.6 ppb | 41.91  | 0.84% |
| QC value within limits for K 766.490 Radial Recovery = 100.23%  |          |             |        |            |        |       |
| Mg 279.077 IEC†   | 9279.1   | 5004.4 µg/L | 24.78  | 5004.4 ppb | 24.78  | 0.50% |
| QC value within limits for Mg 279.077 IEC Recovery = 100.09%    |          |             |        |            |        |       |
| Mn 257.610†   | 284517.6 | 498.47 µg/L | 2.462  | 498.47 ppb | 2.462  | 0.49% |
| QC value within limits for Mn 257.610 Recovery = 99.69%         |          |             |        |            |        |       |
| Mo 202.031†   | 9634.3   | 500.89 µg/L | 8.298  | 500.89 ppb | 8.298  | 1.66% |
| QC value within limits for Mo 202.031 Recovery = 100.18%        |          |             |        |            |        |       |
| Na 589.592 Radial†  | 58177.2  | 9701.3 µg/L | 124.66 | 9701.3 ppb | 124.66 | 1.29% |
| QC value within limits for Na 589.592 Radial Recovery = 97.01%  |          |             |        |            |        |       |
| Ni 231.604†   | 31291.6  | 497.48 µg/L | 2.707  | 497.48 ppb | 2.707  | 0.54% |
| QC value within limits for Ni 231.604 Recovery = 99.50%         |          |             |        |            |        |       |
| P 214.914†  | 6940.5   | 2501.4 µg/L | 45.51  | 2501.4 ppb | 45.51  | 1.82% |
| QC value within limits for P 214.914 Recovery = 100.06%         |          |             |        |            |        |       |
| Pb 220.353†   | 4960.0   | 501.30 µg/L | 8.708  | 501.30 ppb | 8.708  | 1.74% |
| QC value within limits for Pb 220.353 Recovery = 100.26%        |          |             |        |            |        |       |
| S 181.975 Axial†  | 900.1    | 1003.6 µg/L | 10.61  | 1003.6 ppb | 10.61  | 1.06% |
| QC value within limits for S 181.975 Axial Recovery = 100.36%   |          |             |        |            |        |       |
| Sb 206.836†   | 2583.2   | 490.97 µg/L | 8.403  | 490.97 ppb | 8.403  | 1.71% |
| QC value within limits for Sb 206.836 Recovery = 98.19%         |          |             |        |            |        |       |
| Se 196.026†   | 961.6    | 506 µg/L    | 8.3    | 506 ppb    | 8.3    | 1.64% |
| QC value within limits for Se 196.026 Recovery = 101.30%        |          |             |        |            |        |       |
| SiO2†   | 49365.3  | 5463.6 µg/L | 30.58  | 5463.6 ppb | 30.58  | 0.56% |
| QC value within limits for SiO2 Recovery = 102.17%              |          |             |        |            |        |       |
| Si 251.611†   | 151061.1 | 2561.9 µg/L | 14.36  | 2561.9 ppb | 14.36  | 0.56% |
| QC value within limits for Si 251.611 Recovery = 102.47%        |          |             |        |            |        |       |
| Sn 189.927†   | 3920.7   | 501.31 µg/L | 8.316  | 501.31 ppb | 8.316  | 1.66% |
| QC value within limits for Sn 189.927 Recovery = 100.26%        |          |             |        |            |        |       |
| Sr 421.552†   | 170540.5 | 494.61 µg/L | 6.493  | 494.61 ppb | 6.493  | 1.31% |
| QC value within limits for Sr 421.552 Recovery = 98.92%         |          |             |        |            |        |       |
| Ti 334.940†   | 347188.5 | 493.16 µg/L | 3.021  | 493.16 ppb | 3.021  | 0.61% |
| QC value within limits for Ti 334.940 Recovery = 98.63%         |          |             |        |            |        |       |
| Tl 190.801†   | 1644.4   | 505.20 µg/L | 10.448 | 505.20 ppb | 10.448 | 2.07% |
| QC value within limits for Tl 190.801 Recovery = 101.04%        |          |             |        |            |        |       |
| U 367.007†  | 4145.3   | 482.05 µg/L | 5.480  | 482.05 ppb | 5.480  | 1.14% |
| QC value within limits for U 367.007 Recovery = 96.41%          |          |             |        |            |        |       |
| V 292.402†  | 110877.7 | 498.20 µg/L | 2.262  | 498.20 ppb | 2.262  | 0.45% |
| QC value within limits for V 292.402 Recovery = 99.64%          |          |             |        |            |        |       |
| Zn 213.857†   | 88150.4  | 498.80 µg/L | 3.494  | 498.80 ppb | 3.494  | 0.70% |
| QC value within limits for Zn 213.857 Recovery = 99.76%         |          |             |        |            |        |       |

All analyte(s) passed QC.

Sequence No.: 17

Sample ID: CCB

Analyst:

Logged In Analyst (Original) : lab

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 11/11/2016 09:41:38

Data Type: Reprocessed on 11/11/2016 09:56:38

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units | Calib. Units | Conc. Units | Sample Units | Analysis Time |
|-------|--------------------|---------------|---------------------|-------------|--------------|-------------|--------------|---------------|
| 1     | Sc 361.383         | 1363976.8     | 1363976.8           | 102.46      | %            |             |              | 09:43:10      |
| 1     | Sc RADIAL          | 74439.6       | 74439.6             | 103         | %            |             |              | 09:42:03      |
| 1     | Y 371.029          | 743449.0      | 743449.0            | 102.62      | %            |             |              | 09:43:10      |
| 1     | Ag 328.068†        | -1885.5       | 50.7                | 0.2678      | µg/L         | 0.2678      | ppb          | 09:43:12      |
| 1     | Al 396.153Radial†  | 103.3         | -1.7                | -0.6161     | µg/L         | -0.6161     | ppb          | 09:42:23      |
| 1     | As 188.979†        | -22.8         | 7.7                 | 4.1672      | µg/L         | 4.1672      | ppb          | 09:43:32      |
| 1     | B 249.677†         | 985.6         | 77.1                | 1.1109      | µg/L         | 1.1109      | ppb          | 09:43:12      |
| 1     | Ba 233.527†        | -216.6        | 29.3                | 0.2617      | µg/L         | 0.2617      | ppb          | 09:43:32      |
| 1     | Be 313.107†        | -3525.3       | 215.3               | 0.0485      | µg/L         | 0.0485      | ppb          | 09:43:12      |
| 1     | Ca 317.933Radial†  | 355.2         | 0.5                 | 0.0604      | µg/L         | 0.0604      | ppb          | 09:42:23      |
| 1     | Cd 226.502†        | -162.8        | 21.1                | 0.1594      | µg/L         | 0.1594      | ppb          | 09:43:32      |
| 1     | Co 228.616†        | -65.7         | 27.4                | 0.4071      | µg/L         | 0.4071      | ppb          | 09:43:32      |
| 1     | Cr 267.716†        | 166.6         | 33.6                | 0.4046      | µg/L         | 0.4046      | ppb          | 09:43:32      |
| 1     | Cu 324.752†        | 5901.8        | -16.9               | -0.0830     | µg/L         | -0.0830     | ppb          | 09:43:12      |
| 1     | Fe 238.204 Radial† | -499.1        | 35.1                | 3.3186      | µg/L         | 3.3186      | ppb          | 09:42:23      |
| 1     | K 766.490 Radial†  | 1198.6        | 89.7                | 47.155      | µg/L         | 47.155      | ppb          | 09:42:03      |
| 1     | Mg 279.077 IEC†    | 17.8          | -9.6                | -5.1633     | µg/L         | -5.1633     | ppb          | 09:42:23      |
| 1     | Mn 257.610†        | 193.2         | 36.6                | 0.0643      | µg/L         | 0.0643      | ppb          | 09:43:32      |
| 1     | Mo 202.031†        | -1.7          | 28.1                | 1.4599      | µg/L         | 1.4599      | ppb          | 09:43:32      |
| 1     | Na 589.592 Radial† | 103.4         | 60.3                | 10.061      | µg/L         | 10.061      | ppb          | 09:42:03      |
| 1     | Ni 231.604†        | -182.8        | 19.3                | 0.3073      | µg/L         | 0.3073      | ppb          | 09:43:32      |
| 1     | P 214.914†         | -90.8         | 6.5                 | 2.3481      | µg/L         | 2.3481      | ppb          | 09:43:32      |
| 1     | Pb 220.353†        | 99.3          | 23.2                | 2.3580      | µg/L         | 2.3580      | ppb          | 09:43:32      |
| 1     | S 181.975 Axial†   | 110.1         | 4.7                 | 5.2912      | µg/L         | 5.2912      | ppb          | 09:43:32      |
| 1     | Sb 206.836†        | 65.7          | 19.8                | 3.8205      | µg/L         | 3.8205      | ppb          | 09:43:32      |
| 1     | Se 196.026†        | 0.3           | -7.8                | -4.08       | µg/L         | -4.08       | ppb          | 09:43:32      |
| 1     | Si02†              | 3092.9        | -1.2                | -0.1346     | µg/L         | -0.1346     | ppb          | 09:43:12      |
| 1     | Si 251.611†        | 546.4         | -51.2               | -0.8671     | µg/L         | -0.8671     | ppb          | 09:43:12      |
| 1     | Sn 189.927†        | -25.4         | 2.7                 | 0.3499      | µg/L         | 0.3499      | ppb          | 09:43:32      |
| 1     | Sr 421.552†        | -391.2        | 80.5                | 0.2335      | µg/L         | 0.2335      | ppb          | 09:42:23      |
| 1     | Ti 334.940†        | -309.0        | 587.7               | 0.8408      | µg/L         | 0.8408      | ppb          | 09:43:12      |
| 1     | Tl 190.801†        | -74.0         | 13.8                | 4.2380      | µg/L         | 4.2380      | ppb          | 09:43:32      |
| 1     | U 367.007†         | -379.0        | -85.7               | -10.559     | µg/L         | -10.559     | ppb          | 09:43:12      |
| 1     | V 292.402†         | 237.2         | 128.2               | 0.5714      | µg/L         | 0.5714      | ppb          | 09:43:12      |
| 1     | Zn 213.857†        | 76.2          | 27.9                | 0.1581      | µg/L         | 0.1581      | ppb          | 09:43:32      |
| 2     | Sc 361.383         | 1359760.5     | 1359760.5           | 102.15      | %            |             |              | 09:43:34      |
| 2     | Sc RADIAL          | 74690.4       | 74690.4             | 104         | %            |             |              | 09:42:25      |
| 2     | Y 371.029          | 740009.7      | 740009.7            | 102.15      | %            |             |              | 09:43:34      |
| 2     | Ag 328.068†        | -1861.3       | 68.6                | 0.3611      | µg/L         | 0.3611      | ppb          | 09:43:37      |
| 2     | Al 396.153Radial†  | 131.5         | 25.2                | 9.1835      | µg/L         | 9.1835      | ppb          | 09:42:45      |
| 2     | As 188.979†        | -29.8         | 0.8                 | 0.4436      | µg/L         | 0.4436      | ppb          | 09:43:57      |
| 2     | B 249.677†         | 926.0         | 21.7                | 0.3149      | µg/L         | 0.3149      | ppb          | 09:43:37      |
| 2     | Ba 233.527†        | -228.4        | 17.2                | 0.1535      | µg/L         | 0.1535      | ppb          | 09:43:57      |
| 2     | Be 313.107†        | -3603.8       | 127.8               | 0.0268      | µg/L         | 0.0268      | ppb          | 09:43:37      |
| 2     | Ca 317.933Radial†  | 353.6         | -2.2                | -0.2399     | µg/L         | -0.2399     | ppb          | 09:42:45      |
| 2     | Cd 226.502†        | -146.9        | 36.2                | 0.2736      | µg/L         | 0.2736      | ppb          | 09:43:57      |
| 2     | Co 228.616†        | -103.9        | -10.2               | -0.1519     | µg/L         | -0.1519     | ppb          | 09:43:57      |
| 2     | Cr 267.716†        | 142.4         | 10.4                | 0.1332      | µg/L         | 0.1332      | ppb          | 09:43:57      |
| 2     | Cu 324.752†        | 5892.6        | -8.0                | -0.0447     | µg/L         | -0.0447     | ppb          | 09:43:37      |
| 2     | Fe 238.204 Radial† | -486.7        | 48.6                | 4.5990      | µg/L         | 4.5990      | ppb          | 09:42:45      |
| 2     | K 766.490 Radial†  | 1192.8        | 80.2                | 42.143      | µg/L         | 42.143      | ppb          | 09:42:25      |
| 2     | Mg 279.077 IEC†    | 11.7          | -15.5               | -8.3745     | µg/L         | -8.3745     | ppb          | 09:42:45      |
| 2     | Mn 257.610†        | 195.4         | 39.3                | 0.0692      | µg/L         | 0.0692      | ppb          | 09:43:57      |
| 2     | Mo 202.031†        | -1.4          | 28.4                | 1.4762      | µg/L         | 1.4762      | ppb          | 09:43:57      |
| 2     | Na 589.592 Radial† | 157.3         | 112.0               | 18.668      | µg/L         | 18.668      | ppb          | 09:42:25      |
| 2     | Ni 231.604†        | -190.9        | 10.9                | 0.1730      | µg/L         | 0.1730      | ppb          | 09:43:57      |
| 2     | P 214.914†         | -96.4         | 0.7                 | 0.2550      | µg/L         | 0.2550      | ppb          | 09:43:57      |
| 2     | Pb 220.353†        | 82.8          | 7.4                 | 0.7583      | µg/L         | 0.7583      | ppb          | 09:43:57      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 96.3      | -8.4      | -9.4177 µg/L | -9.4177 ppb | 09:43:57 |
| 2 | Sb 206.836†        | 85.5      | 39.4      | 7.6066 µg/L  | 7.6066 ppb  | 09:43:57 |
| 2 | Se 196.026†        | 12.2      | 4.0       | 2.07 µg/L    | 2.07 ppb    | 09:43:57 |
| 2 | SiO2†              | 3074.7    | -9.6      | -1.0620 µg/L | -1.0620 ppb | 09:43:37 |
| 2 | Si 251.611†        | 620.7     | 23.2      | 0.3933 µg/L  | 0.3933 ppb  | 09:43:37 |
| 2 | Sn 189.927†        | -20.4     | 7.6       | 0.9660 µg/L  | 0.9660 ppb  | 09:43:57 |
| 2 | Sr 421.552†        | -411.4    | 62.3      | 0.1807 µg/L  | 0.1807 ppb  | 09:42:45 |
| 2 | Ti 334.940†        | -301.5    | 594.1     | 0.8505 µg/L  | 0.8505 ppb  | 09:43:37 |
| 2 | Tl 190.801†        | -76.3     | 11.4      | 3.5008 µg/L  | 3.5008 ppb  | 09:43:57 |
| 2 | U 367.007†         | -387.8    | -95.5     | -11.770 µg/L | -11.770 ppb | 09:43:37 |
| 2 | V 292.402†         | 208.2     | 100.5     | 0.4465 µg/L  | 0.4465 ppb  | 09:43:37 |
| 2 | Zn 213.857†        | 71.9      | 23.9      | 0.1353 µg/L  | 0.1353 ppb  | 09:43:57 |
| 3 | Sc 361.383         | 1367969.4 | 1367969.4 | 102.76 %     |             | 09:43:59 |
| 3 | Sc RADIAL          | 74753.2   | 74753.2   | 104 %        |             | 09:42:47 |
| 3 | Y 371.029          | 744449.2  | 744449.2  | 102.76 %     |             | 09:43:59 |
| 3 | Ag 328.068†        | -1876.2   | 65.0      | 0.3489 µg/L  | 0.3489 ppb  | 09:44:01 |
| 3 | Al 396.153Radial†  | 121.5     | 15.5      | 5.6446 µg/L  | 5.6446 ppb  | 09:43:07 |
| 3 | As 188.979†        | -22.8     | 7.7       | 4.2065 µg/L  | 4.2065 ppb  | 09:44:21 |
| 3 | B 249.677†         | 997.3     | 85.6      | 1.2354 µg/L  | 1.2354 ppb  | 09:44:01 |
| 3 | Ba 233.527†        | -228.9    | 18.0      | 0.1604 µg/L  | 0.1604 ppb  | 09:44:21 |
| 3 | Be 313.107†        | -3280.1   | 464.0     | 0.1143 µg/L  | 0.1143 ppb  | 09:44:01 |
| 3 | Ca 317.933Radial†  | 375.1     | 18.3      | 2.0385 µg/L  | 2.0385 ppb  | 09:43:07 |
| 3 | Cd 226.502†        | -163.6    | 20.8      | 0.1570 µg/L  | 0.1570 ppb  | 09:44:21 |
| 3 | Co 228.616†        | -83.8     | 10.0      | 0.1488 µg/L  | 0.1488 ppb  | 09:44:21 |
| 3 | Cr 267.716†        | 136.9     | 4.3       | 0.0709 µg/L  | 0.0709 ppb  | 09:44:21 |
| 3 | Cu 324.752†        | 5818.0    | -115.2    | -0.5265 µg/L | -0.5265 ppb | 09:44:01 |
| 3 | Fe 238.204 Radial† | -471.3    | 63.9      | 6.0429 µg/L  | 6.0429 ppb  | 09:43:07 |
| 3 | K 766.490 Radial†  | 1395.8    | 274.9     | 144.45 µg/L  | 144.45 ppb  | 09:42:47 |
| 3 | Mg 279.077 IEC†    | 12.5      | -14.8     | -7.9829 µg/L | -7.9829 ppb | 09:43:07 |
| 3 | Mn 257.610†        | 200.1     | 42.8      | 0.0752 µg/L  | 0.0752 ppb  | 09:44:21 |
| 3 | Mo 202.031†        | -12.3     | 17.7      | 0.9222 µg/L  | 0.9222 ppb  | 09:44:21 |
| 3 | Na 589.592 Radial† | 97.3      | 54.0      | 9.0073 µg/L  | 9.0073 ppb  | 09:42:47 |
| 3 | Ni 231.604†        | -224.3    | -20.6     | -0.3270 µg/L | -0.3270 ppb | 09:44:21 |
| 3 | P 214.914†         | -92.2     | 5.4       | 1.9484 µg/L  | 1.9484 ppb  | 09:44:21 |
| 3 | Pb 220.353†        | 90.8      | 14.7      | 1.5112 µg/L  | 1.5112 ppb  | 09:44:21 |
| 3 | S 181.975 Axial†   | 99.0      | -6.3      | -7.0513 µg/L | -7.0513 ppb | 09:44:21 |
| 3 | Sb 206.836†        | 77.9      | 31.5      | 6.0768 µg/L  | 6.0768 ppb  | 09:44:21 |
| 3 | Se 196.026†        | 10.5      | 2.2       | 1.11 µg/L    | 1.11 ppb    | 09:44:21 |
| 3 | SiO2†              | 3039.0    | -62.4     | -6.9093 µg/L | -6.9093 ppb | 09:44:01 |
| 3 | Si 251.611†        | 373.8     | -220.7    | -3.7417 µg/L | -3.7417 ppb | 09:44:01 |
| 3 | Sn 189.927†        | -24.8     | 3.4       | 0.4304 µg/L  | 0.4304 ppb  | 09:44:21 |
| 3 | Sr 421.552†        | -428.0    | 46.5      | 0.1350 µg/L  | 0.1350 ppb  | 09:43:07 |
| 3 | Ti 334.940†        | -191.3    | 703.1     | 1.0113 µg/L  | 1.0113 ppb  | 09:44:01 |
| 3 | Tl 190.801†        | -72.2     | 15.7      | 4.8361 µg/L  | 4.8361 ppb  | 09:44:21 |
| 3 | U 367.007†         | -482.8    | -185.6    | -22.866 µg/L | -22.866 ppb | 09:44:01 |
| 3 | V 292.402†         | 146.9     | 39.7      | 0.1699 µg/L  | 0.1699 ppb  | 09:44:01 |
| 3 | Zn 213.857†        | 91.2      | 42.3      | 0.2402 µg/L  | 0.2402 ppb  | 09:44:21 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc 361.383  | 1363902.2                | 102.46 %           | 0.308    |                    |          | 0.30%   |
| Sc RADIAL   | 74627.7                  | 104 %              | 0.2      |                    |          | 0.22%   |
| Y 371.029   | 742636.0                 | 102.51 %           | 0.321    |                    |          | 0.31%   |
| Ag 328.068†   | 61.4                     | 0.3259 µg/L        | 0.05071  | 0.3259 ppb         | 0.05071  | 15.56%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 13.0                     | 4.7373 µg/L        | 4.96242  | 4.7373 ppb         | 4.96242  | 104.75% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | 5.4                      | 2.9391 µg/L        | 2.16126  | 2.9391 ppb         | 2.16126  | 73.53%  |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 61.4                     | 0.8870 µg/L        | 0.49941  | 0.8870 ppb         | 0.49941  | 56.30%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | 21.5                     | 0.1919 µg/L        | 0.06056  | 0.1919 ppb         | 0.06056  | 31.56%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 269.0                    | 0.0632 µg/L        | 0.04558  | 0.0632 ppb         | 0.04558  | 72.11%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 5.6                      | 0.6197 µg/L        | 1.23787  | 0.6197 ppb         | 1.23787  | 199.76% |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| Cd 226.502†   | 26.1                     | 0.1967 µg/L        | 0.06660  | 0.1967 ppb         | 0.06660  | 33.86%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |                    |          |                    |          |         |

|  |        |              |         |             |         |         |
|--|--------|--------------|---------|-------------|---------|---------|
| Co 228.616†  | 9.1    | 0.1346 µg/L  | 0.27974 | 0.1346 ppb  | 0.27974 | 207.77% |
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |         |             |         |         |
| Cr 267.716†  | 16.1   | 0.2029 µg/L  | 0.17745 | 0.2029 ppb  | 0.17745 | 87.46%  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |         |             |         |         |
| Cu 324.752†  | -46.7  | -0.2181 µg/L | 0.26780 | -0.2181 ppb | 0.26780 | 122.81% |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |         |             |         |         |
| Fe 238.204 Radial†   | 49.2   | 4.6535 µg/L  | 1.36297 | 4.6535 ppb  | 1.36297 | 29.29%  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |         |             |         |         |
| K 766.490 Radial†  | 148.3  | 77.918 µg/L  | 57.6773 | 77.918 ppb  | 57.6773 | 74.02%  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |         |             |         |         |
| Mg 279.077 IEC†  | -13.3  | -7.1736 µg/L | 1.75193 | -7.1736 ppb | 1.75193 | 24.42%  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |         |             |         |         |
| Mn 257.610†  | 39.6   | 0.0696 µg/L  | 0.00548 | 0.0696 ppb  | 0.00548 | 7.88%   |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |         |             |         |         |
| Mo 202.031†  | 24.7   | 1.2861 µg/L  | 0.31523 | 1.2861 ppb  | 0.31523 | 24.51%  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |         |             |         |         |
| Na 589.592 Radial†   | 75.4   | 12.579 µg/L  | 5.2997  | 12.579 ppb  | 5.2997  | 42.13%  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |         |             |         |         |
| Ni 231.604†  | 3.2    | 0.0511 µg/L  | 0.33426 | 0.0511 ppb  | 0.33426 | 653.73% |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |         |             |         |         |
| P 214.914†   | 4.2    | 1.5172 µg/L  | 1.11118 | 1.5172 ppb  | 1.11118 | 73.24%  |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |         |             |         |         |
| Pb 220.353†  | 15.1   | 1.5425 µg/L  | 0.80034 | 1.5425 ppb  | 0.80034 | 51.89%  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |         |             |         |         |
| S 181.975 Axial†   | -3.3   | -3.7259 µg/L | 7.89821 | -3.7259 ppb | 7.89821 | 211.98% |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |         |             |         |         |
| Sb 206.836†  | 30.2   | 5.8346 µg/L  | 1.90460 | 5.8346 ppb  | 1.90460 | 32.64%  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |         |             |         |         |
| Se 196.026†  | -0.5   | -0.297 µg/L  | 3.3066  | -0.297 ppb  | 3.3066  | >999.9% |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |         |             |         |         |
| SiO2†  | -24.4  | -2.7020 µg/L | 3.67303 | -2.7020 ppb | 3.67303 | 135.94% |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |         |             |         |         |
| Si 251.611†  | -82.9  | -1.4052 µg/L | 2.11938 | -1.4052 ppb | 2.11938 | 150.83% |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |         |             |         |         |
| Sn 189.927†  | 4.6    | 0.5821 µg/L  | 0.33488 | 0.5821 ppb  | 0.33488 | 57.53%  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |         |             |         |         |
| Sr 421.552†  | 63.1   | 0.1831 µg/L  | 0.04930 | 0.1831 ppb  | 0.04930 | 26.93%  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |         |             |         |         |
| Ti 334.940†  | 628.3  | 0.9009 µg/L  | 0.09579 | 0.9009 ppb  | 0.09579 | 10.63%  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |         |             |         |         |
| Tl 190.801†  | 13.6   | 4.1916 µg/L  | 0.66889 | 4.1916 ppb  | 0.66889 | 15.96%  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |         |             |         |         |
| U 367.007†   | -122.2 | -15.065 µg/L | 6.7829  | -15.065 ppb | 6.7829  | 45.02%  |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |         |             |         |         |
| V 292.402†   | 89.4   | 0.3959 µg/L  | 0.20547 | 0.3959 ppb  | 0.20547 | 51.90%  |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |         |             |         |         |
| Zn 213.857†  | 31.3   | 0.1779 µg/L  | 0.05516 | 0.1779 ppb  | 0.05516 | 31.01%  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |         |             |         |         |

All analyte(s) passed QC.

Sequence No.: 14

Autosampler Location: 103

Sample ID: ICSA

Date Collected: 11/11/2016 10:48:14

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: ICSA

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 65215.0       | 65215.0             | 90.5 %             |                    | 10:48:43      |
| 1     | Al 396.153Radial†  | 1245660.7     | 1375881.5           | 502370 µg/L        | 502370 ppb         | 10:48:41      |
| 1     | Ca 317.933Radial†  | 3878733.7     | 4284188.0           | 476920 µg/L        | 476920 ppb         | 10:48:41      |
| 1     | Fe 238.204 Radial† | 1801354.2     | 1990332.0           | 188280 µg/L        | 188280 ppb         | 10:48:41      |
| 1     | K 766.490 Radial†  | 879.9         | -98.3               | -20.597 µg/L       | -20.597 ppb        | 10:48:43      |
| 1     | Mg 279.077 IEC†    | 821610.5      | 907541.6            | 489350 µg/L        | 489350 ppb         | 10:48:41      |
| 1     | Na 589.592 Radial† | -83.2         | -131.6              | -21.949 µg/L       | -21.949 ppb        | 10:48:43      |
| 1     | Sr 421.552†        | 4667.4        | 5614.7              | -0.1638 µg/L       | -0.1638 ppb        | 10:48:43      |
| 1     | Sc 361.383         | 1188088.4     | 1188088.4           | 89.249 %           |                    | 10:48:55      |
| 1     | Y 371.029          | 634812.7      | 634812.7            | 87.627 %           |                    | 10:48:55      |
| 1     | Ag 328.068†        | -2948.9       | -1413.3             | -0.9065 µg/L       | -0.9065 ppb        | 10:48:55      |
| 1     | As 188.979†        | -77.9         | -57.4               | -8.1189 µg/L       | -8.1189 ppb        | 10:49:15      |
| 1     | B 249.677†         | -8698.0       | -10630.6            | -14.772 µg/L       | -14.772 ppb        | 10:48:55      |
| 1     | Ba 233.527†        | -92.7         | 136.9               | 2.1336 µg/L        | 2.1336 ppb         | 10:49:15      |
| 1     | Be 313.107†        | -3921.1       | -737.5              | 0.1530 µg/L        | 0.1530 ppb         | 10:48:55      |
| 1     | Cd 226.502†        | 2683.6        | 3186.9              | 2.5536 µg/L        | 2.5536 ppb         | 10:49:15      |
| 1     | Co 228.616†        | 45.8          | 142.9               | -0.1824 µg/L       | -0.1824 ppb        | 10:49:15      |
| 1     | Cr 267.716†        | 187.9         | 81.6                | 0.6643 µg/L        | 0.6643 ppb         | 10:49:15      |
| 1     | Cu 324.752†        | 859.8         | -4813.5             | -1.9217 µg/L       | -1.9217 ppb        | 10:49:15      |
| 1     | Mn 257.610†        | 8352.7        | 9206.9              | -1.5566 µg/L       | -1.5566 ppb        | 10:48:55      |
| 1     | Mo 202.031†        | -257.9        | -259.2              | -3.7074 µg/L       | -3.7074 ppb        | 10:49:15      |
| 1     | Ni 231.604†        | -224.0        | -53.3               | -0.8468 µg/L       | -0.8468 ppb        | 10:49:15      |
| 1     | P 214.914†         | -49.7         | 39.4                | 4.3016 µg/L        | 4.3016 ppb         | 10:49:15      |
| 1     | Pb 220.353†        | -105.8        | -192.3              | 0.2389 µg/L        | 0.2389 ppb         | 10:49:15      |
| 1     | S 181.975 Axial†   | 132.4         | 45.6                | 0.9622 µg/L        | 0.9622 ppb         | 10:49:15      |
| 1     | Sb 206.836†        | 76.1          | 41.0                | 0.1609 µg/L        | 0.1609 ppb         | 10:49:15      |
| 1     | Se 196.026†        | -149.1        | -175.0              | -16.3 µg/L         | -16.3 ppb          | 10:49:15      |
| 1     | SiO2†              | 3468.6        | 866.6               | 95.915 µg/L        | 95.915 ppb         | 10:49:15      |
| 1     | Si 251.611†        | 1739.7        | 1364.8              | 46.944 µg/L        | 46.944 ppb         | 10:49:15      |
| 1     | Sn 189.927†        | -28.6         | -4.6                | 0.9651 µg/L        | 0.9651 ppb         | 10:49:15      |
| 1     | Ti 334.940†        | -4506.4       | -4160.0             | -0.5215 µg/L       | -0.5215 ppb        | 10:48:55      |
| 1     | Tl 190.801†        | -97.1         | -22.7               | -3.7926 µg/L       | -3.7926 ppb        | 10:49:15      |
| 1     | U 367.007†         | 7457.0        | 8639.5              | -2.4998 µg/L       | -2.4998 ppb        | 10:48:55      |
| 1     | V 292.402†         | -2089.4       | -2444.4             | 1.9975 µg/L        | 1.9975 ppb         | 10:49:15      |
| 1     | Zn 213.857†        | 7860.9        | 8761.4              | 5.3249 µg/L        | 5.3249 ppb         | 10:49:15      |
| 2     | Sc RADIAL          | 67501.6       | 67501.6             | 93.7 %             |                    | 10:48:47      |
| 2     | Al 396.153Radial†  | 1270779.7     | 1356076.6           | 495140 µg/L        | 495140 ppb         | 10:48:45      |
| 2     | Ca 317.933Radial†  | 3976325.2     | 4243198.1           | 472350 µg/L        | 472350 ppb         | 10:48:45      |
| 2     | Fe 238.204 Radial† | 1846525.4     | 1971133.2           | 186460 µg/L        | 186460 ppb         | 10:48:45      |
| 2     | K 766.490 Radial†  | 897.5         | -112.5              | -28.345 µg/L       | -28.345 ppb        | 10:48:47      |
| 2     | Mg 279.077 IEC†    | 845385.5      | 902170.1            | 486450 µg/L        | 486450 ppb         | 10:48:45      |
| 2     | Na 589.592 Radial† | -105.4        | -152.3              | -25.391 µg/L       | -25.391 ppb        | 10:48:47      |
| 2     | Sr 421.552†        | 4916.8        | 5706.3              | 0.2593 µg/L        | 0.2593 ppb         | 10:48:47      |
| 2     | Sc 361.383         | 1207501.8     | 1207501.8           | 90.707 %           |                    | 10:49:18      |
| 2     | Y 371.029          | 645357.2      | 645357.2            | 89.083 %           |                    | 10:49:18      |
| 2     | Ag 328.068†        | -2957.3       | -1369.4             | -0.7632 µg/L       | -0.7632 ppb        | 10:49:18      |
| 2     | As 188.979†        | -70.1         | -47.3               | -2.8959 µg/L       | -2.8959 ppb        | 10:49:38      |
| 2     | B 249.677†         | -8911.1       | -10708.8            | -17.230 µg/L       | -17.230 ppb        | 10:49:18      |
| 2     | Ba 233.527†        | -92.6         | 138.7               | 2.1413 µg/L        | 2.1413 ppb         | 10:49:38      |
| 2     | Be 313.107†        | -3957.8       | -707.3              | 0.1704 µg/L        | 0.1704 ppb         | 10:49:18      |
| 2     | Cd 226.502†        | 2680.5        | 3135.2              | 2.3705 µg/L        | 2.3705 ppb         | 10:49:38      |
| 2     | Co 228.616†        | 42.6          | 138.5               | -0.2248 µg/L       | -0.2248 ppb        | 10:49:38      |
| 2     | Cr 267.716†        | 158.6         | 45.8                | 0.2035 µg/L        | 0.2035 ppb         | 10:49:38      |
| 2     | Cu 324.752†        | 844.2         | -4846.2             | -2.1988 µg/L       | -2.1988 ppb        | 10:49:38      |
| 2     | Mn 257.610†        | 8491.0        | 9208.9              | -1.4484 µg/L       | -1.4484 ppb        | 10:49:18      |
| 2     | Mo 202.031†        | -270.0        | -267.9              | -4.2348 µg/L       | -4.2348 ppb        | 10:49:38      |
| 2     | Ni 231.604†        | -217.8        | -42.4               | -0.6736 µg/L       | -0.6736 ppb        | 10:49:38      |
| 2     | P 214.914†         | -34.9         | 56.6                | 10.620 µg/L        | 10.620 ppb         | 10:49:38      |
| 2     | Pb 220.353†        | -95.6         | -179.2              | 1.1956 µg/L        | 1.1956 ppb         | 10:49:38      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 135.9     | 47.1      | 3.1797 µg/L  | 3.1797 ppb  | 10:49:38 |
| 2 | Sb 206.836†        | 89.8      | 54.7      | 2.8439 µg/L  | 2.8439 ppb  | 10:49:38 |
| 2 | Se 196.026†        | -128.4    | -149.6    | -3.62 µg/L   | -3.62 ppb   | 10:49:38 |
| 2 | SiO2†              | 3444.1    | 777.1     | 86.010 µg/L  | 86.010 ppb  | 10:49:38 |
| 2 | Si 251.611†        | 1721.1    | 1313.0    | 45.836 µg/L  | 45.836 ppb  | 10:49:38 |
| 2 | Sn 189.927†        | -29.1     | -4.5      | 0.9487 µg/L  | 0.9487 ppb  | 10:49:38 |
| 2 | Ti 334.940†        | -4492.2   | -4063.2   | -0.4545 µg/L | -0.4545 ppb | 10:49:18 |
| 2 | Tl 190.801†        | -98.2     | -22.2     | -3.6743 µg/L | -3.6743 ppb | 10:49:38 |
| 2 | U 367.007†         | 7774.1    | 8854.8    | 34.257 µg/L  | 34.257 ppb  | 10:49:18 |
| 2 | V 292.402†         | -2073.4   | -2389.1   | 2.1331 µg/L  | 2.1331 ppb  | 10:49:38 |
| 2 | Zn 213.857†        | 7837.3    | 8593.7    | 4.7119 µg/L  | 4.7119 ppb  | 10:49:38 |
| 3 | Sc RADIAL          | 65996.2   | 65996.2   | 91.6 %       |             | 10:48:52 |
| 3 | Al 396.153Radial†  | 1274946.9 | 1391561.2 | 508100 µg/L  | 508100 ppb  | 10:48:50 |
| 3 | Ca 317.933Radial†  | 3991573.9 | 4356642.3 | 484980 µg/L  | 484980 ppb  | 10:48:50 |
| 3 | Fe 238.204 Radial† | 1855181.6 | 2025533.6 | 191610 µg/L  | 191610 ppb  | 10:48:50 |
| 3 | K 766.490 Radial†  | 845.0     | -147.8    | -46.062 µg/L | -46.062 ppb | 10:48:52 |
| 3 | Mg 279.077 IEC†    | 848588.2  | 926246.0  | 499440 µg/L  | 499440 ppb  | 10:48:50 |
| 3 | Na 589.592 Radial† | 25.7      | -11.7     | -1.9454 µg/L | -1.9454 ppb | 10:48:52 |
| 3 | Sr 421.552†        | 4665.1    | 5551.2    | -0.6262 µg/L | -0.6262 ppb | 10:48:52 |
| 3 | Sc 361.383         | 1204221.3 | 1204221.3 | 90.461 %     |             | 10:49:40 |
| 3 | Y 371.029          | 644439.4  | 644439.4  | 88.956 %     |             | 10:49:40 |
| 3 | Ag 328.068†        | -3016.6   | -1443.9   | -0.9369 µg/L | -0.9369 ppb | 10:49:40 |
| 3 | As 188.979†        | -64.0     | -40.8     | 1.3190 µg/L  | 1.3190 ppb  | 10:50:00 |
| 3 | B 249.677†         | -8543.6   | -10329.4  | -7.9978 µg/L | -7.9978 ppb | 10:49:40 |
| 3 | Ba 233.527†        | -85.0     | 146.8     | 2.2385 µg/L  | 2.2385 ppb  | 10:50:00 |
| 3 | Be 313.107†        | -3841.9   | -591.1    | 0.1903 µg/L  | 0.1903 ppb  | 10:49:40 |
| 3 | Cd 226.502†        | 2714.4    | 3180.6    | 2.1252 µg/L  | 2.1252 ppb  | 10:50:00 |
| 3 | Co 228.616†        | 28.0      | 122.4     | -0.5267 µg/L | -0.5267 ppb | 10:50:00 |
| 3 | Cr 267.716†        | 169.3     | 58.2      | 0.3938 µg/L  | 0.3938 ppb  | 10:50:00 |
| 3 | Cu 324.752†        | 815.7     | -4875.2   | -1.8491 µg/L | -1.8491 ppb | 10:50:00 |
| 3 | Mn 257.610†        | 8387.5    | 9120.0    | -2.0736 µg/L | -2.0736 ppb | 10:49:40 |
| 3 | Mo 202.031†        | -225.3    | -219.3    | -1.4436 µg/L | -1.4436 ppb | 10:50:00 |
| 3 | Ni 231.604†        | -196.2    | -19.1     | -0.3040 µg/L | -0.3040 ppb | 10:50:00 |
| 3 | P 214.914†         | -40.5     | 50.3      | 8.0757 µg/L  | 8.0757 ppb  | 10:50:00 |
| 3 | Pb 220.353†        | -100.1    | -184.3    | 1.2373 µg/L  | 1.2373 ppb  | 10:50:00 |
| 3 | S 181.975 Axial†   | 128.2     | 39.1      | -7.1665 µg/L | -7.1665 ppb | 10:50:00 |
| 3 | Sb 206.836†        | 93.4      | 59.0      | 3.4331 µg/L  | 3.4331 ppb  | 10:50:00 |
| 3 | Se 196.026†        | -124.4    | -145.5    | 0.519 µg/L   | 0.519 ppb   | 10:50:00 |
| 3 | SiO2†              | 3472.8    | 819.2     | 90.670 µg/L  | 90.670 ppb  | 10:50:00 |
| 3 | Si 251.611†        | 1685.4    | 1278.7    | 45.905 µg/L  | 45.905 ppb  | 10:50:00 |
| 3 | Sn 189.927†        | -22.1     | 3.1       | 1.9666 µg/L  | 1.9666 ppb  | 10:50:00 |
| 3 | Ti 334.940†        | -4777.0   | -4391.5   | -0.7493 µg/L | -0.7493 ppb | 10:49:40 |
| 3 | Tl 190.801†        | -100.3    | -24.9     | -4.3950 µg/L | -4.3950 ppb | 10:50:00 |
| 3 | U 367.007†         | 7550.3    | 8630.7    | -22.394 µg/L | -22.394 ppb | 10:49:40 |
| 3 | V 292.402†         | -1918.3   | -2223.9   | 3.2067 µg/L  | 3.2067 ppb  | 10:50:00 |
| 3 | Zn 213.857†        | 7846.4    | 8627.3    | 3.7088 µg/L  | 3.7088 ppb  | 10:50:00 |

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Mean Data: ICSA

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------|-----------------|--------------------|----------|---------|
| Sc 361.383  | 1199937.2                | 90.139 %     | 0.7806          |                    |          | 0.87%   |
| Sc RADIAL   | 66237.6                  | 91.9 %       | 1.61            |                    |          | 1.75%   |
| Y 371.029   | 641536.4                 | 88.555 %     | 0.8063          |                    |          | 0.91%   |
| Ag 328.068†   | -1408.9                  | -0.8689 µg/L | 0.09276         | -0.8689 ppb        | 0.09276  | 10.68%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated |                          |              |                 |                    |          |         |
| Al 396.153Radial†   | 1374506.4                | 501870 µg/L  | 6492.8          | 501870 ppb         | 6492.8   | 1.29%   |
| QC value within limits for Al 396.153Radial Recovery = 100.37%  |                          |              |                 |                    |          |         |
| As 188.979†   | -48.5                    | -3.2319 µg/L | 4.72789         | -3.2319 ppb        | 4.72789  | 146.29% |
| QC value within limits for As 188.979 Recovery = Not calculated |                          |              |                 |                    |          |         |
| B 249.677†  | -10556.3                 | -13.333 µg/L | 4.7813          | -13.333 ppb        | 4.7813   | 35.86%  |
| QC value within limits for B 249.677 Recovery = Not calculated  |                          |              |                 |                    |          |         |
| Ba 233.527†   | 140.8                    | 2.1711 µg/L  | 0.05850         | 2.1711 ppb         | 0.05850  | 2.69%   |
| QC value within limits for Ba 233.527 Recovery = Not calculated |                          |              |                 |                    |          |         |
| Be 313.107†   | -678.6                   | 0.1712 µg/L  | 0.01870         | 0.1712 ppb         | 0.01870  | 10.92%  |
| QC value within limits for Be 313.107 Recovery = Not calculated |                          |              |                 |                    |          |         |
| Ca 317.933Radial†   | 4294676.1                | 478090 µg/L  | 6394.8          | 478090 ppb         | 6394.8   | 1.34%   |
| QC value within limits for Ca 317.933Radial Recovery = 95.62%   |                          |              |                 |                    |          |         |
| Cd 226.502†   | 3167.6                   | 2.3498 µg/L  | 0.21495         | 2.3498 ppb         | 0.21495  | 9.15%   |
| QC value within limits for Cd 226.502 Recovery = Not calculated |                          |              |                 |                    |          |         |
| Co 228.616†   | 134.6                    | -0.3113 µg/L | 0.18774         | -0.3113 ppb        | 0.18774  | 60.30%  |

|  |           |              |          |             |          |         |  |
|--|-----------|--------------|----------|-------------|----------|---------|--|
| QC value within limits for Co 228.616 Recovery = Not calculated        |           |              |          |             |          |         |  |
| Cr 267.716†  | 61.8      | 0.4205 µg/L  | 0.23157  | 0.4205 ppb  | 0.23157  | 55.07%  |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |           |              |          |             |          |         |  |
| Cu 324.752†  | -4844.9   | -1.9899 µg/L | 0.18458  | -1.9899 ppb | 0.18458  | 9.28%   |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |           |              |          |             |          |         |  |
| Fe 238.204 Radial†   | 1995666.3 | 188780 µg/L  | 2609.9   | 188780 ppb  | 2609.9   | 1.38%   |  |
| QC value within limits for Fe 238.204 Radial Recovery = 94.39%         |           |              |          |             |          |         |  |
| K 766.490 Radial†  | -119.5    | -31.668 µg/L | 13.0536  | -31.668 ppb | 13.0536  | 41.22%  |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |           |              |          |             |          |         |  |
| Mg 279.077 IEC†  | 911985.9  | 491750 µg/L  | 6814.6   | 491750 ppb  | 6814.6   | 1.39%   |  |
| QC value within limits for Mg 279.077 IEC Recovery = 98.35%            |           |              |          |             |          |         |  |
| Mn 257.610†  | 9178.6    | -1.6928 µg/L | 0.33411  | -1.6928 ppb | 0.33411  | 19.74%  |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |           |              |          |             |          |         |  |
| Mo 202.031†  | -248.8    | -3.1286 µg/L | 1.48288  | -3.1286 ppb | 1.48288  | 47.40%  |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |           |              |          |             |          |         |  |
| Na 589.592 Radial†   | -98.5     | -16.428 µg/L | 12.6600  | -16.428 ppb | 12.6600  | 77.06%  |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |           |              |          |             |          |         |  |
| Ni 231.604†  | -38.3     | -0.6081 µg/L | 0.27725  | -0.6081 ppb | 0.27725  | 45.59%  |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |           |              |          |             |          |         |  |
| P 214.914†   | 48.8      | 7.6658 µg/L  | 3.17909  | 7.6658 ppb  | 3.17909  | 41.47%  |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |           |              |          |             |          |         |  |
| Pb 220.353†  | -185.3    | 0.8906 µg/L  | 0.56479  | 0.8906 ppb  | 0.56479  | 63.42%  |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |           |              |          |             |          |         |  |
| S 181.975 Axial†   | 43.9      | -1.0082 µg/L | 5.44726  | -1.0082 ppb | 5.44726  | 540.30% |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |           |              |          |             |          |         |  |
| Sb 206.836†  | 51.5      | 2.1460 µg/L  | 1.74422  | 2.1460 ppb  | 1.74422  | 81.28%  |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |           |              |          |             |          |         |  |
| Se 196.026†  | -156.7    | -6.47 µg/L   | 8.773    | -6.47 ppb   | 8.773    | 135.57% |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |           |              |          |             |          |         |  |
| SiO2†  | 821.0     | 90.865 µg/L  | 4.9553   | 90.865 ppb  | 4.9553   | 5.45%   |  |
| QC value within limits for SiO2 Recovery = Not calculated              |           |              |          |             |          |         |  |
| Si 251.611†  | 1318.8    | 46.228 µg/L  | 0.6211   | 46.228 ppb  | 0.6211   | 1.34%   |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |           |              |          |             |          |         |  |
| Sn 189.927†  | -2.0      | 1.2934 µg/L  | 0.58304  | 1.2934 ppb  | 0.58304  | 45.08%  |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |           |              |          |             |          |         |  |
| Sr 421.552†  | 5624.1    | -0.1769 µg/L | 0.44287  | -0.1769 ppb | 0.44287  | 250.37% |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |           |              |          |             |          |         |  |
| Ti 334.940†  | -4204.9   | -0.5751 µg/L | 0.15452  | -0.5751 ppb | 0.15452  | 26.87%  |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |           |              |          |             |          |         |  |
| Tl 190.801†  | -23.3     | -3.9540 µg/L | 0.38653  | -3.9540 ppb | 0.38653  | 9.78%   |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |           |              |          |             |          |         |  |
| U 367.007†   | 8708.3    | 3.1210 µg/L  | 28.74097 | 3.1210 ppb  | 28.74097 | 920.90% |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |           |              |          |             |          |         |  |
| V 292.402†   | -2352.5   | 2.4458 µg/L  | 0.66249  | 2.4458 ppb  | 0.66249  | 27.09%  |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |           |              |          |             |          |         |  |
| Zn 213.857†  | 8660.8    | 4.5819 µg/L  | 0.81588  | 4.5819 ppb  | 0.81588  | 17.81%  |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |           |              |          |             |          |         |  |

All analyte(s) passed QC.

Sequence No.: 15

Sample ID: ICSAB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 104

Date Collected: 11/11/2016 10:50:08

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: ICSAB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 67114.3       | 67114.3             | 93.2 %             |                    | 10:50:35      |
| 1     | Al 396.153Radial†  | 1277553.1     | 1371173.4           | 500660 µg/L        | 500660 ppb         | 10:50:33      |
| 1     | Ca 317.933Radial†  | 4004930.1     | 4298390.7           | 478500 µg/L        | 478500 ppb         | 10:50:33      |
| 1     | Fe 238.204 Radial† | 1860326.1     | 1997318.7           | 188940 µg/L        | 188940 ppb         | 10:50:33      |
| 1     | K 766.490 Radial†  | 11060.0       | 10801.1             | 5707.2 µg/L        | 5707.2 ppb         | 10:50:35      |
| 1     | Mg 279.077 IEC†    | 856068.7      | 918843.6            | 495450 µg/L        | 495450 ppb         | 10:50:35      |
| 1     | Na 589.592 Radial† | 29555.6       | 31684.0             | 5283.5 µg/L        | 5283.5 ppb         | 10:50:35      |
| 1     | Sr 421.552†        | 166893.1      | 179595.5            | 504.55 µg/L        | 504.55 ppb         | 10:50:35      |
| 1     | Sc 361.383         | 1184060.3     | 1184060.3           | 88.947 %           |                    | 10:50:47      |
| 1     | Y 371.029          | 633982.4      | 633982.4            | 87.513 %           |                    | 10:50:47      |
| 1     | Ag 328.068†        | 43459.8       | 50751.4             | 268.03 µg/L        | 268.03 ppb         | 10:50:47      |
| 1     | As 188.979†        | 772.2         | 898.1               | 515.46 µg/L        | 515.46 ppb         | 10:51:07      |
| 1     | B 249.677†         | 23125.0       | 25113.9             | 499.77 µg/L        | 499.77 ppb         | 10:50:47      |
| 1     | Ba 233.527†        | 49673.9       | 56087.7             | 501.03 µg/L        | 501.03 ppb         | 10:50:47      |
| 1     | Be 313.107†        | 775580.2      | 875618.0            | 227.07 µg/L        | 227.07 ppb         | 10:50:47      |
| 1     | Cd 226.502†        | 57906.0       | 65282.1             | 472.32 µg/L        | 472.32 ppb         | 10:50:47      |
| 1     | Co 228.616†        | 28890.0       | 32571.7             | 482.13 µg/L        | 482.13 ppb         | 10:51:07      |
| 1     | Cr 267.716†        | 36841.1       | 41290.4             | 484.81 µg/L        | 484.81 ppb         | 10:50:47      |
| 1     | Cu 324.752†        | 117862.1      | 126732.0            | 579.10 µg/L        | 579.10 ppb         | 10:50:47      |
| 1     | Mn 257.610†        | 255591.2      | 287201.8            | 485.44 µg/L        | 485.44 ppb         | 10:50:47      |
| 1     | Mo 202.031†        | 8469.0        | 9551.2              | 506.24 µg/L        | 506.24 ppb         | 10:51:07      |
| 1     | Ni 231.604†        | 26123.9       | 29568.0             | 470.08 µg/L        | 470.08 ppb         | 10:51:07      |
| 1     | P 214.914†         | 6370.1        | 7256.8              | 2605.7 µg/L        | 2605.7 ppb         | 10:51:07      |
| 1     | Pb 220.353†        | 4320.8        | 4784.1              | 502.81 µg/L        | 502.81 ppb         | 10:51:07      |
| 1     | S 181.975 Axial†   | 2243.1        | 2419.2              | 2650.5 µg/L        | 2650.5 ppb         | 10:51:07      |
| 1     | Sb 206.836†        | 2501.5        | 2768.0              | 519.42 µg/L        | 519.42 ppb         | 10:51:07      |
| 1     | Se 196.026†        | 3944.5        | 4426.6              | 2400 µg/L          | 2400 ppb           | 10:51:07      |
| 1     | SiO2†              | 87424.7       | 95269.3             | 10544 µg/L         | 10544 ppb          | 10:50:47      |
| 1     | Si 251.611†        | 258772.7      | 290346.1            | 4946.7 µg/L        | 4946.7 ppb         | 10:50:47      |
| 1     | Sn 189.927†        | 3431.9        | 3885.8              | 498.38 µg/L        | 498.38 ppb         | 10:51:07      |
| 1     | Ti 334.940†        | 309970.2      | 349379.7            | 501.63 µg/L        | 501.63 ppb         | 10:50:47      |
| 1     | Tl 190.801†        | 1302.1        | 1550.0              | 479.30 µg/L        | 479.30 ppb         | 10:51:07      |
| 1     | U 367.007†         | 11099.3       | 12762.8             | 501.05 µg/L        | 501.05 ppb         | 10:50:47      |
| 1     | V 292.402†         | 96609.8       | 108512.2            | 500.24 µg/L        | 500.24 ppb         | 10:50:47      |
| 1     | Zn 213.857†        | 86238.9       | 96909.4             | 504.44 µg/L        | 504.44 ppb         | 10:50:47      |
| 2     | Sc RADIAL          | 68220.7       | 68220.7             | 94.7 %             |                    | 10:50:39      |
| 2     | Al 396.153Radial†  | 1300165.7     | 1372812.0           | 501250 µg/L        | 501250 ppb         | 10:50:37      |
| 2     | Ca 317.933Radial†  | 4085656.8     | 4313917.7           | 480230 µg/L        | 480230 ppb         | 10:50:37      |
| 2     | Fe 238.204 Radial† | 1897349.0     | 2004029.1           | 189570 µg/L        | 189570 ppb         | 10:50:37      |
| 2     | K 766.490 Radial†  | 11133.1       | 10685.8             | 5646.7 µg/L        | 5646.7 ppb         | 10:50:39      |
| 2     | Mg 279.077 IEC†    | 854168.2      | 901934.5            | 486330 µg/L        | 486330 ppb         | 10:50:39      |
| 2     | Na 589.592 Radial† | 29694.9       | 31316.6             | 5222.2 µg/L        | 5222.2 ppb         | 10:50:39      |
| 2     | Sr 421.552†        | 168381.3      | 178261.8            | 500.62 µg/L        | 500.62 ppb         | 10:50:39      |
| 2     | Sc 361.383         | 1188774.0     | 1188774.0           | 89.301 %           |                    | 10:51:10      |
| 2     | Y 371.029          | 635503.5      | 635503.5            | 87.723 %           |                    | 10:51:10      |
| 2     | Ag 328.068†        | 43543.2       | 50651.1             | 267.55 µg/L        | 267.55 ppb         | 10:51:10      |
| 2     | As 188.979†        | 777.4         | 900.5               | 516.86 µg/L        | 516.86 ppb         | 10:51:30      |
| 2     | B 249.677†         | 23334.0       | 25244.9             | 502.11 µg/L        | 502.11 ppb         | 10:51:10      |
| 2     | Ba 233.527†        | 49930.8       | 56153.9             | 501.63 µg/L        | 501.63 ppb         | 10:51:10      |
| 2     | Be 313.107†        | 778815.9      | 875783.8            | 227.09 µg/L        | 227.09 ppb         | 10:51:10      |
| 2     | Cd 226.502†        | 58135.4       | 65280.8             | 472.23 µg/L        | 472.23 ppb         | 10:51:10      |
| 2     | Co 228.616†        | 29118.7       | 32699.1             | 484.01 µg/L        | 484.01 ppb         | 10:51:30      |
| 2     | Cr 267.716†        | 36978.6       | 41280.1             | 484.77 µg/L        | 484.77 ppb         | 10:51:10      |
| 2     | Cu 324.752†        | 119092.7      | 127584.7            | 582.77 µg/L        | 582.77 ppb         | 10:51:10      |
| 2     | Mn 257.610†        | 256552.7      | 287139.0            | 485.66 µg/L        | 485.66 ppb         | 10:51:10      |
| 2     | Mo 202.031†        | 8523.3        | 9574.2              | 507.36 µg/L        | 507.36 ppb         | 10:51:30      |
| 2     | Ni 231.604†        | 26378.6       | 29736.8             | 472.76 µg/L        | 472.76 ppb         | 10:51:30      |
| 2     | P 214.914†         | 6451.6        | 7319.6              | 2628.3 µg/L        | 2628.3 ppb         | 10:51:30      |
| 2     | Pb 220.353†        | 4389.3        | 4841.5              | 508.75 µg/L        | 508.75 ppb         | 10:51:30      |



|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 2251.8    | 2418.9    | 2650.0 µg/L | 2650.0 ppb | 10:51:30 |
| 2 | Sb 206.836†        | 2499.9    | 2755.1    | 516.88 µg/L | 516.88 ppb | 10:51:30 |
| 2 | Se 196.026†        | 3986.4    | 4456.0    | 2410 µg/L   | 2410 ppb   | 10:51:30 |
| 2 | SiO2†              | 87864.6   | 95372.2   | 10556 µg/L  | 10556 ppb  | 10:51:10 |
| 2 | Si 251.611†        | 260358.5  | 290968.3  | 4957.3 µg/L | 4957.3 ppb | 10:51:10 |
| 2 | Sn 189.927†        | 3473.4    | 3917.0    | 502.37 µg/L | 502.37 ppb | 10:51:30 |
| 2 | Ti 334.940†        | 312150.2  | 350439.0  | 503.16 µg/L | 503.16 ppb | 10:51:10 |
| 2 | Tl 190.801†        | 1336.4    | 1582.6    | 489.34 µg/L | 489.34 ppb | 10:51:30 |
| 2 | U 367.007†         | 11019.8   | 12624.3   | 480.41 µg/L | 480.41 ppb | 10:51:10 |
| 2 | V 292.402†         | 97370.8   | 108933.7  | 502.16 µg/L | 502.16 ppb | 10:51:10 |
| 2 | Zn 213.857†        | 86607.1   | 96937.2   | 504.98 µg/L | 504.98 ppb | 10:51:10 |
| 3 | Sc RADIAL          | 66462.4   | 66462.4   | 92.3 %      |            | 10:50:43 |
| 3 | Al 396.153Radial†  | 1279316.9 | 1386534.7 | 506260 µg/L | 506260 ppb | 10:50:41 |
| 3 | Ca 317.933Radial†  | 4010658.0 | 4346761.2 | 483880 µg/L | 483880 ppb | 10:50:41 |
| 3 | Fe 238.204 Radial† | 1862042.2 | 2018763.4 | 190970 µg/L | 190970 ppb | 10:50:41 |
| 3 | K 766.490 Radial†  | 10913.9   | 10759.2   | 5685.5 µg/L | 5685.5 ppb | 10:50:43 |
| 3 | Mg 279.077 IEC†    | 841991.5  | 912597.7  | 492080 µg/L | 492080 ppb | 10:50:43 |
| 3 | Na 589.592 Radial† | 29242.5   | 31655.8   | 5278.8 µg/L | 5278.8 ppb | 10:50:43 |
| 3 | Sr 421.552†        | 166075.2  | 180466.0  | 506.89 µg/L | 506.89 ppb | 10:50:43 |
| 3 | Sc 361.383         | 1189147.6 | 1189147.6 | 89.329 %    |            | 10:51:32 |
| 3 | Y 371.029          | 636065.0  | 636065.0  | 87.800 %    |            | 10:51:32 |
| 3 | Ag 328.068†        | 43163.6   | 50210.8   | 265.32 µg/L | 265.32 ppb | 10:51:32 |
| 3 | As 188.979†        | 766.6     | 888.2     | 510.30 µg/L | 510.30 ppb | 10:51:52 |
| 3 | B 249.677†         | 22984.2   | 24845.0   | 497.39 µg/L | 497.39 ppb | 10:51:32 |
| 3 | Ba 233.527†        | 49333.6   | 55467.8   | 495.52 µg/L | 495.52 ppb | 10:51:32 |
| 3 | Be 313.107†        | 772847.6  | 868828.6  | 225.34 µg/L | 225.34 ppb | 10:51:32 |
| 3 | Cd 226.502†        | 57805.0   | 64890.4   | 469.12 µg/L | 469.12 ppb | 10:51:32 |
| 3 | Co 228.616†        | 28869.2   | 32409.5   | 479.68 µg/L | 479.68 ppb | 10:51:52 |
| 3 | Cr 267.716†        | 36731.1   | 40990.0   | 481.35 µg/L | 481.35 ppb | 10:51:32 |
| 3 | Cu 324.752†        | 117844.1  | 126145.0  | 576.59 µg/L | 576.59 ppb | 10:51:32 |
| 3 | Mn 257.610†        | 254509.2  | 284761.1  | 481.28 µg/L | 481.28 ppb | 10:51:32 |
| 3 | Mo 202.031†        | 8445.6    | 9484.2    | 502.78 µg/L | 502.78 ppb | 10:51:52 |
| 3 | Ni 231.604†        | 26189.3   | 29515.6   | 469.24 µg/L | 469.24 ppb | 10:51:52 |
| 3 | P 214.914†         | 6373.2    | 7229.6    | 2595.8 µg/L | 2595.8 ppb | 10:51:52 |
| 3 | Pb 220.353†        | 4345.6    | 4791.1    | 503.86 µg/L | 503.86 ppb | 10:51:52 |
| 3 | S 181.975 Axial†   | 2243.2    | 2408.5    | 2638.1 µg/L | 2638.1 ppb | 10:51:52 |
| 3 | Sb 206.836†        | 2487.0    | 2739.8    | 513.95 µg/L | 513.95 ppb | 10:51:52 |
| 3 | Se 196.026†        | 3940.2    | 4402.9    | 2380 µg/L   | 2380 ppb   | 10:51:52 |
| 3 | SiO2†              | 87072.8   | 94454.9   | 10454 µg/L  | 10454 ppb  | 10:51:32 |
| 3 | Si 251.611†        | 258251.2  | 288517.7  | 4916.0 µg/L | 4916.0 ppb | 10:51:32 |
| 3 | Sn 189.927†        | 3428.3    | 3865.3    | 495.78 µg/L | 495.78 ppb | 10:51:52 |
| 3 | Ti 334.940†        | 309169.5  | 346992.4  | 498.31 µg/L | 498.31 ppb | 10:51:32 |
| 3 | Tl 190.801†        | 1329.0    | 1573.8    | 486.66 µg/L | 486.66 ppb | 10:51:52 |
| 3 | U 367.007†         | 11038.1   | 12641.0   | 474.56 µg/L | 474.56 ppb | 10:51:32 |
| 3 | V 292.402†         | 96596.4   | 108032.6  | 498.21 µg/L | 498.21 ppb | 10:51:32 |
| 3 | Zn 213.857†        | 85960.6   | 96183.0   | 500.27 µg/L | 500.27 ppb | 10:51:32 |

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Mean Data: ICSAB

| Analyte  | Mean Corrected Intensity | Conc. Units | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|-------------|-----------------|--------------------|----------|-------|
| Sc 361.383   | 1187327.3                | 89.192 %    | 0.2130          |                    |          | 0.24% |
| Sc RADIAL  | 67265.8                  | 93.4 %      | 1.23            |                    |          | 1.32% |
| Y 371.029  | 635183.6                 | 87.678 %    | 0.1487          |                    |          | 0.17% |
| Ag 328.068†  | 50537.8                  | 266.97 µg/L | 1.444           | 266.97 ppb         | 1.444    | 0.54% |
| QC value within limits for Ag 328.068 Recovery = 106.79%       |                          |             |                 |                    |          |       |
| Al 396.153Radial†  | 1376840.0                | 502720 µg/L | 3080.1          | 502720 ppb         | 3080.1   | 0.61% |
| QC value within limits for Al 396.153Radial Recovery = 100.54% |                          |             |                 |                    |          |       |
| As 188.979†  | 895.6                    | 514.21 µg/L | 3.457           | 514.21 ppb         | 3.457    | 0.67% |
| QC value within limits for As 188.979 Recovery = 102.84%       |                          |             |                 |                    |          |       |
| B 249.677†   | 25067.9                  | 499.76 µg/L | 2.364           | 499.76 ppb         | 2.364    | 0.47% |
| QC value within limits for B 249.677 Recovery = 99.95%         |                          |             |                 |                    |          |       |
| Ba 233.527†  | 55903.1                  | 499.39 µg/L | 3.370           | 499.39 ppb         | 3.370    | 0.67% |
| QC value within limits for Ba 233.527 Recovery = 99.88%        |                          |             |                 |                    |          |       |
| Be 313.107†  | 873410.1                 | 226.50 µg/L | 1.001           | 226.50 ppb         | 1.001    | 0.44% |
| QC value within limits for Be 313.107 Recovery = 90.60%        |                          |             |                 |                    |          |       |
| Ca 317.933Radial†  | 4319689.9                | 480870 µg/L | 2749.2          | 480870 ppb         | 2749.2   | 0.57% |
| QC value within limits for Ca 317.933Radial Recovery = 96.17%  |                          |             |                 |                    |          |       |
| Cd 226.502†  | 65151.1                  | 471.22 µg/L | 1.822           | 471.22 ppb         | 1.822    | 0.39% |
| QC value within limits for Cd 226.502 Recovery = 94.24%        |                          |             |                 |                    |          |       |
| Co 228.616†  | 32560.1                  | 481.94 µg/L | 2.169           | 481.94 ppb         | 2.169    | 0.45% |

|   |           |             |        |            |        |       |  |
|---|-----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Co 228.616 Recovery = 96.39%         |           |             |        |            |        |       |  |
| Cr 267.716†   | 41186.8   | 483.64 µg/L | 1.987  | 483.64 ppb | 1.987  | 0.41% |  |
| QC value within limits for Cr 267.716 Recovery = 96.73%         |           |             |        |            |        |       |  |
| Cu 324.752†   | 126820.6  | 579.49 µg/L | 3.111  | 579.49 ppb | 3.111  | 0.54% |  |
| QC value within limits for Cu 324.752 Recovery = 115.90%        |           |             |        |            |        |       |  |
| Fe 238.204 Radial†  | 2006703.7 | 189820 µg/L | 1037.7 | 189820 ppb | 1037.7 | 0.55% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 94.91%  |           |             |        |            |        |       |  |
| K 766.490 Radial†   | 10748.7   | 5679.8 µg/L | 30.65  | 5679.8 ppb | 30.65  | 0.54% |  |
| QC value within limits for K 766.490 Radial Recovery = 113.60%  |           |             |        |            |        |       |  |
| Mg 279.077 IEC†   | 911125.3  | 491280 µg/L | 4609.7 | 491280 ppb | 4609.7 | 0.94% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 98.26%     |           |             |        |            |        |       |  |
| Mn 257.610†   | 286367.3  | 484.13 µg/L | 2.465  | 484.13 ppb | 2.465  | 0.51% |  |
| QC value within limits for Mn 257.610 Recovery = 96.83%         |           |             |        |            |        |       |  |
| Mo 202.031†   | 9536.6    | 505.46 µg/L | 2.390  | 505.46 ppb | 2.390  | 0.47% |  |
| QC value within limits for Mo 202.031 Recovery = 101.09%        |           |             |        |            |        |       |  |
| Na 589.592 Radial†  | 31552.2   | 5261.5 µg/L | 34.10  | 5261.5 ppb | 34.10  | 0.65% |  |
| QC value within limits for Na 589.592 Radial Recovery = 105.23% |           |             |        |            |        |       |  |
| Ni 231.604†   | 29606.8   | 470.69 µg/L | 1.838  | 470.69 ppb | 1.838  | 0.39% |  |
| QC value within limits for Ni 231.604 Recovery = 94.14%         |           |             |        |            |        |       |  |
| P 214.914†  | 7268.7    | 2610.0 µg/L | 16.66  | 2610.0 ppb | 16.66  | 0.64% |  |
| QC value within limits for P 214.914 Recovery = 104.40%         |           |             |        |            |        |       |  |
| Pb 220.353†   | 4805.5    | 505.14 µg/L | 3.173  | 505.14 ppb | 3.173  | 0.63% |  |
| QC value within limits for Pb 220.353 Recovery = 101.03%        |           |             |        |            |        |       |  |
| S 181.975 Axial†  | 2415.5    | 2646.2 µg/L | 7.04   | 2646.2 ppb | 7.04   | 0.27% |  |
| QC value within limits for S 181.975 Axial Recovery = 105.85%   |           |             |        |            |        |       |  |
| Sb 206.836†   | 2754.3    | 516.75 µg/L | 2.737  | 516.75 ppb | 2.737  | 0.53% |  |
| QC value within limits for Sb 206.836 Recovery = 103.35%        |           |             |        |            |        |       |  |
| Se 196.026†   | 4428.5    | 2400 µg/L   | 13.7   | 2400 ppb   | 13.7   | 0.57% |  |
| QC value within limits for Se 196.026 Recovery = 95.86%         |           |             |        |            |        |       |  |
| SiO2†   | 95032.1   | 10518 µg/L  | 55.6   | 10518 ppb  | 55.6   | 0.53% |  |
| QC value within limits for SiO2 Recovery = 98.34%               |           |             |        |            |        |       |  |
| Si 251.611†   | 289944.0  | 4940.0 µg/L | 21.49  | 4940.0 ppb | 21.49  | 0.43% |  |
| QC value within limits for Si 251.611 Recovery = 98.80%         |           |             |        |            |        |       |  |
| Sn 189.927†   | 3889.4    | 498.85 µg/L | 3.323  | 498.85 ppb | 3.323  | 0.67% |  |
| QC value within limits for Sn 189.927 Recovery = 99.77%         |           |             |        |            |        |       |  |
| Sr 421.552†   | 179441.1  | 504.02 µg/L | 3.168  | 504.02 ppb | 3.168  | 0.63% |  |
| QC value within limits for Sr 421.552 Recovery = 100.80%        |           |             |        |            |        |       |  |
| Ti 334.940†   | 348937.0  | 501.03 µg/L | 2.481  | 501.03 ppb | 2.481  | 0.50% |  |
| QC value within limits for Ti 334.940 Recovery = 100.21%        |           |             |        |            |        |       |  |
| Tl 190.801†   | 1568.8    | 485.10 µg/L | 5.198  | 485.10 ppb | 5.198  | 1.07% |  |
| QC value within limits for Tl 190.801 Recovery = 97.02%         |           |             |        |            |        |       |  |
| U 367.007†  | 12676.1   | 485.34 µg/L | 13.918 | 485.34 ppb | 13.918 | 2.87% |  |
| QC value within limits for U 367.007 Recovery = 97.07%          |           |             |        |            |        |       |  |
| V 292.402†  | 108492.8  | 500.20 µg/L | 1.975  | 500.20 ppb | 1.975  | 0.39% |  |
| QC value within limits for V 292.402 Recovery = 100.04%         |           |             |        |            |        |       |  |
| Zn 213.857†   | 96676.6   | 503.23 µg/L | 2.576  | 503.23 ppb | 2.576  | 0.51% |  |
| QC value within limits for Zn 213.857 Recovery = 100.65%        |           |             |        |            |        |       |  |
| All analyte(s) passed QC.                                       |           |             |        |            |        |       |  |

Sequence No.: 16

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 11/11/2016 10:52:00

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71637.9       | 71637.9             | 99.4 %             |                    | 10:52:28      |
| 1     | Al 396.153Radial†  | 14113.5       | 14090.6             | 5144.9 µg/L        | 5144.9 ppb         | 10:52:28      |
| 1     | Ca 317.933Radial†  | 46541.2       | 46457.9             | 5171.7 µg/L        | 5171.7 ppb         | 10:52:28      |
| 1     | Fe 238.204 Radial† | 53294.1       | 54109.7             | 5118.5 µg/L        | 5118.5 ppb         | 10:52:28      |
| 1     | K 766.490 Radial†  | 10667.7       | 9657.1              | 5076.3 µg/L        | 5076.3 ppb         | 10:52:28      |
| 1     | Mg 279.077 IEC†    | 9503.2        | 9529.4              | 5139.3 µg/L        | 5139.3 ppb         | 10:52:28      |
| 1     | Na 589.592 Radial† | 58760.9       | 59049.2             | 9846.7 µg/L        | 9846.7 ppb         | 10:52:26      |
| 1     | Sr 421.552†        | 172024.3      | 173443.7            | 503.03 µg/L        | 503.03 ppb         | 10:52:26      |
| 1     | Sc 361.383         | 1335020.6     | 1335020.6           | 100.29 %           |                    | 10:52:40      |
| 1     | Y 371.029          | 716614.2      | 716614.2            | 98.919 %           |                    | 10:52:40      |
| 1     | Ag 328.068†        | 94550.9       | 96171.4             | 496.28 µg/L        | 496.28 ppb         | 10:52:42      |
| 1     | As 188.979†        | 905.6         | 932.9               | 512.01 µg/L        | 512.01 ppb         | 10:53:02      |
| 1     | B 249.677†         | 35597.8       | 34611.2             | 501.51 µg/L        | 501.51 ppb         | 10:52:42      |
| 1     | Ba 233.527†        | 55617.2       | 55699.0             | 496.68 µg/L        | 496.68 ppb         | 10:52:42      |
| 1     | Be 313.107†        | 1814579.7     | 1813048.3           | 482.41 µg/L        | 482.41 ppb         | 10:52:40      |
| 1     | Cd 226.502†        | 65241.9       | 65235.4             | 493.01 µg/L        | 493.01 ppb         | 10:52:42      |
| 1     | Co 228.616†        | 33328.8       | 33325.1             | 495.56 µg/L        | 495.56 ppb         | 10:52:42      |
| 1     | Cr 267.716†        | 42452.4       | 42202.0             | 495.93 µg/L        | 495.93 ppb         | 10:52:42      |
| 1     | Cu 324.752†        | 117764.3      | 111650.8            | 493.49 µg/L        | 493.49 ppb         | 10:52:42      |
| 1     | Mn 257.610†        | 284114.6      | 283150.5            | 496.07 µg/L        | 496.07 ppb         | 10:52:42      |
| 1     | Mo 202.031†        | 9658.6        | 9660.7              | 502.27 µg/L        | 502.27 ppb         | 10:53:02      |
| 1     | Ni 231.604†        | 31039.1       | 31148.1             | 495.20 µg/L        | 495.20 ppb         | 10:52:42      |
| 1     | P 214.914†         | 6867.2        | 6942.6              | 2502.2 µg/L        | 2502.2 ppb         | 10:53:02      |
| 1     | Pb 220.353†        | 5051.0        | 4962.8              | 501.61 µg/L        | 501.61 ppb         | 10:53:02      |
| 1     | S 181.975 Axial†   | 1000.6        | 895.1               | 998.01 µg/L        | 998.01 ppb         | 10:53:02      |
| 1     | Sb 206.836†        | 2649.0        | 2597.2              | 493.68 µg/L        | 493.68 ppb         | 10:53:02      |
| 1     | Se 196.026†        | 976.2         | 965.4               | 508 µg/L           | 508 ppb            | 10:53:02      |
| 1     | SiO2†              | 52267.7       | 49098.6             | 5434.1 µg/L        | 5434.1 ppb         | 10:52:42      |
| 1     | Si 251.611†        | 151010.2      | 149994.0            | 2543.8 µg/L        | 2543.8 ppb         | 10:52:42      |
| 1     | Sn 189.927†        | 3906.5        | 3922.9              | 501.59 µg/L        | 501.59 ppb         | 10:53:02      |
| 1     | Ti 334.940†        | 346279.1      | 346178.5            | 491.74 µg/L        | 491.74 ppb         | 10:52:42      |
| 1     | Tl 190.801†        | 1548.2        | 1629.8              | 500.73 µg/L        | 500.73 ppb         | 10:53:02      |
| 1     | U 367.007†         | 3703.2        | 3976.8              | 460.98 µg/L        | 460.98 ppb         | 10:52:42      |
| 1     | V 292.402†         | 110464.2      | 110045.1            | 494.46 µg/L        | 494.46 ppb         | 10:52:42      |
| 1     | Zn 213.857†        | 87818.2       | 87520.7             | 495.22 µg/L        | 495.22 ppb         | 10:52:42      |
| 2     | Sc RADIAL          | 72195.8       | 72195.8             | 100 %              |                    | 10:52:33      |
| 2     | Al 396.153Radial†  | 14363.4       | 14230.3             | 5195.9 µg/L        | 5195.9 ppb         | 10:52:33      |
| 2     | Ca 317.933Radial†  | 47057.2       | 46611.1             | 5188.8 µg/L        | 5188.8 ppb         | 10:52:33      |
| 2     | Fe 238.204 Radial† | 54054.6       | 54454.4             | 5151.1 µg/L        | 5151.1 ppb         | 10:52:33      |
| 2     | K 766.490 Radial†  | 10721.9       | 9628.2              | 5061.1 µg/L        | 5061.1 ppb         | 10:52:33      |
| 2     | Mg 279.077 IEC†    | 9573.4        | 9525.6              | 5137.3 µg/L        | 5137.3 ppb         | 10:52:33      |
| 2     | Na 589.592 Radial† | 57807.5       | 57641.2             | 9611.9 µg/L        | 9611.9 ppb         | 10:52:31      |
| 2     | Sr 421.552†        | 168997.5      | 169086.7            | 490.39 µg/L        | 490.39 ppb         | 10:52:31      |
| 2     | Sc 361.383         | 1360508.5     | 1360508.5           | 102.20 %           |                    | 10:53:05      |
| 2     | Y 371.029          | 729628.2      | 729628.2            | 100.72 %           |                    | 10:53:05      |
| 2     | Ag 328.068†        | 94973.0       | 94818.2             | 489.30 µg/L        | 489.30 ppb         | 10:53:07      |
| 2     | As 188.979†        | 895.4         | 906.0               | 497.33 µg/L        | 497.33 ppb         | 10:53:27      |
| 2     | B 249.677†         | 35950.0       | 34290.8             | 496.93 µg/L        | 496.93 ppb         | 10:53:07      |
| 2     | Ba 233.527†        | 56052.3       | 55085.7             | 491.21 µg/L        | 491.21 ppb         | 10:53:07      |
| 2     | Be 313.107†        | 1862812.3     | 1826344.7           | 486.17 µg/L        | 486.17 ppb         | 10:53:05      |
| 2     | Cd 226.502†        | 65877.6       | 64638.6             | 488.49 µg/L        | 488.49 ppb         | 10:53:07      |
| 2     | Co 228.616†        | 33757.5       | 33121.9             | 492.54 µg/L        | 492.54 ppb         | 10:53:07      |
| 2     | Cr 267.716†        | 42827.1       | 41775.7             | 490.93 µg/L        | 490.93 ppb         | 10:53:07      |
| 2     | Cu 324.752†        | 118915.3      | 110577.1            | 488.75 µg/L        | 488.75 ppb         | 10:53:07      |
| 2     | Mn 257.610†        | 285977.6      | 279665.9            | 489.96 µg/L        | 489.96 ppb         | 10:53:07      |
| 2     | Mo 202.031†        | 9591.5        | 9414.7              | 489.48 µg/L        | 489.48 ppb         | 10:53:27      |
| 2     | Ni 231.604†        | 31241.9       | 30766.7             | 489.13 µg/L        | 489.13 ppb         | 10:53:07      |
| 2     | P 214.914†         | 6816.8        | 6765.1              | 2438.2 µg/L        | 2438.2 ppb         | 10:53:27      |
| 2     | Pb 220.353†        | 5042.8        | 4860.5              | 491.27 µg/L        | 491.27 ppb         | 10:53:27      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 987.5     | 863.6     | 962.79 µg/L | 962.79 ppb | 10:53:27 |
| 2 | Sb 206.836†        | 2637.0    | 2535.9    | 481.93 µg/L | 481.93 ppb | 10:53:27 |
| 2 | Se 196.026†        | 985.0     | 955.8     | 503 µg/L    | 503 ppb    | 10:53:27 |
| 2 | SiO2†              | 52673.4   | 48519.1   | 5370.0 µg/L | 5370.0 ppb | 10:53:07 |
| 2 | Si 251.611†        | 152422.1  | 148554.6  | 2519.4 µg/L | 2519.4 ppb | 10:53:07 |
| 2 | Sn 189.927†        | 3884.2    | 3828.0    | 489.46 µg/L | 489.46 ppb | 10:53:27 |
| 2 | Ti 334.940†        | 348317.1  | 341703.9  | 485.38 µg/L | 485.38 ppb | 10:53:07 |
| 2 | Tl 190.801†        | 1545.0    | 1597.7    | 490.87 µg/L | 490.87 ppb | 10:53:27 |
| 2 | U 367.007†         | 3702.0    | 3906.4    | 452.14 µg/L | 452.14 ppb | 10:53:07 |
| 2 | V 292.402†         | 111394.9  | 108892.2  | 489.29 µg/L | 489.29 ppb | 10:53:07 |
| 2 | Zn 213.857†        | 88595.5   | 86640.8   | 490.23 µg/L | 490.23 ppb | 10:53:07 |
| 3 | Sc RADIAL          | 73764.2   | 73764.2   | 102 %       |            | 10:52:37 |
| 3 | Al 396.153Radial†  | 14599.3   | 14155.9   | 5168.8 µg/L | 5168.8 ppb | 10:52:37 |
| 3 | Ca 317.933Radial†  | 47936.5   | 46471.4   | 5173.2 µg/L | 5173.2 ppb | 10:52:37 |
| 3 | Fe 238.204 Radial† | 55105.3   | 54333.7   | 5139.7 µg/L | 5139.7 ppb | 10:52:37 |
| 3 | K 766.490 Radial†  | 10872.5   | 9547.8    | 5018.9 µg/L | 5018.9 ppb | 10:52:37 |
| 3 | Mg 279.077 IEC†    | 9740.4    | 9485.7    | 5115.7 µg/L | 5115.7 ppb | 10:52:37 |
| 3 | Na 589.592 Radial† | 58446.7   | 57039.1   | 9511.5 µg/L | 9511.5 ppb | 10:52:35 |
| 3 | Sr 421.552†        | 171035.2  | 167491.5  | 485.76 µg/L | 485.76 ppb | 10:52:35 |
| 3 | Sc 361.383         | 1345798.0 | 1345798.0 | 101.10 %    |            | 10:53:29 |
| 3 | Y 371.029          | 721991.1  | 721991.1  | 99.661 %    |            | 10:53:29 |
| 3 | Ag 328.068†        | 95338.0   | 96194.9   | 496.39 µg/L | 496.39 ppb | 10:53:31 |
| 3 | As 188.979†        | 891.4     | 911.7     | 500.47 µg/L | 500.47 ppb | 10:53:51 |
| 3 | B 249.677†         | 36084.2   | 34808.0   | 504.36 µg/L | 504.36 ppb | 10:53:31 |
| 3 | Ba 233.527†        | 56121.5   | 55753.7   | 497.16 µg/L | 497.16 ppb | 10:53:31 |
| 3 | Be 313.107†        | 1820208.2 | 1804125.8 | 479.98 µg/L | 479.98 ppb | 10:53:29 |
| 3 | Cd 226.502†        | 66196.5   | 65658.7   | 496.21 µg/L | 496.21 ppb | 10:53:31 |
| 3 | Co 228.616†        | 33833.0   | 33557.7   | 499.02 µg/L | 499.02 ppb | 10:53:31 |
| 3 | Cr 267.716†        | 42796.2   | 42203.1   | 495.92 µg/L | 495.92 ppb | 10:53:31 |
| 3 | Cu 324.752†        | 119061.2  | 111993.2  | 495.02 µg/L | 495.02 ppb | 10:53:31 |
| 3 | Mn 257.610†        | 287100.4  | 283835.2  | 497.27 µg/L | 497.27 ppb | 10:53:31 |
| 3 | Mo 202.031†        | 9561.9    | 9487.9    | 493.29 µg/L | 493.29 ppb | 10:53:51 |
| 3 | Ni 231.604†        | 31409.9   | 31267.0   | 497.09 µg/L | 497.09 ppb | 10:53:31 |
| 3 | P 214.914†         | 6792.5    | 6813.9    | 2455.8 µg/L | 2455.8 ppb | 10:53:51 |
| 3 | Pb 220.353†        | 4993.3    | 4865.4    | 491.73 µg/L | 491.73 ppb | 10:53:51 |
| 3 | S 181.975 Axial†   | 997.4     | 883.9     | 985.50 µg/L | 985.50 ppb | 10:53:51 |
| 3 | Sb 206.836†        | 2629.3    | 2556.5    | 485.83 µg/L | 485.83 ppb | 10:53:51 |
| 3 | Se 196.026†        | 967.5     | 949.0     | 500 µg/L    | 500 ppb    | 10:53:51 |
| 3 | SiO2†              | 52900.1   | 49306.6   | 5457.1 µg/L | 5457.1 ppb | 10:53:31 |
| 3 | Si 251.611†        | 152720.3  | 150479.8  | 2552.0 µg/L | 2552.0 ppb | 10:53:31 |
| 3 | Sn 189.927†        | 3868.2    | 3853.8    | 492.75 µg/L | 492.75 ppb | 10:53:51 |
| 3 | Ti 334.940†        | 349202.2  | 346304.7  | 491.90 µg/L | 491.90 ppb | 10:53:31 |
| 3 | Tl 190.801†        | 1550.2    | 1619.4    | 497.54 µg/L | 497.54 ppb | 10:53:51 |
| 3 | U 367.007†         | 3959.4    | 4200.6    | 488.40 µg/L | 488.40 ppb | 10:53:31 |
| 3 | V 292.402†         | 111907.3  | 110590.4  | 496.92 µg/L | 496.92 ppb | 10:53:31 |
| 3 | Zn 213.857†        | 88873.7   | 87863.4   | 497.16 µg/L | 497.16 ppb | 10:53:31 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 1347109.1                | 101.19 %           | 0.961    |                    |          | 0.95% |
| Sc RADIAL  | 72532.6                  | 101 %              | 1.5      |                    |          | 1.52% |
| Y 371.029  | 722744.5                 | 99.765 %           | 0.9027   |                    |          | 0.90% |
| Ag 328.068†  | 95728.2                  | 493.99 µg/L        | 4.059    | 493.99 ppb         | 4.059    | 0.82% |
| QC value within limits for Ag 328.068 Recovery = 98.80%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 14159.0                  | 5169.9 µg/L        | 25.52    | 5169.9 ppb         | 25.52    | 0.49% |
| QC value within limits for Al 396.153Radial Recovery = 103.40% |                          |                    |          |                    |          |       |
| As 188.979†  | 916.9                    | 503.27 µg/L        | 7.726    | 503.27 ppb         | 7.726    | 1.54% |
| QC value within limits for As 188.979 Recovery = 100.65%       |                          |                    |          |                    |          |       |
| B 249.677†   | 34570.0                  | 500.93 µg/L        | 3.749    | 500.93 ppb         | 3.749    | 0.75% |
| QC value within limits for B 249.677 Recovery = 100.19%        |                          |                    |          |                    |          |       |
| Ba 233.527†  | 55512.8                  | 495.02 µg/L        | 3.307    | 495.02 ppb         | 3.307    | 0.67% |
| QC value within limits for Ba 233.527 Recovery = 99.00%        |                          |                    |          |                    |          |       |
| Be 313.107†  | 1814506.3                | 482.86 µg/L        | 3.120    | 482.86 ppb         | 3.120    | 0.65% |
| QC value within limits for Be 313.107 Recovery = 96.57%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 46513.5                  | 5177.9 µg/L        | 9.44     | 5177.9 ppb         | 9.44     | 0.18% |
| QC value within limits for Ca 317.933Radial Recovery = 103.56% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 65177.6                  | 492.57 µg/L        | 3.878    | 492.57 ppb         | 3.878    | 0.79% |
| QC value within limits for Cd 226.502 Recovery = 98.51%        |                          |                    |          |                    |          |       |
| Co 228.616†  | 33334.9                  | 495.71 µg/L        | 3.243    | 495.71 ppb         | 3.243    | 0.65% |

|   |          |             |        |            |        |       |  |
|---|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Co 228.616 Recovery = 99.14%         |          |             |        |            |        |       |  |
| Cr 267.716†   | 42060.3  | 494.26 µg/L | 2.887  | 494.26 ppb | 2.887  | 0.58% |  |
| QC value within limits for Cr 267.716 Recovery = 98.85%         |          |             |        |            |        |       |  |
| Cu 324.752†   | 111407.0 | 492.42 µg/L | 3.272  | 492.42 ppb | 3.272  | 0.66% |  |
| QC value within limits for Cu 324.752 Recovery = 98.48%         |          |             |        |            |        |       |  |
| Fe 238.204 Radial†  | 54299.3  | 5136.5 µg/L | 16.55  | 5136.5 ppb | 16.55  | 0.32% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 102.73% |          |             |        |            |        |       |  |
| K 766.490 Radial†   | 9611.0   | 5052.1 µg/L | 29.74  | 5052.1 ppb | 29.74  | 0.59% |  |
| QC value within limits for K 766.490 Radial Recovery = 101.04%  |          |             |        |            |        |       |  |
| Mg 279.077 IEC†   | 9513.6   | 5130.8 µg/L | 13.06  | 5130.8 ppb | 13.06  | 0.25% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 102.62%    |          |             |        |            |        |       |  |
| Mn 257.610†   | 282217.2 | 494.43 µg/L | 3.919  | 494.43 ppb | 3.919  | 0.79% |  |
| QC value within limits for Mn 257.610 Recovery = 98.89%         |          |             |        |            |        |       |  |
| Mo 202.031†   | 9521.1   | 495.01 µg/L | 6.566  | 495.01 ppb | 6.566  | 1.33% |  |
| QC value within limits for Mo 202.031 Recovery = 99.00%         |          |             |        |            |        |       |  |
| Na 589.592 Radial†  | 57909.8  | 9656.7 µg/L | 172.03 | 9656.7 ppb | 172.03 | 1.78% |  |
| QC value within limits for Na 589.592 Radial Recovery = 96.57%  |          |             |        |            |        |       |  |
| Ni 231.604†   | 31060.6  | 493.81 µg/L | 4.155  | 493.81 ppb | 4.155  | 0.84% |  |
| QC value within limits for Ni 231.604 Recovery = 98.76%         |          |             |        |            |        |       |  |
| P 214.914†  | 6840.6   | 2465.4 µg/L | 33.06  | 2465.4 ppb | 33.06  | 1.34% |  |
| QC value within limits for P 214.914 Recovery = 98.61%          |          |             |        |            |        |       |  |
| Pb 220.353†   | 4896.2   | 494.87 µg/L | 5.843  | 494.87 ppb | 5.843  | 1.18% |  |
| QC value within limits for Pb 220.353 Recovery = 98.97%         |          |             |        |            |        |       |  |
| S 181.975 Axial†  | 880.9    | 982.10 µg/L | 17.854 | 982.10 ppb | 17.854 | 1.82% |  |
| QC value within limits for S 181.975 Axial Recovery = 98.21%    |          |             |        |            |        |       |  |
| Sb 206.836†   | 2563.2   | 487.15 µg/L | 5.988  | 487.15 ppb | 5.988  | 1.23% |  |
| QC value within limits for Sb 206.836 Recovery = 97.43%         |          |             |        |            |        |       |  |
| Se 196.026†   | 956.7    | 504 µg/L    | 4.3    | 504 ppb    | 4.3    | 0.86% |  |
| QC value within limits for Se 196.026 Recovery = 100.79%        |          |             |        |            |        |       |  |
| SiO2†   | 48974.8  | 5420.4 µg/L | 45.17  | 5420.4 ppb | 45.17  | 0.83% |  |
| QC value within limits for SiO2 Recovery = 101.36%              |          |             |        |            |        |       |  |
| Si 251.611†   | 149676.1 | 2538.4 µg/L | 16.97  | 2538.4 ppb | 16.97  | 0.67% |  |
| QC value within limits for Si 251.611 Recovery = 101.54%        |          |             |        |            |        |       |  |
| Sn 189.927†   | 3868.2   | 494.60 µg/L | 6.270  | 494.60 ppb | 6.270  | 1.27% |  |
| QC value within limits for Sn 189.927 Recovery = 98.92%         |          |             |        |            |        |       |  |
| Sr 421.552†   | 170007.3 | 493.06 µg/L | 8.939  | 493.06 ppb | 8.939  | 1.81% |  |
| QC value within limits for Sr 421.552 Recovery = 98.61%         |          |             |        |            |        |       |  |
| Ti 334.940†   | 344729.0 | 489.67 µg/L | 3.717  | 489.67 ppb | 3.717  | 0.76% |  |
| QC value within limits for Ti 334.940 Recovery = 97.93%         |          |             |        |            |        |       |  |
| Tl 190.801†   | 1615.7   | 496.38 µg/L | 5.034  | 496.38 ppb | 5.034  | 1.01% |  |
| QC value within limits for Tl 190.801 Recovery = 99.28%         |          |             |        |            |        |       |  |
| U 367.007†  | 4028.0   | 467.17 µg/L | 18.908 | 467.17 ppb | 18.908 | 4.05% |  |
| QC value within limits for U 367.007 Recovery = 93.43%          |          |             |        |            |        |       |  |
| V 292.402†  | 109842.6 | 493.56 µg/L | 3.895  | 493.56 ppb | 3.895  | 0.79% |  |
| QC value within limits for V 292.402 Recovery = 98.71%          |          |             |        |            |        |       |  |
| Zn 213.857†   | 87341.6  | 494.20 µg/L | 3.576  | 494.20 ppb | 3.576  | 0.72% |  |
| QC value within limits for Zn 213.857 Recovery = 98.84%         |          |             |        |            |        |       |  |
| All analyte(s) passed QC.                                       |          |             |        |            |        |       |  |

Sequence No.: 17

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/11/2016 10:53:59

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71564.7       | 71564.7             | 99.3 %             |                    | 10:54:24      |
| 1     | Al 396.153Radial†  | 200.2         | 99.9                | 36.475 µg/L        | 36.475 ppb         | 10:54:44      |
| 1     | Ca 317.933Radial†  | 553.4         | 213.9               | 23.808 µg/L        | 23.808 ppb         | 10:54:44      |
| 1     | Fe 238.204 Radial† | -370.9        | 144.7               | 13.686 µg/L        | 13.686 ppb         | 10:54:44      |
| 1     | K 766.490 Radial†  | 1121.1        | 58.3                | 30.626 µg/L        | 30.626 ppb         | 10:54:24      |
| 1     | Mg 279.077 IEC†    | 89.7          | 63.5                | 34.223 µg/L        | 34.223 ppb         | 10:54:44      |
| 1     | Na 589.592 Radial† | 113.3         | 74.3                | 12.386 µg/L        | 12.386 ppb         | 10:54:24      |
| 1     | Sr 421.552†        | -458.7        | -2.7                | -0.0086 µg/L       | -0.0086 ppb        | 10:54:44      |
| 1     | Sc 361.383         | 1317500.6     | 1317500.6           | 98.971 %           |                    | 10:55:31      |
| 1     | Y 371.029          | 716906.5      | 716906.5            | 98.959 %           |                    | 10:55:31      |
| 1     | Ag 328.068†        | -1941.1       | -70.4               | -0.3688 µg/L       | -0.3688 ppb        | 10:55:33      |
| 1     | As 188.979†        | -23.8         | 5.9                 | 3.1909 µg/L        | 3.1909 ppb         | 10:55:53      |
| 1     | B 249.677†         | 936.3         | 61.2                | 0.8896 µg/L        | 0.8896 ppb         | 10:55:33      |
| 1     | Ba 233.527†        | -228.0        | 10.4                | 0.0928 µg/L        | 0.0928 ppb         | 10:55:53      |
| 1     | Be 313.107†        | -3056.5       | 567.7               | 0.1563 µg/L        | 0.1563 ppb         | 10:55:33      |
| 1     | Cd 226.502†        | -148.1        | 30.4                | 0.2281 µg/L        | 0.2281 ppb         | 10:55:53      |
| 1     | Co 228.616†        | -67.1         | 23.7                | 0.3527 µg/L        | 0.3527 ppb         | 10:55:53      |
| 1     | Cr 267.716†        | 145.9         | 18.4                | 0.2071 µg/L        | 0.2071 ppb         | 10:55:53      |
| 1     | Cu 324.752†        | 5586.6        | -132.2              | -0.5736 µg/L       | -0.5736 ppb        | 10:55:33      |
| 1     | Mn 257.610†        | 215.1         | 65.4                | 0.1133 µg/L        | 0.1133 ppb         | 10:55:53      |
| 1     | Mo 202.031†        | -17.1         | 12.5                | 0.6491 µg/L        | 0.6491 ppb         | 10:55:53      |
| 1     | Ni 231.604†        | -195.2        | 0.5                 | 0.0082 µg/L        | 0.0082 ppb         | 10:55:53      |
| 1     | P 214.914†         | -77.6         | 16.6                | 5.9972 µg/L        | 5.9972 ppb         | 10:55:53      |
| 1     | Pb 220.353†        | 76.6          | 3.6                 | 0.3585 µg/L        | 0.3585 ppb         | 10:55:53      |
| 1     | S 181.975 Axial†   | 93.5          | -8.2                | -9.1585 µg/L       | -9.1585 ppb        | 10:55:53      |
| 1     | Sb 206.836†        | 71.0          | 27.4                | 5.2901 µg/L        | 5.2901 ppb         | 10:55:53      |
| 1     | Se 196.026†        | 10.6          | 2.7                 | 1.41 µg/L          | 1.41 ppb           | 10:55:53      |
| 1     | Si02†              | 2818.0        | -172.5              | -19.090 µg/L       | -19.090 ppb        | 10:55:33      |
| 1     | Si 251.611†        | 438.3         | -141.6              | -2.3991 µg/L       | -2.3991 ppb        | 10:55:33      |
| 1     | Sn 189.927†        | -19.3         | 7.9                 | 1.0161 µg/L        | 1.0161 ppb         | 10:55:53      |
| 1     | Ti 334.940†        | -620.8        | 262.0               | 0.3672 µg/L        | 0.3672 ppb         | 10:55:33      |
| 1     | Tl 190.801†        | -79.8         | 5.4                 | 1.6605 µg/L        | 1.6605 ppb         | 10:55:53      |
| 1     | U 367.007†         | -197.0        | 85.2                | 10.403 µg/L        | 10.403 ppb         | 10:55:33      |
| 1     | V 292.402†         | -77.2         | -181.3              | -0.8075 µg/L       | -0.8075 ppb        | 10:55:33      |
| 1     | Zn 213.857†        | 57.3          | 11.4                | 0.0620 µg/L        | 0.0620 ppb         | 10:55:53      |
| 2     | Sc RADIAL          | 69367.3       | 69367.3             | 96.3 %             |                    | 10:54:46      |
| 2     | Al 396.153Radial†  | 254.7         | 162.8               | 59.439 µg/L        | 59.439 ppb         | 10:55:06      |
| 2     | Ca 317.933Radial†  | 758.9         | 444.9               | 49.532 µg/L        | 49.532 ppb         | 10:55:06      |
| 2     | Fe 238.204 Radial† | -273.9        | 233.6               | 22.097 µg/L        | 22.097 ppb         | 10:55:06      |
| 2     | K 766.490 Radial†  | 975.4         | -57.2               | -30.079 µg/L       | -30.079 ppb        | 10:54:46      |
| 2     | Mg 279.077 IEC†    | 122.6         | 100.5               | 54.189 µg/L        | 54.189 ppb         | 10:55:06      |
| 2     | Na 589.592 Radial† | 197.8         | 165.7               | 27.630 µg/L        | 27.630 ppb         | 10:54:46      |
| 2     | Sr 421.552†        | -419.4        | 23.5                | 0.0664 µg/L        | 0.0664 ppb         | 10:55:06      |
| 2     | Sc 361.383         | 1338650.9     | 1338650.9           | 100.56 %           |                    | 10:55:55      |
| 2     | Y 371.029          | 728557.7      | 728557.7            | 100.57 %           |                    | 10:55:55      |
| 2     | Ag 328.068†        | -1733.1       | 167.4               | 0.8629 µg/L        | 0.8629 ppb         | 10:55:57      |
| 2     | As 188.979†        | -26.4         | 3.7                 | 2.0129 µg/L        | 2.0129 ppb         | 10:56:17      |
| 2     | B 249.677†         | 937.8         | 47.7                | 0.7028 µg/L        | 0.7028 ppb         | 10:55:57      |
| 2     | Ba 233.527†        | -213.3        | 28.6                | 0.2553 µg/L        | 0.2553 ppb         | 10:56:17      |
| 2     | Be 313.107†        | -3181.0       | 492.6               | 0.1291 µg/L        | 0.1291 ppb         | 10:55:57      |
| 2     | Cd 226.502†        | -159.5        | 21.4                | 0.1592 µg/L        | 0.1592 ppb         | 10:56:17      |
| 2     | Co 228.616†        | -82.9         | 9.1                 | 0.1353 µg/L        | 0.1353 ppb         | 10:56:17      |
| 2     | Cr 267.716†        | 143.9         | 14.1                | 0.1633 µg/L        | 0.1633 ppb         | 10:56:17      |
| 2     | Cu 324.752†        | 5650.9        | -157.4              | -0.6902 µg/L       | -0.6902 ppb        | 10:55:57      |
| 2     | Mn 257.610†        | 244.4         | 91.1                | 0.1577 µg/L        | 0.1577 ppb         | 10:56:17      |
| 2     | Mo 202.031†        | -9.2          | 20.5                | 1.0691 µg/L        | 1.0691 ppb         | 10:56:17      |
| 2     | Ni 231.604†        | -185.0        | 13.7                | 0.2186 µg/L        | 0.2186 ppb         | 10:56:17      |
| 2     | P 214.914†         | -79.9         | 15.6                | 5.6216 µg/L        | 5.6216 ppb         | 10:56:17      |
| 2     | Pb 220.353†        | 79.2          | 5.0                 | 0.5080 µg/L        | 0.5080 ppb         | 10:56:17      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 82.7      | -20.4     | -22.800 µg/L | -22.800 ppb | 10:56:17 |
| 2 | Sb 206.836†        | 65.4      | 20.7      | 4.0046 µg/L  | 4.0046 ppb  | 10:56:17 |
| 2 | Se 196.026†        | 5.8       | -2.3      | -1.17 µg/L   | -1.17 ppb   | 10:56:17 |
| 2 | SiO2†              | 2918.0    | -118.0    | -13.058 µg/L | -13.058 ppb | 10:55:57 |
| 2 | Si 251.611†        | 425.4     | -161.5    | -2.7349 µg/L | -2.7349 ppb | 10:55:57 |
| 2 | Sn 189.927†        | -17.9     | 9.7       | 1.2419 µg/L  | 1.2419 ppb  | 10:56:17 |
| 2 | Ti 334.940†        | -607.0    | 285.7     | 0.4051 µg/L  | 0.4051 ppb  | 10:55:57 |
| 2 | Tl 190.801†        | -75.1     | 11.4      | 3.5039 µg/L  | 3.5039 ppb  | 10:56:17 |
| 2 | U 367.007†         | -261.6    | 24.1      | 2.8413 µg/L  | 2.8413 ppb  | 10:55:57 |
| 2 | V 292.402†         | 203.6     | 99.2      | 0.4472 µg/L  | 0.4472 ppb  | 10:55:57 |
| 2 | Zn 213.857†        | 74.2      | 27.3      | 0.1505 µg/L  | 0.1505 ppb  | 10:56:17 |
| 3 | Sc RADIAL          | 70294.8   | 70294.8   | 97.6 %       |             | 10:55:08 |
| 3 | Al 396.153Radial†  | 309.2     | 215.2     | 78.588 µg/L  | 78.588 ppb  | 10:55:28 |
| 3 | Ca 317.933Radial†  | 966.9     | 647.7     | 72.101 µg/L  | 72.101 ppb  | 10:55:28 |
| 3 | Fe 238.204 Radial† | -134.6    | 380.2     | 35.961 µg/L  | 35.961 ppb  | 10:55:28 |
| 3 | K 766.490 Radial†  | 1050.1    | 6.0       | 3.1403 µg/L  | 3.1403 ppb  | 10:55:08 |
| 3 | Mg 279.077 IEC†    | 155.6     | 132.7     | 71.530 µg/L  | 71.530 ppb  | 10:55:28 |
| 3 | Na 589.592 Radial† | 116.0     | 79.1      | 13.185 µg/L  | 13.185 ppb  | 10:55:08 |
| 3 | Sr 421.552†        | -436.2    | 12.0      | 0.0322 µg/L  | 0.0322 ppb  | 10:55:28 |
| 3 | Sc 361.383         | 1341894.8 | 1341894.8 | 100.80 %     |             | 10:56:20 |
| 3 | Y 371.029          | 728402.8  | 728402.8  | 100.55 %     |             | 10:56:20 |
| 3 | Ag 328.068†        | -1838.9   | 66.6      | 0.3485 µg/L  | 0.3485 ppb  | 10:56:22 |
| 3 | As 188.979†        | -27.0     | 3.2       | 1.7401 µg/L  | 1.7401 ppb  | 10:56:42 |
| 3 | B 249.677†         | 929.5     | 37.2      | 0.5617 µg/L  | 0.5617 ppb  | 10:56:22 |
| 3 | Ba 233.527†        | -216.2    | 26.3      | 0.2350 µg/L  | 0.2350 ppb  | 10:56:42 |
| 3 | Be 313.107†        | -2945.0   | 734.4     | 0.1923 µg/L  | 0.1923 ppb  | 10:56:22 |
| 3 | Cd 226.502†        | -135.6    | 45.5      | 0.3400 µg/L  | 0.3400 ppb  | 10:56:42 |
| 3 | Co 228.616†        | -96.3     | -4.0      | -0.0601 µg/L | -0.0601 ppb | 10:56:42 |
| 3 | Cr 267.716†        | 128.5     | -1.6      | -0.0125 µg/L | -0.0125 ppb | 10:56:42 |
| 3 | Cu 324.752†        | 5578.0    | -243.3    | -1.0753 µg/L | -1.0753 ppb | 10:56:22 |
| 3 | Mn 257.610†        | 233.4     | 79.6      | 0.1369 µg/L  | 0.1369 ppb  | 10:56:42 |
| 3 | Mo 202.031†        | -13.4     | 16.4      | 0.8544 µg/L  | 0.8544 ppb  | 10:56:42 |
| 3 | Ni 231.604†        | -198.0    | 1.3       | 0.0206 µg/L  | 0.0206 ppb  | 10:56:42 |
| 3 | P 214.914†         | -91.4     | 4.4       | 1.5794 µg/L  | 1.5794 ppb  | 10:56:42 |
| 3 | Pb 220.353†        | 83.7      | 9.3       | 0.9545 µg/L  | 0.9545 ppb  | 10:56:42 |
| 3 | S 181.975 Axial†   | 98.3      | -5.2      | -5.7773 µg/L | -5.7773 ppb | 10:56:42 |
| 3 | Sb 206.836†        | 64.5      | 19.7      | 3.8045 µg/L  | 3.8045 ppb  | 10:56:42 |
| 3 | Se 196.026†        | 8.1       | -0.0      | 0.002 µg/L   | 0.002 ppb   | 10:56:42 |
| 3 | SiO2†              | 3001.0    | -42.6     | -4.7182 µg/L | -4.7182 ppb | 10:56:22 |
| 3 | Si 251.611†        | 456.1     | -132.0    | -2.2336 µg/L | -2.2336 ppb | 10:56:22 |
| 3 | Sn 189.927†        | -19.3     | 8.3       | 1.0632 µg/L  | 1.0632 ppb  | 10:56:42 |
| 3 | Ti 334.940†        | -433.1    | 459.7     | 0.6575 µg/L  | 0.6575 ppb  | 10:56:22 |
| 3 | Tl 190.801†        | -81.0     | 5.7       | 1.7609 µg/L  | 1.7609 ppb  | 10:56:42 |
| 3 | U 367.007†         | -336.6    | -49.7     | -6.3148 µg/L | -6.3148 ppb | 10:56:22 |
| 3 | V 292.402†         | -3.1      | -106.4    | -0.4768 µg/L | -0.4768 ppb | 10:56:22 |
| 3 | Zn 213.857†        | 67.3      | 20.2      | 0.1084 µg/L  | 0.1084 ppb  | 10:56:42 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Conc. Units | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|-------------|-----------------|--------------------|----------|---------|
| Sc 361.383  | 1332682.1                | 100.11 %    | 0.995           |                    |          | 0.99%   |
| Sc RADIAL   | 70408.9                  | 97.7 %      | 1.53            |                    |          | 1.57%   |
| Y 371.029   | 724622.3                 | 100.02 %    | 0.922           |                    |          | 0.92%   |
| Ag 328.068†   | 54.5                     | 0.2809 µg/L | 0.61861         | 0.2809 ppb         | 0.61861  | 220.25% |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |             |                 |                    |          |         |
| Al 396.153Radial†   | 159.3                    | 58.168 µg/L | 21.0852         | 58.168 ppb         | 21.0852  | 36.25%  |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |             |                 |                    |          |         |
| As 188.979†   | 4.3                      | 2.3146 µg/L | 0.77102         | 2.3146 ppb         | 0.77102  | 33.31%  |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |             |                 |                    |          |         |
| B 249.677†  | 48.7                     | 0.7180 µg/L | 0.16448         | 0.7180 ppb         | 0.16448  | 22.91%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |             |                 |                    |          |         |
| Ba 233.527†   | 21.8                     | 0.1944 µg/L | 0.08851         | 0.1944 ppb         | 0.08851  | 45.54%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |             |                 |                    |          |         |
| Be 313.107†   | 598.2                    | 0.1592 µg/L | 0.03168         | 0.1592 ppb         | 0.03168  | 19.89%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |             |                 |                    |          |         |
| Ca 317.933Radial†   | 435.5                    | 48.480 µg/L | 24.1634         | 48.480 ppb         | 24.1634  | 49.84%  |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |             |                 |                    |          |         |
| Cd 226.502†   | 32.4                     | 0.2425 µg/L | 0.09123         | 0.2425 ppb         | 0.09123  | 37.63%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |             |                 |                    |          |         |
| Co 228.616†   | 9.6                      | 0.1426 µg/L | 0.20647         | 0.1426 ppb         | 0.20647  | 144.78% |

|  |        |              |          |             |          |         |  |
|--|--------|--------------|----------|-------------|----------|---------|--|
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Cr 267.716†  | 10.3   | 0.1193 µg/L  | 0.11620  | 0.1193 ppb  | 0.11620  | 97.41%  |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Cu 324.752†  | -177.6 | -0.7797 µg/L | 0.26251  | -0.7797 ppb | 0.26251  | 33.67%  |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Fe 238.204 Radial†   | 252.8  | 23.915 µg/L  | 11.2484  | 23.915 ppb  | 11.2484  | 47.04%  |  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |          |             |          |         |  |
| K 766.490 Radial†  | 2.3    | 1.2291 µg/L  | 30.39767 | 1.2291 ppb  | 30.39767 | >999.9% |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |          |             |          |         |  |
| Mg 279.077 IEC†  | 98.9   | 53.314 µg/L  | 18.6685  | 53.314 ppb  | 18.6685  | 35.02%  |  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |          |             |          |         |  |
| Mn 257.610†  | 78.7   | 0.1359 µg/L  | 0.02220  | 0.1359 ppb  | 0.02220  | 16.33%  |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Mo 202.031†  | 16.5   | 0.8576 µg/L  | 0.21000  | 0.8576 ppb  | 0.21000  | 24.49%  |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Na 589.592 Radial†   | 106.3  | 17.734 µg/L  | 8.5797   | 17.734 ppb  | 8.5797   | 48.38%  |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |          |             |          |         |  |
| Ni 231.604†  | 5.2    | 0.0825 µg/L  | 0.11805  | 0.0825 ppb  | 0.11805  | 143.17% |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |          |             |          |         |  |
| P 214.914†   | 12.2   | 4.3994 µg/L  | 2.44941  | 4.3994 ppb  | 2.44941  | 55.68%  |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |          |             |          |         |  |
| Pb 220.353†  | 6.0    | 0.6070 µg/L  | 0.31012  | 0.6070 ppb  | 0.31012  | 51.09%  |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |          |             |          |         |  |
| S 181.975 Axial†   | -11.3  | -12.579 µg/L | 9.0123   | -12.579 ppb | 9.0123   | 71.65%  |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |          |             |          |         |  |
| Sb 206.836†  | 22.6   | 4.3664 µg/L  | 0.80621  | 4.3664 ppb  | 0.80621  | 18.46%  |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Se 196.026†  | 0.1    | 0.082 µg/L   | 1.2935   | 0.082 ppb   | 1.2935   | >999.9% |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |          |             |          |         |  |
| SiO2†  | -111.0 | -12.289 µg/L | 7.2165   | -12.289 ppb | 7.2165   | 58.72%  |  |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |          |             |          |         |  |
| Si 251.611†  | -145.0 | -2.4559 µg/L | 0.25546  | -2.4559 ppb | 0.25546  | 10.40%  |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Sn 189.927†  | 8.7    | 1.1071 µg/L  | 0.11910  | 1.1071 ppb  | 0.11910  | 10.76%  |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Sr 421.552†  | 10.9   | 0.0300 µg/L  | 0.03754  | 0.0300 ppb  | 0.03754  | 124.98% |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Ti 334.940†  | 335.8  | 0.4766 µg/L  | 0.15780  | 0.4766 ppb  | 0.15780  | 33.11%  |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Tl 190.801†  | 7.5    | 2.3085 µg/L  | 1.03654  | 2.3085 ppb  | 1.03654  | 44.90%  |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |          |             |          |         |  |
| U 367.007†   | 19.9   | 2.3097 µg/L  | 8.37135  | 2.3097 ppb  | 8.37135  | 362.44% |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |          |             |          |         |  |
| V 292.402†   | -62.9  | -0.2791 µg/L | 0.65030  | -0.2791 ppb | 0.65030  | 233.04% |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |          |             |          |         |  |
| Zn 213.857†  | 19.6   | 0.1070 µg/L  | 0.04424  | 0.1070 ppb  | 0.04424  | 41.35%  |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |          |             |          |         |  |

All analyte(s) passed QC.



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Analysis Begun

Start Time: 11/11/2016 11:45:31

Plasma On Time: 11/7/2016 06:01:25

Logged In Analyst: lab

Technique: ICP Continuous

Spectrometer Model: Optima 7300 DV, S/N No Serial #Autosampler Model: AS-93plus

Sample Information File: C:\pe\optima4\Sample Information\111116.sif

Batch ID:

Results Data Set: 111116

Results Library: C:\pe\optima4\Results\Results.mdb

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Sequence No.: 1

Autosampler Location: 301

Sample ID: 1203657595|1611117|1

Date Collected: 11/11/2016 11:45:33

Analyst: TXT1

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

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Replicate Data: 1203657595|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 68926.7       | 68926.7             | 95.7 %             |                    | 11:46:03      |
| 1     | Al 396.153Radial†  | 132.0         | 36.3                | 13.290 µg/L        | 13.290 ppb         | 11:46:23      |
| 1     | Ca 317.933Radial†  | 2279.6        | 2039.3              | 227.02 µg/L        | 227.02 ppb         | 11:46:23      |
| 1     | Fe 238.204 Radial† | -350.7        | 151.6               | 14.338 µg/L        | 14.338 ppb         | 11:46:23      |
| 1     | K 766.490 Radial†  | 1137.6        | 118.8               | 62.399 µg/L        | 62.399 ppb         | 11:46:03      |
| 1     | Mg 279.077 IEC†    | 66.3          | 42.5                | 22.929 µg/L        | 22.929 ppb         | 11:46:23      |
| 1     | Na 589.592 Radial† | 1180.6        | 1194.2              | 199.13 µg/L        | 199.13 ppb         | 11:46:03      |
| 1     | Sr 421.552†        | -183.0        | 267.8               | 0.7691 µg/L        | 0.7691 ppb         | 11:46:23      |
| 1     | Sc 361.383         | 1312493.9     | 1312493.9           | 98.594 %           |                    | 11:47:10      |
| 1     | Y 371.029          | 711099.8      | 711099.8            | 98.158 %           |                    | 11:47:10      |
| 1     | Ag 328.068†        | -1847.3       | 17.2                | 0.0973 µg/L        | 0.0973 ppb         | 11:47:13      |
| 1     | As 188.979†        | -24.8         | 4.8                 | 2.6275 µg/L        | 2.6275 ppb         | 11:47:33      |
| 1     | B 249.677†         | 953.6         | 82.3                | 1.1941 µg/L        | 1.1941 ppb         | 11:47:13      |
| 1     | Ba 233.527†        | -207.4        | 30.4                | 0.2715 µg/L        | 0.2715 ppb         | 11:47:33      |
| 1     | Be 313.107†        | -3372.3       | 235.5               | 0.0515 µg/L        | 0.0515 ppb         | 11:47:13      |
| 1     | Cd 226.502†        | -158.3        | 19.5                | 0.1456 µg/L        | 0.1456 ppb         | 11:47:33      |
| 1     | Co 228.616†        | -89.2         | 1.1                 | 0.0162 µg/L        | 0.0162 ppb         | 11:47:33      |
| 1     | Cr 267.716†        | 134.8         | 7.7                 | 0.1063 µg/L        | 0.1063 ppb         | 11:47:33      |
| 1     | Cu 324.752†        | 5609.3        | -87.6               | -0.3986 µg/L       | -0.3986 ppb        | 11:47:13      |
| 1     | Mn 257.610†        | 482.9         | 337.8               | 0.5912 µg/L        | 0.5912 ppb         | 11:47:33      |
| 1     | Mo 202.031†        | -25.6         | 3.8                 | 0.1986 µg/L        | 0.1986 ppb         | 11:47:33      |
| 1     | Ni 231.604†        | -162.3        | 33.1                | 0.5268 µg/L        | 0.5268 ppb         | 11:47:33      |
| 1     | P 214.914†         | -10.7         | 84.3                | 30.372 µg/L        | 30.372 ppb         | 11:47:33      |
| 1     | Pb 220.353†        | 88.9          | 16.4                | 1.6808 µg/L        | 1.6808 ppb         | 11:47:33      |
| 1     | S 181.975 Axial†   | 270.8         | 172.0               | 192.02 µg/L        | 192.02 ppb         | 11:47:33      |
| 1     | Sb 206.836†        | 51.8          | 8.2                 | 1.5807 µg/L        | 1.5807 ppb         | 11:47:33      |
| 1     | Se 196.026†        | 1.3           | -6.7                | -3.50 µg/L         | -3.50 ppb          | 11:47:33      |
| 1     | SiO2†              | 4164.2        | 1203.8              | 133.23 µg/L        | 133.23 ppb         | 11:47:13      |
| 1     | Si 251.611†        | 4361.8        | 3839.5              | 65.100 µg/L        | 65.100 ppb         | 11:47:13      |
| 1     | Sn 189.927†        | -0.4          | 27.1                | 3.4641 µg/L        | 3.4641 ppb         | 11:47:33      |
| 1     | Ti 334.940†        | -435.6        | 447.4               | 0.6475 µg/L        | 0.6475 ppb         | 11:47:13      |
| 1     | Tl 190.801†        | -86.3         | -1.5                | -0.4662 µg/L       | -0.4662 ppb        | 11:47:33      |
| 1     | U 367.007†         | -413.7        | -135.4              | -16.759 µg/L       | -16.759 ppb        | 11:47:13      |
| 1     | V 292.402†         | 33.5          | -69.4               | -0.3158 µg/L       | -0.3158 ppb        | 11:47:13      |
| 1     | Zn 213.857†        | 1302.5        | 1274.6              | 7.2292 µg/L        | 7.2292 ppb         | 11:47:33      |
| 2     | Sc RADIAL          | 70589.3       | 70589.3             | 98.0 %             |                    | 11:46:25      |
| 2     | Al 396.153Radial†  | 138.1         | 39.3                | 14.372 µg/L        | 14.372 ppb         | 11:46:45      |
| 2     | Ca 317.933Radial†  | 2280.0        | 1983.6              | 220.82 µg/L        | 220.82 ppb         | 11:46:45      |
| 2     | Fe 238.204 Radial† | -346.1        | 164.9               | 15.598 µg/L        | 15.598 ppb         | 11:46:45      |
| 2     | K 766.490 Radial†  | 968.4         | -81.9               | -43.061 µg/L       | -43.061 ppb        | 11:46:25      |
| 2     | Mg 279.077 IEC†    | 75.4          | 50.1                | 27.033 µg/L        | 27.033 ppb         | 11:46:45      |
| 2     | Na 589.592 Radial† | 1076.0        | 1058.4              | 176.49 µg/L        | 176.49 ppb         | 11:46:25      |
| 2     | Sr 421.552†        | -190.2        | 264.9               | 0.7610 µg/L        | 0.7610 ppb         | 11:46:45      |
| 2     | Sc 361.383         | 1311936.5     | 1311936.5           | 98.553 %           |                    | 11:47:35      |
| 2     | Y 371.029          | 710574.0      | 710574.0            | 98.085 %           |                    | 11:47:35      |
| 2     | Ag 328.068†        | -1800.7       | 63.7                | 0.3278 µg/L        | 0.3278 ppb         | 11:47:37      |
| 2     | As 188.979†        | -29.7         | -0.2                | -0.0828 µg/L       | -0.0828 ppb        | 11:47:57      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | B 249.677†         | 870.9     | -1.2      | -0.0059 µg/L | -0.0059 ppb | 11:47:37 |
| 2 | Ba 233.527†        | -206.3    | 31.4      | 0.2802 µg/L  | 0.2802 ppb  | 11:47:57 |
| 2 | Be 313.107†        | -3392.3   | 213.8     | 0.0513 µg/L  | 0.0513 ppb  | 11:47:37 |
| 2 | Cd 226.502†        | -152.0    | 25.8      | 0.1931 µg/L  | 0.1931 ppb  | 11:47:57 |
| 2 | Co 228.616†        | -92.1     | -1.9      | -0.0281 µg/L | -0.0281 ppb | 11:47:57 |
| 2 | Cr 267.716†        | 140.0     | 13.1      | 0.1539 µg/L  | 0.1539 ppb  | 11:47:57 |
| 2 | Cu 324.752†        | 5797.8    | 106.0     | 0.4690 µg/L  | 0.4690 ppb  | 11:47:37 |
| 2 | Mn 257.610†        | 466.5     | 321.3     | 0.5622 µg/L  | 0.5622 ppb  | 11:47:57 |
| 2 | Mo 202.031†        | -19.2     | 10.3      | 0.5353 µg/L  | 0.5353 ppb  | 11:47:57 |
| 2 | Ni 231.604†        | -182.1    | 13.0      | 0.2066 µg/L  | 0.2066 ppb  | 11:47:57 |
| 2 | P 214.914†         | 5.1       | 100.2     | 36.129 µg/L  | 36.129 ppb  | 11:47:57 |
| 2 | Pb 220.353†        | 44.4      | -28.7     | -2.8986 µg/L | -2.8986 ppb | 11:47:57 |
| 2 | S 181.975 Axial†   | 272.3     | 173.6     | 193.78 µg/L  | 193.78 ppb  | 11:47:57 |
| 2 | Sb 206.836†        | 52.3      | 8.8       | 1.6894 µg/L  | 1.6894 ppb  | 11:47:57 |
| 2 | Se 196.026†        | 3.5       | -4.5      | -2.35 µg/L   | -2.35 ppb   | 11:47:57 |
| 2 | SiO2†              | 4145.0    | 1186.1    | 131.28 µg/L  | 131.28 ppb  | 11:47:37 |
| 2 | Si 251.611†        | 4431.3    | 3912.0    | 66.329 µg/L  | 66.329 ppb  | 11:47:37 |
| 2 | Sn 189.927†        | 0.9       | 28.4      | 3.6357 µg/L  | 3.6357 ppb  | 11:47:57 |
| 2 | Ti 334.940†        | -580.5    | 300.2     | 0.4296 µg/L  | 0.4296 ppb  | 11:47:37 |
| 2 | Tl 190.801†        | -76.0     | 9.0       | 2.7535 µg/L  | 2.7535 ppb  | 11:47:57 |
| 2 | U 367.007†         | -282.5    | -2.4      | -0.4009 µg/L | -0.4009 ppb | 11:47:37 |
| 2 | V 292.402†         | 80.0      | -22.1     | -0.0979 µg/L | -0.0979 ppb | 11:47:37 |
| 2 | Zn 213.857†        | 1300.7    | 1273.3    | 7.2204 µg/L  | 7.2204 ppb  | 11:47:57 |
| 3 | Sc RADIAL          | 71178.0   | 71178.0   | 98.8 %       |             | 11:46:47 |
| 3 | Al 396.153Radial†  | 172.2     | 72.6      | 26.527 µg/L  | 26.527 ppb  | 11:47:07 |
| 3 | Ca 317.933Radial†  | 2224.1    | 1907.8    | 212.37 µg/L  | 212.37 ppb  | 11:47:07 |
| 3 | Fe 238.204 Radial† | -348.3    | 165.6     | 15.662 µg/L  | 15.662 ppb  | 11:47:07 |
| 3 | K 766.490 Radial†  | 973.4     | -85.0     | -44.698 µg/L | -44.698 ppb | 11:46:47 |
| 3 | Mg 279.077 IEC†    | 53.0      | 26.9      | 14.484 µg/L  | 14.484 ppb  | 11:47:07 |
| 3 | Na 589.592 Radial† | 1195.4    | 1170.1    | 195.12 µg/L  | 195.12 ppb  | 11:46:47 |
| 3 | Sr 421.552†        | -155.3    | 301.9     | 0.8685 µg/L  | 0.8685 ppb  | 11:47:07 |
| 3 | Sc 361.383         | 1299229.0 | 1299229.0 | 97.598 %     |             | 11:47:59 |
| 3 | Y 371.029          | 703312.1  | 703312.1  | 97.083 %     |             | 11:47:59 |
| 3 | Ag 328.068†        | -1854.9   | -9.7      | -0.0415 µg/L | -0.0415 ppb | 11:48:01 |
| 3 | As 188.979†        | -31.1     | -1.9      | -1.0268 µg/L | -1.0268 ppb | 11:48:21 |
| 3 | B 249.677†         | 824.4     | -40.2     | -0.5669 µg/L | -0.5669 ppb | 11:48:01 |
| 3 | Ba 233.527†        | -168.1    | 68.6      | 0.6115 µg/L  | 0.6115 ppb  | 11:48:21 |
| 3 | Be 313.107†        | -3470.3   | 100.2     | 0.0063 µg/L  | 0.0063 ppb  | 11:48:01 |
| 3 | Cd 226.502†        | -158.0    | 18.2      | 0.1357 µg/L  | 0.1357 ppb  | 11:48:21 |
| 3 | Co 228.616†        | -90.5     | -1.2      | -0.0170 µg/L | -0.0170 ppb | 11:48:21 |
| 3 | Cr 267.716†        | 138.7     | 13.1      | 0.1698 µg/L  | 0.1698 ppb  | 11:48:21 |
| 3 | Cu 324.752†        | 5697.4    | 60.7      | 0.2559 µg/L  | 0.2559 ppb  | 11:48:01 |
| 3 | Mn 257.610†        | 477.3     | 337.1     | 0.5902 µg/L  | 0.5902 ppb  | 11:48:21 |
| 3 | Mo 202.031†        | -22.9     | 6.3       | 0.3264 µg/L  | 0.3264 ppb  | 11:48:21 |
| 3 | Ni 231.604†        | -165.8    | 27.9      | 0.4431 µg/L  | 0.4431 ppb  | 11:48:21 |
| 3 | P 214.914†         | -9.1      | 85.8      | 30.918 µg/L  | 30.918 ppb  | 11:48:21 |
| 3 | Pb 220.353†        | 68.9      | -3.1      | -0.2920 µg/L | -0.2920 ppb | 11:48:21 |
| 3 | S 181.975 Axial†   | 268.5     | 172.4     | 192.43 µg/L  | 192.43 ppb  | 11:48:21 |
| 3 | Sb 206.836†        | 57.7      | 14.9      | 2.8672 µg/L  | 2.8672 ppb  | 11:48:21 |
| 3 | Se 196.026†        | 12.4      | 4.7       | 2.44 µg/L    | 2.44 ppb    | 11:48:21 |
| 3 | SiO2†              | 4234.4    | 1318.9    | 145.97 µg/L  | 145.97 ppb  | 11:48:01 |
| 3 | Si 251.611†        | 4512.9    | 4039.5    | 68.491 µg/L  | 68.491 ppb  | 11:48:01 |
| 3 | Sn 189.927†        | -4.5      | 22.9      | 2.9261 µg/L  | 2.9261 ppb  | 11:48:21 |
| 3 | Ti 334.940†        | -625.9    | 247.9     | 0.3637 µg/L  | 0.3637 ppb  | 11:48:01 |
| 3 | Tl 190.801†        | -84.2     | -0.2      | -0.0693 µg/L | -0.0693 ppb | 11:48:21 |
| 3 | U 367.007†         | -409.4    | -135.2    | -16.743 µg/L | -16.743 ppb | 11:48:01 |
| 3 | V 292.402†         | 169.9     | 70.8      | 0.3123 µg/L  | 0.3123 ppb  | 11:48:01 |
| 3 | Zn 213.857†        | 1279.1    | 1264.1    | 7.1690 µg/L  | 7.1690 ppb  | 11:48:21 |

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Mean Data: 1203657595|1611117|1

| Analyte           | Mean Corrected Intensity | Conc.  | Calib. Units | Std.Dev. | Conc.  | Sample Units | Std.Dev. | RSD     |
|-------------------|--------------------------|--------|--------------|----------|--------|--------------|----------|---------|
| Sc 361.383        | 1307886.5                | 98.248 | %            | 0.5636   |        |              |          | 0.57%   |
| Sc RADIAL         | 70231.3                  | 97.5   | %            | 1.62     |        |              |          | 1.66%   |
| Y 371.029         | 708328.6                 | 97.775 | %            | 0.6008   |        |              |          | 0.61%   |
| Ag 328.068†       | 23.7                     | 0.1279 | µg/L         | 0.18654  | 0.1279 | ppb          | 0.18654  | 145.86% |
| Al 396.153Radial† | 49.4                     | 18.063 | µg/L         | 7.3500   | 18.063 | ppb          | 7.3500   | 40.69%  |
| As 188.979†       | 0.9                      | 0.5059 | µg/L         | 1.89693  | 0.5059 | ppb          | 1.89693  | 374.93% |
| B 249.677†        | 13.6                     | 0.2071 | µg/L         | 0.89962  | 0.2071 | ppb          | 0.89962  | 434.39% |
| Ba 233.527†       | 43.5                     | 0.3877 | µg/L         | 0.19380  | 0.3877 | ppb          | 0.19380  | 49.98%  |

|                    |        |              |          |             |          |         |
|--------------------|--------|--------------|----------|-------------|----------|---------|
| Be 313.107†        | 183.2  | 0.0364 µg/L  | 0.02606  | 0.0364 ppb  | 0.02606  | 71.64%  |
| Ca 317.933Radial†  | 1976.9 | 220.07 µg/L  | 7.352    | 220.07 ppb  | 7.352    | 3.34%   |
| Cd 226.502†        | 21.1   | 0.1581 µg/L  | 0.03072  | 0.1581 ppb  | 0.03072  | 19.43%  |
| Co 228.616†        | -0.7   | -0.0096 µg/L | 0.02308  | -0.0096 ppb | 0.02308  | 240.02% |
| Cr 267.716†        | 11.3   | 0.1433 µg/L  | 0.03302  | 0.1433 ppb  | 0.03302  | 23.04%  |
| Cu 324.752†        | 26.4   | 0.1088 µg/L  | 0.45212  | 0.1088 ppb  | 0.45212  | 415.63% |
| Fe 238.204 Radial† | 160.7  | 15.199 µg/L  | 0.7470   | 15.199 ppb  | 0.7470   | 4.91%   |
| K 766.490 Radial†  | -16.1  | -8.4532 µg/L | 61.36550 | -8.4532 ppb | 61.36550 | 725.94% |
| Mg 279.077 IEC†    | 39.8   | 21.482 µg/L  | 6.3981   | 21.482 ppb  | 6.3981   | 29.78%  |
| Mn 257.610†        | 332.1  | 0.5812 µg/L  | 0.01646  | 0.5812 ppb  | 0.01646  | 2.83%   |
| Mo 202.031†        | 6.8    | 0.3534 µg/L  | 0.17001  | 0.3534 ppb  | 0.17001  | 48.10%  |
| Na 589.592 Radial† | 1140.9 | 190.25 µg/L  | 12.084   | 190.25 ppb  | 12.084   | 6.35%   |
| Ni 231.604†        | 24.7   | 0.3922 µg/L  | 0.16603  | 0.3922 ppb  | 0.16603  | 42.34%  |
| P 214.914†         | 90.1   | 32.473 µg/L  | 3.1778   | 32.473 ppb  | 3.1778   | 9.79%   |
| Pb 220.353†        | -5.1   | -0.5033 µg/L | 2.29703  | -0.5033 ppb | 2.29703  | 456.42% |
| S 181.975 Axial†   | 172.7  | 192.74 µg/L  | 0.921    | 192.74 ppb  | 0.921    | 0.48%   |
| Sb 206.836†        | 10.6   | 2.0457 µg/L  | 0.71345  | 2.0457 ppb  | 0.71345  | 34.88%  |
| Se 196.026†        | -2.2   | -1.14 µg/L   | 3.149    | -1.14 ppb   | 3.149    | 276.20% |
| SiO2†              | 1236.3 | 136.83 µg/L  | 7.978    | 136.83 ppb  | 7.978    | 5.83%   |
| Si 251.611†        | 3930.3 | 66.640 µg/L  | 1.7170   | 66.640 ppb  | 1.7170   | 2.58%   |
| Sn 189.927†        | 26.1   | 3.3419 µg/L  | 0.37019  | 3.3419 ppb  | 0.37019  | 11.08%  |
| Sr 421.552†        | 278.2  | 0.7996 µg/L  | 0.05984  | 0.7996 ppb  | 0.05984  | 7.48%   |
| Ti 334.940†        | 331.9  | 0.4803 µg/L  | 0.14851  | 0.4803 ppb  | 0.14851  | 30.92%  |
| Tl 190.801†        | 2.4    | 0.7393 µg/L  | 1.75554  | 0.7393 ppb  | 1.75554  | 237.45% |
| U 367.007†         | -91.0  | -11.301 µg/L | 9.4396   | -11.301 ppb | 9.4396   | 83.53%  |
| V 292.402†         | -6.9   | -0.0338 µg/L | 0.31891  | -0.0338 ppb | 0.31891  | 943.21% |
| Zn 213.857†        | 1270.6 | 7.2062 µg/L  | 0.03250  | 7.2062 ppb  | 0.03250  | 0.45%   |

Sequence No.: 2

Sample ID: 1203657596|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 302

Date Collected: 11/11/2016 11:48:28

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1203657596|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 69930.0       | 69930.0             | 97.1 %             |                    | 11:48:55      |
| 1     | Al 396.153Radial†  | 13135.9       | 13430.2             | 4903.8 µg/L        | 4903.8 ppb         | 11:48:55      |
| 1     | Ca 317.933Radial†  | 42971.8       | 43923.9             | 4889.6 µg/L        | 4889.6 ppb         | 11:48:55      |
| 1     | Fe 238.204 Radial† | 50363.3       | 52399.5             | 4956.7 µg/L        | 4956.7 ppb         | 11:48:55      |
| 1     | K 766.490 Radial†  | 10278.8       | 9518.5              | 5003.4 µg/L        | 5003.4 ppb         | 11:48:55      |
| 1     | Mg 279.077 IEC†    | 8777.5        | 9015.3              | 4862.1 µg/L        | 4862.1 ppb         | 11:48:55      |
| 1     | Na 589.592 Radial† | 28892.6       | 29723.7             | 4956.6 µg/L        | 4956.6 ppb         | 11:48:55      |
| 1     | Sr 421.552†        | 163151.0      | 168527.8            | 488.78 µg/L        | 488.78 ppb         | 11:48:53      |
| 1     | Sc 361.383         | 1299991.8     | 1299991.8           | 97.655 %           |                    | 11:49:07      |
| 1     | Y 371.029          | 696648.3      | 696648.3            | 96.163 %           |                    | 11:49:07      |
| 1     | Ag 328.068†        | 88818.8       | 92842.1             | 479.10 µg/L        | 479.10 ppb         | 11:49:07      |
| 1     | As 188.979†        | 838.2         | 888.3               | 487.57 µg/L        | 487.57 ppb         | 11:49:27      |
| 1     | B 249.677†         | 34092.0       | 34025.7             | 492.97 µg/L        | 492.97 ppb         | 11:49:07      |
| 1     | Ba 233.527†        | 52925.8       | 54437.3             | 485.43 µg/L        | 485.43 ppb         | 11:49:07      |
| 1     | Be 313.107†        | 1766361.0     | 1812426.7           | 482.52 µg/L        | 482.52 ppb         | 11:49:07      |
| 1     | Cd 226.502†        | 61780.3       | 63443.6             | 479.47 µg/L        | 479.47 ppb         | 11:49:07      |
| 1     | Co 228.616†        | 31386.3       | 32231.4             | 479.31 µg/L        | 479.31 ppb         | 11:49:27      |
| 1     | Cr 267.716†        | 39918.6       | 40748.0             | 478.84 µg/L        | 478.84 ppb         | 11:49:07      |
| 1     | Cu 324.752†        | 113681.7      | 110634.2            | 488.98 µg/L        | 488.98 ppb         | 11:49:07      |
| 1     | Mn 257.610†        | 268427.1      | 274720.0            | 481.30 µg/L        | 481.30 ppb         | 11:49:07      |
| 1     | Mo 202.031†        | 8919.2        | 9163.1              | 476.40 µg/L        | 476.40 ppb         | 11:49:27      |
| 1     | Ni 231.604†        | 29148.1       | 30045.7             | 477.67 µg/L        | 477.67 ppb         | 11:49:27      |
| 1     | P 214.914†         | 1292.2        | 1418.3              | 510.95 µg/L        | 510.95 ppb         | 11:49:27      |
| 1     | Pb 220.353†        | 4743.6        | 4783.8              | 483.49 µg/L        | 483.49 ppb         | 11:49:27      |
| 1     | S 181.975 Axial†   | 4477.5        | 4482.3              | 5002.5 µg/L        | 5002.5 ppb         | 11:49:27      |
| 1     | Sb 206.836†        | 2527.6        | 2544.0              | 483.69 µg/L        | 483.69 ppb         | 11:49:27      |
| 1     | Se 196.026†        | 898.5         | 912.0               | 480 µg/L           | 480 ppb            | 11:49:27      |
| 1     | SiO2†              | 94324.4       | 93569.4             | 10356 µg/L         | 10356 ppb          | 11:49:07      |
| 1     | Si 251.611†        | 278789.4      | 284898.6            | 4831.1 µg/L        | 4831.1 ppb         | 11:49:07      |
| 1     | Sn 189.927†        | 3628.1        | 3742.7              | 478.55 µg/L        | 478.55 ppb         | 11:49:27      |
| 1     | Ti 334.940†        | 329720.8      | 338526.6            | 480.86 µg/L        | 480.86 ppb         | 11:49:07      |
| 1     | Tl 190.801†        | 1439.0        | 1559.6              | 479.14 µg/L        | 479.14 ppb         | 11:49:27      |
| 1     | U 367.007†         | 3547.7        | 3917.1              | 454.53 µg/L        | 454.53 ppb         | 11:49:07      |
| 1     | V 292.402†         | 104105.0      | 106501.2            | 478.54 µg/L        | 478.54 ppb         | 11:49:07      |
| 1     | Zn 213.857†        | 83179.7       | 85130.3             | 481.69 µg/L        | 481.69 ppb         | 11:49:07      |
| 2     | Sc RADIAL          | 70034.6       | 70034.6             | 97.2 %             |                    | 11:48:59      |
| 2     | Al 396.153Radial†  | 13182.7       | 13458.1             | 4914.0 µg/L        | 4914.0 ppb         | 11:48:59      |
| 2     | Ca 317.933Radial†  | 43229.0       | 44122.3             | 4911.7 µg/L        | 4911.7 ppb         | 11:48:59      |
| 2     | Fe 238.204 Radial† | 50486.6       | 52448.8             | 4961.4 µg/L        | 4961.4 ppb         | 11:48:59      |
| 2     | K 766.490 Radial†  | 10375.6       | 9602.2              | 5047.4 µg/L        | 5047.4 ppb         | 11:48:59      |
| 2     | Mg 279.077 IEC†    | 8870.0        | 9097.0              | 4906.1 µg/L        | 4906.1 ppb         | 11:48:59      |
| 2     | Na 589.592 Radial† | 29119.7       | 29912.9             | 4988.1 µg/L        | 4988.1 ppb         | 11:48:59      |
| 2     | Sr 421.552†        | 162101.8      | 167197.6            | 484.92 µg/L        | 484.92 ppb         | 11:48:57      |
| 2     | Sc 361.383         | 1305810.7     | 1305810.7           | 98.092 %           |                    | 11:49:30      |
| 2     | Y 371.029          | 699631.6      | 699631.6            | 96.575 %           |                    | 11:49:30      |
| 2     | Ag 328.068†        | 89664.4       | 93298.9             | 481.46 µg/L        | 481.46 ppb         | 11:49:30      |
| 2     | As 188.979†        | 839.5         | 885.8               | 486.24 µg/L        | 486.24 ppb         | 11:49:50      |
| 2     | B 249.677†         | 34543.0       | 34329.9             | 497.35 µg/L        | 497.35 ppb         | 11:49:30      |
| 2     | Ba 233.527†        | 53548.4       | 54830.5             | 488.93 µg/L        | 488.93 ppb         | 11:49:30      |
| 2     | Be 313.107†        | 1779880.3     | 1818148.7           | 483.99 µg/L        | 483.99 ppb         | 11:49:30      |
| 2     | Cd 226.502†        | 62594.8       | 63992.1             | 483.62 µg/L        | 483.62 ppb         | 11:49:30      |
| 2     | Co 228.616†        | 31459.8       | 32163.1             | 478.30 µg/L        | 478.30 ppb         | 11:49:50      |
| 2     | Cr 267.716†        | 40219.8       | 40873.0             | 480.31 µg/L        | 480.31 ppb         | 11:49:30      |
| 2     | Cu 324.752†        | 114650.0      | 111102.6            | 491.05 µg/L        | 491.05 ppb         | 11:49:30      |
| 2     | Mn 257.610†        | 269924.9      | 275022.0            | 481.83 µg/L        | 481.83 ppb         | 11:49:30      |
| 2     | Mo 202.031†        | 8960.0        | 9163.9              | 476.44 µg/L        | 476.44 ppb         | 11:49:50      |
| 2     | Ni 231.604†        | 29173.5       | 29938.6             | 475.97 µg/L        | 475.97 ppb         | 11:49:50      |
| 2     | P 214.914†         | 1314.9        | 1435.6              | 517.19 µg/L        | 517.19 ppb         | 11:49:50      |
| 2     | Pb 220.353†        | 4728.3        | 4746.5              | 479.73 µg/L        | 479.73 ppb         | 11:49:50      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 4477.6    | 4462.0    | 4979.8 µg/L | 4979.8 ppb | 11:49:50 |
| 2 | Sb 206.836†        | 2525.8    | 2530.7    | 481.08 µg/L | 481.08 ppb | 11:49:50 |
| 2 | Se 196.026†        | 899.6     | 909.1     | 479 µg/L    | 479 ppb    | 11:49:50 |
| 2 | SiO2†              | 95629.0   | 94468.9   | 10456 µg/L  | 10456 ppb  | 11:49:30 |
| 2 | Si 251.611†        | 282780.1  | 287694.7  | 4878.5 µg/L | 4878.5 ppb | 11:49:30 |
| 2 | Sn 189.927†        | 3627.7    | 3725.7    | 476.38 µg/L | 476.38 ppb | 11:49:50 |
| 2 | Ti 334.940†        | 331710.2  | 339050.0  | 481.61 µg/L | 481.61 ppb | 11:49:30 |
| 2 | Tl 190.801†        | 1424.2    | 1537.9    | 472.49 µg/L | 472.49 ppb | 11:49:50 |
| 2 | U 367.007†         | 3525.9    | 3878.7    | 449.79 µg/L | 449.79 ppb | 11:49:30 |
| 2 | V 292.402†         | 104757.2  | 106691.1  | 479.39 µg/L | 479.39 ppb | 11:49:30 |
| 2 | Zn 213.857†        | 83715.1   | 85296.5   | 482.63 µg/L | 482.63 ppb | 11:49:30 |
| 3 | Sc RADIAL          | 69272.5   | 69272.5   | 96.2 %      |            | 11:49:03 |
| 3 | Al 396.153Radial†  | 13076.9   | 13497.2   | 4928.2 µg/L | 4928.2 ppb | 11:49:03 |
| 3 | Ca 317.933Radial†  | 42605.7   | 43963.4   | 4894.0 µg/L | 4894.0 ppb | 11:49:03 |
| 3 | Fe 238.204 Radial† | 49923.4   | 52434.4   | 4960.0 µg/L | 4960.0 ppb | 11:49:03 |
| 3 | K 766.490 Radial†  | 10076.1   | 9408.1    | 4945.4 µg/L | 4945.4 ppb | 11:49:03 |
| 3 | Mg 279.077 IEC†    | 8710.2    | 9031.1    | 4870.6 µg/L | 4870.6 ppb | 11:49:03 |
| 3 | Na 589.592 Radial† | 28848.7   | 29960.5   | 4996.1 µg/L | 4996.1 ppb | 11:49:03 |
| 3 | Sr 421.552†        | 161037.9  | 167925.5  | 487.03 µg/L | 487.03 ppb | 11:49:01 |
| 3 | Sc 361.383         | 1290560.1 | 1290560.1 | 96.947 %    |            | 11:49:54 |
| 3 | Y 371.029          | 690790.9  | 690790.9  | 95.354 %    |            | 11:49:54 |
| 3 | Ag 328.068†        | 88161.2   | 92828.5   | 479.02 µg/L | 479.02 ppb | 11:49:54 |
| 3 | As 188.979†        | 846.0     | 902.5     | 495.29 µg/L | 495.29 ppb | 11:50:14 |
| 3 | B 249.677†         | 34010.2   | 34196.5   | 495.43 µg/L | 495.43 ppb | 11:49:54 |
| 3 | Ba 233.527†        | 52494.7   | 54388.7   | 484.99 µg/L | 484.99 ppb | 11:49:54 |
| 3 | Be 313.107†        | 1745685.0 | 1804318.5 | 480.32 µg/L | 480.32 ppb | 11:49:54 |
| 3 | Cd 226.502†        | 60897.4   | 62995.3   | 476.08 µg/L | 476.08 ppb | 11:49:54 |
| 3 | Co 228.616†        | 31491.0   | 32574.3   | 484.40 µg/L | 484.40 ppb | 11:50:14 |
| 3 | Cr 267.716†        | 39440.5   | 40553.6   | 476.55 µg/L | 476.55 ppb | 11:49:54 |
| 3 | Cu 324.752†        | 113183.2  | 110970.8  | 490.47 µg/L | 490.47 ppb | 11:49:54 |
| 3 | Mn 257.610†        | 265643.4  | 273857.5  | 479.79 µg/L | 479.79 ppb | 11:49:54 |
| 3 | Mo 202.031†        | 8957.5    | 9269.4    | 481.92 µg/L | 481.92 ppb | 11:50:14 |
| 3 | Ni 231.604†        | 29247.5   | 30366.3   | 482.77 µg/L | 482.77 ppb | 11:50:14 |
| 3 | P 214.914†         | 1297.6    | 1433.5    | 516.43 µg/L | 516.43 ppb | 11:50:14 |
| 3 | Pb 220.353†        | 4767.4    | 4843.9    | 489.57 µg/L | 489.57 ppb | 11:50:14 |
| 3 | S 181.975 Axial†   | 4488.6    | 4527.3    | 5052.7 µg/L | 5052.7 ppb | 11:50:14 |
| 3 | Sb 206.836†        | 2531.3    | 2566.7    | 488.11 µg/L | 488.11 ppb | 11:50:14 |
| 3 | Se 196.026†        | 894.3     | 914.4     | 482 µg/L    | 482 ppb    | 11:50:14 |
| 3 | SiO2†              | 94356.6   | 94308.5   | 10438 µg/L  | 10438 ppb  | 11:49:54 |
| 3 | Si 251.611†        | 279370.0  | 287583.8  | 4876.6 µg/L | 4876.6 ppb | 11:49:54 |
| 3 | Sn 189.927†        | 3648.6    | 3791.0    | 484.72 µg/L | 484.72 ppb | 11:50:14 |
| 3 | Ti 334.940†        | 327409.1  | 338609.6  | 480.98 µg/L | 480.98 ppb | 11:49:54 |
| 3 | Tl 190.801†        | 1433.6    | 1564.8    | 480.73 µg/L | 480.73 ppb | 11:50:14 |
| 3 | U 367.007†         | 3539.4    | 3935.1    | 456.74 µg/L | 456.74 ppb | 11:49:54 |
| 3 | V 292.402†         | 103207.0  | 106354.0  | 477.88 µg/L | 477.88 ppb | 11:49:54 |
| 3 | Zn 213.857†        | 82206.1   | 84748.5   | 479.53 µg/L | 479.53 ppb | 11:49:54 |

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Mean Data: 1203657596|1611117|1

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--------------------|--------------------------|-------------|--------------|----------|--------------------|----------|-------|
| Sc 361.383         | 1298787.5                | 97.565      | %            | 0.5781   |                    |          | 0.59% |
| Sc RADIAL          | 69745.7                  | 96.8        | %            | 0.57     |                    |          | 0.59% |
| Y 371.029          | 695690.3                 | 96.031      | %            | 0.6208   |                    |          | 0.65% |
| Ag 328.068†        | 92989.8                  | 479.86      | µg/L         | 1.384    | 479.86 ppb         | 1.384    | 0.29% |
| Al 396.153Radial†  | 13461.8                  | 4915.3      | µg/L         | 12.29    | 4915.3 ppb         | 12.29    | 0.25% |
| As 188.979†        | 892.2                    | 489.70      | µg/L         | 4.885    | 489.70 ppb         | 4.885    | 1.00% |
| B 249.677†         | 34184.0                  | 495.25      | µg/L         | 2.194    | 495.25 ppb         | 2.194    | 0.44% |
| Ba 233.527†        | 54552.2                  | 486.45      | µg/L         | 2.160    | 486.45 ppb         | 2.160    | 0.44% |
| Be 313.107†        | 1811631.3                | 482.28      | µg/L         | 1.848    | 482.28 ppb         | 1.848    | 0.38% |
| Ca 317.933Radial†  | 44003.2                  | 4898.5      | µg/L         | 11.70    | 4898.5 ppb         | 11.70    | 0.24% |
| Cd 226.502†        | 63477.0                  | 479.73      | µg/L         | 3.777    | 479.73 ppb         | 3.777    | 0.79% |
| Co 228.616†        | 32322.9                  | 480.67      | µg/L         | 3.271    | 480.67 ppb         | 3.271    | 0.68% |
| Cr 267.716†        | 40724.9                  | 478.57      | µg/L         | 1.895    | 478.57 ppb         | 1.895    | 0.40% |
| Cu 324.752†        | 110902.5                 | 490.17      | µg/L         | 1.065    | 490.17 ppb         | 1.065    | 0.22% |
| Fe 238.204 Radial† | 52427.5                  | 4959.4      | µg/L         | 2.40     | 4959.4 ppb         | 2.40     | 0.05% |
| K 766.490 Radial†  | 9509.6                   | 4998.8      | µg/L         | 51.15    | 4998.8 ppb         | 51.15    | 1.02% |
| Mg 279.077 IEC†    | 9047.8                   | 4879.6      | µg/L         | 23.35    | 4879.6 ppb         | 23.35    | 0.48% |
| Mn 257.610†        | 274533.2                 | 480.97      | µg/L         | 1.059    | 480.97 ppb         | 1.059    | 0.22% |
| Mo 202.031†        | 9198.8                   | 478.25      | µg/L         | 3.176    | 478.25 ppb         | 3.176    | 0.66% |
| Na 589.592 Radial† | 29865.7                  | 4980.2      | µg/L         | 20.89    | 4980.2 ppb         | 20.89    | 0.42% |

|                  |          |             |       |            |       |       |
|------------------|----------|-------------|-------|------------|-------|-------|
| Ni 231.604†      | 30116.9  | 478.80 µg/L | 3.539 | 478.80 ppb | 3.539 | 0.74% |
| P 214.914†       | 1429.1   | 514.85 µg/L | 3.406 | 514.85 ppb | 3.406 | 0.66% |
| Pb 220.353†      | 4791.4   | 484.26 µg/L | 4.966 | 484.26 ppb | 4.966 | 1.03% |
| S 181.975 Axial† | 4490.5   | 5011.7 µg/L | 37.34 | 5011.7 ppb | 37.34 | 0.75% |
| Sb 206.836†      | 2547.1   | 484.29 µg/L | 3.551 | 484.29 ppb | 3.551 | 0.73% |
| Se 196.026†      | 911.8    | 480 µg/L    | 1.4   | 480 ppb    | 1.4   | 0.29% |
| SiO2†            | 94115.6  | 10416 µg/L  | 53.1  | 10416 ppb  | 53.1  | 0.51% |
| Si 251.611†      | 286725.7 | 4862.1 µg/L | 26.85 | 4862.1 ppb | 26.85 | 0.55% |
| Sn 189.927†      | 3753.1   | 479.88 µg/L | 4.328 | 479.88 ppb | 4.328 | 0.90% |
| Sr 421.552†      | 167883.6 | 486.91 µg/L | 1.933 | 486.91 ppb | 1.933 | 0.40% |
| Ti 334.940†      | 338728.8 | 481.15 µg/L | 0.401 | 481.15 ppb | 0.401 | 0.08% |
| Tl 190.801†      | 1554.1   | 477.46 µg/L | 4.371 | 477.46 ppb | 4.371 | 0.92% |
| U 367.007†       | 3910.3   | 453.68 µg/L | 3.552 | 453.68 ppb | 3.552 | 0.78% |
| V 292.402†       | 106515.4 | 478.60 µg/L | 0.759 | 478.60 ppb | 0.759 | 0.16% |
| Zn 213.857†      | 85058.5  | 481.28 µg/L | 1.594 | 481.28 ppb | 1.594 | 0.33% |

Sequence No.: 3

Sample ID: 409254001|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 303

Date Collected: 11/11/2016 11:50:21

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254001|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 69211.1       | 69211.1             | 96.1 %             |                    | 11:50:48      |
| 1     | Al 396.153Radial†  | 150035.1      | 156061.3            | 57096 µg/L         | 57096 ppb          | 11:50:48      |
| 1     | Ca 317.933Radial†  | 6076993.1     | 6324853.0           | 704090 µg/L        | 704090 ppb         | 11:50:46      |
| 1     | Fe 238.204 Radial† | 1275928.7     | 1328559.6           | 125680 µg/L        | 125680 ppb         | 11:50:46      |
| 1     | K 766.490 Radial†  | 22416.9       | 22262.2             | 11690 µg/L         | 11690 ppb          | 11:50:48      |
| 1     | Mg 279.077 IEC†    | 133424.3      | 138846.9            | 74898 µg/L         | 74898 ppb          | 11:50:48      |
| 1     | Na 589.592 Radial† | 8033.5        | 8321.8              | 1387.7 µg/L        | 1387.7 ppb         | 11:50:48      |
| 1     | Sr 421.552†        | 507046.3      | 528214.7            | 1508.2 µg/L        | 1508.2 ppb         | 11:50:46      |
| 1     | Sc 361.383         | 1230039.4     | 1230039.4           | 92.401 %           |                    | 11:51:01      |
| 1     | Y 371.029          | 735391.1      | 735391.1            | 101.51 %           |                    | 11:51:01      |
| 1     | Ag 328.068†        | -2675.2       | -1004.3             | -4.1743 µg/L       | -4.1743 ppb        | 11:51:01      |
| 1     | As 188.979†        | 97.1          | 135.0               | 89.651 µg/L        | 89.651 ppb         | 11:51:21      |
| 1     | B 249.677†         | -3003.3       | -4135.2             | 32.720 µg/L        | 32.720 ppb         | 11:51:01      |
| 1     | Ba 233.527†        | 185885.9      | 201414.9            | 1796.6 µg/L        | 1796.6 ppb         | 11:51:01      |
| 1     | Be 313.107†        | 12362.4       | 17035.1             | -39.260 µg/L       | -39.260 ppb        | 11:51:01      |
| 1     | Cd 226.502†        | 2320.6        | 2691.4              | 5.9733 µg/L        | 5.9733 ppb         | 11:51:21      |
| 1     | Co 228.616†        | 4303.6        | 4749.1              | 71.114 µg/L        | 71.114 ppb         | 11:51:21      |
| 1     | Cr 267.716†        | 8154.6        | 8696.2              | 103.47 µg/L        | 103.47 ppb         | 11:51:21      |
| 1     | Cu 324.752†        | 44542.7       | 42429.2             | 196.81 µg/L        | 196.81 ppb         | 11:51:01      |
| 1     | Mn 257.610†        | 2922108.0     | 3162285.5           | 5539.6 µg/L        | 5539.6 ppb         | 11:51:01      |
| 1     | Mo 202.031†        | 48.6          | 82.3                | 8.1263 µg/L        | 8.1263 ppb         | 11:51:21      |
| 1     | Ni 231.604†        | 9927.7        | 10941.9             | 173.96 µg/L        | 173.96 ppb         | 11:51:21      |
| 1     | P 214.914†         | 14478.4       | 15764.2             | 5675.5 µg/L        | 5675.5 ppb         | 11:51:21      |
| 1     | Pb 220.353†        | 183935.1      | 198989.2            | 20133 µg/L         | 20133 ppb          | 11:51:01      |
| 1     | S 181.975 Axial†   | 2160.8        | 2235.8              | 2467.3 µg/L        | 2467.3 ppb         | 11:51:21      |
| 1     | Sb 206.836†        | 230.6         | 205.2               | 26.250 µg/L        | 26.250 ppb         | 11:51:21      |
| 1     | Se 196.026†        | -77.9         | -92.3               | 8.54 µg/L          | 8.54 ppb           | 11:51:21      |
| 1     | SiO2†              | 626100.5      | 674574.5            | 74660 µg/L         | 74660 ppb          | 11:51:01      |
| 1     | Si 251.611†        | 1890422.2     | 2045316.0           | 34694 µg/L         | 34694 ppb          | 11:51:01      |
| 1     | Sn 189.927†        | -39.6         | -15.3               | -1.7812 µg/L       | -1.7812 ppb        | 11:51:21      |
| 1     | Ti 334.940†        | 1085016.0     | 1175142.7           | 1678.8 µg/L        | 1678.8 ppb         | 11:51:01      |
| 1     | Tl 190.801†        | -137.4        | -62.6               | -17.089 µg/L       | -17.089 ppb        | 11:51:21      |
| 1     | U 367.007†         | 5155.1        | 5863.3              | -23.734 µg/L       | -23.734 ppb        | 11:51:01      |
| 1     | V 292.402†         | 39904.5       | 43083.2             | 201.87 µg/L        | 201.87 ppb         | 11:51:01      |
| 1     | Zn 213.857†        | 122856.7      | 132914.5            | 736.68 µg/L        | 736.68 ppb         | 11:51:01      |
| 2     | Sc RADIAL          | 69384.5       | 69384.5             | 96.3 %             |                    | 11:50:53      |
| 2     | Al 396.153Radial†  | 151511.1      | 157203.3            | 57516 µg/L         | 57516 ppb          | 11:50:53      |
| 2     | Ca 317.933Radial†  | 6232842.3     | 6470848.5           | 720340 µg/L        | 720340 ppb         | 11:50:50      |
| 2     | Fe 238.204 Radial† | 1308610.5     | 1359171.0           | 128570 µg/L        | 128570 ppb         | 11:50:50      |
| 2     | K 766.490 Radial†  | 22565.3       | 22358.0             | 11740 µg/L         | 11740 ppb          | 11:50:53      |
| 2     | Mg 279.077 IEC†    | 134632.1      | 139753.7            | 75388 µg/L         | 75388 ppb          | 11:50:53      |
| 2     | Na 589.592 Radial† | 7970.2        | 8235.2              | 1373.3 µg/L        | 1373.3 ppb         | 11:50:53      |
| 2     | Sr 421.552†        | 518948.7      | 539252.8            | 1539.7 µg/L        | 1539.7 ppb         | 11:50:50      |
| 2     | Sc 361.383         | 1242545.4     | 1242545.4           | 93.340 %           |                    | 11:51:24      |
| 2     | Y 371.029          | 743617.1      | 743617.1            | 102.65 %           |                    | 11:51:24      |
| 2     | Ag 328.068†        | -2759.2       | -1065.3             | -4.4687 µg/L       | -4.4687 ppb        | 11:51:24      |
| 2     | As 188.979†        | 108.1         | 145.8               | 95.857 µg/L        | 95.857 ppb         | 11:51:44      |
| 2     | B 249.677†         | -2942.7       | -4037.5             | 36.249 µg/L        | 36.249 ppb         | 11:51:24      |
| 2     | Ba 233.527†        | 188078.9      | 201739.6            | 1799.5 µg/L        | 1799.5 ppb         | 11:51:24      |
| 2     | Be 313.107†        | 12472.5       | 17018.4             | -39.327 µg/L       | -39.327 ppb        | 11:51:24      |
| 2     | Cd 226.502†        | 2272.2        | 2614.3              | 5.0584 µg/L        | 5.0584 ppb         | 11:51:44      |
| 2     | Co 228.616†        | 4282.6        | 4679.7              | 70.052 µg/L        | 70.052 ppb         | 11:51:44      |
| 2     | Cr 267.716†        | 8100.4        | 8549.3              | 101.77 µg/L        | 101.77 ppb         | 11:51:44      |
| 2     | Cu 324.752†        | 45487.2       | 42956.0             | 199.35 µg/L        | 199.35 ppb         | 11:51:24      |
| 2     | Mn 257.610†        | 2961726.2     | 3172901.0           | 5558.1 µg/L        | 5558.1 ppb         | 11:51:24      |
| 2     | Mo 202.031†        | 50.5          | 83.8                | 8.2815 µg/L        | 8.2815 ppb         | 11:51:44      |
| 2     | Ni 231.604†        | 9876.7        | 10779.1             | 171.37 µg/L        | 171.37 ppb         | 11:51:44      |
| 2     | P 214.914†         | 14389.7       | 15511.5             | 5584.3 µg/L        | 5584.3 ppb         | 11:51:44      |
| 2     | Pb 220.353†        | 186699.9      | 199947.7            | 20230 µg/L         | 20230 ppb          | 11:51:24      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 2168.3    | 2220.3    | 2449.3 µg/L  | 2449.3 ppb  | 11:51:44 |
| 2 | Sb 206.836†        | 221.3     | 192.8     | 23.579 µg/L  | 23.579 ppb  | 11:51:44 |
| 2 | Se 196.026†        | -90.7     | -105.2    | 3.13 µg/L    | 3.13 ppb    | 11:51:44 |
| 2 | SiO2†              | 634178.2  | 676408.7  | 74863 µg/L   | 74863 ppb   | 11:51:24 |
| 2 | Si 251.611†        | 1915841.3 | 2051957.0 | 34807 µg/L   | 34807 ppb   | 11:51:24 |
| 2 | Sn 189.927†        | -37.1     | -12.3     | -1.3895 µg/L | -1.3895 ppb | 11:51:44 |
| 2 | Ti 334.940†        | 1097869.0 | 1177094.1 | 1681.7 µg/L  | 1681.7 ppb  | 11:51:24 |
| 2 | Tl 190.801†        | -146.1    | -70.5     | -19.469 µg/L | -19.469 ppb | 11:51:44 |
| 2 | U 367.007†         | 5373.9    | 6041.5    | -18.981 µg/L | -18.981 ppb | 11:51:24 |
| 2 | V 292.402†         | 40405.4   | 43185.1   | 202.53 µg/L  | 202.53 ppb  | 11:51:24 |
| 2 | Zn 213.857†        | 124570.2  | 133412.1  | 739.17 µg/L  | 739.17 ppb  | 11:51:24 |
| 3 | Sc RADIAL          | 67810.0   | 67810.0   | 94.1 %       |             | 11:50:57 |
| 3 | Al 396.153Radial†  | 148777.9  | 157952.3  | 57790 µg/L   | 57790 ppb   | 11:50:57 |
| 3 | Ca 317.933Radial†  | 6149398.8 | 6532458.8 | 727200 µg/L  | 727200 ppb  | 11:50:55 |
| 3 | Fe 238.204 Radial† | 1291837.0 | 1372898.6 | 129870 µg/L  | 129870 ppb  | 11:50:55 |
| 3 | K 766.490 Radial†  | 22096.9   | 22404.3   | 11765 µg/L   | 11765 ppb   | 11:50:57 |
| 3 | Mg 279.077 IEC†    | 131389.4  | 139554.5  | 75281 µg/L   | 75281 ppb   | 11:50:57 |
| 3 | Na 589.592 Radial† | 8050.8    | 8513.0    | 1419.6 µg/L  | 1419.6 ppb  | 11:50:57 |
| 3 | Sr 421.552†        | 513746.4  | 546236.6  | 1559.7 µg/L  | 1559.7 ppb  | 11:50:55 |
| 3 | Sc 361.383         | 1264158.7 | 1264158.7 | 94.964 %     |             | 11:51:47 |
| 3 | Y 371.029          | 756096.6  | 756096.6  | 104.37 %     |             | 11:51:47 |
| 3 | Ag 328.068†        | -2869.9   | -1131.3   | -4.7958 µg/L | -4.7958 ppb | 11:51:47 |
| 3 | As 188.979†        | 103.9     | 139.4     | 92.529 µg/L  | 92.529 ppb  | 11:52:07 |
| 3 | B 249.677†         | -3017.8   | -4062.7   | 36.838 µg/L  | 36.838 ppb  | 11:51:47 |
| 3 | Ba 233.527†        | 191134.6  | 201512.3  | 1797.5 µg/L  | 1797.5 ppb  | 11:51:47 |
| 3 | Be 313.107†        | 12721.6   | 17052.2   | -39.266 µg/L | -39.266 ppb | 11:51:47 |
| 3 | Cd 226.502†        | 2268.8    | 2569.2    | 4.5681 µg/L  | 4.5681 ppb  | 11:52:07 |
| 3 | Co 228.616†        | 4306.2    | 4626.1    | 69.238 µg/L  | 69.238 ppb  | 11:52:07 |
| 3 | Cr 267.716†        | 8089.1    | 8389.1    | 99.906 µg/L  | 99.906 ppb  | 11:52:07 |
| 3 | Cu 324.752†        | 46214.9   | 42889.1   | 199.14 µg/L  | 199.14 ppb  | 11:51:47 |
| 3 | Mn 257.610†        | 3011180.2 | 3170728.4 | 5554.3 µg/L  | 5554.3 ppb  | 11:51:47 |
| 3 | Mo 202.031†        | 65.9      | 99.1      | 9.1082 µg/L  | 9.1082 ppb  | 11:52:07 |
| 3 | Ni 231.604†        | 9919.4    | 10643.2   | 169.21 µg/L  | 169.21 ppb  | 11:52:07 |
| 3 | P 214.914†         | 14418.7   | 15278.5   | 5500.2 µg/L  | 5500.2 ppb  | 11:52:07 |
| 3 | Pb 220.353†        | 189686.4  | 199672.8  | 20202 µg/L   | 20202 ppb   | 11:51:47 |
| 3 | S 181.975 Axial†   | 2173.3    | 2185.9    | 2410.7 µg/L  | 2410.7 ppb  | 11:52:07 |
| 3 | Sb 206.836†        | 228.4     | 196.2     | 24.132 µg/L  | 24.132 ppb  | 11:52:07 |
| 3 | Se 196.026†        | -86.0     | -98.6     | 7.16 µg/L    | 7.16 ppb    | 11:52:07 |
| 3 | SiO2†              | 646042.7  | 677286.3  | 74960 µg/L   | 74960 ppb   | 11:51:47 |
| 3 | Si 251.611†        | 1949055.6 | 2051840.8 | 34805 µg/L   | 34805 ppb   | 11:51:47 |
| 3 | Sn 189.927†        | -42.4     | -17.2     | -2.0122 µg/L | -2.0122 ppb | 11:52:07 |
| 3 | Ti 334.940†        | 1117048.9 | 1177181.6 | 1681.9 µg/L  | 1681.9 ppb  | 11:51:47 |
| 3 | Tl 190.801†        | -142.3    | -63.8     | -17.394 µg/L | -17.394 ppb | 11:52:07 |
| 3 | U 367.007†         | 5526.5    | 6103.8    | -18.978 µg/L | -18.978 ppb | 11:51:47 |
| 3 | V 292.402†         | 40967.8   | 43037.3   | 201.95 µg/L  | 201.95 ppb  | 11:51:47 |
| 3 | Zn 213.857†        | 126779.0  | 133456.3  | 739.28 µg/L  | 739.28 ppb  | 11:51:47 |

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Mean Data: 409254001|1611117|1

| Analyte  | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--|--------------------------|--------------|-----------------|--------------------|----------|--------|
| Sc 361.383   | 1245581.2                | 93.568 %     | 1.2966          |                    |          | 1.39%  |
| Sc RADIAL  | 68801.9                  | 95.5 %       | 1.20            |                    |          | 1.25%  |
| Y 371.029  | 745034.9                 | 102.84 %     | 1.439           |                    |          | 1.40%  |
| Ag 328.068†  | -1067.0                  | -4.4796 µg/L | 0.31089         | -4.4796 ppb        | 0.31089  | 6.94%  |
| Al 396.153Radial†  | 157072.3                 | 57467 µg/L   | 349.7           | 57467 ppb          | 349.7    | 0.61%  |
| As 188.979†  | 140.1                    | 92.679 µg/L  | 3.1057          | 92.679 ppb         | 3.1057   | 3.35%  |
| B 249.677†   | -4078.5                  | 35.269 µg/L  | 2.2270          | 35.269 ppb         | 2.2270   | 6.31%  |
| Ba 233.527†  | 201555.6                 | 1797.8 µg/L  | 1.49            | 1797.8 ppb         | 1.49     | 0.08%  |
| Be 313.107†  | 17035.2                  | -39.284 µg/L | 0.0376          | -39.284 ppb        | 0.0376   | 0.10%  |
| Concentration less than lower limit for Be 313.107.          |                          |              |                 |                    |          |        |
| Ca 317.933Radial†  | 6442720.1                | 717210 µg/L  | 11869.3         | 717210 ppb         | 11869.3  | 1.65%  |
| Concentration greater than upper limit for Ca 317.933Radial. |                          |              |                 |                    |          |        |
| Cd 226.502†  | 2625.0                   | 5.1999 µg/L  | 0.71321         | 5.1999 ppb         | 0.71321  | 13.72% |
| Co 228.616†  | 4685.0                   | 70.135 µg/L  | 0.9411          | 70.135 ppb         | 0.9411   | 1.34%  |
| Cr 267.716†  | 8544.9                   | 101.72 µg/L  | 1.783           | 101.72 ppb         | 1.783    | 1.75%  |
| Cu 324.752†  | 42758.1                  | 198.43 µg/L  | 1.406           | 198.43 ppb         | 1.406    | 0.71%  |
| Fe 238.204 Radial†   | 1353543.1                | 128040 µg/L  | 2147.2          | 128040 ppb         | 2147.2   | 1.68%  |
| K 766.490 Radial†  | 22341.5                  | 11732 µg/L   | 38.0            | 11732 ppb          | 38.0     | 0.32%  |
| Mg 279.077 IEC†  | 139385.0                 | 75189 µg/L   | 257.5           | 75189 ppb          | 257.5    | 0.34%  |
| Mn 257.610†  | 3168638.3                | 5550.7 µg/L  | 9.82            | 5550.7 ppb         | 9.82     | 0.18%  |



|                    |           |              |         |             |         |        |
|--------------------|-----------|--------------|---------|-------------|---------|--------|
| Mo 202.031†        | 88.4      | 8.5053 µg/L  | 0.52787 | 8.5053 ppb  | 0.52787 | 6.21%  |
| Na 589.592 Radial† | 8356.7    | 1393.5 µg/L  | 23.70   | 1393.5 ppb  | 23.70   | 1.70%  |
| Ni 231.604†        | 10788.1   | 171.51 µg/L  | 2.378   | 171.51 ppb  | 2.378   | 1.39%  |
| P 214.914†         | 15518.1   | 5586.7 µg/L  | 87.68   | 5586.7 ppb  | 87.68   | 1.57%  |
| Pb 220.353†        | 199536.6  | 20188 µg/L   | 49.9    | 20188 ppb   | 49.9    | 0.25%  |
| S 181.975 Axial†   | 2214.0    | 2442.4 µg/L  | 28.95   | 2442.4 ppb  | 28.95   | 1.19%  |
| Sb 206.836†        | 198.1     | 24.654 µg/L  | 1.4098  | 24.654 ppb  | 1.4098  | 5.72%  |
| Se 196.026†        | -98.7     | 6.28 µg/L    | 2.813   | 6.28 ppb    | 2.813   | 44.81% |
| SiO2†              | 676089.8  | 74828 µg/L   | 153.1   | 74828 ppb   | 153.1   | 0.20%  |
| Si 251.611†        | 2049704.6 | 34769 µg/L   | 64.7    | 34769 ppb   | 64.7    | 0.19%  |
| Sn 189.927†        | -14.9     | -1.7276 µg/L | 0.31477 | -1.7276 ppb | 0.31477 | 18.22% |
| Sr 421.552†        | 537901.3  | 1535.9 µg/L  | 25.96   | 1535.9 ppb  | 25.96   | 1.69%  |
| Ti 334.940†        | 1176472.8 | 1680.8 µg/L  | 1.77    | 1680.8 ppb  | 1.77    | 0.11%  |
| Tl 190.801†        | -65.6     | -17.984 µg/L | 1.2955  | -17.984 ppb | 1.2955  | 7.20%  |
| U 367.007†         | 6002.9    | -20.564 µg/L | 2.7448  | -20.564 ppb | 2.7448  | 13.35% |
| V 292.402†         | 43101.8   | 202.12 µg/L  | 0.358   | 202.12 ppb  | 0.358   | 0.18%  |
| Zn 213.857†        | 133261.0  | 738.38 µg/L  | 1.470   | 738.38 ppb  | 1.470   | 0.20%  |

Sequence No.: 4

Sample ID: 1203657597|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 304

Date Collected: 11/11/2016 11:52:15

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1203657597|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 68468.4       | 68468.4             | 95.0 %             |                    | 11:52:42      |
| 1     | Al 396.153Radial†  | 136905.7      | 143941.3            | 52700 µg/L         | 52700 ppb          | 11:52:42      |
| 1     | Ca 317.933Radial†  | 7398549.8     | 7783911.7           | 866510 µg/L        | 866510 ppb         | 11:52:40      |
| 1     | Fe 238.204 Radial† | 1230721.4     | 1295400.1           | 122540 µg/L        | 122540 ppb         | 11:52:40      |
| 1     | K 766.490 Radial†  | 21356.5       | 21399.7             | 11224 µg/L         | 11224 ppb          | 11:52:42      |
| 1     | Mg 279.077 IEC†    | 130618.9      | 137401.5            | 74118 µg/L         | 74118 ppb          | 11:52:42      |
| 1     | Na 589.592 Radial† | 8696.0        | 9109.6              | 1519.1 µg/L        | 1519.1 ppb         | 11:52:42      |
| 1     | Sr 421.552†        | 628576.2      | 661804.6            | 1890.2 µg/L        | 1890.2 ppb         | 11:52:40      |
| 1     | Sc 361.383         | 1244528.3     | 1244528.3           | 93.489 %           |                    | 11:52:55      |
| 1     | Y 371.029          | 743556.5      | 743556.5            | 102.64 %           |                    | 11:52:55      |
| 1     | Ag 328.068†        | -3330.3       | -1671.4             | -9.1690 µg/L       | -9.1690 ppb        | 11:52:55      |
| 1     | As 188.979†        | 107.2         | 144.6               | 94.448 µg/L        | 94.448 ppb         | 11:53:15      |
| 1     | B 249.677†         | -2936.6       | -4026.0             | 31.989 µg/L        | 31.989 ppb         | 11:52:55      |
| 1     | Ba 233.527†        | 205145.1      | 219673.4            | 1959.4 µg/L        | 1959.4 ppb         | 11:52:55      |
| 1     | Be 313.107†        | 11469.0       | 15923.7             | -43.566 µg/L       | -43.566 ppb        | 11:52:55      |
| 1     | Cd 226.502†        | 2116.5        | 2444.0              | 4.4601 µg/L        | 4.4601 ppb         | 11:53:15      |
| 1     | Co 228.616†        | 3969.0        | 4336.9              | 65.222 µg/L        | 65.222 ppb         | 11:53:15      |
| 1     | Cr 267.716†        | 7936.7        | 8360.4              | 99.468 µg/L        | 99.468 ppb         | 11:53:15      |
| 1     | Cu 324.752†        | 42016.2       | 39165.6             | 182.20 µg/L        | 182.20 ppb         | 11:52:55      |
| 1     | Mn 257.610†        | 2567003.0     | 2745631.5           | 4809.4 µg/L        | 4809.4 ppb         | 11:52:55      |
| 1     | Mo 202.031†        | 31.7          | 63.7                | 7.0745 µg/L        | 7.0745 ppb         | 11:53:15      |
| 1     | Ni 231.604†        | 8949.2        | 9770.2              | 155.33 µg/L        | 155.33 ppb         | 11:53:15      |
| 1     | P 214.914†         | 13447.4       | 14479.0             | 5212.4 µg/L        | 5212.4 ppb         | 11:53:15      |
| 1     | Pb 220.353†        | 26074.5       | 27816.8             | 2815.3 µg/L        | 2815.3 ppb         | 11:53:15      |
| 1     | S 181.975 Axial†   | 2708.8        | 2794.8              | 3092.1 µg/L        | 3092.1 ppb         | 11:53:15      |
| 1     | Sb 206.836†        | 296.9         | 273.2               | 39.673 µg/L        | 39.673 ppb         | 11:53:15      |
| 1     | Se 196.026†        | -70.1         | -82.9               | 12.1 µg/L          | 12.1 ppb           | 11:53:15      |
| 1     | SiO2†              | 616895.9      | 656840.2            | 72697 µg/L         | 72697 ppb          | 11:52:55      |
| 1     | Si 251.611†        | 1862969.9     | 1992133.1           | 33792 µg/L         | 33792 ppb          | 11:52:55      |
| 1     | Sn 189.927†        | -12.3         | 14.3                | 1.9924 µg/L        | 1.9924 ppb         | 11:53:15      |
| 1     | Ti 334.940†        | 1082744.5     | 1159042.2           | 1657.9 µg/L        | 1657.9 ppb         | 11:52:55      |
| 1     | Tl 190.801†        | -152.1        | -76.6               | -21.453 µg/L       | -21.453 ppb        | 11:53:15      |
| 1     | U 367.007†         | 5229.4        | 5877.8              | -19.187 µg/L       | -19.187 ppb        | 11:52:55      |
| 1     | V 292.402†         | 38499.8       | 41077.8             | 192.67 µg/L        | 192.67 ppb         | 11:52:55      |
| 1     | Zn 213.857†        | 117398.3      | 125528.1            | 695.17 µg/L        | 695.17 ppb         | 11:52:55      |
| 2     | Sc RADIAL          | 67513.5       | 67513.5             | 93.7 %             |                    | 11:52:46      |
| 2     | Al 396.153Radial†  | 134723.2      | 143649.9            | 52595 µg/L         | 52595 ppb          | 11:52:46      |
| 2     | Ca 317.933Radial†  | 7374490.2     | 7868343.6           | 875910 µg/L        | 875910 ppb         | 11:52:44      |
| 2     | Fe 238.204 Radial† | 1227086.2     | 1309836.7           | 123900 µg/L        | 123900 ppb         | 11:52:44      |
| 2     | K 766.490 Radial†  | 21149.9       | 21497.1             | 11274 µg/L         | 11274 ppb          | 11:52:46      |
| 2     | Mg 279.077 IEC†    | 127891.4      | 136435.1            | 73598 µg/L         | 73598 ppb          | 11:52:46      |
| 2     | Na 589.592 Radial† | 8573.1        | 9107.9              | 1518.8 µg/L        | 1518.8 ppb         | 11:52:46      |
| 2     | Sr 421.552†        | 627845.7      | 670379.4            | 1914.7 µg/L        | 1914.7 ppb         | 11:52:44      |
| 2     | Sc 361.383         | 1217361.3     | 1217361.3           | 91.448 %           |                    | 11:53:18      |
| 2     | Y 371.029          | 727460.1      | 727460.1            | 100.42 %           |                    | 11:53:18      |
| 2     | Ag 328.068†        | -3137.0       | -1539.6             | -8.4861 µg/L       | -8.4861 ppb        | 11:53:18      |
| 2     | As 188.979†        | 107.9         | 147.9               | 96.435 µg/L        | 96.435 ppb         | 11:53:38      |
| 2     | B 249.677†         | -2711.9       | -3850.4             | 35.516 µg/L        | 35.516 ppb         | 11:53:18      |
| 2     | Ba 233.527†        | 200339.5      | 219315.2            | 1956.2 µg/L        | 1956.2 ppb         | 11:53:18      |
| 2     | Be 313.107†        | 11176.3       | 15877.4             | -43.501 µg/L       | -43.501 ppb        | 11:53:18      |
| 2     | Cd 226.502†        | 2137.2        | 2517.1              | 4.8572 µg/L        | 4.8572 ppb         | 11:53:38      |
| 2     | Co 228.616†        | 3953.5        | 4414.7              | 66.357 µg/L        | 66.357 ppb         | 11:53:38      |
| 2     | Cr 267.716†        | 8006.2        | 8625.9              | 102.62 µg/L        | 102.62 ppb         | 11:53:38      |
| 2     | Cu 324.752†        | 41004.3       | 39061.9             | 181.82 µg/L        | 181.82 ppb         | 11:53:18      |
| 2     | Mn 257.610†        | 2507062.0     | 2741360.8           | 4801.9 µg/L        | 4801.9 ppb         | 11:53:18      |
| 2     | Mo 202.031†        | 18.4          | 49.8                | 6.3815 µg/L        | 6.3815 ppb         | 11:53:38      |
| 2     | Ni 231.604†        | 9017.8        | 10058.8             | 159.92 µg/L        | 159.92 ppb         | 11:53:38      |
| 2     | P 214.914†         | 13571.9       | 14936.2             | 5377.1 µg/L        | 5377.1 ppb         | 11:53:38      |
| 2     | Pb 220.353†        | 26335.6       | 28724.7             | 2907.1 µg/L        | 2907.1 ppb         | 11:53:38      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 2753.2    | 2907.9    | 3218.1 µg/L  | 3218.1 ppb  | 11:53:38 |
| 2 | Sb 206.836†        | 290.5     | 273.4     | 39.499 µg/L  | 39.499 ppb  | 11:53:38 |
| 2 | Se 196.026†        | -84.5     | -100.4    | 3.59 µg/L    | 3.59 ppb    | 11:53:38 |
| 2 | SiO2†              | 602640.9  | 655977.8  | 72602 µg/L   | 72602 ppb   | 11:53:18 |
| 2 | Si 251.611†        | 1820436.4 | 1990092.1 | 33758 µg/L   | 33758 ppb   | 11:53:18 |
| 2 | Sn 189.927†        | -28.7     | -3.9      | -0.3259 µg/L | -0.3259 ppb | 11:53:38 |
| 2 | Ti 334.940†        | 1058077.3 | 1157913.8 | 1656.4 µg/L  | 1656.4 ppb  | 11:53:18 |
| 2 | Tl 190.801†        | -133.4    | -59.8     | -16.264 µg/L | -16.264 ppb | 11:53:38 |
| 2 | U 367.007†         | 5094.6    | 5855.2    | -30.213 µg/L | -30.213 ppb | 11:53:18 |
| 2 | V 292.402†         | 37581.4   | 40992.5   | 192.39 µg/L  | 192.39 ppb  | 11:53:18 |
| 2 | Zn 213.857†        | 114484.4  | 125144.1  | 692.87 µg/L  | 692.87 ppb  | 11:53:18 |
| 3 | Sc RADIAL          | 68037.3   | 68037.3   | 94.4 %       |             | 11:52:51 |
| 3 | Al 396.153Radial†  | 135883.7  | 143771.9  | 52636 µg/L   | 52636 ppb   | 11:52:51 |
| 3 | Ca 317.933Radial†  | 7255390.4 | 7681660.4 | 855130 µg/L  | 855130 ppb  | 11:52:49 |
| 3 | Fe 238.204 Radial† | 1206591.0 | 1278056.0 | 120900 µg/L  | 120900 ppb  | 11:52:49 |
| 3 | K 766.490 Radial†  | 21207.2   | 21383.9   | 11216 µg/L   | 11216 ppb   | 11:52:51 |
| 3 | Mg 279.077 IEC†    | 128838.1  | 136386.9  | 73571 µg/L   | 73571 ppb   | 11:52:51 |
| 3 | Na 589.592 Radial† | 8629.0    | 9096.6    | 1516.9 µg/L  | 1516.9 ppb  | 11:52:51 |
| 3 | Sr 421.552†        | 619816.5  | 656720.4  | 1875.8 µg/L  | 1875.8 ppb  | 11:52:49 |
| 3 | Sc 361.383         | 1238700.6 | 1238700.6 | 93.051 %     |             | 11:53:41 |
| 3 | Y 371.029          | 739715.9  | 739715.9  | 102.11 %     |             | 11:53:41 |
| 3 | Ag 328.068†        | -3211.0   | -1560.0   | -8.5944 µg/L | -8.5944 ppb | 11:53:41 |
| 3 | As 188.979†        | 98.4      | 135.7     | 89.444 µg/L  | 89.444 ppb  | 11:54:01 |
| 3 | B 249.677†         | -2829.8   | -3926.0   | 32.224 µg/L  | 32.224 ppb  | 11:53:41 |
| 3 | Ba 233.527†        | 204546.1  | 220061.9  | 1962.8 µg/L  | 1962.8 ppb  | 11:53:41 |
| 3 | Be 313.107†        | 11540.7   | 16058.5   | -43.614 µg/L | -43.614 ppb | 11:53:41 |
| 3 | Cd 226.502†        | 2132.0    | 2471.3    | 4.8545 µg/L  | 4.8545 ppb  | 11:54:01 |
| 3 | Co 228.616†        | 3960.1    | 4347.4    | 65.401 µg/L  | 65.401 ppb  | 11:54:01 |
| 3 | Cr 267.716†        | 7961.8    | 8427.4    | 100.23 µg/L  | 100.23 ppb  | 11:54:01 |
| 3 | Cu 324.752†        | 41842.7   | 39190.5   | 182.20 µg/L  | 182.20 ppb  | 11:53:41 |
| 3 | Mn 257.610†        | 2557176.6 | 2747989.4 | 4813.5 µg/L  | 4813.5 ppb  | 11:53:41 |
| 3 | Mo 202.031†        | 27.8      | 59.6      | 6.8186 µg/L  | 6.8186 ppb  | 11:54:01 |
| 3 | Ni 231.604†        | 8983.1    | 9851.7    | 156.62 µg/L  | 156.62 ppb  | 11:54:01 |
| 3 | P 214.914†         | 13506.2   | 14609.9   | 5259.7 µg/L  | 5259.7 ppb  | 11:54:01 |
| 3 | Pb 220.353†        | 26129.9   | 28007.5   | 2834.6 µg/L  | 2834.6 ppb  | 11:54:01 |
| 3 | S 181.975 Axial†   | 2752.4    | 2855.2    | 3159.9 µg/L  | 3159.9 ppb  | 11:54:01 |
| 3 | Sb 206.836†        | 281.7     | 258.4     | 36.972 µg/L  | 36.972 ppb  | 11:54:01 |
| 3 | Se 196.026†        | -77.5     | -91.3     | 6.98 µg/L    | 6.98 ppb    | 11:54:01 |
| 3 | SiO2†              | 614151.9  | 656995.7  | 72714 µg/L   | 72714 ppb   | 11:53:41 |
| 3 | Si 251.611†        | 1856595.2 | 1994657.5 | 33835 µg/L   | 33835 ppb   | 11:53:41 |
| 3 | Sn 189.927†        | -10.2     | 16.5      | 2.2773 µg/L  | 2.2773 ppb  | 11:54:01 |
| 3 | Ti 334.940†        | 1078661.3 | 1160102.8 | 1659.3 µg/L  | 1659.3 ppb  | 11:53:41 |
| 3 | Tl 190.801†        | -143.8    | -68.4     | -18.967 µg/L | -18.967 ppb | 11:54:01 |
| 3 | U 367.007†         | 5212.4    | 5885.8    | -8.2791 µg/L | -8.2791 ppb | 11:53:41 |
| 3 | V 292.402†         | 38254.5   | 41007.9   | 192.25 µg/L  | 192.25 ppb  | 11:53:41 |
| 3 | Zn 213.857†        | 116799.4  | 125475.2  | 695.07 µg/L  | 695.07 ppb  | 11:53:41 |

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Mean Data: 1203657597|1611117|1

| Analyte  | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------|-----------------|--------------------|----------|-------|
| Sc 361.383   | 1233530.1                | 92.663 %     | 1.0744          |                    |          | 1.16% |
| Sc RADIAL  | 68006.4                  | 94.4 %       | 0.66            |                    |          | 0.70% |
| Y 371.029  | 736910.8                 | 101.72 %     | 1.160           |                    |          | 1.14% |
| Ag 328.068†  | -1590.3                  | -8.7499 µg/L | 0.36704         | -8.7499 ppb        | 0.36704  | 4.19% |
| Concentration less than lower limit for Ag 328.068.          |                          |              |                 |                    |          |       |
| Al 396.153Radial†  | 143787.7                 | 52644 µg/L   | 52.8            | 52644 ppb          | 52.8     | 0.10% |
| As 188.979†  | 142.7                    | 93.442 µg/L  | 3.6023          | 93.442 ppb         | 3.6023   | 3.86% |
| B 249.677†   | -3934.1                  | 33.243 µg/L  | 1.9719          | 33.243 ppb         | 1.9719   | 5.93% |
| Ba 233.527†  | 219683.5                 | 1959.4 µg/L  | 3.32            | 1959.4 ppb         | 3.32     | 0.17% |
| Be 313.107†  | 15953.2                  | -43.560 µg/L | 0.0567          | -43.560 ppb        | 0.0567   | 0.13% |
| Concentration less than lower limit for Be 313.107.          |                          |              |                 |                    |          |       |
| Ca 317.933Radial†  | 7777971.9                | 865850 µg/L  | 10406.6         | 865850 ppb         | 10406.6  | 1.20% |
| Concentration greater than upper limit for Ca 317.933Radial. |                          |              |                 |                    |          |       |
| Cd 226.502†  | 2477.4                   | 4.7239 µg/L  | 0.22852         | 4.7239 ppb         | 0.22852  | 4.84% |
| Co 228.616†  | 4366.4                   | 65.660 µg/L  | 0.6100          | 65.660 ppb         | 0.6100   | 0.93% |
| Cr 267.716†  | 8471.3                   | 100.77 µg/L  | 1.645           | 100.77 ppb         | 1.645    | 1.63% |
| Cu 324.752†  | 39139.3                  | 182.08 µg/L  | 0.219           | 182.08 ppb         | 0.219    | 0.12% |
| Fe 238.204 Radial†   | 1294430.9                | 122450 µg/L  | 1505.2          | 122450 ppb         | 1505.2   | 1.23% |
| K 766.490 Radial†  | 21426.9                  | 11238 µg/L   | 32.0            | 11238 ppb          | 32.0     | 0.28% |
| Mg 279.077 IEC†  | 136741.2                 | 73762 µg/L   | 308.6           | 73762 ppb          | 308.6    | 0.42% |

|                    |           |              |         |             |         |         |
|--------------------|-----------|--------------|---------|-------------|---------|---------|
| Mn 257.610†        | 2744993.9 | 4808.2 µg/L  | 5.89    | 4808.2 ppb  | 5.89    | 0.12%   |
| Mo 202.031†        | 57.7      | 6.7582 µg/L  | 0.35040 | 6.7582 ppb  | 0.35040 | 5.18%   |
| Na 589.592 Radial† | 9104.7    | 1518.3 µg/L  | 1.18    | 1518.3 ppb  | 1.18    | 0.08%   |
| Ni 231.604†        | 9893.6    | 157.29 µg/L  | 2.366   | 157.29 ppb  | 2.366   | 1.50%   |
| P 214.914†         | 14675.0   | 5283.1 µg/L  | 84.81   | 5283.1 ppb  | 84.81   | 1.61%   |
| Pb 220.353†        | 28183.0   | 2852.3 µg/L  | 48.43   | 2852.3 ppb  | 48.43   | 1.70%   |
| S 181.975 Axial†   | 2852.7    | 3156.7 µg/L  | 63.06   | 3156.7 ppb  | 63.06   | 2.00%   |
| Sb 206.836†        | 268.3     | 38.715 µg/L  | 1.5115  | 38.715 ppb  | 1.5115  | 3.90%   |
| Se 196.026†        | -91.5     | 7.56 µg/L    | 4.287   | 7.56 ppb    | 4.287   | 56.71%  |
| SiO2†              | 656604.6  | 72671 µg/L   | 60.7    | 72671 ppb   | 60.7    | 0.08%   |
| Si 251.611†        | 1992294.2 | 33795 µg/L   | 38.6    | 33795 ppb   | 38.6    | 0.11%   |
| Sn 189.927†        | 9.0       | 1.3146 µg/L  | 1.42787 | 1.3146 ppb  | 1.42787 | 108.62% |
| Sr 421.552†        | 662968.1  | 1893.6 µg/L  | 19.68   | 1893.6 ppb  | 19.68   | 1.04%   |
| Ti 334.940†        | 1159019.6 | 1657.9 µg/L  | 1.43    | 1657.9 ppb  | 1.43    | 0.09%   |
| Tl 190.801†        | -68.3     | -18.895 µg/L | 2.5951  | -18.895 ppb | 2.5951  | 13.73%  |
| U 367.007†         | 5873.0    | -19.226 µg/L | 10.9668 | -19.226 ppb | 10.9668 | 57.04%  |
| V 292.402†         | 41026.1   | 192.44 µg/L  | 0.215   | 192.44 ppb  | 0.215   | 0.11%   |
| Zn 213.857†        | 125382.4  | 694.37 µg/L  | 1.300   | 694.37 ppb  | 1.300   | 0.19%   |

Sequence No.: 5

Sample ID: 1203657598|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 305

Date Collected: 11/11/2016 11:54:09

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1203657598|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 68165.7       | 68165.7             | 94.6 %             |                    | 11:54:36      |
| 1     | Al 396.153Radial†  | 256061.8      | 270505.7            | 98888 µg/L         | 98888 ppb          | 11:54:36      |
| 1     | Ca 317.933Radial†  | 6557466.4     | 6929620.5           | 771410 µg/L        | 771410 ppb         | 11:54:34      |
| 1     | Fe 238.204 Radial† | 1562148.1     | 1651404.1           | 156220 µg/L        | 156220 ppb         | 11:54:34      |
| 1     | K 766.490 Radial†  | 40943.3       | 42198.9             | 22173 µg/L         | 22173 ppb          | 11:54:36      |
| 1     | Mg 279.077 IEC†    | 151338.1      | 159908.0            | 86263 µg/L         | 86263 ppb          | 11:54:36      |
| 1     | Na 589.592 Radial† | 39955.6       | 42185.5             | 7034.6 µg/L        | 7034.6 ppb         | 11:54:36      |
| 1     | Sr 421.552†        | 706264.4      | 746842.9            | 2140.2 µg/L        | 2140.2 ppb         | 11:54:36      |
| 1     | Sc 361.383         | 1242633.7     | 1242633.7           | 93.347 %           |                    | 11:54:50      |
| 1     | Y 371.029          | 743175.9      | 743175.9            | 102.59 %           |                    | 11:54:50      |
| 1     | Ag 328.068†        | 88692.4       | 96905.0             | 501.95 µg/L        | 501.95 ppb         | 11:54:50      |
| 1     | As 188.979†        | 1007.5        | 1109.3              | 627.26 µg/L        | 627.26 ppb         | 11:55:10      |
| 1     | B 249.677†         | 29925.6       | 31173.7             | 562.91 µg/L        | 562.91 ppb         | 11:54:50      |
| 1     | Ba 233.527†        | 281131.7      | 301410.5            | 2688.3 µg/L        | 2688.3 ppb         | 11:54:50      |
| 1     | Be 313.107†        | 1651543.5     | 1772915.7           | 417.90 µg/L        | 417.90 ppb         | 11:54:50      |
| 1     | Cd 226.502†        | 58055.2       | 62373.2             | 454.05 µg/L        | 454.05 ppb         | 11:54:50      |
| 1     | Co 228.616†        | 33540.2       | 36022.3             | 536.35 µg/L        | 536.35 ppb         | 11:54:50      |
| 1     | Cr 267.716†        | 47875.4       | 51158.8             | 602.76 µg/L        | 602.76 ppb         | 11:54:50      |
| 1     | Cu 324.752†        | 163812.0      | 169711.1            | 761.10 µg/L        | 761.10 ppb         | 11:54:50      |
| 1     | Mn 257.610†        | 3085459.9     | 3305228.7           | 5789.7 µg/L        | 5789.7 ppb         | 11:54:50      |
| 1     | Mo 202.031†        | 8317.0        | 8939.6              | 469.32 µg/L        | 469.32 ppb         | 11:55:10      |
| 1     | Ni 231.604†        | 36837.8       | 39661.2             | 630.54 µg/L        | 630.54 ppb         | 11:54:50      |
| 1     | P 214.914†         | 16569.1       | 17845.2             | 6424.0 µg/L        | 6424.0 ppb         | 11:55:10      |
| 1     | Pb 220.353†        | 34283.6       | 36653.5             | 3710.6 µg/L        | 3710.6 ppb         | 11:54:50      |
| 1     | S 181.975 Axial†   | 6551.5        | 6915.8              | 7684.2 µg/L        | 7684.2 ppb         | 11:55:10      |
| 1     | Sb 206.836†        | 2459.9        | 2591.0              | 477.25 µg/L        | 477.25 ppb         | 11:55:10      |
| 1     | Se 196.026†        | 741.0         | 785.8               | 482 µg/L           | 482 ppb            | 11:55:10      |
| 1     | SiO2†              | 659809.3      | 703818.4            | 77897 µg/L         | 77897 ppb          | 11:54:50      |
| 1     | Si 251.611†        | 1992532.8     | 2133969.0           | 36201 µg/L         | 36201 ppb          | 11:54:50      |
| 1     | Sn 189.927†        | 3344.6        | 3610.5              | 461.94 µg/L        | 461.94 ppb         | 11:55:10      |
| 1     | Ti 334.940†        | 1934101.1     | 2072846.3           | 2955.1 µg/L        | 2955.1 ppb         | 11:54:50      |
| 1     | Tl 190.801†        | 1229.4        | 1403.1              | 433.66 µg/L        | 433.66 ppb         | 11:55:10      |
| 1     | U 367.007†         | 10042.0       | 11041.9             | 441.44 µg/L        | 441.44 ppb         | 11:54:50      |
| 1     | V 292.402†         | 157221.4      | 168324.2            | 766.19 µg/L        | 766.19 ppb         | 11:54:50      |
| 1     | Zn 213.857†        | 189378.5      | 202830.2            | 1128.9 µg/L        | 1128.9 ppb         | 11:54:50      |
| 2     | Sc RADIAL          | 68926.7       | 68926.7             | 95.7 %             |                    | 11:54:41      |
| 2     | Al 396.153Radial†  | 259094.7      | 270687.7            | 98950 µg/L         | 98950 ppb          | 11:54:41      |
| 2     | Ca 317.933Radial†  | 6437932.3     | 6728176.0           | 748980 µg/L        | 748980 ppb         | 11:54:39      |
| 2     | Fe 238.204 Radial† | 1534641.4     | 1604428.1           | 151770 µg/L        | 151770 ppb         | 11:54:39      |
| 2     | K 766.490 Radial†  | 41406.2       | 42204.9             | 22176 µg/L         | 22176 ppb          | 11:54:41      |
| 2     | Mg 279.077 IEC†    | 152801.0      | 159671.1            | 86134 µg/L         | 86134 ppb          | 11:54:41      |
| 2     | Na 589.592 Radial† | 40363.2       | 42145.3             | 7027.9 µg/L        | 7027.9 ppb         | 11:54:41      |
| 2     | Sr 421.552†        | 714800.0      | 747522.8            | 2142.9 µg/L        | 2142.9 ppb         | 11:54:41      |
| 2     | Sc 361.383         | 1261894.4     | 1261894.4           | 94.793 %           |                    | 11:55:13      |
| 2     | Y 371.029          | 754435.2      | 754435.2            | 104.14 %           |                    | 11:55:13      |
| 2     | Ag 328.068†        | 89736.8       | 96556.5             | 500.09 µg/L        | 500.09 ppb         | 11:55:13      |
| 2     | As 188.979†        | 1000.1        | 1085.0              | 613.55 µg/L        | 613.55 ppb         | 11:55:33      |
| 2     | B 249.677†         | 30538.8       | 31331.3             | 561.92 µg/L        | 561.92 ppb         | 11:55:13      |
| 2     | Ba 233.527†        | 285975.2      | 301923.3            | 2692.9 µg/L        | 2692.9 ppb         | 11:55:13      |
| 2     | Be 313.107†        | 1675398.0     | 1771075.5           | 417.28 µg/L        | 417.28 ppb         | 11:55:13      |
| 2     | Cd 226.502†        | 59125.7       | 62553.2             | 455.92 µg/L        | 455.92 ppb         | 11:55:13      |
| 2     | Co 228.616†        | 34009.7       | 35969.2             | 535.62 µg/L        | 535.62 ppb         | 11:55:13      |
| 2     | Cr 267.716†        | 48730.7       | 51278.2             | 604.10 µg/L        | 604.10 ppb         | 11:55:13      |
| 2     | Cu 324.752†        | 166102.5      | 169448.8            | 759.65 µg/L        | 759.65 ppb         | 11:55:13      |
| 2     | Mn 257.610†        | 3131182.2     | 3303011.1           | 5785.8 µg/L        | 5785.8 ppb         | 11:55:13      |
| 2     | Mo 202.031†        | 8375.3        | 8865.0              | 465.34 µg/L        | 465.34 ppb         | 11:55:33      |
| 2     | Ni 231.604†        | 37252.8       | 39496.7             | 627.92 µg/L        | 627.92 ppb         | 11:55:13      |
| 2     | P 214.914†         | 16597.3       | 17604.0             | 6337.2 µg/L        | 6337.2 ppb         | 11:55:33      |
| 2     | Pb 220.353†        | 34705.8       | 36538.4             | 3699.0 µg/L        | 3699.0 ppb         | 11:55:13      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 6550.7    | 6807.8    | 7564.6 µg/L | 7564.6 ppb | 11:55:33 |
| 2 | Sb 206.836†        | 2473.2    | 2564.8    | 472.63 µg/L | 472.63 ppb | 11:55:33 |
| 2 | Se 196.026†        | 736.8     | 769.2     | 471 µg/L    | 471 ppb    | 11:55:33 |
| 2 | SiO2†              | 669683.2  | 703445.9  | 77855 µg/L  | 77855 ppb  | 11:55:13 |
| 2 | Si 251.611†        | 2022688.4 | 2133200.6 | 36188 µg/L  | 36188 ppb  | 11:55:13 |
| 2 | Sn 189.927†        | 3349.8    | 3561.2    | 455.65 µg/L | 455.65 ppb | 11:55:33 |
| 2 | Ti 334.940†        | 1959920.7 | 2068459.0 | 2948.6 µg/L | 2948.6 ppb | 11:55:13 |
| 2 | Tl 190.801†        | 1228.9    | 1382.5    | 427.24 µg/L | 427.24 ppb | 11:55:33 |
| 2 | U 367.007†         | 10078.3   | 10916.1   | 452.09 µg/L | 452.09 ppb | 11:55:13 |
| 2 | V 292.402†         | 159602.0  | 168264.8  | 765.62 µg/L | 765.62 ppb | 11:55:13 |
| 2 | Zn 213.857†        | 192311.4  | 202827.6  | 1129.4 µg/L | 1129.4 ppb | 11:55:13 |
| 3 | Sc RADIAL          | 70349.3   | 70349.3   | 97.7 %      |            | 11:54:45 |
| 3 | Al 396.153Radial†  | 263335.9  | 269554.9  | 98537 µg/L  | 98537 ppb  | 11:54:45 |
| 3 | Ca 317.933Radial†  | 6604963.2 | 6763152.7 | 752880 µg/L | 752880 ppb | 11:54:43 |
| 3 | Fe 238.204 Radial† | 1574462.5 | 1612770.9 | 152560 µg/L | 152560 ppb | 11:54:43 |
| 3 | K 766.490 Radial†  | 42108.2   | 42048.7   | 22094 µg/L  | 22094 ppb  | 11:54:45 |
| 3 | Mg 279.077 IEC†    | 155276.2  | 158976.3  | 85760 µg/L  | 85760 ppb  | 11:54:45 |
| 3 | Na 589.592 Radial† | 40961.3   | 41904.7   | 6987.8 µg/L | 6987.8 ppb | 11:54:45 |
| 3 | Sr 421.552†        | 726682.3  | 744583.2  | 2134.3 µg/L | 2134.3 ppb | 11:54:45 |
| 3 | Sc 361.383         | 1233285.0 | 1233285.0 | 92.644 %    |            | 11:55:36 |
| 3 | Y 371.029          | 737216.3  | 737216.3  | 101.76 %    |            | 11:55:36 |
| 3 | Ag 328.068†        | 87591.8   | 96437.1   | 499.50 µg/L | 499.50 ppb | 11:55:36 |
| 3 | As 188.979†        | 1003.7    | 1113.4    | 629.04 µg/L | 629.04 ppb | 11:55:56 |
| 3 | B 249.677†         | 29627.1   | 31094.6   | 559.09 µg/L | 559.09 ppb | 11:55:36 |
| 3 | Ba 233.527†        | 278638.6  | 301002.5  | 2684.7 µg/L | 2684.7 ppb | 11:55:36 |
| 3 | Be 313.107†        | 1629157.9 | 1762164.3 | 415.05 µg/L | 415.05 ppb | 11:55:36 |
| 3 | Cd 226.502†        | 57379.4   | 62115.2   | 452.52 µg/L | 452.52 ppb | 11:55:36 |
| 3 | Co 228.616†        | 33147.4   | 35870.7   | 534.14 µg/L | 534.14 ppb | 11:55:36 |
| 3 | Cr 267.716†        | 47638.2   | 51291.6   | 604.29 µg/L | 604.29 ppb | 11:55:36 |
| 3 | Cu 324.752†        | 161477.4  | 168521.4  | 755.59 µg/L | 755.59 ppb | 11:55:36 |
| 3 | Mn 257.610†        | 3051115.1 | 3293212.9 | 5768.6 µg/L | 5768.6 ppb | 11:55:36 |
| 3 | Mo 202.031†        | 8345.3    | 9037.6    | 474.32 µg/L | 474.32 ppb | 11:55:56 |
| 3 | Ni 231.604†        | 36358.1   | 39442.6   | 627.06 µg/L | 627.06 ppb | 11:55:36 |
| 3 | P 214.914†         | 16577.5   | 17988.7   | 6475.9 µg/L | 6475.9 ppb | 11:55:56 |
| 3 | Pb 220.353†        | 33864.1   | 36479.1   | 3693.0 µg/L | 3693.0 ppb | 11:55:36 |
| 3 | S 181.975 Axial†   | 6536.0    | 6952.2    | 7725.7 µg/L | 7725.7 ppb | 11:55:56 |
| 3 | Sb 206.836†        | 2479.4    | 2632.0    | 485.52 µg/L | 485.52 ppb | 11:55:56 |
| 3 | Se 196.026†        | 735.8     | 786.2     | 481 µg/L    | 481 ppb    | 11:55:56 |
| 3 | SiO2†              | 652832.1  | 701645.4  | 77656 µg/L  | 77656 ppb  | 11:55:36 |
| 3 | Si 251.611†        | 1972151.1 | 2128149.8 | 36102 µg/L  | 36102 ppb  | 11:55:36 |
| 3 | Sn 189.927†        | 3365.1    | 3659.8    | 468.25 µg/L | 468.25 ppb | 11:55:56 |
| 3 | Ti 334.940†        | 1911457.2 | 2064110.7 | 2942.5 µg/L | 2942.5 ppb | 11:55:36 |
| 3 | Tl 190.801†        | 1215.6    | 1398.1    | 432.07 µg/L | 432.07 ppb | 11:55:56 |
| 3 | U 367.007†         | 9715.3    | 10770.8   | 429.59 µg/L | 429.59 ppb | 11:55:36 |
| 3 | V 292.402†         | 155967.2  | 168247.3  | 765.59 µg/L | 765.59 ppb | 11:55:36 |
| 3 | Zn 213.857†        | 187097.6  | 201906.1  | 1124.1 µg/L | 1124.1 ppb | 11:55:36 |

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Mean Data: 1203657598|1611117|1

| Analyte  | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD   |
|--|--------------------------|-------------|--------------|----------|-------------|-----------------|-------|
| Sc 361.383   | 1245937.7                | 93.595      | %            | 1.0959   |             |                 | 1.17% |
| Sc RADIAL  | 69147.3                  | 96.0        | %            | 1.54     |             |                 | 1.60% |
| Y 371.029  | 744942.5                 | 102.83      | %            | 1.207    |             |                 | 1.17% |
| Ag 328.068†  | 96632.8                  | 500.51      | µg/L         | 1.280    | 500.51 ppb  | 1.280           | 0.26% |
| Al 396.153Radial†  | 270249.4                 | 98792       | µg/L         | 222.5    | 98792 ppb   | 222.5           | 0.23% |
| As 188.979†  | 1102.5                   | 623.28      | µg/L         | 8.479    | 623.28 ppb  | 8.479           | 1.36% |
| B 249.677†   | 31199.9                  | 561.31      | µg/L         | 1.982    | 561.31 ppb  | 1.982           | 0.35% |
| Ba 233.527†  | 301445.4                 | 2688.6      | µg/L         | 4.11     | 2688.6 ppb  | 4.11            | 0.15% |
| Be 313.107†  | 1768718.5                | 416.75      | µg/L         | 1.502    | 416.75 ppb  | 1.502           | 0.36% |
| Ca 317.933Radial†  | 6806983.1                | 757760      | µg/L         | 11982.2  | 757760 ppb  | 11982.2         | 1.58% |
| Concentration greater than upper limit for Ca 317.933Radial. |                          |             |              |          |             |                 |       |
| Cd 226.502†  | 62347.2                  | 454.17      | µg/L         | 1.705    | 454.17 ppb  | 1.705           | 0.38% |
| Co 228.616†  | 35954.1                  | 535.37      | µg/L         | 1.127    | 535.37 ppb  | 1.127           | 0.21% |
| Cr 267.716†  | 51242.9                  | 603.71      | µg/L         | 0.833    | 603.71 ppb  | 0.833           | 0.14% |
| Cu 324.752†  | 169227.1                 | 758.78      | µg/L         | 2.859    | 758.78 ppb  | 2.859           | 0.38% |
| Fe 238.204 Radial†   | 1622867.7                | 153520      | µg/L         | 2370.8   | 153520 ppb  | 2370.8          | 1.54% |
| K 766.490 Radial†  | 42150.8                  | 22148       | µg/L         | 46.5     | 22148 ppb   | 46.5            | 0.21% |
| Mg 279.077 IEC†  | 159518.5                 | 86052       | µg/L         | 261.5    | 86052 ppb   | 261.5           | 0.30% |
| Mn 257.610†  | 3300484.3                | 5781.4      | µg/L         | 11.20    | 5781.4 ppb  | 11.20           | 0.19% |
| Mo 202.031†  | 8947.4                   | 469.66      | µg/L         | 4.502    | 469.66 ppb  | 4.502           | 0.96% |

|                    |           |             |        |            |        |       |
|--------------------|-----------|-------------|--------|------------|--------|-------|
| Na 589.592 Radial† | 42078.5   | 7016.8 µg/L | 25.32  | 7016.8 ppb | 25.32  | 0.36% |
| Ni 231.604†        | 39533.5   | 628.51 µg/L | 1.810  | 628.51 ppb | 1.810  | 0.29% |
| P 214.914†         | 17812.6   | 6412.4 µg/L | 70.05  | 6412.4 ppb | 70.05  | 1.09% |
| Pb 220.353†        | 36557.0   | 3700.9 µg/L | 8.96   | 3700.9 ppb | 8.96   | 0.24% |
| S 181.975 Axial†   | 6891.9    | 7658.2 µg/L | 83.62  | 7658.2 ppb | 83.62  | 1.09% |
| Sb 206.836†        | 2595.9    | 478.47 µg/L | 6.528  | 478.47 ppb | 6.528  | 1.36% |
| Se 196.026†        | 780.4     | 478 µg/L    | 5.8    | 478 ppb    | 5.8    | 1.22% |
| SiO2†              | 702969.9  | 77803 µg/L  | 128.6  | 77803 ppb  | 128.6  | 0.17% |
| Si 251.611†        | 2131773.1 | 36164 µg/L  | 53.7   | 36164 ppb  | 53.7   | 0.15% |
| Sn 189.927†        | 3610.5    | 461.94 µg/L | 6.301  | 461.94 ppb | 6.301  | 1.36% |
| Sr 421.552†        | 746316.3  | 2139.1 µg/L | 4.43   | 2139.1 ppb | 4.43   | 0.21% |
| Ti 334.940†        | 2068472.0 | 2948.8 µg/L | 6.32   | 2948.8 ppb | 6.32   | 0.21% |
| Tl 190.801†        | 1394.6    | 430.99 µg/L | 3.346  | 430.99 ppb | 3.346  | 0.78% |
| U 367.007†         | 10909.6   | 441.04 µg/L | 11.256 | 441.04 ppb | 11.256 | 2.55% |
| V 292.402†         | 168278.8  | 765.80 µg/L | 0.337  | 765.80 ppb | 0.337  | 0.04% |
| Zn 213.857†        | 202521.3  | 1127.5 µg/L | 2.93   | 1127.5 ppb | 2.93   | 0.26% |

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Analysis Begun

Start Time: 11/11/2016 11:56:02

Plasma On Time: 11/7/2016 06:01:25

Logged In Analyst: lab

Technique: ICP Continuous

Spectrometer Model: Optima 7300 DV, S/N No Serial #Autosampler Model: AS-93plus

Sample Information File: C:\pe\optima4\Sample Information\111116.sif

Batch ID:

Results Data Set: 111116

Results Library: C:\pe\optima4\Results\Results.mdb

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Sequence No.: 1

Autosampler Location: 306

Sample ID: 1203668749|1611117|1

Date Collected: 11/11/2016 11:56:03

Analyst: TXT1

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

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Replicate Data: 1203668749|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 67733.2       | 67733.2             | 94.0 %             |                    | 11:56:31      |
| 1     | Al 396.153Radial†  | 159300.3      | 169322.6            | 61939 µg/L         | 61939 ppb          | 11:56:31      |
| 1     | Ca 317.933Radial†  | 6006418.7     | 6387800.6           | 711090 µg/L        | 711090 ppb         | 11:56:28      |
| 1     | Fe 238.204 Radial† | 1317134.9     | 1401360.6           | 132560 µg/L        | 132560 ppb         | 11:56:31      |
| 1     | K 766.490 Radial†  | 31416.5       | 32342.9             | 16990 µg/L         | 16990 ppb          | 11:56:31      |
| 1     | Mg 279.077 IEC†    | 138519.3      | 147295.8            | 79456 µg/L         | 79456 ppb          | 11:56:31      |
| 1     | Na 589.592 Radial† | 36978.5       | 39288.8             | 6551.6 µg/L        | 6551.6 ppb         | 11:56:31      |
| 1     | Sr 421.552†        | 666717.9      | 709548.8            | 2034.1 µg/L        | 2034.1 ppb         | 11:56:31      |
| 1     | Sc 361.383         | 1227880.0     | 1227880.0           | 92.238 %           |                    | 11:56:44      |
| 1     | Y 371.029          | 732649.3      | 732649.3            | 101.13 %           |                    | 11:56:44      |
| 1     | Ag 328.068†        | 85833.2       | 94946.7             | 491.05 µg/L        | 491.05 ppb         | 11:56:44      |
| 1     | As 188.979†        | 956.8         | 1067.3              | 601.26 µg/L        | 601.26 ppb         | 11:57:04      |
| 1     | B 249.677†         | 30090.8       | 31738.0             | 553.68 µg/L        | 553.68 ppb         | 11:56:44      |
| 1     | Ba 233.527†        | 231758.0      | 251500.9            | 2243.2 µg/L        | 2243.2 ppb         | 11:56:44      |
| 1     | Be 313.107†        | 1617536.3     | 1757305.4           | 424.54 µg/L        | 424.54 ppb         | 11:56:44      |
| 1     | Cd 226.502†        | 57139.7       | 62127.9             | 454.91 µg/L        | 454.91 ppb         | 11:56:44      |
| 1     | Co 228.616†        | 32550.6       | 35381.3             | 526.60 µg/L        | 526.60 ppb         | 11:56:44      |
| 1     | Cr 267.716†        | 44733.9       | 48369.2             | 569.68 µg/L        | 569.68 ppb         | 11:56:44      |
| 1     | Cu 324.752†        | 160208.9      | 167913.3            | 751.47 µg/L        | 751.47 ppb         | 11:56:44      |
| 1     | Mn 257.610†        | 3118571.6     | 3380842.6           | 5922.4 µg/L        | 5922.4 ppb         | 11:56:44      |
| 1     | Mo 202.031†        | 8805.9        | 9576.7              | 501.79 µg/L        | 501.79 ppb         | 11:57:04      |
| 1     | Ni 231.604†        | 36062.0       | 39294.3             | 624.71 µg/L        | 624.71 ppb         | 11:56:44      |
| 1     | P 214.914†         | 15557.9       | 16962.1             | 6106.9 µg/L        | 6106.9 ppb         | 11:57:04      |
| 1     | Pb 220.353†        | 185456.0      | 200988.1            | 20334 µg/L         | 20334 ppb          | 11:56:44      |
| 1     | S 181.975 Axial†   | 6521.2        | 6967.3              | 7747.5 µg/L        | 7747.5 ppb         | 11:57:04      |
| 1     | Sb 206.836†        | 2633.9        | 2811.3              | 521.91 µg/L        | 521.91 ppb         | 11:57:04      |
| 1     | Se 196.026†        | 795.7         | 854.6               | 508 µg/L           | 508 ppb            | 11:57:04      |
| 1     | SiO2†              | 706061.0      | 762455.2            | 84386 µg/L         | 84386 ppb          | 11:56:44      |
| 1     | Si 251.611†        | 2129153.3     | 2307733.8           | 39144 µg/L         | 39144 ppb          | 11:56:44      |
| 1     | Sn 189.927†        | 3411.6        | 3726.2              | 476.62 µg/L        | 476.62 ppb         | 11:57:04      |
| 1     | Ti 334.940†        | 1384365.7     | 1501747.3           | 2142.7 µg/L        | 2142.7 ppb         | 11:56:44      |
| 1     | Tl 190.801†        | 1341.4        | 1540.3              | 475.39 µg/L        | 475.39 ppb         | 11:57:04      |
| 1     | U 367.007†         | 8954.7        | 9992.4              | 446.21 µg/L        | 446.21 ppb         | 11:56:44      |
| 1     | V 292.402†         | 138074.4      | 149589.8            | 680.56 µg/L        | 680.56 ppb         | 11:56:44      |
| 1     | Zn 213.857†        | 197329.6      | 213888.1            | 1194.5 µg/L        | 1194.5 ppb         | 11:56:44      |
| 2     | Sc RADIAL          | 68820.3       | 68820.3             | 95.5 %             |                    | 11:56:35      |
| 2     | Al 396.153Radial†  | 161250.6      | 168687.9            | 61710 µg/L         | 61710 ppb          | 11:56:35      |
| 2     | Ca 317.933Radial†  | 6280667.9     | 6573962.7           | 731820 µg/L        | 731820 ppb         | 11:56:33      |
| 2     | Fe 238.204 Radial† | 1333025.8     | 1395866.4           | 132040 µg/L        | 132040 ppb         | 11:56:35      |
| 2     | K 766.490 Radial†  | 31810.1       | 32227.0             | 16927 µg/L         | 16927 ppb          | 11:56:35      |
| 2     | Mg 279.077 IEC†    | 140176.1      | 146702.9            | 79136 µg/L         | 79136 ppb          | 11:56:35      |
| 2     | Na 589.592 Radial† | 37486.8       | 39199.7             | 6536.7 µg/L        | 6536.7 ppb         | 11:56:35      |
| 2     | Sr 421.552†        | 674589.9      | 706587.8            | 2024.8 µg/L        | 2024.8 ppb         | 11:56:35      |
| 2     | Sc 361.383         | 1241007.5     | 1241007.5           | 93.224 %           |                    | 11:57:07      |
| 2     | Y 371.029          | 739896.8      | 739896.8            | 102.13 %           |                    | 11:57:07      |
| 2     | Ag 328.068†        | 86624.1       | 94810.8             | 490.14 µg/L        | 490.14 ppb         | 11:57:07      |
| 2     | As 188.979†        | 974.9         | 1075.7              | 605.74 µg/L        | 605.74 ppb         | 11:57:27      |



|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | B 249.677†         | 30627.6   | 31968.7   | 556.61 µg/L | 556.61 ppb | 11:57:07 |
| 2 | Ba 233.527†        | 234515.1  | 251800.5  | 2245.9 µg/L | 2245.9 ppb | 11:57:07 |
| 2 | Be 313.107†        | 1634454.4 | 1756902.8 | 424.37 µg/L | 424.37 ppb | 11:57:07 |
| 2 | Cd 226.502†        | 57337.3   | 61684.6   | 451.61 µg/L | 451.61 ppb | 11:57:07 |
| 2 | Co 228.616†        | 32926.2   | 35410.8   | 527.04 µg/L | 527.04 ppb | 11:57:07 |
| 2 | Cr 267.716†        | 45211.0   | 48368.0   | 569.66 µg/L | 569.66 ppb | 11:57:07 |
| 2 | Cu 324.752†        | 162204.6  | 168216.7  | 752.77 µg/L | 752.77 ppb | 11:57:07 |
| 2 | Mn 257.610†        | 3151855.2 | 3380780.7 | 5922.3 µg/L | 5922.3 ppb | 11:57:07 |
| 2 | Mo 202.031†        | 8813.4    | 9483.7    | 496.94 µg/L | 496.94 ppb | 11:57:27 |
| 2 | Ni 231.604†        | 36330.6   | 39168.9   | 622.71 µg/L | 622.71 ppb | 11:57:07 |
| 2 | P 214.914†         | 15509.1   | 16731.4   | 6023.8 µg/L | 6023.8 ppb | 11:57:27 |
| 2 | Pb 220.353†        | 187279.0  | 200816.8  | 20317 µg/L  | 20317 ppb  | 11:57:07 |
| 2 | S 181.975 Axial†   | 6520.2    | 6891.4    | 7662.9 µg/L | 7662.9 ppb | 11:57:27 |
| 2 | Sb 206.836†        | 2632.0    | 2779.0    | 515.73 µg/L | 515.73 ppb | 11:57:27 |
| 2 | Se 196.026†        | 775.6     | 824.0     | 492 µg/L    | 492 ppb    | 11:57:27 |
| 2 | SiO2†              | 714775.8  | 763706.1  | 84525 µg/L  | 84525 ppb  | 11:57:07 |
| 2 | Si 251.611†        | 2155223.0 | 2311280.6 | 39204 µg/L  | 39204 ppb  | 11:57:07 |
| 2 | Sn 189.927†        | 3417.1    | 3692.9    | 472.36 µg/L | 472.36 ppb | 11:57:27 |
| 2 | Ti 334.940†        | 1400276.9 | 1502938.6 | 2144.6 µg/L | 2144.6 ppb | 11:57:07 |
| 2 | Tl 190.801†        | 1322.1    | 1504.2    | 464.31 µg/L | 464.31 ppb | 11:57:27 |
| 2 | U 367.007†         | 9042.9    | 9984.4    | 446.22 µg/L | 446.22 ppb | 11:57:07 |
| 2 | V 292.402†         | 139599.4  | 149642.1  | 680.76 µg/L | 680.76 ppb | 11:57:07 |
| 2 | Zn 213.857†        | 199433.0  | 213881.4  | 1194.6 µg/L | 1194.6 ppb | 11:57:07 |
| 3 | Sc RADIAL          | 68215.8   | 68215.8   | 94.7 %      |            | 11:56:39 |
| 3 | Al 396.153Radial†  | 160412.7  | 169298.9  | 61932 µg/L  | 61932 ppb  | 11:56:39 |
| 3 | Ca 317.933Radial†  | 6171481.3 | 6516923.8 | 725470 µg/L | 725470 ppb | 11:56:37 |
| 3 | Fe 238.204 Radial† | 1320464.8 | 1394968.0 | 131960 µg/L | 131960 ppb | 11:56:39 |
| 3 | K 766.490 Radial†  | 31437.3   | 32128.5   | 16876 µg/L  | 16876 ppb  | 11:56:39 |
| 3 | Mg 279.077 IEC†    | 138407.6  | 146135.8  | 78830 µg/L  | 78830 ppb  | 11:56:39 |
| 3 | Na 589.592 Radial† | 37097.4   | 39136.1   | 6526.1 µg/L | 6526.1 ppb | 11:56:39 |
| 3 | Sr 421.552†        | 670720.4  | 708759.7  | 2031.3 µg/L | 2031.3 ppb | 11:56:39 |
| 3 | Sc 361.383         | 1252064.2 | 1252064.2 | 94.055 %    |            | 11:57:30 |
| 3 | Y 371.029          | 746106.7  | 746106.7  | 102.99 %    |            | 11:57:30 |
| 3 | Ag 328.068†        | 87881.6   | 95327.2   | 492.85 µg/L | 492.85 ppb | 11:57:30 |
| 3 | As 188.979†        | 975.1     | 1066.7    | 600.87 µg/L | 600.87 ppb | 11:57:50 |
| 3 | B 249.677†         | 31030.0   | 32106.4   | 558.53 µg/L | 558.53 ppb | 11:57:30 |
| 3 | Ba 233.527†        | 237691.4  | 252956.1  | 2256.2 µg/L | 2256.2 ppb | 11:57:30 |
| 3 | Be 313.107†        | 1656228.8 | 1764571.1 | 426.21 µg/L | 426.21 ppb | 11:57:30 |
| 3 | Cd 226.502†        | 58421.4   | 62294.1   | 456.23 µg/L | 456.23 ppb | 11:57:30 |
| 3 | Co 228.616†        | 33436.8   | 35641.8   | 530.49 µg/L | 530.49 ppb | 11:57:30 |
| 3 | Cr 267.716†        | 45686.8   | 48445.6   | 570.57 µg/L | 570.57 ppb | 11:57:30 |
| 3 | Cu 324.752†        | 164553.3  | 169177.5  | 757.00 µg/L | 757.00 ppb | 11:57:30 |
| 3 | Mn 257.610†        | 3195388.6 | 3397209.6 | 5951.1 µg/L | 5951.1 ppb | 11:57:30 |
| 3 | Mo 202.031†        | 8772.6    | 9356.8    | 490.34 µg/L | 490.34 ppb | 11:57:50 |
| 3 | Ni 231.604†        | 36699.7   | 39217.2   | 623.48 µg/L | 623.48 ppb | 11:57:30 |
| 3 | P 214.914†         | 15564.8   | 16643.7   | 5992.1 µg/L | 5992.1 ppb | 11:57:50 |
| 3 | Pb 220.353†        | 189894.6  | 201823.7  | 20419 µg/L  | 20419 ppb  | 11:57:30 |
| 3 | S 181.975 Axial†   | 6511.7    | 6820.6    | 7583.8 µg/L | 7583.8 ppb | 11:57:50 |
| 3 | Sb 206.836†        | 2647.0    | 2770.0    | 513.99 µg/L | 513.99 ppb | 11:57:50 |
| 3 | Se 196.026†        | 791.6     | 833.7     | 497 µg/L    | 497 ppb    | 11:57:50 |
| 3 | SiO2†              | 725189.9  | 768007.6  | 85001 µg/L  | 85001 ppb  | 11:57:30 |
| 3 | Si 251.611†        | 2185037.3 | 2322563.9 | 39396 µg/L  | 39396 ppb  | 11:57:30 |
| 3 | Sn 189.927†        | 3418.7    | 3662.3    | 468.45 µg/L | 468.45 ppb | 11:57:50 |
| 3 | Ti 334.940†        | 1419196.8 | 1509790.2 | 2154.3 µg/L | 2154.3 ppb | 11:57:30 |
| 3 | Tl 190.801†        | 1323.6    | 1493.3    | 460.94 µg/L | 460.94 ppb | 11:57:50 |
| 3 | U 367.007†         | 9121.7    | 9982.5    | 447.01 µg/L | 447.01 ppb | 11:57:30 |
| 3 | V 292.402†         | 141633.0  | 150482.0  | 684.52 µg/L | 684.52 ppb | 11:57:30 |
| 3 | Zn 213.857†        | 202448.8  | 215198.6  | 1202.1 µg/L | 1202.1 ppb | 11:57:30 |

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Mean Data: 1203668749|1611117|1

| Analyte           | Mean Corrected Intensity | Conc.  | Calib. Units | Std.Dev. | Sample Conc. | Units | Std.Dev. | RSD   |
|-------------------|--------------------------|--------|--------------|----------|--------------|-------|----------|-------|
| Sc 361.383        | 1240317.3                | 93.173 | %            | 0.9095   |              |       |          | 0.98% |
| Sc RADIAL         | 68256.4                  | 94.8   | %            | 0.76     |              |       |          | 0.80% |
| Y 371.029         | 739550.9                 | 102.08 | %            | 0.930    |              |       |          | 0.91% |
| Ag 328.068†       | 95028.3                  | 491.35 | µg/L         | 1.381    | 491.35       | ppb   | 1.381    | 0.28% |
| Al 396.153Radial† | 169103.1                 | 61860  | µg/L         | 130.0    | 61860        | ppb   | 130.0    | 0.21% |
| As 188.979†       | 1069.9                   | 602.62 | µg/L         | 2.708    | 602.62       | ppb   | 2.708    | 0.45% |
| B 249.677†        | 31937.7                  | 556.27 | µg/L         | 2.445    | 556.27       | ppb   | 2.445    | 0.44% |
| Ba 233.527†       | 252085.8                 | 2248.4 | µg/L         | 6.85     | 2248.4       | ppb   | 6.85     | 0.30% |

|  |           |             |         |            |         |       |
|--|-----------|-------------|---------|------------|---------|-------|
| Be 313.107†  | 1759593.1 | 425.04 µg/L | 1.014   | 425.04 ppb | 1.014   | 0.24% |
| Ca 317.933Radial†  | 6492895.7 | 722790 µg/L | 10617.6 | 722790 ppb | 10617.6 | 1.47% |
| Concentration greater than upper limit for Ca 317.933Radial. |           |             |         |            |         |       |
| Cd 226.502†  | 62035.6   | 454.25 µg/L | 2.380   | 454.25 ppb | 2.380   | 0.52% |
| Co 228.616†  | 35477.9   | 528.04 µg/L | 2.130   | 528.04 ppb | 2.130   | 0.40% |
| Cr 267.716†  | 48394.3   | 569.97 µg/L | 0.521   | 569.97 ppb | 0.521   | 0.09% |
| Cu 324.752†  | 168435.9  | 753.75 µg/L | 2.892   | 753.75 ppb | 2.892   | 0.38% |
| Fe 238.204 Radial†   | 1397398.4 | 132190 µg/L | 327.4   | 132190 ppb | 327.4   | 0.25% |
| K 766.490 Radial†  | 32232.8   | 16931 µg/L  | 57.1    | 16931 ppb  | 57.1    | 0.34% |
| Mg 279.077 IEC†  | 146711.5  | 79141 µg/L  | 312.8   | 79141 ppb  | 312.8   | 0.40% |
| Mn 257.610†  | 3386277.6 | 5932.0 µg/L | 16.60   | 5932.0 ppb | 16.60   | 0.28% |
| Mo 202.031†  | 9472.4    | 496.36 µg/L | 5.746   | 496.36 ppb | 5.746   | 1.16% |
| Na 589.592 Radial†   | 39208.2   | 6538.2 µg/L | 12.79   | 6538.2 ppb | 12.79   | 0.20% |
| Ni 231.604†  | 39226.8   | 623.63 µg/L | 1.006   | 623.63 ppb | 1.006   | 0.16% |
| P 214.914†   | 16779.1   | 6040.9 µg/L | 59.28   | 6040.9 ppb | 59.28   | 0.98% |
| Pb 220.353†  | 201209.5  | 20357 µg/L  | 54.5    | 20357 ppb  | 54.5    | 0.27% |
| S 181.975 Axial†   | 6893.1    | 7664.8 µg/L | 81.86   | 7664.8 ppb | 81.86   | 1.07% |
| Sb 206.836†  | 2786.8    | 517.21 µg/L | 4.163   | 517.21 ppb | 4.163   | 0.80% |
| Se 196.026†  | 837.4     | 499 µg/L    | 8.3     | 499 ppb    | 8.3     | 1.67% |
| SiO2†  | 764723.0  | 84637 µg/L  | 322.4   | 84637 ppb  | 322.4   | 0.38% |
| Si 251.611†  | 2313859.4 | 39248 µg/L  | 131.3   | 39248 ppb  | 131.3   | 0.33% |
| Sn 189.927†  | 3693.8    | 472.48 µg/L | 4.090   | 472.48 ppb | 4.090   | 0.87% |
| Sr 421.552†  | 708298.8  | 2030.0 µg/L | 4.78    | 2030.0 ppb | 4.78    | 0.24% |
| Ti 334.940†  | 1504825.3 | 2147.2 µg/L | 6.22    | 2147.2 ppb | 6.22    | 0.29% |
| Tl 190.801†  | 1512.6    | 466.88 µg/L | 7.562   | 466.88 ppb | 7.562   | 1.62% |
| U 367.007†   | 9986.4    | 446.48 µg/L | 0.459   | 446.48 ppb | 0.459   | 0.10% |
| V 292.402†   | 149904.6  | 681.94 µg/L | 2.230   | 681.94 ppb | 2.230   | 0.33% |
| Zn 213.857†  | 214322.7  | 1197.0 µg/L | 4.34    | 1197.0 ppb | 4.34    | 0.36% |

Sequence No.: 2

Sample ID: 1203657599|1611117|5

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 307

Date Collected: 11/11/2016 11:57:58

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1203657599|1611117|5

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71908.0       | 71908.0             | 99.8 %             |                    | 11:58:25      |
| 1     | Al 396.153Radial†  | 30714.0       | 30667.8             | 11220 µg/L         | 11220 ppb          | 11:58:25      |
| 1     | Ca 317.933Radial†  | 1260562.1     | 1262494.6           | 140540 µg/L        | 140540 ppb         | 11:58:23      |
| 1     | Fe 238.204 Radial† | 272278.9      | 273288.5            | 25852 µg/L         | 25852 ppb          | 11:58:25      |
| 1     | K 766.490 Radial†  | 5096.9        | 4035.9              | 2119.4 µg/L        | 2119.4 ppb         | 11:58:25      |
| 1     | Mg 279.077 IEC†    | 27896.9       | 27920.4             | 15061 µg/L         | 15061 ppb          | 11:58:25      |
| 1     | Na 589.592 Radial† | 1491.6        | 1454.5              | 242.55 µg/L        | 242.55 ppb         | 11:58:25      |
| 1     | Sr 421.552†        | 104818.1      | 105466.4            | 301.14 µg/L        | 301.14 ppb         | 11:58:25      |
| 1     | Sc 361.383         | 1322642.2     | 1322642.2           | 99.357 %           |                    | 11:58:37      |
| 1     | Y 371.029          | 728100.8      | 728100.8            | 100.50 %           |                    | 11:58:37      |
| 1     | Ag 328.068†        | -1915.5       | -37.0               | 0.0404 µg/L        | 0.0404 ppb         | 11:58:37      |
| 1     | As 188.979†        | -4.7          | 25.2                | 17.047 µg/L        | 17.047 ppb         | 11:58:57      |
| 1     | B 249.677†         | -35.5         | -920.6              | 5.7241 µg/L        | 5.7241 ppb         | 11:58:37      |
| 1     | Ba 233.527†        | 39266.1       | 39761.1             | 354.66 µg/L        | 354.66 ppb         | 11:58:37      |
| 1     | Be 313.107†        | 101.3         | 3757.9              | -7.6327 µg/L       | -7.6327 ppb        | 11:58:37      |
| 1     | Cd 226.502†        | 343.5         | 525.7               | 1.0175 µg/L        | 1.0175 ppb         | 11:58:57      |
| 1     | Co 228.616†        | 839.2         | 936.1               | 14.005 µg/L        | 14.005 ppb         | 11:58:57      |
| 1     | Cr 267.716†        | 1820.4        | 1703.1              | 20.259 µg/L        | 20.259 ppb         | 11:58:57      |
| 1     | Cu 324.752†        | 12498.6       | 6802.6              | 32.001 µg/L        | 32.001 ppb         | 11:58:37      |
| 1     | Mn 257.610†        | 632950.4      | 636895.8            | 1115.7 µg/L        | 1115.7 ppb         | 11:58:37      |
| 1     | Mo 202.031†        | 4.4           | 34.2                | 2.5642 µg/L        | 2.5642 ppb         | 11:58:57      |
| 1     | Ni 231.604†        | 1956.4        | 2166.7              | 34.447 µg/L        | 34.447 ppb         | 11:58:57      |
| 1     | P 214.914†         | 2823.0        | 2936.3              | 1057.0 µg/L        | 1057.0 ppb         | 11:58:57      |
| 1     | Pb 220.353†        | 39503.0       | 39685.0             | 4015.1 µg/L        | 4015.1 ppb         | 11:58:37      |
| 1     | S 181.975 Axial†   | 501.3         | 401.8               | 442.69 µg/L        | 442.69 ppb         | 11:58:57      |
| 1     | Sb 206.836†        | 89.8          | 46.1                | 6.1505 µg/L        | 6.1505 ppb         | 11:58:57      |
| 1     | Se 196.026†        | -10.7         | -18.8               | 1.89 µg/L          | 1.89 ppb           | 11:58:57      |
| 1     | SiO2†              | 131938.2      | 129772.5            | 14363 µg/L         | 14363 ppb          | 11:58:37      |
| 1     | Si 251.611†        | 393202.5      | 395163.4            | 6703.3 µg/L        | 6703.3 ppb         | 11:58:37      |
| 1     | Sn 189.927†        | -42.5         | -15.3               | -1.9223 µg/L       | -1.9223 ppb        | 11:58:57      |
| 1     | Ti 334.940†        | 224999.9      | 227345.7            | 324.81 µg/L        | 324.81 ppb         | 11:58:37      |
| 1     | Tl 190.801†        | -87.6         | -2.2                | -0.2231 µg/L       | -0.2231 ppb        | 11:58:57      |
| 1     | U 367.007†         | 1085.7        | 1376.9              | 16.510 µg/L        | 16.510 ppb         | 11:58:37      |
| 1     | V 292.402†         | 8383.2        | 8334.2              | 39.165 µg/L        | 39.165 ppb         | 11:58:37      |
| 1     | Zn 213.857†        | 26449.1       | 26573.8             | 147.21 µg/L        | 147.21 ppb         | 11:58:37      |
| 2     | Sc RADIAL          | 71288.5       | 71288.5             | 99.0 %             |                    | 11:58:29      |
| 2     | Al 396.153Radial†  | 30118.1       | 30333.0             | 11099 µg/L         | 11099 ppb          | 11:58:29      |
| 2     | Ca 317.933Radial†  | 1276316.3     | 1289389.4           | 143540 µg/L        | 143540 ppb         | 11:58:27      |
| 2     | Fe 238.204 Radial† | 268797.9      | 272141.5            | 25743 µg/L         | 25743 ppb          | 11:58:29      |
| 2     | K 766.490 Radial†  | 5132.3        | 4116.0              | 2161.3 µg/L        | 2161.3 ppb         | 11:58:29      |
| 2     | Mg 279.077 IEC†    | 27423.1       | 27684.5             | 14934 µg/L         | 14934 ppb          | 11:58:29      |
| 2     | Na 589.592 Radial† | 1537.8        | 1514.3              | 252.51 µg/L        | 252.51 ppb         | 11:58:29      |
| 2     | Sr 421.552†        | 103378.3      | 104924.0            | 299.46 µg/L        | 299.46 ppb         | 11:58:29      |
| 2     | Sc 361.383         | 1288728.1     | 1288728.1           | 96.809 %           |                    | 11:58:59      |
| 2     | Y 371.029          | 710335.2      | 710335.2            | 98.052 %           |                    | 11:58:59      |
| 2     | Ag 328.068†        | -2031.9       | -208.0              | -0.8646 µg/L       | -0.8646 ppb        | 11:58:59      |
| 2     | As 188.979†        | 2.3           | 32.4                | 20.915 µg/L        | 20.915 ppb         | 11:59:19      |
| 2     | B 249.677†         | -25.5         | -911.2              | 5.7799 µg/L        | 5.7799 ppb         | 11:58:59      |
| 2     | Ba 233.527†        | 38371.2       | 39876.6             | 355.69 µg/L        | 355.69 ppb         | 11:58:59      |
| 2     | Be 313.107†        | 70.6          | 3728.9              | -7.6716 µg/L       | -7.6716 ppb        | 11:58:59      |
| 2     | Cd 226.502†        | 325.8         | 516.6               | 0.9608 µg/L        | 0.9608 ppb         | 11:59:19      |
| 2     | Co 228.616†        | 835.5         | 954.6               | 14.282 µg/L        | 14.282 ppb         | 11:59:19      |
| 2     | Cr 267.716†        | 1813.7        | 1744.4              | 20.758 µg/L        | 20.758 ppb         | 11:59:19      |
| 2     | Cu 324.752†        | 12375.0       | 7006.0              | 32.878 µg/L        | 32.878 ppb         | 11:58:59      |
| 2     | Mn 257.610†        | 622038.8      | 642389.0            | 1125.3 µg/L        | 1125.3 ppb         | 11:58:59      |
| 2     | Mo 202.031†        | 4.6           | 34.4                | 2.5740 µg/L        | 2.5740 ppb         | 11:59:19      |
| 2     | Ni 231.604†        | 1948.4        | 2210.3              | 35.140 µg/L        | 35.140 ppb         | 11:59:19      |
| 2     | P 214.914†         | 2808.8        | 2996.5              | 1078.7 µg/L        | 1078.7 ppb         | 11:59:19      |
| 2     | Pb 220.353†        | 38541.0       | 39737.6             | 4020.4 µg/L        | 4020.4 ppb         | 11:58:59      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 514.4     | 428.7     | 472.71 µg/L  | 472.71 ppb  | 11:59:19 |
| 2 | Sb 206.836†        | 88.9      | 47.6      | 6.4343 µg/L  | 6.4343 ppb  | 11:59:19 |
| 2 | Se 196.026†        | -9.1      | -17.4     | 2.54 µg/L    | 2.54 ppb    | 11:59:19 |
| 2 | SiO2†              | 129384.4  | 130629.1  | 14458 µg/L   | 14458 ppb   | 11:58:59 |
| 2 | Si 251.611†        | 385585.4  | 397709.7  | 6746.4 µg/L  | 6746.4 ppb  | 11:58:59 |
| 2 | Sn 189.927†        | -42.1     | -16.0     | -2.0081 µg/L | -2.0081 ppb | 11:59:19 |
| 2 | Ti 334.940†        | 221455.7  | 229644.1  | 328.13 µg/L  | 328.13 ppb  | 11:58:59 |
| 2 | Tl 190.801†        | -83.6     | -0.3      | 0.3549 µg/L  | 0.3549 ppb  | 11:59:19 |
| 2 | U 367.007†         | 934.4     | 1249.4    | 1.1442 µg/L  | 1.1442 ppb  | 11:58:59 |
| 2 | V 292.402†         | 8391.8    | 8565.1    | 40.188 µg/L  | 40.188 ppb  | 11:58:59 |
| 2 | Zn 213.857†        | 25966.0   | 26775.3   | 148.37 µg/L  | 148.37 ppb  | 11:58:59 |
| 3 | Sc RADIAL          | 70470.5   | 70470.5   | 97.8 %       |             | 11:58:33 |
| 3 | Al 396.153Radial†  | 29737.8   | 30297.5   | 11086 µg/L   | 11086 ppb   | 11:58:33 |
| 3 | Ca 317.933Radial†  | 1255156.7 | 1282729.9 | 142790 µg/L  | 142790 ppb  | 11:58:31 |
| 3 | Fe 238.204 Radial† | 265371.9  | 271792.2  | 25710 µg/L   | 25710 ppb   | 11:58:33 |
| 3 | K 766.490 Radial†  | 5047.1    | 4089.1    | 2147.2 µg/L  | 2147.2 ppb  | 11:58:33 |
| 3 | Mg 279.077 IEC†    | 27155.3   | 27732.4   | 14960 µg/L   | 14960 ppb   | 11:58:33 |
| 3 | Na 589.592 Radial† | 1420.5    | 1412.3    | 235.51 µg/L  | 235.51 ppb  | 11:58:33 |
| 3 | Sr 421.552†        | 102504.3  | 105243.2  | 300.41 µg/L  | 300.41 ppb  | 11:58:33 |
| 3 | Sc 361.383         | 1314585.8 | 1314585.8 | 98.752 %     |             | 11:59:22 |
| 3 | Y 371.029          | 724843.1  | 724843.1  | 100.05 %     |             | 11:59:22 |
| 3 | Ag 328.068†        | -2075.2   | -210.6    | -0.8758 µg/L | -0.8758 ppb | 11:59:22 |
| 3 | As 188.979†        | -5.8      | 24.0      | 16.383 µg/L  | 16.383 ppb  | 11:59:42 |
| 3 | B 249.677†         | 104.0     | -779.6    | 7.6483 µg/L  | 7.6483 ppb  | 11:59:22 |
| 3 | Ba 233.527†        | 39334.5   | 40072.5   | 357.44 µg/L  | 357.44 ppb  | 11:59:22 |
| 3 | Be 313.107†        | 159.4     | 3817.4    | -7.6889 µg/L | -7.6889 ppb | 11:59:22 |
| 3 | Cd 226.502†        | 324.9     | 509.0     | 0.9070 µg/L  | 0.9070 ppb  | 11:59:42 |
| 3 | Co 228.616†        | 862.5     | 964.9     | 14.438 µg/L  | 14.438 ppb  | 11:59:42 |
| 3 | Cr 267.716†        | 1808.7    | 1702.6    | 20.261 µg/L  | 20.261 ppb  | 11:59:42 |
| 3 | Cu 324.752†        | 12763.2   | 7147.7    | 33.505 µg/L  | 33.505 ppb  | 11:59:22 |
| 3 | Mn 257.610†        | 636682.9  | 644579.6  | 1129.2 µg/L  | 1129.2 ppb  | 11:59:22 |
| 3 | Mo 202.031†        | 3.3       | 33.1      | 2.5047 µg/L  | 2.5047 ppb  | 11:59:42 |
| 3 | Ni 231.604†        | 1950.6    | 2173.0    | 34.546 µg/L  | 34.546 ppb  | 11:59:42 |
| 3 | P 214.914†         | 2824.9    | 2955.7    | 1064.0 µg/L  | 1064.0 ppb  | 11:59:42 |
| 3 | Pb 220.353†        | 39715.6   | 40143.9   | 4061.5 µg/L  | 4061.5 ppb  | 11:59:22 |
| 3 | S 181.975 Axial†   | 504.9     | 408.6     | 450.27 µg/L  | 450.27 ppb  | 11:59:42 |
| 3 | Sb 206.836†        | 84.6      | 41.4      | 5.2537 µg/L  | 5.2537 ppb  | 11:59:42 |
| 3 | Se 196.026†        | -14.5     | -22.7     | -0.242 µg/L  | -0.242 ppb  | 11:59:42 |
| 3 | SiO2†              | 132363.1  | 131016.6  | 14501 µg/L   | 14501 ppb   | 11:59:22 |
| 3 | Si 251.611†        | 394212.6  | 398611.7  | 6761.7 µg/L  | 6761.7 ppb  | 11:59:22 |
| 3 | Sn 189.927†        | -35.0     | -7.9      | -0.9790 µg/L | -0.9790 ppb | 11:59:42 |
| 3 | Ti 334.940†        | 226108.0  | 229855.6  | 328.42 µg/L  | 328.42 ppb  | 11:59:22 |
| 3 | Tl 190.801†        | -104.8    | -20.1     | -5.7287 µg/L | -5.7287 ppb | 11:59:42 |
| 3 | U 367.007†         | 988.5     | 1285.2    | 5.8015 µg/L  | 5.8015 ppb  | 11:59:22 |
| 3 | V 292.402†         | 8508.1    | 8512.4    | 39.950 µg/L  | 39.950 ppb  | 11:59:22 |
| 3 | Zn 213.857†        | 26632.6   | 26922.7   | 149.21 µg/L  | 149.21 ppb  | 11:59:22 |

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Mean Data: 1203657599|1611117|5

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------|-----------------|--------------------|----------|--------|
| Sc 361.383  | 1308652.0                | 98.306 %     | 1.3310          |                    |          | 1.35%  |
| Sc RADIAL   | 71222.3                  | 98.9 %       | 1.00            |                    |          | 1.01%  |
| Y 371.029   | 721093.1                 | 99.537 %     | 1.3055          |                    |          | 1.31%  |
| Ag 328.068†   | -151.9                   | -0.5667 µg/L | 0.52576         | -0.5667 ppb        | 0.52576  | 92.78% |
| Al 396.153Radial†                                   | 30432.8                  | 11135 µg/L   | 74.3            | 11135 ppb          | 74.3     | 0.67%  |
| As 188.979†   | 27.2                     | 18.115 µg/L  | 2.4474          | 18.115 ppb         | 2.4474   | 13.51% |
| B 249.677†  | -870.5                   | 6.3841 µg/L  | 1.09517         | 6.3841 ppb         | 1.09517  | 17.15% |
| Ba 233.527†   | 39903.4                  | 355.93 µg/L  | 1.403           | 355.93 ppb         | 1.403    | 0.39%  |
| Be 313.107†   | 3768.0                   | -7.6644 µg/L | 0.02876         | -7.6644 ppb        | 0.02876  | 0.38%  |
| Concentration less than lower limit for Be 313.107. |                          |              |                 |                    |          |        |
| Ca 317.933Radial†                                   | 1278204.6                | 142290 µg/L  | 1559.2          | 142290 ppb         | 1559.2   | 1.10%  |
| Cd 226.502†   | 517.1                    | 0.9618 µg/L  | 0.05522         | 0.9618 ppb         | 0.05522  | 5.74%  |
| Co 228.616†   | 951.9                    | 14.242 µg/L  | 0.2189          | 14.242 ppb         | 0.2189   | 1.54%  |
| Cr 267.716†   | 1716.7                   | 20.426 µg/L  | 0.2873          | 20.426 ppb         | 0.2873   | 1.41%  |
| Cu 324.752†   | 6985.4                   | 32.795 µg/L  | 0.7552          | 32.795 ppb         | 0.7552   | 2.30%  |
| Fe 238.204 Radial†                                  | 272407.4                 | 25768 µg/L   | 74.1            | 25768 ppb          | 74.1     | 0.29%  |
| K 766.490 Radial†                                   | 4080.3                   | 2142.6 µg/L  | 21.29           | 2142.6 ppb         | 21.29    | 0.99%  |
| Mg 279.077 IEC†                                     | 27779.1                  | 14985 µg/L   | 67.2            | 14985 ppb          | 67.2     | 0.45%  |
| Mn 257.610†   | 641288.2                 | 1123.4 µg/L  | 6.94            | 1123.4 ppb         | 6.94     | 0.62%  |
| Mo 202.031†   | 33.9                     | 2.5476 µg/L  | 0.03749         | 2.5476 ppb         | 0.03749  | 1.47%  |

|                    |          |              |         |             |         |         |
|--------------------|----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial† | 1460.4   | 243.52 µg/L  | 8.542   | 243.52 ppb  | 8.542   | 3.51%   |
| Ni 231.604†        | 2183.3   | 34.711 µg/L  | 0.3746  | 34.711 ppb  | 0.3746  | 1.08%   |
| P 214.914†         | 2962.8   | 1066.6 µg/L  | 11.06   | 1066.6 ppb  | 11.06   | 1.04%   |
| Pb 220.353†        | 39855.5  | 4032.3 µg/L  | 25.41   | 4032.3 ppb  | 25.41   | 0.63%   |
| S 181.975 Axial†   | 413.0    | 455.22 µg/L  | 15.609  | 455.22 ppb  | 15.609  | 3.43%   |
| Sb 206.836†        | 45.0     | 5.9462 µg/L  | 0.61623 | 5.9462 ppb  | 0.61623 | 10.36%  |
| Se 196.026†        | -19.7    | 1.40 µg/L    | 1.456   | 1.40 ppb    | 1.456   | 104.34% |
| SiO2†              | 130472.7 | 14440 µg/L   | 70.5    | 14440 ppb   | 70.5    | 0.49%   |
| Si 251.611†        | 397161.6 | 6737.1 µg/L  | 30.31   | 6737.1 ppb  | 30.31   | 0.45%   |
| Sn 189.927†        | -13.1    | -1.6365 µg/L | 0.57099 | -1.6365 ppb | 0.57099 | 34.89%  |
| Sr 421.552†        | 105211.2 | 300.34 µg/L  | 0.841   | 300.34 ppb  | 0.841   | 0.28%   |
| Ti 334.940†        | 228948.5 | 327.12 µg/L  | 2.001   | 327.12 ppb  | 2.001   | 0.61%   |
| Tl 190.801†        | -7.5     | -1.8656 µg/L | 3.35802 | -1.8656 ppb | 3.35802 | 179.99% |
| U 367.007†         | 1303.8   | 7.8186 µg/L  | 7.87902 | 7.8186 ppb  | 7.87902 | 100.77% |
| V 292.402†         | 8470.5   | 39.768 µg/L  | 0.5351  | 39.768 ppb  | 0.5351  | 1.35%   |
| Zn 213.857†        | 26757.3  | 148.26 µg/L  | 1.003   | 148.26 ppb  | 1.003   | 0.68%   |

Sequence No.: 3

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 11/11/2016 11:59:50

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 72225.0       | 72225.0             | 100 %              |                    | 12:00:19      |
| 1     | Al 396.153Radial†  | 13786.2       | 13648.8             | 4983.6 µg/L        | 4983.6 ppb         | 12:00:19      |
| 1     | Ca 317.933Radial†  | 45770.6       | 45308.9             | 5043.8 µg/L        | 5043.8 ppb         | 12:00:19      |
| 1     | Fe 238.204 Radial† | 52776.1       | 53157.4             | 5028.4 µg/L        | 5028.4 ppb         | 12:00:19      |
| 1     | K 766.490 Radial†  | 10564.7       | 9467.1              | 4976.5 µg/L        | 4976.5 ppb         | 12:00:19      |
| 1     | Mg 279.077 IEC†    | 9144.5        | 9094.0              | 4904.6 µg/L        | 4904.6 ppb         | 12:00:19      |
| 1     | Na 589.592 Radial† | 58362.2       | 58171.2             | 9700.3 µg/L        | 9700.3 ppb         | 12:00:17      |
| 1     | Sr 421.552†        | 172086.0      | 172099.2            | 499.14 µg/L        | 499.14 ppb         | 12:00:17      |
| 1     | Sc 361.383         | 1343185.7     | 1343185.7           | 100.90 %           |                    | 12:00:31      |
| 1     | Y 371.029          | 717833.4      | 717833.4            | 99.087 %           |                    | 12:00:31      |
| 1     | Ag 328.068†        | 93939.6       | 94992.5             | 490.19 µg/L        | 490.19 ppb         | 12:00:33      |
| 1     | As 188.979†        | 882.8         | 904.9               | 496.68 µg/L        | 496.68 ppb         | 12:00:53      |
| 1     | B 249.677†         | 35290.3       | 34090.6             | 493.96 µg/L        | 493.96 ppb         | 12:00:33      |
| 1     | Ba 233.527†        | 55197.9       | 54946.3             | 489.96 µg/L        | 489.96 ppb         | 12:00:33      |
| 1     | Be 313.107†        | 1803620.9     | 1791188.1           | 476.62 µg/L        | 476.62 ppb         | 12:00:31      |
| 1     | Cd 226.502†        | 64542.9       | 64147.2             | 484.79 µg/L        | 484.79 ppb         | 12:00:33      |
| 1     | Co 228.616†        | 33217.1       | 33012.3             | 490.91 µg/L        | 490.91 ppb         | 12:00:33      |
| 1     | Cr 267.716†        | 42123.4       | 41618.7             | 489.07 µg/L        | 489.07 ppb         | 12:00:33      |
| 1     | Cu 324.752†        | 117906.0      | 111077.4            | 490.95 µg/L        | 490.95 ppb         | 12:00:33      |
| 1     | Mn 257.610†        | 282891.7      | 280216.3            | 490.93 µg/L        | 490.93 ppb         | 12:00:33      |
| 1     | Mo 202.031†        | 9552.7        | 9497.2              | 493.77 µg/L        | 493.77 ppb         | 12:00:53      |
| 1     | Ni 231.604†        | 30846.6       | 30769.2             | 489.17 µg/L        | 489.17 ppb         | 12:00:33      |
| 1     | P 214.914†         | 6745.3        | 6780.2              | 2443.6 µg/L        | 2443.6 ppb         | 12:00:53      |
| 1     | Pb 220.353†        | 4986.6        | 4868.4              | 492.05 µg/L        | 492.05 ppb         | 12:00:53      |
| 1     | S 181.975 Axial†   | 968.2         | 856.9               | 955.40 µg/L        | 955.40 ppb         | 12:00:53      |
| 1     | Sb 206.836†        | 2619.2        | 2551.5              | 484.97 µg/L        | 484.97 ppb         | 12:00:53      |
| 1     | Se 196.026†        | 951.4         | 934.9               | 492 µg/L           | 492 ppb            | 12:00:53      |
| 1     | SiO2†              | 52703.2       | 49213.3             | 5446.8 µg/L        | 5446.8 ppb         | 12:00:33      |
| 1     | Si 251.611†        | 152498.0      | 150553.2            | 2553.3 µg/L        | 2553.3 ppb         | 12:00:33      |
| 1     | Sn 189.927†        | 3856.9        | 3850.0              | 492.27 µg/L        | 492.27 ppb         | 12:00:53      |
| 1     | Ti 334.940†        | 347068.0      | 344861.3            | 489.87 µg/L        | 489.87 ppb         | 12:00:31      |
| 1     | Tl 190.801†        | 1520.8        | 1593.3              | 489.51 µg/L        | 489.51 ppb         | 12:00:53      |
| 1     | U 367.007†         | 3708.8        | 3959.9              | 459.40 µg/L        | 459.40 ppb         | 12:00:33      |
| 1     | V 292.402†         | 110390.4      | 109302.3            | 491.12 µg/L        | 491.12 ppb         | 12:00:33      |
| 1     | Zn 213.857†        | 87179.2       | 86355.1             | 488.63 µg/L        | 488.63 ppb         | 12:00:33      |
| 2     | Sc RADIAL          | 71618.6       | 71618.6             | 99.4 %             |                    | 12:00:23      |
| 2     | Al 396.153Radial†  | 13885.9       | 13865.5             | 5062.7 µg/L        | 5062.7 ppb         | 12:00:23      |
| 2     | Ca 317.933Radial†  | 45945.3       | 45871.1             | 5106.4 µg/L        | 5106.4 ppb         | 12:00:23      |
| 2     | Fe 238.204 Radial† | 53217.6       | 54047.3             | 5112.6 µg/L        | 5112.6 ppb         | 12:00:23      |
| 2     | K 766.490 Radial†  | 10443.9       | 9434.8              | 4959.5 µg/L        | 4959.5 ppb         | 12:00:23      |
| 2     | Mg 279.077 IEC†    | 9244.4        | 9271.7              | 5000.4 µg/L        | 5000.4 ppb         | 12:00:23      |
| 2     | Na 589.592 Radial† | 57863.3       | 58162.3             | 9698.8 µg/L        | 9698.8 ppb         | 12:00:21      |
| 2     | Sr 421.552†        | 170245.9      | 171701.6            | 497.98 µg/L        | 497.98 ppb         | 12:00:21      |
| 2     | Sc 361.383         | 1369663.9     | 1369663.9           | 102.89 %           |                    | 12:00:56      |
| 2     | Y 371.029          | 731779.9      | 731779.9            | 101.01 %           |                    | 12:00:56      |
| 2     | Ag 328.068†        | 93668.2       | 92928.9             | 479.55 µg/L        | 479.55 ppb         | 12:00:58      |
| 2     | As 188.979†        | 888.5         | 893.5               | 490.43 µg/L        | 490.43 ppb         | 12:01:18      |
| 2     | B 249.677†         | 35352.3       | 33474.7             | 485.16 µg/L        | 485.16 ppb         | 12:00:58      |
| 2     | Ba 233.527†        | 55060.0       | 53754.7             | 479.34 µg/L        | 479.34 ppb         | 12:00:58      |
| 2     | Be 313.107†        | 1844149.4     | 1796022.2           | 478.20 µg/L        | 478.20 ppb         | 12:00:56      |
| 2     | Cd 226.502†        | 64391.2       | 62763.2             | 474.31 µg/L        | 474.31 ppb         | 12:00:58      |
| 2     | Co 228.616†        | 33000.6       | 32165.5             | 478.32 µg/L        | 478.32 ppb         | 12:00:58      |
| 2     | Cr 267.716†        | 41928.8       | 40622.4             | 477.36 µg/L        | 477.36 ppb         | 12:00:58      |
| 2     | Cu 324.752†        | 117331.5      | 108259.9            | 478.52 µg/L        | 478.52 ppb         | 12:00:58      |
| 2     | Mn 257.610†        | 282123.4      | 274049.5            | 480.12 µg/L        | 480.12 ppb         | 12:00:58      |
| 2     | Mo 202.031†        | 9519.9        | 9282.4              | 482.60 µg/L        | 482.60 ppb         | 12:01:18      |
| 2     | Ni 231.604†        | 30680.6       | 30016.9             | 477.21 µg/L        | 477.21 ppb         | 12:00:58      |
| 2     | P 214.914†         | 6748.7        | 6654.3              | 2398.2 µg/L        | 2398.2 ppb         | 12:01:18      |
| 2     | Pb 220.353†        | 4995.5        | 4781.5              | 483.27 µg/L        | 483.27 ppb         | 12:01:18      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 972.5     | 842.5     | 939.30 µg/L | 939.30 ppb | 12:01:18 |
| 2 | Sb 206.836†        | 2617.9    | 2500.1    | 475.21 µg/L | 475.21 ppb | 12:01:18 |
| 2 | Se 196.026†        | 962.0     | 927.0     | 488 µg/L    | 488 ppb    | 12:01:18 |
| 2 | SiO2†              | 52794.3   | 48292.0   | 5344.8 µg/L | 5344.8 ppb | 12:00:58 |
| 2 | Si 251.611†        | 151908.7  | 147058.7  | 2494.0 µg/L | 2494.0 ppb | 12:00:58 |
| 2 | Sn 189.927†        | 3856.6    | 3775.8    | 482.78 µg/L | 482.78 ppb | 12:01:18 |
| 2 | Ti 334.940†        | 354535.5  | 345469.5  | 490.74 µg/L | 490.74 ppb | 12:00:56 |
| 2 | Tl 190.801†        | 1537.0    | 1579.9    | 485.38 µg/L | 485.38 ppb | 12:01:18 |
| 2 | U 367.007†         | 3753.5    | 3932.3    | 455.54 µg/L | 455.54 ppb | 12:00:58 |
| 2 | V 292.402†         | 109842.0  | 106654.4  | 479.24 µg/L | 479.24 ppb | 12:00:58 |
| 2 | Zn 213.857†        | 86876.4   | 84390.4   | 477.48 µg/L | 477.48 ppb | 12:00:58 |
| 3 | Sc RADIAL          | 73985.0   | 73985.0   | 103 %       |            | 12:00:28 |
| 3 | Al 396.153Radial†  | 14137.1   | 13663.4   | 4988.9 µg/L | 4988.9 ppb | 12:00:28 |
| 3 | Ca 317.933Radial†  | 47151.9   | 45567.8   | 5072.6 µg/L | 5072.6 ppb | 12:00:28 |
| 3 | Fe 238.204 Radial† | 54326.6   | 53415.0   | 5052.8 µg/L | 5052.8 ppb | 12:00:28 |
| 3 | K 766.490 Radial†  | 10921.6   | 9564.0    | 5027.4 µg/L | 5027.4 ppb | 12:00:28 |
| 3 | Mg 279.077 IEC†    | 9542.8    | 9264.9    | 4996.7 µg/L | 4996.7 ppb | 12:00:28 |
| 3 | Na 589.592 Radial† | 58148.6   | 56578.5   | 9434.7 µg/L | 9434.7 ppb | 12:00:25 |
| 3 | Sr 421.552†        | 170871.3  | 166833.4  | 483.86 µg/L | 483.86 ppb | 12:00:25 |
| 3 | Sc 361.383         | 1354458.3 | 1354458.3 | 101.75 %    |            | 12:01:20 |
| 3 | Y 371.029          | 722809.4  | 722809.4  | 99.774 %    |            | 12:01:20 |
| 3 | Ag 328.068†        | 95255.9   | 95511.3   | 492.87 µg/L | 492.87 ppb | 12:01:22 |
| 3 | As 188.979†        | 893.3     | 907.9     | 498.35 µg/L | 498.35 ppb | 12:01:42 |
| 3 | B 249.677†         | 36073.0   | 34568.8   | 500.85 µg/L | 500.85 ppb | 12:01:22 |
| 3 | Ba 233.527†        | 56273.0   | 55547.6   | 495.33 µg/L | 495.33 ppb | 12:01:22 |
| 3 | Be 313.107†        | 1842320.4 | 1814346.4 | 482.80 µg/L | 482.80 ppb | 12:01:20 |
| 3 | Cd 226.502†        | 66120.8   | 65165.6   | 492.49 µg/L | 492.49 ppb | 12:01:22 |
| 3 | Co 228.616†        | 33813.3   | 33324.3   | 495.55 µg/L | 495.55 ppb | 12:01:22 |
| 3 | Cr 267.716†        | 42799.7   | 41935.9   | 492.81 µg/L | 492.81 ppb | 12:01:22 |
| 3 | Cu 324.752†        | 119510.7  | 111682.0  | 493.62 µg/L | 493.62 ppb | 12:01:22 |
| 3 | Mn 257.610†        | 288214.8  | 283114.6  | 496.01 µg/L | 496.01 ppb | 12:01:22 |
| 3 | Mo 202.031†        | 9535.4    | 9401.4    | 488.79 µg/L | 488.79 ppb | 12:01:42 |
| 3 | Ni 231.604†        | 31321.6   | 30981.6   | 492.55 µg/L | 492.55 ppb | 12:01:22 |
| 3 | P 214.914†         | 6748.5    | 6727.7    | 2424.7 µg/L | 2424.7 ppb | 12:01:42 |
| 3 | Pb 220.353†        | 4993.9    | 4834.5    | 488.62 µg/L | 488.62 ppb | 12:01:42 |
| 3 | S 181.975 Axial†   | 982.3     | 862.7     | 961.87 µg/L | 961.87 ppb | 12:01:42 |
| 3 | Sb 206.836†        | 2607.9    | 2518.9    | 478.61 µg/L | 478.61 ppb | 12:01:42 |
| 3 | Se 196.026†        | 958.3     | 933.9     | 492 µg/L    | 492 ppb    | 12:01:42 |
| 3 | SiO2†              | 53790.3   | 49847.1   | 5516.9 µg/L | 5516.9 ppb | 12:01:22 |
| 3 | Si 251.611†        | 155327.4  | 152076.2  | 2579.1 µg/L | 2579.1 ppb | 12:01:22 |
| 3 | Sn 189.927†        | 3844.8    | 3806.2    | 486.68 µg/L | 486.68 ppb | 12:01:42 |
| 3 | Ti 334.940†        | 353722.9  | 348539.2  | 495.09 µg/L | 495.09 ppb | 12:01:20 |
| 3 | Tl 190.801†        | 1521.0    | 1581.0    | 485.72 µg/L | 485.72 ppb | 12:01:42 |
| 3 | U 367.007†         | 3712.5    | 3933.0    | 455.96 µg/L | 455.96 ppb | 12:01:22 |
| 3 | V 292.402†         | 111995.8  | 109969.7  | 494.11 µg/L | 494.11 ppb | 12:01:22 |
| 3 | Zn 213.857†        | 88861.0   | 87288.8   | 493.92 µg/L | 493.92 ppb | 12:01:22 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Conc. Units | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|-------------|-----------------|--------------------|----------|-------|
| Sc 361.383   | 1355769.3                | 101.85 %    | 0.998           |                    |          | 0.98% |
| Sc RADIAL  | 72609.5                  | 101 %       | 1.7             |                    |          | 1.69% |
| Y 371.029  | 724140.9                 | 99.958 %    | 0.9756          |                    |          | 0.98% |
| Ag 328.068†  | 94477.6                  | 487.54 µg/L | 7.047           | 487.54 ppb         | 7.047    | 1.45% |
| QC value within limits for Ag 328.068 Recovery = 97.51%        |                          |             |                 |                    |          |       |
| Al 396.153Radial†  | 13725.9                  | 5011.8 µg/L | 44.22           | 5011.8 ppb         | 44.22    | 0.88% |
| QC value within limits for Al 396.153Radial Recovery = 100.24% |                          |             |                 |                    |          |       |
| As 188.979†  | 902.1                    | 495.15 µg/L | 4.177           | 495.15 ppb         | 4.177    | 0.84% |
| QC value within limits for As 188.979 Recovery = 99.03%        |                          |             |                 |                    |          |       |
| B 249.677†   | 34044.7                  | 493.32 µg/L | 7.864           | 493.32 ppb         | 7.864    | 1.59% |
| QC value within limits for B 249.677 Recovery = 98.66%         |                          |             |                 |                    |          |       |
| Ba 233.527†  | 54749.5                  | 488.21 µg/L | 8.136           | 488.21 ppb         | 8.136    | 1.67% |
| QC value within limits for Ba 233.527 Recovery = 97.64%        |                          |             |                 |                    |          |       |
| Be 313.107†  | 1800518.9                | 479.20 µg/L | 3.212           | 479.20 ppb         | 3.212    | 0.67% |
| QC value within limits for Be 313.107 Recovery = 95.84%        |                          |             |                 |                    |          |       |
| Ca 317.933Radial†  | 45582.6                  | 5074.3 µg/L | 31.33           | 5074.3 ppb         | 31.33    | 0.62% |
| QC value within limits for Ca 317.933Radial Recovery = 101.49% |                          |             |                 |                    |          |       |
| Cd 226.502†  | 64025.3                  | 483.86 µg/L | 9.128           | 483.86 ppb         | 9.128    | 1.89% |
| QC value within limits for Cd 226.502 Recovery = 96.77%        |                          |             |                 |                    |          |       |
| Co 228.616†  | 32834.0                  | 488.26 µg/L | 8.918           | 488.26 ppb         | 8.918    | 1.83% |

|   |          |             |        |            |        |       |  |
|---|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Co 228.616 Recovery = 97.65%         |          |             |        |            |        |       |  |
| Cr 267.716†   | 41392.3  | 486.41 µg/L | 8.059  | 486.41 ppb | 8.059  | 1.66% |  |
| QC value within limits for Cr 267.716 Recovery = 97.28%         |          |             |        |            |        |       |  |
| Cu 324.752†   | 110339.8 | 487.69 µg/L | 8.057  | 487.69 ppb | 8.057  | 1.65% |  |
| QC value within limits for Cu 324.752 Recovery = 97.54%         |          |             |        |            |        |       |  |
| Fe 238.204 Radial†  | 53539.9  | 5064.6 µg/L | 43.31  | 5064.6 ppb | 43.31  | 0.86% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 101.29% |          |             |        |            |        |       |  |
| K 766.490 Radial†   | 9488.6   | 4987.8 µg/L | 35.32  | 4987.8 ppb | 35.32  | 0.71% |  |
| QC value within limits for K 766.490 Radial Recovery = 99.76%   |          |             |        |            |        |       |  |
| Mg 279.077 IEC†   | 9210.2   | 4967.2 µg/L | 54.29  | 4967.2 ppb | 54.29  | 1.09% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 99.34%     |          |             |        |            |        |       |  |
| Mn 257.610†   | 279126.8 | 489.02 µg/L | 8.115  | 489.02 ppb | 8.115  | 1.66% |  |
| QC value within limits for Mn 257.610 Recovery = 97.80%         |          |             |        |            |        |       |  |
| Mo 202.031†   | 9393.7   | 488.39 µg/L | 5.593  | 488.39 ppb | 5.593  | 1.15% |  |
| QC value within limits for Mo 202.031 Recovery = 97.68%         |          |             |        |            |        |       |  |
| Na 589.592 Radial†  | 57637.4  | 9611.3 µg/L | 152.91 | 9611.3 ppb | 152.91 | 1.59% |  |
| QC value within limits for Na 589.592 Radial Recovery = 96.11%  |          |             |        |            |        |       |  |
| Ni 231.604†   | 30589.2  | 486.31 µg/L | 8.059  | 486.31 ppb | 8.059  | 1.66% |  |
| QC value within limits for Ni 231.604 Recovery = 97.26%         |          |             |        |            |        |       |  |
| P 214.914†  | 6720.8   | 2422.2 µg/L | 22.80  | 2422.2 ppb | 22.80  | 0.94% |  |
| QC value within limits for P 214.914 Recovery = 96.89%          |          |             |        |            |        |       |  |
| Pb 220.353†   | 4828.1   | 487.98 µg/L | 4.424  | 487.98 ppb | 4.424  | 0.91% |  |
| QC value within limits for Pb 220.353 Recovery = 97.60%         |          |             |        |            |        |       |  |
| S 181.975 Axial†  | 854.0    | 952.19 µg/L | 11.618 | 952.19 ppb | 11.618 | 1.22% |  |
| QC value within limits for S 181.975 Axial Recovery = 95.22%    |          |             |        |            |        |       |  |
| Sb 206.836†   | 2523.5   | 479.60 µg/L | 4.957  | 479.60 ppb | 4.957  | 1.03% |  |
| QC value within limits for Sb 206.836 Recovery = 95.92%         |          |             |        |            |        |       |  |
| Se 196.026†   | 931.9    | 491 µg/L    | 2.2    | 491 ppb    | 2.2    | 0.46% |  |
| QC value within limits for Se 196.026 Recovery = 98.18%         |          |             |        |            |        |       |  |
| SiO2†   | 49117.5  | 5436.2 µg/L | 86.54  | 5436.2 ppb | 86.54  | 1.59% |  |
| QC value within limits for SiO2 Recovery = 101.66%              |          |             |        |            |        |       |  |
| Si 251.611†   | 149896.1 | 2542.1 µg/L | 43.61  | 2542.1 ppb | 43.61  | 1.72% |  |
| QC value within limits for Si 251.611 Recovery = 101.68%        |          |             |        |            |        |       |  |
| Sn 189.927†   | 3810.7   | 487.24 µg/L | 4.767  | 487.24 ppb | 4.767  | 0.98% |  |
| QC value within limits for Sn 189.927 Recovery = 97.45%         |          |             |        |            |        |       |  |
| Sr 421.552†   | 170211.4 | 493.66 µg/L | 8.507  | 493.66 ppb | 8.507  | 1.72% |  |
| QC value within limits for Sr 421.552 Recovery = 98.73%         |          |             |        |            |        |       |  |
| Ti 334.940†   | 346290.0 | 491.90 µg/L | 2.802  | 491.90 ppb | 2.802  | 0.57% |  |
| QC value within limits for Ti 334.940 Recovery = 98.38%         |          |             |        |            |        |       |  |
| Tl 190.801†   | 1584.7   | 486.87 µg/L | 2.291  | 486.87 ppb | 2.291  | 0.47% |  |
| QC value within limits for Tl 190.801 Recovery = 97.37%         |          |             |        |            |        |       |  |
| U 367.007†  | 3941.8   | 456.97 µg/L | 2.120  | 456.97 ppb | 2.120  | 0.46% |  |
| QC value within limits for U 367.007 Recovery = 91.39%          |          |             |        |            |        |       |  |
| V 292.402†  | 108642.1 | 488.16 µg/L | 7.869  | 488.16 ppb | 7.869  | 1.61% |  |
| QC value within limits for V 292.402 Recovery = 97.63%          |          |             |        |            |        |       |  |
| Zn 213.857†   | 86011.4  | 486.68 µg/L | 8.390  | 486.68 ppb | 8.390  | 1.72% |  |
| QC value within limits for Zn 213.857 Recovery = 97.34%         |          |             |        |            |        |       |  |

All analyte(s) passed QC.



Sequence No.: 4

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/11/2016 12:01:50

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 70985.8       | 70985.8             | 98.5 %             |                    | 12:02:15      |
| 1     | Al 396.153Radial†  | 135.8         | 36.2                | 13.211 µg/L        | 13.211 ppb         | 12:02:35      |
| 1     | Ca 317.933Radial†  | 886.1         | 556.1               | 61.900 µg/L        | 61.900 ppb         | 12:02:35      |
| 1     | Fe 238.204 Radial† | -357.3        | 155.5               | 14.705 µg/L        | 14.705 ppb         | 12:02:35      |
| 1     | K 766.490 Radial†  | 1027.3        | -27.7               | -14.562 µg/L       | -14.562 ppb        | 12:02:15      |
| 1     | Mg 279.077 IEC†    | 51.4          | 25.3                | 13.653 µg/L        | 13.653 ppb         | 12:02:35      |
| 1     | Na 589.592 Radial† | 79.8          | 41.2                | 6.8753 µg/L        | 6.8753 ppb         | 12:02:15      |
| 1     | Sr 421.552†        | -362.2        | 91.4                | 0.2632 µg/L        | 0.2632 ppb         | 12:02:35      |
| 1     | Sc 361.383         | 1313026.1     | 1313026.1           | 98.634 %           |                    | 12:03:22      |
| 1     | Y 371.029          | 711992.1      | 711992.1            | 98.281 %           |                    | 12:03:22      |
| 1     | Ag 328.068†        | -1670.2       | 197.6               | 1.0237 µg/L        | 1.0237 ppb         | 12:03:24      |
| 1     | As 188.979†        | -25.4         | 4.2                 | 2.2568 µg/L        | 2.2568 ppb         | 12:03:44      |
| 1     | B 249.677†         | 937.0         | 65.1                | 0.9472 µg/L        | 0.9472 ppb         | 12:03:24      |
| 1     | Ba 233.527†        | -213.4        | 24.4                | 0.2179 µg/L        | 0.2179 ppb         | 12:03:44      |
| 1     | Be 313.107†        | -3029.3       | 584.6               | 0.1517 µg/L        | 0.1517 ppb         | 12:03:24      |
| 1     | Cd 226.502†        | -142.6        | 35.4                | 0.2661 µg/L        | 0.2661 ppb         | 12:03:44      |
| 1     | Co 228.616†        | -70.8         | 19.8                | 0.2937 µg/L        | 0.2937 ppb         | 12:03:44      |
| 1     | Cr 267.716†        | 118.0         | -9.4                | -0.1041 µg/L       | -0.1041 ppb        | 12:03:44      |
| 1     | Cu 324.752†        | 5463.5        | -237.8              | -1.0535 µg/L       | -1.0535 ppb        | 12:03:24      |
| 1     | Mn 257.610†        | 352.1         | 205.0               | 0.3589 µg/L        | 0.3589 ppb         | 12:03:44      |
| 1     | Mo 202.031†        | -25.3         | 4.0                 | 0.2106 µg/L        | 0.2106 ppb         | 12:03:44      |
| 1     | Ni 231.604†        | -201.1        | -6.2                | -0.0985 µg/L       | -0.0985 ppb        | 12:03:44      |
| 1     | P 214.914†         | -83.8         | 10.2                | 3.6664 µg/L        | 3.6664 ppb         | 12:03:44      |
| 1     | Pb 220.353†        | 91.9          | 19.4                | 1.9743 µg/L        | 1.9743 ppb         | 12:03:44      |
| 1     | S 181.975 Axial†   | 91.4          | -10.0               | -11.192 µg/L       | -11.192 ppb        | 12:03:44      |
| 1     | Sb 206.836†        | 74.2          | 30.9                | 5.9688 µg/L        | 5.9688 ppb         | 12:03:44      |
| 1     | Se 196.026†        | 5.1           | -2.9                | -1.50 µg/L         | -1.50 ppb          | 12:03:44      |
| 1     | Si02†              | 3244.8        | 269.9               | 29.873 µg/L        | 29.873 ppb         | 12:03:24      |
| 1     | Si 251.611†        | 1417.2        | 852.4               | 14.454 µg/L        | 14.454 ppb         | 12:03:24      |
| 1     | Sn 189.927†        | -23.8         | 3.4                 | 0.4340 µg/L        | 0.4340 ppb         | 12:03:44      |
| 1     | Ti 334.940†        | -444.6        | 438.5               | 0.6276 µg/L        | 0.6276 ppb         | 12:03:24      |
| 1     | Tl 190.801†        | -77.4         | 7.6                 | 2.3216 µg/L        | 2.3216 ppb         | 12:03:44      |
| 1     | U 367.007†         | -333.4        | -53.8               | -6.7085 µg/L       | -6.7085 ppb        | 12:03:24      |
| 1     | V 292.402†         | 63.0          | -39.4               | -0.1783 µg/L       | -0.1783 ppb        | 12:03:24      |
| 1     | Zn 213.857†        | 53.4          | 7.6                 | 0.0421 µg/L        | 0.0421 ppb         | 12:03:44      |
| 2     | Sc RADIAL          | 72506.3       | 72506.3             | 101 %              |                    | 12:02:37      |
| 2     | Al 396.153Radial†  | 114.5         | 12.1                | 4.4223 µg/L        | 4.4223 ppb         | 12:02:57      |
| 2     | Ca 317.933Radial†  | 681.0         | 333.4               | 37.113 µg/L        | 37.113 ppb         | 12:02:57      |
| 2     | Fe 238.204 Radial† | -382.5        | 138.0               | 13.056 µg/L        | 13.056 ppb         | 12:02:57      |
| 2     | K 766.490 Radial†  | 957.8         | -118.6              | -62.317 µg/L       | -62.317 ppb        | 12:02:37      |
| 2     | Mg 279.077 IEC†    | 45.0          | 17.9                | 9.6500 µg/L        | 9.6500 ppb         | 12:02:57      |
| 2     | Na 589.592 Radial† | 140.0         | 99.3                | 16.567 µg/L        | 16.567 ppb         | 12:02:37      |
| 2     | Sr 421.552†        | -415.0        | 46.7                | 0.1342 µg/L        | 0.1342 ppb         | 12:02:57      |
| 2     | Sc 361.383         | 1312510.7     | 1312510.7           | 98.596 %           |                    | 12:03:47      |
| 2     | Y 371.029          | 710567.5      | 710567.5            | 98.084 %           |                    | 12:03:47      |
| 2     | Ag 328.068†        | -1776.4       | 89.1                | 0.4689 µg/L        | 0.4689 ppb         | 12:03:49      |
| 2     | As 188.979†        | -28.4         | 1.1                 | 0.6097 µg/L        | 0.6097 ppb         | 12:04:09      |
| 2     | B 249.677†         | 862.9         | -9.7                | -0.1297 µg/L       | -0.1297 ppb        | 12:03:49      |
| 2     | Ba 233.527†        | -250.0        | -12.8               | -0.1140 µg/L       | -0.1140 ppb        | 12:04:09      |
| 2     | Be 313.107†        | -3296.4       | 312.5               | 0.0827 µg/L        | 0.0827 ppb         | 12:03:49      |
| 2     | Cd 226.502†        | -140.9        | 37.1                | 0.2793 µg/L        | 0.2793 ppb         | 12:04:09      |
| 2     | Co 228.616†        | -89.2         | 1.0                 | 0.0150 µg/L        | 0.0150 ppb         | 12:04:09      |
| 2     | Cr 267.716†        | 119.8         | -7.5                | -0.0742 µg/L       | -0.0742 ppb        | 12:04:09      |
| 2     | Cu 324.752†        | 5543.3        | -154.6              | -0.6932 µg/L       | -0.6932 ppb        | 12:03:49      |
| 2     | Mn 257.610†        | 345.7         | 198.7               | 0.3479 µg/L        | 0.3479 ppb         | 12:04:09      |
| 2     | Mo 202.031†        | -21.4         | 8.0                 | 0.4158 µg/L        | 0.4158 ppb         | 12:04:09      |
| 2     | Ni 231.604†        | -179.0        | 16.2                | 0.2579 µg/L        | 0.2579 ppb         | 12:04:09      |
| 2     | P 214.914†         | -77.4         | 16.6                | 5.9866 µg/L        | 5.9866 ppb         | 12:04:09      |
| 2     | Pb 220.353†        | 86.1          | 13.6                | 1.3907 µg/L        | 1.3907 ppb         | 12:04:09      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 90.9      | -10.5     | -11.737 µg/L | -11.737 ppb | 12:04:09 |
| 2 | Sb 206.836†        | 62.6      | 19.2      | 3.7147 µg/L  | 3.7147 ppb  | 12:04:09 |
| 2 | Se 196.026†        | 5.0       | -2.9      | -1.53 µg/L   | -1.53 ppb   | 12:04:09 |
| 2 | SiO2†              | 3201.5    | 227.3     | 25.155 µg/L  | 25.155 ppb  | 12:03:49 |
| 2 | Si 251.611†        | 1429.8    | 865.7     | 14.680 µg/L  | 14.680 ppb  | 12:03:49 |
| 2 | Sn 189.927†        | -16.8     | 10.4      | 1.3327 µg/L  | 1.3327 ppb  | 12:04:09 |
| 2 | Ti 334.940†        | -352.1    | 532.2     | 0.7647 µg/L  | 0.7647 ppb  | 12:03:49 |
| 2 | Tl 190.801†        | -74.4     | 10.6      | 3.2574 µg/L  | 3.2574 ppb  | 12:04:09 |
| 2 | U 367.007†         | -399.4    | -120.9    | -14.949 µg/L | -14.949 ppb | 12:03:49 |
| 2 | V 292.402†         | 169.7     | 68.8      | 0.3037 µg/L  | 0.3037 ppb  | 12:03:49 |
| 2 | Zn 213.857†        | 43.3      | -2.5      | -0.0156 µg/L | -0.0156 ppb | 12:04:09 |
| 3 | Sc RADIAL          | 70418.8   | 70418.8   | 97.8 %       |             | 12:02:59 |
| 3 | Al 396.153Radial†  | 130.9     | 32.2      | 11.768 µg/L  | 11.768 ppb  | 12:03:19 |
| 3 | Ca 317.933Radial†  | 651.9     | 323.7     | 36.030 µg/L  | 36.030 ppb  | 12:03:19 |
| 3 | Fe 238.204 Radial† | -386.4    | 122.8     | 11.613 µg/L  | 11.613 ppb  | 12:03:19 |
| 3 | K 766.490 Radial†  | 1022.1    | -24.6     | -12.926 µg/L | -12.926 ppb | 12:02:59 |
| 3 | Mg 279.077 IEC†    | 20.5      | -5.8      | -3.1304 µg/L | -3.1304 ppb | 12:03:19 |
| 3 | Na 589.592 Radial† | 69.2      | 31.0      | 5.1744 µg/L  | 5.1744 ppb  | 12:02:59 |
| 3 | Sr 421.552†        | -421.2    | 28.1      | 0.0804 µg/L  | 0.0804 ppb  | 12:03:19 |
| 3 | Sc 361.383         | 1333600.6 | 1333600.6 | 100.18 %     |             | 12:04:11 |
| 3 | Y 371.029          | 722298.8  | 722298.8  | 99.704 %     |             | 12:04:11 |
| 3 | Ag 328.068†        | -1825.8   | 68.3      | 0.3581 µg/L  | 0.3581 ppb  | 12:04:13 |
| 3 | As 188.979†        | -29.5     | 0.5       | 0.2754 µg/L  | 0.2754 ppb  | 12:04:33 |
| 3 | B 249.677†         | 767.0     | -119.3    | -1.7070 µg/L | -1.7070 ppb | 12:04:13 |
| 3 | Ba 233.527†        | -222.7    | 18.5      | 0.1650 µg/L  | 0.1650 ppb  | 12:04:33 |
| 3 | Be 313.107†        | -3168.0   | 493.6     | 0.1272 µg/L  | 0.1272 ppb  | 12:04:13 |
| 3 | Cd 226.502†        | -144.2    | 36.1      | 0.2717 µg/L  | 0.2717 ppb  | 12:04:33 |
| 3 | Co 228.616†        | -61.2     | 30.4      | 0.4517 µg/L  | 0.4517 ppb  | 12:04:33 |
| 3 | Cr 267.716†        | 144.5     | 15.2      | 0.1877 µg/L  | 0.1877 ppb  | 12:04:33 |
| 3 | Cu 324.752†        | 5538.8    | -248.0    | -1.1013 µg/L | -1.1013 ppb | 12:04:13 |
| 3 | Mn 257.610†        | 328.1     | 175.5     | 0.3077 µg/L  | 0.3077 ppb  | 12:04:33 |
| 3 | Mo 202.031†        | -14.1     | 15.7      | 0.8150 µg/L  | 0.8150 ppb  | 12:04:33 |
| 3 | Ni 231.604†        | -148.8    | 49.2      | 0.7823 µg/L  | 0.7823 ppb  | 12:04:33 |
| 3 | P 214.914†         | -77.6     | 17.6      | 6.3593 µg/L  | 6.3593 ppb  | 12:04:33 |
| 3 | Pb 220.353†        | 101.9     | 28.0      | 2.8468 µg/L  | 2.8468 ppb  | 12:04:33 |
| 3 | S 181.975 Axial†   | 93.8      | -9.1      | -10.114 µg/L | -10.114 ppb | 12:04:33 |
| 3 | Sb 206.836†        | 78.3      | 33.8      | 6.5359 µg/L  | 6.5359 ppb  | 12:04:33 |
| 3 | Se 196.026†        | 9.5       | 1.5       | 0.776 µg/L   | 0.776 ppb   | 12:04:33 |
| 3 | SiO2†              | 3241.0    | 215.4     | 23.845 µg/L  | 23.845 ppb  | 12:04:13 |
| 3 | Si 251.611†        | 1532.4    | 945.1     | 16.026 µg/L  | 16.026 ppb  | 12:04:13 |
| 3 | Sn 189.927†        | -31.9     | -4.4      | -0.5620 µg/L | -0.5620 ppb | 12:04:33 |
| 3 | Ti 334.940†        | -503.8    | 386.3     | 0.5545 µg/L  | 0.5545 ppb  | 12:04:13 |
| 3 | Tl 190.801†        | -74.0     | 12.1      | 3.7293 µg/L  | 3.7293 ppb  | 12:04:33 |
| 3 | U 367.007†         | -361.2    | -76.3     | -9.4556 µg/L | -9.4556 ppb | 12:04:13 |
| 3 | V 292.402†         | 289.9     | 186.1     | 0.8314 µg/L  | 0.8314 ppb  | 12:04:13 |
| 3 | Zn 213.857†        | 18.2      | -28.3     | -0.1607 µg/L | -0.1607 ppb | 12:04:33 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------|-----------------|--------------------|----------|---------|
| Sc 361.383  | 1319712.5                | 99.137 %     | 0.9037          |                    |          | 0.91%   |
| Sc RADIAL   | 71303.6                  | 99.0 %       | 1.50            |                    |          | 1.51%   |
| Y 371.029   | 714952.8                 | 98.690 %     | 0.8836          |                    |          | 0.90%   |
| Ag 328.068†   | 118.3                    | 0.6169 µg/L  | 0.35661         | 0.6169 ppb         | 0.35661  | 57.81%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Al 396.153Radial†   | 26.8                     | 9.8003 µg/L  | 4.71306         | 9.8003 ppb         | 4.71306  | 48.09%  |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |              |                 |                    |          |         |
| As 188.979†   | 1.9                      | 1.0473 µg/L  | 1.06069         | 1.0473 ppb         | 1.06069  | 101.28% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| B 249.677†  | -21.3                    | -0.2965 µg/L | 1.33495         | -0.2965 ppb        | 1.33495  | 450.23% |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |              |                 |                    |          |         |
| Ba 233.527†   | 10.0                     | 0.0896 µg/L  | 0.17834         | 0.0896 ppb         | 0.17834  | 199.01% |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Be 313.107†   | 463.6                    | 0.1205 µg/L  | 0.03499         | 0.1205 ppb         | 0.03499  | 29.04%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Ca 317.933Radial†   | 404.4                    | 45.014 µg/L  | 14.6333         | 45.014 ppb         | 14.6333  | 32.51%  |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |              |                 |                    |          |         |
| Cd 226.502†   | 36.2                     | 0.2724 µg/L  | 0.00661         | 0.2724 ppb         | 0.00661  | 2.43%   |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Co 228.616†   | 17.1                     | 0.2534 µg/L  | 0.22112         | 0.2534 ppb         | 0.22112  | 87.25%  |

|  |        |              |         |             |         |         |  |
|--|--------|--------------|---------|-------------|---------|---------|--|
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Cr 267.716†  | -0.5   | 0.0031 µg/L  | 0.16057 | 0.0031 ppb  | 0.16057 | >999.9% |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Cu 324.752†  | -213.5 | -0.9493 µg/L | 0.22307 | -0.9493 ppb | 0.22307 | 23.50%  |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Fe 238.204 Radial†   | 138.7  | 13.125 µg/L  | 1.5472  | 13.125 ppb  | 1.5472  | 11.79%  |  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |         |             |         |         |  |
| K 766.490 Radial†  | -57.0  | -29.935 µg/L | 28.0558 | -29.935 ppb | 28.0558 | 93.72%  |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |         |             |         |         |  |
| Mg 279.077 IEC†  | 12.5   | 6.7241 µg/L  | 8.76582 | 6.7241 ppb  | 8.76582 | 130.36% |  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |         |             |         |         |  |
| Mn 257.610†  | 193.1  | 0.3382 µg/L  | 0.02692 | 0.3382 ppb  | 0.02692 | 7.96%   |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Mo 202.031†  | 9.2    | 0.4805 µg/L  | 0.30737 | 0.4805 ppb  | 0.30737 | 63.97%  |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Na 589.592 Radial†   | 57.2   | 9.5389 µg/L  | 6.14566 | 9.5389 ppb  | 6.14566 | 64.43%  |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |         |             |         |         |  |
| Ni 231.604†  | 19.7   | 0.3139 µg/L  | 0.44306 | 0.3139 ppb  | 0.44306 | 141.15% |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |         |             |         |         |  |
| P 214.914†   | 14.8   | 5.3374 µg/L  | 1.45912 | 5.3374 ppb  | 1.45912 | 27.34%  |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Pb 220.353†  | 20.3   | 2.0706 µg/L  | 0.73280 | 2.0706 ppb  | 0.73280 | 35.39%  |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |         |             |         |         |  |
| S 181.975 Axial†   | -9.9   | -11.014 µg/L | 0.8258  | -11.014 ppb | 0.8258  | 7.50%   |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |         |             |         |         |  |
| Sb 206.836†  | 28.0   | 5.4065 µg/L  | 1.49231 | 5.4065 ppb  | 1.49231 | 27.60%  |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Se 196.026†  | -1.4   | -0.751 µg/L  | 1.3229  | -0.751 ppb  | 1.3229  | 176.15% |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |         |             |         |         |  |
| SiO2†  | 237.5  | 26.291 µg/L  | 3.1705  | 26.291 ppb  | 3.1705  | 12.06%  |  |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |         |             |         |         |  |
| Si 251.611†  | 887.7  | 15.053 µg/L  | 0.8503  | 15.053 ppb  | 0.8503  | 5.65%   |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Sn 189.927†  | 3.1    | 0.4016 µg/L  | 0.94776 | 0.4016 ppb  | 0.94776 | 236.01% |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Sr 421.552†  | 55.4   | 0.1593 µg/L  | 0.09391 | 0.1593 ppb  | 0.09391 | 58.97%  |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Ti 334.940†  | 452.3  | 0.6489 µg/L  | 0.10671 | 0.6489 ppb  | 0.10671 | 16.44%  |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Tl 190.801†  | 10.1   | 3.1028 µg/L  | 0.71646 | 3.1028 ppb  | 0.71646 | 23.09%  |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |         |             |         |         |  |
| U 367.007†   | -83.7  | -10.371 µg/L | 4.1958  | -10.371 ppb | 4.1958  | 40.46%  |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |         |             |         |         |  |
| V 292.402†   | 71.8   | 0.3190 µg/L  | 0.50505 | 0.3190 ppb  | 0.50505 | 158.35% |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Zn 213.857†  | -7.8   | -0.0447 µg/L | 0.10448 | -0.0447 ppb | 0.10448 | 233.51% |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |         |             |         |         |  |

All analyte(s) passed QC.

Sequence No.: 5

Sample ID: 409254002|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 308

Date Collected: 11/11/2016 12:04:40

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254002|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 70240.4       | 70240.4             | 97.5 %             |                    | 12:05:09      |
| 1     | Al 396.153Radial†  | 142928.0      | 146483.9            | 53506 µg/L         | 53506 ppb          | 12:05:09      |
| 1     | Ca 317.933Radial†  | 1460074.9     | 1497095.6           | 166660 µg/L        | 166660 ppb         | 12:05:07      |
| 1     | Fe 238.204 Radial† | 1273865.1     | 1306981.9           | 123630 µg/L        | 123630 ppb         | 12:05:07      |
| 1     | K 766.490 Radial†  | 24074.0       | 23619.8             | 12444 µg/L         | 12444 ppb          | 12:05:09      |
| 1     | Mg 279.077 IEC†    | 107594.1      | 110320.7            | 59518 µg/L         | 59518 ppb          | 12:05:09      |
| 1     | Na 589.592 Radial† | 9066.7        | 9259.0              | 1544.0 µg/L        | 1544.0 ppb         | 12:05:09      |
| 1     | Sr 421.552†        | 181191.8      | 186287.6            | 534.72 µg/L        | 534.72 ppb         | 12:05:09      |
| 1     | Sc 361.383         | 1293853.6     | 1293853.6           | 97.194 %           |                    | 12:05:22      |
| 1     | Y 371.029          | 774425.7      | 774425.7            | 106.90 %           |                    | 12:05:22      |
| 1     | Ag 328.068†        | -2366.5       | -544.0              | 2.6292 µg/L        | 2.6292 ppb         | 12:05:22      |
| 1     | As 188.979†        | 206.9         | 242.8               | 147.89 µg/L        | 147.89 ppb         | 12:05:42      |
| 1     | B 249.677†         | -2553.5       | -3512.1             | 40.184 µg/L        | 40.184 ppb         | 12:05:22      |
| 1     | Ba 233.527†        | 232637.9      | 239594.4            | 2137.0 µg/L        | 2137.0 ppb         | 12:05:22      |
| 1     | Be 313.107†        | 13758.4       | 17811.5             | -47.434 µg/L       | -47.434 ppb        | 12:05:22      |
| 1     | Cd 226.502†        | 2131.6        | 2373.1              | 3.7986 µg/L        | 3.7986 ppb         | 12:05:42      |
| 1     | Co 228.616†        | 3987.7        | 4194.4              | 63.299 µg/L        | 63.299 ppb         | 12:05:42      |
| 1     | Cr 267.716†        | 7668.4        | 7760.7              | 92.553 µg/L        | 92.553 ppb         | 12:05:42      |
| 1     | Cu 324.752†        | 29966.2       | 25054.3             | 119.78 µg/L        | 119.78 ppb         | 12:05:22      |
| 1     | Mn 257.610†        | 2517600.2     | 2590125.6           | 4537.3 µg/L        | 4537.3 ppb         | 12:05:22      |
| 1     | Mo 202.031†        | -44.3         | -15.8               | 2.8152 µg/L        | 2.8152 ppb         | 12:05:42      |
| 1     | Ni 231.604†        | 9568.7        | 10042.7             | 159.66 µg/L        | 159.66 ppb         | 12:05:42      |
| 1     | P 214.914†         | 13598.2       | 14085.8             | 5070.6 µg/L        | 5070.6 ppb         | 12:05:42      |
| 1     | Pb 220.353†        | 1055.9        | 1012.6              | 103.80 µg/L        | 103.80 ppb         | 12:05:42      |
| 1     | S 181.975 Axial†   | 1623.9        | 1568.0              | 1722.4 µg/L        | 1722.4 ppb         | 12:05:42      |
| 1     | Sb 206.836†        | 78.1          | 36.1                | -6.1308 µg/L       | -6.1308 ppb        | 12:05:42      |
| 1     | Se 196.026†        | -88.9         | -99.5               | 3.86 µg/L          | 3.86 ppb           | 12:05:42      |
| 1     | SiO2†              | 566757.2      | 580098.5            | 64204 µg/L         | 64204 ppb          | 12:05:22      |
| 1     | Si 251.611†        | 1710061.6     | 1758842.8           | 29837 µg/L         | 29837 ppb          | 12:05:22      |
| 1     | Sn 189.927†        | -44.1         | -17.9               | -2.1170 µg/L       | -2.1170 ppb        | 12:05:42      |
| 1     | Ti 334.940†        | 1273227.0     | 1310871.5           | 1865.0 µg/L        | 1865.0 ppb         | 12:05:22      |
| 1     | Tl 190.801†        | -149.5        | -67.8               | -18.723 µg/L       | -18.723 ppb        | 12:05:42      |
| 1     | U 367.007†         | 5118.0        | 5550.0              | -3.9246 µg/L       | -3.9246 ppb        | 12:05:22      |
| 1     | V 292.402†         | 40090.8       | 41144.8             | 193.02 µg/L        | 193.02 ppb         | 12:05:22      |
| 1     | Zn 213.857†        | 73228.5       | 75295.9             | 410.84 µg/L        | 410.84 ppb         | 12:05:22      |
| 2     | Sc RADIAL          | 70200.1       | 70200.1             | 97.4 %             |                    | 12:05:14      |
| 2     | Al 396.153Radial†  | 142520.5      | 146149.8            | 53384 µg/L         | 53384 ppb          | 12:05:14      |
| 2     | Ca 317.933Radial†  | 1463189.3     | 1501150.8           | 167110 µg/L        | 167110 ppb         | 12:05:12      |
| 2     | Fe 238.204 Radial† | 1277467.7     | 1311428.5           | 124050 µg/L        | 124050 ppb         | 12:05:12      |
| 2     | K 766.490 Radial†  | 24143.0       | 23704.8             | 12489 µg/L         | 12489 ppb          | 12:05:14      |
| 2     | Mg 279.077 IEC†    | 106765.5      | 109533.7            | 59094 µg/L         | 59094 ppb          | 12:05:14      |
| 2     | Na 589.592 Radial† | 8858.8        | 9051.0              | 1509.3 µg/L        | 1509.3 ppb         | 12:05:14      |
| 2     | Sr 421.552†        | 180725.7      | 185915.9            | 533.63 µg/L        | 533.63 ppb         | 12:05:14      |
| 2     | Sc 361.383         | 1274886.4     | 1274886.4           | 95.769 %           |                    | 12:05:45      |
| 2     | Y 371.029          | 764187.8      | 764187.8            | 105.49 %           |                    | 12:05:45      |
| 2     | Ag 328.068†        | -2534.1       | -755.3              | 1.5614 µg/L        | 1.5614 ppb         | 12:05:45      |
| 2     | As 188.979†        | 216.6         | 256.1               | 155.16 µg/L        | 155.16 ppb         | 12:06:05      |
| 2     | B 249.677†         | -2630.9       | -3632.0             | 38.767 µg/L        | 38.767 ppb         | 12:05:45      |
| 2     | Ba 233.527†        | 229716.2      | 240104.6            | 2141.5 µg/L        | 2141.5 ppb         | 12:05:45      |
| 2     | Be 313.107†        | 13626.5       | 17884.3             | -47.527 µg/L       | -47.527 ppb        | 12:05:45      |
| 2     | Cd 226.502†        | 2129.2        | 2403.3              | 3.9789 µg/L        | 3.9789 ppb         | 12:06:05      |
| 2     | Co 228.616†        | 3998.6        | 4266.8              | 64.374 µg/L        | 64.374 ppb         | 12:06:05      |
| 2     | Cr 267.716†        | 7750.3        | 7963.7              | 94.953 µg/L        | 94.953 ppb         | 12:06:05      |
| 2     | Cu 324.752†        | 29593.8       | 25124.2             | 120.10 µg/L        | 120.10 ppb         | 12:05:45      |
| 2     | Mn 257.610†        | 2486416.6     | 2596101.7           | 4547.8 µg/L        | 4547.8 ppb         | 12:05:45      |
| 2     | Mo 202.031†        | -41.9         | -14.0               | 2.9154 µg/L        | 2.9154 ppb         | 12:06:05      |
| 2     | Ni 231.604†        | 9570.0        | 10190.5             | 162.01 µg/L        | 162.01 ppb         | 12:06:05      |
| 2     | P 214.914†         | 13556.7       | 14250.6             | 5130.0 µg/L        | 5130.0 ppb         | 12:06:05      |
| 2     | Pb 220.353†        | 1004.2        | 974.8               | 99.977 µg/L        | 99.977 ppb         | 12:06:05      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 1636.7    | 1606.4    | 1765.1 µg/L  | 1765.1 ppb  | 12:06:05 |
| 2 | Sb 206.836†        | 70.0      | 28.8      | -7.6164 µg/L | -7.6164 ppb | 12:06:05 |
| 2 | Se 196.026†        | -76.2     | -87.6     | 10.3 µg/L    | 10.3 ppb    | 12:06:05 |
| 2 | SiO2†              | 559981.8  | 581699.1  | 64381 µg/L   | 64381 ppb   | 12:05:45 |
| 2 | Si 251.611†        | 1688368.2 | 1762367.1 | 29897 µg/L   | 29897 ppb   | 12:05:45 |
| 2 | Sn 189.927†        | -43.9     | -18.3     | -2.1718 µg/L | -2.1718 ppb | 12:06:05 |
| 2 | Ti 334.940†        | 1260316.8 | 1316880.4 | 1873.6 µg/L  | 1873.6 ppb  | 12:05:45 |
| 2 | Tl 190.801†        | -168.9    | -90.4     | -25.644 µg/L | -25.644 ppb | 12:06:05 |
| 2 | U 367.007†         | 5021.6    | 5527.6    | -8.9989 µg/L | -8.9989 ppb | 12:05:45 |
| 2 | V 292.402†         | 39433.2   | 41071.8   | 192.72 µg/L  | 192.72 ppb  | 12:05:45 |
| 2 | Zn 213.857†        | 72285.6   | 75432.3   | 411.59 µg/L  | 411.59 ppb  | 12:05:45 |
| 3 | Sc RADIAL          | 68485.0   | 68485.0   | 95.1 %       |             | 12:05:18 |
| 3 | Al 396.153Radial†  | 140641.1  | 147835.6  | 54000 µg/L   | 54000 ppb   | 12:05:18 |
| 3 | Ca 317.933Radial†  | 1457595.4 | 1532869.3 | 170640 µg/L  | 170640 ppb  | 12:05:16 |
| 3 | Fe 238.204 Radial† | 1274303.7 | 1340930.1 | 126850 µg/L  | 126850 ppb  | 12:05:16 |
| 3 | K 766.490 Radial†  | 23719.0   | 23879.3   | 12581 µg/L   | 12581 ppb   | 12:05:18 |
| 3 | Mg 279.077 IEC†    | 104878.3  | 110292.4  | 59504 µg/L   | 59504 ppb   | 12:05:18 |
| 3 | Na 589.592 Radial† | 8965.8    | 9391.2    | 1566.0 µg/L  | 1566.0 ppb  | 12:05:18 |
| 3 | Sr 421.552†        | 178066.0  | 187762.8  | 538.87 µg/L  | 538.87 ppb  | 12:05:18 |
| 3 | Sc 361.383         | 1279920.9 | 1279920.9 | 96.148 %     |             | 12:06:08 |
| 3 | Y 371.029          | 766687.8  | 766687.8  | 105.83 %     |             | 12:06:08 |
| 3 | Ag 328.068†        | -2653.0   | -868.5    | 1.1140 µg/L  | 1.1140 ppb  | 12:06:08 |
| 3 | As 188.979†        | 214.2     | 252.7     | 153.66 µg/L  | 153.66 ppb  | 12:06:28 |
| 3 | B 249.677†         | -2532.9   | -3519.3   | 42.436 µg/L  | 42.436 ppb  | 12:06:08 |
| 3 | Ba 233.527†        | 229849.9  | 239300.1  | 2134.4 µg/L  | 2134.4 ppb  | 12:06:08 |
| 3 | Be 313.107†        | 13615.2   | 17816.6   | -47.371 µg/L | -47.371 ppb | 12:06:08 |
| 3 | Cd 226.502†        | 2141.4    | 2407.2    | 3.6890 µg/L  | 3.6890 ppb  | 12:06:28 |
| 3 | Co 228.616†        | 3981.6    | 4232.7    | 63.825 µg/L  | 63.825 ppb  | 12:06:28 |
| 3 | Cr 267.716†        | 7690.5    | 7869.6    | 93.900 µg/L  | 93.900 ppb  | 12:06:28 |
| 3 | Cu 324.752†        | 29796.6   | 25213.6   | 120.68 µg/L  | 120.68 ppb  | 12:06:08 |
| 3 | Mn 257.610†        | 2491425.4 | 2591098.9 | 4539.0 µg/L  | 4539.0 ppb  | 12:06:08 |
| 3 | Mo 202.031†        | -44.9     | -17.0     | 2.8316 µg/L  | 2.8316 ppb  | 12:06:28 |
| 3 | Ni 231.604†        | 9505.2    | 10083.8   | 160.31 µg/L  | 160.31 ppb  | 12:06:28 |
| 3 | P 214.914†         | 13500.0   | 14136.0   | 5088.6 µg/L  | 5088.6 ppb  | 12:06:28 |
| 3 | Pb 220.353†        | 1015.4    | 982.4     | 100.78 µg/L  | 100.78 ppb  | 12:06:28 |
| 3 | S 181.975 Axial†   | 1622.4    | 1584.8    | 1740.3 µg/L  | 1740.3 ppb  | 12:06:28 |
| 3 | Sb 206.836†        | 70.9      | 29.5      | -7.7483 µg/L | -7.7483 ppb | 12:06:28 |
| 3 | Se 196.026†        | -81.2     | -92.5     | 9.00 µg/L    | 9.00 ppb    | 12:06:28 |
| 3 | SiO2†              | 560784.7  | 580234.2  | 64219 µg/L   | 64219 ppb   | 12:06:08 |
| 3 | Si 251.611†        | 1690881.1 | 1758046.2 | 29824 µg/L   | 29824 ppb   | 12:06:08 |
| 3 | Sn 189.927†        | -56.0     | -30.8     | -3.7630 µg/L | -3.7630 ppb | 12:06:28 |
| 3 | Ti 334.940†        | 1262120.4 | 1313579.8 | 1868.9 µg/L  | 1868.9 ppb  | 12:06:08 |
| 3 | Tl 190.801†        | -165.0    | -85.5     | -24.111 µg/L | -24.111 ppb | 12:06:28 |
| 3 | U 367.007†         | 4993.1    | 5477.4    | -30.658 µg/L | -30.658 ppb | 12:06:08 |
| 3 | V 292.402†         | 39712.1   | 41200.0   | 193.48 µg/L  | 193.48 ppb  | 12:06:08 |
| 3 | Zn 213.857†        | 72454.3   | 75310.9   | 410.58 µg/L  | 410.58 ppb  | 12:06:08 |

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Mean Data: 409254002|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------|-----------------|--------------------|----------|--------|
| Sc 361.383  | 1282887.0                | 96.370 %     | 0.7381          |                    |          | 0.77%  |
| Sc RADIAL   | 69641.8                  | 96.7 %       | 1.39            |                    |          | 1.44%  |
| Y 371.029   | 768433.8                 | 106.07 %     | 0.737           |                    |          | 0.69%  |
| Ag 328.068†   | -722.6                   | 1.7682 µg/L  | 0.77845         | 1.7682 ppb         | 0.77845  | 44.02% |
| Al 396.153Radial†                                   | 146823.1                 | 53630 µg/L   | 326.2           | 53630 ppb          | 326.2    | 0.61%  |
| As 188.979†   | 250.5                    | 152.24 µg/L  | 3.841           | 152.24 ppb         | 3.841    | 2.52%  |
| B 249.677†  | -3554.5                  | 40.462 µg/L  | 1.8502          | 40.462 ppb         | 1.8502   | 4.57%  |
| Ba 233.527†   | 239666.4                 | 2137.6 µg/L  | 3.62            | 2137.6 ppb         | 3.62     | 0.17%  |
| Be 313.107†   | 17837.5                  | -47.444 µg/L | 0.0783          | -47.444 ppb        | 0.0783   | 0.17%  |
| Concentration less than lower limit for Be 313.107. |                          |              |                 |                    |          |        |
| Ca 317.933Radial†                                   | 1510371.9                | 168140 µg/L  | 2180.6          | 168140 ppb         | 2180.6   | 1.30%  |
| Cd 226.502†   | 2394.6                   | 3.8222 µg/L  | 0.14638         | 3.8222 ppb         | 0.14638  | 3.83%  |
| Co 228.616†   | 4231.3                   | 63.833 µg/L  | 0.5379          | 63.833 ppb         | 0.5379   | 0.84%  |
| Cr 267.716†   | 7864.7                   | 93.802 µg/L  | 1.2028          | 93.802 ppb         | 1.2028   | 1.28%  |
| Cu 324.752†   | 25130.7                  | 120.19 µg/L  | 0.456           | 120.19 ppb         | 0.456    | 0.38%  |
| Fe 238.204 Radial†                                  | 1319780.1                | 124850 µg/L  | 1745.4          | 124850 ppb         | 1745.4   | 1.40%  |
| K 766.490 Radial†                                   | 23734.7                  | 12505 µg/L   | 70.0            | 12505 ppb          | 70.0     | 0.56%  |
| Mg 279.077 IEC†                                     | 110048.9                 | 59372 µg/L   | 240.9           | 59372 ppb          | 240.9    | 0.41%  |
| Mn 257.610†   | 2592442.1                | 4541.4 µg/L  | 5.63            | 4541.4 ppb         | 5.63     | 0.12%  |
| Mo 202.031†   | -15.6                    | 2.8541 µg/L  | 0.05378         | 2.8541 ppb         | 0.05378  | 1.88%  |

|   |           |              |         |             |         |        |
|---|-----------|--------------|---------|-------------|---------|--------|
| Na 589.592 Radial†                                  | 9233.7    | 1539.8 µg/L  | 28.60   | 1539.8 ppb  | 28.60   | 1.86%  |
| Ni 231.604†   | 10105.7   | 160.66 µg/L  | 1.213   | 160.66 ppb  | 1.213   | 0.76%  |
| P 214.914†  | 14157.5   | 5096.4 µg/L  | 30.45   | 5096.4 ppb  | 30.45   | 0.60%  |
| Pb 220.353†   | 989.9     | 101.52 µg/L  | 2.018   | 101.52 ppb  | 2.018   | 1.99%  |
| S 181.975 Axial†                                    | 1586.4    | 1742.6 µg/L  | 21.43   | 1742.6 ppb  | 21.43   | 1.23%  |
| Sb 206.836†   | 31.5      | -7.1652 µg/L | 0.89821 | -7.1652 ppb | 0.89821 | 12.54% |
| Se 196.026†   | -93.2     | 7.72 µg/L    | 3.410   | 7.72 ppb    | 3.410   | 44.16% |
| SiO2†   | 580677.3  | 64268 µg/L   | 98.2    | 64268 ppb   | 98.2    | 0.15%  |
| Si 251.611†   | 1759752.0 | 29852 µg/L   | 38.9    | 29852 ppb   | 38.9    | 0.13%  |
| Sn 189.927†   | -22.3     | -2.6839 µg/L | 0.93488 | -2.6839 ppb | 0.93488 | 34.83% |
| Sr 421.552†   | 186655.4  | 535.74 µg/L  | 2.762   | 535.74 ppb  | 2.762   | 0.52%  |
| Ti 334.940†   | 1313777.2 | 1869.2 µg/L  | 4.28    | 1869.2 ppb  | 4.28    | 0.23%  |
| Tl 190.801†   | -81.2     | -22.826 µg/L | 3.6350  | -22.826 ppb | 3.6350  | 15.92% |
| Concentration less than lower limit for Tl 190.801. |           |              |         |             |         |        |
| U 367.007†  | 5518.3    | -14.527 µg/L | 14.1980 | -14.527 ppb | 14.1980 | 97.74% |
| V 292.402†  | 41138.8   | 193.07 µg/L  | 0.381   | 193.07 ppb  | 0.381   | 0.20%  |
| Zn 213.857†   | 75346.4   | 411.00 µg/L  | 0.524   | 411.00 ppb  | 0.524   | 0.13%  |

Sequence No.: 6

Sample ID: 409254003|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 309

Date Collected: 11/11/2016 12:06:35

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254003|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 69940.1       | 69940.1             | 97.1 %             |                    | 12:07:02      |
| 1     | Al 396.153Radial†  | 147550.2      | 151874.1            | 55474 µg/L         | 55474 ppb          | 12:07:02      |
| 1     | Ca 317.933Radial†  | 1489844.0     | 1534187.4           | 170790 µg/L        | 170790 ppb         | 12:07:00      |
| 1     | Fe 238.204 Radial† | 1320963.3     | 1361102.6           | 128750 µg/L        | 128750 ppb         | 12:07:00      |
| 1     | K 766.490 Radial†  | 24548.6       | 24214.7             | 12758 µg/L         | 12758 ppb          | 12:07:02      |
| 1     | Mg 279.077 IEC†    | 113156.9      | 116524.2            | 62864 µg/L         | 62864 ppb          | 12:07:02      |
| 1     | Na 589.592 Radial† | 9057.7        | 9289.7              | 1549.1 µg/L        | 1549.1 ppb         | 12:07:02      |
| 1     | Sr 421.552†        | 181760.7      | 187671.5            | 538.60 µg/L        | 538.60 ppb         | 12:07:02      |
| 1     | Sc 361.383         | 1282900.0     | 1282900.0           | 96.371 %           |                    | 12:07:14      |
| 1     | Y 371.029          | 777963.2      | 777963.2            | 107.39 %           |                    | 12:07:14      |
| 1     | Ag 328.068†        | -2360.2       | -558.2              | 2.7997 µg/L        | 2.7997 ppb         | 12:07:14      |
| 1     | As 188.979†        | 165.9         | 202.1               | 126.46 µg/L        | 126.46 ppb         | 12:07:35      |
| 1     | B 249.677†         | -2721.1       | -3708.4             | 41.115 µg/L        | 41.115 ppb         | 12:07:14      |
| 1     | Ba 233.527†        | 228197.4      | 237030.4            | 2114.2 µg/L        | 2114.2 ppb         | 12:07:14      |
| 1     | Be 313.107†        | 15437.7       | 19674.9             | -46.350 µg/L       | -46.350 ppb        | 12:07:14      |
| 1     | Cd 226.502†        | 2258.4        | 2523.4              | 4.3495 µg/L        | 4.3495 ppb         | 12:07:35      |
| 1     | Co 228.616†        | 4118.9        | 4365.5              | 65.751 µg/L        | 65.751 ppb         | 12:07:35      |
| 1     | Cr 267.716†        | 8258.0        | 8439.9              | 100.58 µg/L        | 100.58 ppb         | 12:07:35      |
| 1     | Cu 324.752†        | 37376.8       | 33007.3             | 155.27 µg/L        | 155.27 ppb         | 12:07:14      |
| 1     | Mn 257.610†        | 2122690.6     | 2202462.9           | 3857.8 µg/L        | 3857.8 ppb         | 12:07:14      |
| 1     | Mo 202.031†        | -45.7         | -17.6               | 2.8808 µg/L        | 2.8808 ppb         | 12:07:35      |
| 1     | Ni 231.604†        | 10032.7       | 10608.2             | 168.65 µg/L        | 168.65 ppb         | 12:07:35      |
| 1     | P 214.914†         | 14072.5       | 14697.5             | 5290.8 µg/L        | 5290.8 ppb         | 12:07:35      |
| 1     | Pb 220.353†        | 942.3         | 904.1               | 92.837 µg/L        | 92.837 ppb         | 12:07:35      |
| 1     | S 181.975 Axial†   | 1642.6        | 1601.8              | 1758.9 µg/L        | 1758.9 ppb         | 12:07:35      |
| 1     | Sb 206.836†        | 59.8          | 17.7                | -10.289 µg/L       | -10.289 ppb        | 12:07:35      |
| 1     | Se 196.026†        | -73.8         | -84.6               | 14.0 µg/L          | 14.0 ppb           | 12:07:35      |
| 1     | SiO2†              | 559499.0      | 577545.7            | 63921 µg/L         | 63921 ppb          | 12:07:14      |
| 1     | Si 251.611†        | 1688316.8     | 1751301.4           | 29710 µg/L         | 29710 ppb          | 12:07:14      |
| 1     | Sn 189.927†        | -55.0         | -29.6               | -3.6056 µg/L       | -3.6056 ppb        | 12:07:35      |
| 1     | Ti 334.940†        | 1404024.0     | 1457778.1           | 2073.9 µg/L        | 2073.9 ppb         | 12:07:14      |
| 1     | Tl 190.801†        | -179.5        | -100.2              | -28.594 µg/L       | -28.594 ppb        | 12:07:35      |
| 1     | U 367.007†         | 5358.9        | 5844.8              | 4.1617 µg/L        | 4.1617 ppb         | 12:07:14      |
| 1     | V 292.402†         | 42206.9       | 43692.7             | 204.80 µg/L        | 204.80 ppb         | 12:07:14      |
| 1     | Zn 213.857†        | 76683.5       | 79524.4             | 434.08 µg/L        | 434.08 ppb         | 12:07:14      |
| 2     | Sc RADIAL          | 70772.2       | 70772.2             | 98.2 %             |                    | 12:07:06      |
| 2     | Al 396.153Radial†  | 149313.4      | 151882.0            | 55477 µg/L         | 55477 ppb          | 12:07:06      |
| 2     | Ca 317.933Radial†  | 1498981.1     | 1525445.4           | 169810 µg/L        | 169810 ppb         | 12:07:04      |
| 2     | Fe 238.204 Radial† | 1327918.4     | 1352184.7           | 127910 µg/L        | 127910 ppb         | 12:07:04      |
| 2     | K 766.490 Radial†  | 24673.6       | 24044.6             | 12668 µg/L         | 12668 ppb          | 12:07:06      |
| 2     | Mg 279.077 IEC†    | 114540.1      | 116561.7            | 62884 µg/L         | 62884 ppb          | 12:07:06      |
| 2     | Na 589.592 Radial† | 9232.1        | 9357.5              | 1560.4 µg/L        | 1560.4 ppb         | 12:07:06      |
| 2     | Sr 421.552†        | 184219.4      | 187973.0            | 539.51 µg/L        | 539.51 ppb         | 12:07:06      |
| 2     | Sc 361.383         | 1305858.7     | 1305858.7           | 98.096 %           |                    | 12:07:37      |
| 2     | Y 371.029          | 790703.6      | 790703.6            | 109.15 %           |                    | 12:07:37      |
| 2     | Ag 328.068†        | -2482.1       | -639.4              | 2.3453 µg/L        | 2.3453 ppb         | 12:07:37      |
| 2     | As 188.979†        | 158.7         | 191.7               | 120.68 µg/L        | 120.68 ppb         | 12:07:58      |
| 2     | B 249.677†         | -2690.4       | -3627.5             | 41.660 µg/L        | 41.660 ppb         | 12:07:37      |
| 2     | Ba 233.527†        | 232145.7      | 236892.2            | 2112.9 µg/L        | 2112.9 ppb         | 12:07:37      |
| 2     | Be 313.107†        | 15587.9       | 19546.3             | -46.359 µg/L       | -46.359 ppb        | 12:07:37      |
| 2     | Cd 226.502†        | 2277.4        | 2501.6              | 4.2812 µg/L        | 4.2812 ppb         | 12:07:58      |
| 2     | Co 228.616†        | 4139.1        | 4311.0              | 64.950 µg/L        | 64.950 ppb         | 12:07:58      |
| 2     | Cr 267.716†        | 8293.9        | 8325.9              | 99.235 µg/L        | 99.235 ppb         | 12:07:58      |
| 2     | Cu 324.752†        | 38056.0       | 33017.7             | 155.26 µg/L        | 155.26 ppb         | 12:07:37      |
| 2     | Mn 257.610†        | 2157382.3     | 2199103.2           | 3851.9 µg/L        | 3851.9 ppb         | 12:07:37      |
| 2     | Mo 202.031†        | -58.4         | -29.8               | 2.2306 µg/L        | 2.2306 ppb         | 12:07:58      |
| 2     | Ni 231.604†        | 10071.8       | 10465.0             | 166.37 µg/L        | 166.37 ppb         | 12:07:58      |
| 2     | P 214.914†         | 14094.4       | 14463.1             | 5206.4 µg/L        | 5206.4 ppb         | 12:07:58      |
| 2     | Pb 220.353†        | 962.6         | 907.5               | 93.200 µg/L        | 93.200 ppb         | 12:07:58      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 1666.6    | 1596.3    | 1753.0 µg/L  | 1753.0 ppb  | 12:07:58 |
| 2 | Sb 206.836†        | 82.6      | 39.9      | -5.8958 µg/L | -5.8958 ppb | 12:07:58 |
| 2 | Se 196.026†        | -79.5     | -89.0     | 11.3 µg/L    | 11.3 ppb    | 12:07:58 |
| 2 | SiO2†              | 569023.9  | 577048.3  | 63866 µg/L   | 63866 ppb   | 12:07:37 |
| 2 | Si 251.611†        | 1716029.0 | 1748751.0 | 29666 µg/L   | 29666 ppb   | 12:07:37 |
| 2 | Sn 189.927†        | -54.2     | -27.8     | -3.3741 µg/L | -3.3741 ppb | 12:07:58 |
| 2 | Ti 334.940†        | 1425136.5 | 1453686.3 | 2068.0 µg/L  | 2068.0 ppb  | 12:07:37 |
| 2 | Tl 190.801†        | -189.1    | -106.7    | -30.594 µg/L | -30.594 ppb | 12:07:58 |
| 2 | U 367.007†         | 5373.1    | 5761.6    | -1.4125 µg/L | -1.4125 ppb | 12:07:37 |
| 2 | V 292.402†         | 42724.6   | 43450.5   | 203.66 µg/L  | 203.66 ppb  | 12:07:37 |
| 2 | Zn 213.857†        | 78157.2   | 79627.7   | 434.75 µg/L  | 434.75 ppb  | 12:07:37 |
| 3 | Sc RADIAL          | 71784.7   | 71784.7   | 99.6 %       |             | 12:07:10 |
| 3 | Al 396.153Radial†  | 150968.4  | 151399.2  | 55301 µg/L   | 55301 ppb   | 12:07:10 |
| 3 | Ca 317.933Radial†  | 1530492.4 | 1535547.1 | 170940 µg/L  | 170940 ppb  | 12:07:08 |
| 3 | Fe 238.204 Radial† | 1354650.6 | 1359946.5 | 128640 µg/L  | 128640 ppb  | 12:07:08 |
| 3 | K 766.490 Radial†  | 25176.9   | 24195.5   | 12748 µg/L   | 12748 ppb   | 12:07:10 |
| 3 | Mg 279.077 IEC†    | 116238.8  | 116621.9  | 62917 µg/L   | 62917 ppb   | 12:07:10 |
| 3 | Na 589.592 Radial† | 9159.6    | 9152.2    | 1526.2 µg/L  | 1526.2 ppb  | 12:07:10 |
| 3 | Sr 421.552†        | 186285.2  | 187401.3  | 537.81 µg/L  | 537.81 ppb  | 12:07:10 |
| 3 | Sc 361.383         | 1292931.9 | 1292931.9 | 97.125 %     |             | 12:08:00 |
| 3 | Y 371.029          | 782998.1  | 782998.1  | 108.08 %     |             | 12:08:00 |
| 3 | Ag 328.068†        | -2527.9   | -711.9    | 2.0104 µg/L  | 2.0104 ppb  | 12:08:00 |
| 3 | As 188.979†        | 150.3     | 184.7     | 117.00 µg/L  | 117.00 ppb  | 12:08:21 |
| 3 | B 249.677†         | -2670.6   | -3634.5   | 42.097 µg/L  | 42.097 ppb  | 12:08:00 |
| 3 | Ba 233.527†        | 229988.2  | 237036.9  | 2114.2 µg/L  | 2114.2 ppb  | 12:08:00 |
| 3 | Be 313.107†        | 15377.1   | 19488.2   | -46.410 µg/L | -46.410 ppb | 12:08:00 |
| 3 | Cd 226.502†        | 2253.4    | 2500.1    | 4.1859 µg/L  | 4.1859 ppb  | 12:08:21 |
| 3 | Co 228.616†        | 4166.7    | 4381.5    | 65.990 µg/L  | 65.990 ppb  | 12:08:21 |
| 3 | Cr 267.716†        | 8336.2    | 8454.0    | 100.76 µg/L  | 100.76 ppb  | 12:08:21 |
| 3 | Cu 324.752†        | 37338.5   | 32666.9   | 153.75 µg/L  | 153.75 ppb  | 12:08:00 |
| 3 | Mn 257.610†        | 2138703.0 | 2201859.2 | 3856.7 µg/L  | 3856.7 ppb  | 12:08:00 |
| 3 | Mo 202.031†        | -75.3     | -47.8     | 1.3104 µg/L  | 1.3104 ppb  | 12:08:21 |
| 3 | Ni 231.604†        | 10114.1   | 10611.3   | 168.70 µg/L  | 168.70 ppb  | 12:08:21 |
| 3 | P 214.914†         | 14179.1   | 14693.9   | 5289.6 µg/L  | 5289.6 ppb  | 12:08:21 |
| 3 | Pb 220.353†        | 949.8     | 904.2     | 92.862 µg/L  | 92.862 ppb  | 12:08:21 |
| 3 | S 181.975 Axial†   | 1687.6    | 1634.8    | 1795.8 µg/L  | 1795.8 ppb  | 12:08:21 |
| 3 | Sb 206.836†        | 68.4      | 26.1      | -8.6626 µg/L | -8.6626 ppb | 12:08:21 |
| 3 | Se 196.026†        | -78.9     | -89.3     | 11.5 µg/L    | 11.5 ppb    | 12:08:21 |
| 3 | SiO2†              | 564402.6  | 578089.8  | 63981 µg/L   | 63981 ppb   | 12:08:00 |
| 3 | Si 251.611†        | 1703013.8 | 1752840.6 | 29736 µg/L   | 29736 ppb   | 12:08:00 |
| 3 | Sn 189.927†        | -66.5     | -41.0     | -5.0599 µg/L | -5.0599 ppb | 12:08:21 |
| 3 | Ti 334.940†        | 1412649.4 | 1455354.7 | 2070.4 µg/L  | 2070.4 ppb  | 12:08:00 |
| 3 | Tl 190.801†        | -186.2    | -105.6    | -30.255 µg/L | -30.255 ppb | 12:08:21 |
| 3 | U 367.007†         | 5246.3    | 5685.8    | -14.823 µg/L | -14.823 ppb | 12:08:00 |
| 3 | V 292.402†         | 42367.9   | 43518.7   | 204.01 µg/L  | 204.01 ppb  | 12:08:00 |
| 3 | Zn 213.857†        | 77162.2   | 79399.8   | 433.38 µg/L  | 433.38 ppb  | 12:08:00 |

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Mean Data: 409254003|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|-------------|--------------|----------|--------------------|----------|--------|
| Sc 361.383  | 1293896.9                | 97.197      | %            | 0.8646   |                    |          | 0.89%  |
| Sc RADIAL   | 70832.3                  | 98.3        | %            | 1.28     |                    |          | 1.30%  |
| Y 371.029   | 783888.3                 | 108.21      | %            | 0.886    |                    |          | 0.82%  |
| Ag 328.068†   | -636.5                   | 2.3851      | µg/L         | 0.39617  | 2.3851 ppb         | 0.39617  | 16.61% |
| Al 396.153Radial†                                   | 151718.4                 | 55417       | µg/L         | 100.9    | 55417 ppb          | 100.9    | 0.18%  |
| As 188.979†   | 192.8                    | 121.38      | µg/L         | 4.768    | 121.38 ppb         | 4.768    | 3.93%  |
| B 249.677†  | -3656.8                  | 41.624      | µg/L         | 0.4922   | 41.624 ppb         | 0.4922   | 1.18%  |
| Ba 233.527†   | 236986.5                 | 2113.8      | µg/L         | 0.73     | 2113.8 ppb         | 0.73     | 0.03%  |
| Be 313.107†   | 19569.8                  | -46.373     | µg/L         | 0.0321   | -46.373 ppb        | 0.0321   | 0.07%  |
| Concentration less than lower limit for Be 313.107. |                          |             |              |          |                    |          |        |
| Ca 317.933Radial†                                   | 1531726.6                | 170510      | µg/L         | 610.3    | 170510 ppb         | 610.3    | 0.36%  |
| Cd 226.502†   | 2508.4                   | 4.2722      | µg/L         | 0.08216  | 4.2722 ppb         | 0.08216  | 1.92%  |
| Co 228.616†   | 4352.7                   | 65.564      | µg/L         | 0.5448   | 65.564 ppb         | 0.5448   | 0.83%  |
| Cr 267.716†   | 8406.6                   | 100.19      | µg/L         | 0.835    | 100.19 ppb         | 0.835    | 0.83%  |
| Cu 324.752†   | 32897.3                  | 154.76      | µg/L         | 0.875    | 154.76 ppb         | 0.875    | 0.57%  |
| Fe 238.204 Radial†                                  | 1357744.6                | 128440      | µg/L         | 458.7    | 128440 ppb         | 458.7    | 0.36%  |
| K 766.490 Radial†                                   | 24151.6                  | 12725       | µg/L         | 49.1     | 12725 ppb          | 49.1     | 0.39%  |
| Mg 279.077 IEC†                                     | 116569.3                 | 62889       | µg/L         | 26.6     | 62889 ppb          | 26.6     | 0.04%  |
| Mn 257.610†   | 2201141.8                | 3855.5      | µg/L         | 3.14     | 3855.5 ppb         | 3.14     | 0.08%  |
| Mo 202.031†   | -31.7                    | 2.1406      | µg/L         | 0.78904  | 2.1406 ppb         | 0.78904  | 36.86% |



|   |           |              |         |             |         |         |
|---|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial†                                  | 9266.4    | 1545.2 µg/L  | 17.44   | 1545.2 ppb  | 17.44   | 1.13%   |
| Ni 231.604†   | 10561.5   | 167.91 µg/L  | 1.329   | 167.91 ppb  | 1.329   | 0.79%   |
| P 214.914†  | 14618.2   | 5262.3 µg/L  | 48.39   | 5262.3 ppb  | 48.39   | 0.92%   |
| Pb 220.353†   | 905.3     | 92.966 µg/L  | 0.2031  | 92.966 ppb  | 0.2031  | 0.22%   |
| S 181.975 Axial†                                    | 1611.0    | 1769.2 µg/L  | 23.23   | 1769.2 ppb  | 23.23   | 1.31%   |
| Sb 206.836†   | 27.9      | -8.2825 µg/L | 2.22120 | -8.2825 ppb | 2.22120 | 26.82%  |
| Se 196.026†   | -87.6     | 12.3 µg/L    | 1.51    | 12.3 ppb    | 1.51    | 12.33%  |
| SiO2†   | 577561.3  | 63923 µg/L   | 57.7    | 63923 ppb   | 57.7    | 0.09%   |
| Si 251.611†   | 1750964.3 | 29704 µg/L   | 35.1    | 29704 ppb   | 35.1    | 0.12%   |
| Sn 189.927†   | -32.8     | -4.0132 µg/L | 0.91383 | -4.0132 ppb | 0.91383 | 22.77%  |
| Sr 421.552†   | 187681.9  | 538.64 µg/L  | 0.849   | 538.64 ppb  | 0.849   | 0.16%   |
| Ti 334.940†   | 1455606.4 | 2070.8 µg/L  | 2.93    | 2070.8 ppb  | 2.93    | 0.14%   |
| Tl 190.801†   | -104.2    | -29.814 µg/L | 1.0706  | -29.814 ppb | 1.0706  | 3.59%   |
| Concentration less than lower limit for Tl 190.801. |           |              |         |             |         |         |
| U 367.007†  | 5764.1    | -4.0247 µg/L | 9.75831 | -4.0247 ppb | 9.75831 | 242.46% |
| V 292.402†  | 43554.0   | 204.16 µg/L  | 0.588   | 204.16 ppb  | 0.588   | 0.29%   |
| Zn 213.857†   | 79517.3   | 434.07 µg/L  | 0.686   | 434.07 ppb  | 0.686   | 0.16%   |

Sequence No.: 7

Sample ID: 409254004|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 310

Date Collected: 11/11/2016 12:08:28

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254004|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71442.2       | 71442.2             | 99.2 %             |                    | 12:08:55      |
| 1     | Al 396.153Radial†  | 51189.9       | 51515.1             | 18815 µg/L         | 18815 ppb          | 12:08:55      |
| 1     | Ca 317.933Radial†  | 436065.7      | 439358.1            | 48910 µg/L         | 48910 ppb          | 12:08:55      |
| 1     | Fe 238.204 Radial† | 703778.4      | 710164.1            | 67178 µg/L         | 67178 ppb          | 12:08:53      |
| 1     | K 766.490 Radial†  | 8134.0        | 7131.6              | 3768.0 µg/L        | 3768.0 ppb         | 12:08:55      |
| 1     | Mg 279.077 IEC†    | 31105.2       | 31337.7             | 16917 µg/L         | 16917 ppb          | 12:08:55      |
| 1     | Na 589.592 Radial† | 6155.5        | 6167.1              | 1028.4 µg/L        | 1028.4 ppb         | 12:08:55      |
| 1     | Sr 421.552†        | 56018.0       | 56944.1             | 163.52 µg/L        | 163.52 ppb         | 12:08:55      |
| 1     | Sc 361.383         | 1279396.2     | 1279396.2           | 96.108 %           |                    | 12:09:07      |
| 1     | Y 371.029          | 745596.0      | 745596.0            | 102.92 %           |                    | 12:09:07      |
| 1     | Ag 328.068†        | -2088.3       | -282.1              | 1.8425 µg/L        | 1.8425 ppb         | 12:09:07      |
| 1     | As 188.979†        | 50.1          | 82.0                | 53.177 µg/L        | 53.177 ppb         | 12:09:27      |
| 1     | B 249.677†         | -1873.4       | -2834.1             | 8.5202 µg/L        | 8.5202 ppb         | 12:09:07      |
| 1     | Ba 233.527†        | 122315.4      | 127509.3            | 1137.3 µg/L        | 1137.3 ppb         | 12:09:07      |
| 1     | Be 313.107†        | 3019.4        | 6797.6              | -25.968 µg/L       | -25.968 ppb        | 12:09:07      |
| 1     | Cd 226.502†        | 1001.4        | 1221.9              | 1.5531 µg/L        | 1.5531 ppb         | 12:09:27      |
| 1     | Co 228.616†        | 2511.6        | 2704.8              | 40.691 µg/L        | 40.691 ppb         | 12:09:27      |
| 1     | Cr 267.716†        | 3626.1        | 3643.9              | 43.628 µg/L        | 43.628 ppb         | 12:09:27      |
| 1     | Cu 324.752†        | 8724.4        | 3300.8              | 19.377 µg/L        | 19.377 ppb         | 12:09:07      |
| 1     | Mn 257.610†        | 944039.2      | 982115.3            | 1720.7 µg/L        | 1720.7 ppb         | 12:09:07      |
| 1     | Mo 202.031†        | -42.5         | -14.5               | 1.0600 µg/L        | 1.0600 ppb         | 12:09:27      |
| 1     | Ni 231.604†        | 5356.1        | 5770.7              | 91.743 µg/L        | 91.743 ppb         | 12:09:27      |
| 1     | P 214.914†         | 7912.5        | 8328.0              | 2998.2 µg/L        | 2998.2 ppb         | 12:09:27      |
| 1     | Pb 220.353†        | 512.4         | 459.5               | 46.848 µg/L        | 46.848 ppb         | 12:09:27      |
| 1     | S 181.975 Axial†   | 644.5         | 567.9               | 618.94 µg/L        | 618.94 ppb         | 12:09:27      |
| 1     | Sb 206.836†        | 67.5          | 25.9                | -2.2560 µg/L       | -2.2560 ppb        | 12:09:27      |
| 1     | Se 196.026†        | -43.5         | -53.3               | 2.75 µg/L          | 2.75 ppb           | 12:09:27      |
| 1     | SiO2†              | 327477.4      | 337718.6            | 37378 µg/L         | 37378 ppb          | 12:09:07      |
| 1     | Si 251.611†        | 982263.9      | 1021455.3           | 17327 µg/L         | 17327 ppb          | 12:09:07      |
| 1     | Sn 189.927†        | -49.6         | -24.1               | -3.0200 µg/L       | -3.0200 ppb        | 12:09:27      |
| 1     | Ti 334.940†        | 562434.4      | 586098.9            | 833.50 µg/L        | 833.50 ppb         | 12:09:07      |
| 1     | Tl 190.801†        | -127.3        | -46.4               | -13.104 µg/L       | -13.104 ppb        | 12:09:27      |
| 1     | U 367.007†         | 2714.5        | 3108.7              | 12.978 µg/L        | 12.978 ppb         | 12:09:07      |
| 1     | V 292.402†         | 16557.7       | 17124.9             | 81.429 µg/L        | 81.429 ppb         | 12:09:07      |
| 1     | Zn 213.857†        | 32880.8       | 34165.8             | 185.76 µg/L        | 185.76 ppb         | 12:09:07      |
| 2     | Sc RADIAL          | 72276.2       | 72276.2             | 100 %              |                    | 12:08:59      |
| 2     | Al 396.153Radial†  | 51701.2       | 51429.0             | 18784 µg/L         | 18784 ppb          | 12:08:59      |
| 2     | Ca 317.933Radial†  | 440709.1      | 438912.8            | 48860 µg/L         | 48860 ppb          | 12:08:59      |
| 2     | Fe 238.204 Radial† | 733641.1      | 731740.1            | 69219 µg/L         | 69219 ppb          | 12:08:57      |
| 2     | K 766.490 Radial†  | 8334.6        | 7236.9              | 3824.1 µg/L        | 3824.1 ppb         | 12:08:59      |
| 2     | Mg 279.077 IEC†    | 31583.9       | 31453.0             | 16980 µg/L         | 16980 ppb          | 12:08:59      |
| 2     | Na 589.592 Radial† | 6341.2        | 6280.5              | 1047.3 µg/L        | 1047.3 ppb         | 12:08:59      |
| 2     | Sr 421.552†        | 56575.2       | 56847.7             | 163.25 µg/L        | 163.25 ppb         | 12:08:59      |
| 2     | Sc 361.383         | 1299420.0     | 1299420.0           | 97.612 %           |                    | 12:09:29      |
| 2     | Y 371.029          | 753679.8      | 753679.8            | 104.04 %           |                    | 12:09:29      |
| 2     | Ag 328.068†        | -2054.3       | -213.7              | 2.3333 µg/L        | 2.3333 ppb         | 12:09:29      |
| 2     | As 188.979†        | 59.1          | 90.5                | 58.042 µg/L        | 58.042 ppb         | 12:09:49      |
| 2     | B 249.677†         | -1946.7       | -2879.2             | 9.3686 µg/L        | 9.3686 ppb         | 12:09:29      |
| 2     | Ba 233.527†        | 123164.0      | 126417.4            | 1127.6 µg/L        | 1127.6 ppb         | 12:09:29      |
| 2     | Be 313.107†        | 3478.0        | 7219.0              | -25.625 µg/L       | -25.625 ppb        | 12:09:29      |
| 2     | Cd 226.502†        | 1001.8        | 1206.3              | 1.2013 µg/L        | 1.2013 ppb         | 12:09:49      |
| 2     | Co 228.616†        | 2493.9        | 2646.4              | 39.787 µg/L        | 39.787 ppb         | 12:09:49      |
| 2     | Cr 267.716†        | 3626.5        | 3586.2              | 43.014 µg/L        | 43.014 ppb         | 12:09:49      |
| 2     | Cu 324.752†        | 8684.5        | 3120.0              | 18.686 µg/L        | 18.686 ppb         | 12:09:29      |
| 2     | Mn 257.610†        | 948326.0      | 971370.4            | 1701.8 µg/L        | 1701.8 ppb         | 12:09:29      |
| 2     | Mo 202.031†        | -51.9         | -23.5               | 0.6429 µg/L        | 0.6429 ppb         | 12:09:49      |
| 2     | Ni 231.604†        | 5343.4        | 5671.8              | 90.171 µg/L        | 90.171 ppb         | 12:09:49      |
| 2     | P 214.914†         | 7903.3        | 8191.7              | 2949.0 µg/L        | 2949.0 ppb         | 12:09:49      |
| 2     | Pb 220.353†        | 531.1         | 470.4               | 47.989 µg/L        | 47.989 ppb         | 12:09:49      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 648.3     | 561.4     | 611.23 µg/L  | 611.23 ppb  | 12:09:49 |
| 2 | Sb 206.836†        | 68.0      | 25.4      | -2.5581 µg/L | -2.5581 ppb | 12:09:49 |
| 2 | Se 196.026†        | -42.2     | -51.2     | 4.76 µg/L    | 4.76 ppb    | 12:09:49 |
| 2 | SiO2†              | 329472.2  | 334511.4  | 37023 µg/L   | 37023 ppb   | 12:09:29 |
| 2 | Si 251.611†        | 987920.7  | 1011501.1 | 17159 µg/L   | 17159 ppb   | 12:09:29 |
| 2 | Sn 189.927†        | -43.5     | -17.1     | -2.1215 µg/L | -2.1215 ppb | 12:09:49 |
| 2 | Ti 334.940†        | 565847.8  | 580577.9  | 825.66 µg/L  | 825.66 ppb  | 12:09:29 |
| 2 | Tl 190.801†        | -116.3    | -33.0     | -8.9739 µg/L | -8.9739 ppb | 12:09:49 |
| 2 | U 367.007†         | 2506.0    | 2851.5    | -29.754 µg/L | -29.754 ppb | 12:09:29 |
| 2 | V 292.402†         | 17003.5   | 17316.1   | 82.410 µg/L  | 82.410 ppb  | 12:09:29 |
| 2 | Zn 213.857†        | 33018.9   | 33780.1   | 183.35 µg/L  | 183.35 ppb  | 12:09:29 |
| 3 | Sc RADIAL          | 70764.2   | 70764.2   | 98.2 %       |             | 12:09:03 |
| 3 | Al 396.153Radial†  | 51200.6   | 52020.5   | 19000 µg/L   | 19000 ppb   | 12:09:03 |
| 3 | Ca 317.933Radial†  | 433850.8  | 441316.4  | 49128 µg/L   | 49128 ppb   | 12:09:03 |
| 3 | Fe 238.204 Radial† | 715163.1  | 728553.2  | 68918 µg/L   | 68918 ppb   | 12:09:01 |
| 3 | K 766.490 Radial†  | 8093.7    | 7169.1    | 3788.4 µg/L  | 3788.4 ppb  | 12:09:03 |
| 3 | Mg 279.077 IEC†    | 30968.4   | 31498.9   | 17005 µg/L   | 17005 ppb   | 12:09:03 |
| 3 | Na 589.592 Radial† | 6198.3    | 6270.1    | 1045.6 µg/L  | 1045.6 ppb  | 12:09:03 |
| 3 | Sr 421.552†        | 55932.5   | 57398.3   | 164.83 µg/L  | 164.83 ppb  | 12:09:03 |
| 3 | Sc 361.383         | 1325992.1 | 1325992.1 | 99.608 %     |             | 12:09:52 |
| 3 | Y 371.029          | 769038.4  | 769038.4  | 106.16 %     |             | 12:09:52 |
| 3 | Ag 328.068†        | -2226.2   | -344.1    | 1.6357 µg/L  | 1.6357 ppb  | 12:09:52 |
| 3 | As 188.979†        | 55.7      | 85.9      | 55.490 µg/L  | 55.490 ppb  | 12:10:12 |
| 3 | B 249.677†         | -1875.0   | -2767.3   | 10.757 µg/L  | 10.757 ppb  | 12:09:52 |
| 3 | Ba 233.527†        | 126175.9  | 126912.6  | 1132.0 µg/L  | 1132.0 ppb  | 12:09:52 |
| 3 | Be 313.107†        | 3486.0    | 7155.6    | -25.748 µg/L | -25.748 ppb | 12:09:52 |
| 3 | Cd 226.502†        | 1007.7    | 1191.6    | 1.1247 µg/L  | 1.1247 ppb  | 12:10:12 |
| 3 | Co 228.616†        | 2477.0    | 2578.2    | 38.783 µg/L  | 38.783 ppb  | 12:10:12 |
| 3 | Cr 267.716†        | 3639.6    | 3524.9    | 42.280 µg/L  | 42.280 ppb  | 12:10:12 |
| 3 | Cu 324.752†        | 8909.4    | 3167.6    | 18.883 µg/L  | 18.883 ppb  | 12:09:52 |
| 3 | Mn 257.610†        | 972324.9  | 975994.9  | 1709.9 µg/L  | 1709.9 ppb  | 12:09:52 |
| 3 | Mo 202.031†        | -27.3     | 2.4       | 1.9787 µg/L  | 1.9787 ppb  | 12:10:12 |
| 3 | Ni 231.604†        | 5343.3    | 5562.0    | 88.426 µg/L  | 88.426 ppb  | 12:10:12 |
| 3 | P 214.914†         | 7917.4    | 8043.6    | 2895.6 µg/L  | 2895.6 ppb  | 12:10:12 |
| 3 | Pb 220.353†        | 534.3     | 462.7     | 47.210 µg/L  | 47.210 ppb  | 12:10:12 |
| 3 | S 181.975 Axial†   | 656.3     | 556.2     | 605.45 µg/L  | 605.45 ppb  | 12:10:12 |
| 3 | Sb 206.836†        | 60.1      | 16.1      | -4.3135 µg/L | -4.3135 ppb | 12:10:12 |
| 3 | Se 196.026†        | -57.0     | -65.3     | -2.74 µg/L   | -2.74 ppb   | 12:10:12 |
| 3 | SiO2†              | 337602.3  | 335909.5  | 37178 µg/L   | 37178 ppb   | 12:09:52 |
| 3 | Si 251.611†        | 1012428.1 | 1015823.3 | 17232 µg/L   | 17232 ppb   | 12:09:52 |
| 3 | Sn 189.927†        | -48.1     | -20.8     | -2.5966 µg/L | -2.5966 ppb | 12:10:12 |
| 3 | Ti 334.940†        | 580208.3  | 583378.3  | 829.64 µg/L  | 829.64 ppb  | 12:09:52 |
| 3 | Tl 190.801†        | -124.5    | -38.9     | -10.785 µg/L | -10.785 ppb | 12:10:12 |
| 3 | U 367.007†         | 2623.0    | 2917.5    | -20.014 µg/L | -20.014 ppb | 12:09:52 |
| 3 | V 292.402†         | 17487.1   | 17452.5   | 83.003 µg/L  | 83.003 ppb  | 12:09:52 |
| 3 | Zn 213.857†        | 33804.5   | 33890.9   | 184.01 µg/L  | 184.01 ppb  | 12:09:52 |

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Mean Data: 409254004|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD    |
|---|--------------------------|-------------|--------------|----------|-------------|-----------------|--------|
| Sc 361.383  | 1301602.8                | 97.776      | %            | 1.7559   |             |                 | 1.80%  |
| Sc RADIAL   | 71494.2                  | 99.2        | %            | 1.05     |             |                 | 1.06%  |
| Y 371.029   | 756104.7                 | 104.37      | %            | 1.644    |             |                 | 1.57%  |
| Ag 328.068†   | -280.0                   | 1.9372      | µg/L         | 0.35829  | 1.9372 ppb  | 0.35829         | 18.50% |
| Al 396.153Radial†                                   | 51654.9                  | 18866       | µg/L         | 116.7    | 18866 ppb   | 116.7           | 0.62%  |
| As 188.979†   | 86.2                     | 55.569      | µg/L         | 2.4334   | 55.569 ppb  | 2.4334          | 4.38%  |
| B 249.677†  | -2826.9                  | 9.5488      | µg/L         | 1.12946  | 9.5488 ppb  | 1.12946         | 11.83% |
| Ba 233.527†   | 126946.4                 | 1132.3      | µg/L         | 4.87     | 1132.3 ppb  | 4.87            | 0.43%  |
| Be 313.107†   | 7057.4                   | -25.780     | µg/L         | 0.1737   | -25.780 ppb | 0.1737          | 0.67%  |
| Concentration less than lower limit for Be 313.107. |                          |             |              |          |             |                 |        |
| Ca 317.933Radial†                                   | 439862.4                 | 48966       | µg/L         | 142.3    | 48966 ppb   | 142.3           | 0.29%  |
| Cd 226.502†   | 1206.6                   | 1.2930      | µg/L         | 0.22848  | 1.2930 ppb  | 0.22848         | 17.67% |
| Co 228.616†   | 2643.2                   | 39.754      | µg/L         | 0.9543   | 39.754 ppb  | 0.9543          | 2.40%  |
| Cr 267.716†   | 3585.0                   | 42.974      | µg/L         | 0.6747   | 42.974 ppb  | 0.6747          | 1.57%  |
| Cu 324.752†   | 3196.1                   | 18.982      | µg/L         | 0.3564   | 18.982 ppb  | 0.3564          | 1.88%  |
| Fe 238.204 Radial†                                  | 723485.8                 | 68438       | µg/L         | 1101.7   | 68438 ppb   | 1101.7          | 1.61%  |
| K 766.490 Radial†                                   | 7179.2                   | 3793.5      | µg/L         | 28.39    | 3793.5 ppb  | 28.39           | 0.75%  |
| Mg 279.077 IEC†                                     | 31429.9                  | 16967       | µg/L         | 45.1     | 16967 ppb   | 45.1            | 0.27%  |
| Mn 257.610†   | 976493.5                 | 1710.8      | µg/L         | 9.45     | 1710.8 ppb  | 9.45            | 0.55%  |
| Mo 202.031†   | -11.9                    | 1.2272      | µg/L         | 0.68342  | 1.2272 ppb  | 0.68342         | 55.69% |

|                    |           |              |         |             |         |         |
|--------------------|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial† | 6239.2    | 1040.4 µg/L  | 10.46   | 1040.4 ppb  | 10.46   | 1.01%   |
| Ni 231.604†        | 5668.2    | 90.113 µg/L  | 1.6594  | 90.113 ppb  | 1.6594  | 1.84%   |
| P 214.914†         | 8187.8    | 2947.6 µg/L  | 51.31   | 2947.6 ppb  | 51.31   | 1.74%   |
| Pb 220.353†        | 464.2     | 47.349 µg/L  | 0.5832  | 47.349 ppb  | 0.5832  | 1.23%   |
| S 181.975 Axial†   | 561.9     | 611.87 µg/L  | 6.765   | 611.87 ppb  | 6.765   | 1.11%   |
| Sb 206.836†        | 22.5      | -3.0425 µg/L | 1.11097 | -3.0425 ppb | 1.11097 | 36.51%  |
| Se 196.026†        | -56.6     | 1.59 µg/L    | 3.884   | 1.59 ppb    | 3.884   | 244.49% |
| SiO2†              | 336046.5  | 37193 µg/L   | 178.0   | 37193 ppb   | 178.0   | 0.48%   |
| Si 251.611†        | 1016259.9 | 17239 µg/L   | 84.5    | 17239 ppb   | 84.5    | 0.49%   |
| Sn 189.927†        | -20.6     | -2.5794 µg/L | 0.44947 | -2.5794 ppb | 0.44947 | 17.43%  |
| Sr 421.552†        | 57063.3   | 163.87 µg/L  | 0.848   | 163.87 ppb  | 0.848   | 0.52%   |
| Ti 334.940†        | 583351.7  | 829.60 µg/L  | 3.916   | 829.60 ppb  | 3.916   | 0.47%   |
| Tl 190.801†        | -39.4     | -10.954 µg/L | 2.0700  | -10.954 ppb | 2.0700  | 18.90%  |
| U 367.007†         | 2959.2    | -12.263 µg/L | 22.3958 | -12.263 ppb | 22.3958 | 182.62% |
| V 292.402†         | 17297.8   | 82.281 µg/L  | 0.7946  | 82.281 ppb  | 0.7946  | 0.97%   |
| Zn 213.857†        | 33945.6   | 184.38 µg/L  | 1.245   | 184.38 ppb  | 1.245   | 0.68%   |

Sequence No.: 8

Sample ID: 409254005|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 311

Date Collected: 11/11/2016 12:10:20

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254005|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 70784.3       | 70784.3             | 98.3 %             |                    | 12:10:47      |
| 1     | Al 396.153Radial†  | 95812.5       | 97407.6             | 35584 µg/L         | 35584 ppb          | 12:10:47      |
| 1     | Ca 317.933Radial†  | 1182064.7     | 1202654.6           | 133880 µg/L        | 133880 ppb         | 12:10:45      |
| 1     | Fe 238.204 Radial† | 1057178.7     | 1076418.2           | 101820 µg/L        | 101820 ppb         | 12:10:45      |
| 1     | K 766.490 Radial†  | 14500.0       | 13686.6             | 7218.7 µg/L        | 7218.7 ppb         | 12:10:47      |
| 1     | Mg 279.077 IEC†    | 97449.7       | 99148.6             | 53488 µg/L         | 53488 ppb          | 12:10:47      |
| 1     | Na 589.592 Radial† | 8806.3        | 8922.5              | 1487.9 µg/L        | 1487.9 ppb         | 12:10:47      |
| 1     | Sr 421.552†        | 118071.1      | 120621.0            | 345.34 µg/L        | 345.34 ppb         | 12:10:47      |
| 1     | Sc 361.383         | 1293536.9     | 1293536.9           | 97.170 %           |                    | 12:11:00      |
| 1     | Y 371.029          | 757694.3      | 757694.3            | 104.59 %           |                    | 12:11:00      |
| 1     | Ag 328.068†        | -2671.9       | -858.8              | 0.0757 µg/L        | 0.0757 ppb         | 12:11:00      |
| 1     | As 188.979†        | 98.4          | 131.2               | 84.406 µg/L        | 84.406 ppb         | 12:11:20      |
| 1     | B 249.677†         | -2365.6       | -3319.4             | 26.956 µg/L        | 26.956 ppb         | 12:11:00      |
| 1     | Ba 233.527†        | 213130.1      | 219577.1            | 1958.4 µg/L        | 1958.4 ppb         | 12:11:00      |
| 1     | Be 313.107†        | 8487.7        | 12390.8             | -44.567 µg/L       | -44.567 ppb        | 12:11:00      |
| 1     | Cd 226.502†        | 1601.9        | 1828.6              | 2.1760 µg/L        | 2.1760 ppb         | 12:11:20      |
| 1     | Co 228.616†        | 2785.3        | 2957.9              | 44.989 µg/L        | 44.989 ppb         | 12:11:20      |
| 1     | Cr 267.716†        | 6070.8        | 6118.5              | 72.992 µg/L        | 72.992 ppb         | 12:11:20      |
| 1     | Cu 324.752†        | 15341.8       | 10011.7             | 51.825 µg/L        | 51.825 ppb         | 12:11:00      |
| 1     | Mn 257.610†        | 1893804.5     | 1948799.4           | 3413.6 µg/L        | 3413.6 ppb         | 12:11:00      |
| 1     | Mo 202.031†        | -55.8         | -27.7               | 1.6021 µg/L        | 1.6021 ppb         | 12:11:20      |
| 1     | Ni 231.604†        | 5776.0        | 6141.9              | 97.644 µg/L        | 97.644 ppb         | 12:11:20      |
| 1     | P 214.914†         | 13622.4       | 14114.1             | 5082.0 µg/L        | 5082.0 ppb         | 12:11:20      |
| 1     | Pb 220.353†        | 628.1         | 572.6               | 58.591 µg/L        | 58.591 ppb         | 12:11:20      |
| 1     | S 181.975 Axial†   | 1099.0        | 1028.3              | 1124.9 µg/L        | 1124.9 ppb         | 12:11:20      |
| 1     | Sb 206.836†        | 52.2          | 9.4                 | -9.1171 µg/L       | -9.1171 ppb        | 12:11:20      |
| 1     | Se 196.026†        | -68.1         | -78.1               | 5.41 µg/L          | 5.41 ppb           | 12:11:20      |
| 1     | SiO2†              | 527803.2      | 540152.8            | 59783 µg/L         | 59783 ppb          | 12:11:00      |
| 1     | Si 251.611†        | 1591887.5     | 1637658.2           | 27779 µg/L         | 27779 ppb          | 12:11:00      |
| 1     | Sn 189.927†        | -53.3         | -27.4               | -3.3849 µg/L       | -3.3849 ppb        | 12:11:20      |
| 1     | Ti 334.940†        | 1047985.6     | 1079391.8           | 1535.6 µg/L        | 1535.6 ppb         | 12:11:00      |
| 1     | Tl 190.801†        | -139.0        | -57.0               | -15.763 µg/L       | -15.763 ppb        | 12:11:20      |
| 1     | U 367.007†         | 4139.4        | 4544.2              | -6.2191 µg/L       | -6.2191 ppb        | 12:11:00      |
| 1     | V 292.402†         | 29481.3       | 30236.4             | 142.61 µg/L        | 142.61 ppb         | 12:11:00      |
| 1     | Zn 213.857†        | 50119.4       | 51532.3             | 278.73 µg/L        | 278.73 ppb         | 12:11:00      |
| 2     | Sc RADIAL          | 70364.6       | 70364.6             | 97.7 %             |                    | 12:10:51      |
| 2     | Al 396.153Radial†  | 95428.5       | 97596.2             | 35653 µg/L         | 35653 ppb          | 12:10:51      |
| 2     | Ca 317.933Radial†  | 1201996.1     | 1230236.8           | 136950 µg/L        | 136950 ppb         | 12:10:49      |
| 2     | Fe 238.204 Radial† | 1075675.8     | 1101773.9           | 104220 µg/L        | 104220 ppb         | 12:10:49      |
| 2     | K 766.490 Radial†  | 14426.6       | 13699.5             | 7226.1 µg/L        | 7226.1 ppb         | 12:10:51      |
| 2     | Mg 279.077 IEC†    | 97004.0       | 99283.9             | 53562 µg/L         | 53562 ppb          | 12:10:51      |
| 2     | Na 589.592 Radial† | 8735.7        | 8903.6              | 1484.7 µg/L        | 1484.7 ppb         | 12:10:51      |
| 2     | Sr 421.552†        | 117696.2      | 120954.1            | 346.20 µg/L        | 346.20 ppb         | 12:10:51      |
| 2     | Sc 361.383         | 1276677.5     | 1276677.5           | 95.904 %           |                    | 12:11:22      |
| 2     | Y 371.029          | 747971.0      | 747971.0            | 103.25 %           |                    | 12:11:22      |
| 2     | Ag 328.068†        | -2441.1       | -654.5              | 1.2443 µg/L        | 1.2443 ppb         | 12:11:22      |
| 2     | As 188.979†        | 101.3         | 135.6               | 87.088 µg/L        | 87.088 ppb         | 12:11:43      |
| 2     | B 249.677†         | -2226.7       | -3206.7             | 30.336 µg/L        | 30.336 ppb         | 12:11:22      |
| 2     | Ba 233.527†        | 209802.6      | 219004.0            | 1953.3 µg/L        | 1953.3 ppb         | 12:11:22      |
| 2     | Be 313.107†        | 8433.6        | 12449.7             | -44.425 µg/L       | -44.425 ppb        | 12:11:22      |
| 2     | Cd 226.502†        | 1600.3        | 1848.7              | 2.0534 µg/L        | 2.0534 ppb         | 12:11:43      |
| 2     | Co 228.616†        | 2814.8        | 3026.6              | 45.974 µg/L        | 45.974 ppb         | 12:11:43      |
| 2     | Cr 267.716†        | 6097.2        | 6228.6              | 74.329 µg/L        | 74.329 ppb         | 12:11:43      |
| 2     | Cu 324.752†        | 14818.0       | 9674.0              | 50.489 µg/L        | 50.489 ppb         | 12:11:22      |
| 2     | Mn 257.610†        | 1862349.4     | 1941738.1           | 3401.2 µg/L        | 3401.2 ppb         | 12:11:22      |
| 2     | Mo 202.031†        | -53.0         | -25.5               | 1.7771 µg/L        | 1.7771 ppb         | 12:11:43      |
| 2     | Ni 231.604†        | 5845.3        | 6292.6              | 100.04 µg/L        | 100.04 ppb         | 12:11:43      |
| 2     | P 214.914†         | 13674.8       | 14353.9             | 5168.3 µg/L        | 5168.3 ppb         | 12:11:43      |
| 2     | Pb 220.353†        | 599.7         | 551.6               | 56.465 µg/L        | 56.465 ppb         | 12:11:43      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 1116.4    | 1061.4    | 1161.4 µg/L  | 1161.4 ppb  | 12:11:43 |
| 2 | Sb 206.836†        | 52.8      | 10.7      | -9.1395 µg/L | -9.1395 ppb | 12:11:43 |
| 2 | Se 196.026†        | -66.6     | -77.5     | 6.81 µg/L    | 6.81 ppb    | 12:11:43 |
| 2 | SiO2†              | 519130.9  | 538283.1  | 59576 µg/L   | 59576 ppb   | 12:11:22 |
| 2 | Si 251.611†        | 1565058.4 | 1631317.4 | 27672 µg/L   | 27672 ppb   | 12:11:22 |
| 2 | Sn 189.927†        | -57.9     | -32.9     | -4.0926 µg/L | -4.0926 ppb | 12:11:43 |
| 2 | Ti 334.940†        | 1031783.4 | 1076740.0 | 1531.9 µg/L  | 1531.9 ppb  | 12:11:22 |
| 2 | Tl 190.801†        | -147.6    | -67.8     | -19.065 µg/L | -19.065 ppb | 12:11:43 |
| 2 | U 367.007†         | 4088.3    | 4547.1    | -19.166 µg/L | -19.166 ppb | 12:11:22 |
| 2 | V 292.402†         | 28984.0   | 30118.6   | 142.24 µg/L  | 142.24 ppb  | 12:11:22 |
| 2 | Zn 213.857†        | 49257.5   | 51314.8   | 277.24 µg/L  | 277.24 ppb  | 12:11:22 |
| 3 | Sc RADIAL          | 69697.0   | 69697.0   | 96.8 %       |             | 12:10:55 |
| 3 | Al 396.153Radial†  | 94330.1   | 97396.6   | 35580 µg/L   | 35580 ppb   | 12:10:55 |
| 3 | Ca 317.933Radial†  | 1176720.7 | 1215899.0 | 135350 µg/L  | 135350 ppb  | 12:10:53 |
| 3 | Fe 238.204 Radial† | 1053829.8 | 1089741.9 | 103080 µg/L  | 103080 ppb  | 12:10:53 |
| 3 | K 766.490 Radial†  | 14296.6   | 13706.6   | 7229.5 µg/L  | 7229.5 ppb  | 12:10:55 |
| 3 | Mg 279.077 IEC†    | 94986.6   | 98150.0   | 52950 µg/L   | 52950 ppb   | 12:10:55 |
| 3 | Na 589.592 Radial† | 8636.6    | 8886.9    | 1481.9 µg/L  | 1481.9 ppb  | 12:10:55 |
| 3 | Sr 421.552†        | 116229.4  | 120592.1  | 345.20 µg/L  | 345.20 ppb  | 12:10:55 |
| 3 | Sc 361.383         | 1284745.5 | 1284745.5 | 96.510 %     |             | 12:11:45 |
| 3 | Y 371.029          | 751947.2  | 751947.2  | 103.80 %     |             | 12:11:45 |
| 3 | Ag 328.068†        | -2287.5   | -479.4    | 2.0889 µg/L  | 2.0889 ppb  | 12:11:45 |
| 3 | As 188.979†        | 91.2      | 124.5     | 80.907 µg/L  | 80.907 ppb  | 12:12:06 |
| 3 | B 249.677†         | -2371.2   | -3341.8   | 27.558 µg/L  | 27.558 ppb  | 12:11:45 |
| 3 | Ba 233.527†        | 210472.6  | 218324.4  | 1947.2 µg/L  | 1947.2 ppb  | 12:11:45 |
| 3 | Be 313.107†        | 8388.5    | 12347.8   | -44.300 µg/L | -44.300 ppb | 12:11:45 |
| 3 | Cd 226.502†        | 1617.8    | 1856.3    | 2.2415 µg/L  | 2.2415 ppb  | 12:12:06 |
| 3 | Co 228.616†        | 2766.2    | 2957.8    | 44.959 µg/L  | 44.959 ppb  | 12:12:06 |
| 3 | Cr 267.716†        | 6063.1    | 6153.4    | 73.418 µg/L  | 73.418 ppb  | 12:12:06 |
| 3 | Cu 324.752†        | 15143.6   | 9914.4    | 51.478 µg/L  | 51.478 ppb  | 12:11:45 |
| 3 | Mn 257.610†        | 1870120.9 | 1937596.0 | 3393.9 µg/L  | 3393.9 ppb  | 12:11:45 |
| 3 | Mo 202.031†        | -39.2     | -10.9     | 2.5015 µg/L  | 2.5015 ppb  | 12:12:06 |
| 3 | Ni 231.604†        | 5800.3    | 6207.8    | 98.693 µg/L  | 98.693 ppb  | 12:12:06 |
| 3 | P 214.914†         | 13588.3   | 14174.7   | 5103.8 µg/L  | 5103.8 ppb  | 12:12:06 |
| 3 | Pb 220.353†        | 590.4     | 538.0     | 55.082 µg/L  | 55.082 ppb  | 12:12:06 |
| 3 | S 181.975 Axial†   | 1111.6    | 1049.1    | 1147.9 µg/L  | 1147.9 ppb  | 12:12:06 |
| 3 | Sb 206.836†        | 69.1      | 27.3      | -5.8045 µg/L | -5.8045 ppb | 12:12:06 |
| 3 | Se 196.026†        | -74.5     | -85.2     | 2.25 µg/L    | 2.25 ppb    | 12:12:06 |
| 3 | SiO2†              | 521355.4  | 537188.8  | 59455 µg/L   | 59455 ppb   | 12:11:45 |
| 3 | Si 251.611†        | 1572249.7 | 1628520.7 | 27625 µg/L   | 27625 ppb   | 12:11:45 |
| 3 | Sn 189.927†        | -54.7     | -29.2     | -3.6161 µg/L | -3.6161 ppb | 12:12:06 |
| 3 | Ti 334.940†        | 1036827.8 | 1075210.7 | 1529.7 µg/L  | 1529.7 ppb  | 12:11:45 |
| 3 | Tl 190.801†        | -143.1    | -62.3     | -17.371 µg/L | -17.371 ppb | 12:12:06 |
| 3 | U 367.007†         | 4199.2    | 4635.2    | -1.9985 µg/L | -1.9985 ppb | 12:11:45 |
| 3 | V 292.402†         | 29244.2   | 30198.4   | 142.53 µg/L  | 142.53 ppb  | 12:11:45 |
| 3 | Zn 213.857†        | 49468.4   | 51210.8   | 276.80 µg/L  | 276.80 ppb  | 12:11:45 |

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Mean Data: 409254005|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD    |
|---|--------------------------|--------------|--------------|----------|-------------|-----------------|--------|
| Sc 361.383  | 1284986.6                | 96.528 %     | %            | 0.6334   |             |                 | 0.66%  |
| Sc RADIAL   | 70282.0                  | 97.6 %       | %            | 0.76     |             |                 | 0.78%  |
| Y 371.029   | 752537.5                 | 103.88 %     | %            | 0.675    |             |                 | 0.65%  |
| Ag 328.068†   | -664.2                   | 1.1363 µg/L  | µg/L         | 1.01093  | 1.1363 ppb  | 1.01093         | 88.97% |
| Al 396.153Radial†                                   | 97466.8                  | 35606 µg/L   | µg/L         | 41.2     | 35606 ppb   | 41.2            | 0.12%  |
| As 188.979†   | 130.4                    | 84.134 µg/L  | µg/L         | 3.0995   | 84.134 ppb  | 3.0995          | 3.68%  |
| B 249.677†  | -3289.3                  | 28.283 µg/L  | µg/L         | 1.8029   | 28.283 ppb  | 1.8029          | 6.37%  |
| Ba 233.527†   | 218968.5                 | 1953.0 µg/L  | µg/L         | 5.59     | 1953.0 ppb  | 5.59            | 0.29%  |
| Be 313.107†   | 12396.1                  | -44.431 µg/L | µg/L         | 0.1336   | -44.431 ppb | 0.1336          | 0.30%  |
| Concentration less than lower limit for Be 313.107. |                          |              |              |          |             |                 |        |
| Ca 317.933Radial†                                   | 1216263.5                | 135390 µg/L  | µg/L         | 1535.6   | 135390 ppb  | 1535.6          | 1.13%  |
| Cd 226.502†   | 1844.5                   | 2.1570 µg/L  | µg/L         | 0.09548  | 2.1570 ppb  | 0.09548         | 4.43%  |
| Co 228.616†   | 2980.8                   | 45.308 µg/L  | µg/L         | 0.5774   | 45.308 ppb  | 0.5774          | 1.27%  |
| Cr 267.716†   | 6166.8                   | 73.580 µg/L  | µg/L         | 0.6829   | 73.580 ppb  | 0.6829          | 0.93%  |
| Cu 324.752†   | 9866.7                   | 51.264 µg/L  | µg/L         | 0.6933   | 51.264 ppb  | 0.6933          | 1.35%  |
| Fe 238.204 Radial†                                  | 1089311.3                | 103040 µg/L  | µg/L         | 1199.8   | 103040 ppb  | 1199.8          | 1.16%  |
| K 766.490 Radial†                                   | 13697.5                  | 7224.8 µg/L  | µg/L         | 5.55     | 7224.8 ppb  | 5.55            | 0.08%  |
| Mg 279.077 IEC†                                     | 98860.9                  | 53333 µg/L   | µg/L         | 333.9    | 53333 ppb   | 333.9           | 0.63%  |
| Mn 257.610†   | 1942711.2                | 3402.9 µg/L  | µg/L         | 9.92     | 3402.9 ppb  | 9.92            | 0.29%  |
| Mo 202.031†   | -21.4                    | 1.9603 µg/L  | µg/L         | 0.47683  | 1.9603 ppb  | 0.47683         | 24.32% |

|                    |           |              |         |             |         |        |
|--------------------|-----------|--------------|---------|-------------|---------|--------|
| Na 589.592 Radial† | 8904.3    | 1484.8 µg/L  | 2.98    | 1484.8 ppb  | 2.98    | 0.20%  |
| Ni 231.604†        | 6214.1    | 98.793 µg/L  | 1.2015  | 98.793 ppb  | 1.2015  | 1.22%  |
| P 214.914†         | 14214.2   | 5118.0 µg/L  | 44.88   | 5118.0 ppb  | 44.88   | 0.88%  |
| Pb 220.353†        | 554.1     | 56.713 µg/L  | 1.7675  | 56.713 ppb  | 1.7675  | 3.12%  |
| S 181.975 Axial†   | 1046.3    | 1144.7 µg/L  | 18.41   | 1144.7 ppb  | 18.41   | 1.61%  |
| Sb 206.836†        | 15.8      | -8.0204 µg/L | 1.91901 | -8.0204 ppb | 1.91901 | 23.93% |
| Se 196.026†        | -80.3     | 4.82 µg/L    | 2.334   | 4.82 ppb    | 2.334   | 48.41% |
| SiO2†              | 538541.6  | 59604 µg/L   | 165.9   | 59604 ppb   | 165.9   | 0.28%  |
| Si 251.611†        | 1632498.7 | 27692 µg/L   | 79.3    | 27692 ppb   | 79.3    | 0.29%  |
| Sn 189.927†        | -29.8     | -3.6978 µg/L | 0.36088 | -3.6978 ppb | 0.36088 | 9.76%  |
| Sr 421.552†        | 120722.4  | 345.58 µg/L  | 0.540   | 345.58 ppb  | 0.540   | 0.16%  |
| Ti 334.940†        | 1077114.2 | 1532.4 µg/L  | 3.00    | 1532.4 ppb  | 3.00    | 0.20%  |
| Tl 190.801†        | -62.4     | -17.400 µg/L | 1.6512  | -17.400 ppb | 1.6512  | 9.49%  |
| U 367.007†         | 4575.5    | -9.1278 µg/L | 8.94554 | -9.1278 ppb | 8.94554 | 98.00% |
| V 292.402†         | 30184.5   | 142.46 µg/L  | 0.192   | 142.46 ppb  | 0.192   | 0.13%  |
| Zn 213.857†        | 51352.6   | 277.59 µg/L  | 1.013   | 277.59 ppb  | 1.013   | 0.37%  |

Sequence No.: 9

Sample ID: 409254006|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 312

Date Collected: 11/11/2016 12:12:14

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254006|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 68765.4       | 68765.4             | 95.5 %             |                    | 12:12:41      |
| 1     | Al 396.153Radial†  | 129203.3      | 135250.3            | 49406 µg/L         | 49406 ppb          | 12:12:41      |
| 1     | Ca 317.933Radial†  | 1497453.4     | 1568372.7           | 174590 µg/L        | 174590 ppb         | 12:12:39      |
| 1     | Fe 238.204 Radial† | 1225968.8     | 1284829.7           | 121540 µg/L        | 121540 ppb         | 12:12:39      |
| 1     | K 766.490 Radial†  | 20228.1       | 20120.5             | 10604 µg/L         | 10604 ppb          | 12:12:41      |
| 1     | Mg 279.077 IEC†    | 111830.8      | 117125.9            | 63186 µg/L         | 63186 ppb          | 12:12:41      |
| 1     | Na 589.592 Radial† | 11105.2       | 11593.9             | 1933.3 µg/L        | 1933.3 ppb         | 12:12:41      |
| 1     | Sr 421.552†        | 167716.3      | 176156.8            | 505.06 µg/L        | 505.06 ppb         | 12:12:41      |
| 1     | Sc 361.383         | 1280646.4     | 1280646.4           | 96.202 %           |                    | 12:12:53      |
| 1     | Y 371.029          | 767226.4      | 767226.4            | 105.91 %           |                    | 12:12:53      |
| 1     | Ag 328.068†        | -2535.5       | -744.8              | 1.4127 µg/L        | 1.4127 ppb         | 12:12:53      |
| 1     | As 188.979†        | 152.2         | 188.1               | 117.87 µg/L        | 117.87 ppb         | 12:13:14      |
| 1     | B 249.677†         | -2636.2       | -3625.2             | 37.020 µg/L        | 37.020 ppb         | 12:12:53      |
| 1     | Ba 233.527†        | 235757.1      | 245305.1            | 2187.9 µg/L        | 2187.9 ppb         | 12:12:53      |
| 1     | Be 313.107†        | 13030.0       | 17200.3             | -48.858 µg/L       | -48.858 ppb        | 12:12:53      |
| 1     | Cd 226.502†        | 1973.7        | 2231.6              | 2.9680 µg/L        | 2.9680 ppb         | 12:13:14      |
| 1     | Co 228.616†        | 3874.4        | 4118.9              | 62.263 µg/L        | 62.263 ppb         | 12:13:14      |
| 1     | Cr 267.716†        | 7293.2        | 7452.1              | 88.880 µg/L        | 88.880 ppb         | 12:13:14      |
| 1     | Cu 324.752†        | 26380.1       | 21644.7             | 104.63 µg/L        | 104.63 ppb         | 12:12:53      |
| 1     | Mn 257.610†        | 2185424.4     | 2271549.4           | 3978.9 µg/L        | 3978.9 ppb         | 12:12:53      |
| 1     | Mo 202.031†        | -72.9         | -46.1               | 1.2296 µg/L        | 1.2296 ppb         | 12:13:14      |
| 1     | Ni 231.604†        | 8796.4        | 9341.4              | 148.51 µg/L        | 148.51 ppb         | 12:13:14      |
| 1     | P 214.914†         | 13416.8       | 14041.5             | 5054.8 µg/L        | 5054.8 ppb         | 12:13:14      |
| 1     | Pb 220.353†        | 855.9         | 816.0               | 83.684 µg/L        | 83.684 ppb         | 12:13:14      |
| 1     | S 181.975 Axial†   | 1438.2        | 1392.3              | 1526.7 µg/L        | 1526.7 ppb         | 12:13:14      |
| 1     | Sb 206.836†        | 79.8          | 38.7                | -5.4528 µg/L       | -5.4528 ppb        | 12:13:14      |
| 1     | Se 196.026†        | -77.5         | -88.6               | 8.70 µg/L          | 8.70 ppb           | 12:13:14      |
| 1     | SiO2†              | 566359.5      | 585698.7            | 64823 µg/L         | 64823 ppb          | 12:12:53      |
| 1     | Si 251.611†        | 1708659.3     | 1775529.9           | 30119 µg/L         | 30119 ppb          | 12:12:53      |
| 1     | Sn 189.927†        | -61.1         | -36.1               | -4.4520 µg/L       | -4.4520 ppb        | 12:13:14      |
| 1     | Ti 334.940†        | 1332234.3     | 1385717.9           | 1971.5 µg/L        | 1971.5 ppb         | 12:12:53      |
| 1     | Tl 190.801†        | -174.2        | -95.1               | -27.135 µg/L       | -27.135 ppb        | 12:13:14      |
| 1     | U 367.007†         | 4941.5        | 5420.8              | -9.1216 µg/L       | -9.1216 ppb        | 12:12:53      |
| 1     | V 292.402†         | 38637.4       | 40059.4             | 188.00 µg/L        | 188.00 ppb         | 12:12:53      |
| 1     | Zn 213.857†        | 68343.4       | 70995.0             | 386.50 µg/L        | 386.50 ppb         | 12:12:53      |
| 2     | Sc RADIAL          | 69233.5       | 69233.5             | 96.1 %             |                    | 12:12:45      |
| 2     | Al 396.153Radial†  | 129512.6      | 134656.9            | 49189 µg/L         | 49189 ppb          | 12:12:45      |
| 2     | Ca 317.933Radial†  | 1485328.8     | 1545149.9           | 172010 µg/L        | 172010 ppb         | 12:12:43      |
| 2     | Fe 238.204 Radial† | 1216574.9     | 1266371.2           | 119790 µg/L        | 119790 ppb         | 12:12:43      |
| 2     | K 766.490 Radial†  | 20347.5       | 20101.5             | 10593 µg/L         | 10593 ppb          | 12:12:45      |
| 2     | Mg 279.077 IEC†    | 112420.4      | 116947.2            | 63090 µg/L         | 63090 ppb          | 12:12:45      |
| 2     | Na 589.592 Radial† | 11198.7       | 11612.5             | 1936.4 µg/L        | 1936.4 ppb         | 12:12:45      |
| 2     | Sr 421.552†        | 168474.8      | 175758.1            | 503.99 µg/L        | 503.99 ppb         | 12:12:45      |
| 2     | Sc 361.383         | 1308339.1     | 1308339.1           | 98.282 %           |                    | 12:13:16      |
| 2     | Y 371.029          | 783331.7      | 783331.7            | 108.13 %           |                    | 12:13:16      |
| 2     | Ag 328.068†        | -2589.4       | -743.8              | 1.3367 µg/L        | 1.3367 ppb         | 12:13:16      |
| 2     | As 188.979†        | 148.6         | 181.2               | 113.88 µg/L        | 113.88 ppb         | 12:13:37      |
| 2     | B 249.677†         | -2716.0       | -3648.3             | 35.406 µg/L        | 35.406 ppb         | 12:13:16      |
| 2     | Ba 233.527†        | 240020.5      | 244455.9            | 2180.3 µg/L        | 2180.3 ppb         | 12:13:16      |
| 2     | Be 313.107†        | 13358.9       | 17248.3             | -48.659 µg/L       | -48.659 ppb        | 12:13:16      |
| 2     | Cd 226.502†        | 2018.2        | 2233.5              | 3.1821 µg/L        | 3.1821 ppb         | 12:13:37      |
| 2     | Co 228.616†        | 3879.8        | 4039.2              | 61.091 µg/L        | 61.091 ppb         | 12:13:37      |
| 2     | Cr 267.716†        | 7339.7        | 7339.0              | 87.518 µg/L        | 87.518 ppb         | 12:13:37      |
| 2     | Cu 324.752†        | 26841.0       | 21533.2             | 104.03 µg/L        | 104.03 ppb         | 12:13:16      |
| 2     | Mn 257.610†        | 2223141.0     | 2261841.8           | 3961.9 µg/L        | 3961.9 ppb         | 12:13:16      |
| 2     | Mo 202.031†        | -73.3         | -44.9               | 1.2502 µg/L        | 1.2502 ppb         | 12:13:37      |
| 2     | Ni 231.604†        | 8796.5        | 9148.0              | 145.44 µg/L        | 145.44 ppb         | 12:13:37      |
| 2     | P 214.914†         | 13436.8       | 13766.8             | 4955.8 µg/L        | 4955.8 ppb         | 12:13:37      |
| 2     | Pb 220.353†        | 833.5         | 774.3               | 79.460 µg/L        | 79.460 ppb         | 12:13:37      |



|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 1424.9    | 1347.1    | 1476.6 µg/L  | 1476.6 ppb  | 12:13:37 |
| 2 | Sb 206.836†        | 55.2      | 11.9      | -10.428 µg/L | -10.428 ppb | 12:13:37 |
| 2 | Se 196.026†        | -81.5     | -90.9     | 6.68 µg/L    | 6.68 ppb    | 12:13:37 |
| 2 | SiO2†              | 577344.6  | 584414.8  | 64681 µg/L   | 64681 ppb   | 12:13:16 |
| 2 | Si 251.611†        | 1741065.7 | 1770908.9 | 30041 µg/L   | 30041 ppb   | 12:13:16 |
| 2 | Sn 189.927†        | -58.9     | -32.5     | -3.9960 µg/L | -3.9960 ppb | 12:13:37 |
| 2 | Ti 334.940†        | 1357354.5 | 1381965.5 | 1966.1 µg/L  | 1966.1 ppb  | 12:13:16 |
| 2 | Tl 190.801†        | -184.7    | -101.9    | -29.265 µg/L | -29.265 ppb | 12:13:37 |
| 2 | U 367.007†         | 5059.9    | 5432.6    | 2.0471 µg/L  | 2.0471 ppb  | 12:13:16 |
| 2 | V 292.402†         | 39480.1   | 40066.7   | 187.92 µg/L  | 187.92 ppb  | 12:13:16 |
| 2 | Zn 213.857†        | 69562.3   | 70731.5   | 385.20 µg/L  | 385.20 ppb  | 12:13:16 |
| 3 | Sc RADIAL          | 70858.2   | 70858.2   | 98.4 %       |             | 12:12:49 |
| 3 | Al 396.153Radial†  | 132269.2  | 134369.5  | 49084 µg/L   | 49084 ppb   | 12:12:49 |
| 3 | Ca 317.933Radial†  | 1501966.3 | 1526627.6 | 169940 µg/L  | 169940 ppb  | 12:12:47 |
| 3 | Fe 238.204 Radial† | 1229390.4 | 1250375.1 | 118280 µg/L  | 118280 ppb  | 12:12:47 |
| 3 | K 766.490 Radial†  | 20573.2   | 19845.5   | 10458 µg/L   | 10458 ppb   | 12:12:49 |
| 3 | Mg 279.077 IEC†    | 115223.9  | 117115.4  | 63180 µg/L   | 63180 ppb   | 12:12:49 |
| 3 | Na 589.592 Radial† | 11417.1   | 11567.4   | 1928.9 µg/L  | 1928.9 ppb  | 12:12:49 |
| 3 | Sr 421.552†        | 171946.7  | 175268.3  | 502.64 µg/L  | 502.64 ppb  | 12:12:49 |
| 3 | Sc 361.383         | 1280952.8 | 1280952.8 | 96.225 %     |             | 12:13:39 |
| 3 | Y 371.029          | 766937.2  | 766937.2  | 105.87 %     |             | 12:13:39 |
| 3 | Ag 328.068†        | -2605.5   | -816.9    | 0.9002 µg/L  | 0.9002 ppb  | 12:13:39 |
| 3 | As 188.979†        | 158.3     | 194.5     | 120.95 µg/L  | 120.95 ppb  | 12:13:59 |
| 3 | B 249.677†         | -2506.4   | -3489.6   | 36.578 µg/L  | 36.578 ppb  | 12:13:39 |
| 3 | Ba 233.527†        | 234724.9  | 244173.8  | 2177.8 µg/L  | 2177.8 ppb  | 12:13:39 |
| 3 | Be 313.107†        | 13075.6   | 17244.4   | -48.605 µg/L | -48.605 ppb | 12:13:39 |
| 3 | Cd 226.502†        | 2018.4    | 2277.6    | 3.6890 µg/L  | 3.6890 ppb  | 12:13:59 |
| 3 | Co 228.616†        | 3886.6    | 4130.6    | 62.465 µg/L  | 62.465 ppb  | 12:13:59 |
| 3 | Cr 267.716†        | 7314.0    | 7472.0    | 89.072 µg/L  | 89.072 ppb  | 12:13:59 |
| 3 | Cu 324.752†        | 26182.9   | 21433.2   | 103.48 µg/L  | 103.48 ppb  | 12:13:39 |
| 3 | Mn 257.610†        | 2174648.8 | 2259807.7 | 3958.3 µg/L  | 3958.3 ppb  | 12:13:39 |
| 3 | Mo 202.031†        | -59.8     | -32.4     | 1.8616 µg/L  | 1.8616 ppb  | 12:13:59 |
| 3 | Ni 231.604†        | 8843.5    | 9388.2    | 149.25 µg/L  | 149.25 ppb  | 12:13:59 |
| 3 | P 214.914†         | 13470.5   | 14094.0   | 5073.9 µg/L  | 5073.9 ppb  | 12:13:59 |
| 3 | Pb 220.353†        | 852.0     | 811.7     | 83.261 µg/L  | 83.261 ppb  | 12:13:59 |
| 3 | S 181.975 Axial†   | 1446.0    | 1400.0    | 1536.1 µg/L  | 1536.1 ppb  | 12:13:59 |
| 3 | Sb 206.836†        | 73.4      | 32.0      | -6.4087 µg/L | -6.4087 ppb | 12:13:59 |
| 3 | Se 196.026†        | -80.7     | -91.8     | 5.51 µg/L    | 5.51 ppb    | 12:13:59 |
| 3 | SiO2†              | 564380.8  | 583501.6  | 64580 µg/L   | 64580 ppb   | 12:13:39 |
| 3 | Si 251.611†        | 1701160.7 | 1767312.3 | 29980 µg/L   | 29980 ppb   | 12:13:39 |
| 3 | Sn 189.927†        | -60.5     | -35.4     | -4.3659 µg/L | -4.3659 ppb | 12:13:59 |
| 3 | Ti 334.940†        | 1327444.5 | 1380409.1 | 1963.9 µg/L  | 1963.9 ppb  | 12:13:39 |
| 3 | Tl 190.801†        | -174.6    | -95.4     | -27.292 µg/L | -27.292 ppb | 12:13:59 |
| 3 | U 367.007†         | 4792.1    | 5264.4    | -10.242 µg/L | -10.242 ppb | 12:13:39 |
| 3 | V 292.402†         | 38634.9   | 40047.2   | 187.73 µg/L  | 187.73 ppb  | 12:13:39 |
| 3 | Zn 213.857†        | 68084.4   | 70708.8   | 385.23 µg/L  | 385.23 ppb  | 12:13:39 |

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Mean Data: 409254006|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD    |
|---|--------------------------|-------------|--------------|----------|-------------|-----------------|--------|
| Sc 361.383  | 1289979.4                | 96.903      | %            | 1.1945   |             |                 | 1.23%  |
| Sc RADIAL   | 69619.0                  | 96.6        | %            | 1.52     |             |                 | 1.58%  |
| Y 371.029   | 772498.4                 | 106.63      | %            | 1.295    |             |                 | 1.21%  |
| Ag 328.068†   | -768.5                   | 1.2165      | µg/L         | 0.27653  | 1.2165 ppb  | 0.27653         | 22.73% |
| Al 396.153Radial†                                   | 134758.9                 | 49226       | µg/L         | 164.4    | 49226 ppb   | 164.4           | 0.33%  |
| As 188.979†   | 187.9                    | 117.57      | µg/L         | 3.542    | 117.57 ppb  | 3.542           | 3.01%  |
| B 249.677†  | -3587.7                  | 36.335      | µg/L         | 0.8338   | 36.335 ppb  | 0.8338          | 2.29%  |
| Ba 233.527†   | 244645.0                 | 2182.0      | µg/L         | 5.26     | 2182.0 ppb  | 5.26            | 0.24%  |
| Be 313.107†   | 17231.0                  | -48.707     | µg/L         | 0.1335   | -48.707 ppb | 0.1335          | 0.27%  |
| Concentration less than lower limit for Be 313.107. |                          |             |              |          |             |                 |        |
| Ca 317.933Radial†                                   | 1546716.8                | 172180      | µg/L         | 2328.4   | 172180 ppb  | 2328.4          | 1.35%  |
| Cd 226.502†   | 2247.6                   | 3.2797      | µg/L         | 0.37026  | 3.2797 ppb  | 0.37026         | 11.29% |
| Co 228.616†   | 4096.2                   | 61.940      | µg/L         | 0.7421   | 61.940 ppb  | 0.7421          | 1.20%  |
| Cr 267.716†   | 7421.0                   | 88.490      | µg/L         | 0.8475   | 88.490 ppb  | 0.8475          | 0.96%  |
| Cu 324.752†   | 21537.0                  | 104.04      | µg/L         | 0.578    | 104.04 ppb  | 0.578           | 0.56%  |
| Fe 238.204 Radial†                                  | 1267192.0                | 119870      | µg/L         | 1631.0   | 119870 ppb  | 1631.0          | 1.36%  |
| K 766.490 Radial†                                   | 20022.5                  | 10552       | µg/L         | 81.1     | 10552 ppb   | 81.1            | 0.77%  |
| Mg 279.077 IEC†                                     | 117062.8                 | 63152       | µg/L         | 54.1     | 63152 ppb   | 54.1            | 0.09%  |
| Mn 257.610†   | 2264399.6                | 3966.3      | µg/L         | 11.00    | 3966.3 ppb  | 11.00           | 0.28%  |
| Mo 202.031†   | -41.1                    | 1.4472      | µg/L         | 0.35910  | 1.4472 ppb  | 0.35910         | 24.81% |

|   |           |              |         |             |         |         |
|---|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial†                                  | 11591.3   | 1932.9 µg/L  | 3.79    | 1932.9 ppb  | 3.79    | 0.20%   |
| Ni 231.604†   | 9292.5    | 147.73 µg/L  | 2.025   | 147.73 ppb  | 2.025   | 1.37%   |
| P 214.914†  | 13967.4   | 5028.2 µg/L  | 63.36   | 5028.2 ppb  | 63.36   | 1.26%   |
| Pb 220.353†   | 800.7     | 82.135 µg/L  | 2.3266  | 82.135 ppb  | 2.3266  | 2.83%   |
| S 181.975 Axial†                                    | 1379.8    | 1513.1 µg/L  | 31.95   | 1513.1 ppb  | 31.95   | 2.11%   |
| Sb 206.836†   | 27.5      | -7.4298 µg/L | 2.64004 | -7.4298 ppb | 2.64004 | 35.53%  |
| Se 196.026†   | -90.5     | 6.96 µg/L    | 1.615   | 6.96 ppb    | 1.615   | 23.20%  |
| SiO2†   | 584538.3  | 64695 µg/L   | 122.2   | 64695 ppb   | 122.2   | 0.19%   |
| Si 251.611†   | 1771250.4 | 30047 µg/L   | 70.1    | 30047 ppb   | 70.1    | 0.23%   |
| Sn 189.927†   | -34.6     | -4.2713 µg/L | 0.24226 | -4.2713 ppb | 0.24226 | 5.67%   |
| Sr 421.552†   | 175727.7  | 503.90 µg/L  | 1.211   | 503.90 ppb  | 1.211   | 0.24%   |
| Ti 334.940†   | 1382697.5 | 1967.2 µg/L  | 3.90    | 1967.2 ppb  | 3.90    | 0.20%   |
| Tl 190.801†   | -97.5     | -27.897 µg/L | 1.1872  | -27.897 ppb | 1.1872  | 4.26%   |
| Concentration less than lower limit for Tl 190.801. |           |              |         |             |         |         |
| U 367.007†  | 5372.6    | -5.7723 µg/L | 6.79493 | -5.7723 ppb | 6.79493 | 117.72% |
| V 292.402†  | 40057.8   | 187.88 µg/L  | 0.143   | 187.88 ppb  | 0.143   | 0.08%   |
| Zn 213.857†   | 70811.8   | 385.64 µg/L  | 0.743   | 385.64 ppb  | 0.743   | 0.19%   |

Sequence No.: 10

Sample ID: 409254007|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 313

Date Collected: 11/11/2016 12:14:08

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254007|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 70755.4       | 70755.4             | 98.2 %             |                    | 12:14:35      |
| 1     | Al 396.153Radial†  | 163206.1      | 166062.6            | 60652 µg/L         | 60652 ppb          | 12:14:35      |
| 1     | Ca 317.933Radial†  | 1396408.5     | 1421376.3           | 158230 µg/L        | 158230 ppb         | 12:14:33      |
| 1     | Fe 238.204 Radial† | 1349356.1     | 1374332.2           | 130010 µg/L        | 130010 ppb         | 12:14:33      |
| 1     | K 766.490 Radial†  | 27956.8       | 27393.3             | 14430 µg/L         | 14430 ppb          | 12:14:35      |
| 1     | Mg 279.077 IEC†    | 110131.8      | 112101.2            | 60480 µg/L         | 60480 ppb          | 12:14:35      |
| 1     | Na 589.592 Radial† | 10687.3       | 10841.2             | 1807.8 µg/L        | 1807.8 ppb         | 12:14:35      |
| 1     | Sr 421.552†        | 206383.1      | 210583.0            | 605.50 µg/L        | 605.50 ppb         | 12:14:35      |
| 1     | Sc 361.383         | 1294857.8     | 1294857.8           | 97.270 %           |                    | 12:14:47      |
| 1     | Y 371.029          | 798667.7      | 798667.7            | 110.25 %           |                    | 12:14:47      |
| 1     | Ag 328.068†        | -2540.1       | -720.5              | 2.1397 µg/L        | 2.1397 ppb         | 12:14:47      |
| 1     | As 188.979†        | 173.6         | 208.5               | 130.12 µg/L        | 130.12 ppb         | 12:15:08      |
| 1     | B 249.677†         | -2680.5       | -3640.6             | 43.008 µg/L        | 43.008 ppb         | 12:14:47      |
| 1     | Ba 233.527†        | 230391.8      | 237099.6            | 2114.8 µg/L        | 2114.8 ppb         | 12:14:47      |
| 1     | Be 313.107†        | 17042.3       | 21176.6             | -45.955 µg/L       | -45.955 ppb        | 12:14:47      |
| 1     | Cd 226.502†        | 2292.8        | 2537.2              | 4.3106 µg/L        | 4.3106 ppb         | 12:15:08      |
| 1     | Co 228.616†        | 4550.7        | 4770.0              | 71.745 µg/L        | 71.745 ppb         | 12:15:08      |
| 1     | Cr 267.716†        | 8755.8        | 8872.6              | 105.70 µg/L        | 105.70 ppb         | 12:15:08      |
| 1     | Cu 324.752†        | 43010.1       | 38440.5             | 179.30 µg/L        | 179.30 ppb         | 12:14:47      |
| 1     | Mn 257.610†        | 1875097.2     | 1927578.8           | 3376.1 µg/L        | 3376.1 ppb         | 12:14:47      |
| 1     | Mo 202.031†        | -36.3         | -7.6                | 3.4078 µg/L        | 3.4078 ppb         | 12:15:08      |
| 1     | Ni 231.604†        | 9919.0        | 10395.1             | 165.26 µg/L        | 165.26 ppb         | 12:15:08      |
| 1     | P 214.914†         | 15328.1       | 15853.5             | 5707.4 µg/L        | 5707.4 ppb         | 12:15:08      |
| 1     | Pb 220.353†        | 1026.9        | 982.0               | 101.00 µg/L        | 101.00 ppb         | 12:15:08      |
| 1     | S 181.975 Axial†   | 1572.7        | 1514.2              | 1660.7 µg/L        | 1660.7 ppb         | 12:15:08      |
| 1     | Sb 206.836†        | 84.4          | 42.4                | -5.5996 µg/L       | -5.5996 ppb        | 12:15:08      |
| 1     | Se 196.026†        | -92.5         | -103.1              | 4.75 µg/L          | 4.75 ppb           | 12:15:08      |
| 1     | SiO2†              | 590014.5      | 603556.4            | 66800 µg/L         | 66800 ppb          | 12:14:47      |
| 1     | Si 251.611†        | 1778431.1     | 1827766.8           | 31006 µg/L         | 31006 ppb          | 12:14:47      |
| 1     | Sn 189.927†        | -64.2         | -38.5               | -4.7270 µg/L       | -4.7270 ppb        | 12:15:08      |
| 1     | Ti 334.940†        | 1535884.2     | 1579885.5           | 2247.3 µg/L        | 2247.3 ppb         | 12:14:47      |
| 1     | Tl 190.801†        | -204.7        | -124.4              | -36.012 µg/L       | -36.012 ppb        | 12:15:08      |
| 1     | U 367.007†         | 5427.2        | 5863.8              | 0.7926 µg/L        | 0.7926 ppb         | 12:14:47      |
| 1     | V 292.402†         | 44498.8       | 45644.6             | 213.64 µg/L        | 213.64 ppb         | 12:14:47      |
| 1     | Zn 213.857†        | 82180.2       | 84440.4             | 461.93 µg/L        | 461.93 ppb         | 12:14:47      |
| 2     | Sc RADIAL          | 71745.4       | 71745.4             | 99.6 %             |                    | 12:14:39      |
| 2     | Al 396.153Radial†  | 165609.4      | 166182.7            | 60696 µg/L         | 60696 ppb          | 12:14:39      |
| 2     | Ca 317.933Radial†  | 1451432.9     | 1457005.6           | 162190 µg/L        | 162190 ppb         | 12:14:37      |
| 2     | Fe 238.204 Radial† | 1401197.6     | 1407426.8           | 133140 µg/L        | 133140 ppb         | 12:14:37      |
| 2     | K 766.490 Radial†  | 28386.4       | 27431.8             | 14451 µg/L         | 14451 ppb          | 12:14:39      |
| 2     | Mg 279.077 IEC†    | 111497.9      | 111925.6            | 60387 µg/L         | 60387 ppb          | 12:14:39      |
| 2     | Na 589.592 Radial† | 10856.3       | 10860.7             | 1811.1 µg/L        | 1811.1 ppb         | 12:14:39      |
| 2     | Sr 421.552†        | 209379.1      | 210691.5            | 605.68 µg/L        | 605.68 ppb         | 12:14:39      |
| 2     | Sc 361.383         | 1292860.4     | 1292860.4           | 97.120 %           |                    | 12:15:10      |
| 2     | Y 371.029          | 796856.3      | 796856.3            | 110.00 %           |                    | 12:15:10      |
| 2     | Ag 328.068†        | -2693.3       | -882.3              | 1.4486 µg/L        | 1.4486 ppb         | 12:15:10      |
| 2     | As 188.979†        | 181.2         | 216.5               | 134.89 µg/L        | 134.89 ppb         | 12:15:31      |
| 2     | B 249.677†         | -2673.8       | -3638.0             | 45.342 µg/L        | 45.342 ppb         | 12:15:10      |
| 2     | Ba 233.527†        | 229643.6      | 236695.2            | 2111.2 µg/L        | 2111.2 ppb         | 12:15:10      |
| 2     | Be 313.107†        | 16843.6       | 20999.1             | -45.911 µg/L       | -45.911 ppb        | 12:15:10      |
| 2     | Cd 226.502†        | 2280.6        | 2528.2              | 3.8842 µg/L        | 3.8842 ppb         | 12:15:31      |
| 2     | Co 228.616†        | 4538.7        | 4764.8              | 71.625 µg/L        | 71.625 ppb         | 12:15:31      |
| 2     | Cr 267.716†        | 8726.0        | 8855.8              | 105.56 µg/L        | 105.56 ppb         | 12:15:31      |
| 2     | Cu 324.752†        | 43185.3       | 38689.2             | 180.60 µg/L        | 180.60 ppb         | 12:15:10      |
| 2     | Mn 257.610†        | 1869562.5     | 1924858.2           | 3371.4 µg/L        | 3371.4 ppb         | 12:15:10      |
| 2     | Mo 202.031†        | -41.4         | -12.9               | 3.2057 µg/L        | 3.2057 ppb         | 12:15:31      |
| 2     | Ni 231.604†        | 9837.6        | 10327.1             | 164.18 µg/L        | 164.18 ppb         | 12:15:31      |
| 2     | P 214.914†         | 15241.0       | 15788.1             | 5683.7 µg/L        | 5683.7 ppb         | 12:15:31      |
| 2     | Pb 220.353†        | 1030.8        | 987.7               | 101.57 µg/L        | 101.57 ppb         | 12:15:31      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 1564.0    | 1507.7    | 1652.8 µg/L  | 1652.8 ppb  | 12:15:31 |
| 2 | Sb 206.836†        | 77.5      | 35.5      | -7.2703 µg/L | -7.2703 ppb | 12:15:31 |
| 2 | Se 196.026†        | -95.7     | -106.5    | 4.43 µg/L    | 4.43 ppb    | 12:15:31 |
| 2 | SiO2†              | 588273.5  | 602700.8  | 66705 µg/L   | 66705 ppb   | 12:15:10 |
| 2 | Si 251.611†        | 1775261.8 | 1827328.3 | 30999 µg/L   | 30999 ppb   | 12:15:10 |
| 2 | Sn 189.927†        | -53.5     | -27.6     | -3.3330 µg/L | -3.3330 ppb | 12:15:31 |
| 2 | Ti 334.940†        | 1532644.4 | 1578989.0 | 2246.0 µg/L  | 2246.0 ppb  | 12:15:10 |
| 2 | Tl 190.801†        | -202.0    | -121.9    | -35.189 µg/L | -35.189 ppb | 12:15:31 |
| 2 | U 367.007†         | 5500.2    | 5947.5    | -6.2670 µg/L | -6.2670 ppb | 12:15:10 |
| 2 | V 292.402†         | 44385.9   | 45599.0   | 213.65 µg/L  | 213.65 ppb  | 12:15:10 |
| 2 | Zn 213.857†        | 81799.1   | 84178.6   | 460.11 µg/L  | 460.11 ppb  | 12:15:10 |
| 3 | Sc RADIAL          | 70752.8   | 70752.8   | 98.2 %       |             | 12:14:43 |
| 3 | Al 396.153Radial†  | 163796.9  | 166670.2  | 60875 µg/L   | 60875 ppb   | 12:14:43 |
| 3 | Ca 317.933Radial†  | 1445001.8 | 1470903.5 | 163740 µg/L  | 163740 ppb  | 12:14:41 |
| 3 | Fe 238.204 Radial† | 1396058.5 | 1421932.5 | 134510 µg/L  | 134510 ppb  | 12:14:41 |
| 3 | K 766.490 Radial†  | 27917.2   | 27354.0   | 14410 µg/L   | 14410 ppb   | 12:14:43 |
| 3 | Mg 279.077 IEC†    | 109401.5  | 111361.7  | 60083 µg/L   | 60083 ppb   | 12:14:43 |
| 3 | Na 589.592 Radial† | 10772.7   | 10928.6   | 1822.4 µg/L  | 1822.4 ppb  | 12:14:43 |
| 3 | Sr 421.552†        | 207493.7  | 211721.3  | 608.62 µg/L  | 608.62 ppb  | 12:14:43 |
| 3 | Sc 361.383         | 1312060.4 | 1312060.4 | 98.562 %     |             | 12:15:33 |
| 3 | Y 371.029          | 808154.9  | 808154.9  | 111.55 %     |             | 12:15:33 |
| 3 | Ag 328.068†        | -2561.0   | -707.5    | 2.4261 µg/L  | 2.4261 ppb  | 12:15:33 |
| 3 | As 188.979†        | 180.3     | 212.9     | 133.07 µg/L  | 133.07 ppb  | 12:15:54 |
| 3 | B 249.677†         | -2597.1   | -3519.8   | 48.049 µg/L  | 48.049 ppb  | 12:15:33 |
| 3 | Ba 233.527†        | 234029.0  | 237684.4  | 2120.0 µg/L  | 2120.0 ppb  | 12:15:33 |
| 3 | Be 313.107†        | 17380.1   | 21289.5   | -46.054 µg/L | -46.054 ppb | 12:15:33 |
| 3 | Cd 226.502†        | 2280.3    | 2493.6    | 3.4647 µg/L  | 3.4647 ppb  | 12:15:54 |
| 3 | Co 228.616†        | 4581.3    | 4739.6    | 71.245 µg/L  | 71.245 ppb  | 12:15:54 |
| 3 | Cr 267.716†        | 8736.4    | 8734.9    | 104.17 µg/L  | 104.17 ppb  | 12:15:54 |
| 3 | Cu 324.752†        | 43799.0   | 38661.2   | 180.55 µg/L  | 180.55 ppb  | 12:15:33 |
| 3 | Mn 257.610†        | 1904840.7 | 1932481.7 | 3384.7 µg/L  | 3384.7 ppb  | 12:15:33 |
| 3 | Mo 202.031†        | -64.6     | -35.8     | 2.0445 µg/L  | 2.0445 ppb  | 12:15:54 |
| 3 | Ni 231.604†        | 9877.3    | 10219.1   | 162.46 µg/L  | 162.46 ppb  | 12:15:54 |
| 3 | P 214.914†         | 15321.9   | 15640.6   | 5630.5 µg/L  | 5630.5 ppb  | 12:15:54 |
| 3 | Pb 220.353†        | 1035.4    | 976.8     | 100.49 µg/L  | 100.49 ppb  | 12:15:54 |
| 3 | S 181.975 Axial†   | 1549.8    | 1469.7    | 1610.1 µg/L  | 1610.1 ppb  | 12:15:54 |
| 3 | Sb 206.836†        | 79.0      | 35.9      | -7.3148 µg/L | -7.3148 ppb | 12:15:54 |
| 3 | Se 196.026†        | -84.3     | -93.6     | 11.8 µg/L    | 11.8 ppb    | 12:15:54 |
| 3 | SiO2†              | 599512.9  | 605240.4  | 66986 µg/L   | 66986 ppb   | 12:15:33 |
| 3 | Si 251.611†        | 1808002.9 | 1833798.4 | 31109 µg/L   | 31109 ppb   | 12:15:33 |
| 3 | Sn 189.927†        | -50.4     | -23.6     | -2.8253 µg/L | -2.8253 ppb | 12:15:54 |
| 3 | Ti 334.940†        | 1560460.1 | 1584117.5 | 2253.3 µg/L  | 2253.3 ppb  | 12:15:33 |
| 3 | Tl 190.801†        | -206.4    | -123.3    | -35.591 µg/L | -35.591 ppb | 12:15:54 |
| 3 | U 367.007†         | 5468.5    | 5832.6    | -28.010 µg/L | -28.010 ppb | 12:15:33 |
| 3 | V 292.402†         | 45528.3   | 46089.3   | 215.93 µg/L  | 215.93 ppb  | 12:15:33 |
| 3 | Zn 213.857†        | 83711.7   | 84886.6   | 463.99 µg/L  | 463.99 ppb  | 12:15:33 |

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Mean Data: 409254007|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|-------------|--------------|----------|--------------------|----------|--------|
| Sc 361.383  | 1299926.2                | 97.650      | %            | 0.7930   |                    |          | 0.81%  |
| Sc RADIAL   | 71084.5                  | 98.7        | %            | 0.79     |                    |          | 0.81%  |
| Y 371.029   | 801226.3                 | 110.60      | %            | 0.838    |                    |          | 0.76%  |
| Ag 328.068†   | -770.1                   | 2.0048      | µg/L         | 0.50252  | 2.0048 ppb         | 0.50252  | 25.07% |
| Al 396.153Radial†                                   | 166305.2                 | 60741       | µg/L         | 117.9    | 60741 ppb          | 117.9    | 0.19%  |
| As 188.979†   | 212.6                    | 132.69      | µg/L         | 2.408    | 132.69 ppb         | 2.408    | 1.81%  |
| B 249.677†  | -3599.5                  | 45.466      | µg/L         | 2.5226   | 45.466 ppb         | 2.5226   | 5.55%  |
| Ba 233.527†   | 237159.7                 | 2115.3      | µg/L         | 4.44     | 2115.3 ppb         | 4.44     | 0.21%  |
| Be 313.107†   | 21155.1                  | -45.974     | µg/L         | 0.0731   | -45.974 ppb        | 0.0731   | 0.16%  |
| Concentration less than lower limit for Be 313.107. |                          |             |              |          |                    |          |        |
| Ca 317.933Radial†                                   | 1449761.8                | 161390      | µg/L         | 2843.8   | 161390 ppb         | 2843.8   | 1.76%  |
| Cd 226.502†   | 2519.7                   | 3.8865      | µg/L         | 0.42293  | 3.8865 ppb         | 0.42293  | 10.88% |
| Co 228.616†   | 4758.2                   | 71.538      | µg/L         | 0.2612   | 71.538 ppb         | 0.2612   | 0.37%  |
| Cr 267.716†   | 8821.1                   | 105.14      | µg/L         | 0.845    | 105.14 ppb         | 0.845    | 0.80%  |
| Cu 324.752†   | 38597.0                  | 180.15      | µg/L         | 0.738    | 180.15 ppb         | 0.738    | 0.41%  |
| Fe 238.204 Radial†                                  | 1401230.5                | 132550      | µg/L         | 2307.9   | 132550 ppb         | 2307.9   | 1.74%  |
| K 766.490 Radial†                                   | 27393.0                  | 14430       | µg/L         | 20.3     | 14430 ppb          | 20.3     | 0.14%  |
| Mg 279.077 IEC†                                     | 111796.2                 | 60317       | µg/L         | 207.7    | 60317 ppb          | 207.7    | 0.34%  |
| Mn 257.610†   | 1928306.2                | 3377.4      | µg/L         | 6.78     | 3377.4 ppb         | 6.78     | 0.20%  |
| Mo 202.031†   | -18.8                    | 2.8860      | µg/L         | 0.73569  | 2.8860 ppb         | 0.73569  | 25.49% |

|   |           |              |         |             |         |         |
|---|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial†                                  | 10876.8   | 1813.8 µg/L  | 7.64    | 1813.8 ppb  | 7.64    | 0.42%   |
| Ni 231.604†   | 10313.8   | 163.97 µg/L  | 1.411   | 163.97 ppb  | 1.411   | 0.86%   |
| P 214.914†  | 15760.7   | 5673.9 µg/L  | 39.42   | 5673.9 ppb  | 39.42   | 0.69%   |
| Pb 220.353†   | 982.1     | 101.02 µg/L  | 0.540   | 101.02 ppb  | 0.540   | 0.53%   |
| S 181.975 Axial†                                    | 1497.2    | 1641.2 µg/L  | 27.25   | 1641.2 ppb  | 27.25   | 1.66%   |
| Sb 206.836†   | 37.9      | -6.7282 µg/L | 0.97770 | -6.7282 ppb | 0.97770 | 14.53%  |
| Se 196.026†   | -101.1    | 7.00 µg/L    | 4.174   | 7.00 ppb    | 4.174   | 59.63%  |
| SiO2†   | 603832.5  | 66830 µg/L   | 143.0   | 66830 ppb   | 143.0   | 0.21%   |
| Si 251.611†   | 1829631.2 | 31038 µg/L   | 61.5    | 31038 ppb   | 61.5    | 0.20%   |
| Sn 189.927†   | -29.9     | -3.6284 µg/L | 0.98464 | -3.6284 ppb | 0.98464 | 27.14%  |
| Sr 421.552†   | 210998.6  | 606.60 µg/L  | 1.748   | 606.60 ppb  | 1.748   | 0.29%   |
| Ti 334.940†   | 1580997.3 | 2248.9 µg/L  | 3.92    | 2248.9 ppb  | 3.92    | 0.17%   |
| Tl 190.801†   | -123.2    | -35.598 µg/L | 0.4118  | -35.598 ppb | 0.4118  | 1.16%   |
| Concentration less than lower limit for Tl 190.801. |           |              |         |             |         |         |
| U 367.007†  | 5881.3    | -11.161 µg/L | 15.0120 | -11.161 ppb | 15.0120 | 134.50% |
| V 292.402†  | 45777.6   | 214.41 µg/L  | 1.319   | 214.41 ppb  | 1.319   | 0.62%   |
| Zn 213.857†   | 84501.9   | 462.01 µg/L  | 1.944   | 462.01 ppb  | 1.944   | 0.42%   |

Sequence No.: 11

Autosampler Location: 314

Sample ID: 409254008|1611117|1

Date Collected: 11/11/2016 12:16:02

Analyst: TXT1

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Replicate Data: 409254008|1611117|1

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 70760.6          | 70760.6                | 98.2 %                |                       | 12:16:29         |
| 1     | Al 396.153Radial†  | 49227.8          | 50014.7                | 18268 µg/L            | 18268 ppb             | 12:16:29         |
| 1     | Ca 317.933Radial†  | 471105.1         | 479265.3               | 53352 µg/L            | 53352 ppb             | 12:16:29         |
| 1     | Fe 238.204 Radial† | 680945.7         | 693754.6               | 65626 µg/L            | 65626 ppb             | 12:16:27         |
| 1     | K 766.490 Radial†  | 7666.6           | 6734.7                 | 3558.6 µg/L           | 3558.6 ppb            | 12:16:29         |
| 1     | Mg 279.077 IEC†    | 37322.8          | 37969.7                | 20492 µg/L            | 20492 ppb             | 12:16:29         |
| 1     | Na 589.592 Radial† | 7387.9           | 7481.5                 | 1247.6 µg/L           | 1247.6 ppb            | 12:16:29         |
| 1     | Sr 421.552†        | 58617.1          | 60134.1                | 172.63 µg/L           | 172.63 ppb            | 12:16:29         |
| 1     | Sc 361.383         | 1298125.6        | 1298125.6              | 97.515 %              |                       | 12:16:41         |
| 1     | Y 371.029          | 751138.5         | 751138.5               | 103.68 %              |                       | 12:16:41         |
| 1     | Ag 328.068†        | -2149.0          | -312.9                 | 1.5808 µg/L           | 1.5808 ppb            | 12:16:41         |
| 1     | As 188.979†        | 53.3             | 84.6                   | 54.381 µg/L           | 54.381 ppb            | 12:17:01         |
| 1     | B 249.677†         | -1903.8          | -2837.2                | 7.3376 µg/L           | 7.3376 ppb            | 12:16:41         |
| 1     | Ba 233.527†        | 232163.2         | 238319.9               | 2125.3 µg/L           | 2125.3 ppb            | 12:16:41         |
| 1     | Be 313.107†        | 3306.8           | 7046.9                 | -50.214 µg/L          | -50.214 ppb           | 12:16:41         |
| 1     | Cd 226.502†        | 908.4            | 1111.5                 | 0.8955 µg/L           | 0.8955 ppb            | 12:17:01         |
| 1     | Co 228.616†        | 2111.2           | 2256.5                 | 35.210 µg/L           | 35.210 ppb            | 12:17:01         |
| 1     | Cr 267.716†        | 3397.4           | 3355.0                 | 40.222 µg/L           | 40.222 ppb            | 12:17:01         |
| 1     | Cu 324.752†        | 7518.7           | 1933.4                 | 13.256 µg/L           | 13.256 ppb            | 12:16:41         |
| 1     | Mn 257.610†        | 876796.9         | 898987.3               | 1574.8 µg/L           | 1574.8 ppb            | 12:16:41         |
| 1     | Mo 202.031†        | -53.1            | -24.7                  | 0.5277 µg/L           | 0.5277 ppb            | 12:17:01         |
| 1     | Ni 231.604†        | 4810.2           | 5130.5                 | 81.565 µg/L           | 81.565 ppb            | 12:17:01         |
| 1     | P 214.914†         | 7950.4           | 8248.1                 | 2969.5 µg/L           | 2969.5 ppb            | 12:17:01         |
| 1     | Pb 220.353†        | 492.6            | 431.4                  | 44.002 µg/L           | 44.002 ppb            | 12:17:01         |
| 1     | S 181.975 Axial†   | 823.7            | 742.0                  | 813.58 µg/L           | 813.58 ppb            | 12:17:01         |
| 1     | Sb 206.836†        | 59.6             | 16.8                   | -3.8145 µg/L          | -3.8145 ppb           | 12:17:01         |
| 1     | Se 196.026†        | -49.6            | -58.8                  | -0.893 µg/L           | -0.893 ppb            | 12:17:01         |
| 1     | SiO2†              | 290822.0         | 295213.0               | 32673 µg/L            | 32673 ppb             | 12:16:41         |
| 1     | Si 251.611†        | 872876.5         | 894534.6               | 15175 µg/L            | 15175 ppb             | 12:16:41         |
| 1     | Sn 189.927†        | -59.6            | -33.6                  | -4.2358 µg/L          | -4.2358 ppb           | 12:17:01         |
| 1     | Ti 334.940†        | 659644.3         | 677342.5               | 963.27 µg/L           | 963.27 ppb            | 12:16:41         |
| 1     | Tl 190.801†        | -142.4           | -59.9                  | -17.297 µg/L          | -17.297 ppb           | 12:17:01         |
| 1     | U 367.007†         | 2399.8           | 2745.2                 | -23.698 µg/L          | -23.698 ppb           | 12:16:41         |
| 1     | V 292.402†         | 18184.3          | 18544.3                | 87.664 µg/L           | 87.664 ppb            | 12:16:41         |
| 1     | Zn 213.857†        | 31377.2          | 32130.2                | 174.21 µg/L           | 174.21 ppb            | 12:16:41         |
| 2     | Sc RADIAL          | 69710.8          | 69710.8                | 96.8 %                |                       | 12:16:33         |
| 2     | Al 396.153Radial†  | 48336.0          | 49847.9                | 18207 µg/L            | 18207 ppb             | 12:16:33         |
| 2     | Ca 317.933Radial†  | 461913.9         | 476990.1               | 53099 µg/L            | 53099 ppb             | 12:16:33         |
| 2     | Fe 238.204 Radial† | 680583.5         | 703820.5               | 66578 µg/L            | 66578 ppb             | 12:16:31         |
| 2     | K 766.490 Radial†  | 7547.7           | 6729.5                 | 3556.2 µg/L           | 3556.2 ppb            | 12:16:33         |
| 2     | Mg 279.077 IEC†    | 36699.7          | 37898.0                | 20454 µg/L            | 20454 ppb             | 12:16:33         |
| 2     | Na 589.592 Radial† | 7448.4           | 7657.3                 | 1276.9 µg/L           | 1276.9 ppb            | 12:16:33         |
| 2     | Sr 421.552†        | 57796.5          | 60184.9                | 172.78 µg/L           | 172.78 ppb            | 12:16:33         |
| 2     | Sc 361.383         | 1270129.3        | 1270129.3              | 95.412 %              |                       | 12:17:03         |
| 2     | Y 371.029          | 734594.9         | 734594.9               | 101.40 %              |                       | 12:17:03         |
| 2     | Ag 328.068†        | -1970.1          | -174.0                 | 2.3504 µg/L           | 2.3504 ppb            | 12:17:03         |
| 2     | As 188.979†        | 43.7             | 75.7                   | 49.661 µg/L           | 49.661 ppb            | 12:17:23         |
| 2     | B 249.677†         | -1797.7          | -2769.0                | 9.0163 µg/L           | 9.0163 ppb            | 12:17:03         |
| 2     | Ba 233.527†        | 226850.0         | 237999.0               | 2122.5 µg/L           | 2122.5 ppb            | 12:17:03         |
| 2     | Be 313.107†        | 3318.8           | 7134.3                 | -50.117 µg/L          | -50.117 ppb           | 12:17:03         |
| 2     | Cd 226.502†        | 913.0            | 1136.9                 | 0.9784 µg/L           | 0.9784 ppb            | 12:17:23         |
| 2     | Co 228.616†        | 2131.9           | 2325.9                 | 36.227 µg/L           | 36.227 ppb            | 12:17:23         |
| 2     | Cr 267.716†        | 3410.4           | 3445.3                 | 41.295 µg/L           | 41.295 ppb            | 12:17:23         |
| 2     | Cu 324.752†        | 7492.5           | 2075.9                 | 13.952 µg/L           | 13.952 ppb            | 12:17:03         |
| 2     | Mn 257.610†        | 857420.4         | 898497.9               | 1574.0 µg/L           | 1574.0 ppb            | 12:17:03         |
| 2     | Mo 202.031†        | -41.9            | -14.2                  | 1.0993 µg/L           | 1.0993 ppb            | 12:17:23         |
| 2     | Ni 231.604†        | 4809.5           | 5238.5                 | 83.282 µg/L           | 83.282 ppb            | 12:17:23         |
| 2     | P 214.914†         | 7974.7           | 8453.2                 | 3043.4 µg/L           | 3043.4 ppb            | 12:17:23         |
| 2     | Pb 220.353†        | 481.5            | 430.9                  | 43.934 µg/L           | 43.934 ppb            | 12:17:23         |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 834.6     | 772.1     | 846.94 µg/L  | 846.94 ppb  | 12:17:23 |
| 2 | Sb 206.836†        | 63.6      | 22.3      | -2.8649 µg/L | -2.8649 ppb | 12:17:23 |
| 2 | Se 196.026†        | -46.4     | -56.6     | 0.723 µg/L   | 0.723 ppb   | 12:17:23 |
| 2 | SiO2†              | 284728.6  | 295400.2  | 32694 µg/L   | 32694 ppb   | 12:17:03 |
| 2 | Si 251.611†        | 853251.0  | 893695.6  | 15161 µg/L   | 15161 ppb   | 12:17:03 |
| 2 | Sn 189.927†        | -47.5     | -22.3     | -2.7904 µg/L | -2.7904 ppb | 12:17:23 |
| 2 | Ti 334.940†        | 646257.0  | 678221.9  | 964.51 µg/L  | 964.51 ppb  | 12:17:03 |
| 2 | Tl 190.801†        | -124.0    | -43.9     | -12.353 µg/L | -12.353 ppb | 12:17:23 |
| 2 | U 367.007†         | 2415.5    | 2815.8    | -20.157 µg/L | -20.157 ppb | 12:17:03 |
| 2 | V 292.402†         | 17911.9   | 18669.9   | 88.295 µg/L  | 88.295 ppb  | 12:17:03 |
| 2 | Zn 213.857†        | 30658.3   | 32086.0   | 173.86 µg/L  | 173.86 ppb  | 12:17:03 |
| 3 | Sc RADIAL          | 69869.7   | 69869.7   | 97.0 %       |             | 12:16:37 |
| 3 | Al 396.153Radial†  | 48578.5   | 49984.3   | 18257 µg/L   | 18257 ppb   | 12:16:37 |
| 3 | Ca 317.933Radial†  | 462893.9  | 476914.8  | 53090 µg/L   | 53090 ppb   | 12:16:37 |
| 3 | Fe 238.204 Radial† | 666175.6  | 687365.8  | 65022 µg/L   | 65022 ppb   | 12:16:35 |
| 3 | K 766.490 Radial†  | 7541.9    | 6705.7    | 3543.1 µg/L  | 3543.1 ppb  | 12:16:37 |
| 3 | Mg 279.077 IEC†    | 36528.9   | 37635.6   | 20312 µg/L   | 20312 ppb   | 12:16:37 |
| 3 | Na 589.592 Radial† | 7318.2    | 7505.6    | 1251.6 µg/L  | 1251.6 ppb  | 12:16:37 |
| 3 | Sr 421.552†        | 58073.7   | 60334.8   | 173.22 µg/L  | 173.22 ppb  | 12:16:37 |
| 3 | Sc 361.383         | 1286187.7 | 1286187.7 | 96.618 %     |             | 12:17:26 |
| 3 | Y 371.029          | 743338.3  | 743338.3  | 102.61 %     |             | 12:17:26 |
| 3 | Ag 328.068†        | -2167.4   | -352.5    | 1.3399 µg/L  | 1.3399 ppb  | 12:17:26 |
| 3 | As 188.979†        | 53.4      | 85.2      | 54.611 µg/L  | 54.611 ppb  | 12:17:46 |
| 3 | B 249.677†         | -1858.9   | -2808.8   | 7.3023 µg/L  | 7.3023 ppb  | 12:17:26 |
| 3 | Ba 233.527†        | 229909.4  | 238197.0  | 2124.2 µg/L  | 2124.2 ppb  | 12:17:26 |
| 3 | Be 313.107†        | 3246.0    | 7015.5    | -50.194 µg/L | -50.194 ppb | 12:17:26 |
| 3 | Cd 226.502†        | 942.3     | 1155.3    | 1.2957 µg/L  | 1.2957 ppb  | 12:17:46 |
| 3 | Co 228.616†        | 2112.9    | 2278.4    | 35.542 µg/L  | 35.542 ppb  | 12:17:46 |
| 3 | Cr 267.716†        | 3366.2    | 3355.0    | 40.208 µg/L  | 40.208 ppb  | 12:17:46 |
| 3 | Cu 324.752†        | 7295.2    | 1773.6    | 12.515 µg/L  | 12.515 ppb  | 12:17:26 |
| 3 | Mn 257.610†        | 869790.1  | 900080.8  | 1576.8 µg/L  | 1576.8 ppb  | 12:17:26 |
| 3 | Mo 202.031†        | -40.6     | -12.3     | 1.1559 µg/L  | 1.1559 ppb  | 12:17:46 |
| 3 | Ni 231.604†        | 4764.6    | 5129.1    | 81.542 µg/L  | 81.542 ppb  | 12:17:46 |
| 3 | P 214.914†         | 7906.6    | 8278.4    | 2980.5 µg/L  | 2980.5 ppb  | 12:17:46 |
| 3 | Pb 220.353†        | 467.7     | 410.4     | 41.863 µg/L  | 41.863 ppb  | 12:17:46 |
| 3 | S 181.975 Axial†   | 821.6     | 747.6     | 820.02 µg/L  | 820.02 ppb  | 12:17:46 |
| 3 | Sb 206.836†        | 61.1      | 18.9      | -3.3359 µg/L | -3.3359 ppb | 12:17:46 |
| 3 | Se 196.026†        | -32.2     | -41.3     | 8.03 µg/L    | 8.03 ppb    | 12:17:46 |
| 3 | SiO2†              | 288716.3  | 295801.5  | 32738 µg/L   | 32738 ppb   | 12:17:26 |
| 3 | Si 251.611†        | 865400.4  | 895104.9  | 15185 µg/L   | 15185 ppb   | 12:17:26 |
| 3 | Sn 189.927†        | -43.9     | -17.9     | -2.2357 µg/L | -2.2357 ppb | 12:17:46 |
| 3 | Ti 334.940†        | 655217.1  | 679038.9  | 965.68 µg/L  | 965.68 ppb  | 12:17:26 |
| 3 | Tl 190.801†        | -132.7    | -51.3     | -14.648 µg/L | -14.648 ppb | 12:17:46 |
| 3 | U 367.007†         | 2426.5    | 2795.6    | -14.180 µg/L | -14.180 ppb | 12:17:26 |
| 3 | V 292.402†         | 18026.1   | 18553.7   | 87.668 µg/L  | 87.668 ppb  | 12:17:26 |
| 3 | Zn 213.857†        | 31164.1   | 32208.3   | 174.73 µg/L  | 174.73 ppb  | 12:17:26 |

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Mean Data: 409254008|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD    |
|---|--------------------------|--------------|--------------|----------|-------------|-----------------|--------|
| Sc 361.383  | 1284814.2                | 96.515 %     | %            | 1.0553   |             |                 | 1.09%  |
| Sc RADIAL   | 70113.7                  | 97.3 %       | %            | 0.79     |             |                 | 0.81%  |
| Y 371.029   | 743023.9                 | 102.56 %     | %            | 1.142    |             |                 | 1.11%  |
| Ag 328.068†   | -279.8                   | 1.7570 µg/L  | µg/L         | 0.52778  | 1.7570 ppb  | 0.52778         | 30.04% |
| Al 396.153Radial†                                   | 49948.9                  | 18244 µg/L   | µg/L         | 32.4     | 18244 ppb   | 32.4            | 0.18%  |
| As 188.979†   | 81.9                     | 52.884 µg/L  | µg/L         | 2.7939   | 52.884 ppb  | 2.7939          | 5.28%  |
| B 249.677†  | -2805.0                  | 7.8854 µg/L  | µg/L         | 0.97956  | 7.8854 ppb  | 0.97956         | 12.42% |
| Ba 233.527†   | 238172.0                 | 2124.0 µg/L  | µg/L         | 1.44     | 2124.0 ppb  | 1.44            | 0.07%  |
| Be 313.107†   | 7065.6                   | -50.175 µg/L | µg/L         | 0.0513   | -50.175 ppb | 0.0513          | 0.10%  |
| Concentration less than lower limit for Be 313.107. |                          |              |              |          |             |                 |        |
| Ca 317.933Radial†                                   | 477723.4                 | 53180 µg/L   | µg/L         | 148.7    | 53180 ppb   | 148.7           | 0.28%  |
| Cd 226.502†   | 1134.6                   | 1.0565 µg/L  | µg/L         | 0.21121  | 1.0565 ppb  | 0.21121         | 19.99% |
| Co 228.616†   | 2286.9                   | 35.660 µg/L  | µg/L         | 0.5181   | 35.660 ppb  | 0.5181          | 1.45%  |
| Cr 267.716†   | 3385.1                   | 40.575 µg/L  | µg/L         | 0.6234   | 40.575 ppb  | 0.6234          | 1.54%  |
| Cu 324.752†   | 1927.6                   | 13.241 µg/L  | µg/L         | 0.7186   | 13.241 ppb  | 0.7186          | 5.43%  |
| Fe 238.204 Radial†                                  | 694980.3                 | 65742 µg/L   | µg/L         | 784.7    | 65742 ppb   | 784.7           | 1.19%  |
| K 766.490 Radial†                                   | 6723.3                   | 3552.6 µg/L  | µg/L         | 8.32     | 3552.6 ppb  | 8.32            | 0.23%  |
| Mg 279.077 IEC†                                     | 37834.4                  | 20419 µg/L   | µg/L         | 95.0     | 20419 ppb   | 95.0            | 0.47%  |
| Mn 257.610†   | 899188.7                 | 1575.2 µg/L  | µg/L         | 1.42     | 1575.2 ppb  | 1.42            | 0.09%  |
| Mo 202.031†   | -17.1                    | 0.9276 µg/L  | µg/L         | 0.34748  | 0.9276 ppb  | 0.34748         | 37.46% |

|                    |          |              |         |             |         |         |
|--------------------|----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial† | 7548.1   | 1258.7 µg/L  | 15.89   | 1258.7 ppb  | 15.89   | 1.26%   |
| Ni 231.604†        | 5166.0   | 82.130 µg/L  | 0.9980  | 82.130 ppb  | 0.9980  | 1.22%   |
| P 214.914†         | 8326.6   | 2997.8 µg/L  | 39.88   | 2997.8 ppb  | 39.88   | 1.33%   |
| Pb 220.353†        | 424.2    | 43.266 µg/L  | 1.2155  | 43.266 ppb  | 1.2155  | 2.81%   |
| S 181.975 Axial†   | 753.9    | 826.85 µg/L  | 17.698  | 826.85 ppb  | 17.698  | 2.14%   |
| Sb 206.836†        | 19.3     | -3.3384 µg/L | 0.47482 | -3.3384 ppb | 0.47482 | 14.22%  |
| Se 196.026†        | -52.3    | 2.62 µg/L    | 4.755   | 2.62 ppb    | 4.755   | 181.46% |
| SiO2†              | 295471.6 | 32702 µg/L   | 33.3    | 32702 ppb   | 33.3    | 0.10%   |
| Si 251.611†        | 894445.0 | 15174 µg/L   | 11.9    | 15174 ppb   | 11.9    | 0.08%   |
| Sn 189.927†        | -24.6    | -3.0873 µg/L | 1.03259 | -3.0873 ppb | 1.03259 | 33.45%  |
| Sr 421.552†        | 60217.9  | 172.87 µg/L  | 0.306   | 172.87 ppb  | 0.306   | 0.18%   |
| Ti 334.940†        | 678201.1 | 964.49 µg/L  | 1.203   | 964.49 ppb  | 1.203   | 0.12%   |
| Tl 190.801†        | -51.7    | -14.766 µg/L | 2.4743  | -14.766 ppb | 2.4743  | 16.76%  |
| U 367.007†         | 2785.5   | -19.345 µg/L | 4.8102  | -19.345 ppb | 4.8102  | 24.87%  |
| V 292.402†         | 18589.3  | 87.876 µg/L  | 0.3632  | 87.876 ppb  | 0.3632  | 0.41%   |
| Zn 213.857†        | 32141.5  | 174.27 µg/L  | 0.437   | 174.27 ppb  | 0.437   | 0.25%   |



Sequence No.: 12

Sample ID: 409254009|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 315

Date Collected: 11/11/2016 12:17:54

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254009|1611117|1

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 70939.2          | 70939.2                | 98.5 %                |                       | 12:18:21         |
| 1     | Al 396.153Radial†  | 93622.9          | 94971.1                | 34693 µg/L            | 34693 ppb             | 12:18:21         |
| 1     | Ca 317.933Radial†  | 1122948.3        | 1139995.9              | 126900 µg/L           | 126900 ppb            | 12:18:19         |
| 1     | Fe 238.204 Radial† | 1005063.9        | 1021147.1              | 96596 µg/L            | 96596 ppb             | 12:18:19         |
| 1     | K 766.490 Radial†  | 13816.7          | 12960.5                | 6835.8 µg/L           | 6835.8 ppb            | 12:18:21         |
| 1     | Mg 279.077 IEC†    | 87176.1          | 88499.4                | 47745 µg/L            | 47745 ppb             | 12:18:21         |
| 1     | Na 589.592 Radial† | 9649.9           | 9759.5                 | 1627.5 µg/L           | 1627.5 ppb            | 12:18:21         |
| 1     | Sr 421.552†        | 109859.3         | 112019.7               | 320.62 µg/L           | 320.62 ppb            | 12:18:21         |
| 1     | Sc 361.383         | 1296321.4        | 1296321.4              | 97.380 %              |                       | 12:18:33         |
| 1     | Y 371.029          | 755395.4         | 755395.4               | 104.27 %              |                       | 12:18:33         |
| 1     | Ag 328.068†        | -2419.3          | -593.6                 | 1.2188 µg/L           | 1.2188 ppb            | 12:18:35         |
| 1     | As 188.979†        | 90.6             | 123.0                  | 79.218 µg/L           | 79.218 ppb            | 12:18:55         |
| 1     | B 249.677†         | -2358.2          | -3306.5                | 23.305 µg/L           | 23.305 ppb            | 12:18:35         |
| 1     | Ba 233.527†        | 174845.0         | 179790.7               | 1603.6 µg/L           | 1603.6 ppb            | 12:18:35         |
| 1     | Be 313.107†        | 8106.0           | 11980.0                | -35.969 µg/L          | -35.969 ppb           | 12:18:35         |
| 1     | Cd 226.502†        | 1475.3           | 1695.0                 | 1.7638 µg/L           | 1.7638 ppb            | 12:18:55         |
| 1     | Co 228.616†        | 2947.6           | 3118.4                 | 47.021 µg/L           | 47.021 ppb            | 12:18:55         |
| 1     | Cr 267.716†        | 5413.8           | 5430.5                 | 64.872 µg/L           | 64.872 ppb            | 12:18:35         |
| 1     | Cu 324.752†        | 14296.6          | 8904.5                 | 46.500 µg/L           | 46.500 ppb            | 12:18:35         |
| 1     | Mn 257.610†        | 1538347.9        | 1579591.4              | 2766.7 µg/L           | 2766.7 ppb            | 12:18:33         |
| 1     | Mo 202.031†        | -76.2            | -48.6                  | 0.3316 µg/L           | 0.3316 ppb            | 12:18:55         |
| 1     | Ni 231.604†        | 6437.3           | 6808.3                 | 108.24 µg/L           | 108.24 ppb            | 12:18:55         |
| 1     | P 214.914†         | 11201.0          | 11597.5                | 4175.2 µg/L           | 4175.2 ppb            | 12:18:35         |
| 1     | Pb 220.353†        | 625.9            | 569.0                  | 58.281 µg/L           | 58.281 ppb            | 12:18:55         |
| 1     | S 181.975 Axial†   | 988.7            | 912.6                  | 996.98 µg/L           | 996.98 ppb            | 12:18:55         |
| 1     | Sb 206.836†        | 68.9             | 26.5                   | -5.1773 µg/L          | -5.1773 ppb           | 12:18:55         |
| 1     | Se 196.026†        | -62.1            | -71.8                  | 6.27 µg/L             | 6.27 ppb              | 12:18:55         |
| 1     | SiO2†              | 485476.5         | 495520.5               | 54843 µg/L            | 54843 ppb             | 12:18:33         |
| 1     | Si 251.611†        | 1465786.0        | 1504644.5              | 25523 µg/L            | 25523 ppb             | 12:18:33         |
| 1     | Sn 189.927†        | -41.5            | -15.1                  | -1.8228 µg/L          | -1.8228 ppb           | 12:18:55         |
| 1     | Ti 334.940†        | 1004867.5        | 1032796.8              | 1469.3 µg/L           | 1469.3 ppb            | 12:18:33         |
| 1     | Tl 190.801†        | -170.3           | -88.9                  | -25.657 µg/L          | -25.657 ppb           | 12:18:55         |
| 1     | U 367.007†         | 3856.1           | 4244.1                 | -14.105 µg/L          | -14.105 ppb           | 12:18:35         |
| 1     | V 292.402†         | 28425.6          | 29087.2                | 137.08 µg/L           | 137.08 ppb            | 12:18:35         |
| 1     | Zn 213.857†        | 51072.3          | 52400.2                | 284.51 µg/L           | 284.51 ppb            | 12:18:35         |
| 2     | Sc RADIAL          | 70523.3          | 70523.3                | 97.9 %                |                       | 12:18:25         |
| 2     | Al 396.153Radial†  | 92755.6          | 94646.0                | 34574 µg/L            | 34574 ppb             | 12:18:25         |
| 2     | Ca 317.933Radial†  | 1107914.7        | 1131365.8              | 125940 µg/L           | 125940 ppb            | 12:18:23         |
| 2     | Fe 238.204 Radial† | 991889.0         | 1013709.6              | 95892 µg/L            | 95892 ppb             | 12:18:23         |
| 2     | K 766.490 Radial†  | 13875.8          | 13103.6                | 6910.8 µg/L           | 6910.8 ppb            | 12:18:25         |
| 2     | Mg 279.077 IEC†    | 86124.3          | 87947.1                | 47447 µg/L            | 47447 ppb             | 12:18:25         |
| 2     | Na 589.592 Radial† | 9527.2           | 9692.0                 | 1616.2 µg/L           | 1616.2 ppb            | 12:18:25         |
| 2     | Sr 421.552†        | 108905.7         | 111703.6               | 319.74 µg/L           | 319.74 ppb            | 12:18:25         |
| 2     | Sc 361.383         | 1316853.8        | 1316853.8              | 98.922 %              |                       | 12:18:58         |
| 2     | Y 371.029          | 767503.5         | 767503.5               | 105.94 %              |                       | 12:18:58         |
| 2     | Ag 328.068†        | -2405.4          | -540.7                 | 1.4608 µg/L           | 1.4608 ppb            | 12:19:00         |
| 2     | As 188.979†        | 65.0             | 95.6                   | 64.260 µg/L           | 64.260 ppb            | 12:19:20         |
| 2     | B 249.677†         | -2363.6          | -3274.3                | 23.253 µg/L           | 23.253 ppb            | 12:19:00         |
| 2     | Ba 233.527†        | 177118.3         | 179289.2               | 1599.1 µg/L           | 1599.1 ppb            | 12:19:00         |
| 2     | Be 313.107†        | 8397.8           | 12145.2                | -35.815 µg/L          | -35.815 ppb           | 12:19:00         |
| 2     | Cd 226.502†        | 1505.5           | 1701.9                 | 1.8968 µg/L           | 1.8968 ppb            | 12:19:20         |
| 2     | Co 228.616†        | 2979.9           | 3103.9                 | 46.809 µg/L           | 46.809 ppb            | 12:19:20         |
| 2     | Cr 267.716†        | 5396.4           | 5326.2                 | 63.638 µg/L           | 63.638 ppb            | 12:19:00         |
| 2     | Cu 324.752†        | 14240.4          | 8618.7                 | 45.187 µg/L           | 45.187 ppb            | 12:19:00         |
| 2     | Mn 257.610†        | 1560933.8        | 1577792.1              | 2763.5 µg/L           | 2763.5 ppb            | 12:18:58         |
| 2     | Mo 202.031†        | -61.4            | -32.3                  | 1.1557 µg/L           | 1.1557 ppb            | 12:19:20         |
| 2     | Ni 231.604†        | 6373.8           | 6641.0                 | 105.58 µg/L           | 105.58 ppb            | 12:19:20         |
| 2     | P 214.914†         | 11440.3          | 11660.1                | 4197.7 µg/L           | 4197.7 ppb            | 12:19:00         |
| 2     | Pb 220.353†        | 610.0            | 543.0                  | 55.644 µg/L           | 55.644 ppb            | 12:19:20         |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 978.9     | 886.8     | 968.35 µg/L  | 968.35 ppb  | 12:19:20 |
| 2 | Sb 206.836†        | 61.8      | 18.1      | -6.6943 µg/L | -6.6943 ppb | 12:19:20 |
| 2 | Se 196.026†        | -58.4     | -67.1     | 8.44 µg/L    | 8.44 ppb    | 12:19:20 |
| 2 | SiO2†              | 493888.0  | 496250.4  | 54924 µg/L   | 54924 ppb   | 12:18:58 |
| 2 | Si 251.611†        | 1489098.4 | 1504741.4 | 25525 µg/L   | 25525 ppb   | 12:18:58 |
| 2 | Sn 189.927†        | -45.5     | -18.5     | -2.2514 µg/L | -2.2514 ppb | 12:19:20 |
| 2 | Ti 334.940†        | 1020802.2 | 1032815.7 | 1469.4 µg/L  | 1469.4 ppb  | 12:18:58 |
| 2 | Tl 190.801†        | -152.7    | -68.3     | -19.361 µg/L | -19.361 ppb | 12:19:20 |
| 2 | U 367.007†         | 3882.4    | 4209.0    | -14.519 µg/L | -14.519 ppb | 12:19:00 |
| 2 | V 292.402†         | 29093.1   | 29306.8   | 138.01 µg/L  | 138.01 ppb  | 12:19:00 |
| 2 | Zn 213.857†        | 51758.0   | 52275.5   | 283.89 µg/L  | 283.89 ppb  | 12:19:00 |
| 3 | Sc RADIAL          | 72914.4   | 72914.4   | 101 %        |             | 12:18:29 |
| 3 | Al 396.153Radial†  | 95490.2   | 94240.5   | 34426 µg/L   | 34426 ppb   | 12:18:29 |
| 3 | Ca 317.933Radial†  | 1127037.0 | 1113144.8 | 123920 µg/L  | 123920 ppb  | 12:18:27 |
| 3 | Fe 238.204 Radial† | 1007554.1 | 995959.6  | 94213 µg/L   | 94213 ppb   | 12:18:27 |
| 3 | K 766.490 Radial†  | 14249.1   | 13007.5   | 6859.9 µg/L  | 6859.9 ppb  | 12:18:29 |
| 3 | Mg 279.077 IEC†    | 89240.1   | 88140.4   | 47550 µg/L   | 47550 ppb   | 12:18:29 |
| 3 | Na 589.592 Radial† | 9957.8    | 9798.3    | 1633.9 µg/L  | 1633.9 ppb  | 12:18:29 |
| 3 | Sr 421.552†        | 112231.2  | 111341.0  | 318.76 µg/L  | 318.76 ppb  | 12:18:29 |
| 3 | Sc 361.383         | 1288460.5 | 1288460.5 | 96.789 %     |             | 12:19:22 |
| 3 | Y 371.029          | 750360.5  | 750360.5  | 103.58 %     |             | 12:19:22 |
| 3 | Ag 328.068†        | -2518.6   | -711.3    | 0.4992 µg/L  | 0.4992 ppb  | 12:19:24 |
| 3 | As 188.979†        | 78.0      | 110.5     | 72.157 µg/L  | 72.157 ppb  | 12:19:44 |
| 3 | B 249.677†         | -2283.3   | -3243.9   | 22.458 µg/L  | 22.458 ppb  | 12:19:24 |
| 3 | Ba 233.527†        | 176784.0  | 182889.5  | 1631.2 µg/L  | 1631.2 ppb  | 12:19:24 |
| 3 | Be 313.107†        | 8669.5    | 12613.0   | -36.477 µg/L | -36.477 ppb | 12:19:24 |
| 3 | Cd 226.502†        | 1484.9    | 1714.2    | 2.1821 µg/L  | 2.1821 ppb  | 12:19:44 |
| 3 | Co 228.616†        | 2973.8    | 3164.0    | 47.760 µg/L  | 47.760 ppb  | 12:19:44 |
| 3 | Cr 267.716†        | 5468.3    | 5520.7    | 65.894 µg/L  | 65.894 ppb  | 12:19:24 |
| 3 | Cu 324.752†        | 14292.8   | 8990.1    | 46.721 µg/L  | 46.721 ppb  | 12:19:24 |
| 3 | Mn 257.610†        | 1526132.2 | 1576608.6 | 2761.5 µg/L  | 2761.5 ppb  | 12:19:22 |
| 3 | Mo 202.031†        | -67.2     | -39.7     | 0.7310 µg/L  | 0.7310 ppb  | 12:19:44 |
| 3 | Ni 231.604†        | 6410.6    | 6821.0    | 108.44 µg/L  | 108.44 ppb  | 12:19:44 |
| 3 | P 214.914†         | 11396.7   | 11869.9   | 4273.5 µg/L  | 4273.5 ppb  | 12:19:24 |
| 3 | Pb 220.353†        | 653.8     | 601.7     | 61.582 µg/L  | 61.582 ppb  | 12:19:44 |
| 3 | S 181.975 Axial†   | 988.1     | 918.2     | 1003.7 µg/L  | 1003.7 ppb  | 12:19:44 |
| 3 | Sb 206.836†        | 70.3      | 28.3      | -4.5937 µg/L | -4.5937 ppb | 12:19:44 |
| 3 | Se 196.026†        | -63.8     | -74.0     | 4.06 µg/L    | 4.06 ppb    | 12:19:44 |
| 3 | SiO2†              | 481915.5  | 494883.0  | 54772 µg/L   | 54772 ppb   | 12:19:22 |
| 3 | Si 251.611†        | 1454672.8 | 1502346.1 | 25484 µg/L   | 25484 ppb   | 12:19:22 |
| 3 | Sn 189.927†        | -48.6     | -22.7     | -2.7928 µg/L | -2.7928 ppb | 12:19:44 |
| 3 | Ti 334.940†        | 997152.1  | 1031121.2 | 1466.9 µg/L  | 1466.9 ppb  | 12:19:22 |
| 3 | Tl 190.801†        | -150.1    | -69.1     | -19.616 µg/L | -19.616 ppb | 12:19:44 |
| 3 | U 367.007†         | 3804.9    | 4215.4    | -4.4240 µg/L | -4.4240 ppb | 12:19:24 |
| 3 | V 292.402†         | 28703.8   | 29552.6   | 139.01 µg/L  | 139.01 ppb  | 12:19:24 |
| 3 | Zn 213.857†        | 51711.3   | 53380.3   | 290.33 µg/L  | 290.33 ppb  | 12:19:24 |

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Mean Data: 409254009|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD    |
|---|--------------------------|-------------|--------------|----------|-------------|-----------------|--------|
| Sc 361.383  | 1300545.2                | 97.697      | %            | 1.1013   |             |                 | 1.13%  |
| Sc RADIAL   | 71459.0                  | 99.2        | %            | 1.77     |             |                 | 1.79%  |
| Y 371.029   | 757753.2                 | 104.60      | %            | 1.216    |             |                 | 1.16%  |
| Ag 328.068†   | -615.2                   | 1.0596      | µg/L         | 0.50019  | 1.0596 ppb  | 0.50019         | 47.21% |
| Al 396.153Radial†                                   | 94619.2                  | 34564       | µg/L         | 133.9    | 34564 ppb   | 133.9           | 0.39%  |
| As 188.979†   | 109.7                    | 71.878      | µg/L         | 7.4832   | 71.878 ppb  | 7.4832          | 10.41% |
| B 249.677†  | -3274.9                  | 23.006      | µg/L         | 0.4747   | 23.006 ppb  | 0.4747          | 2.06%  |
| Ba 233.527†   | 180656.5                 | 1611.3      | µg/L         | 17.38    | 1611.3 ppb  | 17.38           | 1.08%  |
| Be 313.107†   | 12246.1                  | -36.087     | µg/L         | 0.3463   | -36.087 ppb | 0.3463          | 0.96%  |
| Concentration less than lower limit for Be 313.107. |                          |             |              |          |             |                 |        |
| Ca 317.933Radial†                                   | 1128168.8                | 125590      | µg/L         | 1526.0   | 125590 ppb  | 1526.0          | 1.22%  |
| Cd 226.502†   | 1703.7                   | 1.9476      | µg/L         | 0.21373  | 1.9476 ppb  | 0.21373         | 10.97% |
| Co 228.616†   | 3128.8                   | 47.197      | µg/L         | 0.4992   | 47.197 ppb  | 0.4992          | 1.06%  |
| Cr 267.716†   | 5425.8                   | 64.801      | µg/L         | 1.1296   | 64.801 ppb  | 1.1296          | 1.74%  |
| Cu 324.752†   | 8837.7                   | 46.136      | µg/L         | 0.8292   | 46.136 ppb  | 0.8292          | 1.80%  |
| Fe 238.204 Radial†                                  | 1010272.1                | 95567       | µg/L         | 1224.1   | 95567 ppb   | 1224.1          | 1.28%  |
| K 766.490 Radial†                                   | 13023.9                  | 6868.8      | µg/L         | 38.32    | 6868.8 ppb  | 38.32           | 0.56%  |
| Mg 279.077 IEC†                                     | 88195.6                  | 47581       | µg/L         | 151.3    | 47581 ppb   | 151.3           | 0.32%  |
| Mn 257.610†   | 1577997.4                | 2763.9      | µg/L         | 2.63     | 2763.9 ppb  | 2.63            | 0.10%  |
| Mo 202.031†   | -40.2                    | 0.7395      | µg/L         | 0.41212  | 0.7395 ppb  | 0.41212         | 55.73% |

|   |           |              |         |             |         |        |
|---|-----------|--------------|---------|-------------|---------|--------|
| Na 589.592 Radial†                                  | 9750.0    | 1625.9 µg/L  | 8.97    | 1625.9 ppb  | 8.97    | 0.55%  |
| Ni 231.604†   | 6756.8    | 107.42 µg/L  | 1.597   | 107.42 ppb  | 1.597   | 1.49%  |
| P 214.914†  | 11709.2   | 4215.5 µg/L  | 51.49   | 4215.5 ppb  | 51.49   | 1.22%  |
| Pb 220.353†   | 571.2     | 58.502 µg/L  | 2.9749  | 58.502 ppb  | 2.9749  | 5.09%  |
| S 181.975 Axial†                                    | 905.9     | 989.67 µg/L  | 18.767  | 989.67 ppb  | 18.767  | 1.90%  |
| Sb 206.836†   | 24.3      | -5.4884 µg/L | 1.08431 | -5.4884 ppb | 1.08431 | 19.76% |
| Se 196.026†   | -71.0     | 6.26 µg/L    | 2.187   | 6.26 ppb    | 2.187   | 34.94% |
| SiO2†   | 495551.3  | 54846 µg/L   | 75.7    | 54846 ppb   | 75.7    | 0.14%  |
| Si 251.611†   | 1503910.7 | 25511 µg/L   | 23.1    | 25511 ppb   | 23.1    | 0.09%  |
| Sn 189.927†   | -18.8     | -2.2890 µg/L | 0.48607 | -2.2890 ppb | 0.48607 | 21.24% |
| Sr 421.552†   | 111688.1  | 319.71 µg/L  | 0.933   | 319.71 ppb  | 0.933   | 0.29%  |
| Ti 334.940†   | 1032244.6 | 1468.5 µg/L  | 1.40    | 1468.5 ppb  | 1.40    | 0.10%  |
| Tl 190.801†   | -75.4     | -21.545 µg/L | 3.5638  | -21.545 ppb | 3.5638  | 16.54% |
| Concentration less than lower limit for Tl 190.801. |           |              |         |             |         |        |
| U 367.007†  | 4222.8    | -11.016 µg/L | 5.7127  | -11.016 ppb | 5.7127  | 51.86% |
| V 292.402†  | 29315.5   | 138.03 µg/L  | 0.964   | 138.03 ppb  | 0.964   | 0.70%  |
| Zn 213.857†   | 52685.3   | 286.24 µg/L  | 3.555   | 286.24 ppb  | 3.555   | 1.24%  |

Sequence No.: 13

Sample ID: 409254010|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 316

Date Collected: 11/11/2016 12:19:52

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254010|1611117|1

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 71074.5          | 71074.5                | 98.7 %                |                       | 12:20:19         |
| 1     | Al 396.153Radial†  | 53740.9          | 54367.6                | 19858 µg/L            | 19858 ppb             | 12:20:19         |
| 1     | Ca 317.933Radial†  | 521754.3         | 528483.1               | 58831 µg/L            | 58831 ppb             | 12:20:19         |
| 1     | Fe 238.204 Radial† | 677634.0         | 687336.9               | 65019 µg/L            | 65019 ppb             | 12:20:17         |
| 1     | K 766.490 Radial†  | 8123.7           | 7163.6                 | 3783.3 µg/L           | 3783.3 ppb            | 12:20:19         |
| 1     | Mg 279.077 IEC†    | 39135.5          | 39639.1                | 21392 µg/L            | 21392 ppb             | 12:20:19         |
| 1     | Na 589.592 Radial† | 8134.5           | 8205.0                 | 1368.2 µg/L           | 1368.2 ppb            | 12:20:19         |
| 1     | Sr 421.552†        | 65517.7          | 66864.8                | 191.96 µg/L           | 191.96 ppb            | 12:20:19         |
| 1     | Sc 361.383         | 1288708.4        | 1288708.4              | 96.808 %              |                       | 12:20:31         |
| 1     | Y 371.029          | 742739.3         | 742739.3               | 102.53 %              |                       | 12:20:31         |
| 1     | Ag 328.068†        | -2239.2          | -422.2                 | 0.9165 µg/L           | 0.9165 ppb            | 12:20:31         |
| 1     | As 188.979†        | 48.2             | 79.8                   | 51.750 µg/L           | 51.750 ppb            | 12:20:51         |
| 1     | B 249.677†         | -1766.9          | -2710.0                | 8.7211 µg/L           | 8.7211 ppb            | 12:20:31         |
| 1     | Ba 233.527†        | 127789.0         | 132243.6               | 1179.5 µg/L           | 1179.5 ppb            | 12:20:31         |
| 1     | Be 313.107†        | 3284.2           | 7048.4                 | -26.942 µg/L          | -26.942 ppb           | 12:20:31         |
| 1     | Cd 226.502†        | 955.3            | 1166.8                 | 1.3833 µg/L           | 1.3833 ppb            | 12:20:51         |
| 1     | Co 228.616†        | 2268.8           | 2435.2                 | 36.761 µg/L           | 36.761 ppb            | 12:20:51         |
| 1     | Cr 267.716†        | 4198.0           | 4207.4                 | 50.202 µg/L           | 50.202 ppb            | 12:20:51         |
| 1     | Cu 324.752†        | 8234.2           | 2728.8                 | 16.765 µg/L           | 16.765 ppb            | 12:20:31         |
| 1     | Mn 257.610†        | 982448.4         | 1014693.1              | 1777.6 µg/L           | 1777.6 ppb            | 12:20:31         |
| 1     | Mo 202.031†        | 0.7              | 30.4                   | 3.3889 µg/L           | 3.3889 ppb            | 12:20:51         |
| 1     | Ni 231.604†        | 4915.8           | 5275.6                 | 83.873 µg/L           | 83.873 ppb            | 12:20:51         |
| 1     | P 214.914†         | 7719.5           | 8069.1                 | 2905.0 µg/L           | 2905.0 ppb            | 12:20:51         |
| 1     | Pb 220.353†        | 460.0            | 401.5                  | 41.004 µg/L           | 41.004 ppb            | 12:20:51         |
| 1     | S 181.975 Axial†   | 651.0            | 569.7                  | 621.40 µg/L           | 621.40 ppb            | 12:20:51         |
| 1     | Sb 206.836†        | 54.1             | 11.6                   | -4.8731 µg/L          | -4.8731 ppb           | 12:20:51         |
| 1     | Se 196.026†        | -36.0            | -45.2                  | 5.96 µg/L             | 5.96 ppb              | 12:20:51         |
| 1     | SiO2†              | 339265.2         | 347432.9               | 38453 µg/L            | 38453 ppb             | 12:20:31         |
| 1     | Si 251.611†        | 1017613.8        | 1050585.6              | 17821 µg/L            | 17821 ppb             | 12:20:31         |
| 1     | Sn 189.927†        | -35.1            | -8.7                   | -1.0545 µg/L          | -1.0545 ppb           | 12:20:51         |
| 1     | Ti 334.940†        | 627320.5         | 648896.0               | 922.88 µg/L           | 922.88 ppb            | 12:20:31         |
| 1     | Tl 190.801†        | -137.3           | -55.8                  | -16.040 µg/L          | -16.040 ppb           | 12:20:51         |
| 1     | U 367.007†         | 2637.9           | 3009.1                 | 11.596 µg/L           | 11.596 ppb            | 12:20:31         |
| 1     | V 292.402†         | 17620.4          | 18098.1                | 85.653 µg/L           | 85.653 ppb            | 12:20:31         |
| 1     | Zn 213.857†        | 33026.6          | 34069.1                | 185.23 µg/L           | 185.23 ppb            | 12:20:31         |
| 2     | Sc RADIAL          | 70585.9          | 70585.9                | 98.0 %                |                       | 12:20:23         |
| 2     | Al 396.153Radial†  | 53256.0          | 54249.8                | 19815 µg/L            | 19815 ppb             | 12:20:23         |
| 2     | Ca 317.933Radial†  | 517248.3         | 527544.7               | 58726 µg/L            | 58726 ppb             | 12:20:23         |
| 2     | Fe 238.204 Radial† | 693734.5         | 708522.5               | 67023 µg/L            | 67023 ppb             | 12:20:21         |
| 2     | K 766.490 Radial†  | 8108.1           | 7204.6                 | 3805.6 µg/L           | 3805.6 ppb            | 12:20:23         |
| 2     | Mg 279.077 IEC†    | 38998.4          | 39773.8                | 21465 µg/L            | 21465 ppb             | 12:20:23         |
| 2     | Na 589.592 Radial† | 7974.9           | 8099.2                 | 1350.6 µg/L           | 1350.6 ppb            | 12:20:23         |
| 2     | Sr 421.552†        | 65119.2          | 66917.7                | 192.12 µg/L           | 192.12 ppb            | 12:20:23         |
| 2     | Sc 361.383         | 1277906.0        | 1277906.0              | 95.996 %              |                       | 12:20:53         |
| 2     | Y 371.029          | 735734.3         | 735734.3               | 101.56 %              |                       | 12:20:53         |
| 2     | Ag 328.068†        | -2113.6          | -310.9                 | 1.6207 µg/L           | 1.6207 ppb            | 12:20:53         |
| 2     | As 188.979†        | 41.9             | 73.6                   | 48.627 µg/L           | 48.627 ppb            | 12:21:13         |
| 2     | B 249.677†         | -1738.8          | -2696.2                | 10.389 µg/L           | 10.389 ppb            | 12:20:53         |
| 2     | Ba 233.527†        | 126779.9         | 132308.3               | 1180.1 µg/L           | 1180.1 ppb            | 12:20:53         |
| 2     | Be 313.107†        | 3314.6           | 7108.8                 | -26.947 µg/L          | -26.947 ppb           | 12:20:53         |
| 2     | Cd 226.502†        | 944.8            | 1164.2                 | 1.1339 µg/L           | 1.1339 ppb            | 12:21:13         |
| 2     | Co 228.616†        | 2288.3           | 2475.3                 | 37.334 µg/L           | 37.334 ppb            | 12:21:13         |
| 2     | Cr 267.716†        | 4184.4           | 4230.0                 | 50.522 µg/L           | 50.522 ppb            | 12:21:13         |
| 2     | Cu 324.752†        | 8039.2           | 2597.6                 | 16.298 µg/L           | 16.298 ppb            | 12:20:53         |
| 2     | Mn 257.610†        | 973578.9         | 1014032.5              | 1776.4 µg/L           | 1776.4 ppb            | 12:20:53         |
| 2     | Mo 202.031†        | 3.0              | 32.9                   | 3.5646 µg/L           | 3.5646 ppb            | 12:21:13         |
| 2     | Ni 231.604†        | 4879.7           | 5280.9                 | 83.957 µg/L           | 83.957 ppb            | 12:21:13         |
| 2     | P 214.914†         | 7741.1           | 8159.0                 | 2937.3 µg/L           | 2937.3 ppb            | 12:21:13         |
| 2     | Pb 220.353†        | 473.4            | 419.5                  | 42.845 µg/L           | 42.845 ppb            | 12:21:13         |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 660.1     | 584.9     | 637.92 µg/L  | 637.92 ppb  | 12:21:13 |
| 2 | Sb 206.836†        | 69.9      | 28.5      | -1.8192 µg/L | -1.8192 ppb | 12:21:13 |
| 2 | Se 196.026†        | -37.2     | -46.8     | 6.06 µg/L    | 6.06 ppb    | 12:21:13 |
| 2 | SiO2†              | 336472.4  | 347486.1  | 38459 µg/L   | 38459 ppb   | 12:20:53 |
| 2 | Si 251.611†        | 1009870.3 | 1051405.0 | 17835 µg/L   | 17835 ppb   | 12:20:53 |
| 2 | Sn 189.927†        | -37.5     | -11.6     | -1.4172 µg/L | -1.4172 ppb | 12:21:13 |
| 2 | Ti 334.940†        | 622630.4  | 649488.0  | 923.74 µg/L  | 923.74 ppb  | 12:20:53 |
| 2 | Tl 190.801†        | -121.3    | -40.3     | -11.244 µg/L | -11.244 ppb | 12:21:13 |
| 2 | U 367.007†         | 2453.3    | 2839.9    | -20.114 µg/L | -20.114 ppb | 12:20:53 |
| 2 | V 292.402†         | 17558.1   | 18187.0   | 86.178 µg/L  | 86.178 ppb  | 12:20:53 |
| 2 | Zn 213.857†        | 32744.0   | 34063.1   | 184.98 µg/L  | 184.98 ppb  | 12:20:53 |
| 3 | Sc RADIAL          | 69478.6   | 69478.6   | 96.4 %       |             | 12:20:27 |
| 3 | Al 396.153Radial†  | 52586.7   | 54422.1   | 19878 µg/L   | 19878 ppb   | 12:20:27 |
| 3 | Ca 317.933Radial†  | 507556.3  | 525909.3  | 58544 µg/L   | 58544 ppb   | 12:20:27 |
| 3 | Fe 238.204 Radial† | 680363.8  | 705943.5  | 66779 µg/L   | 66779 ppb   | 12:20:25 |
| 3 | K 766.490 Radial†  | 7893.4    | 7114.0    | 3757.9 µg/L  | 3757.9 ppb  | 12:20:27 |
| 3 | Mg 279.077 IEC†    | 38204.5   | 39585.0   | 21363 µg/L   | 21363 ppb   | 12:20:27 |
| 3 | Na 589.592 Radial† | 7912.9    | 8164.7    | 1361.5 µg/L  | 1361.5 ppb  | 12:20:27 |
| 3 | Sr 421.552†        | 64147.7   | 66969.6   | 192.28 µg/L  | 192.28 ppb  | 12:20:27 |
| 3 | Sc 361.383         | 1306537.9 | 1306537.9 | 98.147 %     |             | 12:21:16 |
| 3 | Y 371.029          | 752072.9  | 752072.9  | 103.81 %     |             | 12:21:16 |
| 3 | Ag 328.068†        | -2116.1   | -265.2    | 1.8342 µg/L  | 1.8342 ppb  | 12:21:16 |
| 3 | As 188.979†        | 45.5      | 76.3      | 50.083 µg/L  | 50.083 ppb  | 12:21:36 |
| 3 | B 249.677†         | -1878.9   | -2799.2   | 8.7293 µg/L  | 8.7293 ppb  | 12:21:16 |
| 3 | Ba 233.527†        | 129463.5  | 132148.4  | 1178.7 µg/L  | 1178.7 ppb  | 12:21:16 |
| 3 | Be 313.107†        | 3388.9    | 7108.8    | -26.906 µg/L | -26.906 ppb | 12:21:16 |
| 3 | Cd 226.502†        | 950.5     | 1148.4    | 1.0426 µg/L  | 1.0426 ppb  | 12:21:36 |
| 3 | Co 228.616†        | 2273.0    | 2407.5    | 36.327 µg/L  | 36.327 ppb  | 12:21:36 |
| 3 | Cr 267.716†        | 4189.4    | 4139.5    | 49.438 µg/L  | 49.438 ppb  | 12:21:36 |
| 3 | Cu 324.752†        | 8264.7    | 2643.8    | 16.499 µg/L  | 16.499 ppb  | 12:21:16 |
| 3 | Mn 257.610†        | 995420.5  | 1014061.3 | 1776.5 µg/L  | 1776.5 ppb  | 12:21:16 |
| 3 | Mo 202.031†        | -6.8      | 22.8      | 3.0346 µg/L  | 3.0346 ppb  | 12:21:36 |
| 3 | Ni 231.604†        | 4865.0    | 5154.6    | 81.948 µg/L  | 81.948 ppb  | 12:21:36 |
| 3 | P 214.914†         | 7696.7    | 7937.1    | 2857.3 µg/L  | 2857.3 ppb  | 12:21:36 |
| 3 | Pb 220.353†        | 469.7     | 404.9     | 41.357 µg/L  | 41.357 ppb  | 12:21:36 |
| 3 | S 181.975 Axial†   | 635.5     | 544.8     | 593.18 µg/L  | 593.18 ppb  | 12:21:36 |
| 3 | Sb 206.836†        | 61.5      | 18.4      | -3.7307 µg/L | -3.7307 ppb | 12:21:36 |
| 3 | Se 196.026†        | -40.5     | -49.3     | 4.65 µg/L    | 4.65 ppb    | 12:21:36 |
| 3 | SiO2†              | 344099.0  | 347575.6  | 38469 µg/L   | 38469 ppb   | 12:21:16 |
| 3 | Si 251.611†        | 1031824.7 | 1050720.2 | 17823 µg/L   | 17823 ppb   | 12:21:16 |
| 3 | Sn 189.927†        | -42.7     | -16.0     | -1.9814 µg/L | -1.9814 ppb | 12:21:36 |
| 3 | Ti 334.940†        | 635716.3  | 648607.3  | 922.47 µg/L  | 922.47 ppb  | 12:21:16 |
| 3 | Tl 190.801†        | -129.4    | -45.8     | -12.943 µg/L | -12.943 ppb | 12:21:36 |
| 3 | U 367.007†         | 2643.1    | 2977.2    | -1.8798 µg/L | -1.8798 ppb | 12:21:16 |
| 3 | V 292.402†         | 18041.5   | 18278.7   | 86.577 µg/L  | 86.577 ppb  | 12:21:16 |
| 3 | Zn 213.857†        | 33328.9   | 33911.6   | 184.15 µg/L  | 184.15 ppb  | 12:21:16 |

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Mean Data: 409254010|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD    |
|---|--------------------------|--------------|--------------|----------|-------------|-----------------|--------|
| Sc 361.383  | 1291050.8                | 96.984 %     | %            | 1.0862   |             |                 | 1.12%  |
| Sc RADIAL   | 70379.7                  | 97.7 %       | %            | 1.14     |             |                 | 1.16%  |
| Y 371.029   | 743515.5                 | 102.63 %     | %            | 1.131    |             |                 | 1.10%  |
| Ag 328.068†   | -332.8                   | 1.4571 µg/L  | µg/L         | 0.48023  | 1.4571 ppb  | 0.48023         | 32.96% |
| Al 396.153Radial†                                   | 54346.5                  | 19850 µg/L   | µg/L         | 32.1     | 19850 ppb   | 32.1            | 0.16%  |
| As 188.979†   | 76.6                     | 50.153 µg/L  | µg/L         | 1.5628   | 50.153 ppb  | 1.5628          | 3.12%  |
| B 249.677†  | -2735.1                  | 9.2799 µg/L  | µg/L         | 0.96073  | 9.2799 ppb  | 0.96073         | 10.35% |
| Ba 233.527†   | 132233.5                 | 1179.4 µg/L  | µg/L         | 0.72     | 1179.4 ppb  | 0.72            | 0.06%  |
| Be 313.107†   | 7088.7                   | -26.932 µg/L | µg/L         | 0.0224   | -26.932 ppb | 0.0224          | 0.08%  |
| Concentration less than lower limit for Be 313.107. |                          |              |              |          |             |                 |        |
| Ca 317.933Radial†                                   | 527312.4                 | 58701 µg/L   | µg/L         | 145.0    | 58701 ppb   | 145.0           | 0.25%  |
| Cd 226.502†   | 1159.8                   | 1.1866 µg/L  | µg/L         | 0.17634  | 1.1866 ppb  | 0.17634         | 14.86% |
| Co 228.616†   | 2439.3                   | 36.807 µg/L  | µg/L         | 0.5048   | 36.807 ppb  | 0.5048          | 1.37%  |
| Cr 267.716†   | 4192.3                   | 50.054 µg/L  | µg/L         | 0.5567   | 50.054 ppb  | 0.5567          | 1.11%  |
| Cu 324.752†   | 2656.7                   | 16.521 µg/L  | µg/L         | 0.2343   | 16.521 ppb  | 0.2343          | 1.42%  |
| Fe 238.204 Radial†                                  | 700601.0                 | 66274 µg/L   | µg/L         | 1093.4   | 66274 ppb   | 1093.4          | 1.65%  |
| K 766.490 Radial†                                   | 7160.7                   | 3782.3 µg/L  | µg/L         | 23.88    | 3782.3 ppb  | 23.88           | 0.63%  |
| Mg 279.077 IEC†                                     | 39666.0                  | 21407 µg/L   | µg/L         | 52.5     | 21407 ppb   | 52.5            | 0.25%  |
| Mn 257.610†   | 1014262.3                | 1776.8 µg/L  | µg/L         | 0.65     | 1776.8 ppb  | 0.65            | 0.04%  |
| Mo 202.031†   | 28.7                     | 3.3294 µg/L  | µg/L         | 0.26995  | 3.3294 ppb  | 0.26995         | 8.11%  |

|                    |           |              |          |             |          |         |
|--------------------|-----------|--------------|----------|-------------|----------|---------|
| Na 589.592 Radial† | 8156.3    | 1360.1 µg/L  | 8.91     | 1360.1 ppb  | 8.91     | 0.65%   |
| Ni 231.604†        | 5237.0    | 83.259 µg/L  | 1.1363   | 83.259 ppb  | 1.1363   | 1.36%   |
| P 214.914†         | 8055.1    | 2899.9 µg/L  | 40.24    | 2899.9 ppb  | 40.24    | 1.39%   |
| Pb 220.353†        | 408.6     | 41.736 µg/L  | 0.9768   | 41.736 ppb  | 0.9768   | 2.34%   |
| S 181.975 Axial†   | 566.5     | 617.50 µg/L  | 22.622   | 617.50 ppb  | 22.622   | 3.66%   |
| Sb 206.836†        | 19.5      | -3.4743 µg/L | 1.54300  | -3.4743 ppb | 1.54300  | 44.41%  |
| Se 196.026†        | -47.1     | 5.56 µg/L    | 0.783    | 5.56 ppb    | 0.783    | 14.10%  |
| SiO2†              | 347498.2  | 38460 µg/L   | 8.0      | 38460 ppb   | 8.0      | 0.02%   |
| Si 251.611†        | 1050903.6 | 17826 µg/L   | 7.5      | 17826 ppb   | 7.5      | 0.04%   |
| Sn 189.927†        | -12.1     | -1.4844 µg/L | 0.46705  | -1.4844 ppb | 0.46705  | 31.46%  |
| Sr 421.552†        | 66917.4   | 192.12 µg/L  | 0.157    | 192.12 ppb  | 0.157    | 0.08%   |
| Ti 334.940†        | 648997.1  | 923.03 µg/L  | 0.644    | 923.03 ppb  | 0.644    | 0.07%   |
| Tl 190.801†        | -47.3     | -13.409 µg/L | 2.4314   | -13.409 ppb | 2.4314   | 18.13%  |
| U 367.007†         | 2942.1    | -3.4659 µg/L | 15.91402 | -3.4659 ppb | 15.91402 | 459.16% |
| V 292.402†         | 18188.0   | 86.136 µg/L  | 0.4635   | 86.136 ppb  | 0.4635   | 0.54%   |
| Zn 213.857†        | 34014.6   | 184.79 µg/L  | 0.566    | 184.79 ppb  | 0.566    | 0.31%   |

Sequence No.: 14

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 11/11/2016 12:21:43

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 73346.6       | 73346.6             | 102 %              |                    | 12:22:12      |
| 1     | Al 396.153Radial†  | 14098.5       | 13745.2             | 5018.8 µg/L        | 5018.8 ppb         | 12:22:12      |
| 1     | Ca 317.933Radial†  | 45861.1       | 44699.6             | 4976.0 µg/L        | 4976.0 ppb         | 12:22:12      |
| 1     | Fe 238.204 Radial† | 53687.7       | 53247.8             | 5037.0 µg/L        | 5037.0 ppb         | 12:22:12      |
| 1     | K 766.490 Radial†  | 10729.6       | 9467.9              | 4976.9 µg/L        | 4976.9 ppb         | 12:22:12      |
| 1     | Mg 279.077 IEC†    | 9332.6        | 9139.3              | 4929.0 µg/L        | 4929.0 ppb         | 12:22:12      |
| 1     | Na 589.592 Radial† | 59046.2       | 57952.9             | 9663.9 µg/L        | 9663.9 ppb         | 12:22:10      |
| 1     | Sr 421.552†        | 172788.2      | 170164.1            | 493.52 µg/L        | 493.52 ppb         | 12:22:10      |
| 1     | Sc 361.383         | 1362629.3     | 1362629.3           | 102.36 %           |                    | 12:22:24      |
| 1     | Y 371.029          | 730645.1      | 730645.1            | 100.86 %           |                    | 12:22:24      |
| 1     | Ag 328.068†        | 96050.8       | 95726.5             | 493.98 µg/L        | 493.98 ppb         | 12:22:26      |
| 1     | As 188.979†        | 885.5         | 895.1               | 491.39 µg/L        | 491.39 ppb         | 12:22:46      |
| 1     | B 249.677†         | 36121.6       | 34403.7             | 498.46 µg/L        | 498.46 ppb         | 12:22:26      |
| 1     | Ba 233.527†        | 56661.4       | 55595.4             | 495.75 µg/L        | 495.75 ppb         | 12:22:26      |
| 1     | Be 313.107†        | 1828872.6     | 1790350.9           | 476.25 µg/L        | 476.25 ppb         | 12:22:24      |
| 1     | Cd 226.502†        | 65941.8       | 64601.1             | 488.22 µg/L        | 488.22 ppb         | 12:22:26      |
| 1     | Co 228.616†        | 33947.1       | 33255.8             | 494.54 µg/L        | 494.54 ppb         | 12:22:26      |
| 1     | Cr 267.716†        | 43083.1       | 41960.5             | 493.08 µg/L        | 493.08 ppb         | 12:22:26      |
| 1     | Cu 324.752†        | 120567.8      | 112010.4            | 495.07 µg/L        | 495.07 ppb         | 12:22:26      |
| 1     | Mn 257.610†        | 289342.3      | 282517.5            | 494.97 µg/L        | 494.97 ppb         | 12:22:26      |
| 1     | Mo 202.031†        | 9495.9        | 9306.6              | 483.86 µg/L        | 483.86 ppb         | 12:22:46      |
| 1     | Ni 231.604†        | 31547.3       | 31017.4             | 493.12 µg/L        | 493.12 ppb         | 12:22:26      |
| 1     | P 214.914†         | 6687.7        | 6628.5              | 2388.9 µg/L        | 2388.9 ppb         | 12:22:46      |
| 1     | Pb 220.353†        | 4948.8        | 4760.9              | 481.17 µg/L        | 481.17 ppb         | 12:22:46      |
| 1     | S 181.975 Axial†   | 970.9         | 845.8               | 942.98 µg/L        | 942.98 ppb         | 12:22:46      |
| 1     | Sb 206.836†        | 2625.4        | 2520.5              | 478.93 µg/L        | 478.93 ppb         | 12:22:46      |
| 1     | Se 196.026†        | 957.4         | 927.3               | 489 µg/L           | 489 ppb            | 12:22:46      |
| 1     | SiO2†              | 53498.3       | 49244.7             | 5450.3 µg/L        | 5450.3 ppb         | 12:22:26      |
| 1     | Si 251.611†        | 155131.0      | 150968.9            | 2560.3 µg/L        | 2560.3 ppb         | 12:22:26      |
| 1     | Sn 189.927†        | 3815.9        | 3755.4              | 480.18 µg/L        | 480.18 ppb         | 12:22:46      |
| 1     | Ti 334.940†        | 353566.6      | 346301.9            | 491.91 µg/L        | 491.91 ppb         | 12:22:26      |
| 1     | Tl 190.801†        | 1524.3        | 1575.2              | 483.95 µg/L        | 483.95 ppb         | 12:22:46      |
| 1     | U 367.007†         | 3849.3        | 4044.8              | 469.80 µg/L        | 469.80 ppb         | 12:22:26      |
| 1     | V 292.402†         | 112654.2      | 109952.9            | 494.04 µg/L        | 494.04 ppb         | 12:22:26      |
| 1     | Zn 213.857†        | 89171.3       | 87068.3             | 492.67 µg/L        | 492.67 ppb         | 12:22:26      |
| 2     | Sc RADIAL          | 70934.2       | 70934.2             | 98.5 %             |                    | 12:22:16      |
| 2     | Al 396.153Radial†  | 13913.8       | 14028.6             | 5122.3 µg/L        | 5122.3 ppb         | 12:22:16      |
| 2     | Ca 317.933Radial†  | 44822.1       | 45176.3             | 5029.0 µg/L        | 5029.0 ppb         | 12:22:16      |
| 2     | Fe 238.204 Radial† | 52489.4       | 53824.1             | 5091.5 µg/L        | 5091.5 ppb         | 12:22:16      |
| 2     | K 766.490 Radial†  | 10702.0       | 9798.3              | 5150.5 µg/L        | 5150.5 ppb         | 12:22:16      |
| 2     | Mg 279.077 IEC†    | 9070.9        | 9185.2              | 4953.7 µg/L        | 4953.7 ppb         | 12:22:16      |
| 2     | Na 589.592 Radial† | 58379.2       | 59247.7             | 9879.8 µg/L        | 9879.8 ppb         | 12:22:14      |
| 2     | Sr 421.552†        | 169910.7      | 173013.3            | 501.79 µg/L        | 501.79 ppb         | 12:22:14      |
| 2     | Sc 361.383         | 1343666.8     | 1343666.8           | 100.94 %           |                    | 12:22:48      |
| 2     | Y 371.029          | 718048.8      | 718048.8            | 99.117 %           |                    | 12:22:48      |
| 2     | Ag 328.068†        | 94780.0       | 95791.7             | 494.32 µg/L        | 494.32 ppb         | 12:22:50      |
| 2     | As 188.979†        | 877.9         | 899.7               | 493.94 µg/L        | 493.94 ppb         | 12:23:10      |
| 2     | B 249.677†         | 35656.6       | 34441.0             | 499.04 µg/L        | 499.04 ppb         | 12:22:50      |
| 2     | Ba 233.527†        | 55891.5       | 55613.9             | 495.92 µg/L        | 495.92 ppb         | 12:22:50      |
| 2     | Be 313.107†        | 1801143.9     | 1788094.2           | 475.63 µg/L        | 475.63 ppb         | 12:22:48      |
| 2     | Cd 226.502†        | 65222.4       | 64797.5             | 489.70 µg/L        | 489.70 ppb         | 12:22:50      |
| 2     | Co 228.616†        | 33509.4       | 33290.2             | 495.05 µg/L        | 495.05 ppb         | 12:22:50      |
| 2     | Cr 267.716†        | 42698.4       | 42173.4             | 495.59 µg/L        | 495.59 ppb         | 12:22:50      |
| 2     | Cu 324.752†        | 119328.6      | 112444.9            | 497.00 µg/L        | 497.00 ppb         | 12:22:50      |
| 2     | Mn 257.610†        | 286051.4      | 283246.3            | 496.24 µg/L        | 496.24 ppb         | 12:22:50      |
| 2     | Mo 202.031†        | 9524.2        | 9465.6              | 492.12 µg/L        | 492.12 ppb         | 12:23:10      |
| 2     | Ni 231.604†        | 31188.4       | 31096.8             | 494.38 µg/L        | 494.38 ppb         | 12:22:50      |
| 2     | P 214.914†         | 6720.4        | 6753.1              | 2433.8 µg/L        | 2433.8 ppb         | 12:23:10      |
| 2     | Pb 220.353†        | 4985.1        | 4865.2              | 491.72 µg/L        | 491.72 ppb         | 12:23:10      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 969.6     | 857.9     | 956.49 µg/L | 956.49 ppb | 12:23:10 |
| 2 | Sb 206.836†        | 2629.5    | 2560.8    | 486.67 µg/L | 486.67 ppb | 12:23:10 |
| 2 | Se 196.026†        | 958.1     | 941.2     | 496 µg/L    | 496 ppb    | 12:23:10 |
| 2 | SiO2†              | 52958.1   | 49447.1   | 5472.7 µg/L | 5472.7 ppb | 12:22:50 |
| 2 | Si 251.611†        | 153263.9  | 151257.9  | 2565.2 µg/L | 2565.2 ppb | 12:22:50 |
| 2 | Sn 189.927†        | 3834.0    | 3825.9    | 489.20 µg/L | 489.20 ppb | 12:23:10 |
| 2 | Ti 334.940†        | 349507.0  | 347154.6  | 493.12 µg/L | 493.12 ppb | 12:22:50 |
| 2 | Tl 190.801†        | 1534.5    | 1606.3    | 493.51 µg/L | 493.51 ppb | 12:23:10 |
| 2 | U 367.007†         | 3791.3    | 4040.3    | 468.95 µg/L | 468.95 ppb | 12:22:50 |
| 2 | V 292.402†         | 111451.5  | 110314.5  | 495.67 µg/L | 495.67 ppb | 12:22:50 |
| 2 | Zn 213.857†        | 88221.4   | 87356.6   | 494.30 µg/L | 494.30 ppb | 12:22:50 |
| 3 | Sc RADIAL          | 71079.8   | 71079.8   | 98.7 %      |            | 12:22:20 |
| 3 | Al 396.153Radial†  | 13855.6   | 13940.7   | 5090.1 µg/L | 5090.1 ppb | 12:22:20 |
| 3 | Ca 317.933Radial†  | 44720.4   | 44980.0   | 5007.2 µg/L | 5007.2 ppb | 12:22:20 |
| 3 | Fe 238.204 Radial† | 52395.7   | 53620.0   | 5072.2 µg/L | 5072.2 ppb | 12:22:20 |
| 3 | K 766.490 Radial†  | 10706.3   | 9780.4    | 5141.1 µg/L | 5141.1 ppb | 12:22:20 |
| 3 | Mg 279.077 IEC†    | 9053.1    | 9148.3    | 4933.8 µg/L | 4933.8 ppb | 12:22:20 |
| 3 | Na 589.592 Radial† | 57282.8   | 58015.2   | 9674.3 µg/L | 9674.3 ppb | 12:22:18 |
| 3 | Sr 421.552†        | 167602.5  | 170320.6  | 493.98 µg/L | 493.98 ppb | 12:22:18 |
| 3 | Sc 361.383         | 1334593.1 | 1334593.1 | 100.25 %    |            | 12:23:12 |
| 3 | Y 371.029          | 712442.4  | 712442.4  | 98.343 %    |            | 12:23:12 |
| 3 | Ag 328.068†        | 93723.8   | 95376.6   | 492.18 µg/L | 492.18 ppb | 12:23:15 |
| 3 | As 188.979†        | 886.0     | 913.7     | 501.49 µg/L | 501.49 ppb | 12:23:35 |
| 3 | B 249.677†         | 35316.0   | 34341.5   | 497.60 µg/L | 497.60 ppb | 12:23:15 |
| 3 | Ba 233.527†        | 55196.1   | 55296.7   | 493.09 µg/L | 493.09 ppb | 12:23:15 |
| 3 | Be 313.107†        | 1787587.0 | 1786703.8 | 475.32 µg/L | 475.32 ppb | 12:23:12 |
| 3 | Cd 226.502†        | 64426.9   | 64443.4   | 487.02 µg/L | 487.02 ppb | 12:23:15 |
| 3 | Co 228.616†        | 33165.4   | 33172.7   | 493.30 µg/L | 493.30 ppb | 12:23:15 |
| 3 | Cr 267.716†        | 42000.5   | 41764.9   | 490.79 µg/L | 490.79 ppb | 12:23:15 |
| 3 | Cu 324.752†        | 117644.3  | 111568.7  | 493.12 µg/L | 493.12 ppb | 12:23:15 |
| 3 | Mn 257.610†        | 282618.3  | 281748.7  | 493.62 µg/L | 493.62 ppb | 12:23:15 |
| 3 | Mo 202.031†        | 9600.9    | 9606.3    | 499.43 µg/L | 499.43 ppb | 12:23:35 |
| 3 | Ni 231.604†        | 30740.8   | 30860.5   | 490.62 µg/L | 490.62 ppb | 12:23:15 |
| 3 | P 214.914†         | 6762.1    | 6840.0    | 2465.2 µg/L | 2465.2 ppb | 12:23:35 |
| 3 | Pb 220.353†        | 4977.6    | 4891.2    | 494.36 µg/L | 494.36 ppb | 12:23:35 |
| 3 | S 181.975 Axial†   | 992.2     | 887.0     | 988.96 µg/L | 988.96 ppb | 12:23:35 |
| 3 | Sb 206.836†        | 2641.5    | 2590.5    | 492.47 µg/L | 492.47 ppb | 12:23:35 |
| 3 | Se 196.026†        | 974.2     | 963.7     | 508 µg/L    | 508 ppb    | 12:23:35 |
| 3 | SiO2†              | 52496.3   | 49343.2   | 5461.2 µg/L | 5461.2 ppb | 12:23:15 |
| 3 | Si 251.611†        | 151541.1  | 150571.8  | 2553.6 µg/L | 2553.6 ppb | 12:23:15 |
| 3 | Sn 189.927†        | 3882.5    | 3900.2    | 498.68 µg/L | 498.68 ppb | 12:23:35 |
| 3 | Ti 334.940†        | 345405.2  | 345417.4  | 490.65 µg/L | 490.65 ppb | 12:23:15 |
| 3 | Tl 190.801†        | 1544.9    | 1627.0    | 499.86 µg/L | 499.86 ppb | 12:23:35 |
| 3 | U 367.007†         | 3702.3    | 3977.1    | 461.28 µg/L | 461.28 ppb | 12:23:15 |
| 3 | V 292.402†         | 109981.0  | 109598.4  | 492.45 µg/L | 492.45 ppb | 12:23:15 |
| 3 | Zn 213.857†        | 86888.7   | 86621.6   | 490.13 µg/L | 490.13 ppb | 12:23:15 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 1346963.1                | 101.18 %           | 1.075    |                    |          | 1.06% |
| Sc RADIAL  | 71786.9                  | 99.7 %             | 1.88     |                    |          | 1.88% |
| Y 371.029  | 720378.8                 | 99.439 %           | 1.2868   |                    |          | 1.29% |
| Ag 328.068†  | 95631.6                  | 493.49 µg/L        | 1.149    | 493.49 ppb         | 1.149    | 0.23% |
| QC value within limits for Ag 328.068 Recovery = 98.70%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 13904.8                  | 5077.1 µg/L        | 52.95    | 5077.1 ppb         | 52.95    | 1.04% |
| QC value within limits for Al 396.153Radial Recovery = 101.54% |                          |                    |          |                    |          |       |
| As 188.979†  | 902.8                    | 495.61 µg/L        | 5.249    | 495.61 ppb         | 5.249    | 1.06% |
| QC value within limits for As 188.979 Recovery = 99.12%        |                          |                    |          |                    |          |       |
| B 249.677†   | 34395.4                  | 498.37 µg/L        | 0.727    | 498.37 ppb         | 0.727    | 0.15% |
| QC value within limits for B 249.677 Recovery = 99.67%         |                          |                    |          |                    |          |       |
| Ba 233.527†  | 55502.0                  | 494.92 µg/L        | 1.588    | 494.92 ppb         | 1.588    | 0.32% |
| QC value within limits for Ba 233.527 Recovery = 98.98%        |                          |                    |          |                    |          |       |
| Be 313.107†  | 1788383.0                | 475.73 µg/L        | 0.474    | 475.73 ppb         | 0.474    | 0.10% |
| QC value within limits for Be 313.107 Recovery = 95.15%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 44952.0                  | 5004.1 µg/L        | 26.67    | 5004.1 ppb         | 26.67    | 0.53% |
| QC value within limits for Ca 317.933Radial Recovery = 100.08% |                          |                    |          |                    |          |       |
| Cd 226.502†  | 64614.0                  | 488.32 µg/L        | 1.341    | 488.32 ppb         | 1.341    | 0.27% |
| QC value within limits for Cd 226.502 Recovery = 97.66%        |                          |                    |          |                    |          |       |
| Co 228.616†  | 33239.6                  | 494.29 µg/L        | 0.898    | 494.29 ppb         | 0.898    | 0.18% |



|   |          |             |        |            |        |       |  |
|---|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Co 228.616 Recovery = 98.86%         |          |             |        |            |        |       |  |
| Cr 267.716†   | 41966.2  | 493.15 µg/L | 2.399  | 493.15 ppb | 2.399  | 0.49% |  |
| QC value within limits for Cr 267.716 Recovery = 98.63%         |          |             |        |            |        |       |  |
| Cu 324.752†   | 112008.0 | 495.06 µg/L | 1.937  | 495.06 ppb | 1.937  | 0.39% |  |
| QC value within limits for Cu 324.752 Recovery = 99.01%         |          |             |        |            |        |       |  |
| Fe 238.204 Radial†  | 53564.0  | 5066.9 µg/L | 27.64  | 5066.9 ppb | 27.64  | 0.55% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 101.34% |          |             |        |            |        |       |  |
| K 766.490 Radial†   | 9682.2   | 5089.5 µg/L | 97.65  | 5089.5 ppb | 97.65  | 1.92% |  |
| QC value within limits for K 766.490 Radial Recovery = 101.79%  |          |             |        |            |        |       |  |
| Mg 279.077 IEC†   | 9157.6   | 4938.8 µg/L | 13.13  | 4938.8 ppb | 13.13  | 0.27% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 98.78%     |          |             |        |            |        |       |  |
| Mn 257.610†   | 282504.2 | 494.94 µg/L | 1.312  | 494.94 ppb | 1.312  | 0.27% |  |
| QC value within limits for Mn 257.610 Recovery = 98.99%         |          |             |        |            |        |       |  |
| Mo 202.031†   | 9459.5   | 491.81 µg/L | 7.792  | 491.81 ppb | 7.792  | 1.58% |  |
| QC value within limits for Mo 202.031 Recovery = 98.36%         |          |             |        |            |        |       |  |
| Na 589.592 Radial†  | 58405.3  | 9739.4 µg/L | 121.77 | 9739.4 ppb | 121.77 | 1.25% |  |
| QC value within limits for Na 589.592 Radial Recovery = 97.39%  |          |             |        |            |        |       |  |
| Ni 231.604†   | 30991.6  | 492.71 µg/L | 1.912  | 492.71 ppb | 1.912  | 0.39% |  |
| QC value within limits for Ni 231.604 Recovery = 98.54%         |          |             |        |            |        |       |  |
| P 214.914†  | 6740.6   | 2429.3 µg/L | 38.32  | 2429.3 ppb | 38.32  | 1.58% |  |
| QC value within limits for P 214.914 Recovery = 97.17%          |          |             |        |            |        |       |  |
| Pb 220.353†   | 4839.1   | 489.08 µg/L | 6.981  | 489.08 ppb | 6.981  | 1.43% |  |
| QC value within limits for Pb 220.353 Recovery = 97.82%         |          |             |        |            |        |       |  |
| S 181.975 Axial†  | 863.6    | 962.81 µg/L | 23.633 | 962.81 ppb | 23.633 | 2.45% |  |
| QC value within limits for S 181.975 Axial Recovery = 96.28%    |          |             |        |            |        |       |  |
| Sb 206.836†   | 2557.3   | 486.02 µg/L | 6.797  | 486.02 ppb | 6.797  | 1.40% |  |
| QC value within limits for Sb 206.836 Recovery = 97.20%         |          |             |        |            |        |       |  |
| Se 196.026†   | 944.1    | 497 µg/L    | 9.6    | 497 ppb    | 9.6    | 1.93% |  |
| QC value within limits for Se 196.026 Recovery = 99.46%         |          |             |        |            |        |       |  |
| SiO2†   | 49345.0  | 5461.4 µg/L | 11.20  | 5461.4 ppb | 11.20  | 0.21% |  |
| QC value within limits for SiO2 Recovery = 102.13%              |          |             |        |            |        |       |  |
| Si 251.611†   | 150932.9 | 2559.7 µg/L | 5.84   | 2559.7 ppb | 5.84   | 0.23% |  |
| QC value within limits for Si 251.611 Recovery = 102.39%        |          |             |        |            |        |       |  |
| Sn 189.927†   | 3827.2   | 489.35 µg/L | 9.254  | 489.35 ppb | 9.254  | 1.89% |  |
| QC value within limits for Sn 189.927 Recovery = 97.87%         |          |             |        |            |        |       |  |
| Sr 421.552†   | 171166.0 | 496.43 µg/L | 4.646  | 496.43 ppb | 4.646  | 0.94% |  |
| QC value within limits for Sr 421.552 Recovery = 99.29%         |          |             |        |            |        |       |  |
| Ti 334.940†   | 346291.3 | 491.89 µg/L | 1.232  | 491.89 ppb | 1.232  | 0.25% |  |
| QC value within limits for Ti 334.940 Recovery = 98.38%         |          |             |        |            |        |       |  |
| Tl 190.801†   | 1602.9   | 492.44 µg/L | 8.006  | 492.44 ppb | 8.006  | 1.63% |  |
| QC value within limits for Tl 190.801 Recovery = 98.49%         |          |             |        |            |        |       |  |
| U 367.007†  | 4020.7   | 466.68 µg/L | 4.693  | 466.68 ppb | 4.693  | 1.01% |  |
| QC value within limits for U 367.007 Recovery = 93.34%          |          |             |        |            |        |       |  |
| V 292.402†  | 109955.3 | 494.06 µg/L | 1.610  | 494.06 ppb | 1.610  | 0.33% |  |
| QC value within limits for V 292.402 Recovery = 98.81%          |          |             |        |            |        |       |  |
| Zn 213.857†   | 87015.5  | 492.37 µg/L | 2.098  | 492.37 ppb | 2.098  | 0.43% |  |
| QC value within limits for Zn 213.857 Recovery = 98.47%         |          |             |        |            |        |       |  |

All analyte(s) passed QC.

Sequence No.: 15

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/11/2016 12:23:42

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 69720.4       | 69720.4             | 96.8 %             |                    | 12:24:07      |
| 1     | Al 396.153Radial†  | 128.2         | 30.8                | 11.252 µg/L        | 11.252 ppb         | 12:24:27      |
| 1     | Ca 317.933Radial†  | 425.5         | 96.5                | 10.743 µg/L        | 10.743 ppb         | 12:24:27      |
| 1     | Fe 238.204 Radial† | -413.8        | 90.5                | 8.5656 µg/L        | 8.5656 ppb         | 12:24:27      |
| 1     | K 766.490 Radial†  | 1022.4        | -13.9               | -7.2824 µg/L       | -7.2824 ppb        | 12:24:07      |
| 1     | Mg 279.077 IEC†    | 39.7          | 14.3                | 7.6876 µg/L        | 7.6876 ppb         | 12:24:27      |
| 1     | Na 589.592 Radial† | 139.3         | 104.2               | 17.373 µg/L        | 17.373 ppb         | 12:24:07      |
| 1     | Sr 421.552†        | -431.1        | 13.6                | 0.0390 µg/L        | 0.0390 ppb         | 12:24:27      |
| 1     | Sc 361.383         | 1315284.4     | 1315284.4           | 98.804 %           |                    | 12:25:14      |
| 1     | Y 371.029          | 713302.8      | 713302.8            | 98.462 %           |                    | 12:25:14      |
| 1     | Ag 328.068†        | -1857.6       | 10.8                | 0.0650 µg/L        | 0.0650 ppb         | 12:25:16      |
| 1     | As 188.979†        | -32.1         | -2.6                | -1.3915 µg/L       | -1.3915 ppb        | 12:25:36      |
| 1     | B 249.677†         | 822.6         | -52.3               | -0.7459 µg/L       | -0.7459 ppb        | 12:25:16      |
| 1     | Ba 233.527†        | -208.9        | 29.3                | 0.2617 µg/L        | 0.2617 ppb         | 12:25:36      |
| 1     | Be 313.107†        | -3187.8       | 429.6               | 0.1050 µg/L        | 0.1050 ppb         | 12:25:16      |
| 1     | Cd 226.502†        | -145.3        | 32.9                | 0.2480 µg/L        | 0.2480 ppb         | 12:25:36      |
| 1     | Co 228.616†        | -89.2         | 1.3                 | 0.0190 µg/L        | 0.0190 ppb         | 12:25:36      |
| 1     | Cr 267.716†        | 119.6         | -7.9                | -0.0787 µg/L       | -0.0787 ppb        | 12:25:36      |
| 1     | Cu 324.752†        | 5538.9        | -171.0              | -0.7665 µg/L       | -0.7665 ppb        | 12:25:16      |
| 1     | Mn 257.610†        | 296.8         | 148.5               | 0.2599 µg/L        | 0.2599 ppb         | 12:25:36      |
| 1     | Mo 202.031†        | -27.4         | 2.0                 | 0.1051 µg/L        | 0.1051 ppb         | 12:25:36      |
| 1     | Ni 231.604†        | -191.6        | 3.8                 | 0.0607 µg/L        | 0.0607 ppb         | 12:25:36      |
| 1     | P 214.914†         | -92.0         | 2.0                 | 0.7271 µg/L        | 0.7271 ppb         | 12:25:36      |
| 1     | Pb 220.353†        | 107.1         | 34.7                | 3.5258 µg/L        | 3.5258 ppb         | 12:25:36      |
| 1     | S 181.975 Axial†   | 94.5          | -7.0                | -7.8507 µg/L       | -7.8507 ppb        | 12:25:36      |
| 1     | Sb 206.836†        | 66.3          | 22.8                | 4.4059 µg/L        | 4.4059 ppb         | 12:25:36      |
| 1     | Se 196.026†        | 3.9           | -4.1                | -2.14 µg/L         | -2.14 ppb          | 12:25:36      |
| 1     | Si02†              | 3218.2        | 237.4               | 26.276 µg/L        | 26.276 ppb         | 12:25:16      |
| 1     | Si 251.611†        | 1043.6        | 471.8               | 8.0008 µg/L        | 8.0008 ppb         | 12:25:16      |
| 1     | Sn 189.927†        | -21.6         | 5.7                 | 0.7257 µg/L        | 0.7257 ppb         | 12:25:36      |
| 1     | Ti 334.940†        | -678.3        | 202.7               | 0.2966 µg/L        | 0.2966 ppb         | 12:25:16      |
| 1     | Tl 190.801†        | -71.7         | 13.5                | 4.1510 µg/L        | 4.1510 ppb         | 12:25:36      |
| 1     | U 367.007†         | -407.8        | -128.5              | -15.859 µg/L       | -15.859 ppb        | 12:25:16      |
| 1     | V 292.402†         | 41.7          | -61.1               | -0.2792 µg/L       | -0.2792 ppb        | 12:25:16      |
| 1     | Zn 213.857†        | 42.3          | -3.7                | -0.0217 µg/L       | -0.0217 ppb        | 12:25:36      |
| 2     | Sc RADIAL          | 71902.8       | 71902.8             | 99.8 %             |                    | 12:24:29      |
| 2     | Al 396.153Radial†  | 97.5          | -4.0                | -1.4602 µg/L       | -1.4602 ppb        | 12:24:49      |
| 2     | Ca 317.933Radial†  | 388.0         | 45.5                | 5.0670 µg/L        | 5.0670 ppb         | 12:24:49      |
| 2     | Fe 238.204 Radial† | -398.3        | 119.0               | 11.254 µg/L        | 11.254 ppb         | 12:24:49      |
| 2     | K 766.490 Radial†  | 953.2         | -115.2              | -60.555 µg/L       | -60.555 ppb        | 12:24:29      |
| 2     | Mg 279.077 IEC†    | 23.2          | -3.6                | -1.9140 µg/L       | -1.9140 ppb        | 12:24:49      |
| 2     | Na 589.592 Radial† | 156.3         | 116.8               | 19.482 µg/L        | 19.482 ppb         | 12:24:29      |
| 2     | Sr 421.552†        | -431.1        | 27.1                | 0.0786 µg/L        | 0.0786 ppb         | 12:24:49      |
| 2     | Sc 361.383         | 1311387.3     | 1311387.3           | 98.511 %           |                    | 12:25:38      |
| 2     | Y 371.029          | 710777.1      | 710777.1            | 98.113 %           |                    | 12:25:38      |
| 2     | Ag 328.068†        | -1688.7       | 176.6               | 0.9110 µg/L        | 0.9110 ppb         | 12:25:41      |
| 2     | As 188.979†        | -30.5         | -1.0                | -0.5556 µg/L       | -0.5556 ppb        | 12:26:01      |
| 2     | B 249.677†         | 791.0         | -81.9               | -1.1692 µg/L       | -1.1692 ppb        | 12:25:41      |
| 2     | Ba 233.527†        | -207.7        | 30.0                | 0.2672 µg/L        | 0.2672 ppb         | 12:26:01      |
| 2     | Be 313.107†        | -3120.0       | 488.8               | 0.1275 µg/L        | 0.1275 ppb         | 12:25:41      |
| 2     | Cd 226.502†        | -165.4        | 12.2                | 0.0908 µg/L        | 0.0908 ppb         | 12:26:01      |
| 2     | Co 228.616†        | -89.2         | 1.0                 | 0.0143 µg/L        | 0.0143 ppb         | 12:26:01      |
| 2     | Cr 267.716†        | 119.5         | -7.7                | -0.0921 µg/L       | -0.0921 ppb        | 12:26:01      |
| 2     | Cu 324.752†        | 5564.3        | -128.5              | -0.5648 µg/L       | -0.5648 ppb        | 12:25:41      |
| 2     | Mn 257.610†        | 281.5         | 133.8               | 0.2346 µg/L        | 0.2346 ppb         | 12:26:01      |
| 2     | Mo 202.031†        | -21.7         | 7.8                 | 0.4033 µg/L        | 0.4033 ppb         | 12:26:01      |
| 2     | Ni 231.604†        | -194.4        | 0.4                 | 0.0063 µg/L        | 0.0063 ppb         | 12:26:01      |
| 2     | P 214.914†         | -84.8         | 9.0                 | 3.2605 µg/L        | 3.2605 ppb         | 12:26:01      |
| 2     | Pb 220.353†        | 60.8          | -12.0               | -1.2186 µg/L       | -1.2186 ppb        | 12:26:01      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 94.9      | -6.4      | -7.1239 µg/L | -7.1239 ppb | 12:26:01 |
| 2 | Sb 206.836†        | 61.5      | 18.1      | 3.4972 µg/L  | 3.4972 ppb  | 12:26:01 |
| 2 | Se 196.026†        | 2.5       | -5.5      | -2.86 µg/L   | -2.86 ppb   | 12:26:01 |
| 2 | SiO2†              | 3138.1    | 165.8     | 18.347 µg/L  | 18.347 ppb  | 12:25:41 |
| 2 | Si 251.611†        | 1210.0    | 643.8     | 10.918 µg/L  | 10.918 ppb  | 12:25:41 |
| 2 | Sn 189.927†        | -23.6     | 3.5       | 0.4522 µg/L  | 0.4522 ppb  | 12:26:01 |
| 2 | Ti 334.940†        | -600.5    | 279.7     | 0.3966 µg/L  | 0.3966 ppb  | 12:25:41 |
| 2 | Tl 190.801†        | -82.6     | 2.2       | 0.6712 µg/L  | 0.6712 ppb  | 12:26:01 |
| 2 | U 367.007†         | -263.4    | 16.9      | 2.0146 µg/L  | 2.0146 ppb  | 12:25:41 |
| 2 | V 292.402†         | 90.7      | -11.2     | -0.0490 µg/L | -0.0490 ppb | 12:25:41 |
| 2 | Zn 213.857†        | 30.8      | -15.2     | -0.0870 µg/L | -0.0870 ppb | 12:26:01 |
| 3 | Sc RADIAL          | 72708.8   | 72708.8   | 101 %        |             | 12:24:51 |
| 3 | Al 396.153Radial†  | 122.5     | 19.7      | 7.1889 µg/L  | 7.1889 ppb  | 12:25:11 |
| 3 | Ca 317.933Radial†  | 401.3     | 54.4      | 6.0531 µg/L  | 6.0531 ppb  | 12:25:11 |
| 3 | Fe 238.204 Radial† | -380.3    | 141.3     | 13.362 µg/L  | 13.362 ppb  | 12:25:11 |
| 3 | K 766.490 Radial†  | 961.1     | -118.0    | -61.982 µg/L | -61.982 ppb | 12:24:51 |
| 3 | Mg 279.077 IEC†    | 47.4      | 20.2      | 10.877 µg/L  | 10.877 ppb  | 12:25:11 |
| 3 | Na 589.592 Radial† | 62.3      | 22.0      | 3.6679 µg/L  | 3.6679 ppb  | 12:24:51 |
| 3 | Sr 421.552†        | -432.9    | 30.1      | 0.0872 µg/L  | 0.0872 ppb  | 12:25:11 |
| 3 | Sc 361.383         | 1337082.5 | 1337082.5 | 100.44 %     |             | 12:26:03 |
| 3 | Y 371.029          | 723731.4  | 723731.4  | 99.901 %     |             | 12:26:03 |
| 3 | Ag 328.068†        | -1740.9   | 157.5     | 0.8143 µg/L  | 0.8143 ppb  | 12:26:05 |
| 3 | As 188.979†        | -24.2     | 5.8       | 3.1780 µg/L  | 3.1780 ppb  | 12:26:25 |
| 3 | B 249.677†         | 942.9     | 53.9      | 0.7855 µg/L  | 0.7855 ppb  | 12:26:05 |
| 3 | Ba 233.527†        | -213.0    | 28.8      | 0.2565 µg/L  | 0.2565 ppb  | 12:26:25 |
| 3 | Be 313.107†        | -2896.9   | 771.8     | 0.2038 µg/L  | 0.2038 ppb  | 12:26:05 |
| 3 | Cd 226.502†        | -148.9    | 31.8      | 0.2390 µg/L  | 0.2390 ppb  | 12:26:25 |
| 3 | Co 228.616†        | -90.5     | 1.4       | 0.0212 µg/L  | 0.0212 ppb  | 12:26:25 |
| 3 | Cr 267.716†        | 160.6     | 30.8      | 0.3638 µg/L  | 0.3638 ppb  | 12:26:25 |
| 3 | Cu 324.752†        | 5420.6    | -380.1    | -1.6774 µg/L | -1.6774 ppb | 12:26:05 |
| 3 | Mn 257.610†        | 306.3     | 153.0     | 0.2677 µg/L  | 0.2677 ppb  | 12:26:25 |
| 3 | Mo 202.031†        | -22.5     | 7.3       | 0.3821 µg/L  | 0.3821 ppb  | 12:26:25 |
| 3 | Ni 231.604†        | -167.2    | 31.2      | 0.4964 µg/L  | 0.4964 ppb  | 12:26:25 |
| 3 | P 214.914†         | -72.7     | 22.7      | 8.1652 µg/L  | 8.1652 ppb  | 12:26:25 |
| 3 | Pb 220.353†        | 105.3     | 31.1      | 3.1495 µg/L  | 3.1495 ppb  | 12:26:25 |
| 3 | S 181.975 Axial†   | 99.6      | -3.6      | -3.9736 µg/L | -3.9736 ppb | 12:26:25 |
| 3 | Sb 206.836†        | 62.3      | 17.7      | 3.4147 µg/L  | 3.4147 ppb  | 12:26:25 |
| 3 | Se 196.026†        | 1.9       | -6.2      | -3.23 µg/L   | -3.23 ppb   | 12:26:25 |
| 3 | SiO2†              | 3149.7    | 116.1     | 12.847 µg/L  | 12.847 ppb  | 12:26:05 |
| 3 | Si 251.611†        | 1193.5    | 603.8     | 10.240 µg/L  | 10.240 ppb  | 12:26:05 |
| 3 | Sn 189.927†        | -13.9     | 13.7      | 1.7486 µg/L  | 1.7486 ppb  | 12:26:25 |
| 3 | Ti 334.940†        | -332.0    | 558.7     | 0.7946 µg/L  | 0.7946 ppb  | 12:26:05 |
| 3 | Tl 190.801†        | -84.2     | 2.2       | 0.6867 µg/L  | 0.6867 ppb  | 12:26:25 |
| 3 | U 367.007†         | -293.6    | -8.1      | -1.0753 µg/L | -1.0753 ppb | 12:26:05 |
| 3 | V 292.402†         | 261.2     | 156.7     | 0.7033 µg/L  | 0.7033 ppb  | 12:26:05 |
| 3 | Zn 213.857†        | 26.2      | -20.4     | -0.1158 µg/L | -0.1158 ppb | 12:26:25 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------|-----------------|--------------------|----------|---------|
| Sc 361.383  | 1321251.4                | 99.252 %     | 1.0403          |                    |          | 1.05%   |
| Sc RADIAL   | 71444.0                  | 99.2 %       | 2.15            |                    |          | 2.16%   |
| Y 371.029   | 715937.1                 | 98.825 %     | 0.9479          |                    |          | 0.96%   |
| Ag 328.068†   | 115.0                    | 0.5967 µg/L  | 0.46305         | 0.5967 ppb         | 0.46305  | 77.60%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Al 396.153Radial†   | 15.5                     | 5.6602 µg/L  | 6.49248         | 5.6602 ppb         | 6.49248  | 114.70% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |              |                 |                    |          |         |
| As 188.979†   | 0.8                      | 0.4103 µg/L  | 2.43308         | 0.4103 ppb         | 2.43308  | 592.98% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| B 249.677†  | -26.7                    | -0.3765 µg/L | 1.02836         | -0.3765 ppb        | 1.02836  | 273.12% |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |              |                 |                    |          |         |
| Ba 233.527†   | 29.4                     | 0.2618 µg/L  | 0.00536         | 0.2618 ppb         | 0.00536  | 2.05%   |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Be 313.107†   | 563.4                    | 0.1454 µg/L  | 0.05179         | 0.1454 ppb         | 0.05179  | 35.61%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Ca 317.933Radial†   | 65.5                     | 7.2876 µg/L  | 3.03245         | 7.2876 ppb         | 3.03245  | 41.61%  |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |              |                 |                    |          |         |
| Cd 226.502†   | 25.6                     | 0.1926 µg/L  | 0.08832         | 0.1926 ppb         | 0.08832  | 45.85%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Co 228.616†   | 1.2                      | 0.0182 µg/L  | 0.00350         | 0.0182 ppb         | 0.00350  | 19.24%  |

|  |        |              |         |             |         |         |  |
|--|--------|--------------|---------|-------------|---------|---------|--|
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Cr 267.716†  | 5.1    | 0.0644 µg/L  | 0.25945 | 0.0644 ppb  | 0.25945 | 403.11% |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Cu 324.752†  | -226.6 | -1.0029 µg/L | 0.59275 | -1.0029 ppb | 0.59275 | 59.10%  |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Fe 238.204 Radial†   | 116.9  | 11.061 µg/L  | 2.4039  | 11.061 ppb  | 2.4039  | 21.73%  |  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |         |             |         |         |  |
| K 766.490 Radial†  | -82.4  | -43.273 µg/L | 31.1773 | -43.273 ppb | 31.1773 | 72.05%  |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |         |             |         |         |  |
| Mg 279.077 IEC†  | 10.3   | 5.5503 µg/L  | 6.65800 | 5.5503 ppb  | 6.65800 | 119.96% |  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |         |             |         |         |  |
| Mn 257.610†  | 145.1  | 0.2541 µg/L  | 0.01731 | 0.2541 ppb  | 0.01731 | 6.81%   |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Mo 202.031†  | 5.7    | 0.2968 µg/L  | 0.16637 | 0.2968 ppb  | 0.16637 | 56.05%  |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Na 589.592 Radial†   | 81.0   | 13.508 µg/L  | 8.5865  | 13.508 ppb  | 8.5865  | 63.57%  |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |         |             |         |         |  |
| Ni 231.604†  | 11.8   | 0.1878 µg/L  | 0.26864 | 0.1878 ppb  | 0.26864 | 143.07% |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |         |             |         |         |  |
| P 214.914†   | 11.2   | 4.0509 µg/L  | 3.78152 | 4.0509 ppb  | 3.78152 | 93.35%  |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Pb 220.353†  | 17.9   | 1.8189 µg/L  | 2.63732 | 1.8189 ppb  | 2.63732 | 144.99% |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |         |             |         |         |  |
| S 181.975 Axial†   | -5.7   | -6.3160 µg/L | 2.06093 | -6.3160 ppb | 2.06093 | 32.63%  |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |         |             |         |         |  |
| Sb 206.836†  | 19.5   | 3.7726 µg/L  | 0.54999 | 3.7726 ppb  | 0.54999 | 14.58%  |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Se 196.026†  | -5.2   | -2.74 µg/L   | 0.554   | -2.74 ppb   | 0.554   | 20.19%  |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |         |             |         |         |  |
| SiO2†  | 173.1  | 19.157 µg/L  | 6.7510  | 19.157 ppb  | 6.7510  | 35.24%  |  |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |         |             |         |         |  |
| Si 251.611†  | 573.2  | 9.7193 µg/L  | 1.52640 | 9.7193 ppb  | 1.52640 | 15.70%  |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Sn 189.927†  | 7.6    | 0.9755 µg/L  | 0.68333 | 0.9755 ppb  | 0.68333 | 70.05%  |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Sr 421.552†  | 23.6   | 0.0683 µg/L  | 0.02571 | 0.0683 ppb  | 0.02571 | 37.66%  |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Ti 334.940†  | 347.0  | 0.4959 µg/L  | 0.26349 | 0.4959 ppb  | 0.26349 | 53.13%  |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Tl 190.801†  | 6.0    | 1.8363 µg/L  | 2.00460 | 1.8363 ppb  | 2.00460 | 109.16% |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |         |             |         |         |  |
| U 367.007†   | -39.9  | -4.9733 µg/L | 9.55321 | -4.9733 ppb | 9.55321 | 192.09% |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |         |             |         |         |  |
| V 292.402†   | 28.1   | 0.1250 µg/L  | 0.51383 | 0.1250 ppb  | 0.51383 | 410.91% |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Zn 213.857†  | -13.1  | -0.0748 µg/L | 0.04821 | -0.0748 ppb | 0.04821 | 64.41%  |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |         |             |         |         |  |

All analyte(s) passed QC.

Sequence No.: 16

Sample ID: 409254011|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 317

Date Collected: 11/11/2016 12:26:32

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254011|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 66048.6       | 66048.6             | 91.7 %             |                    | 12:27:03      |
| 1     | Al 396.153Radial†  | 75208.4       | 81926.6             | 30222 µg/L         | 30222 ppb          | 12:27:03      |
| 1     | Ca 317.933Radial†  | 14752056.5    | 16089423.7          | 1791100 µg/L       | 1791100 ppb        | 12:26:59      |
| 1     | Fe 238.204 Radial† | 1017194.4     | 1109951.2           | 105000 µg/L        | 105000 ppb         | 12:27:01      |
| 1     | K 766.490 Radial†  | 14632.7       | 14889.3             | 7725.5 µg/L        | 7725.5 ppb         | 12:27:03      |
| 1     | Mg 279.077 IEC†    | 81823.6       | 89216.5             | 48134 µg/L         | 48134 ppb          | 12:27:03      |
| 1     | Na 589.592 Radial† | 21826.0       | 23765.5             | 3963.0 µg/L        | 3963.0 ppb         | 12:27:03      |
| 1     | Sr 421.552†        | 1338857.2     | 1460723.2           | 4176.2 µg/L        | 4176.2 ppb         | 12:27:01      |
| 1     | Sc 361.383         | 1150897.5     | 1150897.5           | 86.455 %           |                    | 12:27:20      |
| 1     | Y 371.029          | 654786.1      | 654786.1            | 90.384 %           |                    | 12:27:20      |
| 1     | Ag 328.068†        | -3504.6       | -2162.8             | -20.490 µg/L       | -20.490 ppb        | 12:27:20      |
| 1     | As 188.979†        | 23.5          | 57.1                | 44.608 µg/L        | 44.608 ppb         | 12:27:40      |
| 1     | B 249.677†         | -1777.2       | -2940.5             | 34.732 µg/L        | 34.732 ppb         | 12:27:20      |
| 1     | Ba 233.527†        | 86109.6       | 99840.8             | 890.76 µg/L        | 890.76 ppb         | 12:27:20      |
| 1     | Be 313.107†        | 4133.8        | 8437.4              | -19.347 µg/L       | -19.347 ppb        | 12:27:20      |
| 1     | Cd 226.502†        | 1637.6        | 2074.2              | 3.6708 µg/L        | 3.6708 ppb         | 12:27:40      |
| 1     | Co 228.616†        | 2121.4        | 2545.3              | 37.568 µg/L        | 37.568 ppb         | 12:27:40      |
| 1     | Cr 267.716†        | 5934.4        | 6735.1              | 80.223 µg/L        | 80.223 ppb         | 12:27:40      |
| 1     | Cu 324.752†        | 44635.0       | 45850.8             | 210.21 µg/L        | 210.21 ppb         | 12:27:20      |
| 1     | Mn 257.610†        | 1450447.1     | 1677531.1           | 2938.3 µg/L        | 2938.3 ppb         | 12:27:20      |
| 1     | Mo 202.031†        | -1.8          | 27.7                | 4.5031 µg/L        | 4.5031 ppb         | 12:27:40      |
| 1     | Ni 231.604†        | 6664.5        | 7906.3              | 125.70 µg/L        | 125.70 ppb         | 12:27:40      |
| 1     | P 214.914†         | 8315.4        | 9713.2              | 3495.5 µg/L        | 3495.5 ppb         | 12:27:40      |
| 1     | Pb 220.353†        | 9124.2        | 10479.9             | 1060.5 µg/L        | 1060.5 ppb         | 12:27:40      |
| 1     | S 181.975 Axial†   | 44799.4       | 51715.2             | 57707 µg/L         | 57707 ppb          | 12:27:20      |
| 1     | Sb 206.836†        | 180.9         | 165.0               | 20.346 µg/L        | 20.346 ppb         | 12:27:40      |
| 1     | Se 196.026†        | -70.3         | -89.4               | 1.21 µg/L          | 1.21 ppb           | 12:27:40      |
| 1     | SiO2†              | 462752.0      | 532229.8            | 58906 µg/L         | 58906 ppb          | 12:27:20      |
| 1     | Si 251.611†        | 1394834.8     | 1612773.8           | 27358 µg/L         | 27358 ppb          | 12:27:20      |
| 1     | Sn 189.927†        | -39.6         | -18.3               | -2.2506 µg/L       | -2.2506 ppb        | 12:27:40      |
| 1     | Ti 334.940†        | 640414.0      | 741634.5            | 1076.1 µg/L        | 1076.1 ppb         | 12:27:20      |
| 1     | Tl 190.801†        | -93.4         | -22.0               | -4.9670 µg/L       | -4.9670 ppb        | 12:27:40      |
| 1     | U 367.007†         | 4523.8        | 5516.8              | -49.557 µg/L       | -49.557 ppb        | 12:27:20      |
| 1     | V 292.402†         | 19404.7       | 22341.4             | 107.50 µg/L        | 107.50 ppb         | 12:27:20      |
| 1     | Zn 213.857†        | 88264.7       | 102046.3            | 565.08 µg/L        | 565.08 ppb         | 12:27:20      |
| 2     | Sc RADIAL          | 64425.2       | 64425.2             | 89.4 %             |                    | 12:27:10      |
| 2     | Al 396.153Radial†  | 73321.4       | 81883.6             | 30217 µg/L         | 30217 ppb          | 12:27:10      |
| 2     | Ca 317.933Radial†  | 14883384.3    | 16641706.3          | 1852600 µg/L       | 1852600 ppb        | 12:27:06      |
| 2     | Fe 238.204 Radial† | 997703.3      | 1116112.9           | 105580 µg/L        | 105580 ppb         | 12:27:08      |
| 2     | K 766.490 Radial†  | 14373.7       | 15001.9             | 7780.2 µg/L        | 7780.2 ppb         | 12:27:10      |
| 2     | Mg 279.077 IEC†    | 79454.1       | 88815.8             | 47918 µg/L         | 47918 ppb          | 12:27:10      |
| 2     | Na 589.592 Radial† | 21412.9       | 23903.3             | 3986.0 µg/L        | 3986.0 ppb         | 12:27:10      |
| 2     | Sr 421.552†        | 1322146.1     | 1478833.8           | 4226.6 µg/L        | 4226.6 ppb         | 12:27:08      |
| 2     | Sc 361.383         | 1171338.9     | 1171338.9           | 87.991 %           |                    | 12:27:43      |
| 2     | Y 371.029          | 666449.5      | 666449.5            | 91.994 %           |                    | 12:27:43      |
| 2     | Ag 328.068†        | -3524.0       | -2114.1             | -20.712 µg/L       | -20.712 ppb        | 12:27:43      |
| 2     | As 188.979†        | 29.4          | 63.3                | 48.037 µg/L        | 48.037 ppb         | 12:28:03      |
| 2     | B 249.677†         | -1877.2       | -3018.2             | 34.041 µg/L        | 34.041 ppb         | 12:27:43      |
| 2     | Ba 233.527†        | 87961.7       | 100207.6            | 894.03 µg/L        | 894.03 ppb         | 12:27:43      |
| 2     | Be 313.107†        | 4192.4        | 8420.5              | -19.438 µg/L       | -19.438 ppb        | 12:27:43      |
| 2     | Cd 226.502†        | 1660.8        | 2067.5              | 3.5537 µg/L        | 3.5537 ppb         | 12:28:03      |
| 2     | Co 228.616†        | 2138.1        | 2521.4              | 37.210 µg/L        | 37.210 ppb         | 12:28:03      |
| 2     | Cr 267.716†        | 5864.8        | 6536.2              | 77.911 µg/L        | 77.911 ppb         | 12:28:03      |
| 2     | Cu 324.752†        | 45230.1       | 45626.2             | 209.24 µg/L        | 209.24 ppb         | 12:27:43      |
| 2     | Mn 257.610†        | 1478891.6     | 1680580.0           | 2943.7 µg/L        | 2943.7 ppb         | 12:27:43      |
| 2     | Mo 202.031†        | -17.6         | 9.7                 | 3.5791 µg/L        | 3.5791 ppb         | 12:28:03      |
| 2     | Ni 231.604†        | 6613.4        | 7713.7              | 122.63 µg/L        | 122.63 ppb         | 12:28:03      |
| 2     | P 214.914†         | 8238.4        | 9457.9              | 3403.5 µg/L        | 3403.5 ppb         | 12:28:03      |
| 2     | Pb 220.353†        | 9135.4        | 10308.5             | 1043.2 µg/L        | 1043.2 ppb         | 12:28:03      |

|   |                    |            |            |              |             |          |
|---|--------------------|------------|------------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 45684.1    | 51816.4    | 57820 µg/L   | 57820 ppb   | 12:27:43 |
| 2 | Sb 206.836†        | 194.0      | 176.2      | 22.486 µg/L  | 22.486 ppb  | 12:28:03 |
| 2 | Se 196.026†        | -57.5      | -73.3      | 9.85 µg/L    | 9.85 ppb    | 12:28:03 |
| 2 | SiO2†              | 471754.8   | 533120.5   | 59004 µg/L   | 59004 ppb   | 12:27:43 |
| 2 | Si 251.611†        | 1421036.1  | 1614395.8  | 27385 µg/L   | 27385 ppb   | 12:27:43 |
| 2 | Sn 189.927†        | -49.3      | -28.6      | -3.5582 µg/L | -3.5582 ppb | 12:28:03 |
| 2 | Ti 334.940†        | 651823.8   | 741674.5   | 1077.0 µg/L  | 1077.0 ppb  | 12:27:43 |
| 2 | Tl 190.801†        | -88.5      | -14.5      | -2.6516 µg/L | -2.6516 ppb | 12:28:03 |
| 2 | U 367.007†         | 4477.4     | 5372.7     | -75.862 µg/L | -75.862 ppb | 12:27:43 |
| 2 | V 292.402†         | 19862.2    | 22469.7    | 108.10 µg/L  | 108.10 ppb  | 12:27:43 |
| 2 | Zn 213.857†        | 90257.7    | 102529.7   | 567.77 µg/L  | 567.77 ppb  | 12:27:43 |
| 3 | Sc RADIAL          | 65839.3    | 65839.3    | 91.4 %       |             | 12:27:17 |
| 3 | Al 396.153Radial†  | 75255.1    | 82238.4    | 30337 µg/L   | 30337 ppb   | 12:27:17 |
| 3 | Ca 317.933Radial†  | 14775710.4 | 16166451.6 | 1799700 µg/L | 1799700 ppb | 12:27:12 |
| 3 | Fe 238.204 Radial† | 1020978.3  | 1117618.1  | 105720 µg/L  | 105720 ppb  | 12:27:15 |
| 3 | K 766.490 Radial†  | 14750.9    | 15069.5    | 7819.7 µg/L  | 7819.7 ppb  | 12:27:17 |
| 3 | Mg 279.077 IEC†    | 81869.4    | 89550.3    | 48314 µg/L   | 48314 ppb   | 12:27:17 |
| 3 | Na 589.592 Radial† | 21877.6    | 23897.6    | 3985.0 µg/L  | 3985.0 ppb  | 12:27:17 |
| 3 | Sr 421.552†        | 1347890.9  | 1475249.4  | 4218.0 µg/L  | 4218.0 ppb  | 12:27:15 |
| 3 | Sc 361.383         | 1171129.6  | 1171129.6  | 87.975 %     |             | 12:28:05 |
| 3 | Y 371.029          | 665111.8   | 665111.8   | 91.810 %     |             | 12:28:05 |
| 3 | Ag 328.068†        | -3532.5    | -2124.5    | -20.314 µg/L | -20.314 ppb | 12:28:05 |
| 3 | As 188.979†        | 19.7       | 52.4       | 42.100 µg/L  | 42.100 ppb  | 12:28:25 |
| 3 | B 249.677†         | -1883.5    | -3025.9    | 34.036 µg/L  | 34.036 ppb  | 12:28:05 |
| 3 | Ba 233.527†        | 87253.0    | 99419.8    | 887.01 µg/L  | 887.01 ppb  | 12:28:05 |
| 3 | Be 313.107†        | 4234.2     | 8468.9     | -19.251 µg/L | -19.251 ppb | 12:28:05 |
| 3 | Cd 226.502†        | 1663.2     | 2070.5     | 3.5602 µg/L  | 3.5602 ppb  | 12:28:25 |
| 3 | Co 228.616†        | 2107.8     | 2487.4     | 36.695 µg/L  | 36.695 ppb  | 12:28:25 |
| 3 | Cr 267.716†        | 5875.5     | 6549.6     | 78.066 µg/L  | 78.066 ppb  | 12:28:25 |
| 3 | Cu 324.752†        | 44953.8    | 45321.3    | 207.91 µg/L  | 207.91 ppb  | 12:28:05 |
| 3 | Mn 257.610†        | 1467362.8  | 1667775.7  | 2921.2 µg/L  | 2921.2 ppb  | 12:28:05 |
| 3 | Mo 202.031†        | -6.8       | 22.0       | 4.2288 µg/L  | 4.2288 ppb  | 12:28:25 |
| 3 | Ni 231.604†        | 6621.5     | 7724.3     | 122.80 µg/L  | 122.80 ppb  | 12:28:25 |
| 3 | P 214.914†         | 8202.0     | 9418.2     | 3389.2 µg/L  | 3389.2 ppb  | 12:28:25 |
| 3 | Pb 220.353†        | 9106.2     | 10277.1    | 1040.0 µg/L  | 1040.0 ppb  | 12:28:25 |
| 3 | S 181.975 Axial†   | 45233.4    | 51313.4    | 57258 µg/L   | 57258 ppb   | 12:28:05 |
| 3 | Sb 206.836†        | 184.2      | 165.1      | 20.339 µg/L  | 20.339 ppb  | 12:28:25 |
| 3 | Se 196.026†        | -32.4      | -44.9      | 24.8 µg/L    | 24.8 ppb    | 12:28:25 |
| 3 | SiO2†              | 468867.3   | 529934.2   | 58652 µg/L   | 58652 ppb   | 12:28:05 |
| 3 | Si 251.611†        | 1411891.4  | 1604289.8  | 27214 µg/L   | 27214 ppb   | 12:28:05 |
| 3 | Sn 189.927†        | -38.2      | -15.9      | -1.9379 µg/L | -1.9379 ppb | 12:28:25 |
| 3 | Ti 334.940†        | 647573.9   | 736976.1   | 1069.6 µg/L  | 1069.6 ppb  | 12:28:05 |
| 3 | Tl 190.801†        | -84.7      | -10.2      | -1.3368 µg/L | -1.3368 ppb | 12:28:25 |
| 3 | U 367.007†         | 4500.2     | 5399.5     | -68.685 µg/L | -68.685 ppb | 12:28:05 |
| 3 | V 292.402†         | 19633.2    | 22213.4    | 106.96 µg/L  | 106.96 ppb  | 12:28:05 |
| 3 | Zn 213.857†        | 89348.1    | 101514.0   | 561.97 µg/L  | 561.97 ppb  | 12:28:05 |

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Mean Data: 409254011|1611117|1

| Analyte  | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------|-----------------|--------------------|----------|-------|
| Sc 361.383   | 1164455.4                | 87.474 %     | 0.8821          |                    |          | 1.01% |
| Sc RADIAL  | 65437.7                  | 90.8 %       | 1.23            |                    |          | 1.35% |
| Y 371.029  | 662115.8                 | 91.396 %     | 0.8811          |                    |          | 0.96% |
| Ag 328.068†  | -2133.8                  | -20.506 µg/L | 0.1995          | -20.506 ppb        | 0.1995   | 0.97% |
| Concentration less than lower limit for Ag 328.068.          |                          |              |                 |                    |          |       |
| Al 396.153Radial†  | 82016.2                  | 30258 µg/L   | 68.1            | 30258 ppb          | 68.1     | 0.22% |
| As 188.979†  | 57.6                     | 44.915 µg/L  | 2.9802          | 44.915 ppb         | 2.9802   | 6.64% |
| B 249.677†   | -2994.9                  | 34.269 µg/L  | 0.4003          | 34.269 ppb         | 0.4003   | 1.17% |
| Ba 233.527†  | 99822.7                  | 890.60 µg/L  | 3.514           | 890.60 ppb         | 3.514    | 0.39% |
| Be 313.107†  | 8442.2                   | -19.345 µg/L | 0.0936          | -19.345 ppb        | 0.0936   | 0.48% |
| Concentration less than lower limit for Be 313.107.          |                          |              |                 |                    |          |       |
| Ca 317.933Radial†  | 16299193.8               | 1814400 µg/L | 33297.5         | 1814400 ppb        | 33297.5  | 1.84% |
| Concentration greater than upper limit for Ca 317.933Radial. |                          |              |                 |                    |          |       |
| Cd 226.502†  | 2070.7                   | 3.5949 µg/L  | 0.06583         | 3.5949 ppb         | 0.06583  | 1.83% |
| Co 228.616†  | 2518.0                   | 37.157 µg/L  | 0.4387          | 37.157 ppb         | 0.4387   | 1.18% |
| Cr 267.716†  | 6607.0                   | 78.733 µg/L  | 1.2922          | 78.733 ppb         | 1.2922   | 1.64% |
| Cu 324.752†  | 45599.5                  | 209.12 µg/L  | 1.154           | 209.12 ppb         | 1.154    | 0.55% |
| Fe 238.204 Radial†   | 1114560.7                | 105430 µg/L  | 384.3           | 105430 ppb         | 384.3    | 0.36% |
| K 766.490 Radial†  | 14986.9                  | 7775.1 µg/L  | 47.33           | 7775.1 ppb         | 47.33    | 0.61% |
| Mg 279.077 IEC†  | 89194.2                  | 48122 µg/L   | 198.3           | 48122 ppb          | 198.3    | 0.41% |

|   |           |              |         |             |         |        |
|---|-----------|--------------|---------|-------------|---------|--------|
| Mn 257.610†   | 1675295.6 | 2934.4 µg/L  | 11.73   | 2934.4 ppb  | 11.73   | 0.40%  |
| Mo 202.031†   | 19.8      | 4.1036 µg/L  | 0.47452 | 4.1036 ppb  | 0.47452 | 11.56% |
| Na 589.592 Radial†  | 23855.4   | 3978.0 µg/L  | 13.00   | 3978.0 ppb  | 13.00   | 0.33%  |
| Ni 231.604†   | 7781.4    | 123.71 µg/L  | 1.722   | 123.71 ppb  | 1.722   | 1.39%  |
| P 214.914†  | 9529.7    | 3429.4 µg/L  | 57.73   | 3429.4 ppb  | 57.73   | 1.68%  |
| Pb 220.353†   | 10355.2   | 1047.9 µg/L  | 11.03   | 1047.9 ppb  | 11.03   | 1.05%  |
| S 181.975 Axial†  | 51615.0   | 57595 µg/L   | 297.1   | 57595 ppb   | 297.1   | 0.52%  |
| Concentration greater than upper limit for S 181.975 Axial. |           |              |         |             |         |        |
| Sb 206.836†   | 168.8     | 21.057 µg/L  | 1.2374  | 21.057 ppb  | 1.2374  | 5.88%  |
| Se 196.026†   | -69.2     | 12.0 µg/L    | 11.96   | 12.0 ppb    | 11.96   | 99.90% |
| SiO2†   | 531761.5  | 58854 µg/L   | 182.0   | 58854 ppb   | 182.0   | 0.31%  |
| Si 251.611†   | 1610486.5 | 27319 µg/L   | 92.0    | 27319 ppb   | 92.0    | 0.34%  |
| Sn 189.927†   | -20.9     | -2.5822 µg/L | 0.85954 | -2.5822 ppb | 0.85954 | 33.29% |
| Sr 421.552†   | 1471602.2 | 4206.9 µg/L  | 26.98   | 4206.9 ppb  | 26.98   | 0.64%  |
| Ti 334.940†   | 740095.0  | 1074.2 µg/L  | 4.02    | 1074.2 ppb  | 4.02    | 0.37%  |
| Tl 190.801†   | -15.6     | -2.9852 µg/L | 1.83796 | -2.9852 ppb | 1.83796 | 61.57% |
| U 367.007†  | 5429.7    | -64.701 µg/L | 13.5976 | -64.701 ppb | 13.5976 | 21.02% |
| Concentration less than lower limit for U 367.007.          |           |              |         |             |         |        |
| V 292.402†  | 22341.5   | 107.52 µg/L  | 0.569   | 107.52 ppb  | 0.569   | 0.53%  |
| Zn 213.857†   | 102030.0  | 564.94 µg/L  | 2.900   | 564.94 ppb  | 2.900   | 0.51%  |

Sequence No.: 17

Sample ID: 409254012|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 318

Date Collected: 11/11/2016 12:28:34

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254012|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 70966.8       | 70966.8             | 98.5 %             |                    | 12:29:01      |
| 1     | Al 396.153Radial†  | 183320.2      | 185985.2            | 67926 µg/L         | 67926 ppb          | 12:29:01      |
| 1     | Ca 317.933Radial†  | 1441643.2     | 1463057.2           | 162870 µg/L        | 162870 ppb         | 12:29:01      |
| 1     | Fe 238.204 Radial† | 1591022.7     | 1615552.4           | 152820 µg/L        | 152820 ppb         | 12:28:59      |
| 1     | K 766.490 Radial†  | 25238.4       | 24549.1             | 12943 µg/L         | 12943 ppb          | 12:29:01      |
| 1     | Mg 279.077 IEC†    | 155339.4      | 157657.0            | 85048 µg/L         | 85048 ppb          | 12:29:01      |
| 1     | Na 589.592 Radial† | 41860.7       | 42452.7             | 7079.2 µg/L        | 7079.2 ppb         | 12:29:01      |
| 1     | Sr 421.552†        | 130413.2      | 132840.4            | 379.79 µg/L        | 379.79 ppb         | 12:29:01      |
| 1     | Sc 361.383         | 1296636.1     | 1296636.1           | 97.403 %           |                    | 12:29:14      |
| 1     | Y 371.029          | 778333.6      | 778333.6            | 107.44 %           |                    | 12:29:16      |
| 1     | Ag 328.068†        | -2694.3       | -875.3              | 2.5715 µg/L        | 2.5715 ppb         | 12:29:16      |
| 1     | As 188.979†        | 114.1         | 147.1               | 99.615 µg/L        | 99.615 ppb         | 12:29:36      |
| 1     | B 249.677†         | -4282.4       | -5281.4             | 36.150 µg/L        | 36.150 ppb         | 12:29:16      |
| 1     | Ba 233.527†        | 243458.0      | 250189.3            | 2231.6 µg/L        | 2231.6 ppb         | 12:29:16      |
| 1     | Be 313.107†        | 17140.0       | 21252.8             | -48.764 µg/L       | -48.764 ppb        | 12:29:16      |
| 1     | Cd 226.502†        | 2838.3        | 3094.0              | 5.9108 µg/L        | 5.9108 ppb         | 12:29:36      |
| 1     | Co 228.616†        | 5549.9        | 5789.4              | 86.746 µg/L        | 86.746 ppb         | 12:29:36      |
| 1     | Cr 267.716†        | 9215.7        | 9332.4              | 111.28 µg/L        | 111.28 ppb         | 12:29:36      |
| 1     | Cu 324.752†        | 46373.3       | 41832.7             | 196.14 µg/L        | 196.14 ppb         | 12:29:16      |
| 1     | Mn 257.610†        | 4021758.5     | 4128825.9           | 7233.2 µg/L        | 7233.2 ppb         | 12:29:14      |
| 1     | Mo 202.031†        | 10.3          | 40.3                | 6.7130 µg/L        | 6.7130 ppb         | 12:29:36      |
| 1     | Ni 231.604†        | 12203.6       | 12726.7             | 202.33 µg/L        | 202.33 ppb         | 12:29:36      |
| 1     | P 214.914†         | 16242.3       | 16770.4             | 6036.7 µg/L        | 6036.7 ppb         | 12:29:36      |
| 1     | Pb 220.353†        | 2644.6        | 2641.4              | 268.88 µg/L        | 268.88 ppb         | 12:29:36      |
| 1     | S 181.975 Axial†   | 1197.0        | 1126.3              | 1222.6 µg/L        | 1222.6 ppb         | 12:29:36      |
| 1     | Sb 206.836†        | 102.2         | 60.6                | -4.3903 µg/L       | -4.3903 ppb        | 12:29:36      |
| 1     | Se 196.026†        | -115.3        | -126.4              | 2.95 µg/L          | 2.95 ppb           | 12:29:36      |
| 1     | SiO2†              | 566055.5      | 578126.7            | 63985 µg/L         | 63985 ppb          | 12:29:16      |
| 1     | Si 251.611†        | 1728576.0     | 1774075.0           | 30099 µg/L         | 30099 ppb          | 12:29:14      |
| 1     | Sn 189.927†        | -49.7         | -23.5               | -2.7914 µg/L       | -2.7914 ppb        | 12:29:36      |
| 1     | Ti 334.940†        | 1485821.0     | 1526322.0           | 2171.1 µg/L        | 2171.1 ppb         | 12:29:14      |
| 1     | Tl 190.801†        | -166.3        | -84.7               | -23.416 µg/L       | -23.416 ppb        | 12:29:36      |
| 1     | U 367.007†         | 6330.8        | 6783.7              | -10.472 µg/L       | -10.472 ppb        | 12:29:16      |
| 1     | V 292.402†         | 51083.0       | 52341.5             | 245.23 µg/L        | 245.23 ppb         | 12:29:16      |
| 1     | Zn 213.857†        | 112533.2      | 115486.8            | 634.39 µg/L        | 634.39 ppb         | 12:29:16      |
| 2     | Sc RADIAL          | 70356.5       | 70356.5             | 97.7 %             |                    | 12:29:05      |
| 2     | Al 396.153Radial†  | 182408.4      | 186665.9            | 68174 µg/L         | 68174 ppb          | 12:29:05      |
| 2     | Ca 317.933Radial†  | 1424858.0     | 1458566.2           | 162370 µg/L        | 162370 ppb         | 12:29:05      |
| 2     | Fe 238.204 Radial† | 1601666.3     | 1640461.2           | 155180 µg/L        | 155180 ppb         | 12:29:03      |
| 2     | K 766.490 Radial†  | 24848.2       | 24371.8             | 12851 µg/L         | 12851 ppb          | 12:29:05      |
| 2     | Mg 279.077 IEC†    | 152918.7      | 156546.3            | 84450 µg/L         | 84450 ppb          | 12:29:05      |
| 2     | Na 589.592 Radial† | 41571.2       | 42524.9             | 7091.2 µg/L        | 7091.2 ppb         | 12:29:05      |
| 2     | Sr 421.552†        | 130034.2      | 133600.8            | 382.01 µg/L        | 382.01 ppb         | 12:29:05      |
| 2     | Sc 361.383         | 1278142.1     | 1278142.1           | 96.014 %           |                    | 12:29:39      |
| 2     | Y 371.029          | 782219.6      | 782219.6            | 107.97 %           |                    | 12:29:41      |
| 2     | Ag 328.068†        | -2624.0       | -842.1              | 2.8712 µg/L        | 2.8712 ppb         | 12:29:41      |
| 2     | As 188.979†        | 114.8         | 149.5               | 101.26 µg/L        | 101.26 ppb         | 12:30:01      |
| 2     | B 249.677†         | -4032.6       | -5084.9             | 40.704 µg/L        | 40.704 ppb         | 12:29:41      |
| 2     | Ba 233.527†        | 244002.6      | 254373.1            | 2268.9 µg/L        | 2268.9 ppb         | 12:29:41      |
| 2     | Be 313.107†        | 16908.7       | 21266.6             | -49.669 µg/L       | -49.669 ppb        | 12:29:41      |
| 2     | Cd 226.502†        | 2851.5        | 3149.9              | 6.0640 µg/L        | 6.0640 ppb         | 12:30:01      |
| 2     | Co 228.616†        | 5520.0        | 5840.7              | 87.523 µg/L        | 87.523 ppb         | 12:30:01      |
| 2     | Cr 267.716†        | 9223.3        | 9477.2              | 113.01 µg/L        | 113.01 ppb         | 12:30:01      |
| 2     | Cu 324.752†        | 46480.9       | 42633.7             | 199.83 µg/L        | 199.83 ppb         | 12:29:41      |
| 2     | Mn 257.610†        | 3976043.3     | 4140956.9           | 7254.4 µg/L        | 7254.4 ppb         | 12:29:39      |
| 2     | Mo 202.031†        | 0.2           | 29.9                | 6.2245 µg/L        | 6.2245 ppb         | 12:30:01      |
| 2     | Ni 231.604†        | 12249.1       | 12955.3             | 205.97 µg/L        | 205.97 ppb         | 12:30:01      |
| 2     | P 214.914†         | 16312.8       | 17085.1             | 6150.1 µg/L        | 6150.1 ppb         | 12:30:01      |
| 2     | Pb 220.353†        | 2649.3        | 2685.6              | 273.34 µg/L        | 273.34 ppb         | 12:30:01      |



|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 1205.8    | 1153.2    | 1252.1 µg/L  | 1252.1 ppb  | 12:30:01 |
| 2 | Sb 206.836†        | 109.1     | 69.3      | -2.9825 µg/L | -2.9825 ppb | 12:30:01 |
| 2 | Se 196.026†        | -114.6    | -127.4    | 3.51 µg/L    | 3.51 ppb    | 12:30:01 |
| 2 | SiO2†              | 567327.6  | 587860.4  | 65063 µg/L   | 65063 ppb   | 12:29:41 |
| 2 | Si 251.611†        | 1708377.9 | 1778716.8 | 30178 µg/L   | 30178 ppb   | 12:29:39 |
| 2 | Sn 189.927†        | -57.9     | -32.8     | -3.9744 µg/L | -3.9744 ppb | 12:30:01 |
| 2 | Ti 334.940†        | 1470884.6 | 1532837.7 | 2180.4 µg/L  | 2180.4 ppb  | 12:29:39 |
| 2 | Tl 190.801†        | -161.3    | -81.9     | -22.517 µg/L | -22.517 ppb | 12:30:01 |
| 2 | U 367.007†         | 6431.6    | 6982.8    | 1.2558 µg/L  | 1.2558 ppb  | 12:29:41 |
| 2 | V 292.402†         | 51417.8   | 53449.0   | 250.36 µg/L  | 250.36 ppb  | 12:29:41 |
| 2 | Zn 213.857†        | 112930.2  | 117572.0  | 645.99 µg/L  | 645.99 ppb  | 12:29:41 |
| 3 | Sc RADIAL          | 68825.5   | 68825.5   | 95.5 %       |             | 12:29:10 |
| 3 | Al 396.153Radial†  | 178375.1  | 186599.0  | 68150 µg/L   | 68150 ppb   | 12:29:10 |
| 3 | Ca 317.933Radial†  | 1385204.1 | 1449514.7 | 161360 µg/L  | 161360 ppb  | 12:29:10 |
| 3 | Fe 238.204 Radial† | 1590628.1 | 1665388.0 | 157540 µg/L  | 157540 ppb  | 12:29:08 |
| 3 | K 766.490 Radial†  | 24453.3   | 24524.4   | 12932 µg/L   | 12932 ppb   | 12:29:10 |
| 3 | Mg 279.077 IEC†    | 148497.8  | 155402.0  | 83834 µg/L   | 83834 ppb   | 12:29:10 |
| 3 | Na 589.592 Radial† | 40540.7   | 42393.2   | 7069.3 µg/L  | 7069.3 ppb  | 12:29:10 |
| 3 | Sr 421.552†        | 126799.5  | 133176.8  | 380.82 µg/L  | 380.82 ppb  | 12:29:10 |
| 3 | Sc 361.383         | 1271262.6 | 1271262.6 | 95.497 %     |             | 12:30:03 |
| 3 | Y 371.029          | 770022.8  | 770022.8  | 106.29 %     |             | 12:30:06 |
| 3 | Ag 328.068†        | -2571.3   | -801.7    | 3.2381 µg/L  | 3.2381 ppb  | 12:30:06 |
| 3 | As 188.979†        | 112.4     | 147.6     | 100.50 µg/L  | 100.50 ppb  | 12:30:26 |
| 3 | B 249.677†         | -4087.1   | -5164.7   | 41.286 µg/L  | 41.286 ppb  | 12:30:06 |
| 3 | Ba 233.527†        | 240638.1  | 252225.3  | 2249.8 µg/L  | 2249.8 ppb  | 12:30:06 |
| 3 | Be 313.107†        | 17183.8   | 21650.0   | -49.101 µg/L | -49.101 ppb | 12:30:06 |
| 3 | Cd 226.502†        | 2849.5    | 3163.9    | 5.8998 µg/L  | 5.8998 ppb  | 12:30:26 |
| 3 | Co 228.616†        | 5609.9    | 5965.9    | 89.331 µg/L  | 89.331 ppb  | 12:30:26 |
| 3 | Cr 267.716†        | 9279.2    | 9587.7    | 114.38 µg/L  | 114.38 ppb  | 12:30:26 |
| 3 | Cu 324.752†        | 46055.9   | 42450.6   | 199.15 µg/L  | 199.15 ppb  | 12:30:06 |
| 3 | Mn 257.610†        | 3932872.2 | 4118160.2 | 7214.5 µg/L  | 7214.5 ppb  | 12:30:03 |
| 3 | Mo 202.031†        | -2.0      | 27.7      | 6.1571 µg/L  | 6.1571 ppb  | 12:30:26 |
| 3 | Ni 231.604†        | 12294.4   | 13071.8   | 207.82 µg/L  | 207.82 ppb  | 12:30:26 |
| 3 | P 214.914†         | 16427.9   | 17297.5   | 6226.5 µg/L  | 6226.5 ppb  | 12:30:26 |
| 3 | Pb 220.353†        | 2656.6    | 2708.2    | 275.66 µg/L  | 275.66 ppb  | 12:30:26 |
| 3 | S 181.975 Axial†   | 1214.5    | 1169.1    | 1269.3 µg/L  | 1269.3 ppb  | 12:30:26 |
| 3 | Sb 206.836†        | 90.3      | 50.3      | -6.9206 µg/L | -6.9206 ppb | 12:30:26 |
| 3 | Se 196.026†        | -107.2    | -120.3    | 8.31 µg/L    | 8.31 ppb    | 12:30:26 |
| 3 | SiO2†              | 560555.3  | 583966.5  | 64632 µg/L   | 64632 ppb   | 12:30:06 |
| 3 | Si 251.611†        | 1689102.7 | 1768161.6 | 29999 µg/L   | 29999 ppb   | 12:30:03 |
| 3 | Sn 189.927†        | -44.4     | -19.0     | -2.2102 µg/L | -2.2102 ppb | 12:30:26 |
| 3 | Ti 334.940†        | 1458262.6 | 1527910.8 | 2173.4 µg/L  | 2173.4 ppb  | 12:30:03 |
| 3 | Tl 190.801†        | -182.9    | -105.5    | -29.730 µg/L | -29.730 ppb | 12:30:26 |
| 3 | U 367.007†         | 6232.8    | 6810.9    | -32.621 µg/L | -32.621 ppb | 12:30:06 |
| 3 | V 292.402†         | 50932.4   | 53230.5   | 249.53 µg/L  | 249.53 ppb  | 12:30:06 |
| 3 | Zn 213.857†        | 111135.0  | 116328.6  | 638.71 µg/L  | 638.71 ppb  | 12:30:06 |

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Mean Data: 409254012|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|-------------|--------------|----------|--------------------|----------|--------|
| Sc 361.383  | 1282013.6                | 96.305      | %            | 0.9858   |                    |          | 1.02%  |
| Sc RADIAL   | 70049.6                  | 97.2        | %            | 1.53     |                    |          | 1.57%  |
| Y 371.029   | 776858.7                 | 107.23      | %            | 0.860    |                    |          | 0.80%  |
| Ag 328.068†   | -839.7                   | 2.8936      | µg/L         | 0.33386  | 2.8936 ppb         | 0.33386  | 11.54% |
| Al 396.153Radial†                                   | 186416.7                 | 68083       | µg/L         | 136.9    | 68083 ppb          | 136.9    | 0.20%  |
| As 188.979†   | 148.1                    | 100.46      | µg/L         | 0.822    | 100.46 ppb         | 0.822    | 0.82%  |
| B 249.677†  | -5177.0                  | 39.380      | µg/L         | 2.8124   | 39.380 ppb         | 2.8124   | 7.14%  |
| Ba 233.527†   | 252262.6                 | 2250.1      | µg/L         | 18.66    | 2250.1 ppb         | 18.66    | 0.83%  |
| Be 313.107†   | 21389.8                  | -49.178     | µg/L         | 0.4573   | -49.178 ppb        | 0.4573   | 0.93%  |
| Concentration less than lower limit for Be 313.107. |                          |             |              |          |                    |          |        |
| Ca 317.933Radial†                                   | 1457046.0                | 162200      | µg/L         | 767.9    | 162200 ppb         | 767.9    | 0.47%  |
| Cd 226.502†   | 3136.0                   | 5.9582      | µg/L         | 0.09176  | 5.9582 ppb         | 0.09176  | 1.54%  |
| Co 228.616†   | 5865.3                   | 87.867      | µg/L         | 1.3265   | 87.867 ppb         | 1.3265   | 1.51%  |
| Cr 267.716†   | 9465.8                   | 112.89      | µg/L         | 1.549    | 112.89 ppb         | 1.549    | 1.37%  |
| Cu 324.752†   | 42305.7                  | 198.37      | µg/L         | 1.967    | 198.37 ppb         | 1.967    | 0.99%  |
| Fe 238.204 Radial†                                  | 1640467.2                | 155180      | µg/L         | 2357.1   | 155180 ppb         | 2357.1   | 1.52%  |
| K 766.490 Radial†                                   | 24481.8                  | 12909       | µg/L         | 50.4     | 12909 ppb          | 50.4     | 0.39%  |
| Mg 279.077 IEC†                                     | 156535.1                 | 84444       | µg/L         | 607.1    | 84444 ppb          | 607.1    | 0.72%  |
| Mn 257.610†   | 4129314.4                | 7234.0      | µg/L         | 19.98    | 7234.0 ppb         | 19.98    | 0.28%  |
| Mo 202.031†   | 32.6                     | 6.3649      | µg/L         | 0.30337  | 6.3649 ppb         | 0.30337  | 4.77%  |

|   |           |              |         |             |         |         |
|---|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial†                                  | 42456.9   | 7079.9 µg/L  | 11.00   | 7079.9 ppb  | 11.00   | 0.16%   |
| Ni 231.604†   | 12917.9   | 205.37 µg/L  | 2.791   | 205.37 ppb  | 2.791   | 1.36%   |
| P 214.914†  | 17051.0   | 6137.8 µg/L  | 95.48   | 6137.8 ppb  | 95.48   | 1.56%   |
| Pb 220.353†   | 2678.4    | 272.63 µg/L  | 3.446   | 272.63 ppb  | 3.446   | 1.26%   |
| S 181.975 Axial†                                    | 1149.5    | 1248.0 µg/L  | 23.64   | 1248.0 ppb  | 23.64   | 1.89%   |
| Sb 206.836†   | 60.1      | -4.7645 µg/L | 1.99554 | -4.7645 ppb | 1.99554 | 41.88%  |
| Se 196.026†   | -124.7    | 4.92 µg/L    | 2.944   | 4.92 ppb    | 2.944   | 59.81%  |
| SiO2†   | 583317.8  | 64560 µg/L   | 542.2   | 64560 ppb   | 542.2   | 0.84%   |
| Si 251.611†   | 1773651.2 | 30092 µg/L   | 89.5    | 30092 ppb   | 89.5    | 0.30%   |
| Sn 189.927†   | -25.1     | -2.9920 µg/L | 0.89905 | -2.9920 ppb | 0.89905 | 30.05%  |
| Sr 421.552†   | 133206.0  | 380.87 µg/L  | 1.113   | 380.87 ppb  | 1.113   | 0.29%   |
| Ti 334.940†   | 1529023.5 | 2174.9 µg/L  | 4.82    | 2174.9 ppb  | 4.82    | 0.22%   |
| Tl 190.801†   | -90.7     | -25.221 µg/L | 3.9308  | -25.221 ppb | 3.9308  | 15.59%  |
| Concentration less than lower limit for Tl 190.801. |           |              |         |             |         |         |
| U 367.007†  | 6859.2    | -13.946 µg/L | 17.2038 | -13.946 ppb | 17.2038 | 123.36% |
| V 292.402†  | 53007.0   | 248.37 µg/L  | 2.755   | 248.37 ppb  | 2.755   | 1.11%   |
| Zn 213.857†   | 116462.5  | 639.70 µg/L  | 5.864   | 639.70 ppb  | 5.864   | 0.92%   |

Sequence No.: 18

Sample ID: 409254013|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 319

Date Collected: 11/11/2016 12:30:34

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254013|1611117|1

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 69756.9          | 69756.9                | 96.8 %                |                       | 12:31:01         |
| 1     | Al 396.153Radial†  | 177083.5         | 182772.2               | 66752 µg/L            | 66752 ppb             | 12:31:01         |
| 1     | Ca 317.933Radial†  | 1383739.4        | 1428642.4              | 159040 µg/L           | 159040 ppb            | 12:30:59         |
| 1     | Fe 238.204 Radial† | 1394646.1        | 1440767.0              | 136290 µg/L           | 136290 ppb            | 12:30:59         |
| 1     | K 766.490 Radial†  | 27163.3          | 26981.3                | 14216 µg/L            | 14216 ppb             | 12:31:01         |
| 1     | Mg 279.077 IEC†    | 87268.2          | 90094.9                | 48618 µg/L            | 48618 ppb             | 12:31:01         |
| 1     | Na 589.592 Radial† | 7922.0           | 8141.3                 | 1357.6 µg/L           | 1357.6 ppb            | 12:31:01         |
| 1     | Sr 421.552†        | 187402.0         | 193988.9               | 557.33 µg/L           | 557.33 ppb            | 12:31:01         |
| 1     | Sc 361.383         | 1291477.0        | 1291477.0              | 97.016 %              |                       | 12:31:13         |
| 1     | Y 371.029          | 769179.0         | 769179.0               | 106.17 %              |                       | 12:31:13         |
| 1     | Ag 328.068†        | -2649.5          | -840.2                 | 1.8675 µg/L           | 1.8675 ppb            | 12:31:13         |
| 1     | As 188.979†        | 95.8             | 128.7                  | 87.510 µg/L           | 87.510 ppb            | 12:31:34         |
| 1     | B 249.677†         | -1995.4          | -2941.6                | 57.670 µg/L           | 57.670 ppb            | 12:31:13         |
| 1     | Ba 233.527†        | 166895.7         | 172270.4               | 1536.7 µg/L           | 1536.7 ppb            | 12:31:13         |
| 1     | Be 313.107†        | 15873.3          | 20017.4                | -32.046 µg/L          | -32.046 ppb           | 12:31:13         |
| 1     | Cd 226.502†        | 2377.1           | 2630.2                 | 4.2945 µg/L           | 4.2945 ppb            | 12:31:34         |
| 1     | Co 228.616†        | 4043.8           | 4259.7                 | 63.411 µg/L           | 63.411 ppb            | 12:31:34         |
| 1     | Cr 267.716†        | 8360.3           | 8488.4                 | 101.34 µg/L           | 101.34 ppb            | 12:31:34         |
| 1     | Cu 324.752†        | 39675.9          | 35119.5                | 164.91 µg/L           | 164.91 ppb            | 12:31:13         |
| 1     | Mn 257.610†        | 2539378.6        | 2617340.7              | 4585.4 µg/L           | 4585.4 ppb            | 12:31:13         |
| 1     | Mo 202.031†        | -44.6            | -16.2                  | 2.9871 µg/L           | 2.9871 ppb            | 12:31:34         |
| 1     | Ni 231.604†        | 9168.3           | 9648.0                 | 153.39 µg/L           | 153.39 ppb            | 12:31:34         |
| 1     | P 214.914†         | 19771.6          | 20474.9                | 7372.9 µg/L           | 7372.9 ppb            | 12:31:34         |
| 1     | Pb 220.353†        | 1008.1           | 965.4                  | 99.714 µg/L           | 99.714 ppb            | 12:31:34         |
| 1     | S 181.975 Axial†   | 3429.3           | 3432.2                 | 3800.3 µg/L           | 3800.3 ppb            | 12:31:34         |
| 1     | Sb 206.836†        | 88.0             | 46.4                   | -5.2824 µg/L          | -5.2824 ppb           | 12:31:34         |
| 1     | Se 196.026†        | -80.6            | -91.1                  | 13.8 µg/L             | 13.8 ppb              | 12:31:34         |
| 1     | SiO2†              | 614349.8         | 630228.1               | 69752 µg/L            | 69752 ppb             | 12:31:13         |
| 1     | Si 251.611†        | 1851132.1        | 1907490.5              | 32359 µg/L            | 32359 ppb             | 12:31:13         |
| 1     | Sn 189.927†        | -30.8            | -4.2                   | -0.3307 µg/L          | -0.3307 ppb           | 12:31:34         |
| 1     | Ti 334.940†        | 903843.6         | 932536.1               | 1327.1 µg/L           | 1327.1 ppb            | 12:31:13         |
| 1     | Tl 190.801†        | -131.5           | -49.5                  | -12.885 µg/L          | -12.885 ppb           | 12:31:34         |
| 1     | U 367.007†         | 5626.9           | 6084.2                 | -6.3257 µg/L          | -6.3257 ppb           | 12:31:13         |
| 1     | V 292.402†         | 44050.1          | 45301.8                | 212.53 µg/L           | 212.53 ppb            | 12:31:13         |
| 1     | Zn 213.857†        | 106570.1         | 109801.8               | 605.74 µg/L           | 605.74 ppb            | 12:31:13         |
| 2     | Sc RADIAL          | 72677.5          | 72677.5                | 101 %                 |                       | 12:31:05         |
| 2     | Al 396.153Radial†  | 183463.2         | 181746.9               | 66377 µg/L            | 66377 ppb             | 12:31:05         |
| 2     | Ca 317.933Radial†  | 1423504.2        | 1410633.0              | 157030 µg/L           | 157030 ppb            | 12:31:03         |
| 2     | Fe 238.204 Radial† | 1435005.7        | 1422894.5              | 134600 µg/L           | 134600 ppb            | 12:31:03         |
| 2     | K 766.490 Radial†  | 28196.1          | 26877.7                | 14161 µg/L            | 14161 ppb             | 12:31:05         |
| 2     | Mg 279.077 IEC†    | 90611.6          | 89787.3                | 48451 µg/L            | 48451 ppb             | 12:31:05         |
| 2     | Na 589.592 Radial† | 8178.7           | 8066.9                 | 1345.2 µg/L           | 1345.2 ppb            | 12:31:05         |
| 2     | Sr 421.552†        | 194790.7         | 193535.4               | 556.08 µg/L           | 556.08 ppb            | 12:31:05         |
| 2     | Sc 361.383         | 1294965.9        | 1294965.9              | 97.278 %              |                       | 12:31:36         |
| 2     | Y 371.029          | 769448.0         | 769448.0               | 106.21 %              |                       | 12:31:36         |
| 2     | Ag 328.068†        | -2582.8          | -764.2                 | 2.1767 µg/L           | 2.1767 ppb            | 12:31:36         |
| 2     | As 188.979†        | 92.2             | 124.8                  | 85.154 µg/L           | 85.154 ppb            | 12:31:57         |
| 2     | B 249.677†         | -1994.0          | -2934.7                | 56.531 µg/L           | 56.531 ppb            | 12:31:36         |
| 2     | Ba 233.527†        | 167256.5         | 172177.7               | 1535.9 µg/L           | 1535.9 ppb            | 12:31:36         |
| 2     | Be 313.107†        | 15874.8          | 19974.9                | -32.036 µg/L          | -32.036 ppb           | 12:31:36         |
| 2     | Cd 226.502†        | 2362.9           | 2609.0                 | 4.3278 µg/L           | 4.3278 ppb            | 12:31:57         |
| 2     | Co 228.616†        | 4028.8           | 4233.1                 | 63.035 µg/L           | 63.035 ppb            | 12:31:57         |
| 2     | Cr 267.716†        | 8310.2           | 8413.8                 | 100.43 µg/L           | 100.43 ppb            | 12:31:57         |
| 2     | Cu 324.752†        | 39762.3          | 35098.1                | 164.70 µg/L           | 164.70 ppb            | 12:31:36         |
| 2     | Mn 257.610†        | 2544499.2        | 2615552.5              | 4582.3 µg/L           | 4582.3 ppb            | 12:31:36         |
| 2     | Mo 202.031†        | -51.4            | -23.1                  | 2.5871 µg/L           | 2.5871 ppb            | 12:31:57         |
| 2     | Ni 231.604†        | 9100.1           | 9552.5                 | 151.87 µg/L           | 151.87 ppb            | 12:31:57         |
| 2     | P 214.914†         | 19681.7          | 20327.6                | 7319.9 µg/L           | 7319.9 ppb            | 12:31:57         |
| 2     | Pb 220.353†        | 1013.9           | 968.6                  | 100.02 µg/L           | 100.02 ppb            | 12:31:57         |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 3389.4    | 3381.6    | 3744.2 µg/L  | 3744.2 ppb  | 12:31:57 |
| 2 | Sb 206.836†        | 78.2      | 36.0      | -7.0996 µg/L | -7.0996 ppb | 12:31:57 |
| 2 | Se 196.026†        | -93.4     | -104.0    | 6.29 µg/L    | 6.29 ppb    | 12:31:57 |
| 2 | SiO2†              | 615791.6  | 630004.1  | 69727 µg/L   | 69727 ppb   | 12:31:36 |
| 2 | Si 251.611†        | 1856304.8 | 1907667.1 | 32361 µg/L   | 32361 ppb   | 12:31:36 |
| 2 | Sn 189.927†        | -23.3     | 3.5       | 0.6622 µg/L  | 0.6622 ppb  | 12:31:57 |
| 2 | Ti 334.940†        | 907322.4  | 933602.2  | 1328.6 µg/L  | 1328.6 ppb  | 12:31:36 |
| 2 | Tl 190.801†        | -140.5    | -58.4     | -15.642 µg/L | -15.642 ppb | 12:31:57 |
| 2 | U 367.007†         | 5653.3    | 6095.7    | 4.4649 µg/L  | 4.4649 ppb  | 12:31:36 |
| 2 | V 292.402†         | 44196.1   | 45329.6   | 212.54 µg/L  | 212.54 ppb  | 12:31:36 |
| 2 | Zn 213.857†        | 106902.5  | 109847.6  | 606.19 µg/L  | 606.19 ppb  | 12:31:36 |
| 3 | Sc RADIAL          | 70965.1   | 70965.1   | 98.5 %       |             | 12:31:09 |
| 3 | Al 396.153Radial†  | 180204.7  | 182827.2  | 66773 µg/L   | 66773 ppb   | 12:31:09 |
| 3 | Ca 317.933Radial†  | 1440444.0 | 1461876.3 | 162740 µg/L  | 162740 ppb  | 12:31:07 |
| 3 | Fe 238.204 Radial† | 1453898.7 | 1476395.7 | 139660 µg/L  | 139660 ppb  | 12:31:07 |
| 3 | K 766.490 Radial†  | 27569.5   | 26916.0   | 14182 µg/L   | 14182 ppb   | 12:31:09 |
| 3 | Mg 279.077 IEC†    | 88386.1   | 89695.4   | 48403 µg/L   | 48403 ppb   | 12:31:09 |
| 3 | Na 589.592 Radial† | 7938.0    | 8018.2    | 1337.1 µg/L  | 1337.1 ppb  | 12:31:09 |
| 3 | Sr 421.552†        | 190585.2  | 193925.3  | 557.02 µg/L  | 557.02 ppb  | 12:31:09 |
| 3 | Sc 361.383         | 1312808.5 | 1312808.5 | 98.618 %     |             | 12:31:59 |
| 3 | Y 371.029          | 780548.9  | 780548.9  | 107.74 %     |             | 12:31:59 |
| 3 | Ag 328.068†        | -2622.1   | -768.0    | 2.4102 µg/L  | 2.4102 ppb  | 12:31:59 |
| 3 | As 188.979†        | 88.0      | 119.2     | 82.731 µg/L  | 82.731 ppb  | 12:32:20 |
| 3 | B 249.677†         | -2007.5   | -2920.5   | 60.447 µg/L  | 60.447 ppb  | 12:31:59 |
| 3 | Ba 233.527†        | 170163.2  | 172788.4  | 1541.4 µg/L  | 1541.4 ppb  | 12:31:59 |
| 3 | Be 313.107†        | 16561.8   | 20449.8   | -32.044 µg/L | -32.044 ppb | 12:31:59 |
| 3 | Cd 226.502†        | 2366.2    | 2579.4    | 3.5242 µg/L  | 3.5242 ppb  | 12:32:20 |
| 3 | Co 228.616†        | 4029.8    | 4177.8    | 62.158 µg/L  | 62.158 ppb  | 12:32:20 |
| 3 | Cr 267.716†        | 8265.6    | 8252.4    | 98.635 µg/L  | 98.635 ppb  | 12:32:20 |
| 3 | Cu 324.752†        | 40276.4   | 35063.9   | 164.87 µg/L  | 164.87 ppb  | 12:31:59 |
| 3 | Mn 257.610†        | 2585589.5 | 2621668.1 | 4593.0 µg/L  | 4593.0 ppb  | 12:31:59 |
| 3 | Mo 202.031†        | -44.5     | -15.4     | 3.1091 µg/L  | 3.1091 ppb  | 12:32:20 |
| 3 | Ni 231.604†        | 9078.7    | 9403.6    | 149.50 µg/L  | 149.50 ppb  | 12:32:20 |
| 3 | P 214.914†         | 19668.3   | 20039.0   | 7215.6 µg/L  | 7215.6 ppb  | 12:32:20 |
| 3 | Pb 220.353†        | 1037.0    | 977.9     | 100.99 µg/L  | 100.99 ppb  | 12:32:20 |
| 3 | S 181.975 Axial†   | 3405.3    | 3350.3    | 3708.2 µg/L  | 3708.2 ppb  | 12:32:20 |
| 3 | Sb 206.836†        | 82.7      | 39.6      | -6.9108 µg/L | -6.9108 ppb | 12:32:20 |
| 3 | Se 196.026†        | -94.8     | -104.1    | 8.54 µg/L    | 8.54 ppb    | 12:32:20 |
| 3 | SiO2†              | 625857.0  | 631607.1  | 69905 µg/L   | 69905 ppb   | 12:31:59 |
| 3 | Si 251.611†        | 1885648.5 | 1911486.7 | 32427 µg/L   | 32427 ppb   | 12:31:59 |
| 3 | Sn 189.927†        | -35.3     | -8.3      | -0.8527 µg/L | -0.8527 ppb | 12:32:20 |
| 3 | Ti 334.940†        | 920922.1  | 934715.8  | 1330.2 µg/L  | 1330.2 ppb  | 12:31:59 |
| 3 | Tl 190.801†        | -142.0    | -57.9     | -15.413 µg/L | -15.413 ppb | 12:32:20 |
| 3 | U 367.007†         | 5659.5    | 6023.0    | -32.500 µg/L | -32.500 ppb | 12:31:59 |
| 3 | V 292.402†         | 44846.7   | 45371.8   | 213.06 µg/L  | 213.06 ppb  | 12:31:59 |
| 3 | Zn 213.857†        | 108421.7  | 109894.4  | 605.92 µg/L  | 605.92 ppb  | 12:31:59 |

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Mean Data: 409254013|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------|-----------------|--------------------|----------|--------|
| Sc 361.383  | 1299750.5                | 97.637 %     | 0.8596          |                    |          | 0.88%  |
| Sc RADIAL   | 71133.1                  | 98.7 %       | 2.04            |                    |          | 2.06%  |
| Y 371.029   | 773058.7                 | 106.71 %     | 0.896           |                    |          | 0.84%  |
| Ag 328.068†   | -790.8                   | 2.1515 µg/L  | 0.27223         | 2.1515 ppb         | 0.27223  | 12.65% |
| Al 396.153Radial†                                   | 182448.8                 | 66634 µg/L   | 222.5           | 66634 ppb          | 222.5    | 0.33%  |
| As 188.979†   | 124.2                    | 85.132 µg/L  | 2.3895          | 85.132 ppb         | 2.3895   | 2.81%  |
| B 249.677†  | -2932.3                  | 58.216 µg/L  | 2.0143          | 58.216 ppb         | 2.0143   | 3.46%  |
| Ba 233.527†   | 172412.2                 | 1538.0 µg/L  | 2.95            | 1538.0 ppb         | 2.95     | 0.19%  |
| Be 313.107†   | 20147.4                  | -32.042 µg/L | 0.0049          | -32.042 ppb        | 0.0049   | 0.02%  |
| Concentration less than lower limit for Be 313.107. |                          |              |                 |                    |          |        |
| Ca 317.933Radial†                                   | 1433717.3                | 159600 µg/L  | 2893.9          | 159600 ppb         | 2893.9   | 1.81%  |
| Cd 226.502†   | 2606.2                   | 4.0488 µg/L  | 0.45469         | 4.0488 ppb         | 0.45469  | 11.23% |
| Co 228.616†   | 4223.5                   | 62.868 µg/L  | 0.6429          | 62.868 ppb         | 0.6429   | 1.02%  |
| Cr 267.716†   | 8384.9                   | 100.14 µg/L  | 1.377           | 100.14 ppb         | 1.377    | 1.38%  |
| Cu 324.752†   | 35093.8                  | 164.83 µg/L  | 0.108           | 164.83 ppb         | 0.108    | 0.07%  |
| Fe 238.204 Radial†                                  | 1446685.7                | 136850 µg/L  | 2576.5          | 136850 ppb         | 2576.5   | 1.88%  |
| K 766.490 Radial†                                   | 26925.0                  | 14186 µg/L   | 27.7            | 14186 ppb          | 27.7     | 0.19%  |
| Mg 279.077 IEC†                                     | 89859.2                  | 48491 µg/L   | 112.5           | 48491 ppb          | 112.5    | 0.23%  |
| Mn 257.610†   | 2618187.1                | 4586.9 µg/L  | 5.51            | 4586.9 ppb         | 5.51     | 0.12%  |
| Mo 202.031†   | -18.2                    | 2.8945 µg/L  | 0.27306         | 2.8945 ppb         | 0.27306  | 9.43%  |

|                    |           |              |         |             |         |         |
|--------------------|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial† | 8075.5    | 1346.6 µg/L  | 10.33   | 1346.6 ppb  | 10.33   | 0.77%   |
| Ni 231.604†        | 9534.7    | 151.58 µg/L  | 1.958   | 151.58 ppb  | 1.958   | 1.29%   |
| P 214.914†         | 20280.5   | 7302.8 µg/L  | 80.03   | 7302.8 ppb  | 80.03   | 1.10%   |
| Pb 220.353†        | 970.6     | 100.24 µg/L  | 0.666   | 100.24 ppb  | 0.666   | 0.66%   |
| S 181.975 Axial†   | 3388.0    | 3750.9 µg/L  | 46.43   | 3750.9 ppb  | 46.43   | 1.24%   |
| Sb 206.836†        | 40.7      | -6.4310 µg/L | 0.99914 | -6.4310 ppb | 0.99914 | 15.54%  |
| Se 196.026†        | -99.7     | 9.54 µg/L    | 3.857   | 9.54 ppb    | 3.857   | 40.42%  |
| SiO2†              | 630613.1  | 69794 µg/L   | 96.1    | 69794 ppb   | 96.1    | 0.14%   |
| Si 251.611†        | 1908881.4 | 32382 µg/L   | 38.6    | 32382 ppb   | 38.6    | 0.12%   |
| Sn 189.927†        | -3.0      | -0.1737 µg/L | 0.76955 | -0.1737 ppb | 0.76955 | 442.99% |
| Sr 421.552†        | 193816.5  | 556.81 µg/L  | 0.649   | 556.81 ppb  | 0.649   | 0.12%   |
| Ti 334.940†        | 933618.0  | 1328.6 µg/L  | 1.58    | 1328.6 ppb  | 1.58    | 0.12%   |
| Tl 190.801†        | -55.3     | -14.647 µg/L | 1.5300  | -14.647 ppb | 1.5300  | 10.45%  |
| U 367.007†         | 6067.6    | -11.454 µg/L | 19.0084 | -11.454 ppb | 19.0084 | 165.96% |
| V 292.402†         | 45334.4   | 212.71 µg/L  | 0.304   | 212.71 ppb  | 0.304   | 0.14%   |
| Zn 213.857†        | 109847.9  | 605.95 µg/L  | 0.227   | 605.95 ppb  | 0.227   | 0.04%   |

Sequence No.: 19

Sample ID: 409254014|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 320

Date Collected: 11/11/2016 12:32:28

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254014|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 72080.9       | 72080.9             | 100 %              |                    | 12:32:55      |
| 1     | Al 396.153Radial†  | 181575.2      | 181365.1            | 66241 µg/L         | 66241 ppb          | 12:32:55      |
| 1     | Ca 317.933Radial†  | 1560463.2     | 1559188.1           | 173570 µg/L        | 173570 ppb         | 12:32:53      |
| 1     | Fe 238.204 Radial† | 1304931.6     | 1304670.3           | 123420 µg/L        | 123420 ppb         | 12:32:53      |
| 1     | K 766.490 Radial†  | 27930.3       | 26843.4             | 14137 µg/L         | 14137 ppb          | 12:32:55      |
| 1     | Mg 279.077 IEC†    | 105088.9      | 104999.4            | 56649 µg/L         | 56649 ppb          | 12:32:55      |
| 1     | Na 589.592 Radial† | 7952.4        | 7907.9              | 1318.7 µg/L        | 1318.7 ppb         | 12:32:55      |
| 1     | Sr 421.552†        | 204355.1      | 204692.1            | 587.88 µg/L        | 587.88 ppb         | 12:32:55      |
| 1     | Sc 361.383         | 1312166.8     | 1312166.8           | 98.570 %           |                    | 12:33:08      |
| 1     | Y 371.029          | 777047.0      | 777047.0            | 107.26 %           |                    | 12:33:08      |
| 1     | Ag 328.068†        | -2703.9       | -852.3              | 0.9564 µg/L        | 0.9564 ppb         | 12:33:08      |
| 1     | As 188.979†        | 46.5          | 77.1                | 57.899 µg/L        | 57.899 ppb         | 12:33:28      |
| 1     | B 249.677†         | -933.4        | -1831.8             | 64.188 µg/L        | 64.188 ppb         | 12:33:08      |
| 1     | Ba 233.527†        | 174148.3      | 176915.7            | 1578.1 µg/L        | 1578.1 ppb         | 12:33:08      |
| 1     | Be 313.107†        | 15927.1       | 19814.1             | -33.137 µg/L       | -33.137 ppb        | 12:33:08      |
| 1     | Cd 226.502†        | 2298.1        | 2511.5              | 4.8707 µg/L        | 4.8707 ppb         | 12:33:28      |
| 1     | Co 228.616†        | 3822.3        | 3969.3              | 59.302 µg/L        | 59.302 ppb         | 12:33:28      |
| 1     | Cr 267.716†        | 8475.1        | 8469.1              | 100.88 µg/L        | 100.88 ppb         | 12:33:28      |
| 1     | Cu 324.752†        | 39022.3       | 33811.6             | 158.38 µg/L        | 158.38 ppb         | 12:33:08      |
| 1     | Mn 257.610†        | 2642060.2     | 2680240.3           | 4695.4 µg/L        | 4695.4 ppb         | 12:33:08      |
| 1     | Mo 202.031†        | -58.4         | -29.5               | 2.0678 µg/L        | 2.0678 ppb         | 12:33:28      |
| 1     | Ni 231.604†        | 8873.4        | 9199.9              | 146.26 µg/L        | 146.26 ppb         | 12:33:28      |
| 1     | P 214.914†         | 18971.2       | 19341.6             | 6965.0 µg/L        | 6965.0 ppb         | 12:33:28      |
| 1     | Pb 220.353†        | 1016.9        | 958.0               | 98.917 µg/L        | 98.917 ppb         | 12:33:28      |
| 1     | S 181.975 Axial†   | 4617.5        | 4581.8              | 5086.5 µg/L        | 5086.5 ppb         | 12:33:28      |
| 1     | Sb 206.836†        | 64.3          | 21.0                | -8.8528 µg/L       | -8.8528 ppb        | 12:33:28      |
| 1     | Se 196.026†        | -73.4         | -82.5               | 12.4 µg/L          | 12.4 ppb           | 12:33:28      |
| 1     | SiO2†              | 644720.7      | 651054.8            | 72057 µg/L         | 72057 ppb          | 12:33:08      |
| 1     | Si 251.611†        | 1943289.0     | 1970898.5           | 33432 µg/L         | 33432 ppb          | 12:33:08      |
| 1     | Sn 189.927†        | -35.3         | -8.4                | -0.8602 µg/L       | -0.8602 ppb        | 12:33:28      |
| 1     | Ti 334.940†        | 899772.8      | 913716.3            | 1300.6 µg/L        | 1300.6 ppb         | 12:33:08      |
| 1     | Tl 190.801†        | -141.2        | -57.2               | -15.459 µg/L       | -15.459 ppb        | 12:33:28      |
| 1     | U 367.007†         | 5340.8        | 5702.5              | 15.419 µg/L        | 15.419 ppb         | 12:33:08      |
| 1     | V 292.402†         | 45208.3       | 45760.8             | 213.71 µg/L        | 213.71 ppb         | 12:33:08      |
| 1     | Zn 213.857†        | 119343.7      | 121028.7            | 670.43 µg/L        | 670.43 ppb         | 12:33:08      |
| 2     | Sc RADIAL          | 70790.5       | 70790.5             | 98.3 %             |                    | 12:32:59      |
| 2     | Al 396.153Radial†  | 178876.5      | 181926.5            | 66447 µg/L         | 66447 ppb          | 12:32:59      |
| 2     | Ca 317.933Radial†  | 1599121.9     | 1626954.7           | 181110 µg/L        | 181110 ppb         | 12:32:57      |
| 2     | Fe 238.204 Radial† | 1337904.3     | 1361995.8           | 128840 µg/L        | 128840 ppb         | 12:32:57      |
| 2     | K 766.490 Radial†  | 27302.4       | 26713.3             | 14070 µg/L         | 14070 ppb          | 12:32:59      |
| 2     | Mg 279.077 IEC†    | 102749.7      | 104533.3            | 56400 µg/L         | 56400 ppb          | 12:32:59      |
| 2     | Na 589.592 Radial† | 7855.6        | 7954.2              | 1326.4 µg/L        | 1326.4 ppb         | 12:32:59      |
| 2     | Sr 421.552†        | 201394.6      | 205402.1            | 589.68 µg/L        | 589.68 ppb         | 12:32:59      |
| 2     | Sc 361.383         | 1274640.2     | 1274640.2           | 95.751 %           |                    | 12:33:30      |
| 2     | Y 371.029          | 754418.3      | 754418.3            | 104.14 %           |                    | 12:33:30      |
| 2     | Ag 328.068†        | -2478.2       | -697.3              | 2.0164 µg/L        | 2.0164 ppb         | 12:33:30      |
| 2     | As 188.979†        | 54.4          | 86.8                | 63.852 µg/L        | 63.852 ppb         | 12:33:51      |
| 2     | B 249.677†         | -1054.0       | -1985.6             | 65.953 µg/L        | 65.953 ppb         | 12:33:30      |
| 2     | Ba 233.527†        | 168350.5      | 176062.1            | 1570.5 µg/L        | 1570.5 ppb         | 12:33:30      |
| 2     | Be 313.107†        | 15227.6       | 19559.2             | -33.023 µg/L       | -33.023 ppb        | 12:33:30      |
| 2     | Cd 226.502†        | 2294.0        | 2575.8              | 4.7360 µg/L        | 4.7360 ppb         | 12:33:51      |
| 2     | Co 228.616†        | 3791.4        | 4051.2              | 60.444 µg/L        | 60.444 ppb         | 12:33:51      |
| 2     | Cr 267.716†        | 8452.9        | 8699.0              | 103.69 µg/L        | 103.69 ppb         | 12:33:51      |
| 2     | Cu 324.752†        | 37984.4       | 33893.2             | 159.08 µg/L        | 159.08 ppb         | 12:33:30      |
| 2     | Mn 257.610†        | 2554980.3     | 2668209.3           | 4674.3 µg/L        | 4674.3 ppb         | 12:33:30      |
| 2     | Mo 202.031†        | -53.1         | -25.8               | 2.3919 µg/L        | 2.3919 ppb         | 12:33:51      |
| 2     | Ni 231.604†        | 8864.9        | 9456.0              | 150.33 µg/L        | 150.33 ppb         | 12:33:51      |
| 2     | P 214.914†         | 18965.7       | 19902.5             | 7166.9 µg/L        | 7166.9 ppb         | 12:33:51      |
| 2     | Pb 220.353†        | 1004.5        | 975.3               | 100.70 µg/L        | 100.70 ppb         | 12:33:51      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 4595.1    | 4696.4    | 5213.2 µg/L  | 5213.2 ppb  | 12:33:51 |
| 2 | Sb 206.836†        | 64.6      | 23.2      | -9.0267 µg/L | -9.0267 ppb | 12:33:51 |
| 2 | Se 196.026†        | -73.4     | -84.7     | 13.7 µg/L    | 13.7 ppb    | 12:33:51 |
| 2 | SiO2†              | 625011.0  | 649727.0  | 71910 µg/L   | 71910 ppb   | 12:33:30 |
| 2 | Si 251.611†        | 1880931.9 | 1963816.5 | 33313 µg/L   | 33313 ppb   | 12:33:30 |
| 2 | Sn 189.927†        | -15.5     | 11.3      | 1.6598 µg/L  | 1.6598 ppb  | 12:33:51 |
| 2 | Ti 334.940†        | 872903.6  | 912529.3  | 1299.0 µg/L  | 1299.0 ppb  | 12:33:30 |
| 2 | Tl 190.801†        | -138.7    | -58.8     | -15.866 µg/L | -15.866 ppb | 12:33:51 |
| 2 | U 367.007†         | 5100.3    | 5610.8    | -25.998 µg/L | -25.998 ppb | 12:33:30 |
| 2 | V 292.402†         | 43825.6   | 45667.1   | 213.65 µg/L  | 213.65 ppb  | 12:33:30 |
| 2 | Zn 213.857†        | 114860.4  | 119911.0  | 663.52 µg/L  | 663.52 ppb  | 12:33:30 |
| 3 | Sc RADIAL          | 70111.0   | 70111.0   | 97.3 %       |             | 12:33:03 |
| 3 | Al 396.153Radial†  | 177617.7  | 182397.5  | 66619 µg/L   | 66619 ppb   | 12:33:03 |
| 3 | Ca 317.933Radial†  | 1552562.9 | 1594888.3 | 177540 µg/L  | 177540 ppb  | 12:33:01 |
| 3 | Fe 238.204 Radial† | 1299001.2 | 1335219.3 | 126310 µg/L  | 126310 ppb  | 12:33:01 |
| 3 | K 766.490 Radial†  | 27364.9   | 27046.7   | 14245 µg/L   | 14245 ppb   | 12:33:03 |
| 3 | Mg 279.077 IEC†    | 102248.1  | 105031.4  | 56667 µg/L   | 56667 ppb   | 12:33:03 |
| 3 | Na 589.592 Radial† | 7667.0    | 7838.0    | 1307.0 µg/L  | 1307.0 ppb  | 12:33:03 |
| 3 | Sr 421.552†        | 199551.0  | 205494.2  | 590.07 µg/L  | 590.07 ppb  | 12:33:03 |
| 3 | Sc 361.383         | 1305780.6 | 1305780.6 | 98.090 %     |             | 12:33:53 |
| 3 | Y 371.029          | 771961.2  | 771961.2  | 106.56 %     |             | 12:33:53 |
| 3 | Ag 328.068†        | -2278.0   | -431.5    | 3.2700 µg/L  | 3.2700 ppb  | 12:33:53 |
| 3 | As 188.979†        | 43.1      | 73.9      | 56.484 µg/L  | 56.484 ppb  | 12:34:14 |
| 3 | B 249.677†         | -881.3    | -1783.3   | 67.005 µg/L  | 67.005 ppb  | 12:33:53 |
| 3 | Ba 233.527†        | 172015.2  | 175605.1  | 1566.4 µg/L  | 1566.4 ppb  | 12:33:53 |
| 3 | Be 313.107†        | 15853.0   | 19817.5   | -32.852 µg/L | -32.852 ppb | 12:33:53 |
| 3 | Cd 226.502†        | 2283.2    | 2507.7    | 4.5107 µg/L  | 4.5107 ppb  | 12:34:14 |
| 3 | Co 228.616†        | 3765.6    | 3930.5    | 58.677 µg/L  | 58.677 ppb  | 12:34:14 |
| 3 | Cr 267.716†        | 8391.7    | 8426.1    | 100.44 µg/L  | 100.44 ppb  | 12:34:14 |
| 3 | Cu 324.752†        | 38824.7   | 33803.7   | 158.52 µg/L  | 158.52 ppb  | 12:33:53 |
| 3 | Mn 257.610†        | 2614804.7 | 2665563.1 | 4669.7 µg/L  | 4669.7 ppb  | 12:33:53 |
| 3 | Mo 202.031†        | -48.8     | -20.0     | 2.6304 µg/L  | 2.6304 ppb  | 12:34:14 |
| 3 | Ni 231.604†        | 8830.1    | 9199.7    | 146.26 µg/L  | 146.26 ppb  | 12:34:14 |
| 3 | P 214.914†         | 18879.2   | 19341.9   | 6965.0 µg/L  | 6965.0 ppb  | 12:34:14 |
| 3 | Pb 220.353†        | 992.4     | 938.0     | 96.930 µg/L  | 96.930 ppb  | 12:34:14 |
| 3 | S 181.975 Axial†   | 4571.1    | 4557.4    | 5058.7 µg/L  | 5058.7 ppb  | 12:34:14 |
| 3 | Sb 206.836†        | 62.5      | 19.4      | -9.4436 µg/L | -9.4436 ppb | 12:34:14 |
| 3 | Se 196.026†        | -73.6     | -83.0     | 13.4 µg/L    | 13.4 ppb    | 12:34:14 |
| 3 | SiO2†              | 639314.0  | 648741.8  | 71801 µg/L   | 71801 ppb   | 12:33:53 |
| 3 | Si 251.611†        | 1925143.4 | 1962041.6 | 33282 µg/L   | 33282 ppb   | 12:33:53 |
| 3 | Sn 189.927†        | -29.4     | -2.5      | -0.1114 µg/L | -0.1114 ppb | 12:34:14 |
| 3 | Ti 334.940†        | 892534.1  | 910801.0  | 1296.5 µg/L  | 1296.5 ppb  | 12:33:53 |
| 3 | Tl 190.801†        | -128.7    | -45.2     | -11.722 µg/L | -11.722 ppb | 12:34:14 |
| 3 | U 367.007†         | 5227.2    | 5613.2    | -11.626 µg/L | -11.626 ppb | 12:33:53 |
| 3 | V 292.402†         | 44803.6   | 45572.6   | 213.05 µg/L  | 213.05 ppb  | 12:33:53 |
| 3 | Zn 213.857†        | 118022.4  | 120273.8  | 665.84 µg/L  | 665.84 ppb  | 12:33:53 |

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Mean Data: 409254014|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------|-----------------|--------------------|----------|--------|
| Sc 361.383  | 1297529.2                | 97.470 %     | 1.5083          |                    |          | 1.55%  |
| Sc RADIAL   | 70994.2                  | 98.6 %       | 1.39            |                    |          | 1.41%  |
| Y 371.029   | 767808.8                 | 105.99 %     | 1.639           |                    |          | 1.55%  |
| Ag 328.068†   | -660.4                   | 2.0809 µg/L  | 1.15814         | 2.0809 ppb         | 1.15814  | 55.65% |
| Al 396.153Radial†                                   | 181896.4                 | 66436 µg/L   | 189.1           | 66436 ppb          | 189.1    | 0.28%  |
| As 188.979†   | 79.2                     | 59.412 µg/L  | 3.9101          | 59.412 ppb         | 3.9101   | 6.58%  |
| B 249.677†  | -1866.9                  | 65.715 µg/L  | 1.4233          | 65.715 ppb         | 1.4233   | 2.17%  |
| Ba 233.527†   | 176194.3                 | 1571.7 µg/L  | 5.92            | 1571.7 ppb         | 5.92     | 0.38%  |
| Be 313.107†   | 19730.3                  | -33.004 µg/L | 0.1431          | -33.004 ppb        | 0.1431   | 0.43%  |
| Concentration less than lower limit for Be 313.107. |                          |              |                 |                    |          |        |
| Ca 317.933Radial†                                   | 1593677.0                | 177410 µg/L  | 3773.7          | 177410 ppb         | 3773.7   | 2.13%  |
| Cd 226.502†   | 2531.6                   | 4.7058 µg/L  | 0.18188         | 4.7058 ppb         | 0.18188  | 3.87%  |
| Co 228.616†   | 3983.7                   | 59.474 µg/L  | 0.8962          | 59.474 ppb         | 0.8962   | 1.51%  |
| Cr 267.716†   | 8531.4                   | 101.67 µg/L  | 1.767           | 101.67 ppb         | 1.767    | 1.74%  |
| Cu 324.752†   | 33836.1                  | 158.66 µg/L  | 0.367           | 158.66 ppb         | 0.367    | 0.23%  |
| Fe 238.204 Radial†                                  | 1333961.8                | 126190 µg/L  | 2713.3          | 126190 ppb         | 2713.3   | 2.15%  |
| K 766.490 Radial†                                   | 26867.8                  | 14151 µg/L   | 88.1            | 14151 ppb          | 88.1     | 0.62%  |
| Mg 279.077 IEC†                                     | 104854.7                 | 56572 µg/L   | 149.6           | 56572 ppb          | 149.6    | 0.26%  |
| Mn 257.610†   | 2671337.6                | 4679.8 µg/L  | 13.71           | 4679.8 ppb         | 13.71    | 0.29%  |
| Mo 202.031†   | -25.1                    | 2.3634 µg/L  | 0.28238         | 2.3634 ppb         | 0.28238  | 11.95% |

|                    |           |              |          |             |          |         |
|--------------------|-----------|--------------|----------|-------------|----------|---------|
| Na 589.592 Radial† | 7900.0    | 1317.4 µg/L  | 9.76     | 1317.4 ppb  | 9.76     | 0.74%   |
| Ni 231.604†        | 9285.2    | 147.62 µg/L  | 2.352    | 147.62 ppb  | 2.352    | 1.59%   |
| P 214.914†         | 19528.6   | 7032.3 µg/L  | 116.57   | 7032.3 ppb  | 116.57   | 1.66%   |
| Pb 220.353†        | 957.1     | 98.848 µg/L  | 1.8850   | 98.848 ppb  | 1.8850   | 1.91%   |
| S 181.975 Axial†   | 4611.9    | 5119.4 µg/L  | 82.36    | 5119.4 ppb  | 82.36    | 1.61%   |
| Sb 206.836†        | 21.2      | -9.1077 µg/L | 0.30357  | -9.1077 ppb | 0.30357  | 3.33%   |
| Se 196.026†        | -83.4     | 13.2 µg/L    | 0.70     | 13.2 ppb    | 0.70     | 5.31%   |
| SiO2†              | 649841.2  | 71923 µg/L   | 128.5    | 71923 ppb   | 128.5    | 0.18%   |
| Si 251.611†        | 1965585.5 | 33342 µg/L   | 79.2     | 33342 ppb   | 79.2     | 0.24%   |
| Sn 189.927†        | 0.2       | 0.2294 µg/L  | 1.29409  | 0.2294 ppb  | 1.29409  | 564.18% |
| Sr 421.552†        | 205196.1  | 589.21 µg/L  | 1.168    | 589.21 ppb  | 1.168    | 0.20%   |
| Ti 334.940†        | 912348.8  | 1298.7 µg/L  | 2.06     | 1298.7 ppb  | 2.06     | 0.16%   |
| Tl 190.801†        | -53.7     | -14.349 µg/L | 2.2840   | -14.349 ppb | 2.2840   | 15.92%  |
| U 367.007†         | 5642.1    | -7.4017 µg/L | 21.02908 | -7.4017 ppb | 21.02908 | 284.11% |
| V 292.402†         | 45666.8   | 213.47 µg/L  | 0.363    | 213.47 ppb  | 0.363    | 0.17%   |
| Zn 213.857†        | 120404.5  | 666.60 µg/L  | 3.518    | 666.60 ppb  | 3.518    | 0.53%   |



Sequence No.: 20

Sample ID: 409254015|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 321

Date Collected: 11/11/2016 12:34:22

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254015|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71337.9       | 71337.9             | 99.0 %             |                    | 12:34:49      |
| 1     | Al 396.153Radial†  | 191363.7      | 193139.7            | 70549 µg/L         | 70549 ppb          | 12:34:49      |
| 1     | Ca 317.933Radial†  | 2038429.0     | 2058087.3           | 229110 µg/L        | 229110 ppb         | 12:34:47      |
| 1     | Fe 238.204 Radial† | 1444014.1     | 1458701.1           | 137990 µg/L        | 137990 ppb         | 12:34:47      |
| 1     | K 766.490 Radial†  | 27652.2       | 26853.3             | 14144 µg/L         | 14144 ppb          | 12:34:49      |
| 1     | Mg 279.077 IEC†    | 130082.1      | 131331.7            | 70851 µg/L         | 70851 ppb          | 12:34:49      |
| 1     | Na 589.592 Radial† | 10761.7       | 10827.5             | 1805.5 µg/L        | 1805.5 ppb         | 12:34:49      |
| 1     | Sr 421.552†        | 244015.0      | 246868.4            | 708.33 µg/L        | 708.33 ppb         | 12:34:49      |
| 1     | Sc 361.383         | 1303481.3     | 1303481.3           | 97.917 %           |                    | 12:35:02      |
| 1     | Y 371.029          | 777562.1      | 777562.1            | 107.33 %           |                    | 12:35:02      |
| 1     | Ag 328.068†        | -2675.2       | -841.2              | 1.3788 µg/L        | 1.3788 ppb         | 12:35:02      |
| 1     | As 188.979†        | 75.8          | 107.3               | 76.198 µg/L        | 76.198 ppb         | 12:35:22      |
| 1     | B 249.677†         | -1503.2       | -2420.0             | 66.416 µg/L        | 66.416 ppb         | 12:35:02      |
| 1     | Ba 233.527†        | 184076.1      | 188231.8            | 1679.1 µg/L        | 1679.1 ppb         | 12:35:02      |
| 1     | Be 313.107†        | 16752.7       | 20764.9             | -35.347 µg/L       | -35.347 ppb        | 12:35:02      |
| 1     | Cd 226.502†        | 2475.3        | 2707.9              | 4.6884 µg/L        | 4.6884 ppb         | 12:35:22      |
| 1     | Co 228.616†        | 4070.9        | 4249.0              | 63.397 µg/L        | 63.397 ppb         | 12:35:22      |
| 1     | Cr 267.716†        | 9198.8        | 9265.4              | 110.40 µg/L        | 110.40 ppb         | 12:35:22      |
| 1     | Cu 324.752†        | 40514.2       | 35599.0             | 167.42 µg/L        | 167.42 ppb         | 12:35:02      |
| 1     | Mn 257.610†        | 2712567.6     | 2770107.5           | 4852.4 µg/L        | 4852.4 ppb         | 12:35:02      |
| 1     | Mo 202.031†        | -55.0         | -26.4               | 2.7318 µg/L        | 2.7318 ppb         | 12:35:22      |
| 1     | Ni 231.604†        | 9520.1        | 9920.3              | 157.71 µg/L        | 157.71 ppb         | 12:35:22      |
| 1     | P 214.914†         | 19931.3       | 20450.3             | 7363.9 µg/L        | 7363.9 ppb         | 12:35:22      |
| 1     | Pb 220.353†        | 1040.0        | 988.4               | 102.04 µg/L        | 102.04 ppb         | 12:35:22      |
| 1     | S 181.975 Axial†   | 3021.0        | 2982.6              | 3298.0 µg/L        | 3298.0 ppb         | 12:35:22      |
| 1     | Sb 206.836†        | 85.7          | 43.2                | -6.1257 µg/L       | -6.1257 ppb        | 12:35:22      |
| 1     | Se 196.026†        | -89.9         | -99.9               | 9.90 µg/L          | 9.90 ppb           | 12:35:22      |
| 1     | SiO2†              | 675630.6      | 686980.4            | 76033 µg/L         | 76033 ppb          | 12:35:02      |
| 1     | Si 251.611†        | 2033837.9     | 2076509.8           | 35225 µg/L         | 35225 ppb          | 12:35:02      |
| 1     | Sn 189.927†        | -24.4         | 2.6                 | 0.5551 µg/L        | 0.5551 ppb         | 12:35:22      |
| 1     | Ti 334.940†        | 980800.1      | 1002549.3           | 1427.5 µg/L        | 1427.5 ppb         | 12:35:02      |
| 1     | Tl 190.801†        | -156.6        | -73.9               | -20.356 µg/L       | -20.356 ppb        | 12:35:22      |
| 1     | U 367.007†         | 5574.0        | 5976.7              | -34.926 µg/L       | -34.926 ppb        | 12:35:02      |
| 1     | V 292.402†         | 47891.2       | 48806.5             | 228.36 µg/L        | 228.36 ppb         | 12:35:02      |
| 1     | Zn 213.857†        | 128533.9      | 131221.1            | 725.98 µg/L        | 725.98 ppb         | 12:35:02      |
| 2     | Sc RADIAL          | 69632.0       | 69632.0             | 96.7 %             |                    | 12:34:53      |
| 2     | Al 396.153Radial†  | 187835.5      | 194223.8            | 70945 µg/L         | 70945 ppb          | 12:34:53      |
| 2     | Ca 317.933Radial†  | 1972164.5     | 2039962.4           | 227090 µg/L        | 227090 ppb         | 12:34:51      |
| 2     | Fe 238.204 Radial† | 1397603.9     | 1446411.1           | 136820 µg/L        | 136820 ppb         | 12:34:51      |
| 2     | K 766.490 Radial†  | 27213.5       | 27083.6             | 14264 µg/L         | 14264 ppb          | 12:34:53      |
| 2     | Mg 279.077 IEC†    | 126765.6      | 131118.7            | 70735 µg/L         | 70735 ppb          | 12:34:53      |
| 2     | Na 589.592 Radial† | 10641.4       | 10969.3             | 1829.2 µg/L        | 1829.2 ppb         | 12:34:53      |
| 2     | Sr 421.552†        | 239128.4      | 247849.7            | 711.25 µg/L        | 711.25 ppb         | 12:34:53      |
| 2     | Sc 361.383         | 1297679.4     | 1297679.4           | 97.482 %           |                    | 12:35:24      |
| 2     | Y 371.029          | 773686.1      | 773686.1            | 106.80 %           |                    | 12:35:24      |
| 2     | Ag 328.068†        | -2429.9       | -601.8              | 2.5676 µg/L        | 2.5676 ppb         | 12:35:24      |
| 2     | As 188.979†        | 71.8          | 103.6               | 74.017 µg/L        | 74.017 ppb         | 12:35:45      |
| 2     | B 249.677†         | -1318.3       | -2237.2             | 68.192 µg/L        | 68.192 ppb         | 12:35:24      |
| 2     | Ba 233.527†        | 183577.5      | 188560.8            | 1682.0 µg/L        | 1682.0 ppb         | 12:35:24      |
| 2     | Be 313.107†        | 16811.5       | 20901.7             | -35.384 µg/L       | -35.384 ppb        | 12:35:24      |
| 2     | Cd 226.502†        | 2494.3        | 2738.8              | 5.0550 µg/L        | 5.0550 ppb         | 12:35:45      |
| 2     | Co 228.616†        | 4068.6        | 4265.2              | 63.656 µg/L        | 63.656 ppb         | 12:35:45      |
| 2     | Cr 267.716†        | 9196.0        | 9304.6              | 110.84 µg/L        | 110.84 ppb         | 12:35:45      |
| 2     | Cu 324.752†        | 40190.7       | 35452.1             | 166.69 µg/L        | 166.69 ppb         | 12:35:24      |
| 2     | Mn 257.610†        | 2701198.1     | 2770830.0           | 4853.6 µg/L        | 4853.6 ppb         | 12:35:24      |
| 2     | Mo 202.031†        | -56.2         | -27.9               | 2.6265 µg/L        | 2.6265 ppb         | 12:35:45      |
| 2     | Ni 231.604†        | 9561.8        | 10006.5             | 159.08 µg/L        | 159.08 ppb         | 12:35:45      |
| 2     | P 214.914†         | 19966.4       | 20577.3             | 7409.7 µg/L        | 7409.7 ppb         | 12:35:45      |
| 2     | Pb 220.353†        | 1039.3        | 992.4               | 102.47 µg/L        | 102.47 ppb         | 12:35:45      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 3024.5    | 3000.0    | 3317.7 µg/L  | 3317.7 ppb  | 12:35:45 |
| 2 | Sb 206.836†        | 79.8      | 37.5      | -7.1006 µg/L | -7.1006 ppb | 12:35:45 |
| 2 | Se 196.026†        | -80.3     | -90.4     | 14.3 µg/L    | 14.3 ppb    | 12:35:45 |
| 2 | SiO2†              | 672686.9  | 687045.7  | 76040 µg/L   | 76040 ppb   | 12:35:24 |
| 2 | Si 251.611†        | 2025505.4 | 2077248.7 | 35237 µg/L   | 35237 ppb   | 12:35:24 |
| 2 | Sn 189.927†        | -20.9     | 6.1       | 1.0004 µg/L  | 1.0004 ppb  | 12:35:45 |
| 2 | Ti 334.940†        | 976395.8  | 1002509.7 | 1427.4 µg/L  | 1427.4 ppb  | 12:35:24 |
| 2 | Tl 190.801†        | -140.5    | -58.1     | -15.518 µg/L | -15.518 ppb | 12:35:45 |
| 2 | U 367.007†         | 5492.1    | 5918.2    | -35.631 µg/L | -35.631 ppb | 12:35:24 |
| 2 | V 292.402†         | 47996.8   | 49133.4   | 229.74 µg/L  | 229.74 ppb  | 12:35:24 |
| 2 | Zn 213.857†        | 128052.4  | 131314.0  | 726.64 µg/L  | 726.64 ppb  | 12:35:24 |
| 3 | Sc RADIAL          | 71389.0   | 71389.0   | 99.1 %       |             | 12:34:57 |
| 3 | Al 396.153Radial†  | 190902.7  | 192536.1  | 70328 µg/L   | 70328 ppb   | 12:34:57 |
| 3 | Ca 317.933Radial†  | 1972515.1 | 1990099.4 | 221540 µg/L  | 221540 ppb  | 12:34:55 |
| 3 | Fe 238.204 Radial† | 1397377.9 | 1410596.2 | 133440 µg/L  | 133440 ppb  | 12:34:55 |
| 3 | K 766.490 Radial†  | 27442.1   | 26621.3   | 14021 µg/L   | 14021 ppb   | 12:34:57 |
| 3 | Mg 279.077 IEC†    | 129195.1  | 130342.5  | 70316 µg/L   | 70316 ppb   | 12:34:57 |
| 3 | Na 589.592 Radial† | 10651.7   | 10708.7   | 1785.7 µg/L  | 1785.7 ppb  | 12:34:57 |
| 3 | Sr 421.552†        | 243472.4  | 246144.3  | 706.49 µg/L  | 706.49 ppb  | 12:34:57 |
| 3 | Sc 361.383         | 1288389.9 | 1288389.9 | 96.784 %     |             | 12:35:47 |
| 3 | Y 371.029          | 767922.7  | 767922.7  | 106.00 %     |             | 12:35:47 |
| 3 | Ag 328.068†        | -2765.4   | -966.5    | 0.5234 µg/L  | 0.5234 ppb  | 12:35:47 |
| 3 | As 188.979†        | 74.0      | 106.4     | 75.130 µg/L  | 75.130 ppb  | 12:36:08 |
| 3 | B 249.677†         | -1320.3   | -2249.0   | 65.538 µg/L  | 65.538 ppb  | 12:35:47 |
| 3 | Ba 233.527†        | 181825.9  | 188108.9  | 1678.0 µg/L  | 1678.0 ppb  | 12:35:47 |
| 3 | Be 313.107†        | 16690.7   | 20901.3   | -35.278 µg/L | -35.278 ppb | 12:35:47 |
| 3 | Cd 226.502†        | 2486.2    | 2748.8    | 5.5192 µg/L  | 5.5192 ppb  | 12:36:08 |
| 3 | Co 228.616†        | 4049.6    | 4275.7    | 63.849 µg/L  | 63.849 ppb  | 12:36:08 |
| 3 | Cr 267.716†        | 9204.5    | 9381.3    | 111.67 µg/L  | 111.67 ppb  | 12:36:08 |
| 3 | Cu 324.752†        | 40031.1   | 35584.5   | 167.06 µg/L  | 167.06 ppb  | 12:35:47 |
| 3 | Mn 257.610†        | 2677740.8 | 2766572.5 | 4846.2 µg/L  | 4846.2 ppb  | 12:35:47 |
| 3 | Mo 202.031†        | -35.6     | -7.0      | 3.6246 µg/L  | 3.6246 ppb  | 12:36:08 |
| 3 | Ni 231.604†        | 9480.1    | 9992.9    | 158.87 µg/L  | 158.87 ppb  | 12:36:08 |
| 3 | P 214.914†         | 19837.7   | 20592.0   | 7415.2 µg/L  | 7415.2 ppb  | 12:36:08 |
| 3 | Pb 220.353†        | 1041.9    | 1002.9    | 103.48 µg/L  | 103.48 ppb  | 12:36:08 |
| 3 | S 181.975 Axial†   | 3001.1    | 2998.1    | 3316.4 µg/L  | 3316.4 ppb  | 12:36:08 |
| 3 | Sb 206.836†        | 84.1      | 42.6      | -5.7967 µg/L | -5.7967 ppb | 12:36:08 |
| 3 | Se 196.026†        | -73.8     | -84.3     | 16.0 µg/L    | 16.0 ppb    | 12:36:08 |
| 3 | SiO2†              | 667523.6  | 686686.3  | 76001 µg/L   | 76001 ppb   | 12:35:47 |
| 3 | Si 251.611†        | 2010039.3 | 2076250.2 | 35220 µg/L   | 35220 ppb   | 12:35:47 |
| 3 | Sn 189.927†        | -9.0      | 18.2      | 2.5494 µg/L  | 2.5494 ppb  | 12:36:08 |
| 3 | Ti 334.940†        | 971070.1  | 1004228.8 | 1429.8 µg/L  | 1429.8 ppb  | 12:35:47 |
| 3 | Tl 190.801†        | -146.9    | -65.8     | -17.934 µg/L | -17.934 ppb | 12:36:08 |
| 3 | U 367.007†         | 5599.1    | 6069.3    | 1.8667 µg/L  | 1.8667 ppb  | 12:35:47 |
| 3 | V 292.402†         | 47388.8   | 48860.3   | 228.30 µg/L  | 228.30 ppb  | 12:35:47 |
| 3 | Zn 213.857†        | 126874.9  | 131044.5  | 725.50 µg/L  | 725.50 ppb  | 12:35:47 |

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Mean Data: 409254015|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------|-----------------|--------------------|----------|--------|
| Sc 361.383  | 1296516.9                | 97.394 %     | 0.5719          |                    |          | 0.59%  |
| Sc RADIAL   | 70786.3                  | 98.3 %       | 1.39            |                    |          | 1.41%  |
| Y 371.029   | 773057.0                 | 106.71 %     | 0.670           |                    |          | 0.63%  |
| Ag 328.068†   | -803.2                   | 1.4899 µg/L  | 1.02665         | 1.4899 ppb         | 1.02665  | 68.91% |
| Al 396.153Radial†                                   | 193299.9                 | 70607 µg/L   | 312.6           | 70607 ppb          | 312.6    | 0.44%  |
| As 188.979†   | 105.8                    | 75.115 µg/L  | 1.0906          | 75.115 ppb         | 1.0906   | 1.45%  |
| B 249.677†  | -2302.1                  | 66.715 µg/L  | 1.3523          | 66.715 ppb         | 1.3523   | 2.03%  |
| Ba 233.527†   | 188300.5                 | 1679.7 µg/L  | 2.09            | 1679.7 ppb         | 2.09     | 0.12%  |
| Be 313.107†   | 20856.0                  | -35.336 µg/L | 0.0536          | -35.336 ppb        | 0.0536   | 0.15%  |
| Concentration less than lower limit for Be 313.107. |                          |              |                 |                    |          |        |
| Ca 317.933Radial†                                   | 2029383.0                | 225910 µg/L  | 3919.3          | 225910 ppb         | 3919.3   | 1.73%  |
| Cd 226.502†   | 2731.8                   | 5.0876 µg/L  | 0.41632         | 5.0876 ppb         | 0.41632  | 8.18%  |
| Co 228.616†   | 4263.3                   | 63.634 µg/L  | 0.2267          | 63.634 ppb         | 0.2267   | 0.36%  |
| Cr 267.716†   | 9317.1                   | 110.97 µg/L  | 0.646           | 110.97 ppb         | 0.646    | 0.58%  |
| Cu 324.752†   | 35545.2                  | 167.05 µg/L  | 0.365           | 167.05 ppb         | 0.365    | 0.22%  |
| Fe 238.204 Radial†                                  | 1438569.5                | 136080 µg/L  | 2364.2          | 136080 ppb         | 2364.2   | 1.74%  |
| K 766.490 Radial†                                   | 26852.7                  | 14143 µg/L   | 121.9           | 14143 ppb          | 121.9    | 0.86%  |
| Mg 279.077 IEC†                                     | 130931.0                 | 70634 µg/L   | 281.5           | 70634 ppb          | 281.5    | 0.40%  |
| Mn 257.610†   | 2769170.0                | 4850.7 µg/L  | 3.98            | 4850.7 ppb         | 3.98     | 0.08%  |
| Mo 202.031†   | -20.5                    | 2.9943 µg/L  | 0.54838         | 2.9943 ppb         | 0.54838  | 18.31% |

|                    |           |              |         |             |         |        |
|--------------------|-----------|--------------|---------|-------------|---------|--------|
| Na 589.592 Radial† | 10835.2   | 1806.8 µg/L  | 21.76   | 1806.8 ppb  | 21.76   | 1.20%  |
| Ni 231.604†        | 9973.2    | 158.56 µg/L  | 0.737   | 158.56 ppb  | 0.737   | 0.46%  |
| P 214.914†         | 20539.8   | 7396.3 µg/L  | 28.17   | 7396.3 ppb  | 28.17   | 0.38%  |
| Pb 220.353†        | 994.6     | 102.67 µg/L  | 0.739   | 102.67 ppb  | 0.739   | 0.72%  |
| S 181.975 Axial†   | 2993.6    | 3310.7 µg/L  | 11.01   | 3310.7 ppb  | 11.01   | 0.33%  |
| Sb 206.836†        | 41.1      | -6.3410 µg/L | 0.67809 | -6.3410 ppb | 0.67809 | 10.69% |
| Se 196.026†        | -91.5     | 13.4 µg/L    | 3.15    | 13.4 ppb    | 3.15    | 23.52% |
| SiO2†              | 686904.1  | 76025 µg/L   | 21.2    | 76025 ppb   | 21.2    | 0.03%  |
| Si 251.611†        | 2076669.6 | 35227 µg/L   | 8.9     | 35227 ppb   | 8.9     | 0.03%  |
| Sn 189.927†        | 9.0       | 1.3683 µg/L  | 1.04684 | 1.3683 ppb  | 1.04684 | 76.51% |
| Sr 421.552†        | 246954.1  | 708.69 µg/L  | 2.398   | 708.69 ppb  | 2.398   | 0.34%  |
| Ti 334.940†        | 1003096.0 | 1428.2 µg/L  | 1.34    | 1428.2 ppb  | 1.34    | 0.09%  |
| Tl 190.801†        | -65.9     | -17.936 µg/L | 2.4190  | -17.936 ppb | 2.4190  | 13.49% |
| U 367.007†         | 5988.1    | -22.897 µg/L | 21.4487 | -22.897 ppb | 21.4487 | 93.68% |
| V 292.402†         | 48933.4   | 228.80 µg/L  | 0.817   | 228.80 ppb  | 0.817   | 0.36%  |
| Zn 213.857†        | 131193.2  | 726.04 µg/L  | 0.574   | 726.04 ppb  | 0.574   | 0.08%  |

Sequence No.: 21

Sample ID: 409254016|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 322

Date Collected: 11/11/2016 12:36:15

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254016|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 70850.9       | 70850.9             | 98.4 %             |                    | 12:36:42      |
| 1     | Al 396.153Radial†  | 176649.9      | 179507.6            | 65563 µg/L         | 65563 ppb          | 12:36:42      |
| 1     | Ca 317.933Radial†  | 1558668.7     | 1584437.6           | 176380 µg/L        | 176380 ppb         | 12:36:40      |
| 1     | Fe 238.204 Radial† | 1344124.4     | 1367160.4           | 129330 µg/L        | 129330 ppb         | 12:36:40      |
| 1     | K 766.490 Radial†  | 24968.0       | 24316.1             | 12811 µg/L         | 12811 ppb          | 12:36:42      |
| 1     | Mg 279.077 IEC†    | 111841.5      | 113688.4            | 61336 µg/L         | 61336 ppb          | 12:36:42      |
| 1     | Na 589.592 Radial† | 9649.4        | 9771.3              | 1629.4 µg/L        | 1629.4 ppb         | 12:36:42      |
| 1     | Sr 421.552†        | 196231.5      | 199978.0            | 574.11 µg/L        | 574.11 ppb         | 12:36:42      |
| 1     | Sc 361.383         | 1287699.2     | 1287699.2           | 96.732 %           |                    | 12:36:54      |
| 1     | Y 371.029          | 761722.3      | 761722.3            | 105.15 %           |                    | 12:36:54      |
| 1     | Ag 328.068†        | -2553.9       | -749.4              | 1.8222 µg/L        | 1.8222 ppb         | 12:36:54      |
| 1     | As 188.979†        | 79.4          | 112.1               | 77.627 µg/L        | 77.627 ppb         | 12:37:15      |
| 1     | B 249.677†         | -1167.7       | -2092.0             | 64.782 µg/L        | 64.782 ppb         | 12:36:54      |
| 1     | Ba 233.527†        | 171528.8      | 177564.7            | 1583.9 µg/L        | 1583.9 ppb         | 12:36:54      |
| 1     | Be 313.107†        | 15673.5       | 19859.0             | -33.275 µg/L       | -33.275 ppb        | 12:36:54      |
| 1     | Cd 226.502†        | 2273.5        | 2530.4              | 4.3366 µg/L        | 4.3366 ppb         | 12:37:15      |
| 1     | Co 228.616†        | 3892.0        | 4115.0              | 61.401 µg/L        | 61.401 ppb         | 12:37:15      |
| 1     | Cr 267.716†        | 8443.3        | 8599.5              | 102.51 µg/L        | 102.51 ppb         | 12:37:15      |
| 1     | Cu 324.752†        | 36994.5       | 32467.4             | 152.87 µg/L        | 152.87 ppb         | 12:36:54      |
| 1     | Mn 257.610†        | 2406438.5     | 2487588.4           | 4357.6 µg/L        | 4357.6 ppb         | 12:36:54      |
| 1     | Mo 202.031†        | -57.1         | -29.3               | 2.2721 µg/L        | 2.2721 ppb         | 12:37:15      |
| 1     | Ni 231.604†        | 9004.4        | 9506.4              | 151.13 µg/L        | 151.13 ppb         | 12:37:15      |
| 1     | P 214.914†         | 17754.3       | 18449.2             | 6643.1 µg/L        | 6643.1 ppb         | 12:37:15      |
| 1     | Pb 220.353†        | 970.9         | 930.0               | 96.031 µg/L        | 96.031 ppb         | 12:37:15      |
| 1     | S 181.975 Axial†   | 2874.4        | 2868.9              | 3173.1 µg/L        | 3173.1 ppb         | 12:37:15      |
| 1     | Sb 206.836†        | 84.2          | 42.8                | -5.2967 µg/L       | -5.2967 ppb        | 12:37:15      |
| 1     | Se 196.026†        | -57.8         | -67.8               | 22.8 µg/L          | 22.8 ppb           | 12:37:15      |
| 1     | SiO2†              | 654467.5      | 673558.9            | 74548 µg/L         | 74548 ppb          | 12:36:54      |
| 1     | Si 251.611†        | 1970166.1     | 2036143.9           | 34539 µg/L         | 34539 ppb          | 12:36:54      |
| 1     | Sn 189.927†        | -21.4         | 5.4                 | 0.8935 µg/L        | 0.8935 ppb         | 12:37:15      |
| 1     | Ti 334.940†        | 944538.4      | 977339.0            | 1391.0 µg/L        | 1391.0 ppb         | 12:36:54      |
| 1     | Tl 190.801†        | -158.0        | -77.3               | -21.534 µg/L       | -21.534 ppb        | 12:37:15      |
| 1     | U 367.007†         | 5070.3        | 5525.8              | -38.697 µg/L       | -38.697 ppb        | 12:36:54      |
| 1     | V 292.402†         | 44787.4       | 46197.3             | 216.06 µg/L        | 216.06 ppb         | 12:36:54      |
| 1     | Zn 213.857†        | 122653.6      | 126750.9            | 702.04 µg/L        | 702.04 ppb         | 12:36:54      |
| 2     | Sc RADIAL          | 71690.6       | 71690.6             | 99.5 %             |                    | 12:36:46      |
| 2     | Al 396.153Radial†  | 178071.3      | 178832.2            | 65316 µg/L         | 65316 ppb          | 12:36:46      |
| 2     | Ca 317.933Radial†  | 1545347.2     | 1552490.0           | 172820 µg/L        | 172820 ppb         | 12:36:44      |
| 2     | Fe 238.204 Radial† | 1330864.4     | 1337829.5           | 126550 µg/L        | 126550 ppb         | 12:36:44      |
| 2     | K 766.490 Radial†  | 25251.8       | 24303.9             | 12804 µg/L         | 12804 ppb          | 12:36:46      |
| 2     | Mg 279.077 IEC†    | 113131.7      | 113652.9            | 61316 µg/L         | 61316 ppb          | 12:36:46      |
| 2     | Na 589.592 Radial† | 9633.2        | 9640.1              | 1607.5 µg/L        | 1607.5 ppb         | 12:36:46      |
| 2     | Sr 421.552†        | 197962.6      | 199380.6            | 572.50 µg/L        | 572.50 ppb         | 12:36:46      |
| 2     | Sc 361.383         | 1319631.0     | 1319631.0           | 99.131 %           |                    | 12:37:17      |
| 2     | Y 371.029          | 781171.5      | 781171.5            | 107.83 %           |                    | 12:37:17      |
| 2     | Ag 328.068†        | -2456.5       | -587.2              | 2.5243 µg/L        | 2.5243 ppb         | 12:37:17      |
| 2     | As 188.979†        | 71.8          | 102.4               | 72.027 µg/L        | 72.027 ppb         | 12:37:38      |
| 2     | B 249.677†         | -1218.8       | -2114.4             | 62.425 µg/L        | 62.425 ppb         | 12:37:17      |
| 2     | Ba 233.527†        | 176655.8      | 178445.9            | 1591.8 µg/L        | 1591.8 ppb         | 12:37:17      |
| 2     | Be 313.107†        | 15773.9       | 19568.2             | -33.546 µg/L       | -33.546 ppb        | 12:37:17      |
| 2     | Cd 226.502†        | 2298.2        | 2498.4              | 4.4123 µg/L        | 4.4123 ppb         | 12:37:38      |
| 2     | Co 228.616†        | 3882.2        | 4007.8              | 59.851 µg/L        | 59.851 ppb         | 12:37:38      |
| 2     | Cr 267.716†        | 8456.5        | 8401.7              | 100.13 µg/L        | 100.13 ppb         | 12:37:38      |
| 2     | Cu 324.752†        | 37851.1       | 32406.2             | 152.43 µg/L        | 152.43 ppb         | 12:37:17      |
| 2     | Mn 257.610†        | 2474274.6     | 2495822.1           | 4372.0 µg/L        | 4372.0 ppb         | 12:37:17      |
| 2     | Mo 202.031†        | -34.9         | -5.5                | 3.4437 µg/L        | 3.4437 ppb         | 12:37:38      |
| 2     | Ni 231.604†        | 8953.5        | 9229.8              | 146.74 µg/L        | 146.74 ppb         | 12:37:38      |
| 2     | P 214.914†         | 17740.3       | 17991.0             | 6478.1 µg/L        | 6478.1 ppb         | 12:37:38      |
| 2     | Pb 220.353†        | 1008.8        | 943.9               | 97.423 µg/L        | 97.423 ppb         | 12:37:38      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 2867.0    | 2789.5    | 3085.0 µg/L  | 3085.0 ppb  | 12:37:38 |
| 2 | Sb 206.836†        | 90.7      | 47.2      | -4.1299 µg/L | -4.1299 ppb | 12:37:38 |
| 2 | Se 196.026†        | -75.3     | -84.0     | 13.0 µg/L    | 13.0 ppb    | 12:37:38 |
| 2 | SiO2†              | 674011.1  | 676902.4  | 74918 µg/L   | 74918 ppb   | 12:37:17 |
| 2 | Si 251.611†        | 2028281.5 | 2045485.2 | 34697 µg/L   | 34697 ppb   | 12:37:17 |
| 2 | Sn 189.927†        | -26.7     | 0.6       | 0.2759 µg/L  | 0.2759 ppb  | 12:37:38 |
| 2 | Ti 334.940†        | 972152.9  | 981568.0  | 1397.0 µg/L  | 1397.0 ppb  | 12:37:17 |
| 2 | Tl 190.801†        | -142.4    | -57.6     | -15.531 µg/L | -15.531 ppb | 12:37:38 |
| 2 | U 367.007†         | 5226.8    | 5556.8    | -19.484 µg/L | -19.484 ppb | 12:37:17 |
| 2 | V 292.402†         | 46221.7   | 46523.7   | 217.33 µg/L  | 217.33 ppb  | 12:37:17 |
| 2 | Zn 213.857†        | 126422.7  | 127485.0  | 706.50 µg/L  | 706.50 ppb  | 12:37:17 |
| 3 | Sc RADIAL          | 72541.6   | 72541.6   | 101 %        |             | 12:36:50 |
| 3 | Al 396.153Radial†  | 180250.9  | 178897.6  | 65340 µg/L   | 65340 ppb   | 12:36:50 |
| 3 | Ca 317.933Radial†  | 1561334.5 | 1550149.7 | 172560 µg/L  | 172560 ppb  | 12:36:48 |
| 3 | Fe 238.204 Radial† | 1344293.9 | 1335477.4 | 126330 µg/L  | 126330 ppb  | 12:36:48 |
| 3 | K 766.490 Radial†  | 25467.4   | 24220.3   | 12760 µg/L   | 12760 ppb   | 12:36:50 |
| 3 | Mg 279.077 IEC†    | 114410.3  | 113589.1  | 61281 µg/L   | 61281 ppb   | 12:36:50 |
| 3 | Na 589.592 Radial† | 9851.7    | 9743.5    | 1624.8 µg/L  | 1624.8 ppb  | 12:36:50 |
| 3 | Sr 421.552†        | 200356.1  | 199423.9  | 572.63 µg/L  | 572.63 ppb  | 12:36:50 |
| 3 | Sc 361.383         | 1271630.2 | 1271630.2 | 95.525 %     |             | 12:37:40 |
| 3 | Y 371.029          | 752211.5  | 752211.5  | 103.83 %     |             | 12:37:40 |
| 3 | Ag 328.068†        | -2447.1   | -670.9    | 2.0794 µg/L  | 2.0794 ppb  | 12:37:40 |
| 3 | As 188.979†        | 72.2      | 105.5     | 73.696 µg/L  | 73.696 ppb  | 12:38:01 |
| 3 | B 249.677†         | -1185.1   | -2125.5   | 62.101 µg/L  | 62.101 ppb  | 12:37:40 |
| 3 | Ba 233.527†        | 169259.5  | 177429.9  | 1582.7 µg/L  | 1582.7 ppb  | 12:37:40 |
| 3 | Be 313.107†        | 15100.4   | 19463.8   | -33.350 µg/L | -33.350 ppb | 12:37:40 |
| 3 | Cd 226.502†        | 2298.5    | 2586.2    | 5.1022 µg/L  | 5.1022 ppb  | 12:38:01 |
| 3 | Co 228.616†        | 3874.5    | 4147.6    | 61.920 µg/L  | 61.920 ppb  | 12:38:01 |
| 3 | Cr 267.716†        | 8407.8    | 8672.7    | 103.31 µg/L  | 103.31 ppb  | 12:38:01 |
| 3 | Cu 324.752†        | 36444.2   | 32374.6   | 152.28 µg/L  | 152.28 ppb  | 12:37:40 |
| 3 | Mn 257.610†        | 2371259.8 | 2482197.9 | 4348.1 µg/L  | 4348.1 ppb  | 12:37:40 |
| 3 | Mo 202.031†        | -38.3     | -10.4     | 3.1807 µg/L  | 3.1807 ppb  | 12:38:01 |
| 3 | Ni 231.604†        | 8938.0    | 9554.4    | 151.90 µg/L  | 151.90 ppb  | 12:38:01 |
| 3 | P 214.914†         | 17773.8   | 18701.6   | 6734.2 µg/L  | 6734.2 ppb  | 12:38:01 |
| 3 | Pb 220.353†        | 990.5     | 963.2     | 99.377 µg/L  | 99.377 ppb  | 12:38:01 |
| 3 | S 181.975 Axial†   | 2883.8    | 2916.2    | 3226.6 µg/L  | 3226.6 ppb  | 12:38:01 |
| 3 | Sb 206.836†        | 77.4      | 36.7      | -6.1745 µg/L | -6.1745 ppb | 12:38:01 |
| 3 | Se 196.026†        | -77.2     | -88.9     | 10.4 µg/L    | 10.4 ppb    | 12:38:01 |
| 3 | SiO2†              | 646270.2  | 673527.3  | 74544 µg/L   | 74544 ppb   | 12:37:40 |
| 3 | Si 251.611†        | 1944460.9 | 2034971.6 | 34519 µg/L   | 34519 ppb   | 12:37:40 |
| 3 | Sn 189.927†        | -26.6     | -0.3      | 0.1617 µg/L  | 0.1617 ppb  | 12:38:01 |
| 3 | Ti 334.940†        | 932853.7  | 977445.8  | 1391.1 µg/L  | 1391.1 ppb  | 12:37:40 |
| 3 | Tl 190.801†        | -137.8    | -58.3     | -15.747 µg/L | -15.747 ppb | 12:38:01 |
| 3 | U 367.007†         | 5071.6    | 5593.4    | -13.757 µg/L | -13.757 ppb | 12:37:40 |
| 3 | V 292.402†         | 44291.8   | 46263.5   | 216.16 µg/L  | 216.16 ppb  | 12:37:40 |
| 3 | Zn 213.857†        | 120478.0  | 126075.8  | 698.53 µg/L  | 698.53 ppb  | 12:37:40 |

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Mean Data: 409254016|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------|-----------------|--------------------|----------|--------|
| Sc 361.383  | 1292986.8                | 97.129 %     | 1.8354          |                    |          | 1.89%  |
| Sc RADIAL   | 71694.3                  | 99.5 %       | 1.17            |                    |          | 1.18%  |
| Y 371.029   | 765035.1                 | 105.60 %     | 2.038           |                    |          | 1.93%  |
| Ag 328.068†   | -669.2                   | 2.1420 µg/L  | 0.35523         | 2.1420 ppb         | 0.35523  | 16.58% |
| Al 396.153Radial†                                   | 179079.1                 | 65407 µg/L   | 136.3           | 65407 ppb          | 136.3    | 0.21%  |
| As 188.979†   | 106.6                    | 74.450 µg/L  | 2.8753          | 74.450 ppb         | 2.8753   | 3.86%  |
| B 249.677†  | -2110.6                  | 63.103 µg/L  | 1.4633          | 63.103 ppb         | 1.4633   | 2.32%  |
| Ba 233.527†   | 177813.5                 | 1586.1 µg/L  | 4.92            | 1586.1 ppb         | 4.92     | 0.31%  |
| Be 313.107†   | 19630.3                  | -33.390 µg/L | 0.1400          | -33.390 ppb        | 0.1400   | 0.42%  |
| Concentration less than lower limit for Be 313.107. |                          |              |                 |                    |          |        |
| Ca 317.933Radial†                                   | 1562359.1                | 173920 µg/L  | 2132.5          | 173920 ppb         | 2132.5   | 1.23%  |
| Cd 226.502†   | 2538.3                   | 4.6170 µg/L  | 0.42185         | 4.6170 ppb         | 0.42185  | 9.14%  |
| Co 228.616†   | 4090.1                   | 61.058 µg/L  | 1.0764          | 61.058 ppb         | 1.0764   | 1.76%  |
| Cr 267.716†   | 8558.0                   | 101.99 µg/L  | 1.654           | 101.99 ppb         | 1.654    | 1.62%  |
| Cu 324.752†   | 32416.1                  | 152.53 µg/L  | 0.309           | 152.53 ppb         | 0.309    | 0.20%  |
| Fe 238.204 Radial†                                  | 1346822.4                | 127400 µg/L  | 1669.8          | 127400 ppb         | 1669.8   | 1.31%  |
| K 766.490 Radial†                                   | 24280.1                  | 12792 µg/L   | 27.7            | 12792 ppb          | 27.7     | 0.22%  |
| Mg 279.077 IEC†                                     | 113643.5                 | 61311 µg/L   | 27.6            | 61311 ppb          | 27.6     | 0.04%  |
| Mn 257.610†   | 2488536.1                | 4359.2 µg/L  | 12.02           | 4359.2 ppb         | 12.02    | 0.28%  |
| Mo 202.031†   | -15.1                    | 2.9655 µg/L  | 0.61474         | 2.9655 ppb         | 0.61474  | 20.73% |

|                    |           |              |         |             |         |        |
|--------------------|-----------|--------------|---------|-------------|---------|--------|
| Na 589.592 Radial† | 9718.3    | 1620.6 µg/L  | 11.54   | 1620.6 ppb  | 11.54   | 0.71%  |
| Ni 231.604†        | 9430.2    | 149.92 µg/L  | 2.786   | 149.92 ppb  | 2.786   | 1.86%  |
| P 214.914†         | 18380.6   | 6618.4 µg/L  | 129.84  | 6618.4 ppb  | 129.84  | 1.96%  |
| Pb 220.353†        | 945.7     | 97.610 µg/L  | 1.6810  | 97.610 ppb  | 1.6810  | 1.72%  |
| S 181.975 Axial†   | 2858.2    | 3161.6 µg/L  | 71.46   | 3161.6 ppb  | 71.46   | 2.26%  |
| Sb 206.836†        | 42.2      | -5.2004 µg/L | 1.02565 | -5.2004 ppb | 1.02565 | 19.72% |
| Se 196.026†        | -80.2     | 15.4 µg/L    | 6.54    | 15.4 ppb    | 6.54    | 42.39% |
| SiO2†              | 674662.9  | 74670 µg/L   | 214.7   | 74670 ppb   | 214.7   | 0.29%  |
| Si 251.611†        | 2038866.9 | 34585 µg/L   | 97.6    | 34585 ppb   | 97.6    | 0.28%  |
| Sn 189.927†        | 1.9       | 0.4437 µg/L  | 0.39370 | 0.4437 ppb  | 0.39370 | 88.73% |
| Sr 421.552†        | 199594.2  | 573.08 µg/L  | 0.894   | 573.08 ppb  | 0.894   | 0.16%  |
| Ti 334.940†        | 978784.2  | 1393.1 µg/L  | 3.42    | 1393.1 ppb  | 3.42    | 0.25%  |
| Tl 190.801†        | -64.4     | -17.604 µg/L | 3.4053  | -17.604 ppb | 3.4053  | 19.34% |
| U 367.007†         | 5558.7    | -23.979 µg/L | 13.0639 | -23.979 ppb | 13.0639 | 54.48% |
| V 292.402†         | 46328.2   | 216.51 µg/L  | 0.709   | 216.51 ppb  | 0.709   | 0.33%  |
| Zn 213.857†        | 126770.5  | 702.36 µg/L  | 3.994   | 702.36 ppb  | 3.994   | 0.57%  |

Sequence No.: 22

Sample ID: 409254017|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 323

Date Collected: 11/11/2016 12:38:09

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254017|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 69052.8       | 69052.8             | 95.9 %             |                    | 12:38:36      |
| 1     | Al 396.153Radial†  | 149037.9      | 155378.9            | 56758 µg/L         | 56758 ppb          | 12:38:36      |
| 1     | Ca 317.933Radial†  | 1660945.4     | 1732402.9           | 192850 µg/L        | 192850 ppb         | 12:38:34      |
| 1     | Fe 238.204 Radial† | 1329355.0     | 1387339.5           | 131240 µg/L        | 131240 ppb         | 12:38:34      |
| 1     | K 766.490 Radial†  | 23689.8       | 23643.6             | 12457 µg/L         | 12457 ppb          | 12:38:36      |
| 1     | Mg 279.077 IEC†    | 133071.5      | 138797.3            | 74873 µg/L         | 74873 ppb          | 12:38:36      |
| 1     | Na 589.592 Radial† | 12919.6       | 13438.3             | 2240.9 µg/L        | 2240.9 ppb         | 12:38:36      |
| 1     | Sr 421.552†        | 184514.3      | 192949.7            | 553.15 µg/L        | 553.15 ppb         | 12:38:36      |
| 1     | Sc 361.383         | 1270033.3     | 1270033.3           | 95.405 %           |                    | 12:38:48      |
| 1     | Y 371.029          | 761498.5      | 761498.5            | 105.11 %           |                    | 12:38:48      |
| 1     | Ag 328.068†        | -2616.9       | -852.1              | 1.2561 µg/L        | 1.2561 ppb         | 12:38:48      |
| 1     | As 188.979†        | 89.4          | 123.6               | 84.125 µg/L        | 84.125 ppb         | 12:39:09      |
| 1     | B 249.677†         | -2649.0       | -3661.5             | 43.611 µg/L        | 43.611 ppb         | 12:38:48      |
| 1     | Ba 233.527†        | 230728.5      | 242082.2            | 2159.2 µg/L        | 2159.2 ppb         | 12:38:48      |
| 1     | Be 313.107†        | 14776.2       | 19143.8             | -47.611 µg/L       | -47.611 ppb        | 12:38:48      |
| 1     | Cd 226.502†        | 2070.3        | 2350.1              | 2.7537 µg/L        | 2.7537 ppb         | 12:39:09      |
| 1     | Co 228.616†        | 3618.1        | 3883.9              | 58.619 µg/L        | 58.619 ppb         | 12:39:09      |
| 1     | Cr 267.716†        | 8223.9        | 8491.0              | 101.18 µg/L        | 101.18 ppb         | 12:39:09      |
| 1     | Cu 324.752†        | 27858.9       | 23423.8             | 113.28 µg/L        | 113.28 ppb         | 12:38:48      |
| 1     | Mn 257.610†        | 1558481.9     | 1633394.0           | 2860.0 µg/L        | 2860.0 ppb         | 12:38:48      |
| 1     | Mo 202.031†        | -67.4         | -40.9               | 1.8582 µg/L        | 1.8582 ppb         | 12:39:09      |
| 1     | Ni 231.604†        | 8949.2        | 9578.0              | 152.27 µg/L        | 152.27 ppb         | 12:39:09      |
| 1     | P 214.914†         | 14568.1       | 15364.8             | 5531.2 µg/L        | 5531.2 ppb         | 12:39:09      |
| 1     | Pb 220.353†        | 832.2         | 798.6               | 82.154 µg/L        | 82.154 ppb         | 12:39:09      |
| 1     | S 181.975 Axial†   | 1557.1        | 1529.4              | 1677.5 µg/L        | 1677.5 ppb         | 12:39:09      |
| 1     | Sb 206.836†        | 69.2          | 28.3                | -8.4894 µg/L       | -8.4894 ppb        | 12:39:09      |
| 1     | Se 196.026†        | -91.0         | -103.4              | 5.22 µg/L          | 5.22 ppb           | 12:39:09      |
| 1     | SiO2†              | 563703.2      | 587834.1            | 65060 µg/L         | 65060 ppb          | 12:38:48      |
| 1     | Si 251.611†        | 1699879.0     | 1781168.9           | 30216 µg/L         | 30216 ppb          | 12:38:48      |
| 1     | Sn 189.927†        | -57.5         | -32.8               | -4.0154 µg/L       | -4.0154 ppb        | 12:39:09      |
| 1     | Ti 334.940†        | 1381050.4     | 1448457.8           | 2060.9 µg/L        | 2060.9 ppb         | 12:38:48      |
| 1     | Tl 190.801†        | -181.2        | -103.9              | -29.678 µg/L       | -29.678 ppb        | 12:39:09      |
| 1     | U 367.007†         | 5121.6        | 5652.5              | -34.928 µg/L       | -34.928 ppb        | 12:38:48      |
| 1     | V 292.402†         | 39920.0       | 41739.5             | 196.21 µg/L        | 196.21 ppb         | 12:38:48      |
| 1     | Zn 213.857†        | 73217.5       | 76697.5             | 417.23 µg/L        | 417.23 ppb         | 12:38:48      |
| 2     | Sc RADIAL          | 71162.6       | 71162.6             | 98.8 %             |                    | 12:38:40      |
| 2     | Al 396.153Radial†  | 153328.7      | 155113.0            | 56660 µg/L         | 56660 ppb          | 12:38:40      |
| 2     | Ca 317.933Radial†  | 1687977.4     | 1708396.2           | 190180 µg/L        | 190180 ppb         | 12:38:38      |
| 2     | Fe 238.204 Radial† | 1350396.6     | 1367524.5           | 129360 µg/L        | 129360 ppb         | 12:38:38      |
| 2     | K 766.490 Radial†  | 24742.0       | 23976.1             | 12631 µg/L         | 12631 ppb          | 12:38:40      |
| 2     | Mg 279.077 IEC†    | 137565.9      | 139231.1            | 75107 µg/L         | 75107 ppb          | 12:38:40      |
| 2     | Na 589.592 Radial† | 13243.6       | 13366.7             | 2229.0 µg/L        | 2229.0 ppb         | 12:38:40      |
| 2     | Sr 421.552†        | 190365.5      | 193166.0            | 553.87 µg/L        | 553.87 ppb         | 12:38:40      |
| 2     | Sc 361.383         | 1288738.2     | 1288738.2           | 96.810 %           |                    | 12:39:11      |
| 2     | Y 371.029          | 771471.0      | 771471.0            | 106.49 %           |                    | 12:39:11      |
| 2     | Ag 328.068†        | -2688.9       | -886.7              | 0.9867 µg/L        | 0.9867 ppb         | 12:39:11      |
| 2     | As 188.979†        | 94.5          | 127.6               | 86.039 µg/L        | 86.039 ppb         | 12:39:32      |
| 2     | B 249.677†         | -2677.3       | -3650.4             | 42.395 µg/L        | 42.395 ppb         | 12:39:11      |
| 2     | Ba 233.527†        | 233542.1      | 241478.5            | 2153.8 µg/L        | 2153.8 ppb         | 12:39:11      |
| 2     | Be 313.107†        | 15210.4       | 19367.5             | -47.416 µg/L       | -47.416 ppb        | 12:39:11      |
| 2     | Cd 226.502†        | 2066.1        | 2314.2              | 2.6973 µg/L        | 2.6973 ppb         | 12:39:32      |
| 2     | Co 228.616†        | 3584.0        | 3793.6              | 57.294 µg/L        | 57.294 ppb         | 12:39:32      |
| 2     | Cr 267.716†        | 8196.7        | 8337.8              | 99.340 µg/L        | 99.340 ppb         | 12:39:32      |
| 2     | Cu 324.752†        | 28383.2       | 23541.6             | 113.69 µg/L        | 113.69 ppb         | 12:39:11      |
| 2     | Mn 257.610†        | 1577439.3     | 1629266.5           | 2852.8 µg/L        | 2852.8 ppb         | 12:39:11      |
| 2     | Mo 202.031†        | -63.3         | -35.6               | 2.0895 µg/L        | 2.0895 ppb         | 12:39:32      |
| 2     | Ni 231.604†        | 8939.2        | 9431.5              | 149.94 µg/L        | 149.94 ppb         | 12:39:32      |
| 2     | P 214.914†         | 14507.4       | 15080.5             | 5428.9 µg/L        | 5428.9 ppb         | 12:39:32      |
| 2     | Pb 220.353†        | 818.4         | 771.7               | 79.419 µg/L        | 79.419 ppb         | 12:39:32      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 1577.5    | 1526.8    | 1675.1 µg/L  | 1675.1 ppb  | 12:39:32 |
| 2 | Sb 206.836†        | 72.3      | 30.4      | -7.8614 µg/L | -7.8614 ppb | 12:39:32 |
| 2 | Se 196.026†        | -98.2     | -109.4    | 1.25 µg/L    | 1.25 ppb    | 12:39:32 |
| 2 | SiO2†              | 570965.5  | 586760.0  | 64941 µg/L   | 64941 ppb   | 12:39:11 |
| 2 | Si 251.611†        | 1722877.7 | 1779064.8 | 30180 µg/L   | 30180 ppb   | 12:39:11 |
| 2 | Sn 189.927†        | -60.8     | -35.3     | -4.3315 µg/L | -4.3315 ppb | 12:39:32 |
| 2 | Ti 334.940†        | 1399116.1 | 1446108.5 | 2057.5 µg/L  | 2057.5 ppb  | 12:39:11 |
| 2 | Tl 190.801†        | -176.0    | -95.8     | -27.215 µg/L | -27.215 ppb | 12:39:32 |
| 2 | U 367.007†         | 5250.4    | 5707.6    | -17.731 µg/L | -17.731 ppb | 12:39:11 |
| 2 | V 292.402†         | 40414.0   | 41642.3   | 195.65 µg/L  | 195.65 ppb  | 12:39:11 |
| 2 | Zn 213.857†        | 74339.2   | 76742.3   | 417.67 µg/L  | 417.67 ppb  | 12:39:11 |
| 3 | Sc RADIAL          | 71355.1   | 71355.1   | 99.1 %       |             | 12:38:44 |
| 3 | Al 396.153Radial†  | 153220.2  | 154584.6  | 56467 µg/L   | 56467 ppb   | 12:38:44 |
| 3 | Ca 317.933Radial†  | 1691302.4 | 1707142.9 | 190040 µg/L  | 190040 ppb  | 12:38:42 |
| 3 | Fe 238.204 Radial† | 1352082.0 | 1365537.8 | 129170 µg/L  | 129170 ppb  | 12:38:42 |
| 3 | K 766.490 Radial†  | 24669.0   | 23834.8   | 12557 µg/L   | 12557 ppb   | 12:38:44 |
| 3 | Mg 279.077 IEC†    | 136787.5  | 138069.6  | 74480 µg/L   | 74480 ppb   | 12:38:44 |
| 3 | Na 589.592 Radial† | 13473.0   | 13562.1   | 2261.6 µg/L  | 2261.6 ppb  | 12:38:44 |
| 3 | Sr 421.552†        | 190298.7  | 192578.6  | 552.17 µg/L  | 552.17 ppb  | 12:38:44 |
| 3 | Sc 361.383         | 1284907.3 | 1284907.3 | 96.522 %     |             | 12:39:34 |
| 3 | Y 371.029          | 769326.0  | 769326.0  | 106.20 %     |             | 12:39:34 |
| 3 | Ag 328.068†        | -2675.4   | -880.9    | 1.0101 µg/L  | 1.0101 ppb  | 12:39:34 |
| 3 | As 188.979†        | 86.2      | 119.3     | 81.499 µg/L  | 81.499 ppb  | 12:39:55 |
| 3 | B 249.677†         | -2752.6   | -3736.7   | 41.017 µg/L  | 41.017 ppb  | 12:39:34 |
| 3 | Ba 233.527†        | 234015.5  | 242688.1  | 2164.6 µg/L  | 2164.6 ppb  | 12:39:34 |
| 3 | Be 313.107†        | 15180.1   | 19383.0   | -47.679 µg/L | -47.679 ppb | 12:39:34 |
| 3 | Cd 226.502†        | 2085.1    | 2340.3    | 2.9157 µg/L  | 2.9157 ppb  | 12:39:55 |
| 3 | Co 228.616†        | 3596.9    | 3818.0    | 57.673 µg/L  | 57.673 ppb  | 12:39:55 |
| 3 | Cr 267.716†        | 8224.3    | 8391.6    | 99.978 µg/L  | 99.978 ppb  | 12:39:55 |
| 3 | Cu 324.752†        | 28265.9   | 23507.5   | 113.51 µg/L  | 113.51 ppb  | 12:39:34 |
| 3 | Mn 257.610†        | 1576172.7 | 1632812.3 | 2859.0 µg/L  | 2859.0 ppb  | 12:39:34 |
| 3 | Mo 202.031†        | -62.7     | -35.2     | 2.1013 µg/L  | 2.1013 ppb  | 12:39:55 |
| 3 | Ni 231.604†        | 8964.3    | 9485.0    | 150.79 µg/L  | 150.79 ppb  | 12:39:55 |
| 3 | P 214.914†         | 14644.5   | 15267.3   | 5496.2 µg/L  | 5496.2 ppb  | 12:39:55 |
| 3 | Pb 220.353†        | 830.1     | 786.3     | 80.902 µg/L  | 80.902 ppb  | 12:39:55 |
| 3 | S 181.975 Axial†   | 1576.3    | 1530.4    | 1679.1 µg/L  | 1679.1 ppb  | 12:39:55 |
| 3 | Sb 206.836†        | 78.2      | 36.7      | -6.6392 µg/L | -6.6392 ppb | 12:39:55 |
| 3 | Se 196.026†        | -91.7     | -103.0    | 4.52 µg/L    | 4.52 ppb    | 12:39:55 |
| 3 | SiO2†              | 570795.0  | 588341.7  | 65116 µg/L   | 65116 ppb   | 12:39:34 |
| 3 | Si 251.611†        | 1721047.0 | 1782474.2 | 30238 µg/L   | 30238 ppb   | 12:39:34 |
| 3 | Sn 189.927†        | -58.9     | -33.5     | -4.1048 µg/L | -4.1048 ppb | 12:39:55 |
| 3 | Ti 334.940†        | 1396863.4 | 1448083.5 | 2060.3 µg/L  | 2060.3 ppb  | 12:39:34 |
| 3 | Tl 190.801†        | -190.7    | -111.5    | -32.061 µg/L | -32.061 ppb | 12:39:55 |
| 3 | U 367.007†         | 5183.0    | 5653.9    | -23.297 µg/L | -23.297 ppb | 12:39:34 |
| 3 | V 292.402†         | 40398.5   | 41750.7   | 196.12 µg/L  | 196.12 ppb  | 12:39:34 |
| 3 | Zn 213.857†        | 74284.9   | 76915.0   | 418.70 µg/L  | 418.70 ppb  | 12:39:34 |

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Mean Data: 409254017|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|-------------|--------------|----------|--------------------|----------|--------|
| Sc 361.383  | 1281226.3                | 96.246      | %            | 0.7423   |                    |          | 0.77%  |
| Sc RADIAL   | 70523.5                  | 97.9        | %            | 1.77     |                    |          | 1.81%  |
| Y 371.029   | 767431.8                 | 105.93      | %            | 0.725    |                    |          | 0.68%  |
| Ag 328.068†   | -873.2                   | 1.0843      | µg/L         | 0.14920  | 1.0843 ppb         | 0.14920  | 13.76% |
| Al 396.153Radial†                                   | 155025.5                 | 56628       | µg/L         | 147.8    | 56628 ppb          | 147.8    | 0.26%  |
| As 188.979†   | 123.5                    | 83.888      | µg/L         | 2.2791   | 83.888 ppb         | 2.2791   | 2.72%  |
| B 249.677†  | -3682.9                  | 42.341      | µg/L         | 1.2978   | 42.341 ppb         | 1.2978   | 3.07%  |
| Ba 233.527†   | 242082.9                 | 2159.2      | µg/L         | 5.39     | 2159.2 ppb         | 5.39     | 0.25%  |
| Be 313.107†   | 19298.1                  | -47.569     | µg/L         | 0.1368   | -47.569 ppb        | 0.1368   | 0.29%  |
| Concentration less than lower limit for Be 313.107. |                          |             |              |          |                    |          |        |
| Ca 317.933Radial†                                   | 1715980.7                | 191020      | µg/L         | 1584.7   | 191020 ppb         | 1584.7   | 0.83%  |
| Cd 226.502†   | 2334.9                   | 2.7889      | µg/L         | 0.11336  | 2.7889 ppb         | 0.11336  | 4.06%  |
| Co 228.616†   | 3831.8                   | 57.862      | µg/L         | 0.6825   | 57.862 ppb         | 0.6825   | 1.18%  |
| Cr 267.716†   | 8406.8                   | 100.17      | µg/L         | 0.935    | 100.17 ppb         | 0.935    | 0.93%  |
| Cu 324.752†   | 23491.0                  | 113.49      | µg/L         | 0.205    | 113.49 ppb         | 0.205    | 0.18%  |
| Fe 238.204 Radial†                                  | 1373467.3                | 129920      | µg/L         | 1140.3   | 129920 ppb         | 1140.3   | 0.88%  |
| K 766.490 Radial†                                   | 23818.2                  | 12549       | µg/L         | 87.4     | 12549 ppb          | 87.4     | 0.70%  |
| Mg 279.077 IEC†                                     | 138699.3                 | 74820       | µg/L         | 316.5    | 74820 ppb          | 316.5    | 0.42%  |
| Mn 257.610†   | 1631824.3                | 2857.3      | µg/L         | 3.92     | 2857.3 ppb         | 3.92     | 0.14%  |
| Mo 202.031†   | -37.3                    | 2.0163      | µg/L         | 0.13706  | 2.0163 ppb         | 0.13706  | 6.80%  |



|   |           |              |         |             |         |        |
|---|-----------|--------------|---------|-------------|---------|--------|
| Na 589.592 Radial†                                  | 13455.7   | 2243.8 µg/L  | 16.49   | 2243.8 ppb  | 16.49   | 0.73%  |
| Ni 231.604†   | 9498.2    | 151.00 µg/L  | 1.178   | 151.00 ppb  | 1.178   | 0.78%  |
| P 214.914†  | 15237.5   | 5485.4 µg/L  | 52.04   | 5485.4 ppb  | 52.04   | 0.95%  |
| Pb 220.353†   | 785.5     | 80.825 µg/L  | 1.3695  | 80.825 ppb  | 1.3695  | 1.69%  |
| S 181.975 Axial†                                    | 1528.9    | 1677.2 µg/L  | 2.05    | 1677.2 ppb  | 2.05    | 0.12%  |
| Sb 206.836†   | 31.8      | -7.6633 µg/L | 0.94089 | -7.6633 ppb | 0.94089 | 12.28% |
| Se 196.026†   | -105.3    | 3.66 µg/L    | 2.118   | 3.66 ppb    | 2.118   | 57.85% |
| SiO2†   | 587645.3  | 65039 µg/L   | 89.4    | 65039 ppb   | 89.4    | 0.14%  |
| Si 251.611†   | 1780902.6 | 30212 µg/L   | 29.2    | 30212 ppb   | 29.2    | 0.10%  |
| Sn 189.927†   | -33.9     | -4.1505 µg/L | 0.16295 | -4.1505 ppb | 0.16295 | 3.93%  |
| Sr 421.552†   | 192898.1  | 553.06 µg/L  | 0.853   | 553.06 ppb  | 0.853   | 0.15%  |
| Ti 334.940†   | 1447549.9 | 2059.6 µg/L  | 1.81    | 2059.6 ppb  | 1.81    | 0.09%  |
| Tl 190.801†   | -103.7    | -29.651 µg/L | 2.4230  | -29.651 ppb | 2.4230  | 8.17%  |
| Concentration less than lower limit for Tl 190.801. |           |              |         |             |         |        |
| U 367.007†  | 5671.4    | -25.319 µg/L | 8.7748  | -25.319 ppb | 8.7748  | 34.66% |
| V 292.402†  | 41710.8   | 195.99 µg/L  | 0.301   | 195.99 ppb  | 0.301   | 0.15%  |
| Zn 213.857†   | 76784.9   | 417.86 µg/L  | 0.756   | 417.86 ppb  | 0.756   | 0.18%  |

Sequence No.: 23

Sample ID: 409254018|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 324

Date Collected: 11/11/2016 12:40:02

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254018|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 70582.7       | 70582.7             | 98.0 %             |                    | 12:40:29      |
| 1     | Al 396.153Radial†  | 196744.4      | 200698.9            | 73295 µg/L         | 73295 ppb          | 12:40:29      |
| 1     | Ca 317.933Radial†  | 1297785.6     | 1324198.2           | 147410 µg/L        | 147410 ppb         | 12:40:27      |
| 1     | Fe 238.204 Radial† | 1053257.8     | 1075490.4           | 101740 µg/L        | 101740 ppb         | 12:40:27      |
| 1     | K 766.490 Radial†  | 28874.1       | 28399.2             | 14949 µg/L         | 14949 ppb          | 12:40:29      |
| 1     | Mg 279.077 IEC†    | 107633.8      | 109826.1            | 59244 µg/L         | 59244 ppb          | 12:40:29      |
| 1     | Na 589.592 Radial† | 10555.2       | 10733.1             | 1789.8 µg/L        | 1789.8 ppb         | 12:40:29      |
| 1     | Sr 421.552†        | 187132.4      | 191449.5            | 550.36 µg/L        | 550.36 ppb         | 12:40:29      |
| 1     | Sc 361.383         | 1296564.9     | 1296564.9           | 97.398 %           |                    | 12:40:41      |
| 1     | Y 371.029          | 771327.5      | 771327.5            | 106.47 %           |                    | 12:40:41      |
| 1     | Ag 328.068†        | -2400.4       | -573.7              | 1.4117 µg/L        | 1.4117 ppb         | 12:40:43      |
| 1     | As 188.979†        | 27.0          | 57.7                | 44.847 µg/L        | 44.847 ppb         | 12:41:03      |
| 1     | B 249.677†         | -354.0        | -1248.3             | 56.676 µg/L        | 56.676 ppb         | 12:40:43      |
| 1     | Ba 233.527†        | 201213.1      | 206829.5            | 1844.7 µg/L        | 1844.7 ppb         | 12:40:43      |
| 1     | Be 313.107†        | 18895.2       | 23055.9             | -38.853 µg/L       | -38.853 ppb        | 12:40:43      |
| 1     | Cd 226.502†        | 1832.2        | 2061.2              | 3.9458 µg/L        | 3.9458 ppb         | 12:41:03      |
| 1     | Co 228.616†        | 4809.0        | 5029.0              | 75.623 µg/L        | 75.623 ppb         | 12:41:03      |
| 1     | Cr 267.716†        | 9805.4        | 9938.4              | 117.86 µg/L        | 117.86 ppb         | 12:40:43      |
| 1     | Cu 324.752†        | 44422.5       | 39832.5             | 183.52 µg/L        | 183.52 ppb         | 12:40:43      |
| 1     | Mn 257.610†        | 1817851.4     | 1866265.6           | 3268.7 µg/L        | 3268.7 ppb         | 12:40:41      |
| 1     | Mo 202.031†        | -45.1         | -16.5               | 2.2430 µg/L        | 2.2430 ppb         | 12:41:03      |
| 1     | Ni 231.604†        | 11467.4       | 11971.5             | 190.32 µg/L        | 190.32 ppb         | 12:40:43      |
| 1     | P 214.914†         | 11242.3       | 11637.7             | 4189.4 µg/L        | 4189.4 ppb         | 12:40:43      |
| 1     | Pb 220.353†        | 1060.0        | 1014.6              | 105.10 µg/L        | 105.10 ppb         | 12:41:03      |
| 1     | S 181.975 Axial†   | 2881.8        | 2856.1              | 3164.8 µg/L        | 3164.8 ppb         | 12:41:03      |
| 1     | Sb 206.836†        | 75.6          | 33.3                | -4.2839 µg/L       | -4.2839 ppb        | 12:41:03      |
| 1     | Se 196.026†        | -70.5         | -80.4               | 3.27 µg/L          | 3.27 ppb           | 12:41:03      |
| 1     | SiO2†              | 667453.6      | 682265.7            | 75511 µg/L         | 75511 ppb          | 12:40:41      |
| 1     | Si 251.611†        | 2009476.3     | 2062577.5           | 34984 µg/L         | 34984 ppb          | 12:40:41      |
| 1     | Sn 189.927†        | -37.9         | -11.4               | -1.2285 µg/L       | -1.2285 ppb        | 12:41:03      |
| 1     | Ti 334.940†        | 988733.0      | 1016037.4           | 1445.7 µg/L        | 1445.7 ppb         | 12:40:41      |
| 1     | Tl 190.801†        | -150.8        | -68.8               | -19.394 µg/L       | -19.394 ppb        | 12:41:03      |
| 1     | U 367.007†         | 4378.5        | 4779.7              | 22.036 µg/L        | 22.036 ppb         | 12:40:43      |
| 1     | V 292.402†         | 49877.8       | 51107.0             | 236.21 µg/L        | 236.21 ppb         | 12:40:43      |
| 1     | Zn 213.857†        | 88333.7       | 90647.1             | 500.24 µg/L        | 500.24 ppb         | 12:40:43      |
| 2     | Sc RADIAL          | 72598.0       | 72598.0             | 101 %              |                    | 12:40:33      |
| 2     | Al 396.153Radial†  | 202599.9      | 200935.0            | 73381 µg/L         | 73381 ppb          | 12:40:33      |
| 2     | Ca 317.933Radial†  | 1361374.5     | 1350527.2           | 150340 µg/L        | 150340 ppb         | 12:40:31      |
| 2     | Fe 238.204 Radial† | 1104212.2     | 1096210.4           | 103700 µg/L        | 103700 ppb         | 12:40:31      |
| 2     | K 766.490 Radial†  | 29696.4       | 28397.0             | 14949 µg/L         | 14949 ppb          | 12:40:33      |
| 2     | Mg 279.077 IEC†    | 111250.8      | 110365.6            | 59536 µg/L         | 59536 ppb          | 12:40:33      |
| 2     | Na 589.592 Radial† | 10710.1       | 10587.7             | 1765.5 µg/L        | 1765.5 ppb         | 12:40:33      |
| 2     | Sr 421.552†        | 193292.6      | 192260.2            | 552.62 µg/L        | 552.62 ppb         | 12:40:33      |
| 2     | Sc 361.383         | 1310186.5     | 1310186.5           | 98.421 %           |                    | 12:41:06      |
| 2     | Y 371.029          | 778867.8      | 778867.8            | 107.51 %           |                    | 12:41:06      |
| 2     | Ag 328.068†        | -2332.7       | -479.3              | 1.9982 µg/L        | 1.9982 ppb         | 12:41:08      |
| 2     | As 188.979†        | 21.2          | 51.5                | 41.689 µg/L        | 41.689 ppb         | 12:41:28      |
| 2     | B 249.677†         | -124.5        | -1011.3             | 61.522 µg/L        | 61.522 ppb         | 12:41:08      |
| 2     | Ba 233.527†        | 196859.4      | 200258.2            | 1786.1 µg/L        | 1786.1 ppb         | 12:41:08      |
| 2     | Be 313.107†        | 18703.0       | 22658.9             | -37.526 µg/L       | -37.526 ppb        | 12:41:08      |
| 2     | Cd 226.502†        | 1782.4        | 1991.0              | 3.1902 µg/L        | 3.1902 ppb         | 12:41:28      |
| 2     | Co 228.616†        | 4778.0        | 4946.1              | 74.299 µg/L        | 74.299 ppb         | 12:41:28      |
| 2     | Cr 267.716†        | 9493.4        | 9516.7              | 112.94 µg/L        | 112.94 ppb         | 12:41:08      |
| 2     | Cu 324.752†        | 43772.2       | 38697.5             | 178.62 µg/L        | 178.62 ppb         | 12:41:08      |
| 2     | Mn 257.610†        | 1833121.6     | 1862376.3           | 3261.9 µg/L        | 3261.9 ppb         | 12:41:06      |
| 2     | Mo 202.031†        | -19.9         | 9.6                 | 3.6496 µg/L        | 3.6496 ppb         | 12:41:28      |
| 2     | Ni 231.604†        | 11105.7       | 11481.6             | 182.54 µg/L        | 182.54 ppb         | 12:41:08      |
| 2     | P 214.914†         | 10879.5       | 11149.1             | 4013.2 µg/L        | 4013.2 ppb         | 12:41:08      |
| 2     | Pb 220.353†        | 1056.3        | 999.5               | 103.60 µg/L        | 103.60 ppb         | 12:41:28      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 2866.1    | 2809.4    | 3112.1 µg/L  | 3112.1 ppb  | 12:41:28 |
| 2 | Sb 206.836†        | 62.5      | 19.2      | -7.1361 µg/L | -7.1361 ppb | 12:41:28 |
| 2 | Se 196.026†        | -67.4     | -76.5     | 6.21 µg/L    | 6.21 ppb    | 12:41:28 |
| 2 | SiO2†              | 673272.8  | 681053.5  | 75377 µg/L   | 75377 ppb   | 12:41:06 |
| 2 | Si 251.611†        | 2026563.0 | 2058488.3 | 34915 µg/L   | 34915 ppb   | 12:41:06 |
| 2 | Sn 189.927†        | -27.0     | 0.0       | 0.2354 µg/L  | 0.2354 ppb  | 12:41:28 |
| 2 | Ti 334.940†        | 996620.4  | 1013497.3 | 1442.2 µg/L  | 1442.2 ppb  | 12:41:06 |
| 2 | Tl 190.801†        | -151.1    | -67.4     | -18.949 µg/L | -18.949 ppb | 12:41:28 |
| 2 | U 367.007†         | 4290.0    | 4643.1    | -5.6795 µg/L | -5.6795 ppb | 12:41:08 |
| 2 | V 292.402†         | 48669.4   | 49346.8   | 228.44 µg/L  | 228.44 ppb  | 12:41:08 |
| 2 | Zn 213.857†        | 86345.5   | 87684.1   | 483.21 µg/L  | 483.21 ppb  | 12:41:08 |
| 3 | Sc RADIAL          | 70985.7   | 70985.7   | 98.5 %       |             | 12:40:37 |
| 3 | Al 396.153Radial†  | 197836.7  | 200667.4  | 73284 µg/L   | 73284 ppb   | 12:40:37 |
| 3 | Ca 317.933Radial†  | 1356032.7 | 1375789.0 | 153150 µg/L  | 153150 ppb  | 12:40:35 |
| 3 | Fe 238.204 Radial† | 1099263.3 | 1116074.9 | 105580 µg/L  | 105580 ppb  | 12:40:35 |
| 3 | K 766.490 Radial†  | 29053.2   | 28413.6   | 14958 µg/L   | 14958 ppb   | 12:40:37 |
| 3 | Mg 279.077 IEC†    | 107725.6  | 109295.5  | 58960 µg/L   | 58960 ppb   | 12:40:37 |
| 3 | Na 589.592 Radial† | 10448.7   | 10563.8   | 1761.6 µg/L  | 1761.6 ppb  | 12:40:37 |
| 3 | Sr 421.552†        | 188625.6  | 191880.5  | 551.42 µg/L  | 551.42 ppb  | 12:40:37 |
| 3 | Sc 361.383         | 1325966.1 | 1325966.1 | 99.607 %     |             | 12:41:30 |
| 3 | Y 371.029          | 788005.8  | 788005.8  | 108.77 %     |             | 12:41:30 |
| 3 | Ag 328.068†        | -2324.6   | -443.0    | 2.2718 µg/L  | 2.2718 ppb  | 12:41:32 |
| 3 | As 188.979†        | 28.0      | 58.1      | 45.521 µg/L  | 45.521 ppb  | 12:41:52 |
| 3 | B 249.677†         | -227.5    | -1113.2   | 61.435 µg/L  | 61.435 ppb  | 12:41:32 |
| 3 | Ba 233.527†        | 200136.1  | 201167.5  | 1794.3 µg/L  | 1794.3 ppb  | 12:41:32 |
| 3 | Be 313.107†        | 19221.4   | 22953.3   | -37.645 µg/L | -37.645 ppb | 12:41:32 |
| 3 | Cd 226.502†        | 1767.9    | 1954.9    | 2.7023 µg/L  | 2.7023 ppb  | 12:41:52 |
| 3 | Co 228.616†        | 4809.0    | 4919.5    | 73.890 µg/L  | 73.890 ppb  | 12:41:52 |
| 3 | Cr 267.716†        | 9746.5    | 9656.0    | 114.62 µg/L  | 114.62 ppb  | 12:41:32 |
| 3 | Cu 324.752†        | 44459.1   | 38857.9   | 179.44 µg/L  | 179.44 ppb  | 12:41:32 |
| 3 | Mn 257.610†        | 1865462.5 | 1872680.0 | 3280.0 µg/L  | 3280.0 ppb  | 12:41:30 |
| 3 | Mo 202.031†        | -45.7     | -16.1     | 2.3533 µg/L  | 2.3533 ppb  | 12:41:52 |
| 3 | Ni 231.604†        | 11567.1   | 11810.5   | 187.76 µg/L  | 187.76 ppb  | 12:41:32 |
| 3 | P 214.914†         | 11133.7   | 11272.7   | 4057.6 µg/L  | 4057.6 ppb  | 12:41:32 |
| 3 | Pb 220.353†        | 1065.9    | 996.4     | 103.28 µg/L  | 103.28 ppb  | 12:41:52 |
| 3 | S 181.975 Axial†   | 2862.0    | 2770.6    | 3068.5 µg/L  | 3068.5 ppb  | 12:41:52 |
| 3 | Sb 206.836†        | 67.0      | 23.0      | -6.6328 µg/L | -6.6328 ppb | 12:41:52 |
| 3 | Se 196.026†        | -58.8     | -67.1     | 12.0 µg/L    | 12.0 ppb    | 12:41:52 |
| 3 | SiO2†              | 685207.4  | 684894.5  | 75802 µg/L   | 75802 ppb   | 12:41:30 |
| 3 | Si 251.611†        | 2062395.2 | 2069958.2 | 35109 µg/L   | 35109 ppb   | 12:41:30 |
| 3 | Sn 189.927†        | -21.8     | 5.6       | 0.9419 µg/L  | 0.9419 ppb  | 12:41:52 |
| 3 | Ti 334.940†        | 1015128.9 | 1020028.4 | 1451.5 µg/L  | 1451.5 ppb  | 12:41:30 |
| 3 | Tl 190.801†        | -163.5    | -78.1     | -22.203 µg/L | -22.203 ppb | 12:41:52 |
| 3 | U 367.007†         | 4344.6    | 4646.0    | -15.781 µg/L | -15.781 ppb | 12:41:32 |
| 3 | V 292.402†         | 49590.9   | 49683.4   | 230.07 µg/L  | 230.07 ppb  | 12:41:32 |
| 3 | Zn 213.857†        | 88051.2   | 88352.6   | 486.82 µg/L  | 486.82 ppb  | 12:41:32 |

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Mean Data: 409254018|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------|-----------------|--------------------|----------|--------|
| Sc 361.383  | 1310905.8                | 98.475 %     | 1.1053          |                    |          | 1.12%  |
| Sc RADIAL   | 71388.8                  | 99.1 %       | 1.48            |                    |          | 1.49%  |
| Y 371.029   | 779400.4                 | 107.59 %     | 1.153           |                    |          | 1.07%  |
| Ag 328.068†   | -498.7                   | 1.8939 µg/L  | 0.43945         | 1.8939 ppb         | 0.43945  | 23.20% |
| Al 396.153Radial†                                   | 200767.1                 | 73320 µg/L   | 53.3            | 73320 ppb          | 53.3     | 0.07%  |
| As 188.979†   | 55.8                     | 44.019 µg/L  | 2.0456          | 44.019 ppb         | 2.0456   | 4.65%  |
| B 249.677†  | -1124.3                  | 59.878 µg/L  | 2.7730          | 59.878 ppb         | 2.7730   | 4.63%  |
| Ba 233.527†   | 202751.7                 | 1808.4 µg/L  | 31.74           | 1808.4 ppb         | 31.74    | 1.76%  |
| Be 313.107†   | 22889.4                  | -38.008 µg/L | 0.7340          | -38.008 ppb        | 0.7340   | 1.93%  |
| Concentration less than lower limit for Be 313.107. |                          |              |                 |                    |          |        |
| Ca 317.933Radial†                                   | 1350171.4                | 150300 µg/L  | 2871.8          | 150300 ppb         | 2871.8   | 1.91%  |
| Cd 226.502†   | 2002.4                   | 3.2794 µg/L  | 0.62654         | 3.2794 ppb         | 0.62654  | 19.11% |
| Co 228.616†   | 4964.9                   | 74.604 µg/L  | 0.9060          | 74.604 ppb         | 0.9060   | 1.21%  |
| Cr 267.716†   | 9703.7                   | 115.14 µg/L  | 2.496           | 115.14 ppb         | 2.496    | 2.17%  |
| Cu 324.752†   | 39129.3                  | 180.53 µg/L  | 2.620           | 180.53 ppb         | 2.620    | 1.45%  |
| Fe 238.204 Radial†                                  | 1095925.2                | 103670 µg/L  | 1919.7          | 103670 ppb         | 1919.7   | 1.85%  |
| K 766.490 Radial†                                   | 28403.3                  | 14952 µg/L   | 5.1             | 14952 ppb          | 5.1      | 0.03%  |
| Mg 279.077 IEC†                                     | 109829.0                 | 59247 µg/L   | 288.2           | 59247 ppb          | 288.2    | 0.49%  |
| Mn 257.610†   | 1867107.3                | 3270.2 µg/L  | 9.13            | 3270.2 ppb         | 9.13     | 0.28%  |
| Mo 202.031†   | -7.7                     | 2.7486 µg/L  | 0.78218         | 2.7486 ppb         | 0.78218  | 28.46% |

|   |           |              |          |             |          |         |
|---|-----------|--------------|----------|-------------|----------|---------|
| Na 589.592 Radial†                                  | 10628.2   | 1772.3 µg/L  | 15.28    | 1772.3 ppb  | 15.28    | 0.86%   |
| Ni 231.604†   | 11754.5   | 186.87 µg/L  | 3.969    | 186.87 ppb  | 3.969    | 2.12%   |
| P 214.914†  | 11353.2   | 4086.7 µg/L  | 91.64    | 4086.7 ppb  | 91.64    | 2.24%   |
| Pb 220.353†   | 1003.5    | 103.99 µg/L  | 0.970    | 103.99 ppb  | 0.970    | 0.93%   |
| S 181.975 Axial†                                    | 2812.1    | 3115.1 µg/L  | 48.21    | 3115.1 ppb  | 48.21    | 1.55%   |
| Sb 206.836†   | 25.2      | -6.0176 µg/L | 1.52238  | -6.0176 ppb | 1.52238  | 25.30%  |
| Se 196.026†   | -74.7     | 7.17 µg/L    | 4.453    | 7.17 ppb    | 4.453    | 62.10%  |
| SiO2†   | 682737.9  | 75564 µg/L   | 217.3    | 75564 ppb   | 217.3    | 0.29%   |
| Si 251.611†   | 2063674.7 | 35003 µg/L   | 98.7     | 35003 ppb   | 98.7     | 0.28%   |
| Sn 189.927†   | -1.9      | -0.0171 µg/L | 1.10704  | -0.0171 ppb | 1.10704  | >999.9% |
| Sr 421.552†   | 191863.4  | 551.47 µg/L  | 1.126    | 551.47 ppb  | 1.126    | 0.20%   |
| Ti 334.940†   | 1016521.0 | 1446.5 µg/L  | 4.70     | 1446.5 ppb  | 4.70     | 0.33%   |
| Tl 190.801†   | -71.4     | -20.182 µg/L | 1.7644   | -20.182 ppb | 1.7644   | 8.74%   |
| Concentration less than lower limit for Tl 190.801. |           |              |          |             |          |         |
| U 367.007†  | 4689.6    | 0.1920 µg/L  | 19.58035 | 0.1920 ppb  | 19.58035 | >999.9% |
| V 292.402†  | 50045.7   | 231.57 µg/L  | 4.097    | 231.57 ppb  | 4.097    | 1.77%   |
| Zn 213.857†   | 88894.6   | 490.09 µg/L  | 8.972    | 490.09 ppb  | 8.972    | 1.83%   |

Sequence No.: 24

Sample ID: 409254019|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 325

Date Collected: 11/11/2016 12:42:00

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254019|1611117|1

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 71627.1          | 71627.1                | 99.4 %                |                       | 12:42:27         |
| 1     | Al 396.153Radial†  | 131722.9         | 132376.5               | 48355 µg/L            | 48355 ppb             | 12:42:27         |
| 1     | Ca 317.933Radial†  | 1458026.7        | 1466044.4              | 163200 µg/L           | 163200 ppb            | 12:42:25         |
| 1     | Fe 238.204 Radial† | 1108317.4        | 1115191.1              | 105490 µg/L           | 105490 ppb            | 12:42:25         |
| 1     | K 766.490 Radial†  | 21578.9          | 20632.4                | 10868 µg/L            | 10868 ppb             | 12:42:27         |
| 1     | Mg 279.077 IEC†    | 118344.5         | 118996.4               | 64190 µg/L            | 64190 ppb             | 12:42:27         |
| 1     | Na 589.592 Radial† | 12674.3          | 12707.3                | 2119.0 µg/L           | 2119.0 ppb            | 12:42:27         |
| 1     | Sr 421.552†        | 184478.6         | 185995.5               | 534.00 µg/L           | 534.00 ppb            | 12:42:27         |
| 1     | Sc 361.383         | 1291905.0        | 1291905.0              | 97.048 %              |                       | 12:42:39         |
| 1     | Y 371.029          | 766844.7         | 766844.7               | 105.85 %              |                       | 12:42:39         |
| 1     | Ag 328.068†        | -2546.2          | -732.9                 | 0.6768 µg/L           | 0.6768 ppb            | 12:42:41         |
| 1     | As 188.979†        | 47.6             | 79.0                   | 56.588 µg/L           | 56.588 ppb            | 12:43:01         |
| 1     | B 249.677†         | -1826.5          | -2767.0                | 37.591 µg/L           | 37.591 ppb            | 12:42:41         |
| 1     | Ba 233.527†        | 210273.2         | 216910.4               | 1934.6 µg/L           | 1934.6 ppb            | 12:42:41         |
| 1     | Be 313.107†        | 13680.2          | 17752.3                | -42.510 µg/L          | -42.510 ppb           | 12:42:41         |
| 1     | Cd 226.502†        | 1819.1           | 2054.4                 | 3.4648 µg/L           | 3.4648 ppb            | 12:43:01         |
| 1     | Co 228.616†        | 3095.8           | 3281.5                 | 49.723 µg/L           | 49.723 ppb            | 12:43:01         |
| 1     | Cr 267.716†        | 7204.2           | 7294.4                 | 86.801 µg/L           | 86.801 ppb            | 12:42:41         |
| 1     | Cu 324.752†        | 32053.1          | 27251.2                | 128.30 µg/L           | 128.30 ppb            | 12:42:41         |
| 1     | Mn 257.610†        | 1213452.0        | 1250212.8              | 2188.8 µg/L           | 2188.8 ppb            | 12:42:39         |
| 1     | Mo 202.031†        | -85.5            | -58.3                  | 0.2136 µg/L           | 0.2136 ppb            | 12:43:01         |
| 1     | Ni 231.604†        | 7575.0           | 8003.1                 | 127.23 µg/L           | 127.23 ppb            | 12:43:01         |
| 1     | P 214.914†         | 12364.1          | 12835.3                | 4620.8 µg/L           | 4620.8 ppb            | 12:42:41         |
| 1     | Pb 220.353†        | 765.4            | 715.0                  | 73.490 µg/L           | 73.490 ppb            | 12:43:01         |
| 1     | S 181.975 Axial†   | 1462.3           | 1404.1                 | 1543.4 µg/L           | 1543.4 ppb            | 12:43:01         |
| 1     | Sb 206.836†        | 53.7             | 11.0                   | -9.1012 µg/L          | -9.1012 ppb           | 12:43:01         |
| 1     | Se 196.026†        | -64.1            | -74.1                  | 8.92 µg/L             | 8.92 ppb              | 12:43:01         |
| 1     | Si02†              | 556033.3         | 569927.8               | 63078 µg/L            | 63078 ppb             | 12:42:39         |
| 1     | Si 251.611†        | 1677170.5        | 1727604.9              | 29305 µg/L            | 29305 ppb             | 12:42:39         |
| 1     | Sn 189.927†        | -53.2            | -27.4                  | -3.3464 µg/L          | -3.3464 ppb           | 12:43:01         |
| 1     | Ti 334.940†        | 1319311.2        | 1360333.4              | 1935.3 µg/L           | 1935.3 ppb            | 12:42:39         |
| 1     | Tl 190.801†        | -177.5           | -96.8                  | -27.951 µg/L          | -27.951 ppb           | 12:43:01         |
| 1     | U 367.007†         | 4364.0           | 4781.0                 | 0.3995 µg/L           | 0.3995 ppb            | 12:42:41         |
| 1     | V 292.402†         | 36334.1          | 37336.1                | 174.70 µg/L           | 174.70 ppb            | 12:42:41         |
| 1     | Zn 213.857†        | 66854.7          | 68841.9                | 375.93 µg/L           | 375.93 ppb            | 12:42:41         |
| 2     | Sc RADIAL          | 70842.5          | 70842.5                | 98.3 %                |                       | 12:42:31         |
| 2     | Al 396.153Radial†  | 130677.2         | 132780.5               | 48503 µg/L            | 48503 ppb             | 12:42:31         |
| 2     | Ca 317.933Radial†  | 1474938.7        | 1499482.4              | 166920 µg/L           | 166920 ppb            | 12:42:29         |
| 2     | Fe 238.204 Radial† | 1121431.5        | 1140871.7              | 107920 µg/L           | 107920 ppb            | 12:42:29         |
| 2     | K 766.490 Radial†  | 21302.2          | 20591.4                | 10847 µg/L            | 10847 ppb             | 12:42:31         |
| 2     | Mg 279.077 IEC†    | 116240.8         | 118175.3               | 63748 µg/L            | 63748 ppb             | 12:42:31         |
| 2     | Na 589.592 Radial† | 12620.6          | 12793.8                | 2133.4 µg/L           | 2133.4 ppb            | 12:42:31         |
| 2     | Sr 421.552†        | 183135.8         | 186684.9               | 535.87 µg/L           | 535.87 ppb            | 12:42:31         |
| 2     | Sc 361.383         | 1283796.1        | 1283796.1              | 96.439 %              |                       | 12:43:04         |
| 2     | Y 371.029          | 762112.1         | 762112.1               | 105.20 %              |                       | 12:43:04         |
| 2     | Ag 328.068†        | -2430.5          | -629.4                 | 1.3127 µg/L           | 1.3127 ppb            | 12:43:06         |
| 2     | As 188.979†        | 48.0             | 79.7                   | 57.307 µg/L           | 57.307 ppb            | 12:43:26         |
| 2     | B 249.677†         | -1713.7          | -2661.9                | 40.884 µg/L           | 40.884 ppb            | 12:43:06         |
| 2     | Ba 233.527†        | 208396.3         | 216332.7               | 1929.5 µg/L           | 1929.5 ppb            | 12:43:06         |
| 2     | Be 313.107†        | 13863.0          | 18030.8                | -42.302 µg/L          | -42.302 ppb           | 12:43:06         |
| 2     | Cd 226.502†        | 1838.4           | 2086.3                 | 3.4275 µg/L           | 3.4275 ppb            | 12:43:26         |
| 2     | Co 228.616†        | 3101.0           | 3307.0                 | 50.066 µg/L           | 50.066 ppb            | 12:43:26         |
| 2     | Cr 267.716†        | 7252.3           | 7391.1                 | 87.971 µg/L           | 87.971 ppb            | 12:43:06         |
| 2     | Cu 324.752†        | 31762.2          | 27158.2                | 128.05 µg/L           | 128.05 ppb            | 12:43:06         |
| 2     | Mn 257.610†        | 1201070.4        | 1245271.7              | 2180.2 µg/L           | 2180.2 ppb            | 12:43:04         |
| 2     | Mo 202.031†        | -76.8            | -49.9                  | 0.7069 µg/L           | 0.7069 ppb            | 12:43:26         |
| 2     | Ni 231.604†        | 7540.4           | 8016.6                 | 127.45 µg/L           | 127.45 ppb            | 12:43:26         |
| 2     | P 214.914†         | 12189.0          | 12734.2                | 4584.3 µg/L           | 4584.3 ppb            | 12:43:06         |
| 2     | Pb 220.353†        | 805.4            | 761.4                  | 78.178 µg/L           | 78.178 ppb            | 12:43:26         |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 1466.9    | 1418.4    | 1558.8 µg/L  | 1558.8 ppb  | 12:43:26 |
| 2 | Sb 206.836†        | 69.4      | 27.7      | -6.1501 µg/L | -6.1501 ppb | 12:43:26 |
| 2 | Se 196.026†        | -54.6     | -64.7     | 15.0 µg/L    | 15.0 ppb    | 12:43:26 |
| 2 | SiO2†              | 550616.9  | 567930.3  | 62857 µg/L   | 62857 ppb   | 12:43:04 |
| 2 | Si 251.611†        | 1660818.8 | 1721565.1 | 29203 µg/L   | 29203 ppb   | 12:43:04 |
| 2 | Sn 189.927†        | -49.9     | -24.3     | -2.9489 µg/L | -2.9489 ppb | 12:43:26 |
| 2 | Ti 334.940†        | 1308298.3 | 1357500.5 | 1931.3 µg/L  | 1931.3 ppb  | 12:43:04 |
| 2 | Tl 190.801†        | -183.1    | -103.8    | -30.039 µg/L | -30.039 ppb | 12:43:26 |
| 2 | U 367.007†         | 4456.4    | 4905.2    | 2.1481 µg/L  | 2.1481 ppb  | 12:43:06 |
| 2 | V 292.402†         | 36015.0   | 37241.6   | 174.44 µg/L  | 174.44 ppb  | 12:43:06 |
| 2 | Zn 213.857†        | 66237.1   | 68636.6   | 374.53 µg/L  | 374.53 ppb  | 12:43:06 |
| 3 | Sc RADIAL          | 70349.7   | 70349.7   | 97.7 %       |             | 12:42:35 |
| 3 | Al 396.153Radial†  | 129121.1  | 132117.9  | 48261 µg/L   | 48261 ppb   | 12:42:35 |
| 3 | Ca 317.933Radial†  | 1456434.0 | 1491040.5 | 165980 µg/L  | 165980 ppb  | 12:42:33 |
| 3 | Fe 238.204 Radial† | 1108416.2 | 1135532.6 | 107420 µg/L  | 107420 ppb  | 12:42:33 |
| 3 | K 766.490 Radial†  | 21247.5   | 20687.2   | 10897 µg/L   | 10897 ppb   | 12:42:35 |
| 3 | Mg 279.077 IEC†    | 115114.2  | 117849.7  | 63572 µg/L   | 63572 ppb   | 12:42:35 |
| 3 | Na 589.592 Radial† | 12448.5   | 12707.5   | 2119.0 µg/L  | 2119.0 ppb  | 12:42:35 |
| 3 | Sr 421.552†        | 180860.6  | 185659.7  | 532.93 µg/L  | 532.93 ppb  | 12:42:35 |
| 3 | Sc 361.383         | 1285290.7 | 1285290.7 | 96.551 %     |             | 12:43:28 |
| 3 | Y 371.029          | 762119.8  | 762119.8  | 105.20 %     |             | 12:43:28 |
| 3 | Ag 328.068†        | -2365.1   | -558.8    | 1.6653 µg/L  | 1.6653 ppb  | 12:43:30 |
| 3 | As 188.979†        | 46.6      | 78.2      | 56.387 µg/L  | 56.387 ppb  | 12:43:50 |
| 3 | B 249.677†         | -1701.7   | -2647.4   | 40.722 µg/L  | 40.722 ppb  | 12:43:30 |
| 3 | Ba 233.527†        | 204380.7  | 211922.4  | 1890.2 µg/L  | 1890.2 ppb  | 12:43:30 |
| 3 | Be 313.107†        | 13621.6   | 17764.1   | -41.414 µg/L | -41.414 ppb | 12:43:30 |
| 3 | Cd 226.502†        | 1823.6    | 2068.7    | 3.3525 µg/L  | 3.3525 ppb  | 12:43:50 |
| 3 | Co 228.616†        | 3103.7    | 3306.1    | 50.012 µg/L  | 50.012 ppb  | 12:43:50 |
| 3 | Cr 267.716†        | 6903.3    | 7020.9    | 83.625 µg/L  | 83.625 ppb  | 12:43:30 |
| 3 | Cu 324.752†        | 31301.5   | 26642.7   | 125.73 µg/L  | 125.73 ppb  | 12:43:30 |
| 3 | Mn 257.610†        | 1206505.7 | 1249452.9 | 2187.5 µg/L  | 2187.5 ppb  | 12:43:28 |
| 3 | Mo 202.031†        | -75.3     | -48.2     | 0.7789 µg/L  | 0.7789 ppb  | 12:43:50 |
| 3 | Ni 231.604†        | 7552.8    | 8020.4    | 127.51 µg/L  | 127.51 ppb  | 12:43:50 |
| 3 | P 214.914†         | 11963.2   | 12485.7   | 4494.7 µg/L  | 4494.7 ppb  | 12:43:30 |
| 3 | Pb 220.353†        | 784.3     | 738.6     | 75.881 µg/L  | 75.881 ppb  | 12:43:50 |
| 3 | S 181.975 Axial†   | 1456.4    | 1405.8    | 1544.9 µg/L  | 1544.9 ppb  | 12:43:50 |
| 3 | Sb 206.836†        | 62.5      | 20.5      | -7.4337 µg/L | -7.4337 ppb | 12:43:50 |
| 3 | Se 196.026†        | -30.6     | -39.7     | 27.8 µg/L    | 27.8 ppb    | 12:43:50 |
| 3 | SiO2†              | 553385.3  | 570133.7  | 63101 µg/L   | 63101 ppb   | 12:43:28 |
| 3 | Si 251.611†        | 1668107.2 | 1727111.3 | 29297 µg/L   | 29297 ppb   | 12:43:28 |
| 3 | Sn 189.927†        | -39.2     | -13.1     | -1.5259 µg/L | -1.5259 ppb | 12:43:50 |
| 3 | Ti 334.940†        | 1312064.7 | 1359823.9 | 1934.6 µg/L  | 1934.6 ppb  | 12:43:28 |
| 3 | Tl 190.801†        | -186.9    | -107.6    | -31.217 µg/L | -31.217 ppb | 12:43:50 |
| 3 | U 367.007†         | 4325.9    | 4764.7    | -12.317 µg/L | -12.317 ppb | 12:43:30 |
| 3 | V 292.402†         | 35291.5   | 36448.9   | 170.84 µg/L  | 170.84 ppb  | 12:43:30 |
| 3 | Zn 213.857†        | 64782.5   | 67050.1   | 365.60 µg/L  | 365.60 ppb  | 12:43:30 |

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Mean Data: 409254019|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD    |
|---|--------------------------|-------------|--------------|----------|-------------|-----------------|--------|
| Sc 361.383  | 1286997.3                | 96.679      | %            | 0.3242   |             |                 | 0.34%  |
| Sc RADIAL   | 70939.8                  | 98.5        | %            | 0.89     |             |                 | 0.91%  |
| Y 371.029   | 763692.2                 | 105.42      | %            | 0.377    |             |                 | 0.36%  |
| Ag 328.068†   | -640.4                   | 1.2183      | µg/L         | 0.50098  | 1.2183      | ppb             | 41.12% |
| Al 396.153Radial†                                   | 132425.0                 | 48373       | µg/L         | 122.0    | 48373       | ppb             | 0.25%  |
| As 188.979†   | 79.0                     | 56.761      | µg/L         | 0.4838   | 56.761      | ppb             | 0.85%  |
| B 249.677†  | -2692.1                  | 39.732      | µg/L         | 1.8566   | 39.732      | ppb             | 4.67%  |
| Ba 233.527†   | 215055.2                 | 1918.1      | µg/L         | 24.33    | 1918.1      | ppb             | 1.27%  |
| Be 313.107†   | 17849.1                  | -42.075     | µg/L         | 0.5822   | -42.075     | ppb             | 1.38%  |
| Concentration less than lower limit for Be 313.107. |                          |             |              |          |             |                 |        |
| Ca 317.933Radial†                                   | 1485522.4                | 165370      | µg/L         | 1935.7   | 165370      | ppb             | 1.17%  |
| Cd 226.502†   | 2069.8                   | 3.4150      | µg/L         | 0.05717  | 3.4150      | ppb             | 1.67%  |
| Co 228.616†   | 3298.2                   | 49.933      | µg/L         | 0.1842   | 49.933      | ppb             | 0.37%  |
| Cr 267.716†   | 7235.5                   | 86.132      | µg/L         | 2.2492   | 86.132      | ppb             | 2.61%  |
| Cu 324.752†   | 27017.4                  | 127.36      | µg/L         | 1.419    | 127.36      | ppb             | 1.11%  |
| Fe 238.204 Radial†                                  | 1130531.8                | 106940      | µg/L         | 1281.9   | 106940      | ppb             | 1.20%  |
| K 766.490 Radial†                                   | 20637.0                  | 10871       | µg/L         | 25.2     | 10871       | ppb             | 0.23%  |
| Mg 279.077 IEC†                                     | 118340.5                 | 63837       | µg/L         | 318.2    | 63837       | ppb             | 0.50%  |
| Mn 257.610†   | 1248312.4                | 2185.5      | µg/L         | 4.66     | 2185.5      | ppb             | 0.21%  |
| Mo 202.031†   | -52.2                    | 0.5665      | µg/L         | 0.30770  | 0.5665      | ppb             | 54.32% |

|   |           |              |         |             |         |         |
|---|-----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial†                                  | 12736.2   | 2123.8 µg/L  | 8.32    | 2123.8 ppb  | 8.32    | 0.39%   |
| Ni 231.604†   | 8013.3    | 127.40 µg/L  | 0.144   | 127.40 ppb  | 0.144   | 0.11%   |
| P 214.914†  | 12685.1   | 4566.6 µg/L  | 64.88   | 4566.6 ppb  | 64.88   | 1.42%   |
| Pb 220.353†   | 738.3     | 75.850 µg/L  | 2.3442  | 75.850 ppb  | 2.3442  | 3.09%   |
| S 181.975 Axial†                                    | 1409.4    | 1549.0 µg/L  | 8.51    | 1549.0 ppb  | 8.51    | 0.55%   |
| Sb 206.836†   | 19.7      | -7.5616 µg/L | 1.47970 | -7.5616 ppb | 1.47970 | 19.57%  |
| Se 196.026†   | -59.5     | 17.2 µg/L    | 9.64    | 17.2 ppb    | 9.64    | 55.96%  |
| SiO2†   | 569330.6  | 63012 µg/L   | 134.7   | 63012 ppb   | 134.7   | 0.21%   |
| Si 251.611†   | 1725427.1 | 29268 µg/L   | 56.7    | 29268 ppb   | 56.7    | 0.19%   |
| Sn 189.927†   | -21.6     | -2.6071 µg/L | 0.95719 | -2.6071 ppb | 0.95719 | 36.72%  |
| Sr 421.552†   | 186113.4  | 534.26 µg/L  | 1.489   | 534.26 ppb  | 1.489   | 0.28%   |
| Ti 334.940†   | 1359219.3 | 1933.8 µg/L  | 2.13    | 1933.8 ppb  | 2.13    | 0.11%   |
| Tl 190.801†   | -102.7    | -29.735 µg/L | 1.6541  | -29.735 ppb | 1.6541  | 5.56%   |
| Concentration less than lower limit for Tl 190.801. |           |              |         |             |         |         |
| U 367.007†  | 4817.0    | -3.2564 µg/L | 7.89510 | -3.2564 ppb | 7.89510 | 242.45% |
| V 292.402†  | 37008.8   | 173.33 µg/L  | 2.155   | 173.33 ppb  | 2.155   | 1.24%   |
| Zn 213.857†   | 68176.2   | 372.02 µg/L  | 5.608   | 372.02 ppb  | 5.608   | 1.51%   |

Sequence No.: 25

Sample ID: 409254020|1611117|1

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 326

Date Collected: 11/11/2016 12:43:58

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254020|1611117|1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71028.3       | 71028.3             | 98.6 %             |                    | 12:44:25      |
| 1     | Al 396.153Radial†  | 294258.6      | 298339.1            | 108930 µg/L        | 108930 ppb         | 12:44:25      |
| 1     | Ca 317.933Radial†  | 1030577.7     | 1044881.9           | 116320 µg/L        | 116320 ppb         | 12:44:25      |
| 1     | Fe 238.204 Radial† | 2144643.0     | 2175642.4           | 205810 µg/L        | 205810 ppb         | 12:44:23      |
| 1     | K 766.490 Radial†  | 38435.1       | 37911.2             | 19987 µg/L         | 19987 ppb          | 12:44:25      |
| 1     | Mg 279.077 IEC†    | 92080.1       | 93362.0             | 50402 µg/L         | 50402 ppb          | 12:44:25      |
| 1     | Na 589.592 Radial† | 92259.6       | 93531.1             | 15597 µg/L         | 15597 ppb          | 12:44:25      |
| 1     | Sr 421.552†        | 199476.9      | 202771.0            | 584.28 µg/L        | 584.28 ppb         | 12:44:25      |
| 1     | Sc 361.383         | 1305462.6     | 1305462.6           | 98.066 %           |                    | 12:44:37      |
| 1     | Y 371.029          | 805643.9      | 805643.9            | 111.21 %           |                    | 12:44:40      |
| 1     | Ag 328.068†        | -2786.4       | -950.5              | 5.5354 µg/L        | 5.5354 ppb         | 12:44:40      |
| 1     | As 188.979†        | 153.3         | 186.2               | 127.71 µg/L        | 127.71 ppb         | 12:45:00      |
| 1     | B 249.677†         | -4790.8       | -5770.2             | 67.986 µg/L        | 67.986 ppb         | 12:44:40      |
| 1     | Ba 233.527†        | 350101.8      | 357246.1            | 3186.5 µg/L        | 3186.5 ppb         | 12:44:40      |
| 1     | Be 313.107†        | 25655.0       | 29816.8             | -69.815 µg/L       | -69.815 ppb        | 12:44:40      |
| 1     | Cd 226.502†        | 3734.0        | 3987.6              | 6.6053 µg/L        | 6.6053 ppb         | 12:45:00      |
| 1     | Co 228.616†        | 5554.2        | 5755.2              | 86.711 µg/L        | 86.711 ppb         | 12:45:00      |
| 1     | Cr 267.716†        | 12452.4       | 12569.0             | 150.28 µg/L        | 150.28 ppb         | 12:45:00      |
| 1     | Cu 324.752†        | 53165.7       | 48437.2             | 228.40 µg/L        | 228.40 ppb         | 12:44:40      |
| 1     | Mn 257.610†        | 4429929.5     | 4517128.7           | 7915.0 µg/L        | 7915.0 ppb         | 12:44:37      |
| 1     | Mo 202.031†        | -14.4         | 15.0                | 6.3202 µg/L        | 6.3202 ppb         | 12:45:00      |
| 1     | Ni 231.604†        | 13936.8       | 14409.4             | 229.08 µg/L        | 229.08 ppb         | 12:45:00      |
| 1     | P 214.914†         | 16666.0       | 17089.7             | 6149.1 µg/L        | 6149.1 ppb         | 12:45:00      |
| 1     | Pb 220.353†        | 1532.9        | 1489.4              | 154.48 µg/L        | 154.48 ppb         | 12:45:00      |
| 1     | S 181.975 Axial†   | 13621.2       | 13787.1             | 15344 µg/L         | 15344 ppb          | 12:45:00      |
| 1     | Sb 206.836†        | 86.2          | 43.6                | -12.848 µg/L       | -12.848 ppb        | 12:45:00      |
| 1     | Se 196.026†        | -124.0        | -134.4              | 22.3 µg/L          | 22.3 ppb           | 12:45:00      |
| 1     | SiO2†              | 641345.5      | 650972.1            | 72048 µg/L         | 72048 ppb          | 12:44:40      |
| 1     | Si 251.611†        | 1953894.7     | 1991837.9           | 33798 µg/L         | 33798 ppb          | 12:44:37      |
| 1     | Sn 189.927†        | -19.4         | 7.7                 | 1.3315 µg/L        | 1.3315 ppb         | 12:45:00      |
| 1     | Ti 334.940†        | 1173759.5     | 1197793.4           | 1703.4 µg/L        | 1703.4 ppb         | 12:44:37      |
| 1     | Tl 190.801†        | -176.8        | -94.3               | -25.454 µg/L       | -25.454 ppb        | 12:45:00      |
| 1     | U 367.007†         | 8307.9        | 8755.9              | -51.752 µg/L       | -51.752 ppb        | 12:44:40      |
| 1     | V 292.402†         | 70323.7       | 71607.0             | 335.24 µg/L        | 335.24 ppb         | 12:44:40      |
| 1     | Zn 213.857†        | 126756.9      | 129209.8            | 708.23 µg/L        | 708.23 ppb         | 12:44:40      |
| 2     | Sc RADIAL          | 71451.0       | 71451.0             | 99.2 %             |                    | 12:44:29      |
| 2     | Al 396.153Radial†  | 297186.5      | 299525.5            | 109370 µg/L        | 109370 ppb         | 12:44:29      |
| 2     | Ca 317.933Radial†  | 1040349.9     | 1048550.9           | 116730 µg/L        | 116730 ppb         | 12:44:29      |
| 2     | Fe 238.204 Radial† | 2103068.8     | 2120858.9           | 200620 µg/L        | 200620 ppb         | 12:44:27      |
| 2     | K 766.490 Radial†  | 38744.9       | 37992.9             | 20029 µg/L         | 20029 ppb          | 12:44:29      |
| 2     | Mg 279.077 IEC†    | 92964.1       | 93700.8             | 50583 µg/L         | 50583 ppb          | 12:44:29      |
| 2     | Na 589.592 Radial† | 93100.3       | 93825.1             | 15646 µg/L         | 15646 ppb          | 12:44:29      |
| 2     | Sr 421.552†        | 201148.5      | 203259.5            | 585.69 µg/L        | 585.69 ppb         | 12:44:29      |
| 2     | Sc 361.383         | 1327371.4     | 1327371.4           | 99.712 %           |                    | 12:45:02      |
| 2     | Y 371.029          | 821735.0      | 821735.0            | 113.43 %           |                    | 12:45:04      |
| 2     | Ag 328.068†        | -2751.3       | -868.4              | 5.6534 µg/L        | 5.6534 ppb         | 12:45:04      |
| 2     | As 188.979†        | 148.9         | 179.3               | 123.28 µg/L        | 123.28 ppb         | 12:45:25      |
| 2     | B 249.677†         | -4766.7       | -5665.3             | 65.692 µg/L        | 65.692 ppb         | 12:45:04      |
| 2     | Ba 233.527†        | 356938.4      | 358209.8            | 3195.0 µg/L        | 3195.0 ppb         | 12:45:04      |
| 2     | Be 313.107†        | 26217.4       | 29949.0             | -69.991 µg/L       | -69.991 ppb        | 12:45:04      |
| 2     | Cd 226.502†        | 3708.3        | 3899.0              | 6.5282 µg/L        | 6.5282 ppb         | 12:45:25      |
| 2     | Co 228.616†        | 5492.8        | 5600.2              | 84.482 µg/L        | 84.482 ppb         | 12:45:25      |
| 2     | Cr 267.716†        | 12360.7       | 12267.4             | 146.64 µg/L        | 146.64 ppb         | 12:45:25      |
| 2     | Cu 324.752†        | 54618.3       | 48999.1             | 230.55 µg/L        | 230.55 ppb         | 12:45:04      |
| 2     | Mn 257.610†        | 4523495.9     | 4536405.6           | 7948.7 µg/L        | 7948.7 ppb         | 12:45:02      |
| 2     | Mo 202.031†        | -26.4         | 3.3                 | 5.5850 µg/L        | 5.5850 ppb         | 12:45:25      |
| 2     | Ni 231.604†        | 13826.8       | 14064.5             | 223.60 µg/L        | 223.60 ppb         | 12:45:25      |
| 2     | P 214.914†         | 16525.3       | 16668.1             | 5997.4 µg/L        | 5997.4 ppb         | 12:45:25      |
| 2     | Pb 220.353†        | 1503.4        | 1434.0              | 148.90 µg/L        | 148.90 ppb         | 12:45:25      |



|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 13507.7   | 13444.0   | 14962 µg/L   | 14962 ppb   | 12:45:25 |
| 2 | Sb 206.836†        | 81.2      | 37.2      | -13.484 µg/L | -13.484 ppb | 12:45:25 |
| 2 | Se 196.026†        | -133.8    | -142.2    | 15.8 µg/L    | 15.8 ppb    | 12:45:25 |
| 2 | SiO2†              | 655366.8  | 654239.4  | 72409 µg/L   | 72409 ppb   | 12:45:04 |
| 2 | Si 251.611†        | 1996962.0 | 2002143.8 | 33972 µg/L   | 33972 ppb   | 12:45:02 |
| 2 | Sn 189.927†        | -18.2     | 9.2       | 1.5177 µg/L  | 1.5177 ppb  | 12:45:25 |
| 2 | Ti 334.940†        | 1199305.0 | 1203657.2 | 1711.8 µg/L  | 1711.8 ppb  | 12:45:02 |
| 2 | Tl 190.801†        | -165.2    | -79.6     | -21.047 µg/L | -21.047 ppb | 12:45:25 |
| 2 | U 367.007†         | 8433.2    | 8741.8    | -25.352 µg/L | -25.352 ppb | 12:45:04 |
| 2 | V 292.402†         | 71801.6   | 71905.6   | 336.23 µg/L  | 336.23 ppb  | 12:45:04 |
| 2 | Zn 213.857†        | 129859.3  | 130187.7  | 714.32 µg/L  | 714.32 ppb  | 12:45:04 |
| 3 | Sc RADIAL          | 72678.6   | 72678.6   | 101 %        |             | 12:44:33 |
| 3 | Al 396.153Radial†  | 301631.1  | 298870.3  | 109130 µg/L  | 109130 ppb  | 12:44:33 |
| 3 | Ca 317.933Radial†  | 1058617.7 | 1048941.7 | 116770 µg/L  | 116770 ppb  | 12:44:33 |
| 3 | Fe 238.204 Radial† | 2188335.6 | 2169561.3 | 205230 µg/L  | 205230 ppb  | 12:44:31 |
| 3 | K 766.490 Radial†  | 39437.3   | 38019.4   | 20044 µg/L   | 20044 ppb   | 12:44:33 |
| 3 | Mg 279.077 IEC†    | 94714.3   | 93852.5   | 50666 µg/L   | 50666 ppb   | 12:44:33 |
| 3 | Na 589.592 Radial† | 94327.9   | 93456.6   | 15584 µg/L   | 15584 ppb   | 12:44:33 |
| 3 | Sr 421.552†        | 204281.5  | 202939.6  | 584.76 µg/L  | 584.76 ppb  | 12:44:33 |
| 3 | Sc 361.383         | 1322200.2 | 1322200.2 | 99.324 %     |             | 12:45:27 |
| 3 | Y 371.029          | 830077.6  | 830077.6  | 114.58 %     |             | 12:45:29 |
| 3 | Ag 328.068†        | -2887.8   | -1016.7   | 5.1527 µg/L  | 5.1527 ppb  | 12:45:29 |
| 3 | As 188.979†        | 144.2     | 175.1     | 121.57 µg/L  | 121.57 ppb  | 12:45:49 |
| 3 | B 249.677†         | -4655.1   | -5571.7   | 70.418 µg/L  | 70.418 ppb  | 12:45:29 |
| 3 | Ba 233.527†        | 360088.5  | 362781.4  | 3235.8 µg/L  | 3235.8 ppb  | 12:45:29 |
| 3 | Be 313.107†        | 26370.6   | 30206.1   | -70.920 µg/L | -70.920 ppb | 12:45:29 |
| 3 | Cd 226.502†        | 3724.5    | 3929.9    | 6.2345 µg/L  | 6.2345 ppb  | 12:45:49 |
| 3 | Co 228.616†        | 5540.8    | 5670.0    | 85.511 µg/L  | 85.511 ppb  | 12:45:49 |
| 3 | Cr 267.716†        | 12401.8   | 12357.2   | 147.77 µg/L  | 147.77 ppb  | 12:45:49 |
| 3 | Cu 324.752†        | 54572.1   | 49166.8   | 231.59 µg/L  | 231.59 ppb  | 12:45:29 |
| 3 | Mn 257.610†        | 4469357.6 | 4499641.6 | 7884.3 µg/L  | 7884.3 ppb  | 12:45:27 |
| 3 | Mo 202.031†        | -9.6      | 20.1      | 6.5710 µg/L  | 6.5710 ppb  | 12:45:49 |
| 3 | Ni 231.604†        | 13931.8   | 14224.4   | 226.14 µg/L  | 226.14 ppb  | 12:45:49 |
| 3 | P 214.914†         | 16634.5   | 16842.8   | 6060.1 µg/L  | 6060.1 ppb  | 12:45:49 |
| 3 | Pb 220.353†        | 1518.6    | 1455.2    | 151.02 µg/L  | 151.02 ppb  | 12:45:49 |
| 3 | S 181.975 Axial†   | 13596.4   | 13586.3   | 15120 µg/L   | 15120 ppb   | 12:45:49 |
| 3 | Sb 206.836†        | 88.2      | 44.5      | -12.575 µg/L | -12.575 ppb | 12:45:49 |
| 3 | Se 196.026†        | -133.8    | -142.7    | 17.7 µg/L    | 17.7 ppb    | 12:45:49 |
| 3 | SiO2†              | 660787.0  | 662267.1  | 73298 µg/L   | 73298 ppb   | 12:45:29 |
| 3 | Si 251.611†        | 1971636.2 | 1984478.4 | 33673 µg/L   | 33673 ppb   | 12:45:27 |
| 3 | Sn 189.927†        | -4.8      | 22.6      | 3.2373 µg/L  | 3.2373 ppb  | 12:45:49 |
| 3 | Ti 334.940†        | 1186889.5 | 1195861.4 | 1700.7 µg/L  | 1700.7 ppb  | 12:45:27 |
| 3 | Tl 190.801†        | -149.7    | -64.6     | -16.367 µg/L | -16.367 ppb | 12:45:49 |
| 3 | U 367.007†         | 8468.1    | 8809.9    | -42.017 µg/L | -42.017 ppb | 12:45:29 |
| 3 | V 292.402†         | 72622.4   | 73013.6   | 341.50 µg/L  | 341.50 ppb  | 12:45:29 |
| 3 | Zn 213.857†        | 130901.7  | 131746.6  | 722.66 µg/L  | 722.66 ppb  | 12:45:29 |

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Mean Data: 409254020|1611117|1

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|---|--------------------------|--------------|-----------------|--------------------|----------|-------|
| Sc 361.383  | 1318344.7                | 99.034 %     | 0.8603          |                    |          | 0.87% |
| Sc RADIAL   | 71719.3                  | 99.6 %       | 1.19            |                    |          | 1.20% |
| Y 371.029   | 819152.2                 | 113.07 %     | 1.714           |                    |          | 1.52% |
| Ag 328.068†   | -945.2                   | 5.4472 µg/L  | 0.26175         | 5.4472 ppb         | 0.26175  | 4.81% |
| Al 396.153Radial†                                   | 298911.6                 | 109140 µg/L  | 217.0           | 109140 ppb         | 217.0    | 0.20% |
| As 188.979†   | 180.2                    | 124.19 µg/L  | 3.170           | 124.19 ppb         | 3.170    | 2.55% |
| B 249.677†  | -5669.1                  | 68.032 µg/L  | 2.3636          | 68.032 ppb         | 2.3636   | 3.47% |
| Ba 233.527†   | 359412.4                 | 3205.8 µg/L  | 26.37           | 3205.8 ppb         | 26.37    | 0.82% |
| Be 313.107†   | 29990.6                  | -70.242 µg/L | 0.5939          | -70.242 ppb        | 0.5939   | 0.85% |
| Concentration less than lower limit for Be 313.107. |                          |              |                 |                    |          |       |
| Ca 317.933Radial†                                   | 1047458.2                | 116600 µg/L  | 249.3           | 116600 ppb         | 249.3    | 0.21% |
| Cd 226.502†   | 3938.9                   | 6.4560 µg/L  | 0.19563         | 6.4560 ppb         | 0.19563  | 3.03% |
| Co 228.616†   | 5675.2                   | 85.568 µg/L  | 1.1157          | 85.568 ppb         | 1.1157   | 1.30% |
| Cr 267.716†   | 12397.9                  | 148.23 µg/L  | 1.863           | 148.23 ppb         | 1.863    | 1.26% |
| Cu 324.752†   | 48867.7                  | 230.18 µg/L  | 1.628           | 230.18 ppb         | 1.628    | 0.71% |
| Fe 238.204 Radial†                                  | 2155354.2                | 203890 µg/L  | 2840.5          | 203890 ppb         | 2840.5   | 1.39% |
| K 766.490 Radial†                                   | 37974.5                  | 20020 µg/L   | 29.2            | 20020 ppb          | 29.2     | 0.15% |
| Mg 279.077 IEC†                                     | 93638.4                  | 50550 µg/L   | 135.1           | 50550 ppb          | 135.1    | 0.27% |
| Mn 257.610†   | 4517725.3                | 7916.0 µg/L  | 32.23           | 7916.0 ppb         | 32.23    | 0.41% |
| Mo 202.031†   | 12.8                     | 6.1587 µg/L  | 0.51241         | 6.1587 ppb         | 0.51241  | 8.32% |

|   |           |              |         |             |         |        |
|---|-----------|--------------|---------|-------------|---------|--------|
| Na 589.592 Radial†                                  | 93604.3   | 15609 µg/L   | 32.5    | 15609 ppb   | 32.5    | 0.21%  |
| Ni 231.604†   | 14232.8   | 226.27 µg/L  | 2.744   | 226.27 ppb  | 2.744   | 1.21%  |
| P 214.914†  | 16866.9   | 6068.8 µg/L  | 76.23   | 6068.8 ppb  | 76.23   | 1.26%  |
| Pb 220.353†   | 1459.6    | 151.47 µg/L  | 2.819   | 151.47 ppb  | 2.819   | 1.86%  |
| S 181.975 Axial†                                    | 13605.8   | 15142 µg/L   | 191.9   | 15142 ppb   | 191.9   | 1.27%  |
| Sb 206.836†   | 41.7      | -12.969 µg/L | 0.4665  | -12.969 ppb | 0.4665  | 3.60%  |
| Concentration less than lower limit for Sb 206.836. |           |              |         |             |         |        |
| Se 196.026†   | -139.8    | 18.6 µg/L    | 3.32    | 18.6 ppb    | 3.32    | 17.86% |
| SiO2†   | 655826.2  | 72585 µg/L   | 643.3   | 72585 ppb   | 643.3   | 0.89%  |
| Si 251.611†   | 1992820.1 | 33814 µg/L   | 150.1   | 33814 ppb   | 150.1   | 0.44%  |
| Sn 189.927†   | 13.2      | 2.0288 µg/L  | 1.05064 | 2.0288 ppb  | 1.05064 | 51.79% |
| Sr 421.552†   | 202990.0  | 584.91 µg/L  | 0.714   | 584.91 ppb  | 0.714   | 0.12%  |
| Ti 334.940†   | 1199104.0 | 1705.3 µg/L  | 5.77    | 1705.3 ppb  | 5.77    | 0.34%  |
| Tl 190.801†   | -79.5     | -20.956 µg/L | 4.5444  | -20.956 ppb | 4.5444  | 21.69% |
| Concentration less than lower limit for Tl 190.801. |           |              |         |             |         |        |
| U 367.007†  | 8769.2    | -39.707 µg/L | 13.3507 | -39.707 ppb | 13.3507 | 33.62% |
| V 292.402†  | 72175.4   | 337.66 µg/L  | 3.368   | 337.66 ppb  | 3.368   | 1.00%  |
| Zn 213.857†   | 130381.4  | 715.07 µg/L  | 7.248   | 715.07 ppb  | 7.248   | 1.01%  |

=====  
Analysis Begun

Start Time: 11/11/2016 13:04:59

Plasma On Time: 11/7/2016 06:01:25

Logged In Analyst: lab

Technique: ICP Continuous

Spectrometer Model: Optima 7300 DV, S/N No Serial #Autosampler Model: AS-93plus

Sample Information File: C:\pe\optima4\Sample Information\111116.sif

Batch ID:

Results Data Set: 111116

Results Library: C:\pe\optima4\Results\Results.mdb

=====  
Sequence No.: 1

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/11/2016 13:05:00

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:  
-----

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71815.4       | 71815.4             | 99.7 %             |                    | 13:05:33      |
| 1     | Al 396.153Radial†  | 13929.6       | 13871.0             | 5064.7 µg/L        | 5064.7 ppb         | 13:05:33      |
| 1     | Ca 317.933Radial†  | 45599.2       | 45397.2             | 5053.6 µg/L        | 5053.6 ppb         | 13:05:33      |
| 1     | Fe 238.204 Radial† | 53171.4       | 53854.1             | 5094.3 µg/L        | 5094.3 ppb         | 13:05:33      |
| 1     | K 766.490 Radial†  | 10695.7       | 9658.6              | 5077.1 µg/L        | 5077.1 ppb         | 13:05:33      |
| 1     | Mg 279.077 IEC†    | 9225.4        | 9227.1              | 4976.4 µg/L        | 4976.4 ppb         | 13:05:33      |
| 1     | Na 589.592 Radial† | 58142.3       | 58282.6             | 9718.9 µg/L        | 9718.9 ppb         | 13:05:31      |
| 1     | Sr 421.552†        | 169593.4      | 170577.7            | 494.72 µg/L        | 494.72 ppb         | 13:05:31      |
| 1     | Sc 361.383         | 1312887.4     | 1312887.4           | 98.624 %           |                    | 13:05:44      |
| 1     | Y 371.029          | 701638.9      | 701638.9            | 96.852 %           |                    | 13:05:44      |
| 1     | Ag 328.068†        | 93012.2       | 96200.7             | 496.42 µg/L        | 496.42 ppb         | 13:05:46      |
| 1     | As 188.979†        | 898.1         | 940.6               | 516.15 µg/L        | 516.15 ppb         | 13:06:07      |
| 1     | B 249.677†         | 34873.1       | 34474.8             | 499.53 µg/L        | 499.53 ppb         | 13:05:46      |
| 1     | Ba 233.527†        | 54732.3       | 55736.6             | 497.01 µg/L        | 497.01 ppb         | 13:05:46      |
| 1     | Be 313.107†        | 1784152.3     | 1812699.9           | 482.32 µg/L        | 482.32 ppb         | 13:05:44      |
| 1     | Cd 226.502†        | 64253.8       | 65330.3             | 493.73 µg/L        | 493.73 ppb         | 13:05:46      |
| 1     | Co 228.616†        | 32891.8       | 33442.2             | 497.31 µg/L        | 497.31 ppb         | 13:05:46      |
| 1     | Cr 267.716†        | 41860.2       | 42315.2             | 497.25 µg/L        | 497.25 ppb         | 13:05:46      |
| 1     | Cu 324.752†        | 116505.5      | 112354.1            | 496.60 µg/L        | 496.60 ppb         | 13:05:46      |
| 1     | Mn 257.610†        | 280556.6      | 284318.9            | 498.12 µg/L        | 498.12 ppb         | 13:05:46      |
| 1     | Mo 202.031†        | 9585.0        | 9748.5              | 506.83 µg/L        | 506.83 ppb         | 13:06:07      |
| 1     | Ni 231.604†        | 30500.9       | 31124.2             | 494.82 µg/L        | 494.82 ppb         | 13:05:46      |
| 1     | P 214.914†         | 6808.2        | 6998.3              | 2522.2 µg/L        | 2522.2 ppb         | 13:06:07      |
| 1     | Pb 220.353†        | 5037.2        | 5033.8              | 508.76 µg/L        | 508.76 ppb         | 13:06:07      |
| 1     | S 181.975 Axial†   | 985.1         | 896.1               | 999.15 µg/L        | 999.15 ppb         | 13:06:07      |
| 1     | Sb 206.836†        | 2647.6        | 2640.3              | 501.99 µg/L        | 501.99 ppb         | 13:06:07      |
| 1     | Se 196.026†        | 954.7         | 960.0               | 506 µg/L           | 506 ppb            | 13:06:07      |
| 1     | SiO2†              | 51427.2       | 49125.0             | 5437.0 µg/L        | 5437.0 ppb         | 13:05:46      |
| 1     | Si 251.611†        | 149204.1      | 150701.3            | 2555.8 µg/L        | 2555.8 ppb         | 13:05:46      |
| 1     | Sn 189.927†        | 3897.1        | 3979.0              | 508.76 µg/L        | 508.76 ppb         | 13:06:07      |
| 1     | Ti 334.940†        | 342252.7      | 347916.9            | 494.20 µg/L        | 494.20 ppb         | 13:05:46      |
| 1     | Tl 190.801†        | 1541.7        | 1649.3              | 506.69 µg/L        | 506.69 ppb         | 13:06:07      |
| 1     | U 367.007†         | 3796.1        | 4133.2              | 480.37 µg/L        | 480.37 ppb         | 13:05:46      |
| 1     | V 292.402†         | 109296.1      | 110717.7            | 497.49 µg/L        | 497.49 ppb         | 13:05:46      |
| 1     | Zn 213.857†        | 86484.4       | 87644.5             | 495.93 µg/L        | 495.93 ppb         | 13:05:46      |
| 2     | Sc RADIAL          | 73140.9       | 73140.9             | 102 %              |                    | 13:05:37      |
| 2     | Al 396.153Radial†  | 13944.8       | 13632.8             | 4977.8 µg/L        | 4977.8 ppb         | 13:05:37      |
| 2     | Ca 317.933Radial†  | 45988.2       | 44951.5             | 5004.0 µg/L        | 5004.0 ppb         | 13:05:37      |
| 2     | Fe 238.204 Radial† | 53781.5       | 53488.5             | 5059.8 µg/L        | 5059.8 ppb         | 13:05:37      |
| 2     | K 766.490 Radial†  | 10847.2       | 9613.4              | 5053.4 µg/L        | 5053.4 ppb         | 13:05:37      |
| 2     | Mg 279.077 IEC†    | 9369.8        | 9201.7              | 4962.6 µg/L        | 4962.6 ppb         | 13:05:37      |
| 2     | Na 589.592 Radial† | 58784.4       | 57858.1             | 9648.1 µg/L        | 9648.1 ppb         | 13:05:35      |
| 2     | Sr 421.552†        | 171162.1      | 169039.9            | 490.26 µg/L        | 490.26 ppb         | 13:05:35      |
| 2     | Sc 361.383         | 1347943.1     | 1347943.1           | 101.26 %           |                    | 13:06:09      |
| 2     | Y 371.029          | 718977.7      | 718977.7            | 99.245 %           |                    | 13:06:09      |
| 2     | Ag 328.068†        | 94401.2       | 95119.7             | 490.85 µg/L        | 490.85 ppb         | 13:06:11      |
| 2     | As 188.979†        | 902.9         | 921.7               | 505.83 µg/L        | 505.83 ppb         | 13:06:31      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | B 249.677†         | 35648.6   | 34321.1   | 497.29 µg/L | 497.29 ppb | 13:06:11 |
| 2 | Ba 233.527†        | 55887.2   | 55433.9   | 494.31 µg/L | 494.31 ppb | 13:06:11 |
| 2 | Be 313.107†        | 1827356.0 | 1808319.7 | 481.18 µg/L | 481.18 ppb | 13:06:09 |
| 2 | Cd 226.502†        | 65487.0   | 64853.8   | 490.13 µg/L | 490.13 ppb | 13:06:11 |
| 2 | Co 228.616†        | 33627.9   | 33301.8   | 495.22 µg/L | 495.22 ppb | 13:06:11 |
| 2 | Cr 267.716†        | 42470.8   | 41814.4   | 491.37 µg/L | 491.37 ppb | 13:06:11 |
| 2 | Cu 324.752†        | 118457.2  | 111209.3  | 491.54 µg/L | 491.54 ppb | 13:06:11 |
| 2 | Mn 257.610†        | 285432.2  | 281735.7  | 493.59 µg/L | 493.59 ppb | 13:06:11 |
| 2 | Mo 202.031†        | 9558.1    | 9469.1    | 492.31 µg/L | 492.31 ppb | 13:06:31 |
| 2 | Ni 231.604†        | 31077.3   | 30889.1   | 491.08 µg/L | 491.08 ppb | 13:06:11 |
| 2 | P 214.914†         | 6761.5    | 6772.7    | 2440.9 µg/L | 2440.9 ppb | 13:06:31 |
| 2 | Pb 220.353†        | 4999.8    | 4864.0    | 491.60 µg/L | 491.60 ppb | 13:06:31 |
| 2 | S 181.975 Axial†   | 987.3     | 872.4     | 972.68 µg/L | 972.68 ppb | 13:06:31 |
| 2 | Sb 206.836†        | 2621.2    | 2544.3    | 483.54 µg/L | 483.54 ppb | 13:06:31 |
| 2 | Se 196.026†        | 966.4     | 946.3     | 498 µg/L    | 498 ppb    | 13:06:31 |
| 2 | SiO2†              | 52675.0   | 49001.1   | 5423.3 µg/L | 5423.3 ppb | 13:06:11 |
| 2 | Si 251.611†        | 151942.9  | 149471.6  | 2534.9 µg/L | 2534.9 ppb | 13:06:11 |
| 2 | Sn 189.927†        | 3855.9    | 3835.5    | 490.42 µg/L | 490.42 ppb | 13:06:31 |
| 2 | Ti 334.940†        | 347629.9  | 344202.3  | 488.92 µg/L | 488.92 ppb | 13:06:11 |
| 2 | Tl 190.801†        | 1529.3    | 1596.3    | 490.44 µg/L | 490.44 ppb | 13:06:31 |
| 2 | U 367.007†         | 3773.2    | 4010.6    | 465.47 µg/L | 465.47 ppb | 13:06:11 |
| 2 | V 292.402†         | 110976.4  | 109495.0  | 491.99 µg/L | 491.99 ppb | 13:06:11 |
| 2 | Zn 213.857†        | 88146.8   | 87005.7   | 492.32 µg/L | 492.32 ppb | 13:06:11 |
| 3 | Sc RADIAL          | 71842.6   | 71842.6   | 99.7 %      |            | 13:05:41 |
| 3 | Al 396.153Radial†  | 13746.1   | 13681.8   | 4995.6 µg/L | 4995.6 ppb | 13:05:41 |
| 3 | Ca 317.933Radial†  | 45204.1   | 44983.8   | 5007.6 µg/L | 5007.6 ppb | 13:05:41 |
| 3 | Fe 238.204 Radial† | 52754.2   | 53415.7   | 5052.9 µg/L | 5052.9 ppb | 13:05:41 |
| 3 | K 766.490 Radial†  | 10704.8   | 9663.7    | 5079.8 µg/L | 5079.8 ppb | 13:05:41 |
| 3 | Mg 279.077 IEC†    | 9072.0    | 9069.9    | 4891.6 µg/L | 4891.6 ppb | 13:05:41 |
| 3 | Na 589.592 Radial† | 59175.9   | 59297.0   | 9888.0 µg/L | 9888.0 ppb | 13:05:39 |
| 3 | Sr 421.552†        | 172653.5  | 173581.9  | 503.44 µg/L | 503.44 ppb | 13:05:39 |
| 3 | Sc 361.383         | 1338036.6 | 1338036.6 | 100.51 %    |            | 13:06:33 |
| 3 | Y 371.029          | 713246.4  | 713246.4  | 98.454 %    |            | 13:06:33 |
| 3 | Ag 328.068†        | 95645.7   | 97048.1   | 500.80 µg/L | 500.80 ppb | 13:06:35 |
| 3 | As 188.979†        | 893.2     | 918.6     | 504.26 µg/L | 504.26 ppb | 13:06:55 |
| 3 | B 249.677†         | 36329.3   | 35259.0   | 510.78 µg/L | 510.78 ppb | 13:06:35 |
| 3 | Ba 233.527†        | 56496.6   | 56448.9   | 503.36 µg/L | 503.36 ppb | 13:06:35 |
| 3 | Be 313.107†        | 1806191.0 | 1800624.0 | 478.86 µg/L | 478.86 ppb | 13:06:33 |
| 3 | Cd 226.502†        | 66696.9   | 66536.3   | 502.86 µg/L | 502.86 ppb | 13:06:35 |
| 3 | Co 228.616†        | 34114.8   | 34032.1   | 506.08 µg/L | 506.08 ppb | 13:06:35 |
| 3 | Cr 267.716†        | 43177.8   | 42828.3   | 503.29 µg/L | 503.29 ppb | 13:06:35 |
| 3 | Cu 324.752†        | 120152.1  | 113761.7  | 502.80 µg/L | 502.80 ppb | 13:06:35 |
| 3 | Mn 257.610†        | 289566.9  | 287936.3  | 504.46 µg/L | 504.46 ppb | 13:06:35 |
| 3 | Mo 202.031†        | 9555.0    | 9536.0    | 495.78 µg/L | 495.78 ppb | 13:06:55 |
| 3 | Ni 231.604†        | 31789.8   | 31825.2   | 505.96 µg/L | 505.96 ppb | 13:06:35 |
| 3 | P 214.914†         | 6763.7    | 6824.3    | 2459.5 µg/L | 2459.5 ppb | 13:06:55 |
| 3 | Pb 220.353†        | 5005.7    | 4906.4    | 495.89 µg/L | 495.89 ppb | 13:06:55 |
| 3 | S 181.975 Axial†   | 981.0     | 873.3     | 973.70 µg/L | 973.70 ppb | 13:06:55 |
| 3 | Sb 206.836†        | 2642.9    | 2585.1    | 491.25 µg/L | 491.25 ppb | 13:06:55 |
| 3 | Se 196.026†        | 959.8     | 946.9     | 499 µg/L    | 499 ppb    | 13:06:55 |
| 3 | SiO2†              | 53563.2   | 50269.9   | 5563.7 µg/L | 5563.7 ppb | 13:06:35 |
| 3 | Si 251.611†        | 154651.8  | 153277.6  | 2599.5 µg/L | 2599.5 ppb | 13:06:35 |
| 3 | Sn 189.927†        | 3863.4    | 3871.1    | 494.97 µg/L | 494.97 ppb | 13:06:55 |
| 3 | Ti 334.940†        | 352571.2  | 351660.1  | 499.52 µg/L | 499.52 ppb | 13:06:35 |
| 3 | Tl 190.801†        | 1515.1    | 1593.4    | 489.54 µg/L | 489.54 ppb | 13:06:55 |
| 3 | U 367.007†         | 3761.7    | 4026.7    | 467.49 µg/L | 467.49 ppb | 13:06:35 |
| 3 | V 292.402†         | 112629.7  | 111951.2  | 503.02 µg/L | 503.02 ppb | 13:06:35 |
| 3 | Zn 213.857†        | 89666.6   | 89162.2   | 504.54 µg/L | 504.54 ppb | 13:06:35 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 1332955.7                | 100.13 %           | 1.358    |                    |          | 1.36% |
| Sc RADIAL  | 72266.3                  | 100 %              | 1.1      |                    |          | 1.05% |
| Y 371.029  | 711287.7                 | 98.184 %           | 1.2194   |                    |          | 1.24% |
| Ag 328.068†  | 96122.8                  | 496.02 µg/L        | 4.987    | 496.02 ppb         | 4.987    | 1.01% |
| QC value within limits for Ag 328.068 Recovery = 99.20%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 13728.6                  | 5012.7 µg/L        | 45.93    | 5012.7 ppb         | 45.93    | 0.92% |
| QC value within limits for Al 396.153Radial Recovery = 100.25% |                          |                    |          |                    |          |       |
| As 188.979†  | 926.9                    | 508.75 µg/L        | 6.458    | 508.75 ppb         | 6.458    | 1.27% |

|   |           |             |        |            |        |       |  |
|---|-----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for As 188.979 Recovery = 101.75%        |           |             |        |            |        |       |  |
| B 249.677†  | 34684.9   | 502.53 µg/L | 7.226  | 502.53 ppb | 7.226  | 1.44% |  |
| QC value within limits for B 249.677 Recovery = 100.51%         |           |             |        |            |        |       |  |
| Ba 233.527†   | 55873.2   | 498.23 µg/L | 4.646  | 498.23 ppb | 4.646  | 0.93% |  |
| QC value within limits for Ba 233.527 Recovery = 99.65%         |           |             |        |            |        |       |  |
| Be 313.107†   | 1807214.6 | 480.79 µg/L | 1.761  | 480.79 ppb | 1.761  | 0.37% |  |
| QC value within limits for Be 313.107 Recovery = 96.16%         |           |             |        |            |        |       |  |
| Ca 317.933Radial†   | 45110.8   | 5021.8 µg/L | 27.67  | 5021.8 ppb | 27.67  | 0.55% |  |
| QC value within limits for Ca 317.933Radial Recovery = 100.44%  |           |             |        |            |        |       |  |
| Cd 226.502†   | 65573.4   | 495.58 µg/L | 6.563  | 495.58 ppb | 6.563  | 1.32% |  |
| QC value within limits for Cd 226.502 Recovery = 99.12%         |           |             |        |            |        |       |  |
| Co 228.616†   | 33592.1   | 499.53 µg/L | 5.762  | 499.53 ppb | 5.762  | 1.15% |  |
| QC value within limits for Co 228.616 Recovery = 99.91%         |           |             |        |            |        |       |  |
| Cr 267.716†   | 42319.3   | 497.30 µg/L | 5.961  | 497.30 ppb | 5.961  | 1.20% |  |
| QC value within limits for Cr 267.716 Recovery = 99.46%         |           |             |        |            |        |       |  |
| Cu 324.752†   | 112441.7  | 496.98 µg/L | 5.641  | 496.98 ppb | 5.641  | 1.14% |  |
| QC value within limits for Cu 324.752 Recovery = 99.40%         |           |             |        |            |        |       |  |
| Fe 238.204 Radial†  | 53586.1   | 5069.0 µg/L | 22.23  | 5069.0 ppb | 22.23  | 0.44% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 101.38% |           |             |        |            |        |       |  |
| K 766.490 Radial†   | 9645.2    | 5070.1 µg/L | 14.54  | 5070.1 ppb | 14.54  | 0.29% |  |
| QC value within limits for K 766.490 Radial Recovery = 101.40%  |           |             |        |            |        |       |  |
| Mg 279.077 IEC†   | 9166.2    | 4943.5 µg/L | 45.52  | 4943.5 ppb | 45.52  | 0.92% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 98.87%     |           |             |        |            |        |       |  |
| Mn 257.610†   | 284663.6  | 498.73 µg/L | 5.460  | 498.73 ppb | 5.460  | 1.09% |  |
| QC value within limits for Mn 257.610 Recovery = 99.75%         |           |             |        |            |        |       |  |
| Mo 202.031†   | 9584.5    | 498.31 µg/L | 7.582  | 498.31 ppb | 7.582  | 1.52% |  |
| QC value within limits for Mo 202.031 Recovery = 99.66%         |           |             |        |            |        |       |  |
| Na 589.592 Radial†  | 58479.2   | 9751.7 µg/L | 123.28 | 9751.7 ppb | 123.28 | 1.26% |  |
| QC value within limits for Na 589.592 Radial Recovery = 97.52%  |           |             |        |            |        |       |  |
| Ni 231.604†   | 31279.5   | 497.29 µg/L | 7.742  | 497.29 ppb | 7.742  | 1.56% |  |
| QC value within limits for Ni 231.604 Recovery = 99.46%         |           |             |        |            |        |       |  |
| P 214.914†  | 6865.1    | 2474.2 µg/L | 42.62  | 2474.2 ppb | 42.62  | 1.72% |  |
| QC value within limits for P 214.914 Recovery = 98.97%          |           |             |        |            |        |       |  |
| Pb 220.353†   | 4934.7    | 498.75 µg/L | 8.932  | 498.75 ppb | 8.932  | 1.79% |  |
| QC value within limits for Pb 220.353 Recovery = 99.75%         |           |             |        |            |        |       |  |
| S 181.975 Axial†  | 880.6     | 981.84 µg/L | 14.996 | 981.84 ppb | 14.996 | 1.53% |  |
| QC value within limits for S 181.975 Axial Recovery = 98.18%    |           |             |        |            |        |       |  |
| Sb 206.836†   | 2589.9    | 492.26 µg/L | 9.264  | 492.26 ppb | 9.264  | 1.88% |  |
| QC value within limits for Sb 206.836 Recovery = 98.45%         |           |             |        |            |        |       |  |
| Se 196.026†   | 951.1     | 501 µg/L    | 4.1    | 501 ppb    | 4.1    | 0.82% |  |
| QC value within limits for Se 196.026 Recovery = 100.19%        |           |             |        |            |        |       |  |
| SiO2†   | 49465.3   | 5474.7 µg/L | 77.42  | 5474.7 ppb | 77.42  | 1.41% |  |
| QC value within limits for SiO2 Recovery = 102.38%              |           |             |        |            |        |       |  |
| Si 251.611†   | 151150.2  | 2563.4 µg/L | 32.93  | 2563.4 ppb | 32.93  | 1.28% |  |
| QC value within limits for Si 251.611 Recovery = 102.54%        |           |             |        |            |        |       |  |
| Sn 189.927†   | 3895.2    | 498.05 µg/L | 9.553  | 498.05 ppb | 9.553  | 1.92% |  |
| QC value within limits for Sn 189.927 Recovery = 99.61%         |           |             |        |            |        |       |  |
| Sr 421.552†   | 171066.5  | 496.14 µg/L | 6.702  | 496.14 ppb | 6.702  | 1.35% |  |
| QC value within limits for Sr 421.552 Recovery = 99.23%         |           |             |        |            |        |       |  |
| Ti 334.940†   | 347926.4  | 494.21 µg/L | 5.298  | 494.21 ppb | 5.298  | 1.07% |  |
| QC value within limits for Ti 334.940 Recovery = 98.84%         |           |             |        |            |        |       |  |
| Tl 190.801†   | 1613.0    | 495.56 µg/L | 9.655  | 495.56 ppb | 9.655  | 1.95% |  |
| QC value within limits for Tl 190.801 Recovery = 99.11%         |           |             |        |            |        |       |  |
| U 367.007†  | 4056.8    | 471.11 µg/L | 8.082  | 471.11 ppb | 8.082  | 1.72% |  |
| QC value within limits for U 367.007 Recovery = 94.22%          |           |             |        |            |        |       |  |
| V 292.402†  | 110721.3  | 497.50 µg/L | 5.513  | 497.50 ppb | 5.513  | 1.11% |  |
| QC value within limits for V 292.402 Recovery = 99.50%          |           |             |        |            |        |       |  |
| Zn 213.857†   | 87937.5   | 497.60 µg/L | 6.282  | 497.60 ppb | 6.282  | 1.26% |  |
| QC value within limits for Zn 213.857 Recovery = 99.52%         |           |             |        |            |        |       |  |
| All analyte(s) passed QC.                                       |           |             |        |            |        |       |  |

Sequence No.: 2

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/11/2016 13:07:03

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 72246.8       | 72246.8             | 100 %              |                    | 13:07:28      |
| 1     | Al 396.153Radial†  | 98.9          | -3.0                | -1.1090 µg/L       | -1.1090 ppb        | 13:07:48      |
| 1     | Ca 317.933Radial†  | 344.3         | 0.1                 | 0.0123 µg/L        | 0.0123 ppb         | 13:07:48      |
| 1     | Fe 238.204 Radial† | -485.7        | 33.8                | 3.1952 µg/L        | 3.1952 ppb         | 13:07:48      |
| 1     | K 766.490 Radial†  | 1148.8        | 75.3                | 39.559 µg/L        | 39.559 ppb         | 13:07:28      |
| 1     | Mg 279.077 IEC†    | 23.6          | -3.3                | -1.7604 µg/L       | -1.7604 ppb        | 13:07:48      |
| 1     | Na 589.592 Radial† | 119.8         | 79.7                | 13.284 µg/L        | 13.284 ppb         | 13:07:28      |
| 1     | Sr 421.552†        | -436.2        | 24.1                | 0.0699 µg/L        | 0.0699 ppb         | 13:07:48      |
| 1     | Sc 361.383         | 1315277.1     | 1315277.1           | 98.804 %           |                    | 13:08:35      |
| 1     | Y 371.029          | 711309.2      | 711309.2            | 98.187 %           |                    | 13:08:35      |
| 1     | Ag 328.068†        | -1731.3       | 138.6               | 0.7154 µg/L        | 0.7154 ppb         | 13:08:37      |
| 1     | As 188.979†        | -31.6         | -2.0                | -1.0839 µg/L       | -1.0839 ppb        | 13:08:57      |
| 1     | B 249.677†         | 774.7         | -100.8              | -1.4476 µg/L       | -1.4476 ppb        | 13:08:37      |
| 1     | Ba 233.527†        | -222.5        | 15.6                | 0.1392 µg/L        | 0.1392 ppb         | 13:08:57      |
| 1     | Be 313.107†        | -2904.3       | 716.4               | 0.1920 µg/L        | 0.1920 ppb         | 13:08:37      |
| 1     | Cd 226.502†        | -145.8        | 32.5                | 0.2452 µg/L        | 0.2452 ppb         | 13:08:57      |
| 1     | Co 228.616†        | -110.3        | -20.1               | -0.2991 µg/L       | -0.2991 ppb        | 13:08:57      |
| 1     | Cr 267.716†        | 124.8         | -2.7                | -0.0318 µg/L       | -0.0318 ppb        | 13:08:57      |
| 1     | Cu 324.752†        | 5452.8        | -258.0              | -1.1385 µg/L       | -1.1385 ppb        | 13:08:37      |
| 1     | Mn 257.610†        | 174.1         | 24.2                | 0.0426 µg/L        | 0.0426 ppb         | 13:08:57      |
| 1     | Mo 202.031†        | -4.1          | 25.6                | 1.3300 µg/L        | 1.3300 ppb         | 13:08:57      |
| 1     | Ni 231.604†        | -170.8        | 24.8                | 0.3945 µg/L        | 0.3945 ppb         | 13:08:57      |
| 1     | P 214.914†         | -90.9         | 3.1                 | 1.1132 µg/L        | 1.1132 ppb         | 13:08:57      |
| 1     | Pb 220.353†        | 80.5          | 7.8                 | 0.7879 µg/L        | 0.7879 ppb         | 13:08:57      |
| 1     | S 181.975 Axial†   | 93.3          | -8.3                | -9.2592 µg/L       | -9.2592 ppb        | 13:08:57      |
| 1     | Sb 206.836†        | 60.4          | 16.8                | 3.2451 µg/L        | 3.2451 ppb         | 13:08:57      |
| 1     | Se 196.026†        | 3.7           | -4.3                | -2.24 µg/L         | -2.24 ppb          | 13:08:57      |
| 1     | SiO2†              | 2897.5        | -87.1               | -9.6448 µg/L       | -9.6448 ppb        | 13:08:37      |
| 1     | Si 251.611†        | 629.6         | 52.7                | 0.8943 µg/L        | 0.8943 ppb         | 13:08:37      |
| 1     | Sn 189.927†        | -17.6         | 9.7                 | 1.2380 µg/L        | 1.2380 ppb         | 13:08:57      |
| 1     | Ti 334.940†        | -619.1        | 262.6               | 0.3733 µg/L        | 0.3733 ppb         | 13:08:37      |
| 1     | Tl 190.801†        | -89.8         | -4.8                | -1.4726 µg/L       | -1.4726 ppb        | 13:08:57      |
| 1     | U 367.007†         | -280.0        | 0.8                 | 0.0844 µg/L        | 0.0844 ppb         | 13:08:37      |
| 1     | V 292.402†         | 38.3          | -64.5               | -0.2890 µg/L       | -0.2890 ppb        | 13:08:37      |
| 1     | Zn 213.857†        | 10.7          | -35.7               | -0.2015 µg/L       | -0.2015 ppb        | 13:08:57      |
| 2     | Sc RADIAL          | 71745.8       | 71745.8             | 99.6 %             |                    | 13:07:50      |
| 2     | Al 396.153Radial†  | 104.4         | 3.1                 | 1.1375 µg/L        | 1.1375 ppb         | 13:08:10      |
| 2     | Ca 317.933Radial†  | 337.9         | -3.9                | -0.4320 µg/L       | -0.4320 ppb        | 13:08:10      |
| 2     | Fe 238.204 Radial† | -458.1        | 58.1                | 5.4975 µg/L        | 5.4975 ppb         | 13:08:10      |
| 2     | K 766.490 Radial†  | 961.6         | -104.7              | -55.045 µg/L       | -55.045 ppb        | 13:07:50      |
| 2     | Mg 279.077 IEC†    | 22.5          | -4.3                | -2.2931 µg/L       | -2.2931 ppb        | 13:08:10      |
| 2     | Na 589.592 Radial† | 167.2         | 128.2               | 21.373 µg/L        | 21.373 ppb         | 13:07:50      |
| 2     | Sr 421.552†        | -429.5        | 27.8                | 0.0805 µg/L        | 0.0805 ppb         | 13:08:10      |
| 2     | Sc 361.383         | 1321646.3     | 1321646.3           | 99.282 %           |                    | 13:08:59      |
| 2     | Y 371.029          | 713383.8      | 713383.8            | 98.473 %           |                    | 13:08:59      |
| 2     | Ag 328.068†        | -1802.5       | 75.3                | 0.3887 µg/L        | 0.3887 ppb         | 13:09:01      |
| 2     | As 188.979†        | -33.0         | -3.3                | -1.7963 µg/L       | -1.7963 ppb        | 13:09:22      |
| 2     | B 249.677†         | 798.0         | -81.1               | -1.1626 µg/L       | -1.1626 ppb        | 13:09:01      |
| 2     | Ba 233.527†        | -226.7        | 12.4                | 0.1109 µg/L        | 0.1109 ppb         | 13:09:22      |
| 2     | Be 313.107†        | -2910.5       | 724.4               | 0.1951 µg/L        | 0.1951 ppb         | 13:09:01      |
| 2     | Cd 226.502†        | -138.2        | 40.8                | 0.3083 µg/L        | 0.3083 ppb         | 13:09:22      |
| 2     | Co 228.616†        | -91.6         | -0.7                | -0.0110 µg/L       | -0.0110 ppb        | 13:09:22      |
| 2     | Cr 267.716†        | 123.3         | -4.8                | -0.0573 µg/L       | -0.0573 ppb        | 13:09:22      |
| 2     | Cu 324.752†        | 5242.3        | -496.7              | -2.1908 µg/L       | -2.1908 ppb        | 13:09:01      |
| 2     | Mn 257.610†        | 247.3         | 97.2                | 0.1704 µg/L        | 0.1704 ppb         | 13:09:22      |
| 2     | Mo 202.031†        | -9.6          | 20.1                | 1.0423 µg/L        | 1.0423 ppb         | 13:09:22      |
| 2     | Ni 231.604†        | -178.8        | 17.6                | 0.2802 µg/L        | 0.2802 ppb         | 13:09:22      |
| 2     | P 214.914†         | -80.0         | 14.5                | 5.2131 µg/L        | 5.2131 ppb         | 13:09:22      |
| 2     | Pb 220.353†        | 81.3          | 8.2                 | 0.8291 µg/L        | 0.8291 ppb         | 13:09:22      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 85.0      | -17.0     | -19.003 µg/L | -19.003 ppb | 13:09:22 |
| 2 | Sb 206.836†        | 65.8      | 22.0      | 4.2427 µg/L  | 4.2427 ppb  | 13:09:22 |
| 2 | Se 196.026†        | -3.1      | -11.2     | -5.84 µg/L   | -5.84 ppb   | 13:09:22 |
| 2 | SiO2†              | 2855.9    | -143.2    | -15.852 µg/L | -15.852 ppb | 13:09:01 |
| 2 | Si 251.611†        | 582.4     | 2.1       | 0.0366 µg/L  | 0.0366 ppb  | 13:09:01 |
| 2 | Sn 189.927†        | -19.6     | 7.7       | 0.9840 µg/L  | 0.9840 ppb  | 13:09:22 |
| 2 | Ti 334.940†        | -445.1    | 441.0     | 0.6264 µg/L  | 0.6264 ppb  | 13:09:01 |
| 2 | Tl 190.801†        | -66.2     | 19.4      | 5.9484 µg/L  | 5.9484 ppb  | 13:09:22 |
| 2 | U 367.007†         | -275.8    | 6.4       | 0.7612 µg/L  | 0.7612 ppb  | 13:09:01 |
| 2 | V 292.402†         | 168.4     | 66.3      | 0.2976 µg/L  | 0.2976 ppb  | 13:09:01 |
| 2 | Zn 213.857†        | 4.0       | -42.5     | -0.2393 µg/L | -0.2393 ppb | 13:09:22 |
| 3 | Sc RADIAL          | 69561.7   | 69561.7   | 96.6 %       |             | 13:08:12 |
| 3 | Al 396.153Radial†  | 105.1     | 7.2       | 2.6135 µg/L  | 2.6135 ppb  | 13:08:32 |
| 3 | Ca 317.933Radial†  | 348.3     | 17.5      | 1.9499 µg/L  | 1.9499 ppb  | 13:08:32 |
| 3 | Fe 238.204 Radial† | -448.2    | 53.9      | 5.0954 µg/L  | 5.0954 ppb  | 13:08:32 |
| 3 | K 766.490 Radial†  | 893.1     | -145.3    | -76.349 µg/L | -76.349 ppb | 13:08:12 |
| 3 | Mg 279.077 IEC†    | 24.8      | -1.1      | -0.6019 µg/L | -0.6019 ppb | 13:08:32 |
| 3 | Na 589.592 Radial† | 72.5      | 35.3      | 5.8890 µg/L  | 5.8890 ppb  | 13:08:12 |
| 3 | Sr 421.552†        | -446.6    | -3.4      | -0.0100 µg/L | -0.0100 ppb | 13:08:32 |
| 3 | Sc 361.383         | 1328811.5 | 1328811.5 | 99.820 %     |             | 13:09:24 |
| 3 | Y 371.029          | 717510.8  | 717510.8  | 99.043 %     |             | 13:09:24 |
| 3 | Ag 328.068†        | -1810.9   | 76.7      | 0.3944 µg/L  | 0.3944 ppb  | 13:09:26 |
| 3 | As 188.979†        | -31.0     | -1.1      | -0.6185 µg/L | -0.6185 ppb | 13:09:46 |
| 3 | B 249.677†         | 816.5     | -66.9     | -0.9577 µg/L | -0.9577 ppb | 13:09:26 |
| 3 | Ba 233.527†        | -235.3    | 5.1       | 0.0452 µg/L  | 0.0452 ppb  | 13:09:46 |
| 3 | Be 313.107†        | -2821.3   | 829.6     | 0.2261 µg/L  | 0.2261 ppb  | 13:09:26 |
| 3 | Cd 226.502†        | -143.8    | 36.0      | 0.2715 µg/L  | 0.2715 ppb  | 13:09:46 |
| 3 | Co 228.616†        | -85.2     | 6.1       | 0.0911 µg/L  | 0.0911 ppb  | 13:09:46 |
| 3 | Cr 267.716†        | 146.9     | 18.2      | 0.2114 µg/L  | 0.2114 ppb  | 13:09:46 |
| 3 | Cu 324.752†        | 5415.9    | -351.2    | -1.5474 µg/L | -1.5474 ppb | 13:09:26 |
| 3 | Mn 257.610†        | 262.6     | 111.1     | 0.1948 µg/L  | 0.1948 ppb  | 13:09:46 |
| 3 | Mo 202.031†        | -22.0     | 7.7       | 0.4008 µg/L  | 0.4008 ppb  | 13:09:46 |
| 3 | Ni 231.604†        | -157.4    | 40.0      | 0.6365 µg/L  | 0.6365 ppb  | 13:09:46 |
| 3 | P 214.914†         | -52.4     | 42.6      | 15.354 µg/L  | 15.354 ppb  | 13:09:46 |
| 3 | Pb 220.353†        | 68.9      | -4.7      | -0.4811 µg/L | -0.4811 ppb | 13:09:46 |
| 3 | S 181.975 Axial†   | 88.8      | -13.7     | -15.339 µg/L | -15.339 ppb | 13:09:46 |
| 3 | Sb 206.836†        | 60.3      | 16.1      | 3.1106 µg/L  | 3.1106 ppb  | 13:09:46 |
| 3 | Se 196.026†        | -3.5      | -11.6     | -6.06 µg/L   | -6.06 ppb   | 13:09:46 |
| 3 | SiO2†              | 2919.6    | -94.9     | -10.507 µg/L | -10.507 ppb | 13:09:26 |
| 3 | Si 251.611†        | 599.3     | 15.9      | 0.2704 µg/L  | 0.2704 ppb  | 13:09:26 |
| 3 | Sn 189.927†        | -23.8     | 3.7       | 0.4723 µg/L  | 0.4723 ppb  | 13:09:46 |
| 3 | Ti 334.940†        | -450.3    | 438.2     | 0.6214 µg/L  | 0.6214 ppb  | 13:09:26 |
| 3 | Tl 190.801†        | -69.4     | 16.5      | 5.0758 µg/L  | 5.0758 ppb  | 13:09:46 |
| 3 | U 367.007†         | -262.5    | 21.3      | 2.5897 µg/L  | 2.5897 ppb  | 13:09:26 |
| 3 | V 292.402†         | 19.1      | -84.2     | -0.3756 µg/L | -0.3756 ppb | 13:09:26 |
| 3 | Zn 213.857†        | 19.3      | -27.2     | -0.1530 µg/L | -0.1530 ppb | 13:09:46 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------|-----------------|--------------------|----------|---------|
| Sc 361.383  | 1321911.6                | 99.302 %     | 0.5086          |                    |          | 0.51%   |
| Sc RADIAL   | 71184.7                  | 98.8 %       | 1.98            |                    |          | 2.01%   |
| Y 371.029   | 714067.9                 | 98.567 %     | 0.4358          |                    |          | 0.44%   |
| Ag 328.068†   | 96.9                     | 0.4995 µg/L  | 0.18697         | 0.4995 ppb         | 0.18697  | 37.43%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Al 396.153Radial†   | 2.4                      | 0.8807 µg/L  | 1.87448         | 0.8807 ppb         | 1.87448  | 212.85% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |              |                 |                    |          |         |
| As 188.979†   | -2.1                     | -1.1662 µg/L | 0.59316         | -1.1662 ppb        | 0.59316  | 50.86%  |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| B 249.677†  | -82.9                    | -1.1893 µg/L | 0.24605         | -1.1893 ppb        | 0.24605  | 20.69%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |              |                 |                    |          |         |
| Ba 233.527†   | 11.0                     | 0.0984 µg/L  | 0.04823         | 0.0984 ppb         | 0.04823  | 49.00%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Be 313.107†   | 756.8                    | 0.2044 µg/L  | 0.01884         | 0.2044 ppb         | 0.01884  | 9.22%   |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Ca 317.933Radial†   | 4.6                      | 0.5101 µg/L  | 1.26657         | 0.5101 ppb         | 1.26657  | 248.31% |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |              |                 |                    |          |         |
| Cd 226.502†   | 36.4                     | 0.2750 µg/L  | 0.03169         | 0.2750 ppb         | 0.03169  | 11.52%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Co 228.616†   | -4.9                     | -0.0730 µg/L | 0.20236         | -0.0730 ppb        | 0.20236  | 277.25% |

|  |        |              |         |             |         |         |  |
|--|--------|--------------|---------|-------------|---------|---------|--|
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Cr 267.716†  | 3.5    | 0.0408 µg/L  | 0.14830 | 0.0408 ppb  | 0.14830 | 363.71% |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Cu 324.752†  | -368.6 | -1.6256 µg/L | 0.53052 | -1.6256 ppb | 0.53052 | 32.64%  |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Fe 238.204 Radial†   | 48.6   | 4.5961 µg/L  | 1.22972 | 4.5961 ppb  | 1.22972 | 26.76%  |  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |         |             |         |         |  |
| K 766.490 Radial†  | -58.3  | -30.612 µg/L | 61.6958 | -30.612 ppb | 61.6958 | 201.54% |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |         |             |         |         |  |
| Mg 279.077 IEC†  | -2.9   | -1.5518 µg/L | 0.86468 | -1.5518 ppb | 0.86468 | 55.72%  |  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |         |             |         |         |  |
| Mn 257.610†  | 77.5   | 0.1359 µg/L  | 0.08178 | 0.1359 ppb  | 0.08178 | 60.17%  |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Mo 202.031†  | 17.8   | 0.9244 µg/L  | 0.47567 | 0.9244 ppb  | 0.47567 | 51.46%  |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Na 589.592 Radial†   | 81.0   | 13.515 µg/L  | 7.7443  | 13.515 ppb  | 7.7443  | 57.30%  |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |         |             |         |         |  |
| Ni 231.604†  | 27.5   | 0.4371 µg/L  | 0.18189 | 0.4371 ppb  | 0.18189 | 41.62%  |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |         |             |         |         |  |
| P 214.914†   | 20.1   | 7.2268 µg/L  | 7.33088 | 7.2268 ppb  | 7.33088 | 101.44% |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Pb 220.353†  | 3.8    | 0.3786 µg/L  | 0.74484 | 0.3786 ppb  | 0.74484 | 196.74% |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |         |             |         |         |  |
| S 181.975 Axial†   | -13.0  | -14.534 µg/L | 4.9216  | -14.534 ppb | 4.9216  | 33.86%  |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |         |             |         |         |  |
| Sb 206.836†  | 18.3   | 3.5328 µg/L  | 0.61848 | 3.5328 ppb  | 0.61848 | 17.51%  |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Se 196.026†  | -9.0   | -4.71 µg/L   | 2.145   | -4.71 ppb   | 2.145   | 45.51%  |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |         |             |         |         |  |
| SiO2†  | -108.4 | -12.001 µg/L | 3.3622  | -12.001 ppb | 3.3622  | 28.02%  |  |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |         |             |         |         |  |
| Si 251.611†  | 23.6   | 0.4004 µg/L  | 0.44336 | 0.4004 ppb  | 0.44336 | 110.72% |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Sn 189.927†  | 7.0    | 0.8981 µg/L  | 0.39002 | 0.8981 ppb  | 0.39002 | 43.43%  |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Sr 421.552†  | 16.1   | 0.0468 µg/L  | 0.04950 | 0.0468 ppb  | 0.04950 | 105.79% |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Ti 334.940†  | 380.6  | 0.5404 µg/L  | 0.14471 | 0.5404 ppb  | 0.14471 | 26.78%  |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Tl 190.801†  | 10.4   | 3.1839 µg/L  | 4.05613 | 3.1839 ppb  | 4.05613 | 127.40% |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |         |             |         |         |  |
| U 367.007†   | 9.5    | 1.1451 µg/L  | 1.29600 | 1.1451 ppb  | 1.29600 | 113.18% |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |         |             |         |         |  |
| V 292.402†   | -27.5  | -0.1223 µg/L | 0.36623 | -0.1223 ppb | 0.36623 | 299.35% |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Zn 213.857†  | -35.1  | -0.1980 µg/L | 0.04324 | -0.1980 ppb | 0.04324 | 21.84%  |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |         |             |         |         |  |

All analyte(s) passed QC.



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Analysis Begun

Start Time: 11/11/2016 13:13:19

Plasma On Time: 11/7/2016 06:01:25

Logged In Analyst: lab

Technique: ICP Continuous

Spectrometer Model: Optima 7300 DV, S/N No Serial #Autosampler Model: AS-93plus

Sample Information File: C:\pe\optima4\Sample Information\111116.sif

Batch ID:

Results Data Set: 111116

Results Library: C:\pe\optima4\Results\Results.mdb

=====  
Sequence No.: 1

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/11/2016 13:13:19

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:  
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## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 73600.8       | 73600.8             | 102 %              |                    | 13:13:56      |
| 1     | Al 396.153Radial†  | 14164.4       | 13761.9             | 5024.9 µg/L        | 5024.9 ppb         | 13:13:56      |
| 1     | Ca 317.933Radial†  | 46611.7       | 45278.7             | 5040.4 µg/L        | 5040.4 ppb         | 13:13:56      |
| 1     | Fe 238.204 Radial† | 53952.1       | 53324.5             | 5044.2 µg/L        | 5044.2 ppb         | 13:13:56      |
| 1     | K 766.490 Radial†  | 10750.9       | 9452.4              | 4968.7 µg/L        | 4968.7 ppb         | 13:13:56      |
| 1     | Mg 279.077 IEC†    | 9289.8        | 9065.7              | 4889.3 µg/L        | 4889.3 ppb         | 13:13:56      |
| 1     | Na 589.592 Radial† | 59209.7       | 57912.6             | 9657.2 µg/L        | 9657.2 ppb         | 13:13:54      |
| 1     | Sr 421.552†        | 173473.3      | 170248.6            | 493.77 µg/L        | 493.77 ppb         | 13:13:54      |
| 1     | Sc 361.383         | 1340829.5     | 1340829.5           | 100.72 %           |                    | 13:14:07      |
| 1     | Y 371.029          | 715225.4      | 715225.4            | 98.727 %           |                    | 13:14:07      |
| 1     | Ag 328.068†        | 95184.1       | 96391.7             | 497.41 µg/L        | 497.41 ppb         | 13:14:09      |
| 1     | As 188.979†        | 898.9         | 922.4               | 506.31 µg/L        | 506.31 ppb         | 13:14:29      |
| 1     | B 249.677†         | 35817.7       | 34675.7             | 502.38 µg/L        | 502.38 ppb         | 13:14:09      |
| 1     | Ba 233.527†        | 56119.2       | 55957.1             | 498.98 µg/L        | 498.98 ppb         | 13:14:09      |
| 1     | Be 313.107†        | 1795989.5     | 1786752.7           | 475.19 µg/L        | 475.19 ppb         | 13:14:07      |
| 1     | Cd 226.502†        | 65937.8       | 65644.5             | 496.12 µg/L        | 496.12 ppb         | 13:14:09      |
| 1     | Co 228.616†        | 33739.4       | 33588.8             | 499.49 µg/L        | 499.49 ppb         | 13:14:09      |
| 1     | Cr 267.716†        | 42894.6       | 42457.6             | 498.93 µg/L        | 498.93 ppb         | 13:14:09      |
| 1     | Cu 324.752†        | 119759.7      | 113123.1            | 499.99 µg/L        | 499.99 ppb         | 13:14:09      |
| 1     | Mn 257.610†        | 287430.7      | 285215.4            | 499.70 µg/L        | 499.70 ppb         | 13:14:09      |
| 1     | Mo 202.031†        | 9536.1        | 9497.4              | 493.77 µg/L        | 493.77 ppb         | 13:14:29      |
| 1     | Ni 231.604†        | 31278.9       | 31252.1             | 496.85 µg/L        | 496.85 ppb         | 13:14:09      |
| 1     | P 214.914†         | 6750.5        | 6797.1              | 2449.7 µg/L        | 2449.7 ppb         | 13:14:29      |
| 1     | Pb 220.353†        | 4981.7        | 4872.2              | 492.43 µg/L        | 492.43 ppb         | 13:14:29      |
| 1     | S 181.975 Axial†   | 973.2         | 863.5               | 962.75 µg/L        | 962.75 ppb         | 13:14:29      |
| 1     | Sb 206.836†        | 2633.5        | 2570.3              | 488.45 µg/L        | 488.45 ppb         | 13:14:29      |
| 1     | Se 196.026†        | 947.7         | 932.9               | 491 µg/L           | 491 ppb            | 13:14:29      |
| 1     | SiO2†              | 52930.7       | 49531.0             | 5482.0 µg/L        | 5482.0 ppb         | 13:14:09      |
| 1     | Si 251.611†        | 153016.3      | 151333.4            | 2566.5 µg/L        | 2566.5 ppb         | 13:14:09      |
| 1     | Sn 189.927†        | 3858.8        | 3858.6              | 493.38 µg/L        | 493.38 ppb         | 13:14:29      |
| 1     | Ti 334.940†        | 350990.1      | 349359.7            | 496.25 µg/L        | 496.25 ppb         | 13:14:09      |
| 1     | Tl 190.801†        | 1526.0        | 1601.0              | 491.88 µg/L        | 491.88 ppb         | 13:14:29      |
| 1     | U 367.007†         | 3799.7        | 4056.7              | 471.22 µg/L        | 471.22 ppb         | 13:14:09      |
| 1     | V 292.402†         | 112108.5      | 111200.4            | 499.64 µg/L        | 499.64 ppb         | 13:14:09      |
| 1     | Zn 213.857†        | 88516.0       | 87834.1             | 497.01 µg/L        | 497.01 ppb         | 13:14:09      |
| 2     | Sc RADIAL          | 71294.7       | 71294.7             | 99.0 %             |                    | 13:14:00      |
| 2     | Al 396.153Radial†  | 13710.0       | 13751.2             | 5021.0 µg/L        | 5021.0 ppb         | 13:14:00      |
| 2     | Ca 317.933Radial†  | 45057.4       | 45183.8             | 5029.9 µg/L        | 5029.9 ppb         | 13:14:00      |
| 2     | Fe 238.204 Radial† | 52098.0       | 53159.1             | 5028.6 µg/L        | 5028.6 ppb         | 13:14:00      |
| 2     | K 766.490 Radial†  | 10640.3       | 9681.0              | 5088.8 µg/L        | 5088.8 ppb         | 13:14:00      |
| 2     | Mg 279.077 IEC†    | 8955.7        | 9022.2              | 4865.8 µg/L        | 4865.8 ppb         | 13:14:00      |
| 2     | Na 589.592 Radial† | 59053.2       | 59629.0             | 9943.4 µg/L        | 9943.4 ppb         | 13:13:58      |
| 2     | Sr 421.552†        | 172549.7      | 174807.2            | 506.99 µg/L        | 506.99 ppb         | 13:13:58      |
| 2     | Sc 361.383         | 1325473.7     | 1325473.7           | 99.570 %           |                    | 13:14:32      |
| 2     | Y 371.029          | 706144.7      | 706144.7            | 97.474 %           |                    | 13:14:32      |
| 2     | Ag 328.068†        | 94311.9       | 96610.5             | 498.54 µg/L        | 498.54 ppb         | 13:14:34      |
| 2     | As 188.979†        | 900.2         | 934.0               | 512.58 µg/L        | 512.58 ppb         | 13:14:54      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | B 249.677†         | 35506.9   | 34775.6   | 503.81 µg/L | 503.81 ppb | 13:14:34 |
| 2 | Ba 233.527†        | 55745.7   | 56227.5   | 501.39 µg/L | 501.39 ppb | 13:14:34 |
| 2 | Be 313.107†        | 1777889.8 | 1789232.3 | 475.81 µg/L | 475.81 ppb | 13:14:32 |
| 2 | Cd 226.502†        | 65134.6   | 65596.2   | 495.75 µg/L | 495.75 ppb | 13:14:34 |
| 2 | Co 228.616†        | 33387.0   | 33622.8   | 499.99 µg/L | 499.99 ppb | 13:14:34 |
| 2 | Cr 267.716†        | 42298.1   | 42352.0   | 497.69 µg/L | 497.69 ppb | 13:14:34 |
| 2 | Cu 324.752†        | 118542.2  | 113277.8  | 500.66 µg/L | 500.66 ppb | 13:14:34 |
| 2 | Mn 257.610†        | 284739.4  | 285818.5  | 500.75 µg/L | 500.75 ppb | 13:14:34 |
| 2 | Mo 202.031†        | 9578.5    | 9649.6    | 501.68 µg/L | 501.68 ppb | 13:14:54 |
| 2 | Ni 231.604†        | 31042.5   | 31374.4   | 498.79 µg/L | 498.79 ppb | 13:14:34 |
| 2 | P 214.914†         | 6769.8    | 6894.1    | 2484.7 µg/L | 2484.7 ppb | 13:14:54 |
| 2 | Pb 220.353†        | 4994.9    | 4942.7    | 499.56 µg/L | 499.56 ppb | 13:14:54 |
| 2 | S 181.975 Axial†   | 981.7     | 883.3     | 984.84 µg/L | 984.84 ppb | 13:14:54 |
| 2 | Sb 206.836†        | 2627.8    | 2594.9    | 493.22 µg/L | 493.22 ppb | 13:14:54 |
| 2 | Se 196.026†        | 967.4     | 963.6     | 507 µg/L    | 507 ppb    | 13:14:54 |
| 2 | SiO2†              | 52609.4   | 49817.1   | 5513.6 µg/L | 5513.6 ppb | 13:14:34 |
| 2 | Si 251.611†        | 151914.2  | 151986.5  | 2577.6 µg/L | 2577.6 ppb | 13:14:34 |
| 2 | Sn 189.927†        | 3880.0    | 3924.3    | 501.77 µg/L | 501.77 ppb | 13:14:54 |
| 2 | Ti 334.940†        | 347570.0  | 349961.9  | 497.11 µg/L | 497.11 ppb | 13:14:34 |
| 2 | Tl 190.801†        | 1539.9    | 1632.6    | 501.59 µg/L | 501.59 ppb | 13:14:54 |
| 2 | U 367.007†         | 3728.7    | 4029.0    | 467.90 µg/L | 467.90 ppb | 13:14:34 |
| 2 | V 292.402†         | 111122.8  | 111499.9  | 500.98 µg/L | 500.98 ppb | 13:14:34 |
| 2 | Zn 213.857†        | 87855.1   | 88188.4   | 499.02 µg/L | 499.02 ppb | 13:14:34 |
| 3 | Sc RADIAL          | 72030.8   | 72030.8   | 100.0 %     |            | 13:14:04 |
| 3 | Al 396.153Radial†  | 13747.2   | 13646.9   | 4982.9 µg/L | 4982.9 ppb | 13:14:04 |
| 3 | Ca 317.933Radial†  | 45469.5   | 45130.8   | 5024.0 µg/L | 5024.0 ppb | 13:14:04 |
| 3 | Fe 238.204 Radial† | 52466.5   | 52989.7   | 5012.6 µg/L | 5012.6 ppb | 13:14:04 |
| 3 | K 766.490 Radial†  | 10766.1   | 9696.9    | 5097.2 µg/L | 5097.2 ppb | 13:14:04 |
| 3 | Mg 279.077 IEC†    | 9038.5    | 9012.6    | 4860.7 µg/L | 4860.7 ppb | 13:14:04 |
| 3 | Na 589.592 Radial† | 56926.5   | 56892.4   | 9487.1 µg/L | 9487.1 ppb | 13:14:02 |
| 3 | Sr 421.552†        | 165610.1  | 166085.4  | 481.69 µg/L | 481.69 ppb | 13:14:02 |
| 3 | Sc 361.383         | 1322771.3 | 1322771.3 | 99.367 %    |            | 13:14:56 |
| 3 | Y 371.029          | 703777.4  | 703777.4  | 97.147 %    |            | 13:14:56 |
| 3 | Ag 328.068†        | 92577.3   | 95058.3   | 490.53 µg/L | 490.53 ppb | 13:14:58 |
| 3 | As 188.979†        | 895.9     | 931.6     | 511.23 µg/L | 511.23 ppb | 13:15:18 |
| 3 | B 249.677†         | 35001.9   | 34340.2   | 497.53 µg/L | 497.53 ppb | 13:14:58 |
| 3 | Ba 233.527†        | 54664.7   | 55253.9   | 492.71 µg/L | 492.71 ppb | 13:14:58 |
| 3 | Be 313.107†        | 1774617.9 | 1789587.3 | 476.12 µg/L | 476.12 ppb | 13:14:56 |
| 3 | Cd 226.502†        | 64021.2   | 64609.3   | 488.29 µg/L | 488.29 ppb | 13:14:58 |
| 3 | Co 228.616†        | 32922.8   | 33224.2   | 494.06 µg/L | 494.06 ppb | 13:14:58 |
| 3 | Cr 267.716†        | 41775.1   | 41912.4   | 492.52 µg/L | 492.52 ppb | 13:14:58 |
| 3 | Cu 324.752†        | 116978.7  | 111947.6  | 494.79 µg/L | 494.79 ppb | 13:14:58 |
| 3 | Mn 257.610†        | 280269.5  | 281904.3  | 493.89 µg/L | 493.89 ppb | 13:14:58 |
| 3 | Mo 202.031†        | 9477.8    | 9568.0    | 497.44 µg/L | 497.44 ppb | 13:15:18 |
| 3 | Ni 231.604†        | 30392.4   | 30783.9   | 489.41 µg/L | 489.41 ppb | 13:14:58 |
| 3 | P 214.914†         | 6729.6    | 6867.6    | 2475.1 µg/L | 2475.1 ppb | 13:15:18 |
| 3 | Pb 220.353†        | 4962.8    | 4920.8    | 497.34 µg/L | 497.34 ppb | 13:15:18 |
| 3 | S 181.975 Axial†   | 973.4     | 876.9     | 977.69 µg/L | 977.69 ppb | 13:15:18 |
| 3 | Sb 206.836†        | 2630.5    | 2603.0    | 494.86 µg/L | 494.86 ppb | 13:15:18 |
| 3 | Se 196.026†        | 954.5     | 952.6     | 502 µg/L    | 502 ppb    | 13:15:18 |
| 3 | SiO2†              | 51738.0   | 49048.0   | 5428.5 µg/L | 5428.5 ppb | 13:14:58 |
| 3 | Si 251.611†        | 149515.6  | 149884.3  | 2541.9 µg/L | 2541.9 ppb | 13:14:58 |
| 3 | Sn 189.927†        | 3822.2    | 3874.1    | 495.35 µg/L | 495.35 ppb | 13:15:18 |
| 3 | Ti 334.940†        | 342102.4  | 345172.6  | 490.30 µg/L | 490.30 ppb | 13:14:58 |
| 3 | Tl 190.801†        | 1506.4    | 1602.0    | 492.18 µg/L | 492.18 ppb | 13:15:18 |
| 3 | U 367.007†         | 3727.6    | 4035.6    | 468.80 µg/L | 468.80 ppb | 13:14:58 |
| 3 | V 292.402†         | 109149.5  | 109742.0  | 493.10 µg/L | 493.10 ppb | 13:14:58 |
| 3 | Zn 213.857†        | 86404.8   | 86909.1   | 491.77 µg/L | 491.77 ppb | 13:14:58 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 1329691.5                | 99.886 %           | 0.7317   |                    |          | 0.73% |
| Sc RADIAL  | 72308.8                  | 100 %              | 1.6      |                    |          | 1.63% |
| Y 371.029  | 708382.5                 | 97.783 %           | 0.8342   |                    |          | 0.85% |
| Ag 328.068†  | 96020.2                  | 495.49 µg/L        | 4.336    | 495.49 ppb         | 4.336    | 0.88% |
| QC value within limits for Ag 328.068 Recovery = 99.10%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 13720.0                  | 5009.6 µg/L        | 23.20    | 5009.6 ppb         | 23.20    | 0.46% |
| QC value within limits for Al 396.153Radial Recovery = 100.19% |                          |                    |          |                    |          |       |
| As 188.979†  | 929.3                    | 510.04 µg/L        | 3.299    | 510.04 ppb         | 3.299    | 0.65% |

|   |           |             |        |            |        |       |  |
|---|-----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for As 188.979 Recovery = 102.01%        |           |             |        |            |        |       |  |
| B 249.677†  | 34597.1   | 501.24 µg/L | 3.289  | 501.24 ppb | 3.289  | 0.66% |  |
| QC value within limits for B 249.677 Recovery = 100.25%         |           |             |        |            |        |       |  |
| Ba 233.527†   | 55812.9   | 497.69 µg/L | 4.481  | 497.69 ppb | 4.481  | 0.90% |  |
| QC value within limits for Ba 233.527 Recovery = 99.54%         |           |             |        |            |        |       |  |
| Be 313.107†   | 1788524.1 | 475.70 µg/L | 0.471  | 475.70 ppb | 0.471  | 0.10% |  |
| QC value within limits for Be 313.107 Recovery = 95.14%         |           |             |        |            |        |       |  |
| Ca 317.933Radial†   | 45197.8   | 5031.4 µg/L | 8.34   | 5031.4 ppb | 8.34   | 0.17% |  |
| QC value within limits for Ca 317.933Radial Recovery = 100.63%  |           |             |        |            |        |       |  |
| Cd 226.502†   | 65283.3   | 493.38 µg/L | 4.419  | 493.38 ppb | 4.419  | 0.90% |  |
| QC value within limits for Cd 226.502 Recovery = 98.68%         |           |             |        |            |        |       |  |
| Co 228.616†   | 33478.6   | 497.85 µg/L | 3.287  | 497.85 ppb | 3.287  | 0.66% |  |
| QC value within limits for Co 228.616 Recovery = 99.57%         |           |             |        |            |        |       |  |
| Cr 267.716†   | 42240.7   | 496.38 µg/L | 3.400  | 496.38 ppb | 3.400  | 0.68% |  |
| QC value within limits for Cr 267.716 Recovery = 99.28%         |           |             |        |            |        |       |  |
| Cu 324.752†   | 112782.8  | 498.48 µg/L | 3.211  | 498.48 ppb | 3.211  | 0.64% |  |
| QC value within limits for Cu 324.752 Recovery = 99.70%         |           |             |        |            |        |       |  |
| Fe 238.204 Radial†  | 53157.7   | 5028.5 µg/L | 15.83  | 5028.5 ppb | 15.83  | 0.31% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 100.57% |           |             |        |            |        |       |  |
| K 766.490 Radial†   | 9610.1    | 5051.6 µg/L | 71.89  | 5051.6 ppb | 71.89  | 1.42% |  |
| QC value within limits for K 766.490 Radial Recovery = 101.03%  |           |             |        |            |        |       |  |
| Mg 279.077 IEC†   | 9033.5    | 4871.9 µg/L | 15.27  | 4871.9 ppb | 15.27  | 0.31% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 97.44%     |           |             |        |            |        |       |  |
| Mn 257.610†   | 284312.7  | 498.11 µg/L | 3.693  | 498.11 ppb | 3.693  | 0.74% |  |
| QC value within limits for Mn 257.610 Recovery = 99.62%         |           |             |        |            |        |       |  |
| Mo 202.031†   | 9571.7    | 497.63 µg/L | 3.959  | 497.63 ppb | 3.959  | 0.80% |  |
| QC value within limits for Mo 202.031 Recovery = 99.53%         |           |             |        |            |        |       |  |
| Na 589.592 Radial†  | 58144.6   | 9695.9 µg/L | 230.62 | 9695.9 ppb | 230.62 | 2.38% |  |
| QC value within limits for Na 589.592 Radial Recovery = 96.96%  |           |             |        |            |        |       |  |
| Ni 231.604†   | 31136.8   | 495.02 µg/L | 4.955  | 495.02 ppb | 4.955  | 1.00% |  |
| QC value within limits for Ni 231.604 Recovery = 99.00%         |           |             |        |            |        |       |  |
| P 214.914†  | 6852.9    | 2469.8 µg/L | 18.07  | 2469.8 ppb | 18.07  | 0.73% |  |
| QC value within limits for P 214.914 Recovery = 98.79%          |           |             |        |            |        |       |  |
| Pb 220.353†   | 4911.9    | 496.44 µg/L | 3.652  | 496.44 ppb | 3.652  | 0.74% |  |
| QC value within limits for Pb 220.353 Recovery = 99.29%         |           |             |        |            |        |       |  |
| S 181.975 Axial†  | 874.6     | 975.09 µg/L | 11.268 | 975.09 ppb | 11.268 | 1.16% |  |
| QC value within limits for S 181.975 Axial Recovery = 97.51%    |           |             |        |            |        |       |  |
| Sb 206.836†   | 2589.4    | 492.18 µg/L | 3.331  | 492.18 ppb | 3.331  | 0.68% |  |
| QC value within limits for Sb 206.836 Recovery = 98.44%         |           |             |        |            |        |       |  |
| Se 196.026†   | 949.7     | 500 µg/L    | 8.1    | 500 ppb    | 8.1    | 1.62% |  |
| QC value within limits for Se 196.026 Recovery = 100.04%        |           |             |        |            |        |       |  |
| SiO2†   | 49465.4   | 5474.7 µg/L | 43.02  | 5474.7 ppb | 43.02  | 0.79% |  |
| QC value within limits for SiO2 Recovery = 102.38%              |           |             |        |            |        |       |  |
| Si 251.611†   | 151068.1  | 2562.0 µg/L | 18.24  | 2562.0 ppb | 18.24  | 0.71% |  |
| QC value within limits for Si 251.611 Recovery = 102.48%        |           |             |        |            |        |       |  |
| Sn 189.927†   | 3885.7    | 496.83 µg/L | 4.389  | 496.83 ppb | 4.389  | 0.88% |  |
| QC value within limits for Sn 189.927 Recovery = 99.37%         |           |             |        |            |        |       |  |
| Sr 421.552†   | 170380.4  | 494.15 µg/L | 12.657 | 494.15 ppb | 12.657 | 2.56% |  |
| QC value within limits for Sr 421.552 Recovery = 98.83%         |           |             |        |            |        |       |  |
| Ti 334.940†   | 348164.7  | 494.55 µg/L | 3.707  | 494.55 ppb | 3.707  | 0.75% |  |
| QC value within limits for Ti 334.940 Recovery = 98.91%         |           |             |        |            |        |       |  |
| Tl 190.801†   | 1611.9    | 495.22 µg/L | 5.520  | 495.22 ppb | 5.520  | 1.11% |  |
| QC value within limits for Tl 190.801 Recovery = 99.04%         |           |             |        |            |        |       |  |
| U 367.007†  | 4040.4    | 469.31 µg/L | 1.714  | 469.31 ppb | 1.714  | 0.37% |  |
| QC value within limits for U 367.007 Recovery = 93.86%          |           |             |        |            |        |       |  |
| V 292.402†  | 110814.1  | 497.91 µg/L | 4.220  | 497.91 ppb | 4.220  | 0.85% |  |
| QC value within limits for V 292.402 Recovery = 99.58%          |           |             |        |            |        |       |  |
| Zn 213.857†   | 87643.9   | 495.94 µg/L | 3.743  | 495.94 ppb | 3.743  | 0.75% |  |
| QC value within limits for Zn 213.857 Recovery = 99.19%         |           |             |        |            |        |       |  |
| All analyte(s) passed QC.                                       |           |             |        |            |        |       |  |

Sequence No.: 2

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/11/2016 13:15:26

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 72390.3       | 72390.3             | 100 %              |                    | 13:15:51      |
| 1     | Al 396.153Radial†  | 102.3         | 0.1                 | 0.0368 µg/L        | 0.0368 ppb         | 13:16:11      |
| 1     | Ca 317.933Radial†  | 461.2         | 115.8               | 12.886 µg/L        | 12.886 ppb         | 13:16:11      |
| 1     | Fe 238.204 Radial† | -453.9        | 66.4                | 6.2773 µg/L        | 6.2773 ppb         | 13:16:11      |
| 1     | K 766.490 Radial†  | 1020.7        | -54.5               | -28.625 µg/L       | -28.625 ppb        | 13:15:51      |
| 1     | Mg 279.077 IEC†    | 17.8          | -9.1                | -4.9182 µg/L       | -4.9182 ppb        | 13:16:11      |
| 1     | Na 589.592 Radial† | 170.7         | 130.1               | 21.695 µg/L        | 21.695 ppb         | 13:15:51      |
| 1     | Sr 421.552†        | -398.8        | 62.2                | 0.1799 µg/L        | 0.1799 ppb         | 13:16:11      |
| 1     | Sc 361.383         | 1354014.4     | 1354014.4           | 101.71 %           |                    | 13:16:58      |
| 1     | Y 371.029          | 731462.4      | 731462.4            | 100.97 %           |                    | 13:16:58      |
| 1     | Ag 328.068†        | -1855.1       | 66.9                | 0.3530 µg/L        | 0.3530 ppb         | 13:17:00      |
| 1     | As 188.979†        | -33.9         | -3.3                | -1.8125 µg/L       | -1.8125 ppb        | 13:17:20      |
| 1     | B 249.677†         | 811.0         | -87.5               | -1.2540 µg/L       | -1.2540 ppb        | 13:17:00      |
| 1     | Ba 233.527†        | -235.6        | 9.1                 | 0.0814 µg/L        | 0.0814 ppb         | 13:17:20      |
| 1     | Be 313.107†        | -2798.4       | 904.6               | 0.2402 µg/L        | 0.2402 ppb         | 13:17:00      |
| 1     | Cd 226.502†        | -137.1        | 45.3                | 0.3418 µg/L        | 0.3418 ppb         | 13:17:20      |
| 1     | Co 228.616†        | -89.6         | 3.4                 | 0.0508 µg/L        | 0.0508 ppb         | 13:17:20      |
| 1     | Cr 267.716†        | 146.7         | 15.2                | 0.1905 µg/L        | 0.1905 ppb         | 13:17:20      |
| 1     | Cu 324.752†        | 5399.7        | -468.1              | -2.0756 µg/L       | -2.0756 ppb        | 13:17:00      |
| 1     | Mn 257.610†        | 218.5         | 62.8                | 0.1103 µg/L        | 0.1103 ppb         | 13:17:20      |
| 1     | Mo 202.031†        | -15.3         | 14.7                | 0.7616 µg/L        | 0.7616 ppb         | 13:17:20      |
| 1     | Ni 231.604†        | -194.7        | 6.3                 | 0.1009 µg/L        | 0.1009 ppb         | 13:17:20      |
| 1     | P 214.914†         | -69.2         | 27.1                | 9.7580 µg/L        | 9.7580 ppb         | 13:17:20      |
| 1     | Pb 220.353†        | 90.2          | 15.0                | 1.5322 µg/L        | 1.5322 ppb         | 13:17:20      |
| 1     | S 181.975 Axial†   | 89.5          | -14.7               | -16.396 µg/L       | -16.396 ppb        | 13:17:20      |
| 1     | Sb 206.836†        | 64.8          | 19.4                | 3.7406 µg/L        | 3.7406 ppb         | 13:17:20      |
| 1     | Se 196.026†        | -2.5          | -10.5               | -5.51 µg/L         | -5.51 ppb          | 13:17:20      |
| 1     | Si 21.02†          | 2978.7        | -91.3               | -10.102 µg/L       | -10.102 ppb        | 13:17:00      |
| 1     | Si 251.611†        | 719.5         | 122.9               | 2.0852 µg/L        | 2.0852 ppb         | 13:17:00      |
| 1     | Sn 189.927†        | -20.2         | 7.6                 | 0.9692 µg/L        | 0.9692 ppb         | 13:17:20      |
| 1     | Ti 334.940†        | -752.3        | 149.6               | 0.2194 µg/L        | 0.2194 ppb         | 13:17:00      |
| 1     | Tl 190.801†        | -81.9         | 5.5                 | 1.6934 µg/L        | 1.6934 ppb         | 13:17:20      |
| 1     | U 367.007†         | -393.3        | -102.5              | -12.641 µg/L       | -12.641 ppb        | 13:17:00      |
| 1     | V 292.402†         | 28.7          | -75.2               | -0.3407 µg/L       | -0.3407 ppb        | 13:17:00      |
| 1     | Zn 213.857†        | 29.8          | -17.2               | -0.0957 µg/L       | -0.0957 ppb        | 13:17:20      |
| 2     | Sc RADIAL          | 71919.9       | 71919.9             | 99.8 %             |                    | 13:16:13      |
| 2     | Al 396.153Radial†  | 145.0         | 43.6                | 15.910 µg/L        | 15.910 ppb         | 13:16:33      |
| 2     | Ca 317.933Radial†  | 452.6         | 110.1               | 12.261 µg/L        | 12.261 ppb         | 13:16:33      |
| 2     | Fe 238.204 Radial† | -440.4        | 76.9                | 7.2781 µg/L        | 7.2781 ppb         | 13:16:33      |
| 2     | K 766.490 Radial†  | 964.7         | -103.9              | -54.607 µg/L       | -54.607 ppb        | 13:16:13      |
| 2     | Mg 279.077 IEC†    | 17.3          | -9.5                | -5.1217 µg/L       | -5.1217 ppb        | 13:16:33      |
| 2     | Na 589.592 Radial† | 90.6          | 51.0                | 8.5072 µg/L        | 8.5072 ppb         | 13:16:13      |
| 2     | Sr 421.552†        | -411.9        | 46.5                | 0.1345 µg/L        | 0.1345 ppb         | 13:16:33      |
| 2     | Sc 361.383         | 1329004.1     | 1329004.1           | 99.835 %           |                    | 13:17:23      |
| 2     | Y 371.029          | 717553.8      | 717553.8            | 99.049 %           |                    | 13:17:23      |
| 2     | Ag 328.068†        | -1739.1       | 148.9               | 0.7600 µg/L        | 0.7600 ppb         | 13:17:25      |
| 2     | As 188.979†        | -33.6         | -3.7                | -2.0037 µg/L       | -2.0037 ppb        | 13:17:45      |
| 2     | B 249.677†         | 843.4         | -40.1               | -0.5714 µg/L       | -0.5714 ppb        | 13:17:25      |
| 2     | Ba 233.527†        | -233.1        | 7.3                 | 0.0653 µg/L        | 0.0653 ppb         | 13:17:45      |
| 2     | Be 313.107†        | -2740.3       | 911.1               | 0.2523 µg/L        | 0.2523 ppb         | 13:17:25      |
| 2     | Cd 226.502†        | -153.4        | 26.3                | 0.1985 µg/L        | 0.1985 ppb         | 13:17:45      |
| 2     | Co 228.616†        | -107.6        | -16.3               | -0.2422 µg/L       | -0.2422 ppb        | 13:17:45      |
| 2     | Cr 267.716†        | 137.7         | 8.9                 | 0.0911 µg/L        | 0.0911 ppb         | 13:17:45      |
| 2     | Cu 324.752†        | 5502.7        | -265.1              | -1.1576 µg/L       | -1.1576 ppb        | 13:17:25      |
| 2     | Mn 257.610†        | 210.3         | 58.7                | 0.1030 µg/L        | 0.1030 ppb         | 13:17:45      |
| 2     | Mo 202.031†        | -18.4         | 11.3                | 0.5879 µg/L        | 0.5879 ppb         | 13:17:45      |
| 2     | Ni 231.604†        | -178.2        | 19.2                | 0.3057 µg/L        | 0.3057 ppb         | 13:17:45      |
| 2     | P 214.914†         | -72.1         | 22.9                | 8.2469 µg/L        | 8.2469 ppb         | 13:17:45      |
| 2     | Pb 220.353†        | 72.8          | -0.8                | -0.0997 µg/L       | -0.0997 ppb        | 13:17:45      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 96.1      | -6.4      | -7.1609 µg/L | -7.1609 ppb | 13:17:45 |
| 2 | Sb 206.836†        | 56.2      | 12.0      | 2.3071 µg/L  | 2.3071 ppb  | 13:17:45 |
| 2 | Se 196.026†        | 12.3      | 4.3       | 2.27 µg/L    | 2.27 ppb    | 13:17:45 |
| 2 | SiO2†              | 2820.6    | -194.5    | -21.531 µg/L | -21.531 ppb | 13:17:25 |
| 2 | Si 251.611†        | 574.4     | -9.1      | -0.1535 µg/L | -0.1535 ppb | 13:17:25 |
| 2 | Sn 189.927†        | -18.4     | 9.1       | 1.1603 µg/L  | 1.1603 ppb  | 13:17:45 |
| 2 | Ti 334.940†        | -530.4    | 358.0     | 0.5012 µg/L  | 0.5012 ppb  | 13:17:25 |
| 2 | Tl 190.801†        | -69.0     | 17.0      | 5.2145 µg/L  | 5.2145 ppb  | 13:17:45 |
| 2 | U 367.007†         | -162.6    | 121.3     | 14.883 µg/L  | 14.883 ppb  | 13:17:25 |
| 2 | V 292.402†         | 27.5      | -75.8     | -0.3334 µg/L | -0.3334 ppb | 13:17:25 |
| 2 | Zn 213.857†        | 23.1      | -23.4     | -0.1319 µg/L | -0.1319 ppb | 13:17:45 |
| 3 | Sc RADIAL          | 71690.2   | 71690.2   | 99.5 %       |             | 13:16:35 |
| 3 | Al 396.153Radial†  | 116.0     | 14.9      | 5.4425 µg/L  | 5.4425 ppb  | 13:16:55 |
| 3 | Ca 317.933Radial†  | 438.1     | 97.0      | 10.800 µg/L  | 10.800 ppb  | 13:16:55 |
| 3 | Fe 238.204 Radial† | -428.5    | 87.5      | 8.2739 µg/L  | 8.2739 ppb  | 13:16:55 |
| 3 | K 766.490 Radial†  | 962.0     | -103.6    | -54.436 µg/L | -54.436 ppb | 13:16:35 |
| 3 | Mg 279.077 IEC†    | 18.0      | -8.7      | -4.7080 µg/L | -4.7080 ppb | 13:16:55 |
| 3 | Na 589.592 Radial† | 46.1      | 6.6       | 1.1004 µg/L  | 1.1004 ppb  | 13:16:35 |
| 3 | Sr 421.552†        | -418.6    | 38.4      | 0.1112 µg/L  | 0.1112 ppb  | 13:16:55 |
| 3 | Sc 361.383         | 1332331.6 | 1332331.6 | 100.08 %     |             | 13:17:47 |
| 3 | Y 371.029          | 719168.8  | 719168.8  | 99.272 %     |             | 13:17:47 |
| 3 | Ag 328.068†        | -1848.0   | 44.4      | 0.2311 µg/L  | 0.2311 ppb  | 13:17:49 |
| 3 | As 188.979†        | -29.3     | 0.7       | 0.3824 µg/L  | 0.3824 ppb  | 13:18:09 |
| 3 | B 249.677†         | 856.9     | -28.7     | -0.4068 µg/L | -0.4068 ppb | 13:17:49 |
| 3 | Ba 233.527†        | -241.0    | -0.1      | -0.0006 µg/L | -0.0006 ppb | 13:18:09 |
| 3 | Be 313.107†        | -2661.4   | 996.8     | 0.2707 µg/L  | 0.2707 ppb  | 13:17:49 |
| 3 | Cd 226.502†        | -144.1    | 36.0      | 0.2715 µg/L  | 0.2715 ppb  | 13:18:09 |
| 3 | Co 228.616†        | -99.1     | -7.5      | -0.1108 µg/L | -0.1108 ppb | 13:18:09 |
| 3 | Cr 267.716†        | 125.6     | -3.5      | -0.0382 µg/L | -0.0382 ppb | 13:18:09 |
| 3 | Cu 324.752†        | 5596.3    | -185.3    | -0.8198 µg/L | -0.8198 ppb | 13:17:49 |
| 3 | Mn 257.610†        | 242.4     | 90.2      | 0.1583 µg/L  | 0.1583 ppb  | 13:18:09 |
| 3 | Mo 202.031†        | -15.4     | 14.4      | 0.7485 µg/L  | 0.7485 ppb  | 13:18:09 |
| 3 | Ni 231.604†        | -148.8    | 49.1      | 0.7803 µg/L  | 0.7803 ppb  | 13:18:09 |
| 3 | P 214.914†         | -84.6     | 10.5      | 3.7884 µg/L  | 3.7884 ppb  | 13:18:09 |
| 3 | Pb 220.353†        | 89.3      | 15.5      | 1.5728 µg/L  | 1.5728 ppb  | 13:18:09 |
| 3 | S 181.975 Axial†   | 97.6      | -5.1      | -5.7251 µg/L | -5.7251 ppb | 13:18:09 |
| 3 | Sb 206.836†        | 60.6      | 16.2      | 3.1319 µg/L  | 3.1319 ppb  | 13:18:09 |
| 3 | Se 196.026†        | 13.5      | 5.5       | 2.86 µg/L    | 2.86 ppb    | 13:18:09 |
| 3 | SiO2†              | 2924.2    | -98.0     | -10.848 µg/L | -10.848 ppb | 13:17:49 |
| 3 | Si 251.611†        | 595.7     | 10.7      | 0.1824 µg/L  | 0.1824 ppb  | 13:17:49 |
| 3 | Sn 189.927†        | -26.2     | 1.3       | 0.1690 µg/L  | 0.1690 ppb  | 13:18:09 |
| 3 | Ti 334.940†        | -479.4    | 410.3     | 0.5849 µg/L  | 0.5849 ppb  | 13:17:49 |
| 3 | Tl 190.801†        | -64.4     | 21.7      | 6.6706 µg/L  | 6.6706 ppb  | 13:18:09 |
| 3 | U 367.007†         | -310.0    | -25.6     | -3.1912 µg/L | -3.1912 ppb | 13:17:49 |
| 3 | V 292.402†         | 152.6     | 49.2      | 0.2197 µg/L  | 0.2197 ppb  | 13:17:49 |
| 3 | Zn 213.857†        | 35.9      | -10.7     | -0.0603 µg/L | -0.0603 ppb | 13:18:09 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------|-----------------|--------------------|----------|---------|
| Sc 361.383  | 1338450.0                | 100.54 %     | 1.020           |                    |          | 1.01%   |
| Sc RADIAL   | 72000.1                  | 99.9 %       | 0.50            |                    |          | 0.50%   |
| Y 371.029   | 722728.4                 | 99.763 %     | 1.0500          |                    |          | 1.05%   |
| Ag 328.068†   | 86.7                     | 0.4481 µg/L  | 0.27697         | 0.4481 ppb         | 0.27697  | 61.82%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Al 396.153Radial†   | 19.5                     | 7.1296 µg/L  | 8.06974         | 7.1296 ppb         | 8.06974  | 113.19% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |              |                 |                    |          |         |
| As 188.979†   | -2.1                     | -1.1446 µg/L | 1.32583         | -1.1446 ppb        | 1.32583  | 115.83% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| B 249.677†  | -52.1                    | -0.7441 µg/L | 0.44919         | -0.7441 ppb        | 0.44919  | 60.37%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |              |                 |                    |          |         |
| Ba 233.527†   | 5.5                      | 0.0487 µg/L  | 0.04346         | 0.0487 ppb         | 0.04346  | 89.21%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Be 313.107†   | 937.5                    | 0.2544 µg/L  | 0.01539         | 0.2544 ppb         | 0.01539  | 6.05%   |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Ca 317.933Radial†   | 107.6                    | 11.983 µg/L  | 1.0707          | 11.983 ppb         | 1.0707   | 8.94%   |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |              |                 |                    |          |         |
| Cd 226.502†   | 35.9                     | 0.2706 µg/L  | 0.07164         | 0.2706 ppb         | 0.07164  | 26.47%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Co 228.616†   | -6.8                     | -0.1008 µg/L | 0.14674         | -0.1008 ppb        | 0.14674  | 145.64% |

|  |        |              |          |             |          |         |  |
|--|--------|--------------|----------|-------------|----------|---------|--|
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Cr 267.716†  | 6.9    | 0.0811 µg/L  | 0.11465  | 0.0811 ppb  | 0.11465  | 141.29% |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Cu 324.752†  | -306.2 | -1.3510 µg/L | 0.64982  | -1.3510 ppb | 0.64982  | 48.10%  |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Fe 238.204 Radial†   | 76.9   | 7.2765 µg/L  | 0.99832  | 7.2765 ppb  | 0.99832  | 13.72%  |  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |          |             |          |         |  |
| K 766.490 Radial†  | -87.3  | -45.889 µg/L | 14.9517  | -45.889 ppb | 14.9517  | 32.58%  |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |          |             |          |         |  |
| Mg 279.077 IEC†  | -9.1   | -4.9159 µg/L | 0.20685  | -4.9159 ppb | 0.20685  | 4.21%   |  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |          |             |          |         |  |
| Mn 257.610†  | 70.6   | 0.1239 µg/L  | 0.03005  | 0.1239 ppb  | 0.03005  | 24.26%  |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Mo 202.031†  | 13.5   | 0.6993 µg/L  | 0.09672  | 0.6993 ppb  | 0.09672  | 13.83%  |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Na 589.592 Radial†   | 62.6   | 10.434 µg/L  | 10.4314  | 10.434 ppb  | 10.4314  | 99.98%  |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |          |             |          |         |  |
| Ni 231.604†  | 24.9   | 0.3956 µg/L  | 0.34853  | 0.3956 ppb  | 0.34853  | 88.09%  |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |          |             |          |         |  |
| P 214.914†   | 20.2   | 7.2644 µg/L  | 3.10373  | 7.2644 ppb  | 3.10373  | 42.73%  |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |          |             |          |         |  |
| Pb 220.353†  | 9.9    | 1.0018 µg/L  | 0.95409  | 1.0018 ppb  | 0.95409  | 95.24%  |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |          |             |          |         |  |
| S 181.975 Axial†   | -8.7   | -9.7608 µg/L | 5.79128  | -9.7608 ppb | 5.79128  | 59.33%  |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |          |             |          |         |  |
| Sb 206.836†  | 15.8   | 3.0599 µg/L  | 0.71944  | 3.0599 ppb  | 0.71944  | 23.51%  |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Se 196.026†  | -0.2   | -0.125 µg/L  | 4.6752   | -0.125 ppb  | 4.6752   | >999.9% |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |          |             |          |         |  |
| SiO2†  | -127.9 | -14.160 µg/L | 6.3939   | -14.160 ppb | 6.3939   | 45.15%  |  |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |          |             |          |         |  |
| Si 251.611†  | 41.5   | 0.7047 µg/L  | 1.20726  | 0.7047 ppb  | 1.20726  | 171.31% |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Sn 189.927†  | 6.0    | 0.7661 µg/L  | 0.52592  | 0.7661 ppb  | 0.52592  | 68.65%  |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Sr 421.552†  | 49.0   | 0.1418 µg/L  | 0.03494  | 0.1418 ppb  | 0.03494  | 24.63%  |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Ti 334.940†  | 306.0  | 0.4352 µg/L  | 0.19151  | 0.4352 ppb  | 0.19151  | 44.01%  |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |          |             |          |         |  |
| Tl 190.801†  | 14.7   | 4.5262 µg/L  | 2.55900  | 4.5262 ppb  | 2.55900  | 56.54%  |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |          |             |          |         |  |
| U 367.007†   | -2.2   | -0.3166 µg/L | 13.98520 | -0.3166 ppb | 13.98520 | >999.9% |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |          |             |          |         |  |
| V 292.402†   | -33.9  | -0.1515 µg/L | 0.32146  | -0.1515 ppb | 0.32146  | 212.22% |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |          |             |          |         |  |
| Zn 213.857†  | -17.1  | -0.0959 µg/L | 0.03581  | -0.0959 ppb | 0.03581  | 37.32%  |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |          |             |          |         |  |
| All analyte(s) passed QC.  |        |              |          |             |          |         |  |

Sequence No.: 3

Sample ID: 409254011|1611117|10

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 349

Date Collected: 11/11/2016 13:18:17

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254011|1611117|10

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 70635.4          | 70635.4                | 98.1 %                |                       | 13:18:45         |
| 1     | Al 396.153Radial†  | 7956.1           | 8012.4                 | 2957.2 µg/L           | 2957.2 ppb            | 13:18:45         |
| 1     | Ca 317.933Radial†  | 1620497.3        | 1652329.0              | 183940 µg/L           | 183940 ppb            | 13:18:43         |
| 1     | Fe 238.204 Radial† | 109801.4         | 112499.6               | 10642 µg/L            | 10642 ppb             | 13:18:45         |
| 1     | K 766.490 Radial†  | 2397.8           | 1375.2                 | 712.45 µg/L           | 712.45 ppb            | 13:18:45         |
| 1     | Mg 279.077 IEC†    | 8980.5           | 9132.0                 | 4926.8 µg/L           | 4926.8 ppb            | 13:18:45         |
| 1     | Na 589.592 Radial† | 2286.8           | 2292.5                 | 382.28 µg/L           | 382.28 ppb            | 13:18:45         |
| 1     | Sr 421.552†        | 140713.9         | 143966.8               | 411.34 µg/L           | 411.34 ppb            | 13:18:43         |
| 1     | Sc 361.383         | 1313485.6        | 1313485.6              | 98.669 %              |                       | 13:18:57         |
| 1     | Y 371.029          | 707905.5         | 707905.5               | 97.717 %              |                       | 13:18:57         |
| 1     | Ag 328.068†        | -2030.6          | -167.1                 | -1.8388 µg/L          | -1.8388 ppb           | 13:18:57         |
| 1     | As 188.979†        | -23.7            | 5.9                    | 4.5895 µg/L           | 4.5895 ppb            | 13:19:17         |
| 1     | B 249.677†         | 555.1            | -322.2                 | 3.1723 µg/L           | 3.1723 ppb            | 13:18:57         |
| 1     | Ba 233.527†        | 9491.8           | 9860.7                 | 87.976 µg/L           | 87.976 ppb            | 13:19:17         |
| 1     | Be 313.107†        | -2135.7          | 1491.4                 | -1.7240 µg/L          | -1.7240 ppb           | 13:18:57         |
| 1     | Cd 226.502†        | 17.9             | 198.2                  | 0.2809 µg/L           | 0.2809 ppb            | 13:19:17         |
| 1     | Co 228.616†        | 173.0            | 266.8                  | 3.9362 µg/L           | 3.9362 ppb            | 13:19:17         |
| 1     | Cr 267.716†        | 804.3            | 866.1                  | 8.1550 µg/L           | 8.1550 ppb            | 13:19:17         |
| 1     | Cu 324.752†        | 9363.8           | 3713.3                 | 17.199 µg/L           | 17.199 ppb            | 13:18:57         |
| 1     | Mn 257.610†        | 167545.0         | 169653.1               | 297.16 µg/L           | 297.16 ppb            | 13:18:57         |
| 1     | Mo 202.031†        | -21.3            | 8.1                    | 0.7323 µg/L           | 0.7323 ppb            | 13:19:17         |
| 1     | Ni 231.604†        | 596.4            | 802.2                  | 12.753 µg/L           | 12.753 ppb            | 13:19:17         |
| 1     | P 214.914†         | 797.6            | 903.5                  | 325.09 µg/L           | 325.09 ppb            | 13:19:17         |
| 1     | Pb 220.353†        | 1096.7           | 1037.8                 | 104.99 µg/L           | 104.99 ppb            | 13:19:17         |
| 1     | S 181.975 Axial†   | 4731.7           | 4692.9                 | 5236.3 µg/L           | 5236.3 ppb            | 13:19:17         |
| 1     | Sb 206.836†        | 68.8             | 25.4                   | 3.7436 µg/L           | 3.7436 ppb            | 13:19:17         |
| 1     | Se 196.026†        | -6.2             | -14.3                  | -2.60 µg/L            | -2.60 ppb             | 13:19:17         |
| 1     | Si02†              | 52324.5          | 50010.6                | 5535.0 µg/L           | 5535.0 ppb            | 13:18:57         |
| 1     | Si 251.611†        | 151298.5         | 152755.0               | 2591.3 µg/L           | 2591.3 ppb            | 13:18:57         |
| 1     | Sn 189.927†        | -40.6            | -13.7                  | -1.7403 µg/L          | -1.7403 ppb           | 13:19:17         |
| 1     | Ti 334.940†        | 69677.3          | 71506.5                | 103.89 µg/L           | 103.89 ppb            | 13:18:57         |
| 1     | Tl 190.801†        | -81.9            | 3.0                    | 1.1074 µg/L           | 1.1074 ppb            | 13:19:17         |
| 1     | U 367.007†         | 419.4            | 709.3                  | 13.238 µg/L           | 13.238 ppb            | 13:18:57         |
| 1     | V 292.402†         | 2273.4           | 2200.7                 | 10.617 µg/L           | 10.617 ppb            | 13:18:57         |
| 1     | Zn 213.857†        | 10169.8          | 10260.5                | 56.808 µg/L           | 56.808 ppb            | 13:19:17         |
| 2     | Sc RADIAL          | 69410.6          | 69410.6                | 96.4 %                |                       | 13:18:50         |
| 2     | Al 396.153Radial†  | 7852.6           | 8048.2                 | 2970.2 µg/L           | 2970.2 ppb            | 13:18:50         |
| 2     | Ca 317.933Radial†  | 1589300.3        | 1649114.1              | 183580 µg/L           | 183580 ppb            | 13:18:48         |
| 2     | Fe 238.204 Radial† | 108720.2         | 113353.5               | 10723 µg/L            | 10723 ppb             | 13:18:50         |
| 2     | K 766.490 Radial†  | 2285.0           | 1301.3                 | 673.66 µg/L           | 673.66 ppb            | 13:18:50         |
| 2     | Mg 279.077 IEC†    | 8820.9           | 9128.0                 | 4924.7 µg/L           | 4924.7 ppb            | 13:18:50         |
| 2     | Na 589.592 Radial† | 2310.7           | 2358.4                 | 393.27 µg/L           | 393.27 ppb            | 13:18:50         |
| 2     | Sr 421.552†        | 138388.2         | 144085.4               | 411.70 µg/L           | 411.70 ppb            | 13:18:48         |
| 2     | Sc 361.383         | 1292261.3        | 1292261.3              | 97.075 %              |                       | 13:19:20         |
| 2     | Y 371.029          | 696455.0         | 696455.0               | 96.136 %              |                       | 13:19:20         |
| 2     | Ag 328.068†        | -2002.0          | -171.5                 | -1.8431 µg/L          | -1.8431 ppb           | 13:19:20         |
| 2     | As 188.979†        | -21.5            | 7.8                    | 5.6281 µg/L           | 5.6281 ppb            | 13:19:40         |
| 2     | B 249.677†         | 431.7            | -440.1                 | 1.5361 µg/L           | 1.5361 ppb            | 13:19:20         |
| 2     | Ba 233.527†        | 9512.3           | 10039.8                | 89.573 µg/L           | 89.573 ppb            | 13:19:40         |
| 2     | Be 313.107†        | -2332.4          | 1253.2                 | -1.8348 µg/L          | -1.8348 ppb           | 13:19:20         |
| 2     | Cd 226.502†        | 21.2             | 201.8                  | 0.2994 µg/L           | 0.2994 ppb            | 13:19:40         |
| 2     | Co 228.616†        | 150.3            | 246.3                  | 3.6330 µg/L           | 3.6330 ppb            | 13:19:40         |
| 2     | Cr 267.716†        | 782.0            | 676.6                  | 8.0606 µg/L           | 8.0606 ppb            | 13:19:40         |
| 2     | Cu 324.752†        | 9089.7           | 3586.7                 | 16.632 µg/L           | 16.632 ppb            | 13:19:20         |
| 2     | Mn 257.610†        | 166375.8         | 171237.6               | 299.94 µg/L           | 299.94 ppb            | 13:19:20         |
| 2     | Mo 202.031†        | -26.5            | 2.4                    | 0.4398 µg/L           | 0.4398 ppb            | 13:19:40         |
| 2     | Ni 231.604†        | 608.8            | 824.9                  | 13.114 µg/L           | 13.114 ppb            | 13:19:40         |
| 2     | P 214.914†         | 782.1            | 900.7                  | 324.10 µg/L           | 324.10 ppb            | 13:19:40         |
| 2     | Pb 220.353†        | 1139.5           | 1100.1                 | 111.32 µg/L           | 111.32 ppb            | 13:19:40         |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 4762.5    | 4803.3    | 5359.6 µg/L  | 5359.6 ppb  | 13:19:40 |
| 2 | Sb 206.836†        | 78.0      | 36.1      | 5.7965 µg/L  | 5.7965 ppb  | 13:19:40 |
| 2 | Se 196.026†        | -8.6      | -16.9     | -3.94 µg/L   | -3.94 ppb   | 13:19:40 |
| 2 | SiO2†              | 51871.5   | 50414.9   | 5579.8 µg/L  | 5579.8 ppb  | 13:19:20 |
| 2 | Si 251.611†        | 149417.8  | 153336.1  | 2601.2 µg/L  | 2601.2 ppb  | 13:19:20 |
| 2 | Sn 189.927†        | -46.2     | -20.1     | -2.5550 µg/L | -2.5550 ppb | 13:19:40 |
| 2 | Ti 334.940†        | 69041.1   | 72011.0   | 104.61 µg/L  | 104.61 ppb  | 13:19:20 |
| 2 | Tl 190.801†        | -74.3     | 9.5       | 3.1104 µg/L  | 3.1104 ppb  | 13:19:40 |
| 2 | U 367.007†         | 267.9     | 560.2     | -5.5173 µg/L | -5.5173 ppb | 13:19:20 |
| 2 | V 292.402†         | 2208.0    | 2171.2    | 10.483 µg/L  | 10.483 ppb  | 13:19:20 |
| 2 | Zn 213.857†        | 10233.2   | 10495.0   | 58.131 µg/L  | 58.131 ppb  | 13:19:40 |
| 3 | Sc RADIAL          | 72192.9   | 72192.9   | 100 %        |             | 13:18:54 |
| 3 | Al 396.153Radial†  | 8026.9    | 7908.0    | 2918.5 µg/L  | 2918.5 ppb  | 13:18:54 |
| 3 | Ca 317.933Radial†  | 1627949.4 | 1624108.9 | 180800 µg/L  | 180800 ppb  | 13:18:52 |
| 3 | Fe 238.204 Radial† | 112679.4  | 112955.4  | 10685 µg/L   | 10685 ppb   | 13:18:54 |
| 3 | K 766.490 Radial†  | 2320.8    | 1245.6    | 644.63 µg/L  | 644.63 ppb  | 13:18:54 |
| 3 | Mg 279.077 IEC†    | 9072.9    | 9026.6    | 4870.1 µg/L  | 4870.1 ppb  | 13:18:54 |
| 3 | Na 589.592 Radial† | 2408.8    | 2363.9    | 394.19 µg/L  | 394.19 ppb  | 13:18:54 |
| 3 | Sr 421.552†        | 141161.4  | 141317.2  | 403.76 µg/L  | 403.76 ppb  | 13:18:52 |
| 3 | Sc 361.383         | 1294559.6 | 1294559.6 | 97.247 %     |             | 13:19:42 |
| 3 | Y 371.029          | 697517.5  | 697517.5  | 96.283 %     |             | 13:19:42 |
| 3 | Ag 328.068†        | -1876.1   | -38.3     | -1.1338 µg/L | -1.1338 ppb | 13:19:42 |
| 3 | As 188.979†        | -24.6     | 4.7       | 3.9144 µg/L  | 3.9144 ppb  | 13:20:02 |
| 3 | B 249.677†         | 517.2     | -353.0    | 2.7615 µg/L  | 2.7615 ppb  | 13:19:42 |
| 3 | Ba 233.527†        | 9615.6    | 10128.6   | 90.365 µg/L  | 90.365 ppb  | 13:20:02 |
| 3 | Be 313.107†        | -2272.1   | 1319.5    | -1.8368 µg/L | -1.8368 ppb | 13:19:42 |
| 3 | Cd 226.502†        | 36.6      | 217.7     | 0.4235 µg/L  | 0.4235 ppb  | 13:20:02 |
| 3 | Co 228.616†        | 162.1     | 258.2     | 3.8109 µg/L  | 3.8109 ppb  | 13:20:02 |
| 3 | Cr 267.716†        | 799.2     | 692.9     | 8.2533 µg/L  | 8.2533 ppb  | 13:20:02 |
| 3 | Cu 324.752†        | 9133.6    | 3615.2    | 16.753 µg/L  | 16.753 ppb  | 13:19:42 |
| 3 | Mn 257.610†        | 166815.6  | 171385.6  | 300.20 µg/L  | 300.20 ppb  | 13:19:42 |
| 3 | Mo 202.031†        | -11.6     | 17.8      | 1.2389 µg/L  | 1.2389 ppb  | 13:20:02 |
| 3 | Ni 231.604†        | 642.1     | 858.0     | 13.640 µg/L  | 13.640 ppb  | 13:20:02 |
| 3 | P 214.914†         | 799.5     | 917.2     | 330.05 µg/L  | 330.05 ppb  | 13:20:02 |
| 3 | Pb 220.353†        | 1166.0    | 1125.3    | 113.86 µg/L  | 113.86 ppb  | 13:20:02 |
| 3 | S 181.975 Axial†   | 4802.1    | 4835.3    | 5395.3 µg/L  | 5395.3 ppb  | 13:20:02 |
| 3 | Sb 206.836†        | 58.8      | 16.2      | 1.9524 µg/L  | 1.9524 ppb  | 13:20:02 |
| 3 | Se 196.026†        | -5.2      | -13.4     | -2.11 µg/L   | -2.11 ppb   | 13:20:02 |
| 3 | SiO2†              | 52191.1   | 50648.7   | 5605.7 µg/L  | 5605.7 ppb  | 13:19:42 |
| 3 | Si 251.611†        | 150035.3  | 153697.8  | 2607.3 µg/L  | 2607.3 ppb  | 13:19:42 |
| 3 | Sn 189.927†        | -41.0     | -14.6     | -1.8607 µg/L | -1.8607 ppb | 13:20:02 |
| 3 | Ti 334.940†        | 69470.1   | 72325.8   | 105.02 µg/L  | 105.02 ppb  | 13:19:42 |
| 3 | Tl 190.801†        | -65.8     | 18.4      | 5.8390 µg/L  | 5.8390 ppb  | 13:20:02 |
| 3 | U 367.007†         | 256.4     | 547.8     | -6.5843 µg/L | -6.5843 ppb | 13:19:42 |
| 3 | V 292.402†         | 2194.0    | 2152.8    | 10.398 µg/L  | 10.398 ppb  | 13:19:42 |
| 3 | Zn 213.857†        | 10351.6   | 10598.1   | 58.722 µg/L  | 58.722 ppb  | 13:20:02 |

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Mean Data: 409254011|1611117|10

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--------------------|--------------------------|-------------|--------------|----------|--------------------|----------|--------|
| Sc 361.383         | 1300102.2                | 97.664      | %            | 0.8749   |                    |          | 0.90%  |
| Sc RADIAL          | 70746.3                  | 98.2        | %            | 1.94     |                    |          | 1.97%  |
| Y 371.029          | 700626.0                 | 96.712      | %            | 0.8733   |                    |          | 0.90%  |
| Ag 328.068†        | -125.6                   | -1.6052     | µg/L         | 0.40828  | -1.6052 ppb        | 0.40828  | 25.43% |
| Al 396.153Radial†  | 7989.5                   | 2948.7      | µg/L         | 26.88    | 2948.7 ppb         | 26.88    | 0.91%  |
| As 188.979†        | 6.1                      | 4.7106      | µg/L         | 0.86327  | 4.7106 ppb         | 0.86327  | 18.33% |
| B 249.677†         | -371.8                   | 2.4900      | µg/L         | 0.85123  | 2.4900 ppb         | 0.85123  | 34.19% |
| Ba 233.527†        | 10009.7                  | 89.305      | µg/L         | 1.2169   | 89.305 ppb         | 1.2169   | 1.36%  |
| Be 313.107†        | 1354.7                   | -1.7985     | µg/L         | 0.06457  | -1.7985 ppb        | 0.06457  | 3.59%  |
| Ca 317.933Radial†  | 1641850.7                | 182770      | µg/L         | 1719.8   | 182770 ppb         | 1719.8   | 0.94%  |
| Cd 226.502†        | 205.9                    | 0.3346      | µg/L         | 0.07754  | 0.3346 ppb         | 0.07754  | 23.17% |
| Co 228.616†        | 257.1                    | 3.7933      | µg/L         | 0.15236  | 3.7933 ppb         | 0.15236  | 4.02%  |
| Cr 267.716†        | 685.2                    | 8.1563      | µg/L         | 0.09639  | 8.1563 ppb         | 0.09639  | 1.18%  |
| Cu 324.752†        | 3638.4                   | 16.861      | µg/L         | 0.2991   | 16.861 ppb         | 0.2991   | 1.77%  |
| Fe 238.204 Radial† | 112936.1                 | 10683       | µg/L         | 40.4     | 10683 ppb          | 40.4     | 0.38%  |
| K 766.490 Radial†  | 1307.4                   | 676.91      | µg/L         | 34.024   | 676.91 ppb         | 34.024   | 5.03%  |
| Mg 279.077 IEC†    | 9095.5                   | 4907.2      | µg/L         | 32.19    | 4907.2 ppb         | 32.19    | 0.66%  |
| Mn 257.610†        | 170758.8                 | 299.10      | µg/L         | 1.684    | 299.10 ppb         | 1.684    | 0.56%  |
| Mo 202.031†        | 9.5                      | 0.8036      | µg/L         | 0.40431  | 0.8036 ppb         | 0.40431  | 50.31% |
| Na 589.592 Radial† | 2338.2                   | 389.91      | µg/L         | 6.626    | 389.91 ppb         | 6.626    | 1.70%  |



|                  |          |              |          |             |          |         |
|------------------|----------|--------------|----------|-------------|----------|---------|
| Ni 231.604†      | 828.3    | 13.169 µg/L  | 0.4461   | 13.169 ppb  | 0.4461   | 3.39%   |
| P 214.914†       | 907.1    | 326.41 µg/L  | 3.191    | 326.41 ppb  | 3.191    | 0.98%   |
| Pb 220.353†      | 1087.7   | 110.06 µg/L  | 4.569    | 110.06 ppb  | 4.569    | 4.15%   |
| S 181.975 Axial† | 4777.2   | 5330.4 µg/L  | 83.42    | 5330.4 ppb  | 83.42    | 1.56%   |
| Sb 206.836†      | 25.9     | 3.8308 µg/L  | 1.92356  | 3.8308 ppb  | 1.92356  | 50.21%  |
| Se 196.026†      | -14.8    | -2.88 µg/L   | 0.950    | -2.88 ppb   | 0.950    | 32.97%  |
| SiO2†            | 50358.0  | 5573.5 µg/L  | 35.73    | 5573.5 ppb  | 35.73    | 0.64%   |
| Si 251.611†      | 153263.0 | 2599.9 µg/L  | 8.07     | 2599.9 ppb  | 8.07     | 0.31%   |
| Sn 189.927†      | -16.1    | -2.0520 µg/L | 0.43971  | -2.0520 ppb | 0.43971  | 21.43%  |
| Sr 421.552†      | 143123.2 | 408.94 µg/L  | 4.482    | 408.94 ppb  | 4.482    | 1.10%   |
| Ti 334.940†      | 71947.8  | 104.51 µg/L  | 0.575    | 104.51 ppb  | 0.575    | 0.55%   |
| Tl 190.801†      | 10.3     | 3.3523 µg/L  | 2.37504  | 3.3523 ppb  | 2.37504  | 70.85%  |
| U 367.007†       | 605.8    | 0.3787 µg/L  | 11.14907 | 0.3787 ppb  | 11.14907 | >999.9% |
| V 292.402†       | 2174.9   | 10.499 µg/L  | 0.1105   | 10.499 ppb  | 0.1105   | 1.05%   |
| Zn 213.857†      | 10451.2  | 57.887 µg/L  | 0.9801   | 57.887 ppb  | 0.9801   | 1.69%   |

Sequence No.: 4

Autosampler Location: 350

Sample ID: 409254012|1611117|10

Date Collected: 11/11/2016 13:20:10

Analyst: TXT1

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Replicate Data: 409254012|1611117|10

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71079.4       | 71079.4             | 98.7 %             |                    | 13:20:35      |
| 1     | Al 396.153Radial†  | 19200.9       | 19358.2             | 7070.1 µg/L        | 7070.1 ppb         | 13:20:35      |
| 1     | Ca 317.933Radial†  | 152237.6      | 153947.3            | 17137 µg/L         | 17137 ppb          | 13:20:35      |
| 1     | Fe 238.204 Radial† | 172660.3      | 175506.6            | 16602 µg/L         | 16602 ppb          | 13:20:35      |
| 1     | K 766.490 Radial†  | 3588.4        | 2566.6              | 1353.4 µg/L        | 1353.4 ppb         | 13:20:35      |
| 1     | Mg 279.077 IEC†    | 16453.1       | 16648.2             | 8981.1 µg/L        | 8981.1 ppb         | 13:20:35      |
| 1     | Na 589.592 Radial† | 4163.5        | 4179.9              | 697.02 µg/L        | 697.02 ppb         | 13:20:35      |
| 1     | Sr 421.552†        | 12972.9       | 13606.9             | 38.886 µg/L        | 38.886 ppb         | 13:20:35      |
| 1     | Sc 361.383         | 1339598.4     | 1339598.4           | 100.63 %           |                    | 13:20:43      |
| 1     | Y 371.029          | 731229.2      | 731229.2            | 100.94 %           |                    | 13:20:43      |
| 1     | Ag 328.068†        | -1854.3       | 48.2                | 1.0274 µg/L        | 1.0274 ppb         | 13:20:43      |
| 1     | As 188.979†        | -19.8         | 10.3                | 7.7142 µg/L        | 7.7142 ppb         | 13:21:03      |
| 1     | B 249.677†         | 256.8         | -629.7              | 3.1231 µg/L        | 3.1231 ppb         | 13:20:43      |
| 1     | Ba 233.527†        | 26180.7       | 26257.4             | 234.21 µg/L        | 234.21 ppb         | 13:20:43      |
| 1     | Be 313.107†        | -849.8        | 2811.4              | -4.9608 µg/L       | -4.9608 ppb        | 13:20:43      |
| 1     | Cd 226.502†        | 133.9         | 313.1               | 0.4679 µg/L        | 0.4679 ppb         | 13:21:03      |
| 1     | Co 228.616†        | 520.3         | 608.5               | 9.1108 µg/L        | 9.1108 ppb         | 13:21:03      |
| 1     | Cr 267.716†        | 1132.8        | 996.7               | 11.896 µg/L        | 11.896 ppb         | 13:21:03      |
| 1     | Cu 324.752†        | 9091.3        | 3257.4              | 15.618 µg/L        | 15.618 ppb         | 13:20:43      |
| 1     | Mn 257.610†        | 444349.0      | 441412.7            | 773.30 µg/L        | 773.30 ppb         | 13:20:43      |
| 1     | Mo 202.031†        | -49.6         | -19.5               | -0.5158 µg/L       | -0.5158 ppb        | 13:21:03      |
| 1     | Ni 231.604†        | 1226.2        | 1416.2              | 22.515 µg/L        | 22.515 ppb         | 13:21:03      |
| 1     | P 214.914†         | 1647.8        | 1732.6              | 623.63 µg/L        | 623.63 ppb         | 13:21:03      |
| 1     | Pb 220.353†        | 365.8         | 289.8               | 29.497 µg/L        | 29.497 ppb         | 13:21:03      |
| 1     | S 181.975 Axial†   | 214.7         | 110.7               | 119.81 µg/L        | 119.81 ppb         | 13:21:03      |
| 1     | Sb 206.836†        | 59.5          | 14.8                | 1.1084 µg/L        | 1.1084 ppb         | 13:21:03      |
| 1     | Se 196.026†        | -12.2         | -20.1               | -3.03 µg/L         | -3.03 ppb          | 13:21:03      |
| 1     | Si02†              | 62013.4       | 58605.0             | 6486.2 µg/L        | 6486.2 ppb         | 13:20:43      |
| 1     | Si 251.611†        | 180496.8      | 178781.3            | 3033.3 µg/L        | 3033.3 ppb         | 13:20:43      |
| 1     | Sn 189.927†        | -34.7         | -7.0                | -0.8749 µg/L       | -0.8749 ppb        | 13:21:03      |
| 1     | Ti 334.940†        | 155324.2      | 155240.2            | 220.83 µg/L        | 220.83 ppb         | 13:20:43      |
| 1     | Tl 190.801†        | -82.7         | 3.8                 | 1.4631 µg/L        | 1.4631 ppb         | 13:21:03      |
| 1     | U 367.007†         | 397.6         | 679.3               | -8.1794 µg/L       | -8.1794 ppb        | 13:20:43      |
| 1     | V 292.402†         | 5555.2        | 5417.1              | 25.432 µg/L        | 25.432 ppb         | 13:20:43      |
| 1     | Zn 213.857†        | 12412.0       | 12287.8             | 67.471 µg/L        | 67.471 ppb         | 13:20:43      |
| 2     | Sc RADIAL          | 71315.6       | 71315.6             | 99.0 %             |                    | 13:20:37      |
| 2     | Al 396.153Radial†  | 19245.9       | 19339.1             | 7063.1 µg/L        | 7063.1 ppb         | 13:20:37      |
| 2     | Ca 317.933Radial†  | 152222.3      | 153420.8            | 17079 µg/L         | 17079 ppb          | 13:20:37      |
| 2     | Fe 238.204 Radial† | 172757.7      | 175025.3            | 16557 µg/L         | 16557 ppb          | 13:20:37      |
| 2     | K 766.490 Radial†  | 3387.4        | 2351.5              | 1240.3 µg/L        | 1240.3 ppb         | 13:20:37      |
| 2     | Mg 279.077 IEC†    | 16432.8       | 16572.4             | 8940.2 µg/L        | 8940.2 ppb         | 13:20:37      |
| 2     | Na 589.592 Radial† | 4285.6        | 4289.2              | 715.25 µg/L        | 715.25 ppb         | 13:20:37      |
| 2     | Sr 421.552†        | 12956.9       | 13547.2             | 38.715 µg/L        | 38.715 ppb         | 13:20:37      |
| 2     | Sc 361.383         | 1351913.1     | 1351913.1           | 101.56 %           |                    | 13:21:05      |
| 2     | Y 371.029          | 737565.9      | 737565.9            | 101.81 %           |                    | 13:21:05      |
| 2     | Ag 328.068†        | -1818.5       | 100.2               | 1.2911 µg/L        | 1.2911 ppb         | 13:21:05      |
| 2     | As 188.979†        | -18.5         | 11.8                | 8.5232 µg/L        | 8.5232 ppb         | 13:21:25      |
| 2     | B 249.677†         | 181.9         | -705.8              | 1.9951 µg/L        | 1.9951 ppb         | 13:21:05      |
| 2     | Ba 233.527†        | 26435.2       | 26271.1             | 234.33 µg/L        | 234.33 ppb         | 13:21:05      |
| 2     | Be 313.107†        | -950.8        | 2719.7              | -4.9870 µg/L       | -4.9870 ppb        | 13:21:05      |
| 2     | Cd 226.502†        | 174.4         | 351.8               | 0.7658 µg/L        | 0.7658 ppb         | 13:21:25      |
| 2     | Co 228.616†        | 515.6         | 599.2               | 8.9732 µg/L        | 8.9732 ppb         | 13:21:25      |
| 2     | Cr 267.716†        | 1130.7        | 984.4               | 11.746 µg/L        | 11.746 ppb         | 13:21:25      |
| 2     | Cu 324.752†        | 9195.3        | 3277.5              | 15.708 µg/L        | 15.708 ppb         | 13:21:05      |
| 2     | Mn 257.610†        | 449942.9      | 442898.6            | 775.91 µg/L        | 775.91 ppb         | 13:21:05      |
| 2     | Mo 202.031†        | -37.8         | -7.5                | 0.1071 µg/L        | 0.1071 ppb         | 13:21:25      |
| 2     | Ni 231.604†        | 1204.9        | 1384.1              | 22.005 µg/L        | 22.005 ppb         | 13:21:25      |
| 2     | P 214.914†         | 1646.9        | 1716.8              | 617.93 µg/L        | 617.93 ppb         | 13:21:25      |
| 2     | Pb 220.353†        | 385.9         | 306.2               | 31.153 µg/L        | 31.153 ppb         | 13:21:25      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 199.6     | 93.9      | 101.07 µg/L  | 101.07 ppb  | 13:21:25 |
| 2 | Sb 206.836†        | 62.9      | 17.7      | 1.6663 µg/L  | 1.6663 ppb  | 13:21:25 |
| 2 | Se 196.026†        | -1.7      | -9.7      | 2.41 µg/L    | 2.41 ppb    | 13:21:25 |
| 2 | SiO2†              | 63037.5   | 59052.1   | 6535.7 µg/L  | 6535.7 ppb  | 13:21:05 |
| 2 | Si 251.611†        | 183038.4  | 179650.1  | 3048.1 µg/L  | 3048.1 ppb  | 13:21:05 |
| 2 | Sn 189.927†        | -30.8     | -2.9      | -0.3461 µg/L | -0.3461 ppb | 13:21:25 |
| 2 | Ti 334.940†        | 157517.4  | 155993.8  | 221.90 µg/L  | 221.90 ppb  | 13:21:05 |
| 2 | Tl 190.801†        | -93.9     | -6.4      | -1.6892 µg/L | -1.6892 ppb | 13:21:25 |
| 2 | U 367.007†         | 441.7     | 719.2     | -3.0252 µg/L | -3.0252 ppb | 13:21:05 |
| 2 | V 292.402†         | 5595.8    | 5406.8    | 25.384 µg/L  | 25.384 ppb  | 13:21:05 |
| 2 | Zn 213.857†        | 12468.2   | 12230.7   | 67.154 µg/L  | 67.154 ppb  | 13:21:05 |
| 3 | Sc RADIAL          | 72465.1   | 72465.1   | 101 %        |             | 13:20:39 |
| 3 | Al 396.153Radial†  | 19601.6   | 19384.4   | 7079.6 µg/L  | 7079.6 ppb  | 13:20:39 |
| 3 | Ca 317.933Radial†  | 154569.3  | 153314.9  | 17067 µg/L   | 17067 ppb   | 13:20:39 |
| 3 | Fe 238.204 Radial† | 175525.0  | 175008.2  | 16555 µg/L   | 16555 ppb   | 13:20:39 |
| 3 | K 766.490 Radial†  | 3526.8    | 2435.8    | 1284.6 µg/L  | 1284.6 ppb  | 13:20:39 |
| 3 | Mg 279.077 IEC†    | 16667.9   | 16542.8   | 8924.2 µg/L  | 8924.2 ppb  | 13:20:39 |
| 3 | Na 589.592 Radial† | 4199.5    | 4135.0    | 689.52 µg/L  | 689.52 ppb  | 13:20:39 |
| 3 | Sr 421.552†        | 13280.2   | 13660.9   | 39.045 µg/L  | 39.045 ppb  | 13:20:39 |
| 3 | Sc 361.383         | 1341409.8 | 1341409.8 | 100.77 %     |             | 13:21:27 |
| 3 | Y 371.029          | 731278.6  | 731278.6  | 100.94 %     |             | 13:21:27 |
| 3 | Ag 328.068†        | -1995.0   | -89.0     | 0.3096 µg/L  | 0.3096 ppb  | 13:21:27 |
| 3 | As 188.979†        | -9.9      | 20.1      | 13.072 µg/L  | 13.072 ppb  | 13:21:48 |
| 3 | B 249.677†         | 174.9     | -711.3    | 1.9147 µg/L  | 1.9147 ppb  | 13:21:27 |
| 3 | Ba 233.527†        | 26283.4   | 26324.2   | 234.81 µg/L  | 234.81 ppb  | 13:21:27 |
| 3 | Be 313.107†        | -893.4    | 2769.3    | -4.9819 µg/L | -4.9819 ppb | 13:21:27 |
| 3 | Cd 226.502†        | 183.6     | 362.2     | 0.8447 µg/L  | 0.8447 ppb  | 13:21:48 |
| 3 | Co 228.616†        | 541.7     | 629.1     | 9.4174 µg/L  | 9.4174 ppb  | 13:21:48 |
| 3 | Cr 267.716†        | 1160.0    | 1022.2    | 12.182 µg/L  | 12.182 ppb  | 13:21:48 |
| 3 | Cu 324.752†        | 9228.0    | 3380.9    | 16.171 µg/L  | 16.171 ppb  | 13:21:27 |
| 3 | Mn 257.610†        | 447123.1  | 443569.4  | 777.08 µg/L  | 777.08 ppb  | 13:21:27 |
| 3 | Mo 202.031†        | -29.3     | 0.6       | 0.5294 µg/L  | 0.5294 ppb  | 13:21:48 |
| 3 | Ni 231.604†        | 1213.3    | 1401.8    | 22.286 µg/L  | 22.286 ppb  | 13:21:48 |
| 3 | P 214.914†         | 1661.1    | 1743.6    | 627.60 µg/L  | 627.60 ppb  | 13:21:48 |
| 3 | Pb 220.353†        | 364.2     | 287.7     | 29.268 µg/L  | 29.268 ppb  | 13:21:48 |
| 3 | S 181.975 Axial†   | 195.2     | 91.0      | 97.812 µg/L  | 97.812 ppb  | 13:21:48 |
| 3 | Sb 206.836†        | 58.6      | 13.9      | 0.9295 µg/L  | 0.9295 ppb  | 13:21:48 |
| 3 | Se 196.026†        | -8.6      | -16.5     | -1.16 µg/L   | -1.16 ppb   | 13:21:48 |
| 3 | SiO2†              | 62485.4   | 58990.2   | 6528.9 µg/L  | 6528.9 ppb  | 13:21:27 |
| 3 | Si 251.611†        | 181543.8  | 179578.1  | 3046.8 µg/L  | 3046.8 ppb  | 13:21:27 |
| 3 | Sn 189.927†        | -28.9     | -1.2      | -0.1330 µg/L | -0.1330 ppb | 13:21:48 |
| 3 | Ti 334.940†        | 156551.2  | 156249.4  | 222.26 µg/L  | 222.26 ppb  | 13:21:27 |
| 3 | Tl 190.801†        | -84.4     | 2.3       | 0.9905 µg/L  | 0.9905 ppb  | 13:21:48 |
| 3 | U 367.007†         | 511.7     | 792.1     | 5.9534 µg/L  | 5.9534 ppb  | 13:21:27 |
| 3 | V 292.402†         | 5510.7    | 5365.4    | 25.202 µg/L  | 25.202 ppb  | 13:21:27 |
| 3 | Zn 213.857†        | 12499.1   | 12357.5   | 67.874 µg/L  | 67.874 ppb  | 13:21:27 |

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Mean Data: 409254012|1611117|10

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|-------------|--------------|----------|--------------------|----------|---------|
| Sc 361.383         | 1344307.1                | 100.98      | %            | 0.499    |                    |          | 0.49%   |
| Sc RADIAL          | 71620.0                  | 99.4        | %            | 1.03     |                    |          | 1.04%   |
| Y 371.029          | 733357.9                 | 101.23      | %            | 0.503    |                    |          | 0.50%   |
| Ag 328.068†        | 19.8                     | 0.8760      | µg/L         | 0.50794  | 0.8760 ppb         | 0.50794  | 57.98%  |
| Al 396.153Radial†  | 19360.6                  | 7070.9      | µg/L         | 8.30     | 7070.9 ppb         | 8.30     | 0.12%   |
| As 188.979†        | 14.1                     | 9.7699      | µg/L         | 2.88837  | 9.7699 ppb         | 2.88837  | 29.56%  |
| B 249.677†         | -682.2                   | 2.3443      | µg/L         | 0.67565  | 2.3443 ppb         | 0.67565  | 28.82%  |
| Ba 233.527†        | 26284.2                  | 234.45      | µg/L         | 0.314    | 234.45 ppb         | 0.314    | 0.13%   |
| Be 313.107†        | 2766.8                   | -4.9766     | µg/L         | 0.01390  | -4.9766 ppb        | 0.01390  | 0.28%   |
| Ca 317.933Radial†  | 153561.0                 | 17094       | µg/L         | 37.7     | 17094 ppb          | 37.7     | 0.22%   |
| Cd 226.502†        | 342.3                    | 0.6928      | µg/L         | 0.19873  | 0.6928 ppb         | 0.19873  | 28.69%  |
| Co 228.616†        | 612.3                    | 9.1671      | µg/L         | 0.22738  | 9.1671 ppb         | 0.22738  | 2.48%   |
| Cr 267.716†        | 1001.1                   | 11.941      | µg/L         | 0.2218   | 11.941 ppb         | 0.2218   | 1.86%   |
| Cu 324.752†        | 3305.3                   | 15.832      | µg/L         | 0.2966   | 15.832 ppb         | 0.2966   | 1.87%   |
| Fe 238.204 Radial† | 175180.1                 | 16571       | µg/L         | 26.8     | 16571 ppb          | 26.8     | 0.16%   |
| K 766.490 Radial†  | 2451.3                   | 1292.8      | µg/L         | 56.97    | 1292.8 ppb         | 56.97    | 4.41%   |
| Mg 279.077 IEC†    | 16587.8                  | 8948.5      | µg/L         | 29.32    | 8948.5 ppb         | 29.32    | 0.33%   |
| Mn 257.610†        | 442626.9                 | 775.43      | µg/L         | 1.936    | 775.43 ppb         | 1.936    | 0.25%   |
| Mo 202.031†        | -8.8                     | 0.0402      | µg/L         | 0.52581  | 0.0402 ppb         | 0.52581  | >999.9% |
| Na 589.592 Radial† | 4201.4                   | 700.60      | µg/L         | 13.230   | 700.60 ppb         | 13.230   | 1.89%   |

|                  |          |              |         |             |         |         |
|------------------|----------|--------------|---------|-------------|---------|---------|
| Ni 231.604†      | 1400.7   | 22.269 µg/L  | 0.2555  | 22.269 ppb  | 0.2555  | 1.15%   |
| P 214.914†       | 1731.0   | 623.05 µg/L  | 4.860   | 623.05 ppb  | 4.860   | 0.78%   |
| Pb 220.353†      | 294.6    | 29.972 µg/L  | 1.0285  | 29.972 ppb  | 1.0285  | 3.43%   |
| S 181.975 Axial† | 98.5     | 106.23 µg/L  | 11.874  | 106.23 ppb  | 11.874  | 11.18%  |
| Sb 206.836†      | 15.5     | 1.2348 µg/L  | 0.38428 | 1.2348 ppb  | 0.38428 | 31.12%  |
| Se 196.026†      | -15.5    | -0.591 µg/L  | 2.7630  | -0.591 ppb  | 2.7630  | 467.37% |
| SiO2†            | 58882.4  | 6516.9 µg/L  | 26.81   | 6516.9 ppb  | 26.81   | 0.41%   |
| Si 251.611†      | 179336.5 | 3042.7 µg/L  | 8.17    | 3042.7 ppb  | 8.17    | 0.27%   |
| Sn 189.927†      | -3.7     | -0.4513 µg/L | 0.38199 | -0.4513 ppb | 0.38199 | 84.64%  |
| Sr 421.552†      | 13605.0  | 38.882 µg/L  | 0.1653  | 38.882 ppb  | 0.1653  | 0.43%   |
| Ti 334.940†      | 155827.8 | 221.66 µg/L  | 0.742   | 221.66 ppb  | 0.742   | 0.33%   |
| Tl 190.801†      | -0.1     | 0.2548 µg/L  | 1.70007 | 0.2548 ppb  | 1.70007 | 667.25% |
| U 367.007†       | 730.2    | -1.7504 µg/L | 7.15213 | -1.7504 ppb | 7.15213 | 408.60% |
| V 292.402†       | 5396.4   | 25.339 µg/L  | 0.1209  | 25.339 ppb  | 0.1209  | 0.48%   |
| Zn 213.857†      | 12292.0  | 67.499 µg/L  | 0.3607  | 67.499 ppb  | 0.3607  | 0.53%   |

Sequence No.: 5

Autosampler Location: 351

Sample ID: 409254013|1611117|10

Date Collected: 11/11/2016 13:21:56

Analyst: TXT1

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Replicate Data: 409254013|1611117|10

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 72192.3       | 72192.3             | 100 %              |                    | 13:22:23      |
| 1     | Al 396.153Radial†  | 18313.2       | 18172.4             | 6637.0 µg/L        | 6637.0 ppb         | 13:22:23      |
| 1     | Ca 317.933Radial†  | 145315.0      | 144660.9            | 16104 µg/L         | 16104 ppb          | 13:22:23      |
| 1     | Fe 238.204 Radial† | 148107.8      | 148309.0            | 14029 µg/L         | 14029 ppb          | 13:22:21      |
| 1     | K 766.490 Radial†  | 3602.8        | 2524.8              | 1330.6 µg/L        | 1330.6 ppb         | 13:22:23      |
| 1     | Mg 279.077 IEC†    | 9264.8        | 9218.2              | 4974.4 µg/L        | 4974.4 ppb         | 13:22:23      |
| 1     | Na 589.592 Radial† | 801.6         | 760.1               | 126.76 µg/L        | 126.76 ppb         | 13:22:23      |
| 1     | Sr 421.552†        | 18572.1       | 18991.4             | 54.544 µg/L        | 54.544 ppb         | 13:22:23      |
| 1     | Sc 361.383         | 1348076.2     | 1348076.2           | 101.27 %           |                    | 13:22:34      |
| 1     | Y 371.029          | 734136.1      | 734136.1            | 101.34 %           |                    | 13:22:34      |
| 1     | Ag 328.068†        | -2107.6       | -190.4              | -0.3364 µg/L       | -0.3364 ppb        | 13:22:34      |
| 1     | As 188.979†        | -14.2         | 15.9                | 10.473 µg/L        | 10.473 ppb         | 13:22:55      |
| 1     | B 249.677†         | 367.0         | -522.5              | 2.7769 µg/L        | 2.7769 ppb         | 13:22:34      |
| 1     | Ba 233.527†        | 17304.9       | 17329.1             | 154.59 µg/L        | 154.59 ppb         | 13:22:34      |
| 1     | Be 313.107†        | -1214.7       | 2456.4              | -3.1056 µg/L       | -3.1056 ppb        | 13:22:34      |
| 1     | Cd 226.502†        | 103.1         | 281.9               | 0.5261 µg/L        | 0.5261 ppb         | 13:22:55      |
| 1     | Co 228.616†        | 345.6         | 432.8               | 6.4392 µg/L        | 6.4392 ppb         | 13:22:55      |
| 1     | Cr 267.716†        | 1009.6        | 868.0               | 10.373 µg/L        | 10.373 ppb         | 13:22:55      |
| 1     | Cu 324.752†        | 8743.8        | 2857.4              | 13.624 µg/L        | 13.624 ppb         | 13:22:34      |
| 1     | Mn 257.610†        | 272148.3      | 268590.2            | 470.56 µg/L        | 470.56 ppb         | 13:22:34      |
| 1     | Mo 202.031†        | -37.2         | -7.0                | 0.0317 µg/L        | 0.0317 ppb         | 13:22:55      |
| 1     | Ni 231.604†        | 813.0         | 1000.5              | 15.906 µg/L        | 15.906 ppb         | 13:22:55      |
| 1     | P 214.914†         | 1912.3        | 1983.5              | 714.18 µg/L        | 714.18 ppb         | 13:22:55      |
| 1     | Pb 220.353†        | 183.7         | 107.6               | 11.101 µg/L        | 11.101 ppb         | 13:22:55      |
| 1     | S 181.975 Axial†   | 409.4         | 301.6               | 333.43 µg/L        | 333.43 ppb         | 13:22:55      |
| 1     | Sb 206.836†        | 44.1          | -0.7                | -1.6134 µg/L       | -1.6134 ppb        | 13:22:55      |
| 1     | Se 196.026†        | -7.1          | -15.0               | -1.54 µg/L         | -1.54 ppb          | 13:22:55      |
| 1     | SiO2†              | 64780.3       | 60949.7             | 6745.7 µg/L        | 6745.7 ppb         | 13:22:34      |
| 1     | Si 251.611†        | 188391.8      | 185449.5            | 3146.1 µg/L        | 3146.1 ppb         | 13:22:34      |
| 1     | Sn 189.927†        | -17.1         | 10.6                | 1.3802 µg/L        | 1.3802 ppb         | 13:22:55      |
| 1     | Ti 334.940†        | 91203.0       | 90950.8             | 129.44 µg/L        | 129.44 ppb         | 13:22:34      |
| 1     | Tl 190.801†        | -96.3         | -9.1                | -2.5434 µg/L       | -2.5434 ppb        | 13:22:55      |
| 1     | U 367.007†         | 267.4         | 548.2               | -10.230 µg/L       | -10.230 ppb        | 13:22:34      |
| 1     | V 292.402†         | 4545.3        | 4385.1              | 20.627 µg/L        | 20.627 ppb         | 13:22:34      |
| 1     | Zn 213.857†        | 11239.4       | 11052.3             | 60.938 µg/L        | 60.938 ppb         | 13:22:55      |
| 2     | Sc RADIAL          | 71075.5       | 71075.5             | 98.7 %             |                    | 13:22:27      |
| 2     | Al 396.153Radial†  | 18052.9       | 18195.7             | 6645.5 µg/L        | 6645.5 ppb         | 13:22:27      |
| 2     | Ca 317.933Radial†  | 141869.3      | 143447.1            | 15969 µg/L         | 15969 ppb          | 13:22:27      |
| 2     | Fe 238.204 Radial† | 146858.0      | 149364.6            | 14129 µg/L         | 14129 ppb          | 13:22:25      |
| 2     | K 766.490 Radial†  | 3650.7        | 2629.9              | 1385.9 µg/L        | 1385.9 ppb         | 13:22:27      |
| 2     | Mg 279.077 IEC†    | 9144.6        | 9241.6              | 4987.1 µg/L        | 4987.1 ppb         | 13:22:27      |
| 2     | Na 589.592 Radial† | 1062.9        | 1037.6              | 173.02 µg/L        | 173.02 ppb         | 13:22:27      |
| 2     | Sr 421.552†        | 18319.2       | 19026.3             | 54.650 µg/L        | 54.650 ppb         | 13:22:27      |
| 2     | Sc 361.383         | 1347077.4     | 1347077.4           | 101.19 %           |                    | 13:22:57      |
| 2     | Y 371.029          | 733242.9      | 733242.9            | 101.21 %           |                    | 13:22:57      |
| 2     | Ag 328.068†        | -2001.7       | -87.3               | 0.2029 µg/L        | 0.2029 ppb         | 13:22:57      |
| 2     | As 188.979†        | -16.7         | 13.5                | 9.1392 µg/L        | 9.1392 ppb         | 13:23:17      |
| 2     | B 249.677†         | 579.1         | -312.6              | 5.8686 µg/L        | 5.8686 ppb         | 13:22:57      |
| 2     | Ba 233.527†        | 17315.8       | 17352.5             | 154.80 µg/L        | 154.80 ppb         | 13:22:57      |
| 2     | Be 313.107†        | -1048.4       | 2619.8              | -3.0663 µg/L       | -3.0663 ppb        | 13:22:57      |
| 2     | Cd 226.502†        | 68.6          | 247.8               | 0.2567 µg/L        | 0.2567 ppb         | 13:23:17      |
| 2     | Co 228.616†        | 346.8         | 434.2               | 6.4585 µg/L        | 6.4585 ppb         | 13:23:17      |
| 2     | Cr 267.716†        | 1017.4        | 876.4               | 10.473 µg/L        | 10.473 ppb         | 13:23:17      |
| 2     | Cu 324.752†        | 8654.6        | 2775.7              | 13.269 µg/L        | 13.269 ppb         | 13:22:57      |
| 2     | Mn 257.610†        | 272636.6      | 269272.0            | 471.75 µg/L        | 471.75 ppb         | 13:22:57      |
| 2     | Mo 202.031†        | -22.0         | 8.0                 | 0.8116 µg/L        | 0.8116 ppb         | 13:23:17      |
| 2     | Ni 231.604†        | 825.9         | 1013.9              | 16.119 µg/L        | 16.119 ppb         | 13:23:17      |
| 2     | P 214.914†         | 1937.7        | 2010.0              | 723.73 µg/L        | 723.73 ppb         | 13:23:17      |
| 2     | Pb 220.353†        | 201.0         | 124.9               | 12.849 µg/L        | 12.849 ppb         | 13:23:17      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 418.1     | 310.5     | 343.44 µg/L  | 343.44 ppb  | 13:23:17 |
| 2 | Sb 206.836†        | 50.3      | 5.4       | -0.4315 µg/L | -0.4315 ppb | 13:23:17 |
| 2 | Se 196.026†        | 0.4       | -7.6      | 2.38 µg/L    | 2.38 ppb    | 13:23:17 |
| 2 | SiO2†              | 64887.5   | 61103.2   | 6762.7 µg/L  | 6762.7 ppb  | 13:22:57 |
| 2 | Si 251.611†        | 189040.9  | 186228.9  | 3159.3 µg/L  | 3159.3 ppb  | 13:22:57 |
| 2 | Sn 189.927†        | -25.3     | 2.5       | 0.3424 µg/L  | 0.3424 ppb  | 13:23:17 |
| 2 | Ti 334.940†        | 91568.2   | 91378.5   | 130.05 µg/L  | 130.05 ppb  | 13:22:57 |
| 2 | Tl 190.801†        | -84.6     | 2.5       | 1.0049 µg/L  | 1.0049 ppb  | 13:23:17 |
| 2 | U 367.007†         | 265.3     | 546.4     | -10.985 µg/L | -10.985 ppb | 13:22:57 |
| 2 | V 292.402†         | 4583.8    | 4426.4    | 20.819 µg/L  | 20.819 ppb  | 13:22:57 |
| 2 | Zn 213.857†        | 11393.9   | 11213.2   | 61.839 µg/L  | 61.839 ppb  | 13:23:17 |
| 3 | Sc RADIAL          | 72479.0   | 72479.0   | 101 %        |             | 13:22:31 |
| 3 | Al 396.153Radial†  | 18329.4   | 18116.2   | 6616.5 µg/L  | 6616.5 ppb  | 13:22:31 |
| 3 | Ca 317.933Radial†  | 145171.5  | 143944.8  | 16024 µg/L   | 16024 ppb   | 13:22:31 |
| 3 | Fe 238.204 Radial† | 146688.0  | 146313.3  | 13841 µg/L   | 13841 ppb   | 13:22:29 |
| 3 | K 766.490 Radial†  | 3726.9    | 2634.0    | 1387.9 µg/L  | 1387.9 ppb  | 13:22:31 |
| 3 | Mg 279.077 IEC†    | 9320.4    | 9236.9    | 4984.5 µg/L  | 4984.5 ppb  | 13:22:31 |
| 3 | Na 589.592 Radial† | 848.1     | 803.2     | 133.93 µg/L  | 133.93 ppb  | 13:22:31 |
| 3 | Sr 421.552†        | 18501.0   | 18847.5   | 54.129 µg/L  | 54.129 ppb  | 13:22:31 |
| 3 | Sc 361.383         | 1298260.6 | 1298260.6 | 97.525 %     |             | 13:23:19 |
| 3 | Y 371.029          | 706854.5  | 706854.5  | 97.572 %     |             | 13:23:19 |
| 3 | Ag 328.068†        | -1796.7   | 48.5      | 0.8697 µg/L  | 0.8697 ppb  | 13:23:19 |
| 3 | As 188.979†        | -16.1     | 13.4      | 9.0923 µg/L  | 9.0923 ppb  | 13:23:39 |
| 3 | B 249.677†         | 527.5     | -344.0    | 5.2054 µg/L  | 5.2054 ppb  | 13:23:19 |
| 3 | Ba 233.527†        | 16823.7   | 17491.4   | 156.03 µg/L  | 156.03 ppb  | 13:23:19 |
| 3 | Be 313.107†        | -1046.7   | 2582.6    | -3.0964 µg/L | -3.0964 ppb | 13:23:19 |
| 3 | Cd 226.502†        | 89.3      | 271.6     | 0.4704 µg/L  | 0.4704 ppb  | 13:23:39 |
| 3 | Co 228.616†        | 338.9     | 439.1     | 6.5357 µg/L  | 6.5357 ppb  | 13:23:39 |
| 3 | Cr 267.716†        | 1017.5    | 914.3     | 10.888 µg/L  | 10.888 ppb  | 13:23:39 |
| 3 | Cu 324.752†        | 8333.7    | 2768.2    | 13.241 µg/L  | 13.241 ppb  | 13:23:19 |
| 3 | Mn 257.610†        | 265691.8  | 272281.8  | 477.02 µg/L  | 477.02 ppb  | 13:23:19 |
| 3 | Mo 202.031†        | -31.1     | -2.1      | 0.2794 µg/L  | 0.2794 ppb  | 13:23:39 |
| 3 | Ni 231.604†        | 812.1     | 1030.4    | 16.382 µg/L  | 16.382 ppb  | 13:23:39 |
| 3 | P 214.914†         | 1906.2    | 2049.7    | 738.07 µg/L  | 738.07 ppb  | 13:23:39 |
| 3 | Pb 220.353†        | 173.8     | 104.5     | 10.748 µg/L  | 10.748 ppb  | 13:23:39 |
| 3 | S 181.975 Axial†   | 418.9     | 326.9     | 361.74 µg/L  | 361.74 ppb  | 13:23:39 |
| 3 | Sb 206.836†        | 60.5      | 17.8      | 1.9714 µg/L  | 1.9714 ppb  | 13:23:39 |
| 3 | Se 196.026†        | -0.0      | -8.1      | 2.05 µg/L    | 2.05 ppb    | 13:23:39 |
| 3 | SiO2†              | 63498.4   | 62089.9   | 6871.9 µg/L  | 6871.9 ppb  | 13:23:19 |
| 3 | Si 251.611†        | 184418.1  | 188513.3  | 3198.0 µg/L  | 3198.0 ppb  | 13:23:19 |
| 3 | Sn 189.927†        | -32.9     | -6.2      | -0.7744 µg/L | -0.7744 ppb | 13:23:39 |
| 3 | Ti 334.940†        | 89433.2   | 92591.8   | 131.76 µg/L  | 131.76 ppb  | 13:23:19 |
| 3 | Tl 190.801†        | -93.6     | -9.9      | -2.8002 µg/L | -2.8002 ppb | 13:23:39 |
| 3 | U 367.007†         | 485.4     | 782.0     | 19.556 µg/L  | 19.556 ppb  | 13:23:19 |
| 3 | V 292.402†         | 4544.1    | 4556.1    | 21.392 µg/L  | 21.392 ppb  | 13:23:19 |
| 3 | Zn 213.857†        | 11317.1   | 11557.7   | 63.825 µg/L  | 63.825 ppb  | 13:23:39 |

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Mean Data: 409254013|1611117|10

| Analyte            | Mean Corrected Intensity | Conc. Units  | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD     |
|--------------------|--------------------------|--------------|--------------|----------|-------------|-----------------|---------|
| Sc 361.383         | 1331138.1                | 99.995 %     |              | 2.1392   |             |                 | 2.14%   |
| Sc RADIAL          | 71915.6                  | 99.8 %       |              | 1.03     |             |                 | 1.03%   |
| Y 371.029          | 724744.5                 | 100.04 %     |              | 2.140    |             |                 | 2.14%   |
| Ag 328.068†        | -76.4                    | 0.2454 µg/L  |              | 0.60421  | 0.2454 ppb  | 0.60421         | 246.24% |
| Al 396.153Radial†  | 18161.4                  | 6633.0 µg/L  |              | 14.92    | 6633.0 ppb  | 14.92           | 0.22%   |
| As 188.979†        | 14.3                     | 9.5683 µg/L  |              | 0.78425  | 9.5683 ppb  | 0.78425         | 8.20%   |
| B 249.677†         | -393.0                   | 4.6170 µg/L  |              | 1.62765  | 4.6170 ppb  | 1.62765         | 35.25%  |
| Ba 233.527†        | 17391.0                  | 155.14 µg/L  |              | 0.782    | 155.14 ppb  | 0.782           | 0.50%   |
| Be 313.107†        | 2553.0                   | -3.0894 µg/L |              | 0.02058  | -3.0894 ppb | 0.02058         | 0.67%   |
| Ca 317.933Radial†  | 144017.6                 | 16032 µg/L   |              | 67.9     | 16032 ppb   | 67.9            | 0.42%   |
| Cd 226.502†        | 267.1                    | 0.4177 µg/L  |              | 0.14220  | 0.4177 ppb  | 0.14220         | 34.04%  |
| Co 228.616†        | 435.4                    | 6.4778 µg/L  |              | 0.05106  | 6.4778 ppb  | 0.05106         | 0.79%   |
| Cr 267.716†        | 886.2                    | 10.578 µg/L  |              | 0.2731   | 10.578 ppb  | 0.2731          | 2.58%   |
| Cu 324.752†        | 2800.5                   | 13.378 µg/L  |              | 0.2132   | 13.378 ppb  | 0.2132          | 1.59%   |
| Fe 238.204 Radial† | 147995.6                 | 14000 µg/L   |              | 146.6    | 14000 ppb   | 146.6           | 1.05%   |
| K 766.490 Radial†  | 2596.2                   | 1368.1 µg/L  |              | 32.51    | 1368.1 ppb  | 32.51           | 2.38%   |
| Mg 279.077 IEC†    | 9232.2                   | 4982.0 µg/L  |              | 6.67     | 4982.0 ppb  | 6.67            | 0.13%   |
| Mn 257.610†        | 270048.0                 | 473.11 µg/L  |              | 3.443    | 473.11 ppb  | 3.443           | 0.73%   |
| Mo 202.031†        | -0.4                     | 0.3742 µg/L  |              | 0.39847  | 0.3742 ppb  | 0.39847         | 106.48% |
| Na 589.592 Radial† | 867.0                    | 144.57 µg/L  |              | 24.900   | 144.57 ppb  | 24.900          | 17.22%  |

|                  |          |              |          |             |          |         |
|------------------|----------|--------------|----------|-------------|----------|---------|
| Ni 231.604†      | 1014.9   | 16.136 µg/L  | 0.2381   | 16.136 ppb  | 0.2381   | 1.48%   |
| P 214.914†       | 2014.4   | 725.33 µg/L  | 12.025   | 725.33 ppb  | 12.025   | 1.66%   |
| Pb 220.353†      | 112.3    | 11.566 µg/L  | 1.1253   | 11.566 ppb  | 1.1253   | 9.73%   |
| S 181.975 Axial† | 313.0    | 346.20 µg/L  | 14.353   | 346.20 ppb  | 14.353   | 4.15%   |
| Sb 206.836†      | 7.5      | -0.0245 µg/L | 1.82675  | -0.0245 ppb | 1.82675  | >999.9% |
| Se 196.026†      | -10.2    | 0.967 µg/L   | 2.1733   | 0.967 ppb   | 2.1733   | 224.82% |
| SiO2†            | 61380.9  | 6793.5 µg/L  | 68.48    | 6793.5 ppb  | 68.48    | 1.01%   |
| Si 251.611†      | 186730.6 | 3167.8 µg/L  | 26.98    | 3167.8 ppb  | 26.98    | 0.85%   |
| Sn 189.927†      | 2.3      | 0.3160 µg/L  | 1.07755  | 0.3160 ppb  | 1.07755  | 340.95% |
| Sr 421.552†      | 18955.0  | 54.441 µg/L  | 0.2752   | 54.441 ppb  | 0.2752   | 0.51%   |
| Ti 334.940†      | 91640.4  | 130.42 µg/L  | 1.201    | 130.42 ppb  | 1.201    | 0.92%   |
| Tl 190.801†      | -5.5     | -1.4462 µg/L | 2.12662  | -1.4462 ppb | 2.12662  | 147.05% |
| U 367.007†       | 625.5    | -0.5529 µg/L | 17.41927 | -0.5529 ppb | 17.41927 | >999.9% |
| V 292.402†       | 4455.9   | 20.946 µg/L  | 0.3981   | 20.946 ppb  | 0.3981   | 1.90%   |
| Zn 213.857†      | 11274.4  | 62.201 µg/L  | 1.4775   | 62.201 ppb  | 1.4775   | 2.38%   |

Sequence No.: 6

Sample ID: 409254014|1611117|10

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 352

Date Collected: 11/11/2016 13:23:47

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254014|1611117|10

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 70276.6          | 70276.6                | 97.6 %                |                       | 13:24:12         |
| 1     | Al 396.153Radial†  | 18280.8          | 18637.3                | 6807.0 µg/L           | 6807.0 ppb            | 13:24:12         |
| 1     | Ca 317.933Radial†  | 158771.2         | 162407.2               | 18079 µg/L            | 18079 ppb             | 13:24:12         |
| 1     | Fe 238.204 Radial† | 134560.2         | 138450.6               | 13097 µg/L            | 13097 ppb             | 13:24:12         |
| 1     | K 766.490 Radial†  | 3597.5           | 2617.4                 | 1378.8 µg/L           | 1378.8 ppb            | 13:24:12         |
| 1     | Mg 279.077 IEC†    | 10670.0          | 10910.6                | 5886.6 µg/L           | 5886.6 ppb            | 13:24:12         |
| 1     | Na 589.592 Radial† | 846.3            | 827.8                  | 138.04 µg/L           | 138.04 ppb            | 13:24:12         |
| 1     | Sr 421.552†        | 19639.1          | 20590.4                | 59.115 µg/L           | 59.115 ppb            | 13:24:12         |
| 1     | Sc 361.383         | 1345845.4        | 1345845.4              | 101.10 %              |                       | 13:24:19         |
| 1     | Y 371.029          | 732911.7         | 732911.7               | 101.17 %              |                       | 13:24:19         |
| 1     | Ag 328.068†        | -1873.0          | 38.2                   | 0.7664 µg/L           | 0.7664 ppb            | 13:24:19         |
| 1     | As 188.979†        | -25.8            | 4.5                    | 4.1157 µg/L           | 4.1157 ppb            | 13:24:39         |
| 1     | B 249.677†         | 560.2            | -330.8                 | 4.8502 µg/L           | 4.8502 ppb            | 13:24:19         |
| 1     | Ba 233.527†        | 17923.9          | 17969.7                | 160.29 µg/L           | 160.29 ppb            | 13:24:19         |
| 1     | Be 313.107†        | -1315.2          | 2355.0                 | -3.2700 µg/L          | -3.2700 ppb           | 13:24:19         |
| 1     | Cd 226.502†        | 102.2            | 281.1                  | 0.6270 µg/L           | 0.6270 ppb            | 13:24:39         |
| 1     | Co 228.616†        | 316.9            | 405.0                  | 6.0434 µg/L           | 6.0434 ppb            | 13:24:39         |
| 1     | Cr 267.716†        | 1025.6           | 885.5                  | 10.547 µg/L           | 10.547 ppb            | 13:24:39         |
| 1     | Cu 324.752†        | 8397.8           | 2529.5                 | 12.137 µg/L           | 12.137 ppb            | 13:24:19         |
| 1     | Mn 257.610†        | 281884.6         | 278666.1               | 488.18 µg/L           | 488.18 ppb            | 13:24:19         |
| 1     | Mo 202.031†        | -47.8            | -17.5                  | -0.5288 µg/L          | -0.5288 ppb           | 13:24:39         |
| 1     | Ni 231.604†        | 805.6            | 994.5                  | 15.811 µg/L           | 15.811 ppb            | 13:24:39         |
| 1     | P 214.914†         | 1858.3           | 1933.1                 | 696.09 µg/L           | 696.09 ppb            | 13:24:39         |
| 1     | Pb 220.353†        | 204.4            | 128.4                  | 13.194 µg/L           | 13.194 ppb            | 13:24:39         |
| 1     | S 181.975 Axial†   | 539.4            | 430.8                  | 477.95 µg/L           | 477.95 ppb            | 13:24:39         |
| 1     | Sb 206.836†        | 52.5             | 7.6                    | 0.0991 µg/L           | 0.0991 ppb            | 13:24:39         |
| 1     | Se 196.026†        | -8.6             | -16.5                  | -2.72 µg/L            | -2.72 ppb             | 13:24:39         |
| 1     | Si02†              | 67559.0          | 63804.3                | 7061.7 µg/L           | 7061.7 ppb            | 13:24:19         |
| 1     | Si 251.611†        | 196711.5         | 193987.0               | 3290.7 µg/L           | 3290.7 ppb            | 13:24:19         |
| 1     | Sn 189.927†        | -25.4            | 2.4                    | 0.3244 µg/L           | 0.3244 ppb            | 13:24:39         |
| 1     | Ti 334.940†        | 90468.7          | 90373.8                | 128.64 µg/L           | 128.64 ppb            | 13:24:19         |
| 1     | Tl 190.801†        | -86.4            | 0.6                    | 0.4025 µg/L           | 0.4025 ppb            | 13:24:39         |
| 1     | U 367.007†         | 352.4            | 632.8                  | 5.0675 µg/L           | 5.0675 ppb            | 13:24:19         |
| 1     | V 292.402†         | 4665.9           | 4511.8                 | 21.137 µg/L           | 21.137 ppb            | 13:24:19         |
| 1     | Zn 213.857†        | 12615.5          | 12431.7                | 68.821 µg/L           | 68.821 ppb            | 13:24:19         |
| 2     | Sc RADIAL          | 70794.6          | 70794.6                | 98.3 %                |                       | 13:24:14         |
| 2     | Al 396.153Radial†  | 18358.0          | 18578.7                | 6785.7 µg/L           | 6785.7 ppb            | 13:24:14         |
| 2     | Ca 317.933Radial†  | 159989.8         | 162456.2               | 18085 µg/L            | 18085 ppb             | 13:24:14         |
| 2     | Fe 238.204 Radial† | 135951.9         | 138857.4               | 13135 µg/L            | 13135 ppb             | 13:24:14         |
| 2     | K 766.490 Radial†  | 3488.9           | 2479.9                 | 1306.5 µg/L           | 1306.5 ppb            | 13:24:14         |
| 2     | Mg 279.077 IEC†    | 10762.5          | 10924.7                | 5894.2 µg/L           | 5894.2 ppb            | 13:24:14         |
| 2     | Na 589.592 Radial† | 750.6            | 724.0                  | 120.73 µg/L           | 120.73 ppb            | 13:24:14         |
| 2     | Sr 421.552†        | 19857.5          | 20665.2                | 59.332 µg/L           | 59.332 ppb            | 13:24:14         |
| 2     | Sc 361.383         | 1335509.4        | 1335509.4              | 100.32 %              |                       | 13:24:42         |
| 2     | Y 371.029          | 726964.0         | 726964.0               | 100.35 %              |                       | 13:24:42         |
| 2     | Ag 328.068†        | -1937.5          | -40.4                  | 0.3633 µg/L           | 0.3633 ppb            | 13:24:42         |
| 2     | As 188.979†        | -15.6            | 14.4                   | 9.5413 µg/L           | 9.5413 ppb            | 13:25:02         |
| 2     | B 249.677†         | 565.0            | -321.7                 | 5.0085 µg/L           | 5.0085 ppb            | 13:24:42         |
| 2     | Ba 233.527†        | 17855.3          | 18038.5                | 160.91 µg/L           | 160.91 ppb            | 13:24:42         |
| 2     | Be 313.107†        | -1065.8          | 2593.6                 | -3.2204 µg/L          | -3.2204 ppb           | 13:24:42         |
| 2     | Cd 226.502†        | 88.8             | 268.5                  | 0.5275 µg/L           | 0.5275 ppb            | 13:25:02         |
| 2     | Co 228.616†        | 328.0            | 418.5                  | 6.2448 µg/L           | 6.2448 ppb            | 13:25:02         |
| 2     | Cr 267.716†        | 1019.0           | 886.7                  | 10.563 µg/L           | 10.563 ppb            | 13:25:02         |
| 2     | Cu 324.752†        | 8228.3           | 2424.9                 | 11.677 µg/L           | 11.677 ppb            | 13:24:42         |
| 2     | Mn 257.610†        | 280984.4         | 279926.7               | 490.39 µg/L           | 490.39 ppb            | 13:24:42         |
| 2     | Mo 202.031†        | -35.8            | -5.9                   | 0.0748 µg/L           | 0.0748 ppb            | 13:25:02         |
| 2     | Ni 231.604†        | 816.2            | 1011.3                 | 16.077 µg/L           | 16.077 ppb            | 13:25:02         |
| 2     | P 214.914†         | 1849.0           | 1938.1                 | 697.88 µg/L           | 697.88 ppb            | 13:25:02         |
| 2     | Pb 220.353†        | 171.0            | 96.7                   | 9.9856 µg/L           | 9.9856 ppb            | 13:25:02         |



|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 543.0     | 438.6     | 486.58 µg/L  | 486.58 ppb  | 13:25:02 |
| 2 | Sb 206.836†        | 54.5      | 10.0      | 0.5608 µg/L  | 0.5608 ppb  | 13:25:02 |
| 2 | Se 196.026†        | -0.0      | -8.0      | 1.73 µg/L    | 1.73 ppb    | 13:25:02 |
| 2 | SiO2†              | 67269.7   | 64033.1   | 7087.0 µg/L  | 7087.0 ppb  | 13:24:42 |
| 2 | Si 251.611†        | 196348.9  | 195131.5  | 3310.1 µg/L  | 3310.1 ppb  | 13:24:42 |
| 2 | Sn 189.927†        | -31.1     | -3.5      | -0.4322 µg/L | -0.4322 ppb | 13:25:02 |
| 2 | Ti 334.940†        | 90101.9   | 90700.7   | 129.11 µg/L  | 129.11 ppb  | 13:24:42 |
| 2 | Tl 190.801†        | -82.6     | 3.7       | 1.3684 µg/L  | 1.3684 ppb  | 13:25:02 |
| 2 | U 367.007†         | 341.1     | 624.2     | 3.8014 µg/L  | 3.8014 ppb  | 13:24:42 |
| 2 | V 292.402†         | 4711.7    | 4593.2    | 21.504 µg/L  | 21.504 ppb  | 13:24:42 |
| 2 | Zn 213.857†        | 12704.0   | 12616.6   | 69.865 µg/L  | 69.865 ppb  | 13:24:42 |
| 3 | Sc RADIAL          | 72377.3   | 72377.3   | 100 %        |             | 13:24:16 |
| 3 | Al 396.153Radial†  | 18685.2   | 18495.9   | 6755.4 µg/L  | 6755.4 ppb  | 13:24:16 |
| 3 | Ca 317.933Radial†  | 163583.8  | 162473.4  | 18087 µg/L   | 18087 ppb   | 13:24:16 |
| 3 | Fe 238.204 Radial† | 138765.4  | 138632.6  | 13114 µg/L   | 13114 ppb   | 13:24:16 |
| 3 | K 766.490 Radial†  | 3665.7    | 2578.3    | 1358.2 µg/L  | 1358.2 ppb  | 13:24:16 |
| 3 | Mg 279.077 IEC†    | 11016.6   | 10938.1   | 5901.4 µg/L  | 5901.4 ppb  | 13:24:16 |
| 3 | Na 589.592 Radial† | 926.3     | 882.2     | 147.10 µg/L  | 147.10 ppb  | 13:24:16 |
| 3 | Sr 421.552†        | 20280.1   | 20644.0   | 59.270 µg/L  | 59.270 ppb  | 13:24:16 |
| 3 | Sc 361.383         | 1341571.9 | 1341571.9 | 100.78 %     |             | 13:25:04 |
| 3 | Y 371.029          | 729516.6  | 729516.6  | 100.70 %     |             | 13:25:04 |
| 3 | Ag 328.068†        | -1918.0   | -12.4     | 0.5159 µg/L  | 0.5159 ppb  | 13:25:04 |
| 3 | As 188.979†        | -18.6     | 11.5      | 7.9478 µg/L  | 7.9478 ppb  | 13:25:24 |
| 3 | B 249.677†         | 595.5     | -294.0    | 5.3917 µg/L  | 5.3917 ppb  | 13:25:04 |
| 3 | Ba 233.527†        | 17898.1   | 18000.5   | 160.57 µg/L  | 160.57 ppb  | 13:25:04 |
| 3 | Be 313.107†        | -839.1    | 2823.3    | -3.1551 µg/L | -3.1551 ppb | 13:25:04 |
| 3 | Cd 226.502†        | 89.5      | 268.8     | 0.5324 µg/L  | 0.5324 ppb  | 13:25:24 |
| 3 | Co 228.616†        | 328.7     | 417.7     | 6.2321 µg/L  | 6.2321 ppb  | 13:25:24 |
| 3 | Cr 267.716†        | 1026.5    | 889.6     | 10.611 µg/L  | 10.611 ppb  | 13:25:24 |
| 3 | Cu 324.752†        | 8484.7    | 2642.2    | 12.622 µg/L  | 12.622 ppb  | 13:25:04 |
| 3 | Mn 257.610†        | 282296.6  | 279963.1  | 490.45 µg/L  | 490.45 ppb  | 13:25:04 |
| 3 | Mo 202.031†        | -41.0     | -10.9     | -0.1870 µg/L | -0.1870 ppb | 13:25:24 |
| 3 | Ni 231.604†        | 773.4     | 965.2     | 15.344 µg/L  | 15.344 ppb  | 13:25:24 |
| 3 | P 214.914†         | 1881.9    | 1962.5    | 706.66 µg/L  | 706.66 ppb  | 13:25:24 |
| 3 | Pb 220.353†        | 186.0     | 110.9     | 11.435 µg/L  | 11.435 ppb  | 13:25:24 |
| 3 | S 181.975 Axial†   | 541.9     | 435.0     | 482.59 µg/L  | 482.59 ppb  | 13:25:24 |
| 3 | Sb 206.836†        | 55.1      | 10.4      | 0.6366 µg/L  | 0.6366 ppb  | 13:25:24 |
| 3 | Se 196.026†        | -9.1      | -17.0     | -3.03 µg/L   | -3.03 ppb   | 13:25:24 |
| 3 | SiO2†              | 67625.2   | 64082.8   | 7092.5 µg/L  | 7092.5 ppb  | 13:25:04 |
| 3 | Si 251.611†        | 197112.2  | 195004.5  | 3308.0 µg/L  | 3308.0 ppb  | 13:25:04 |
| 3 | Sn 189.927†        | -30.8     | -3.1      | -0.3693 µg/L | -0.3693 ppb | 13:25:24 |
| 3 | Ti 334.940†        | 90748.8   | 90936.8   | 129.45 µg/L  | 129.45 ppb  | 13:25:04 |
| 3 | Tl 190.801†        | -89.0     | -2.3      | -0.4788 µg/L | -0.4788 ppb | 13:25:24 |
| 3 | U 367.007†         | 212.8     | 495.3     | -11.935 µg/L | -11.935 ppb | 13:25:04 |
| 3 | V 292.402†         | 4688.8    | 4549.2    | 21.300 µg/L  | 21.300 ppb  | 13:25:04 |
| 3 | Zn 213.857†        | 12618.3   | 12474.3   | 69.059 µg/L  | 69.059 ppb  | 13:25:04 |

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Mean Data: 409254014|1611117|10

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|-------------|--------------|----------|--------------------|----------|---------|
| Sc 361.383         | 1340975.6                | 100.73      | %            | 0.390    |                    |          | 0.39%   |
| Sc RADIAL          | 71149.5                  | 98.8        | %            | 1.52     |                    |          | 1.54%   |
| Y 371.029          | 729797.5                 | 100.74      | %            | 0.412    |                    |          | 0.41%   |
| Ag 328.068†        | -4.9                     | 0.5485      | µg/L         | 0.20353  | 0.5485 ppb         | 0.20353  | 37.11%  |
| Al 396.153Radial†  | 18570.6                  | 6782.7      | µg/L         | 25.93    | 6782.7 ppb         | 25.93    | 0.38%   |
| As 188.979†        | 10.1                     | 7.2016      | µg/L         | 2.78869  | 7.2016 ppb         | 2.78869  | 38.72%  |
| B 249.677†         | -315.5                   | 5.0835      | µg/L         | 0.27839  | 5.0835 ppb         | 0.27839  | 5.48%   |
| Ba 233.527†        | 18002.9                  | 160.59      | µg/L         | 0.307    | 160.59 ppb         | 0.307    | 0.19%   |
| Be 313.107†        | 2590.6                   | -3.2152     | µg/L         | 0.05760  | -3.2152 ppb        | 0.05760  | 1.79%   |
| Ca 317.933Radial†  | 162445.6                 | 18084       | µg/L         | 3.8      | 18084 ppb          | 3.8      | 0.02%   |
| Cd 226.502†        | 272.8                    | 0.5623      | µg/L         | 0.05611  | 0.5623 ppb         | 0.05611  | 9.98%   |
| Co 228.616†        | 413.7                    | 6.1734      | µg/L         | 0.11280  | 6.1734 ppb         | 0.11280  | 1.83%   |
| Cr 267.716†        | 887.2                    | 10.573      | µg/L         | 0.0332   | 10.573 ppb         | 0.0332   | 0.31%   |
| Cu 324.752†        | 2532.2                   | 12.146      | µg/L         | 0.4726   | 12.146 ppb         | 0.4726   | 3.89%   |
| Fe 238.204 Radial† | 138646.9                 | 13115       | µg/L         | 19.3     | 13115 ppb          | 19.3     | 0.15%   |
| K 766.490 Radial†  | 2558.6                   | 1347.9      | µg/L         | 37.22    | 1347.9 ppb         | 37.22    | 2.76%   |
| Mg 279.077 IEC†    | 10924.5                  | 5894.1      | µg/L         | 7.42     | 5894.1 ppb         | 7.42     | 0.13%   |
| Mn 257.610†        | 279518.6                 | 489.68      | µg/L         | 1.294    | 489.68 ppb         | 1.294    | 0.26%   |
| Mo 202.031†        | -11.4                    | -0.2137     | µg/L         | 0.30265  | -0.2137 ppb        | 0.30265  | 141.64% |
| Na 589.592 Radial† | 811.3                    | 135.29      | µg/L         | 13.400   | 135.29 ppb         | 13.400   | 9.90%   |

|                  |          |              |         |             |         |         |
|------------------|----------|--------------|---------|-------------|---------|---------|
| Ni 231.604†      | 990.3    | 15.744 µg/L  | 0.3711  | 15.744 ppb  | 0.3711  | 2.36%   |
| P 214.914†       | 1944.6   | 700.21 µg/L  | 5.657   | 700.21 ppb  | 5.657   | 0.81%   |
| Pb 220.353†      | 112.0    | 11.538 µg/L  | 1.6065  | 11.538 ppb  | 1.6065  | 13.92%  |
| S 181.975 Axial† | 434.8    | 482.37 µg/L  | 4.323   | 482.37 ppb  | 4.323   | 0.90%   |
| Sb 206.836†      | 9.4      | 0.4322 µg/L  | 0.29090 | 0.4322 ppb  | 0.29090 | 67.31%  |
| Se 196.026†      | -13.8    | -1.34 µg/L   | 2.661   | -1.34 ppb   | 2.661   | 198.36% |
| SiO2†            | 63973.4  | 7080.4 µg/L  | 16.44   | 7080.4 ppb  | 16.44   | 0.23%   |
| Si 251.611†      | 194707.7 | 3302.9 µg/L  | 10.64   | 3302.9 ppb  | 10.64   | 0.32%   |
| Sn 189.927†      | -1.4     | -0.1590 µg/L | 0.41983 | -0.1590 ppb | 0.41983 | 263.99% |
| Sr 421.552†      | 20633.2  | 59.239 µg/L  | 0.1118  | 59.239 ppb  | 0.1118  | 0.19%   |
| Ti 334.940†      | 90670.4  | 129.07 µg/L  | 0.406   | 129.07 ppb  | 0.406   | 0.31%   |
| Tl 190.801†      | 0.7      | 0.4307 µg/L  | 0.92396 | 0.4307 ppb  | 0.92396 | 214.52% |
| U 367.007†       | 584.1    | -1.0222 µg/L | 9.47235 | -1.0222 ppb | 9.47235 | 926.66% |
| V 292.402†       | 4551.4   | 21.313 µg/L  | 0.1838  | 21.313 ppb  | 0.1838  | 0.86%   |
| Zn 213.857†      | 12507.5  | 69.248 µg/L  | 0.5474  | 69.248 ppb  | 0.5474  | 0.79%   |

Sequence No.: 7

Sample ID: 409254015|1611117|10

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 353

Date Collected: 11/11/2016 13:25:32

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254015|1611117|10

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 70933.3       | 70933.3             | 98.5 %             |                    | 13:25:59      |
| 1     | Al 396.153Radial†  | 19613.8       | 19817.5             | 7238.8 µg/L        | 7238.8 ppb         | 13:25:59      |
| 1     | Ca 317.933Radial†  | 205078.2      | 207928.6            | 23147 µg/L         | 23147 ppb          | 13:25:57      |
| 1     | Fe 238.204 Radial† | 147307.5      | 150119.5            | 14201 µg/L         | 14201 ppb          | 13:25:57      |
| 1     | K 766.490 Radial†  | 3757.1        | 2745.4              | 1446.1 µg/L        | 1446.1 ppb         | 13:25:59      |
| 1     | Mg 279.077 IEC†    | 13384.3       | 13565.9             | 7318.5 µg/L        | 7318.5 ppb         | 13:25:59      |
| 1     | Na 589.592 Radial† | 1134.9        | 1112.8              | 185.57 µg/L        | 185.57 ppb         | 13:25:59      |
| 1     | Sr 421.552†        | 24045.3       | 24878.7             | 71.382 µg/L        | 71.382 ppb         | 13:25:59      |
| 1     | Sc 361.383         | 1349758.5     | 1349758.5           | 101.39 %           |                    | 13:26:11      |
| 1     | Y 371.029          | 736069.4      | 736069.4            | 101.60 %           |                    | 13:26:11      |
| 1     | Ag 328.068†        | -1831.8       | 84.2                | 1.0187 µg/L        | 1.0187 ppb         | 13:26:11      |
| 1     | As 188.979†        | -16.9         | 13.3                | 9.0496 µg/L        | 9.0496 ppb         | 13:26:31      |
| 1     | B 249.677†         | 513.4         | -378.5              | 4.9738 µg/L        | 4.9738 ppb         | 13:26:11      |
| 1     | Ba 233.527†        | 19289.2       | 19264.8             | 171.85 µg/L        | 171.85 ppb         | 13:26:11      |
| 1     | Be 313.107†        | -1033.8       | 2636.3              | -3.4729 µg/L       | -3.4729 ppb        | 13:26:11      |
| 1     | Cd 226.502†        | 112.3         | 290.8               | 0.5740 µg/L        | 0.5740 ppb         | 13:26:31      |
| 1     | Co 228.616†        | 352.9         | 439.6               | 6.5580 µg/L        | 6.5580 ppb         | 13:26:31      |
| 1     | Cr 267.716†        | 1109.8        | 965.6               | 11.490 µg/L        | 11.490 ppb         | 13:26:31      |
| 1     | Cu 324.752†        | 8564.5        | 2669.9              | 12.856 µg/L        | 12.856 ppb         | 13:26:11      |
| 1     | Mn 257.610†        | 294541.8      | 290341.0            | 508.59 µg/L        | 508.59 ppb         | 13:26:11      |
| 1     | Mo 202.031†        | -49.1         | -18.7               | -0.5480 µg/L       | -0.5480 ppb        | 13:26:31      |
| 1     | Ni 231.604†        | 860.7         | 1046.6              | 16.639 µg/L        | 16.639 ppb         | 13:26:31      |
| 1     | P 214.914†         | 1953.6        | 2021.8              | 728.01 µg/L        | 728.01 ppb         | 13:26:31      |
| 1     | Pb 220.353†        | 178.2         | 102.0               | 10.514 µg/L        | 10.514 ppb         | 13:26:31      |
| 1     | S 181.975 Axial†   | 383.9         | 275.9               | 304.80 µg/L        | 304.80 ppb         | 13:26:31      |
| 1     | Sb 206.836†        | 41.2          | -3.7                | -2.2020 µg/L       | -2.2020 ppb        | 13:26:31      |
| 1     | Se 196.026†        | -6.1          | -14.0               | -0.919 µg/L        | -0.919 ppb         | 13:26:31      |
| 1     | SiO2†              | 71659.4       | 67654.6             | 7487.8 µg/L        | 7487.8 ppb         | 13:26:11      |
| 1     | Si 251.611†        | 208962.8      | 205505.9            | 3486.1 µg/L        | 3486.1 ppb         | 13:26:11      |
| 1     | Sn 189.927†        | -34.5         | -6.6                | -0.8186 µg/L       | -0.8186 ppb        | 13:26:31      |
| 1     | Ti 334.940†        | 100427.9      | 99936.7             | 142.29 µg/L        | 142.29 ppb         | 13:26:11      |
| 1     | Tl 190.801†        | -80.7         | 6.5                 | 2.2245 µg/L        | 2.2245 ppb         | 13:26:31      |
| 1     | U 367.007†         | 453.1         | 731.1               | 10.714 µg/L        | 10.714 ppb         | 13:26:11      |
| 1     | V 292.402†         | 4909.7        | 4738.9              | 22.234 µg/L        | 22.234 ppb         | 13:26:11      |
| 1     | Zn 213.857†        | 13766.1       | 13530.4             | 74.864 µg/L        | 74.864 ppb         | 13:26:11      |
| 2     | Sc RADIAL          | 72536.8       | 72536.8             | 101 %              |                    | 13:26:03      |
| 2     | Al 396.153Radial†  | 19995.5       | 19756.3             | 7216.4 µg/L        | 7216.4 ppb         | 13:26:03      |
| 2     | Ca 317.933Radial†  | 210587.0      | 208795.1            | 23243 µg/L         | 23243 ppb          | 13:26:01      |
| 2     | Fe 238.204 Radial† | 151001.4      | 150480.7            | 14235 µg/L         | 14235 ppb          | 13:26:01      |
| 2     | K 766.490 Radial†  | 3631.8        | 2536.6              | 1336.3 µg/L        | 1336.3 ppb         | 13:26:03      |
| 2     | Mg 279.077 IEC†    | 13737.5       | 13616.2             | 7345.6 µg/L        | 7345.6 ppb         | 13:26:03      |
| 2     | Na 589.592 Radial† | 1173.4        | 1125.6              | 187.70 µg/L        | 187.70 ppb         | 13:26:03      |
| 2     | Sr 421.552†        | 24391.1       | 24682.3             | 70.809 µg/L        | 70.809 ppb         | 13:26:03      |
| 2     | Sc 361.383         | 1312158.9     | 1312158.9           | 98.569 %           |                    | 13:26:33      |
| 2     | Y 371.029          | 714848.9      | 714848.9            | 98.675 %           |                    | 13:26:33      |
| 2     | Ag 328.068†        | -1921.6       | -58.7               | 0.2792 µg/L        | 0.2792 ppb         | 13:26:33      |
| 2     | As 188.979†        | -20.7         | 9.0                 | 6.7245 µg/L        | 6.7245 ppb         | 13:26:53      |
| 2     | B 249.677†         | 498.9         | -378.7              | 4.9952 µg/L        | 4.9952 ppb         | 13:26:33      |
| 2     | Ba 233.527†        | 18854.0       | 19368.4             | 172.77 µg/L        | 172.77 ppb         | 13:26:33      |
| 2     | Be 313.107†        | -1188.6       | 2450.0              | -3.5444 µg/L       | -3.5444 ppb        | 13:26:33      |
| 2     | Cd 226.502†        | 126.1         | 308.0               | 0.7003 µg/L        | 0.7003 ppb         | 13:26:53      |
| 2     | Co 228.616†        | 366.9         | 463.7               | 6.9172 µg/L        | 6.9172 ppb         | 13:26:53      |
| 2     | Cr 267.716†        | 1149.2        | 1036.9              | 12.324 µg/L        | 12.324 ppb         | 13:26:53      |
| 2     | Cu 324.752†        | 8449.8        | 2795.6              | 13.417 µg/L        | 13.417 ppb         | 13:26:33      |
| 2     | Mn 257.610†        | 288216.4      | 292247.7            | 511.93 µg/L        | 511.93 ppb         | 13:26:33      |
| 2     | Mo 202.031†        | -42.5         | -13.3               | -0.2688 µg/L       | -0.2688 ppb        | 13:26:53      |
| 2     | Ni 231.604†        | 895.5         | 1106.3              | 17.588 µg/L        | 17.588 ppb         | 13:26:53      |
| 2     | P 214.914†         | 1994.1        | 2118.2              | 762.73 µg/L        | 762.73 ppb         | 13:26:53      |
| 2     | Pb 220.353†        | 190.4         | 119.4               | 12.267 µg/L        | 12.267 ppb         | 13:26:53      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 379.3     | 282.1     | 311.72 µg/L  | 311.72 ppb  | 13:26:53 |
| 2 | Sb 206.836†        | 50.9      | 7.3       | -0.1011 µg/L | -0.1011 ppb | 13:26:53 |
| 2 | Se 196.026†        | -0.4      | -8.4      | 2.02 µg/L    | 2.02 ppb    | 13:26:53 |
| 2 | SiO2†              | 69920.1   | 67915.2   | 7516.7 µg/L  | 7516.7 ppb  | 13:26:33 |
| 2 | Si 251.611†        | 204040.6  | 206417.7  | 3501.6 µg/L  | 3501.6 ppb  | 13:26:33 |
| 2 | Sn 189.927†        | -32.0     | -5.0      | -0.6188 µg/L | -0.6188 ppb | 13:26:53 |
| 2 | Ti 334.940†        | 98247.9   | 100563.2  | 143.18 µg/L  | 143.18 ppb  | 13:26:33 |
| 2 | Tl 190.801†        | -92.7     | -8.0      | -2.2122 µg/L | -2.2122 ppb | 13:26:53 |
| 2 | U 367.007†         | 485.7     | 777.0     | 16.166 µg/L  | 16.166 ppb  | 13:26:33 |
| 2 | V 292.402†         | 5033.3    | 5003.1    | 23.424 µg/L  | 23.424 ppb  | 13:26:33 |
| 2 | Zn 213.857†        | 13600.8   | 13751.7   | 76.114 µg/L  | 76.114 ppb  | 13:26:33 |
| 3 | Sc RADIAL          | 72030.1   | 72030.1   | 100.0 %      |             | 13:26:07 |
| 3 | Al 396.153Radial†  | 20144.8   | 20045.2   | 7321.9 µg/L  | 7321.9 ppb  | 13:26:07 |
| 3 | Ca 317.933Radial†  | 206673.8  | 206352.8  | 22971 µg/L   | 22971 ppb   | 13:26:05 |
| 3 | Fe 238.204 Radial† | 148312.2  | 148846.2  | 14080 µg/L   | 14080 ppb   | 13:26:05 |
| 3 | K 766.490 Radial†  | 3695.9    | 2626.1    | 1383.3 µg/L  | 1383.3 ppb  | 13:26:07 |
| 3 | Mg 279.077 IEC†    | 13700.4   | 13675.0   | 7377.3 µg/L  | 7377.3 ppb  | 13:26:07 |
| 3 | Na 589.592 Radial† | 1233.5    | 1193.9    | 199.08 µg/L  | 199.08 ppb  | 13:26:07 |
| 3 | Sr 421.552†        | 24572.6   | 25034.3   | 71.839 µg/L  | 71.839 ppb  | 13:26:07 |
| 3 | Sc 361.383         | 1355550.6 | 1355550.6 | 101.83 %     |             | 13:26:55 |
| 3 | Y 371.029          | 737493.6  | 737493.6  | 101.80 %     |             | 13:26:55 |
| 3 | Ag 328.068†        | -2096.8   | -168.3    | -0.2846 µg/L | -0.2846 ppb | 13:26:55 |
| 3 | As 188.979†        | -21.3     | 9.0       | 6.7057 µg/L  | 6.7057 ppb  | 13:27:15 |
| 3 | B 249.677†         | 550.0     | -344.7    | 5.3712 µg/L  | 5.3712 ppb  | 13:26:55 |
| 3 | Ba 233.527†        | 19579.4   | 19468.5   | 173.66 µg/L  | 173.66 ppb  | 13:26:55 |
| 3 | Be 313.107†        | -1014.1   | 2660.0    | -3.5146 µg/L | -3.5146 ppb | 13:26:55 |
| 3 | Cd 226.502†        | 121.3     | 299.2     | 0.6512 µg/L  | 0.6512 ppb  | 13:27:15 |
| 3 | Co 228.616†        | 347.8     | 433.1     | 6.4652 µg/L  | 6.4652 ppb  | 13:27:15 |
| 3 | Cr 267.716†        | 1120.0    | 970.9     | 11.559 µg/L  | 11.559 ppb  | 13:27:15 |
| 3 | Cu 324.752†        | 8720.1    | 2786.6    | 13.356 µg/L  | 13.356 ppb  | 13:26:55 |
| 3 | Mn 257.610†        | 298530.8  | 293017.1  | 513.28 µg/L  | 513.28 ppb  | 13:26:55 |
| 3 | Mo 202.031†        | -44.6     | -14.0     | -0.3085 µg/L | -0.3085 ppb | 13:27:15 |
| 3 | Ni 231.604†        | 869.0     | 1051.1    | 16.710 µg/L  | 16.710 ppb  | 13:27:15 |
| 3 | P 214.914†         | 1989.1    | 2048.4    | 737.60 µg/L  | 737.60 ppb  | 13:27:15 |
| 3 | Pb 220.353†        | 194.6     | 117.4     | 12.087 µg/L  | 12.087 ppb  | 13:27:15 |
| 3 | S 181.975 Axial†   | 393.2     | 283.4     | 313.17 µg/L  | 313.17 ppb  | 13:27:15 |
| 3 | Sb 206.836†        | 56.3      | 11.0      | 0.6497 µg/L  | 0.6497 ppb  | 13:27:15 |
| 3 | Se 196.026†        | -7.8      | -15.7     | -1.88 µg/L   | -1.88 ppb   | 13:27:15 |
| 3 | SiO2†              | 72376.8   | 68057.1   | 7532.4 µg/L  | 7532.4 ppb  | 13:26:55 |
| 3 | Si 251.611†        | 211803.1  | 207414.6  | 3518.5 µg/L  | 3518.5 ppb  | 13:26:55 |
| 3 | Sn 189.927†        | -27.4     | 0.6       | 0.0979 µg/L  | 0.0979 ppb  | 13:27:15 |
| 3 | Ti 334.940†        | 102014.9  | 101072.0  | 143.91 µg/L  | 143.91 ppb  | 13:26:55 |
| 3 | Tl 190.801†        | -100.7    | -12.8     | -3.6951 µg/L | -3.6951 ppb | 13:27:15 |
| 3 | U 367.007†         | 374.7     | 652.2     | 1.6801 µg/L  | 1.6801 ppb  | 13:26:55 |
| 3 | V 292.402†         | 5255.9    | 5058.1    | 23.653 µg/L  | 23.653 ppb  | 13:26:55 |
| 3 | Zn 213.857†        | 14037.9   | 13739.2   | 76.058 µg/L  | 76.058 ppb  | 13:26:55 |

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Mean Data: 409254015|1611117|10

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD     |
|--------------------|--------------------------|-------------|--------------|----------|-------------|-----------------|---------|
| Sc 361.383         | 1339156.0                | 100.60      | %            | 1.770    |             |                 | 1.76%   |
| Sc RADIAL          | 71833.4                  | 99.7        | %            | 1.14     |             |                 | 1.14%   |
| Y 371.029          | 729470.6                 | 100.69      | %            | 1.751    |             |                 | 1.74%   |
| Ag 328.068†        | -47.6                    | 0.3378      | µg/L         | 0.65359  | 0.3378 ppb  | 0.65359         | 193.50% |
| Al 396.153Radial†  | 19873.0                  | 7259.0      | µg/L         | 55.57    | 7259.0 ppb  | 55.57           | 0.77%   |
| As 188.979†        | 10.4                     | 7.4933      | µg/L         | 1.34785  | 7.4933 ppb  | 1.34785         | 17.99%  |
| B 249.677†         | -367.3                   | 5.1134      | µg/L         | 0.22356  | 5.1134 ppb  | 0.22356         | 4.37%   |
| Ba 233.527†        | 19367.3                  | 172.76      | µg/L         | 0.908    | 172.76 ppb  | 0.908           | 0.53%   |
| Be 313.107†        | 2582.1                   | -3.5106     | µg/L         | 0.03590  | -3.5106 ppb | 0.03590         | 1.02%   |
| Ca 317.933Radial†  | 207692.1                 | 23120       | µg/L         | 137.8    | 23120 ppb   | 137.8           | 0.60%   |
| Cd 226.502†        | 299.3                    | 0.6418      | µg/L         | 0.06369  | 0.6418 ppb  | 0.06369         | 9.92%   |
| Co 228.616†        | 445.5                    | 6.6468      | µg/L         | 0.23868  | 6.6468 ppb  | 0.23868         | 3.59%   |
| Cr 267.716†        | 991.1                    | 11.791      | µg/L         | 0.4629   | 11.791 ppb  | 0.4629          | 3.93%   |
| Cu 324.752†        | 2750.7                   | 13.210      | µg/L         | 0.3082   | 13.210 ppb  | 0.3082          | 2.33%   |
| Fe 238.204 Radial† | 149815.5                 | 14172       | µg/L         | 81.2     | 14172 ppb   | 81.2            | 0.57%   |
| K 766.490 Radial†  | 2636.0                   | 1388.6      | µg/L         | 55.05    | 1388.6 ppb  | 55.05           | 3.96%   |
| Mg 279.077 IEC†    | 13619.0                  | 7347.1      | µg/L         | 29.44    | 7347.1 ppb  | 29.44           | 0.40%   |
| Mn 257.610†        | 291868.6                 | 511.27      | µg/L         | 2.414    | 511.27 ppb  | 2.414           | 0.47%   |
| Mo 202.031†        | -15.3                    | -0.3751     | µg/L         | 0.15101  | -0.3751 ppb | 0.15101         | 40.26%  |
| Na 589.592 Radial† | 1144.1                   | 190.78      | µg/L         | 7.266    | 190.78 ppb  | 7.266           | 3.81%   |

|                  |          |              |         |             |         |         |
|------------------|----------|--------------|---------|-------------|---------|---------|
| Ni 231.604†      | 1068.0   | 16.979 µg/L  | 0.5283  | 16.979 ppb  | 0.5283  | 3.11%   |
| P 214.914†       | 2062.8   | 742.78 µg/L  | 17.930  | 742.78 ppb  | 17.930  | 2.41%   |
| Pb 220.353†      | 112.9    | 11.623 µg/L  | 0.9642  | 11.623 ppb  | 0.9642  | 8.30%   |
| S 181.975 Axial† | 280.5    | 309.90 µg/L  | 4.476   | 309.90 ppb  | 4.476   | 1.44%   |
| Sb 206.836†      | 4.9      | -0.5511 µg/L | 1.47815 | -0.5511 ppb | 1.47815 | 268.21% |
| Se 196.026†      | -12.7    | -0.258 µg/L  | 2.0317  | -0.258 ppb  | 2.0317  | 786.16% |
| SiO2†            | 67875.6  | 7512.3 µg/L  | 22.59   | 7512.3 ppb  | 22.59   | 0.30%   |
| Si 251.611†      | 206446.0 | 3502.1 µg/L  | 16.18   | 3502.1 ppb  | 16.18   | 0.46%   |
| Sn 189.927†      | -3.7     | -0.4465 µg/L | 0.48190 | -0.4465 ppb | 0.48190 | 107.93% |
| Sr 421.552†      | 24865.1  | 71.343 µg/L  | 0.5164  | 71.343 ppb  | 0.5164  | 0.72%   |
| Ti 334.940†      | 100523.9 | 143.13 µg/L  | 0.810   | 143.13 ppb  | 0.810   | 0.57%   |
| Tl 190.801†      | -4.8     | -1.2276 µg/L | 3.08018 | -1.2276 ppb | 3.08018 | 250.91% |
| U 367.007†       | 720.1    | 9.5199 µg/L  | 7.31640 | 9.5199 ppb  | 7.31640 | 76.85%  |
| V 292.402†       | 4933.4   | 23.104 µg/L  | 0.7618  | 23.104 ppb  | 0.7618  | 3.30%   |
| Zn 213.857†      | 13673.8  | 75.679 µg/L  | 0.7062  | 75.679 ppb  | 0.7062  | 0.93%   |

Sequence No.: 8

Sample ID: 409254016|1611117|10

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 354

Date Collected: 11/11/2016 13:27:24

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254016|1611117|10

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 73104.1       | 73104.1             | 101 %              |                    | 13:27:51      |
| 1     | Al 396.153Radial†  | 19194.4       | 18812.7             | 6871.1 µg/L        | 6871.1 ppb         | 13:27:51      |
| 1     | Ca 317.933Radial†  | 164105.3      | 161368.5            | 17964 µg/L         | 17964 ppb          | 13:27:51      |
| 1     | Fe 238.204 Radial† | 144702.3      | 143109.7            | 13538 µg/L         | 13538 ppb          | 13:27:49      |
| 1     | K 766.490 Radial†  | 3457.5        | 2336.8              | 1231.5 µg/L        | 1231.5 ppb         | 13:27:51      |
| 1     | Mg 279.077 IEC†    | 12086.4       | 11883.3             | 6411.1 µg/L        | 6411.1 ppb         | 13:27:51      |
| 1     | Na 589.592 Radial† | 1048.1        | 993.0               | 165.59 µg/L        | 165.59 ppb         | 13:27:51      |
| 1     | Sr 421.552†        | 20076.6       | 20242.8             | 58.110 µg/L        | 58.110 ppb         | 13:27:51      |
| 1     | Sc 361.383         | 1355691.0     | 1355691.0           | 101.84 %           |                    | 13:28:03      |
| 1     | Y 371.029          | 738200.9      | 738200.9            | 101.90 %           |                    | 13:28:03      |
| 1     | Ag 328.068†        | -1971.1       | -44.6               | 0.3767 µg/L        | 0.3767 ppb         | 13:28:03      |
| 1     | As 188.979†        | -21.0         | 9.3                 | 6.8304 µg/L        | 6.8304 ppb         | 13:28:23      |
| 1     | B 249.677†         | 534.0         | -360.5              | 4.7460 µg/L        | 4.7460 ppb         | 13:28:03      |
| 1     | Ba 233.527†        | 18381.2       | 18289.9             | 163.15 µg/L        | 163.15 ppb         | 13:28:03      |
| 1     | Be 313.107†        | -1277.3       | 2401.7              | -3.3346 µg/L       | -3.3346 ppb        | 13:28:03      |
| 1     | Cd 226.502†        | 107.6         | 285.7               | 0.6112 µg/L        | 0.6112 ppb         | 13:28:23      |
| 1     | Co 228.616†        | 331.6         | 417.2               | 6.2225 µg/L        | 6.2225 ppb         | 13:28:23      |
| 1     | Cr 267.716†        | 1065.8        | 917.6               | 10.947 µg/L        | 10.947 ppb         | 13:28:23      |
| 1     | Cu 324.752†        | 8418.6        | 2489.7              | 11.981 µg/L        | 11.981 ppb         | 13:28:03      |
| 1     | Mn 257.610†        | 268232.8      | 263236.0            | 461.12 µg/L        | 461.12 ppb         | 13:28:03      |
| 1     | Mo 202.031†        | -44.7         | -14.1               | -0.3379 µg/L       | -0.3379 ppb        | 13:28:23      |
| 1     | Ni 231.604†        | 842.1         | 1024.6              | 16.289 µg/L        | 16.289 ppb         | 13:28:23      |
| 1     | P 214.914†         | 1779.2        | 1842.1              | 663.26 µg/L        | 663.26 ppb         | 13:28:23      |
| 1     | Pb 220.353†        | 197.6         | 120.3               | 12.390 µg/L        | 12.390 ppb         | 13:28:23      |
| 1     | S 181.975 Axial†   | 377.6         | 268.1               | 296.20 µg/L        | 296.20 ppb         | 13:28:23      |
| 1     | Sb 206.836†        | 50.3          | 5.1                 | -0.4442 µg/L       | -0.4442 ppb        | 13:28:23      |
| 1     | Se 196.026†        | -1.8          | -9.8                | 0.967 µg/L         | 0.967 ppb          | 13:28:23      |
| 1     | SiO2†              | 71408.4       | 67098.8             | 7426.3 µg/L        | 7426.3 ppb         | 13:28:03      |
| 1     | Si 251.611†        | 208644.3      | 204291.2            | 3465.5 µg/L        | 3465.5 ppb         | 13:28:03      |
| 1     | Sn 189.927†        | -33.4         | -5.3                | -0.6605 µg/L       | -0.6605 ppb        | 13:28:23      |
| 1     | Ti 334.940†        | 99376.0       | 98470.3             | 140.16 µg/L        | 140.16 ppb         | 13:28:03      |
| 1     | Tl 190.801†        | -73.9         | 13.5                | 4.3694 µg/L        | 4.3694 ppb         | 13:28:23      |
| 1     | U 367.007†         | 192.6         | 473.4               | -16.930 µg/L       | -16.930 ppb        | 13:28:03      |
| 1     | V 292.402†         | 4920.7        | 4728.5              | 22.131 µg/L        | 22.131 ppb         | 13:28:03      |
| 1     | Zn 213.857†        | 13611.0       | 13318.7             | 73.780 µg/L        | 73.780 ppb         | 13:28:03      |
| 2     | Sc RADIAL          | 71693.9       | 71693.9             | 99.5 %             |                    | 13:27:55      |
| 2     | Al 396.153Radial†  | 18717.7       | 18705.8             | 6832.0 µg/L        | 6832.0 ppb         | 13:27:55      |
| 2     | Ca 317.933Radial†  | 160335.5      | 160761.5            | 17896 µg/L         | 17896 ppb          | 13:27:55      |
| 2     | Fe 238.204 Radial† | 141598.4      | 142795.8            | 13508 µg/L         | 13508 ppb          | 13:27:53      |
| 2     | K 766.490 Radial†  | 3372.1        | 2318.0              | 1221.6 µg/L        | 1221.6 ppb         | 13:27:55      |
| 2     | Mg 279.077 IEC†    | 11788.1       | 11817.8             | 6375.8 µg/L        | 6375.8 ppb         | 13:27:55      |
| 2     | Na 589.592 Radial† | 946.2         | 911.0               | 151.91 µg/L        | 151.91 ppb         | 13:27:55      |
| 2     | Sr 421.552†        | 19575.0       | 20127.9             | 57.779 µg/L        | 57.779 ppb         | 13:27:55      |
| 2     | Sc 361.383         | 1356023.5     | 1356023.5           | 101.86 %           |                    | 13:28:25      |
| 2     | Y 371.029          | 737617.0      | 737617.0            | 101.82 %           |                    | 13:28:25      |
| 2     | Ag 328.068†        | -2063.9       | -135.3              | -0.1007 µg/L       | -0.1007 ppb        | 13:28:25      |
| 2     | As 188.979†        | -19.5         | 10.8                | 7.6028 µg/L        | 7.6028 ppb         | 13:28:45      |
| 2     | B 249.677†         | 569.0         | -326.2              | 5.2169 µg/L        | 5.2169 ppb         | 13:28:25      |
| 2     | Ba 233.527†        | 18637.9       | 18537.5             | 165.36 µg/L        | 165.36 ppb         | 13:28:25      |
| 2     | Be 313.107†        | -799.5        | 2871.1              | -3.2554 µg/L       | -3.2554 ppb        | 13:28:25      |
| 2     | Cd 226.502†        | 103.6         | 281.7               | 0.5847 µg/L        | 0.5847 ppb         | 13:28:45      |
| 2     | Co 228.616†        | 344.2         | 429.4               | 6.4073 µg/L        | 6.4073 ppb         | 13:28:45      |
| 2     | Cr 267.716†        | 1022.6        | 874.9               | 10.432 µg/L        | 10.432 ppb         | 13:28:45      |
| 2     | Cu 324.752†        | 8449.6        | 2518.1              | 12.116 µg/L        | 12.116 ppb         | 13:28:25      |
| 2     | Mn 257.610†        | 269189.4      | 264110.4            | 462.65 µg/L        | 462.65 ppb         | 13:28:25      |
| 2     | Mo 202.031†        | -40.8         | -10.3               | -0.1417 µg/L       | -0.1417 ppb        | 13:28:45      |
| 2     | Ni 231.604†        | 864.3         | 1046.2              | 16.632 µg/L        | 16.632 ppb         | 13:28:45      |
| 2     | P 214.914†         | 1812.9        | 1874.8              | 675.06 µg/L        | 675.06 ppb         | 13:28:45      |
| 2     | Pb 220.353†        | 177.2         | 100.3               | 10.346 µg/L        | 10.346 ppb         | 13:28:45      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 377.7     | 268.1     | 296.22 µg/L  | 296.22 ppb  | 13:28:45 |
| 2 | Sb 206.836†        | 54.9      | 9.6       | 0.4378 µg/L  | 0.4378 ppb  | 13:28:45 |
| 2 | Se 196.026†        | -6.6      | -14.5     | -1.49 µg/L   | -1.49 ppb   | 13:28:45 |
| 2 | SiO2†              | 71719.0   | 67386.5   | 7458.2 µg/L  | 7458.2 ppb  | 13:28:25 |
| 2 | Si 251.611†        | 209835.5  | 205410.4  | 3484.4 µg/L  | 3484.4 ppb  | 13:28:25 |
| 2 | Sn 189.927†        | -26.5     | 1.4       | 0.2037 µg/L  | 0.2037 ppb  | 13:28:45 |
| 2 | Ti 334.940†        | 99631.7   | 98697.4   | 140.47 µg/L  | 140.47 ppb  | 13:28:25 |
| 2 | Tl 190.801†        | -92.7     | -5.0      | -1.2936 µg/L | -1.2936 ppb | 13:28:45 |
| 2 | U 367.007†         | 316.9     | 595.3     | -1.7583 µg/L | -1.7583 ppb | 13:28:25 |
| 2 | V 292.402†         | 4842.5    | 4650.5    | 21.784 µg/L  | 21.784 ppb  | 13:28:25 |
| 2 | Zn 213.857†        | 13679.8   | 13382.9   | 74.149 µg/L  | 74.149 ppb  | 13:28:25 |
| 3 | Sc RADIAL          | 72771.2   | 72771.2   | 101 %        |             | 13:27:59 |
| 3 | Al 396.153Radial†  | 19052.8   | 18759.1   | 6851.5 µg/L  | 6851.5 ppb  | 13:27:59 |
| 3 | Ca 317.933Radial†  | 164290.4  | 162291.5  | 18066 µg/L   | 18066 ppb   | 13:27:59 |
| 3 | Fe 238.204 Radial† | 138989.3  | 138106.7  | 13064 µg/L   | 13064 ppb   | 13:27:57 |
| 3 | K 766.490 Radial†  | 3566.9    | 2460.8    | 1296.5 µg/L  | 1296.5 ppb  | 13:27:59 |
| 3 | Mg 279.077 IEC†    | 12079.7   | 11931.1   | 6436.8 µg/L  | 6436.8 ppb  | 13:27:59 |
| 3 | Na 589.592 Radial† | 1138.9    | 1087.6    | 181.37 µg/L  | 181.37 ppb  | 13:27:59 |
| 3 | Sr 421.552†        | 20060.6   | 20317.5   | 58.324 µg/L  | 58.324 ppb  | 13:27:59 |
| 3 | Sc 361.383         | 1347015.6 | 1347015.6 | 101.19 %     |             | 13:28:47 |
| 3 | Y 371.029          | 733503.4  | 733503.4  | 101.25 %     |             | 13:28:47 |
| 3 | Ag 328.068†        | -2047.9   | -133.0    | -0.1163 µg/L | -0.1163 ppb | 13:28:47 |
| 3 | As 188.979†        | -18.7     | 11.5      | 7.9405 µg/L  | 7.9405 ppb  | 13:29:07 |
| 3 | B 249.677†         | 575.6     | -316.0    | 5.0386 µg/L  | 5.0386 ppb  | 13:28:47 |
| 3 | Ba 233.527†        | 18529.3   | 18552.6   | 165.49 µg/L  | 165.49 ppb  | 13:28:47 |
| 3 | Be 313.107†        | -1167.0   | 2502.6    | -3.3592 µg/L | -3.3592 ppb | 13:28:47 |
| 3 | Cd 226.502†        | 88.1      | 267.1     | 0.5247 µg/L  | 0.5247 ppb  | 13:29:07 |
| 3 | Co 228.616†        | 324.3     | 412.0     | 6.1542 µg/L  | 6.1542 ppb  | 13:29:07 |
| 3 | Cr 267.716†        | 1047.9    | 906.6     | 10.795 µg/L  | 10.795 ppb  | 13:29:07 |
| 3 | Cu 324.752†        | 8408.0    | 2532.4    | 12.152 µg/L  | 12.152 ppb  | 13:28:47 |
| 3 | Mn 257.610†        | 267978.2  | 264680.7  | 463.65 µg/L  | 463.65 ppb  | 13:28:47 |
| 3 | Mo 202.031†        | -34.1     | -3.9      | 0.1810 µg/L  | 0.1810 ppb  | 13:29:07 |
| 3 | Ni 231.604†        | 844.6     | 1032.5    | 16.414 µg/L  | 16.414 ppb  | 13:29:07 |
| 3 | P 214.914†         | 1798.5    | 1872.5    | 674.23 µg/L  | 674.23 ppb  | 13:29:07 |
| 3 | Pb 220.353†        | 192.0     | 116.0     | 11.939 µg/L  | 11.939 ppb  | 13:29:07 |
| 3 | S 181.975 Axial†   | 383.8     | 276.6     | 305.77 µg/L  | 305.77 ppb  | 13:29:07 |
| 3 | Sb 206.836†        | 57.7      | 12.7      | 1.0907 µg/L  | 1.0907 ppb  | 13:29:07 |
| 3 | Se 196.026†        | -1.9      | -9.9      | 0.688 µg/L   | 0.688 ppb   | 13:29:07 |
| 3 | SiO2†              | 71395.1   | 67537.3   | 7474.8 µg/L  | 7474.8 ppb  | 13:28:47 |
| 3 | Si 251.611†        | 208727.1  | 205692.6  | 3489.2 µg/L  | 3489.2 ppb  | 13:28:47 |
| 3 | Sn 189.927†        | -25.2     | 2.5       | 0.3471 µg/L  | 0.3471 ppb  | 13:29:07 |
| 3 | Ti 334.940†        | 99209.1   | 98933.8   | 140.81 µg/L  | 140.81 ppb  | 13:28:47 |
| 3 | Tl 190.801†        | -108.0    | -20.7     | -6.1405 µg/L | -6.1405 ppb | 13:29:07 |
| 3 | U 367.007†         | 315.3     | 595.8     | 0.6999 µg/L  | 0.6999 ppb  | 13:28:47 |
| 3 | V 292.402†         | 4943.0    | 4781.6    | 22.343 µg/L  | 22.343 ppb  | 13:28:47 |
| 3 | Zn 213.857†        | 13494.3   | 13289.4   | 73.663 µg/L  | 73.663 ppb  | 13:28:47 |

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Mean Data: 409254016|1611117|10

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD     |
|--------------------|--------------------------|-------------|--------------|----------|-------------|-----------------|---------|
| Sc 361.383         | 1352910.0                | 101.63      | %            | 0.384    |             |                 | 0.38%   |
| Sc RADIAL          | 72523.1                  | 101         | %            | 1.0      |             |                 | 1.02%   |
| Y 371.029          | 736440.4                 | 101.66      | %            | 0.353    |             |                 | 0.35%   |
| Ag 328.068†        | -104.3                   | 0.0533      | µg/L         | 0.28026  | 0.0533 ppb  | 0.28026         | 526.28% |
| Al 396.153Radial†  | 18759.2                  | 6851.5      | µg/L         | 19.52    | 6851.5 ppb  | 19.52           | 0.28%   |
| As 188.979†        | 10.5                     | 7.4579      | µg/L         | 0.56906  | 7.4579 ppb  | 0.56906         | 7.63%   |
| B 249.677†         | -334.3                   | 5.0005      | µg/L         | 0.23775  | 5.0005 ppb  | 0.23775         | 4.75%   |
| Ba 233.527†        | 18460.0                  | 164.67      | µg/L         | 1.314    | 164.67 ppb  | 1.314           | 0.80%   |
| Be 313.107†        | 2591.8                   | -3.3164     | µg/L         | 0.05421  | -3.3164 ppb | 0.05421         | 1.63%   |
| Ca 317.933Radial†  | 161473.8                 | 17975       | µg/L         | 85.8     | 17975 ppb   | 85.8            | 0.48%   |
| Cd 226.502†        | 278.1                    | 0.5735      | µg/L         | 0.04434  | 0.5735 ppb  | 0.04434         | 7.73%   |
| Co 228.616†        | 419.5                    | 6.2613      | µg/L         | 0.13096  | 6.2613 ppb  | 0.13096         | 2.09%   |
| Cr 267.716†        | 899.7                    | 10.725      | µg/L         | 0.2649   | 10.725 ppb  | 0.2649          | 2.47%   |
| Cu 324.752†        | 2513.4                   | 12.083      | µg/L         | 0.0901   | 12.083 ppb  | 0.0901          | 0.75%   |
| Fe 238.204 Radial† | 141337.4                 | 13370       | µg/L         | 265.1    | 13370 ppb   | 265.1           | 1.98%   |
| K 766.490 Radial†  | 2371.9                   | 1249.9      | µg/L         | 40.66    | 1249.9 ppb  | 40.66           | 3.25%   |
| Mg 279.077 IEC†    | 11877.4                  | 6407.9      | µg/L         | 30.61    | 6407.9 ppb  | 30.61           | 0.48%   |
| Mn 257.610†        | 264009.0                 | 462.47      | µg/L         | 1.275    | 462.47 ppb  | 1.275           | 0.28%   |
| Mo 202.031†        | -9.5                     | -0.0995     | µg/L         | 0.26199  | -0.0995 ppb | 0.26199         | 263.20% |
| Na 589.592 Radial† | 997.2                    | 166.29      | µg/L         | 14.744   | 166.29 ppb  | 14.744          | 8.87%   |

|                  |          |              |         |             |         |         |
|------------------|----------|--------------|---------|-------------|---------|---------|
| Ni 231.604†      | 1034.4   | 16.445 µg/L  | 0.1736  | 16.445 ppb  | 0.1736  | 1.06%   |
| P 214.914†       | 1863.1   | 670.85 µg/L  | 6.586   | 670.85 ppb  | 6.586   | 0.98%   |
| Pb 220.353†      | 112.2    | 11.558 µg/L  | 1.0739  | 11.558 ppb  | 1.0739  | 9.29%   |
| S 181.975 Axial† | 270.9    | 299.40 µg/L  | 5.520   | 299.40 ppb  | 5.520   | 1.84%   |
| Sb 206.836†      | 9.1      | 0.3614 µg/L  | 0.77026 | 0.3614 ppb  | 0.77026 | 213.11% |
| Se 196.026†      | -11.4    | 0.056 µg/L   | 1.3429  | 0.056 ppb   | 1.3429  | >999.9% |
| SiO2†            | 67340.9  | 7453.1 µg/L  | 24.66   | 7453.1 ppb  | 24.66   | 0.33%   |
| Si 251.611†      | 205131.4 | 3479.7 µg/L  | 12.54   | 3479.7 ppb  | 12.54   | 0.36%   |
| Sn 189.927†      | -0.5     | -0.0365 µg/L | 0.54506 | -0.0365 ppb | 0.54506 | >999.9% |
| Sr 421.552†      | 20229.4  | 58.071 µg/L  | 0.2742  | 58.071 ppb  | 0.2742  | 0.47%   |
| Ti 334.940†      | 98700.5  | 140.48 µg/L  | 0.326   | 140.48 ppb  | 0.326   | 0.23%   |
| Tl 190.801†      | -4.1     | -1.0216 µg/L | 5.26025 | -1.0216 ppb | 5.26025 | 514.92% |
| U 367.007†       | 554.9    | -5.9960 µg/L | 9.54825 | -5.9960 ppb | 9.54825 | 159.24% |
| V 292.402†       | 4720.2   | 22.086 µg/L  | 0.2819  | 22.086 ppb  | 0.2819  | 1.28%   |
| Zn 213.857†      | 13330.3  | 73.864 µg/L  | 0.2535  | 73.864 ppb  | 0.2535  | 0.34%   |



Sequence No.: 9

Sample ID: 409254017|1611117|10

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 355

Date Collected: 11/11/2016 13:29:15

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254017|1611117|10

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71885.6       | 71885.6             | 99.8 %             |                    | 13:29:40      |
| 1     | Al 396.153Radial†  | 14822.6       | 14752.3             | 5388.8 µg/L        | 5388.8 ppb         | 13:29:40      |
| 1     | Ca 317.933Radial†  | 164097.2      | 164101.6            | 18268 µg/L         | 18268 ppb          | 13:29:40      |
| 1     | Fe 238.204 Radial† | 133110.4      | 133910.5            | 12667 µg/L         | 12667 ppb          | 13:29:40      |
| 1     | K 766.490 Radial†  | 3212.9        | 2149.5              | 1132.7 µg/L        | 1132.7 ppb         | 13:29:40      |
| 1     | Mg 279.077 IEC†    | 13549.6       | 13551.5             | 7310.2 µg/L        | 7310.2 ppb         | 13:29:40      |
| 1     | Na 589.592 Radial† | 1303.8        | 1266.8              | 211.24 µg/L        | 211.24 ppb         | 13:29:40      |
| 1     | Sr 421.552†        | 17469.5       | 17965.6             | 51.493 µg/L        | 51.493 ppb         | 13:29:40      |
| 1     | Sc 361.383         | 1316979.0     | 1316979.0           | 98.931 %           |                    | 13:29:47      |
| 1     | Y 371.029          | 717215.5      | 717215.5            | 99.002 %           |                    | 13:29:47      |
| 1     | Ag 328.068†        | -1795.5       | 76.0                | 0.9380 µg/L        | 0.9380 ppb         | 13:29:47      |
| 1     | As 188.979†        | -18.5         | 11.3                | 7.7551 µg/L        | 7.7551 ppb         | 13:30:07      |
| 1     | B 249.677†         | 456.6         | -423.3              | 3.2044 µg/L        | 3.2044 ppb         | 13:29:47      |
| 1     | Ba 233.527†        | 22787.0       | 23273.9             | 207.59 µg/L        | 207.59 ppb         | 13:29:47      |
| 1     | Be 313.107†        | -1222.8       | 2419.9              | -4.4176 µg/L       | -4.4176 ppb        | 13:29:47      |
| 1     | Cd 226.502†        | 49.6          | 230.2               | 0.2912 µg/L        | 0.2912 ppb         | 13:30:07      |
| 1     | Co 228.616†        | 289.0         | 383.6               | 5.7872 µg/L        | 5.7872 ppb         | 13:30:07      |
| 1     | Cr 267.716†        | 973.0         | 854.5               | 10.172 µg/L        | 10.172 ppb         | 13:30:07      |
| 1     | Cu 324.752†        | 7082.3        | 1381.9              | 7.0596 µg/L        | 7.0596 ppb         | 13:29:47      |
| 1     | Mn 257.610†        | 157539.3      | 159089.0            | 278.56 µg/L        | 278.56 ppb         | 13:29:47      |
| 1     | Mo 202.031†        | -33.0         | -3.6                | 0.1978 µg/L        | 0.1978 ppb         | 13:30:07      |
| 1     | Ni 231.604†        | 724.2         | 929.7               | 14.781 µg/L        | 14.781 ppb         | 13:30:07      |
| 1     | P 214.914†         | 1352.0        | 1461.7              | 526.18 µg/L        | 526.18 ppb         | 13:30:07      |
| 1     | Pb 220.353†        | 191.7         | 120.0               | 12.266 µg/L        | 12.266 ppb         | 13:30:07      |
| 1     | S 181.975 Axial†   | 229.2         | 129.0               | 141.15 µg/L        | 141.15 ppb         | 13:30:07      |
| 1     | Sb 206.836†        | 49.8          | 6.1                 | -0.1805 µg/L       | -0.1805 ppb        | 13:30:07      |
| 1     | Se 196.026†        | -6.3          | -14.3               | -1.77 µg/L         | -1.77 ppb          | 13:30:07      |
| 1     | SiO2†              | 56843.7       | 54438.0             | 6025.0 µg/L        | 6025.0 ppb         | 13:29:47      |
| 1     | Si 251.611†        | 164169.9      | 165358.7            | 2805.3 µg/L        | 2805.3 ppb         | 13:29:47      |
| 1     | Sn 189.927†        | -25.3         | 2.0                 | 0.2666 µg/L        | 0.2666 ppb         | 13:30:07      |
| 1     | Ti 334.940†        | 132794.0      | 135117.6            | 192.25 µg/L        | 192.25 ppb         | 13:29:47      |
| 1     | Tl 190.801†        | -97.5         | -12.5               | -3.6153 µg/L       | -3.6153 ppb        | 13:30:07      |
| 1     | U 367.007†         | 297.0         | 584.4               | 1.4373 µg/L        | 1.4373 ppb         | 13:29:47      |
| 1     | V 292.402†         | 3920.5        | 3859.5              | 18.183 µg/L        | 18.183 ppb         | 13:29:47      |
| 1     | Zn 213.857†        | 7596.4        | 7631.9              | 41.570 µg/L        | 41.570 ppb         | 13:30:07      |
| 2     | Sc RADIAL          | 71627.4       | 71627.4             | 99.4 %             |                    | 13:29:42      |
| 2     | Al 396.153Radial†  | 15083.5       | 15068.3             | 5504.2 µg/L        | 5504.2 ppb         | 13:29:42      |
| 2     | Ca 317.933Radial†  | 165659.0      | 166265.1            | 18509 µg/L         | 18509 ppb          | 13:29:42      |
| 2     | Fe 238.204 Radial† | 134275.8      | 135563.3            | 12824 µg/L         | 12824 ppb          | 13:29:42      |
| 2     | K 766.490 Radial†  | 3286.0        | 2234.6              | 1177.5 µg/L        | 1177.5 ppb         | 13:29:42      |
| 2     | Mg 279.077 IEC†    | 13684.1       | 13735.7             | 7409.6 µg/L        | 7409.6 ppb         | 13:29:42      |
| 2     | Na 589.592 Radial† | 1421.9        | 1390.2              | 231.83 µg/L        | 231.83 ppb         | 13:29:42      |
| 2     | Sr 421.552†        | 17844.1       | 18405.4             | 52.761 µg/L        | 52.761 ppb         | 13:29:42      |
| 2     | Sc 361.383         | 1288388.2     | 1288388.2           | 96.784 %           |                    | 13:30:10      |
| 2     | Y 371.029          | 702311.4      | 702311.4            | 96.945 %           |                    | 13:30:10      |
| 2     | Ag 328.068†        | -1775.3       | 56.6                | 0.8420 µg/L        | 0.8420 ppb         | 13:30:10      |
| 2     | As 188.979†        | -16.1         | 13.3                | 8.9054 µg/L        | 8.9054 ppb         | 13:30:30      |
| 2     | B 249.677†         | 384.8         | -487.3              | 2.3984 µg/L        | 2.3984 ppb         | 13:30:10      |
| 2     | Ba 233.527†        | 22558.9       | 23549.3             | 210.04 µg/L        | 210.04 ppb         | 13:30:10      |
| 2     | Be 313.107†        | -1197.6       | 2418.5              | -4.4765 µg/L       | -4.4765 ppb        | 13:30:10      |
| 2     | Cd 226.502†        | 54.4          | 236.3               | 0.3191 µg/L        | 0.3191 ppb         | 13:30:30      |
| 2     | Co 228.616†        | 306.6         | 408.3               | 6.1544 µg/L        | 6.1544 ppb         | 13:30:30      |
| 2     | Cr 267.716†        | 960.0         | 863.0               | 10.269 µg/L        | 10.269 ppb         | 13:30:30      |
| 2     | Cu 324.752†        | 7179.2        | 1640.9              | 8.2182 µg/L        | 8.2182 ppb         | 13:30:10      |
| 2     | Mn 257.610†        | 156689.3      | 161744.5            | 283.21 µg/L        | 283.21 ppb         | 13:30:10      |
| 2     | Mo 202.031†        | -41.4         | -13.1               | -0.2898 µg/L       | -0.2898 ppb        | 13:30:30      |
| 2     | Ni 231.604†        | 748.8         | 971.4               | 15.443 µg/L        | 15.443 ppb         | 13:30:30      |
| 2     | P 214.914†         | 1373.9        | 1514.6              | 545.26 µg/L        | 545.26 ppb         | 13:30:30      |
| 2     | Pb 220.353†        | 174.5         | 106.6               | 10.908 µg/L        | 10.908 ppb         | 13:30:30      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 229.2     | 134.1     | 146.81 µg/L  | 146.81 ppb  | 13:30:30 |
| 2 | Sb 206.836†        | 49.1      | 6.5       | -0.1193 µg/L | -0.1193 ppb | 13:30:30 |
| 2 | Se 196.026†        | 4.3       | -3.5      | 3.96 µg/L    | 3.96 ppb    | 13:30:30 |
| 2 | SiO2†              | 56402.8   | 55257.4   | 6115.7 µg/L  | 6115.7 ppb  | 13:30:10 |
| 2 | Si 251.611†        | 163318.0  | 168160.9  | 2852.8 µg/L  | 2852.8 ppb  | 13:30:10 |
| 2 | Sn 189.927†        | -35.8     | -9.5      | -1.1943 µg/L | -1.1943 ppb | 13:30:30 |
| 2 | Ti 334.940†        | 132219.5  | 137502.7  | 195.64 µg/L  | 195.64 ppb  | 13:30:10 |
| 2 | Tl 190.801†        | -97.6     | -14.8     | -4.3259 µg/L | -4.3259 ppb | 13:30:30 |
| 2 | U 367.007†         | 330.8     | 626.0     | 5.6751 µg/L  | 5.6751 ppb  | 13:30:10 |
| 2 | V 292.402†         | 4071.6    | 4103.6    | 19.289 µg/L  | 19.289 ppb  | 13:30:10 |
| 2 | Zn 213.857†        | 7615.7    | 7822.3    | 42.627 µg/L  | 42.627 ppb  | 13:30:30 |
| 3 | Sc RADIAL          | 72462.0   | 72462.0   | 101 %        |             | 13:29:44 |
| 3 | Al 396.153Radial†  | 15101.3   | 14911.2   | 5446.8 µg/L  | 5446.8 ppb  | 13:29:44 |
| 3 | Ca 317.933Radial†  | 166947.9  | 165627.5  | 18438 µg/L   | 18438 ppb   | 13:29:44 |
| 3 | Fe 238.204 Radial† | 135211.5  | 134938.2  | 12765 µg/L   | 12765 ppb   | 13:29:44 |
| 3 | K 766.490 Radial†  | 3306.2    | 2216.6    | 1168.0 µg/L  | 1168.0 ppb  | 13:29:44 |
| 3 | Mg 279.077 IEC†    | 13765.8   | 13658.4   | 7367.9 µg/L  | 7367.9 ppb  | 13:29:44 |
| 3 | Na 589.592 Radial† | 1327.3    | 1279.8    | 213.41 µg/L  | 213.41 ppb  | 13:29:44 |
| 3 | Sr 421.552†        | 17782.3   | 18137.2   | 51.985 µg/L  | 51.985 ppb  | 13:29:44 |
| 3 | Sc 361.383         | 1324002.3 | 1324002.3 | 99.459 %     |             | 13:30:32 |
| 3 | Y 371.029          | 720781.8  | 720781.8  | 99.494 %     |             | 13:30:32 |
| 3 | Ag 328.068†        | -1957.1   | -76.9     | 0.1492 µg/L  | 0.1492 ppb  | 13:30:32 |
| 3 | As 188.979†        | -10.5     | 19.4      | 12.166 µg/L  | 12.166 ppb  | 13:30:52 |
| 3 | B 249.677†         | 397.4     | -485.3    | 2.3836 µg/L  | 2.3836 ppb  | 13:30:32 |
| 3 | Ba 233.527†        | 23188.0   | 23554.9   | 210.09 µg/L  | 210.09 ppb  | 13:30:32 |
| 3 | Be 313.107†        | -1258.5   | 2390.6    | -4.4846 µg/L | -4.4846 ppb | 13:30:32 |
| 3 | Cd 226.502†        | 59.1      | 239.4     | 0.3498 µg/L  | 0.3498 ppb  | 13:30:52 |
| 3 | Co 228.616†        | 270.6     | 363.6     | 5.4908 µg/L  | 5.4908 ppb  | 13:30:52 |
| 3 | Cr 267.716†        | 966.8     | 843.1     | 10.033 µg/L  | 10.033 ppb  | 13:30:52 |
| 3 | Cu 324.752†        | 7239.4    | 1501.9    | 7.6016 µg/L  | 7.6016 ppb  | 13:30:32 |
| 3 | Mn 257.610†        | 160557.6  | 161279.0  | 282.39 µg/L  | 282.39 ppb  | 13:30:32 |
| 3 | Mo 202.031†        | -34.1     | -4.5      | 0.1530 µg/L  | 0.1530 ppb  | 13:30:52 |
| 3 | Ni 231.604†        | 768.7     | 970.6     | 15.431 µg/L  | 15.431 ppb  | 13:30:52 |
| 3 | P 214.914†         | 1362.2    | 1464.7    | 527.27 µg/L  | 527.27 ppb  | 13:30:52 |
| 3 | Pb 220.353†        | 157.5     | 84.7      | 8.6829 µg/L  | 8.6829 ppb  | 13:30:52 |
| 3 | S 181.975 Axial†   | 228.1     | 126.7     | 138.55 µg/L  | 138.55 ppb  | 13:30:52 |
| 3 | Sb 206.836†        | 45.1      | 1.1       | -1.1541 µg/L | -1.1541 ppb | 13:30:52 |
| 3 | Se 196.026†        | 0.7       | -7.3      | 1.97 µg/L    | 1.97 ppb    | 13:30:52 |
| 3 | SiO2†              | 57711.9   | 55006.1   | 6087.9 µg/L  | 6087.9 ppb  | 13:30:32 |
| 3 | Si 251.611†        | 167271.5  | 167596.9  | 2843.2 µg/L  | 2843.2 ppb  | 13:30:32 |
| 3 | Sn 189.927†        | -33.6     | -6.3      | -0.7874 µg/L | -0.7874 ppb | 13:30:52 |
| 3 | Ti 334.940†        | 135961.7  | 137590.6  | 195.76 µg/L  | 195.76 ppb  | 13:30:32 |
| 3 | Tl 190.801†        | -94.3     | -8.8      | -2.4800 µg/L | -2.4800 ppb | 13:30:52 |
| 3 | U 367.007†         | 354.7     | 640.8     | 7.8337 µg/L  | 7.8337 ppb  | 13:30:32 |
| 3 | V 292.402†         | 4101.3    | 4020.2    | 18.912 µg/L  | 18.912 ppb  | 13:30:32 |
| 3 | Zn 213.857†        | 7634.8    | 7629.8    | 41.544 µg/L  | 41.544 ppb  | 13:30:52 |

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Mean Data: 409254017|1611117|10

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Conc. Units | Sample Std.Dev. | RSD     |
|--------------------|--------------------------|-------------|--------------|----------|-------------|-----------------|---------|
| Sc 361.383         | 1309789.8                | 98.391      | %            | 1.4171   |             |                 | 1.44%   |
| Sc RADIAL          | 71991.7                  | 99.9        | %            | 0.59     |             |                 | 0.59%   |
| Y 371.029          | 713436.2                 | 98.480      | %            | 1.3525   |             |                 | 1.37%   |
| Ag 328.068†        | 18.6                     | 0.6431      | µg/L         | 0.43038  | 0.6431 ppb  | 0.43038         | 66.92%  |
| Al 396.153Radial†  | 14910.6                  | 5446.6      | µg/L         | 57.70    | 5446.6 ppb  | 57.70           | 1.06%   |
| As 188.979†        | 14.6                     | 9.6089      | µg/L         | 2.28824  | 9.6089 ppb  | 2.28824         | 23.81%  |
| B 249.677†         | -465.3                   | 2.6621      | µg/L         | 0.46970  | 2.6621 ppb  | 0.46970         | 17.64%  |
| Ba 233.527†        | 23459.4                  | 209.24      | µg/L         | 1.433    | 209.24 ppb  | 1.433           | 0.68%   |
| Be 313.107†        | 2409.7                   | -4.4596     | µg/L         | 0.03661  | -4.4596 ppb | 0.03661         | 0.82%   |
| Ca 317.933Radial†  | 165331.4                 | 18405       | µg/L         | 123.8    | 18405 ppb   | 123.8           | 0.67%   |
| Cd 226.502†        | 235.3                    | 0.3201      | µg/L         | 0.02933  | 0.3201 ppb  | 0.02933         | 9.16%   |
| Co 228.616†        | 385.2                    | 5.8108      | µg/L         | 0.33243  | 5.8108 ppb  | 0.33243         | 5.72%   |
| Cr 267.716†        | 853.5                    | 10.158      | µg/L         | 0.1187   | 10.158 ppb  | 0.1187          | 1.17%   |
| Cu 324.752†        | 1508.2                   | 7.6265      | µg/L         | 0.57971  | 7.6265 ppb  | 0.57971         | 7.60%   |
| Fe 238.204 Radial† | 134804.0                 | 12752       | µg/L         | 78.9     | 12752 ppb   | 78.9            | 0.62%   |
| K 766.490 Radial†  | 2200.2                   | 1159.4      | µg/L         | 23.57    | 1159.4 ppb  | 23.57           | 2.03%   |
| Mg 279.077 IEC†    | 13648.6                  | 7362.6      | µg/L         | 49.90    | 7362.6 ppb  | 49.90           | 0.68%   |
| Mn 257.610†        | 160704.2                 | 281.39      | µg/L         | 2.483    | 281.39 ppb  | 2.483           | 0.88%   |
| Mo 202.031†        | -7.1                     | 0.0203      | µg/L         | 0.26951  | 0.0203 ppb  | 0.26951         | >999.9% |
| Na 589.592 Radial† | 1312.3                   | 218.83      | µg/L         | 11.313   | 218.83 ppb  | 11.313          | 5.17%   |

|                  |          |              |         |             |         |         |
|------------------|----------|--------------|---------|-------------|---------|---------|
| Ni 231.604†      | 957.2    | 15.218 µg/L  | 0.3788  | 15.218 ppb  | 0.3788  | 2.49%   |
| P 214.914†       | 1480.3   | 532.90 µg/L  | 10.715  | 532.90 ppb  | 10.715  | 2.01%   |
| Pb 220.353†      | 103.8    | 10.619 µg/L  | 1.8089  | 10.619 ppb  | 1.8089  | 17.03%  |
| S 181.975 Axial† | 129.9    | 142.17 µg/L  | 4.221   | 142.17 ppb  | 4.221   | 2.97%   |
| Sb 206.836†      | 4.5      | -0.4846 µg/L | 0.58056 | -0.4846 ppb | 0.58056 | 119.79% |
| Se 196.026†      | -8.4     | 1.39 µg/L    | 2.907   | 1.39 ppb    | 2.907   | 209.70% |
| SiO2†            | 54900.5  | 6076.2 µg/L  | 46.46   | 6076.2 ppb  | 46.46   | 0.76%   |
| Si 251.611†      | 167038.9 | 2833.8 µg/L  | 25.14   | 2833.8 ppb  | 25.14   | 0.89%   |
| Sn 189.927†      | -4.6     | -0.5717 µg/L | 0.75397 | -0.5717 ppb | 0.75397 | 131.89% |
| Sr 421.552†      | 18169.4  | 52.080 µg/L  | 0.6391  | 52.080 ppb  | 0.6391  | 1.23%   |
| Ti 334.940†      | 136737.0 | 194.55 µg/L  | 1.994   | 194.55 ppb  | 1.994   | 1.02%   |
| Tl 190.801†      | -12.0    | -3.4737 µg/L | 0.93106 | -3.4737 ppb | 0.93106 | 26.80%  |
| U 367.007†       | 617.1    | 4.9820 µg/L  | 3.25402 | 4.9820 ppb  | 3.25402 | 65.31%  |
| V 292.402†       | 3994.4   | 18.794 µg/L  | 0.5623  | 18.794 ppb  | 0.5623  | 2.99%   |
| Zn 213.857†      | 7694.7   | 41.914 µg/L  | 0.6179  | 41.914 ppb  | 0.6179  | 1.47%   |

Sequence No.: 10

Sample ID: 409254018|1611117|10

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 356

Date Collected: 11/11/2016 13:31:00

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254018|1611117|10

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 70372.0          | 70372.0                | 97.7 %                |                       | 13:31:25         |
| 1     | Al 396.153Radial†  | 20494.4          | 20877.9                | 7624.6 µg/L           | 7624.6 ppb            | 13:31:25         |
| 1     | Ca 317.933Radial†  | 136362.1         | 139246.9               | 15501 µg/L            | 15501 ppb             | 13:31:25         |
| 1     | Fe 238.204 Radial† | 111674.4         | 114836.0               | 10863 µg/L            | 10863 ppb             | 13:31:25         |
| 1     | K 766.490 Radial†  | 3849.4           | 2870.3                 | 1511.1 µg/L           | 1511.1 ppb            | 13:31:25         |
| 1     | Mg 279.077 IEC†    | 11253.6          | 11493.2                | 6199.9 µg/L           | 6199.9 ppb            | 13:31:25         |
| 1     | Na 589.592 Radial† | 1006.5           | 990.6                  | 165.18 µg/L           | 165.18 ppb            | 13:31:25         |
| 1     | Sr 421.552†        | 18647.3          | 19547.7                | 56.179 µg/L           | 56.179 ppb            | 13:31:25         |
| 1     | Sc 361.383         | 1322621.4        | 1322621.4              | 99.355 %              |                       | 13:31:32         |
| 1     | Y 371.029          | 721159.7         | 721159.7               | 99.546 %              |                       | 13:31:32         |
| 1     | Ag 328.068†        | -1877.1          | 1.5                    | 0.4784 µg/L           | 0.4784 ppb            | 13:31:32         |
| 1     | As 188.979†        | -23.3            | 6.5                    | 4.9802 µg/L           | 4.9802 ppb            | 13:31:52         |
| 1     | B 249.677†         | 721.5            | -158.7                 | 5.6863 µg/L           | 5.6863 ppb            | 13:31:32         |
| 1     | Ba 233.527†        | 20617.0          | 20991.6                | 187.23 µg/L           | 187.23 ppb            | 13:31:32         |
| 1     | Be 313.107†        | -745.1           | 2906.0                 | -3.7888 µg/L          | -3.7888 ppb           | 13:31:32         |
| 1     | Cd 226.502†        | 25.0             | 205.2                  | 0.3087 µg/L           | 0.3087 ppb            | 13:31:52         |
| 1     | Co 228.616†        | 426.9            | 521.2                  | 7.8287 µg/L           | 7.8287 ppb            | 13:31:52         |
| 1     | Cr 267.716†        | 1143.7           | 1022.1                 | 12.128 µg/L           | 12.128 ppb            | 13:31:52         |
| 1     | Cu 324.752†        | 8868.1           | 3148.8                 | 14.718 µg/L           | 14.718 ppb            | 13:31:32         |
| 1     | Mn 257.610†        | 197549.2         | 198679.2               | 347.98 µg/L           | 347.98 ppb            | 13:31:32         |
| 1     | Mo 202.031†        | -34.7            | -5.2                   | 0.0600 µg/L           | 0.0600 ppb            | 13:31:52         |
| 1     | Ni 231.604†        | 1106.6           | 1311.5                 | 20.850 µg/L           | 20.850 ppb            | 13:31:52         |
| 1     | P 214.914†         | 1052.7           | 1154.6                 | 415.61 µg/L           | 415.61 ppb            | 13:31:52         |
| 1     | Pb 220.353†        | 191.3            | 118.9                  | 12.282 µg/L           | 12.282 ppb            | 13:31:52         |
| 1     | S 181.975 Axial†   | 368.1            | 267.8                  | 296.48 µg/L           | 296.48 ppb            | 13:31:52         |
| 1     | Sb 206.836†        | 51.3             | 7.3                    | 0.2718 µg/L           | 0.2718 ppb            | 13:31:52         |
| 1     | Se 196.026†        | -4.6             | -12.6                  | -1.76 µg/L            | -1.76 ppb             | 13:31:52         |
| 1     | SiO2†              | 71260.9          | 68703.5                | 7603.9 µg/L           | 7603.9 ppb            | 13:31:32         |
| 1     | Si 251.611†        | 208309.8         | 209077.1               | 3546.3 µg/L           | 3546.3 ppb            | 13:31:32         |
| 1     | Sn 189.927†        | -27.7            | -0.4                   | -0.0212 µg/L          | -0.0212 ppb           | 13:31:52         |
| 1     | Ti 334.940†        | 101745.4         | 103294.9               | 146.98 µg/L           | 146.98 ppb            | 13:31:32         |
| 1     | Tl 190.801†        | -91.8            | -6.4                   | -1.7760 µg/L          | -1.7760 ppb           | 13:31:52         |
| 1     | U 367.007†         | 201.3            | 486.9                  | -0.5156 µg/L          | -0.5156 ppb           | 13:31:32         |
| 1     | V 292.402†         | 5291.7           | 5222.7                 | 24.170 µg/L           | 24.170 ppb            | 13:31:32         |
| 1     | Zn 213.857†        | 9378.6           | 9392.9                 | 51.802 µg/L           | 51.802 ppb            | 13:31:52         |
| 2     | Sc RADIAL          | 70786.9          | 70786.9                | 98.3 %                |                       | 13:31:27         |
| 2     | Al 396.153Radial†  | 20585.4          | 20847.5                | 7613.5 µg/L           | 7613.5 ppb            | 13:31:27         |
| 2     | Ca 317.933Radial†  | 137178.6         | 139259.6               | 15502 µg/L            | 15502 ppb             | 13:31:27         |
| 2     | Fe 238.204 Radial† | 112305.3         | 114808.0               | 10860 µg/L            | 10860 ppb             | 13:31:27         |
| 2     | K 766.490 Radial†  | 3893.2           | 2891.8                 | 1522.4 µg/L           | 1522.4 ppb            | 13:31:27         |
| 2     | Mg 279.077 IEC†    | 11475.8          | 11651.8                | 6285.4 µg/L           | 6285.4 ppb            | 13:31:27         |
| 2     | Na 589.592 Radial† | 1266.1           | 1248.7                 | 208.23 µg/L           | 208.23 ppb            | 13:31:27         |
| 2     | Sr 421.552†        | 18666.1          | 19455.0                | 55.910 µg/L           | 55.910 ppb            | 13:31:27         |
| 2     | Sc 361.383         | 1310062.4        | 1310062.4              | 98.412 %              |                       | 13:31:55         |
| 2     | Y 371.029          | 713459.4         | 713459.4               | 98.483 %              |                       | 13:31:55         |
| 2     | Ag 328.068†        | -2072.7          | -215.3                 | -0.6451 µg/L          | -0.6451 ppb           | 13:31:55         |
| 2     | As 188.979†        | -35.5            | -6.1                   | -1.8770 µg/L          | -1.8770 ppb           | 13:32:15         |
| 2     | B 249.677†         | 591.1            | -284.3                 | 3.8785 µg/L           | 3.8785 ppb            | 13:31:55         |
| 2     | Ba 233.527†        | 20588.9          | 21161.9                | 188.75 µg/L           | 188.75 ppb            | 13:31:55         |
| 2     | Be 313.107†        | -702.7           | 2941.9                 | -3.8136 µg/L          | -3.8136 ppb           | 13:31:55         |
| 2     | Cd 226.502†        | 43.6             | 224.3                  | 0.4536 µg/L           | 0.4536 ppb            | 13:32:15         |
| 2     | Co 228.616†        | 451.5            | 550.3                  | 8.2636 µg/L           | 8.2636 ppb            | 13:32:15         |
| 2     | Cr 267.716†        | 1160.6           | 1050.3                 | 12.452 µg/L           | 12.452 ppb            | 13:32:15         |
| 2     | Cu 324.752†        | 8923.0           | 3290.1                 | 15.348 µg/L           | 15.348 ppb            | 13:31:55         |
| 2     | Mn 257.610†        | 195717.1         | 198723.7               | 348.06 µg/L           | 348.06 ppb            | 13:31:55         |
| 2     | Mo 202.031†        | -35.6            | -6.4                   | -0.0032 µg/L          | -0.0032 ppb           | 13:32:15         |
| 2     | Ni 231.604†        | 1090.8           | 1306.1                 | 20.765 µg/L           | 20.765 ppb            | 13:32:15         |
| 2     | P 214.914†         | 1064.5           | 1176.7                 | 423.57 µg/L           | 423.57 ppb            | 13:32:15         |
| 2     | Pb 220.353†        | 205.5            | 135.1                  | 13.918 µg/L           | 13.918 ppb            | 13:32:15         |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 360.3     | 263.5     | 291.61 µg/L  | 291.61 ppb  | 13:32:15 |
| 2 | Sb 206.836†        | 42.1      | -1.5      | -1.4456 µg/L | -1.4456 ppb | 13:32:15 |
| 2 | Se 196.026†        | -5.9      | -14.0     | -2.48 µg/L   | -2.48 ppb   | 13:32:15 |
| 2 | SiO2†              | 70735.5   | 68857.3   | 7620.9 µg/L  | 7620.9 ppb  | 13:31:55 |
| 2 | Si 251.611†        | 206891.8  | 209646.2  | 3555.9 µg/L  | 3555.9 ppb  | 13:31:55 |
| 2 | Sn 189.927†        | -28.5     | -1.5      | -0.1707 µg/L | -0.1707 ppb | 13:32:15 |
| 2 | Ti 334.940†        | 101080.7  | 103601.2  | 147.42 µg/L  | 147.42 ppb  | 13:31:55 |
| 2 | Tl 190.801†        | -94.1     | -9.6      | -2.7697 µg/L | -2.7697 ppb | 13:32:15 |
| 2 | U 367.007†         | 260.9     | 549.4     | 7.1892 µg/L  | 7.1892 ppb  | 13:31:55 |
| 2 | V 292.402†         | 4993.6    | 4970.9    | 23.044 µg/L  | 23.044 ppb  | 13:31:55 |
| 2 | Zn 213.857†        | 9419.3    | 9524.8    | 52.546 µg/L  | 52.546 ppb  | 13:32:15 |
| 3 | Sc RADIAL          | 71478.6   | 71478.6   | 99.2 %       |             | 13:31:29 |
| 3 | Al 396.153Radial†  | 20709.5   | 20769.9   | 7585.1 µg/L  | 7585.1 ppb  | 13:31:29 |
| 3 | Ca 317.933Radial†  | 138413.1  | 139152.9  | 15491 µg/L   | 15491 ppb   | 13:31:29 |
| 3 | Fe 238.204 Radial† | 113114.9  | 114518.1  | 10833 µg/L   | 10833 ppb   | 13:31:29 |
| 3 | K 766.490 Radial†  | 3752.5    | 2711.7    | 1427.7 µg/L  | 1427.7 ppb  | 13:31:29 |
| 3 | Mg 279.077 IEC†    | 11472.0   | 11535.0   | 6222.5 µg/L  | 6222.5 ppb  | 13:31:29 |
| 3 | Na 589.592 Radial† | 1126.1    | 1095.1    | 182.61 µg/L  | 182.61 ppb  | 13:31:29 |
| 3 | Sr 421.552†        | 18796.1   | 19402.2   | 55.757 µg/L  | 55.757 ppb  | 13:31:29 |
| 3 | Sc 361.383         | 1326176.0 | 1326176.0 | 99.622 %     |             | 13:32:17 |
| 3 | Y 371.029          | 721701.3  | 721701.3  | 99.621 %     |             | 13:32:17 |
| 3 | Ag 328.068†        | -1822.7   | 61.2      | 0.7810 µg/L  | 0.7810 ppb  | 13:32:17 |
| 3 | As 188.979†        | -24.0     | 5.9       | 4.6377 µg/L  | 4.6377 ppb  | 13:32:37 |
| 3 | B 249.677†         | 720.4     | -161.7    | 5.6210 µg/L  | 5.6210 ppb  | 13:32:17 |
| 3 | Ba 233.527†        | 20711.0   | 21030.3   | 187.57 µg/L  | 187.57 ppb  | 13:32:17 |
| 3 | Be 313.107†        | -694.8    | 2958.5    | -3.7807 µg/L | -3.7807 ppb | 13:32:17 |
| 3 | Cd 226.502†        | 59.4      | 239.6     | 0.5727 µg/L  | 0.5727 ppb  | 13:32:37 |
| 3 | Co 228.616†        | 445.9     | 539.1     | 8.0958 µg/L  | 8.0958 ppb  | 13:32:37 |
| 3 | Cr 267.716†        | 1181.9    | 1057.4    | 12.536 µg/L  | 12.536 ppb  | 13:32:37 |
| 3 | Cu 324.752†        | 8864.5    | 3121.2    | 14.599 µg/L  | 14.599 ppb  | 13:32:17 |
| 3 | Mn 257.610†        | 197751.9  | 198349.7  | 347.41 µg/L  | 347.41 ppb  | 13:32:17 |
| 3 | Mo 202.031†        | -27.9     | 1.8       | 0.4211 µg/L  | 0.4211 ppb  | 13:32:37 |
| 3 | Ni 231.604†        | 1123.6    | 1325.6    | 21.074 µg/L  | 21.074 ppb  | 13:32:37 |
| 3 | P 214.914†         | 1069.3    | 1168.5    | 420.60 µg/L  | 420.60 ppb  | 13:32:37 |
| 3 | Pb 220.353†        | 197.3     | 124.4     | 12.831 µg/L  | 12.831 ppb  | 13:32:37 |
| 3 | S 181.975 Axial†   | 370.6     | 269.3     | 298.11 µg/L  | 298.11 ppb  | 13:32:37 |
| 3 | Sb 206.836†        | 49.4      | 5.2       | -0.1347 µg/L | -0.1347 ppb | 13:32:37 |
| 3 | Se 196.026†        | 2.5       | -5.5      | 1.96 µg/L    | 1.96 ppb    | 13:32:37 |
| 3 | SiO2†              | 71618.1   | 68869.9   | 7622.3 µg/L  | 7622.3 ppb  | 13:32:17 |
| 3 | Si 251.611†        | 209327.4  | 209536.7  | 3554.1 µg/L  | 3554.1 ppb  | 13:32:17 |
| 3 | Sn 189.927†        | -34.3     | -6.9      | -0.8632 µg/L | -0.8632 ppb | 13:32:37 |
| 3 | Ti 334.940†        | 102212.0  | 103488.8  | 147.26 µg/L  | 147.26 ppb  | 13:32:17 |
| 3 | Tl 190.801†        | -84.8     | 0.9       | 0.4635 µg/L  | 0.4635 ppb  | 13:32:37 |
| 3 | U 367.007†         | 252.8     | 538.0     | 5.9390 µg/L  | 5.9390 ppb  | 13:32:17 |
| 3 | V 292.402†         | 5228.8    | 5145.3    | 23.824 µg/L  | 23.824 ppb  | 13:32:17 |
| 3 | Zn 213.857†        | 9393.9    | 9383.0    | 51.748 µg/L  | 51.748 ppb  | 13:32:37 |

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Mean Data: 409254018|1611117|10

| Analyte            | Mean Corrected Intensity | Conc. Units  | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|--------------|--------------|----------|--------------------|----------|---------|
| Sc 361.383         | 1319619.9                | 99.130 %     | %            | 0.6359   |                    |          | 0.64%   |
| Sc RADIAL          | 70879.2                  | 98.4 %       | %            | 0.78     |                    |          | 0.79%   |
| Y 371.029          | 718773.5                 | 99.217 %     | %            | 0.6364   |                    |          | 0.64%   |
| Ag 328.068†        | -50.9                    | 0.2048 µg/L  | µg/L         | 0.75139  | 0.2048 ppb         | 0.75139  | 366.93% |
| Al 396.153Radial†  | 20831.8                  | 7607.7 µg/L  | µg/L         | 20.33    | 7607.7 ppb         | 20.33    | 0.27%   |
| As 188.979†        | 2.1                      | 2.5803 µg/L  | µg/L         | 3.86393  | 2.5803 ppb         | 3.86393  | 149.75% |
| B 249.677†         | -201.6                   | 5.0619 µg/L  | µg/L         | 1.02541  | 5.0619 ppb         | 1.02541  | 20.26%  |
| Ba 233.527†        | 21061.3                  | 187.85 µg/L  | µg/L         | 0.796    | 187.85 ppb         | 0.796    | 0.42%   |
| Be 313.107†        | 2935.5                   | -3.7944 µg/L | µg/L         | 0.01714  | -3.7944 ppb        | 0.01714  | 0.45%   |
| Ca 317.933Radial†  | 139219.8                 | 15498 µg/L   | µg/L         | 6.5      | 15498 ppb          | 6.5      | 0.04%   |
| Cd 226.502†        | 223.1                    | 0.4450 µg/L  | µg/L         | 0.13221  | 0.4450 ppb         | 0.13221  | 29.71%  |
| Co 228.616†        | 536.9                    | 8.0627 µg/L  | µg/L         | 0.21934  | 8.0627 ppb         | 0.21934  | 2.72%   |
| Cr 267.716†        | 1043.3                   | 12.372 µg/L  | µg/L         | 0.2158   | 12.372 ppb         | 0.2158   | 1.74%   |
| Cu 324.752†        | 3186.7                   | 14.888 µg/L  | µg/L         | 0.4026   | 14.888 ppb         | 0.4026   | 2.70%   |
| Fe 238.204 Radial† | 114720.7                 | 10852 µg/L   | µg/L         | 16.7     | 10852 ppb          | 16.7     | 0.15%   |
| K 766.490 Radial†  | 2824.6                   | 1487.0 µg/L  | µg/L         | 51.71    | 1487.0 ppb         | 51.71    | 3.48%   |
| Mg 279.077 IEC†    | 11560.0                  | 6236.0 µg/L  | µg/L         | 44.32    | 6236.0 ppb         | 44.32    | 0.71%   |
| Mn 257.610†        | 198584.2                 | 347.82 µg/L  | µg/L         | 0.357    | 347.82 ppb         | 0.357    | 0.10%   |
| Mo 202.031†        | -3.3                     | 0.1593 µg/L  | µg/L         | 0.22894  | 0.1593 ppb         | 0.22894  | 143.71% |
| Na 589.592 Radial† | 1111.5                   | 185.34 µg/L  | µg/L         | 21.653   | 185.34 ppb         | 21.653   | 11.68%  |

|                  |          |              |         |             |         |         |
|------------------|----------|--------------|---------|-------------|---------|---------|
| Ni 231.604†      | 1314.4   | 20.897 µg/L  | 0.1595  | 20.897 ppb  | 0.1595  | 0.76%   |
| P 214.914†       | 1166.6   | 419.93 µg/L  | 4.021   | 419.93 ppb  | 4.021   | 0.96%   |
| Pb 220.353†      | 126.1    | 13.010 µg/L  | 0.8325  | 13.010 ppb  | 0.8325  | 6.40%   |
| S 181.975 Axial† | 266.9    | 295.40 µg/L  | 3.382   | 295.40 ppb  | 3.382   | 1.14%   |
| Sb 206.836†      | 3.7      | -0.4362 µg/L | 0.89748 | -0.4362 ppb | 0.89748 | 205.76% |
| Se 196.026†      | -10.7    | -0.761 µg/L  | 2.3811  | -0.761 ppb  | 2.3811  | 312.70% |
| SiO2†            | 68810.2  | 7615.7 µg/L  | 10.25   | 7615.7 ppb  | 10.25   | 0.13%   |
| Si 251.611†      | 209420.0 | 3552.1 µg/L  | 5.12    | 3552.1 ppb  | 5.12    | 0.14%   |
| Sn 189.927†      | -2.9     | -0.3517 µg/L | 0.44926 | -0.3517 ppb | 0.44926 | 127.74% |
| Sr 421.552†      | 19468.3  | 55.948 µg/L  | 0.2136  | 55.948 ppb  | 0.2136  | 0.38%   |
| Ti 334.940†      | 103461.7 | 147.22 µg/L  | 0.218   | 147.22 ppb  | 0.218   | 0.15%   |
| Tl 190.801†      | -5.0     | -1.3607 µg/L | 1.65611 | -1.3607 ppb | 1.65611 | 121.71% |
| U 367.007†       | 524.7    | 4.2042 µg/L  | 4.13501 | 4.2042 ppb  | 4.13501 | 98.35%  |
| V 292.402†       | 5113.0   | 23.679 µg/L  | 0.5764  | 23.679 ppb  | 0.5764  | 2.43%   |
| Zn 213.857†      | 9433.6   | 52.032 µg/L  | 0.4458  | 52.032 ppb  | 0.4458  | 0.86%   |

Sequence No.: 11

Sample ID: 409254019|1611117|10

Analyst: TXT1

Initial Sample Wt:

Dilution:

Autosampler Location: 357

Date Collected: 11/11/2016 13:32:45

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254019|1611117|10

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 72339.7          | 72339.7                | 100 %                 |                       | 13:33:10         |
| 1     | Al 396.153Radial†  | 12895.5          | 12740.0                | 4653.7 µg/L           | 4653.7 ppb            | 13:33:10         |
| 1     | Ca 317.933Radial†  | 141804.5         | 140869.6               | 15682 µg/L            | 15682 ppb             | 13:33:10         |
| 1     | Fe 238.204 Radial† | 109186.1         | 109248.6               | 10334 µg/L            | 10334 ppb             | 13:33:10         |
| 1     | K 766.490 Radial†  | 2984.3           | 1901.6                 | 1001.8 µg/L           | 1001.8 ppb            | 13:33:10         |
| 1     | Mg 279.077 IEC†    | 11590.3          | 11515.1                | 6211.6 µg/L           | 6211.6 ppb            | 13:33:10         |
| 1     | Na 589.592 Radial† | 1187.4           | 1142.7                 | 190.56 µg/L           | 190.56 ppb            | 13:33:10         |
| 1     | Sr 421.552†        | 17075.0          | 17462.8                | 50.123 µg/L           | 50.123 ppb            | 13:33:10         |
| 1     | Sc 361.383         | 1317564.4        | 1317564.4              | 98.975 %              |                       | 13:33:17         |
| 1     | Y 371.029          | 718152.6         | 718152.6               | 99.131 %              |                       | 13:33:17         |
| 1     | Ag 328.068†        | -1945.2          | -74.5                  | 0.0499 µg/L           | 0.0499 ppb            | 13:33:17         |
| 1     | As 188.979†        | -19.9            | 9.8                    | 6.6829 µg/L           | 6.6829 ppb            | 13:33:37         |
| 1     | B 249.677†         | 573.3            | -305.6                 | 3.1858 µg/L           | 3.1858 ppb            | 13:33:17         |
| 1     | Ba 233.527†        | 19973.0          | 20420.6                | 182.13 µg/L           | 182.13 ppb            | 13:33:17         |
| 1     | Be 313.107†        | -1553.3          | 2086.5                 | -3.8847 µg/L          | -3.8847 ppb           | 13:33:17         |
| 1     | Cd 226.502†        | 11.1             | 191.3                  | 0.2639 µg/L           | 0.2639 ppb            | 13:33:37         |
| 1     | Co 228.616†        | 228.7            | 322.6                  | 4.8797 µg/L           | 4.8797 ppb            | 13:33:37         |
| 1     | Cr 267.716†        | 839.8            | 719.5                  | 8.5534 µg/L           | 8.5534 ppb            | 13:33:37         |
| 1     | Cu 324.752†        | 7461.8           | 1762.1                 | 8.5701 µg/L           | 8.5701 ppb            | 13:33:17         |
| 1     | Mn 257.610†        | 120044.3         | 121135.1               | 212.08 µg/L           | 212.08 ppb            | 13:33:17         |
| 1     | Mo 202.031†        | -40.2            | -10.9                  | -0.2505 µg/L          | -0.2505 ppb           | 13:33:37         |
| 1     | Ni 231.604†        | 615.9            | 820.0                  | 13.037 µg/L           | 13.037 ppb            | 13:33:37         |
| 1     | P 214.914†         | 1095.4           | 1201.8                 | 432.64 µg/L           | 432.64 ppb            | 13:33:37         |
| 1     | Pb 220.353†        | 160.8            | 88.7                   | 9.0772 µg/L           | 9.0772 ppb            | 13:33:37         |
| 1     | S 181.975 Axial†   | 212.5            | 112.1                  | 122.74 µg/L           | 122.74 ppb            | 13:33:37         |
| 1     | Sb 206.836†        | 59.4             | 15.7                   | 1.9385 µg/L           | 1.9385 ppb            | 13:33:37         |
| 1     | Se 196.026†        | -3.5             | -11.5                  | -1.35 µg/L            | -1.35 ppb             | 13:33:37         |
| 1     | SiO2†              | 55094.1          | 52644.7                | 5826.6 µg/L           | 5826.6 ppb            | 13:33:17         |
| 1     | Si 251.611†        | 159098.8         | 160161.4               | 2716.8 µg/L           | 2716.8 ppb            | 13:33:17         |
| 1     | Sn 189.927†        | -32.0            | -4.8                   | -0.6051 µg/L          | -0.6051 ppb           | 13:33:37         |
| 1     | Ti 334.940†        | 124737.4         | 126918.0               | 180.56 µg/L           | 180.56 ppb            | 13:33:17         |
| 1     | Tl 190.801†        | -91.3            | -6.2                   | -1.7242 µg/L          | -1.7242 ppb           | 13:33:37         |
| 1     | U 367.007†         | 254.0            | 540.8                  | 8.9828 µg/L           | 8.9828 ppb            | 13:33:17         |
| 1     | V 292.402†         | 3499.0           | 3431.9                 | 16.106 µg/L           | 16.106 ppb            | 13:33:17         |
| 1     | Zn 213.857†        | 6636.3           | 6658.5                 | 36.351 µg/L           | 36.351 ppb            | 13:33:37         |
| 2     | Sc RADIAL          | 70839.2          | 70839.2                | 98.3 %                |                       | 13:33:12         |
| 2     | Al 396.153Radial†  | 12837.4          | 12952.9                | 4731.5 µg/L           | 4731.5 ppb            | 13:33:12         |
| 2     | Ca 317.933Radial†  | 139630.0         | 141649.5               | 15768 µg/L            | 15768 ppb             | 13:33:12         |
| 2     | Fe 238.204 Radial† | 107315.4         | 109649.4               | 10372 µg/L            | 10372 ppb             | 13:33:12         |
| 2     | K 766.490 Radial†  | 2905.2           | 1884.1                 | 992.64 µg/L           | 992.64 ppb            | 13:33:12         |
| 2     | Mg 279.077 IEC†    | 11332.7          | 11497.7                | 6202.2 µg/L           | 6202.2 ppb            | 13:33:12         |
| 2     | Na 589.592 Radial† | 1227.4           | 1208.4                 | 201.50 µg/L           | 201.50 ppb            | 13:33:12         |
| 2     | Sr 421.552†        | 16801.0          | 17544.3                | 50.357 µg/L           | 50.357 ppb            | 13:33:12         |
| 2     | Sc 361.383         | 1326539.4        | 1326539.4              | 99.650 %              |                       | 13:33:40         |
| 2     | Y 371.029          | 722621.4         | 722621.4               | 99.748 %              |                       | 13:33:40         |
| 2     | Ag 328.068†        | -1811.7          | 72.8                   | 0.8217 µg/L           | 0.8217 ppb            | 13:33:40         |
| 2     | As 188.979†        | -24.4            | 5.4                    | 4.3024 µg/L           | 4.3024 ppb            | 13:34:00         |
| 2     | B 249.677†         | 390.7            | -492.8                 | 0.5214 µg/L           | 0.5214 ppb            | 13:33:40         |
| 2     | Ba 233.527†        | 20198.1          | 20509.9                | 182.93 µg/L           | 182.93 ppb            | 13:33:40         |
| 2     | Be 313.107†        | -1509.0          | 2141.6                 | -3.8958 µg/L          | -3.8958 ppb           | 13:33:40         |
| 2     | Cd 226.502†        | 30.7             | 210.8                  | 0.4075 µg/L           | 0.4075 ppb            | 13:34:00         |
| 2     | Co 228.616†        | 241.7            | 334.1                  | 5.0502 µg/L           | 5.0502 ppb            | 13:34:00         |
| 2     | Cr 267.716†        | 872.2            | 746.3                  | 8.8857 µg/L           | 8.8857 ppb            | 13:34:00         |
| 2     | Cu 324.752†        | 7488.7           | 1738.1                 | 8.4523 µg/L           | 8.4523 ppb            | 13:33:40         |
| 2     | Mn 257.610†        | 121608.6         | 121884.3               | 213.39 µg/L           | 213.39 ppb            | 13:33:40         |
| 2     | Mo 202.031†        | -40.9            | -11.3                  | -0.2689 µg/L          | -0.2689 ppb           | 13:34:00         |
| 2     | Ni 231.604†        | 628.7            | 828.6                  | 13.174 µg/L           | 13.174 ppb            | 13:34:00         |
| 2     | P 214.914†         | 1093.7           | 1192.7                 | 429.34 µg/L           | 429.34 ppb            | 13:34:00         |
| 2     | Pb 220.353†        | 163.2            | 90.1                   | 9.2377 µg/L           | 9.2377 ppb            | 13:34:00         |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 220.1     | 118.1     | 129.53 µg/L  | 129.53 ppb  | 13:34:00 |
| 2 | Sb 206.836†        | 41.3      | -2.9      | -1.6681 µg/L | -1.6681 ppb | 13:34:00 |
| 2 | Se 196.026†        | -0.1      | -8.1      | 0.440 µg/L   | 0.440 ppb   | 13:34:00 |
| 2 | SiO2†              | 55776.9   | 52953.2   | 5860.7 µg/L  | 5860.7 ppb  | 13:33:40 |
| 2 | Si 251.611†        | 161108.0  | 161090.1  | 2732.6 µg/L  | 2732.6 ppb  | 13:33:40 |
| 2 | Sn 189.927†        | -20.7     | 6.8       | 0.8795 µg/L  | 0.8795 ppb  | 13:34:00 |
| 2 | Ti 334.940†        | 126630.2  | 127964.8  | 182.06 µg/L  | 182.06 ppb  | 13:33:40 |
| 2 | Tl 190.801†        | -103.4    | -17.8     | -5.2763 µg/L | -5.2763 ppb | 13:34:00 |
| 2 | U 367.007†         | 111.2     | 395.8     | -9.0761 µg/L | -9.0761 ppb | 13:33:40 |
| 2 | V 292.402†         | 3398.7    | 3307.4    | 15.545 µg/L  | 15.545 ppb  | 13:33:40 |
| 2 | Zn 213.857†        | 6651.8    | 6628.7    | 36.178 µg/L  | 36.178 ppb  | 13:34:00 |
| 3 | Sc RADIAL          | 69800.2   | 69800.2   | 96.9 %       |             | 13:33:14 |
| 3 | Al 396.153Radial†  | 12559.1   | 12860.1   | 4697.6 µg/L  | 4697.6 ppb  | 13:33:14 |
| 3 | Ca 317.933Radial†  | 138110.5  | 142194.9  | 15829 µg/L   | 15829 ppb   | 13:33:14 |
| 3 | Fe 238.204 Radial† | 106118.4  | 110038.5  | 10409 µg/L   | 10409 ppb   | 13:33:14 |
| 3 | K 766.490 Radial†  | 2894.6    | 1917.2    | 1010.0 µg/L  | 1010.0 ppb  | 13:33:14 |
| 3 | Mg 279.077 IEC†    | 11214.1   | 11546.8   | 6228.7 µg/L  | 6228.7 ppb  | 13:33:14 |
| 3 | Na 589.592 Radial† | 1236.1    | 1235.9    | 206.10 µg/L  | 206.10 ppb  | 13:33:14 |
| 3 | Sr 421.552†        | 16628.1   | 17620.2   | 50.575 µg/L  | 50.575 ppb  | 13:33:14 |
| 3 | Sc 361.383         | 1329251.7 | 1329251.7 | 99.853 %     |             | 13:34:02 |
| 3 | Y 371.029          | 723626.8  | 723626.8  | 99.887 %     |             | 13:34:02 |
| 3 | Ag 328.068†        | -1860.4   | 27.7      | 0.5931 µg/L  | 0.5931 ppb  | 13:34:02 |
| 3 | As 188.979†        | -21.9     | 8.0       | 5.6822 µg/L  | 5.6822 ppb  | 13:34:22 |
| 3 | B 249.677†         | 566.9     | -317.2    | 3.0742 µg/L  | 3.0742 ppb  | 13:34:02 |
| 3 | Ba 233.527†        | 20245.4   | 20515.9   | 182.98 µg/L  | 182.98 ppb  | 13:34:02 |
| 3 | Be 313.107†        | -1587.3   | 2066.3    | -3.9193 µg/L | -3.9193 ppb | 13:34:02 |
| 3 | Cd 226.502†        | 37.5      | 217.6     | 0.4542 µg/L  | 0.4542 ppb  | 13:34:22 |
| 3 | Co 228.616†        | 238.7     | 330.5     | 4.9970 µg/L  | 4.9970 ppb  | 13:34:22 |
| 3 | Cr 267.716†        | 841.8     | 714.0     | 8.5109 µg/L  | 8.5109 ppb  | 13:34:22 |
| 3 | Cu 324.752†        | 7539.7    | 1773.9    | 8.6091 µg/L  | 8.6091 ppb  | 13:34:02 |
| 3 | Mn 257.610†        | 121422.9  | 121449.3  | 212.63 µg/L  | 212.63 ppb  | 13:34:02 |
| 3 | Mo 202.031†        | -37.5     | -7.8      | -0.0879 µg/L | -0.0879 ppb | 13:34:22 |
| 3 | Ni 231.604†        | 655.2     | 853.9     | 13.576 µg/L  | 13.576 ppb  | 13:34:22 |
| 3 | P 214.914†         | 1114.4    | 1211.1    | 435.98 µg/L  | 435.98 ppb  | 13:34:22 |
| 3 | Pb 220.353†        | 159.0     | 85.6      | 8.7840 µg/L  | 8.7840 ppb  | 13:34:22 |
| 3 | S 181.975 Axial†   | 220.2     | 117.8     | 129.18 µg/L  | 129.18 ppb  | 13:34:22 |
| 3 | Sb 206.836†        | 49.3      | 5.1       | -0.1222 µg/L | -0.1222 ppb | 13:34:22 |
| 3 | Se 196.026†        | 5.4       | -2.6      | 3.32 µg/L    | 3.32 ppb    | 13:34:22 |
| 3 | SiO2†              | 55731.5   | 52793.6   | 5843.0 µg/L  | 5843.0 ppb  | 13:34:02 |
| 3 | Si 251.611†        | 160706.4  | 160358.0  | 2720.2 µg/L  | 2720.2 ppb  | 13:34:02 |
| 3 | Sn 189.927†        | -35.0     | -7.6      | -0.9569 µg/L | -0.9569 ppb | 13:34:22 |
| 3 | Ti 334.940†        | 126084.6  | 127159.1  | 180.92 µg/L  | 180.92 ppb  | 13:34:02 |
| 3 | Tl 190.801†        | -94.4     | -8.5      | -2.4239 µg/L | -2.4239 ppb | 13:34:22 |
| 3 | U 367.007†         | 74.1      | 358.4     | -13.882 µg/L | -13.882 ppb | 13:34:02 |
| 3 | V 292.402†         | 3550.9    | 3452.8    | 16.197 µg/L  | 16.197 ppb  | 13:34:02 |
| 3 | Zn 213.857†        | 6656.3    | 6619.5    | 36.121 µg/L  | 36.121 ppb  | 13:34:22 |

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Mean Data: 409254019|1611117|10

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--------------------|--------------------------|-------------|--------------|----------|--------------------|----------|--------|
| Sc 361.383         | 1324451.8                | 99.493      | %            | 0.4595   |                    |          | 0.46%  |
| Sc RADIAL          | 70993.0                  | 98.5        | %            | 1.77     |                    |          | 1.80%  |
| Y 371.029          | 721466.9                 | 99.589      | %            | 0.4022   |                    |          | 0.40%  |
| Ag 328.068†        | 8.7                      | 0.4882      | µg/L         | 0.39648  | 0.4882 ppb         | 0.39648  | 81.21% |
| Al 396.153Radial†  | 12851.0                  | 4694.2      | µg/L         | 38.98    | 4694.2 ppb         | 38.98    | 0.83%  |
| As 188.979†        | 7.7                      | 5.5558      | µg/L         | 1.19527  | 5.5558 ppb         | 1.19527  | 21.51% |
| B 249.677†         | -371.9                   | 2.2605      | µg/L         | 1.50709  | 2.2605 ppb         | 1.50709  | 66.67% |
| Ba 233.527†        | 20482.1                  | 182.68      | µg/L         | 0.476    | 182.68 ppb         | 0.476    | 0.26%  |
| Be 313.107†        | 109645.5                 | -3.8999     | µg/L         | 0.01763  | -3.8999 ppb        | 0.01763  | 0.45%  |
| Ca 317.933Radial†  | 141571.4                 | 15760       | µg/L         | 74.1     | 15760 ppb          | 74.1     | 0.47%  |
| Cd 226.502†        | 206.6                    | 0.3752      | µg/L         | 0.09917  | 0.3752 ppb         | 0.09917  | 26.43% |
| Co 228.616†        | 329.1                    | 4.9756      | µg/L         | 0.08720  | 4.9756 ppb         | 0.08720  | 1.75%  |
| Cr 267.716†        | 726.6                    | 8.6500      | µg/L         | 0.20518  | 8.6500 ppb         | 0.20518  | 2.37%  |
| Cu 324.752†        | 1758.0                   | 8.5438      | µg/L         | 0.08162  | 8.5438 ppb         | 0.08162  | 0.96%  |
| Fe 238.204 Radial† | 109645.5                 | 10372       | µg/L         | 37.4     | 10372 ppb          | 37.4     | 0.36%  |
| K 766.490 Radial†  | 1901.0                   | 1001.5      | µg/L         | 8.70     | 1001.5 ppb         | 8.70     | 0.87%  |
| Mg 279.077 IEC†    | 11519.9                  | 6214.2      | µg/L         | 13.45    | 6214.2 ppb         | 13.45    | 0.22%  |
| Mn 257.610†        | 121489.6                 | 212.70      | µg/L         | 0.660    | 212.70 ppb         | 0.660    | 0.31%  |
| Mo 202.031†        | -10.0                    | -0.2025     | µg/L         | 0.09961  | -0.2025 ppb        | 0.09961  | 49.20% |
| Na 589.592 Radial† | 1195.7                   | 199.38      | µg/L         | 7.984    | 199.38 ppb         | 7.984    | 4.00%  |



|                  |          |              |          |             |          |         |
|------------------|----------|--------------|----------|-------------|----------|---------|
| Ni 231.604†      | 834.2    | 13.262 µg/L  | 0.2800   | 13.262 ppb  | 0.2800   | 2.11%   |
| P 214.914†       | 1201.9   | 432.65 µg/L  | 3.321    | 432.65 ppb  | 3.321    | 0.77%   |
| Pb 220.353†      | 88.1     | 9.0330 µg/L  | 0.23005  | 9.0330 ppb  | 0.23005  | 2.55%   |
| S 181.975 Axial† | 116.0    | 127.15 µg/L  | 3.822    | 127.15 ppb  | 3.822    | 3.01%   |
| Sb 206.836†      | 6.0      | 0.0494 µg/L  | 1.80941  | 0.0494 ppb  | 1.80941  | >999.9% |
| Se 196.026†      | -7.4     | 0.801 µg/L   | 2.3568   | 0.801 ppb   | 2.3568   | 294.33% |
| SiO2†            | 52797.2  | 5843.4 µg/L  | 17.08    | 5843.4 ppb  | 17.08    | 0.29%   |
| Si 251.611†      | 160536.5 | 2723.2 µg/L  | 8.30     | 2723.2 ppb  | 8.30     | 0.30%   |
| Sn 189.927†      | -1.9     | -0.2275 µg/L | 0.97468  | -0.2275 ppb | 0.97468  | 428.42% |
| Sr 421.552†      | 17542.4  | 50.352 µg/L  | 0.2259   | 50.352 ppb  | 0.2259   | 0.45%   |
| Ti 334.940†      | 127347.3 | 181.18 µg/L  | 0.783    | 181.18 ppb  | 0.783    | 0.43%   |
| Tl 190.801†      | -10.8    | -3.1415 µg/L | 1.88163  | -3.1415 ppb | 1.88163  | 59.90%  |
| U 367.007†       | 431.7    | -4.6586 µg/L | 12.05571 | -4.6586 ppb | 12.05571 | 258.79% |
| V 292.402†       | 3397.3   | 15.949 µg/L  | 0.3532   | 15.949 ppb  | 0.3532   | 2.21%   |
| Zn 213.857†      | 6635.6   | 36.217 µg/L  | 0.1197   | 36.217 ppb  | 0.1197   | 0.33%   |

Sequence No.: 12

Autosampler Location: 358

Sample ID: 409254020|1611117|10

Date Collected: 11/11/2016 13:34:30

Analyst: TXT1

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Replicate Data: 409254020|1611117|10

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 73864.0       | 73864.0             | 103 %              |                    | 13:34:57      |
| 1     | Al 396.153Radial†  | 28600.6       | 27791.9             | 10148 µg/L         | 10148 ppb          | 13:34:57      |
| 1     | Ca 317.933Radial†  | 100980.1      | 98140.3             | 10925 µg/L         | 10925 ppb          | 13:34:57      |
| 1     | Fe 238.204 Radial† | 208980.1      | 204331.4            | 19329 µg/L         | 19329 ppb          | 13:34:55      |
| 1     | K 766.490 Radial†  | 4549.5        | 3366.8              | 1775.4 µg/L        | 1775.4 ppb         | 13:34:57      |
| 1     | Mg 279.077 IEC†    | 9180.7        | 8926.9              | 4819.1 µg/L        | 4819.1 ppb         | 13:34:57      |
| 1     | Na 589.592 Radial† | 8956.7        | 8695.5              | 1450.0 µg/L        | 1450.0 ppb         | 13:34:57      |
| 1     | Sr 421.552†        | 18620.5       | 18619.2             | 53.643 µg/L        | 53.643 ppb         | 13:34:57      |
| 1     | Sc 361.383         | 1331760.5     | 1331760.5           | 100.04 %           |                    | 13:35:09      |
| 1     | Y 371.029          | 727976.9      | 727976.9            | 100.49 %           |                    | 13:35:09      |
| 1     | Ag 328.068†        | -1913.9       | -22.3               | 0.8626 µg/L        | 0.8626 ppb         | 13:35:09      |
| 1     | As 188.979†        | -11.9         | 18.0                | 12.298 µg/L        | 12.298 ppb         | 13:35:29      |
| 1     | B 249.677†         | 151.5         | -733.5              | 3.6303 µg/L        | 3.6303 ppb         | 13:35:09      |
| 1     | Ba 233.527†        | 33834.0       | 34060.7             | 303.80 µg/L        | 303.80 ppb         | 13:35:09      |
| 1     | Be 313.107†        | -279.0        | 3377.0              | -6.5094 µg/L       | -6.5094 ppb        | 13:35:09      |
| 1     | Cd 226.502†        | 210.9         | 390.9               | 0.7441 µg/L        | 0.7441 ppb         | 13:35:29      |
| 1     | Co 228.616†        | 471.7         | 563.0               | 8.4834 µg/L        | 8.4834 ppb         | 13:35:29      |
| 1     | Cr 267.716†        | 1348.8        | 1219.2              | 14.565 µg/L        | 14.565 ppb         | 13:35:29      |
| 1     | Cu 324.752†        | 9460.4        | 3679.5              | 17.618 µg/L        | 17.618 ppb         | 13:35:09      |
| 1     | Mn 257.610†        | 441865.8      | 441529.2            | 773.66 µg/L        | 773.66 ppb         | 13:35:09      |
| 1     | Mo 202.031†        | -29.7         | 0.0                 | 0.5234 µg/L        | 0.5234 ppb         | 13:35:29      |
| 1     | Ni 231.604†        | 1231.9        | 1429.2              | 22.721 µg/L        | 22.721 ppb         | 13:35:29      |
| 1     | P 214.914†         | 1514.5        | 1608.9              | 578.91 µg/L        | 578.91 ppb         | 13:35:29      |
| 1     | Pb 220.353†        | 234.5         | 160.7               | 16.601 µg/L        | 16.601 ppb         | 13:35:29      |
| 1     | S 181.975 Axial†   | 1349.3        | 1246.1              | 1386.6 µg/L        | 1386.6 ppb         | 13:35:29      |
| 1     | Sb 206.836†        | 47.9          | 3.6                 | -1.3122 µg/L       | -1.3122 ppb        | 13:35:29      |
| 1     | Se 196.026†        | -8.9          | -17.0               | -0.169 µg/L        | -0.169 ppb         | 13:35:29      |
| 1     | SiO2†              | 63390.4       | 60344.1             | 6678.7 µg/L        | 6678.7 ppb         | 13:35:09      |
| 1     | Si 251.611†        | 184206.2      | 183544.8            | 3114.4 µg/L        | 3114.4 ppb         | 13:35:09      |
| 1     | Sn 189.927†        | -29.1         | -1.6                | -0.1701 µg/L       | -0.1701 ppb        | 13:35:29      |
| 1     | Ti 334.940†        | 109960.6      | 110803.9            | 157.58 µg/L        | 157.58 ppb         | 13:35:09      |
| 1     | Tl 190.801†        | -81.7         | 4.4                 | 1.6860 µg/L        | 1.6860 ppb         | 13:35:29      |
| 1     | U 367.007†         | 578.0         | 862.0               | 0.0142 µg/L        | 0.0142 ppb         | 13:35:09      |
| 1     | V 292.402†         | 6640.7        | 6534.6              | 30.634 µg/L        | 30.634 ppb         | 13:35:09      |
| 1     | Zn 213.857†        | 12707.9       | 12656.0             | 69.471 µg/L        | 69.471 ppb         | 13:35:09      |
| 2     | Sc RADIAL          | 72739.6       | 72739.6             | 101 %              |                    | 13:35:01      |
| 2     | Al 396.153Radial†  | 28384.4       | 28008.9             | 10227 µg/L         | 10227 ppb          | 13:35:01      |
| 2     | Ca 317.933Radial†  | 99716.0       | 98410.9             | 10955 µg/L         | 10955 ppb          | 13:35:01      |
| 2     | Fe 238.204 Radial† | 210712.4      | 209197.8            | 19789 µg/L         | 19789 ppb          | 13:34:59      |
| 2     | K 766.490 Radial†  | 4372.4        | 3260.0              | 1719.4 µg/L        | 1719.4 ppb         | 13:35:01      |
| 2     | Mg 279.077 IEC†    | 9048.5        | 8934.4              | 4823.3 µg/L        | 4823.3 ppb         | 13:35:01      |
| 2     | Na 589.592 Radial† | 8785.2        | 8660.7              | 1444.2 µg/L        | 1444.2 ppb         | 13:35:01      |
| 2     | Sr 421.552†        | 18406.1       | 18687.6             | 53.840 µg/L        | 53.840 ppb         | 13:35:01      |
| 2     | Sc 361.383         | 1309908.3     | 1309908.3           | 98.400 %           |                    | 13:35:31      |
| 2     | Y 371.029          | 716464.1      | 716464.1            | 98.898 %           |                    | 13:35:31      |
| 2     | Ag 328.068†        | -1855.8       | 4.8                 | 1.0309 µg/L        | 1.0309 ppb         | 13:35:31      |
| 2     | As 188.979†        | -8.4          | 21.4                | 14.177 µg/L        | 14.177 ppb         | 13:35:51      |
| 2     | B 249.677†         | 248.4         | -632.4              | 5.4215 µg/L        | 5.4215 ppb         | 13:35:31      |
| 2     | Ba 233.527†        | 33803.7       | 34594.1             | 308.56 µg/L        | 308.56 ppb         | 13:35:31      |
| 2     | Be 313.107†        | -103.5        | 3550.7              | -6.5799 µg/L       | -6.5799 ppb        | 13:35:31      |
| 2     | Cd 226.502†        | 198.6         | 381.9               | 0.6234 µg/L        | 0.6234 ppb         | 13:35:51      |
| 2     | Co 228.616†        | 473.2         | 572.5               | 8.6234 µg/L        | 8.6234 ppb         | 13:35:51      |
| 2     | Cr 267.716†        | 1375.1        | 1268.5              | 15.155 µg/L        | 15.155 ppb         | 13:35:51      |
| 2     | Cu 324.752†        | 9307.4        | 3681.8              | 17.655 µg/L        | 17.655 ppb         | 13:35:31      |
| 2     | Mn 257.610†        | 441369.0      | 448392.6            | 785.68 µg/L        | 785.68 ppb         | 13:35:31      |
| 2     | Mo 202.031†        | -39.2         | -10.1               | 0.0059 µg/L        | 0.0059 ppb         | 13:35:51      |
| 2     | Ni 231.604†        | 1236.4        | 1454.2              | 23.120 µg/L        | 23.120 ppb         | 13:35:51      |
| 2     | P 214.914†         | 1545.6        | 1665.8              | 599.37 µg/L        | 599.37 ppb         | 13:35:51      |
| 2     | Pb 220.353†        | 215.5         | 145.3               | 15.054 µg/L        | 15.054 ppb         | 13:35:51      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 1381.0    | 1300.8    | 1447.5 µg/L  | 1447.5 ppb  | 13:35:51 |
| 2 | Sb 206.836†        | 45.3      | 1.8       | -1.7175 µg/L | -1.7175 ppb | 13:35:51 |
| 2 | Se 196.026†        | -12.2     | -20.5     | -1.80 µg/L   | -1.80 ppb   | 13:35:51 |
| 2 | SiO2†              | 63407.8   | 61418.9   | 6797.7 µg/L  | 6797.7 ppb  | 13:35:31 |
| 2 | Si 251.611†        | 184018.3  | 186425.5  | 3163.3 µg/L  | 3163.3 ppb  | 13:35:31 |
| 2 | Sn 189.927†        | -25.7     | 1.3       | 0.2040 µg/L  | 0.2040 ppb  | 13:35:51 |
| 2 | Ti 334.940†        | 110234.7  | 112916.1  | 160.58 µg/L  | 160.58 ppb  | 13:35:31 |
| 2 | Tl 190.801†        | -85.2     | -0.5      | 0.1741 µg/L  | 0.1741 ppb  | 13:35:51 |
| 2 | U 367.007†         | 548.4     | 841.5     | -5.0054 µg/L | -5.0054 ppb | 13:35:31 |
| 2 | V 292.402†         | 6680.9    | 6686.1    | 31.344 µg/L  | 31.344 ppb  | 13:35:31 |
| 2 | Zn 213.857†        | 12560.7   | 12718.4   | 69.775 µg/L  | 69.775 ppb  | 13:35:31 |
| 3 | Sc RADIAL          | 72348.6   | 72348.6   | 100 %        |             | 13:35:05 |
| 3 | Al 396.153Radial†  | 28120.2   | 27897.8   | 10187 µg/L   | 10187 ppb   | 13:35:05 |
| 3 | Ca 317.933Radial†  | 98616.0   | 97849.2   | 10893 µg/L   | 10893 ppb   | 13:35:05 |
| 3 | Fe 238.204 Radial† | 209133.1  | 208753.0  | 19747 µg/L   | 19747 ppb   | 13:35:03 |
| 3 | K 766.490 Radial†  | 4384.2    | 3295.1    | 1737.8 µg/L  | 1737.8 ppb  | 13:35:05 |
| 3 | Mg 279.077 IEC†    | 8940.6    | 8875.4    | 4791.5 µg/L  | 4791.5 ppb  | 13:35:05 |
| 3 | Na 589.592 Radial† | 8748.3    | 8671.0    | 1445.9 µg/L  | 1445.9 ppb  | 13:35:05 |
| 3 | Sr 421.552†        | 18243.5   | 18624.2   | 53.658 µg/L  | 53.658 ppb  | 13:35:05 |
| 3 | Sc 361.383         | 1338019.5 | 1338019.5 | 100.51 %     |             | 13:35:53 |
| 3 | Y 371.029          | 730632.0  | 730632.0  | 100.85 %     |             | 13:35:53 |
| 3 | Ag 328.068†        | -1925.4   | -24.8     | 0.8779 µg/L  | 0.8779 ppb  | 13:35:53 |
| 3 | As 188.979†        | -5.7      | 24.3      | 15.759 µg/L  | 15.759 ppb  | 13:36:14 |
| 3 | B 249.677†         | 255.3     | -630.9    | 5.4121 µg/L  | 5.4121 ppb  | 13:35:53 |
| 3 | Ba 233.527†        | 34899.5   | 34962.5   | 311.85 µg/L  | 311.85 ppb  | 13:35:53 |
| 3 | Be 313.107†        | -42.3     | 3613.8    | -6.6447 µg/L | -6.6447 ppb | 13:35:53 |
| 3 | Cd 226.502†        | 224.2     | 403.0     | 0.7882 µg/L  | 0.7882 ppb  | 13:36:14 |
| 3 | Co 228.616†        | 475.8     | 564.9     | 8.5152 µg/L  | 8.5152 ppb  | 13:36:14 |
| 3 | Cr 267.716†        | 1371.4    | 1235.4    | 14.768 µg/L  | 14.768 ppb  | 13:36:14 |
| 3 | Cu 324.752†        | 9616.9    | 3791.0    | 18.132 µg/L  | 18.132 ppb  | 13:35:53 |
| 3 | Mn 257.610†        | 455538.1  | 453065.9  | 793.88 µg/L  | 793.88 ppb  | 13:35:53 |
| 3 | Mo 202.031†        | -26.9     | 3.0       | 0.6843 µg/L  | 0.6843 ppb  | 13:36:14 |
| 3 | Ni 231.604†        | 1272.2    | 1463.4    | 23.266 µg/L  | 23.266 ppb  | 13:36:14 |
| 3 | P 214.914†         | 1545.9    | 1633.2    | 587.62 µg/L  | 587.62 ppb  | 13:36:14 |
| 3 | Pb 220.353†        | 216.3     | 141.5     | 14.673 µg/L  | 14.673 ppb  | 13:36:14 |
| 3 | S 181.975 Axial†   | 1390.8    | 1281.0    | 1425.5 µg/L  | 1425.5 ppb  | 13:36:14 |
| 3 | Sb 206.836†        | 59.0      | 14.4      | 0.7199 µg/L  | 0.7199 ppb  | 13:36:14 |
| 3 | Se 196.026†        | -6.5      | -14.5     | 1.31 µg/L    | 1.31 ppb    | 13:36:14 |
| 3 | SiO2†              | 65316.1   | 61963.7   | 6858.0 µg/L  | 6858.0 ppb  | 13:35:53 |
| 3 | Si 251.611†        | 189806.6  | 188255.3  | 3194.4 µg/L  | 3194.4 ppb  | 13:35:53 |
| 3 | Sn 189.927†        | -28.0     | -0.3      | -0.0114 µg/L | -0.0114 ppb | 13:36:14 |
| 3 | Ti 334.940†        | 113415.9  | 113727.5  | 161.73 µg/L  | 161.73 ppb  | 13:35:53 |
| 3 | Tl 190.801†        | -90.0     | -3.5      | -0.7327 µg/L | -0.7327 ppb | 13:36:14 |
| 3 | U 367.007†         | 532.8     | 814.3     | -8.1149 µg/L | -8.1149 ppb | 13:35:53 |
| 3 | V 292.402†         | 7035.9    | 6896.7    | 32.282 µg/L  | 32.282 ppb  | 13:35:53 |
| 3 | Zn 213.857†        | 13012.7   | 12899.9   | 70.810 µg/L  | 70.810 ppb  | 13:35:53 |

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Mean Data: 409254020|1611117|10

| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------|--------------|----------|--------------------|----------|--------|
| Sc 361.383  | 1326562.8                | 99.651 %     | %            | 1.1087   |                    |          | 1.11%  |
| Sc RADIAL   | 72984.1                  | 101 %        | %            | 1.1      |                    |          | 1.08%  |
| Y 371.029   | 725024.3                 | 100.08 %     | %            | 1.040    |                    |          | 1.04%  |
| Ag 328.068†   | -14.1                    | 0.9238 µg/L  | µg/L         | 0.09305  | 0.9238 ppb         | 0.09305  | 10.07% |
| Al 396.153Radial†                                   | 27899.5                  | 10187 µg/L   | µg/L         | 39.6     | 10187 ppb          | 39.6     | 0.39%  |
| As 188.979†   | 21.2                     | 14.078 µg/L  | µg/L         | 1.7326   | 14.078 ppb         | 1.7326   | 12.31% |
| B 249.677†  | -665.6                   | 4.8213 µg/L  | µg/L         | 1.03145  | 4.8213 ppb         | 1.03145  | 21.39% |
| Ba 233.527†   | 34539.1                  | 308.07 µg/L  | µg/L         | 4.044    | 308.07 ppb         | 4.044    | 1.31%  |
| Be 313.107†   | 3513.9                   | -6.5780 µg/L | µg/L         | 0.06766  | -6.5780 ppb        | 0.06766  | 1.03%  |
| Concentration less than lower limit for Be 313.107. |                          |              |              |          |                    |          |        |
| Ca 317.933Radial†                                   | 98133.5                  | 10924 µg/L   | µg/L         | 31.3     | 10924 ppb          | 31.3     | 0.29%  |
| Cd 226.502†   | 391.9                    | 0.7186 µg/L  | µg/L         | 0.08535  | 0.7186 ppb         | 0.08535  | 11.88% |
| Co 228.616†   | 566.8                    | 8.5407 µg/L  | µg/L         | 0.07339  | 8.5407 ppb         | 0.07339  | 0.86%  |
| Cr 267.716†   | 1241.0                   | 14.829 µg/L  | µg/L         | 0.2997   | 14.829 ppb         | 0.2997   | 2.02%  |
| Cu 324.752†   | 3717.4                   | 17.802 µg/L  | µg/L         | 0.2864   | 17.802 ppb         | 0.2864   | 1.61%  |
| Fe 238.204 Radial†                                  | 207427.4                 | 19622 µg/L   | µg/L         | 254.5    | 19622 ppb          | 254.5    | 1.30%  |
| K 766.490 Radial†                                   | 3307.3                   | 1744.2 µg/L  | µg/L         | 28.52    | 1744.2 ppb         | 28.52    | 1.64%  |
| Mg 279.077 IEC†                                     | 8912.3                   | 4811.3 µg/L  | µg/L         | 17.30    | 4811.3 ppb         | 17.30    | 0.36%  |
| Mn 257.610†   | 447662.6                 | 784.41 µg/L  | µg/L         | 10.171   | 784.41 ppb         | 10.171   | 1.30%  |
| Mo 202.031†   | -2.4                     | 0.4045 µg/L  | µg/L         | 0.35448  | 0.4045 ppb         | 0.35448  | 87.63% |

|                    |          |              |         |             |         |         |
|--------------------|----------|--------------|---------|-------------|---------|---------|
| Na 589.592 Radial† | 8675.7   | 1446.7 µg/L  | 2.98    | 1446.7 ppb  | 2.98    | 0.21%   |
| Ni 231.604†        | 1448.9   | 23.035 µg/L  | 0.2819  | 23.035 ppb  | 0.2819  | 1.22%   |
| P 214.914†         | 1636.0   | 588.64 µg/L  | 10.267  | 588.64 ppb  | 10.267  | 1.74%   |
| Pb 220.353†        | 149.2    | 15.442 µg/L  | 1.0212  | 15.442 ppb  | 1.0212  | 6.61%   |
| S 181.975 Axial†   | 1276.0   | 1419.9 µg/L  | 30.86   | 1419.9 ppb  | 30.86   | 2.17%   |
| Sb 206.836†        | 6.6      | -0.7699 µg/L | 1.30602 | -0.7699 ppb | 1.30602 | 169.62% |
| Se 196.026†        | -17.3    | -0.219 µg/L  | 1.5541  | -0.219 ppb  | 1.5541  | 710.80% |
| SiO2†              | 61242.2  | 6778.1 µg/L  | 91.21   | 6778.1 ppb  | 91.21   | 1.35%   |
| Si 251.611†        | 186075.2 | 3157.4 µg/L  | 40.29   | 3157.4 ppb  | 40.29   | 1.28%   |
| Sn 189.927†        | -0.2     | 0.0075 µg/L  | 0.18775 | 0.0075 ppb  | 0.18775 | >999.9% |
| Sr 421.552†        | 18643.7  | 53.714 µg/L  | 0.1098  | 53.714 ppb  | 0.1098  | 0.20%   |
| Ti 334.940†        | 112482.5 | 159.96 µg/L  | 2.147   | 159.96 ppb  | 2.147   | 1.34%   |
| Tl 190.801†        | 0.1      | 0.3758 µg/L  | 1.22190 | 0.3758 ppb  | 1.22190 | 325.15% |
| U 367.007†         | 839.3    | -4.3687 µg/L | 4.10178 | -4.3687 ppb | 4.10178 | 93.89%  |
| V 292.402†         | 6705.8   | 31.420 µg/L  | 0.8270  | 31.420 ppb  | 0.8270  | 2.63%   |
| Zn 213.857†        | 12758.1  | 70.018 µg/L  | 0.7022  | 70.018 ppb  | 0.7022  | 1.00%   |

Sequence No.: 13

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 11/11/2016 13:36:22

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71869.8       | 71869.8             | 99.8 %             |                    | 13:36:51      |
| 1     | Al 396.153Radial†  | 13836.9       | 13767.6             | 5027.0 µg/L        | 5027.0 ppb         | 13:36:51      |
| 1     | Ca 317.933Radial†  | 45272.7       | 45035.4             | 5013.4 µg/L        | 5013.4 ppb         | 13:36:51      |
| 1     | Fe 238.204 Radial† | 53133.2       | 53775.5             | 5086.9 µg/L        | 5086.9 ppb         | 13:36:51      |
| 1     | K 766.490 Radial†  | 10658.1       | 9612.8              | 5053.1 µg/L        | 5053.1 ppb         | 13:36:51      |
| 1     | Mg 279.077 IEC†    | 9196.8        | 9191.5              | 4957.1 µg/L        | 4957.1 ppb         | 13:36:51      |
| 1     | Na 589.592 Radial† | 57680.3       | 57775.4             | 9634.3 µg/L        | 9634.3 ppb         | 13:36:49      |
| 1     | Sr 421.552†        | 168375.7      | 169228.5            | 490.81 µg/L        | 490.81 ppb         | 13:36:49      |
| 1     | Sc 361.383         | 1313327.2     | 1313327.2           | 98.657 %           |                    | 13:37:03      |
| 1     | Y 371.029          | 700134.8      | 700134.8            | 96.644 %           |                    | 13:37:03      |
| 1     | Ag 328.068†        | 93989.9       | 97160.1             | 501.37 µg/L        | 501.37 ppb         | 13:37:05      |
| 1     | As 188.979†        | 897.7         | 939.9               | 515.85 µg/L        | 515.85 ppb         | 13:37:25      |
| 1     | B 249.677†         | 35479.8       | 35077.9             | 508.20 µg/L        | 508.20 ppb         | 13:37:05      |
| 1     | Ba 233.527†        | 55612.2       | 56610.0             | 504.80 µg/L        | 504.80 ppb         | 13:37:05      |
| 1     | Be 313.107†        | 1762174.1     | 1789816.7           | 475.89 µg/L        | 475.89 ppb         | 13:37:03      |
| 1     | Cd 226.502†        | 65274.2       | 66342.8             | 501.39 µg/L        | 501.39 ppb         | 13:37:05      |
| 1     | Co 228.616†        | 33510.1       | 34057.8             | 506.46 µg/L        | 506.46 ppb         | 13:37:05      |
| 1     | Cr 267.716†        | 42436.2       | 42884.8             | 503.95 µg/L        | 503.95 ppb         | 13:37:05      |
| 1     | Cu 324.752†        | 118121.1      | 113952.1            | 503.65 µg/L        | 503.65 ppb         | 13:37:05      |
| 1     | Mn 257.610†        | 284769.9      | 288494.2            | 505.44 µg/L        | 505.44 ppb         | 13:37:05      |
| 1     | Mo 202.031†        | 9509.9        | 9669.1              | 502.70 µg/L        | 502.70 ppb         | 13:37:25      |
| 1     | Ni 231.604†        | 31043.3       | 31663.6             | 503.39 µg/L        | 503.39 ppb         | 13:37:05      |
| 1     | P 214.914†         | 6745.7        | 6932.6              | 2498.5 µg/L        | 2498.5 ppb         | 13:37:25      |
| 1     | Pb 220.353†        | 4971.5        | 4965.5              | 501.85 µg/L        | 501.85 ppb         | 13:37:25      |
| 1     | S 181.975 Axial†   | 970.4         | 881.0               | 982.23 µg/L        | 982.23 ppb         | 13:37:25      |
| 1     | Sb 206.836†        | 2637.7        | 2629.3              | 499.76 µg/L        | 499.76 ppb         | 13:37:25      |
| 1     | Se 196.026†        | 957.1         | 962.1               | 507 µg/L           | 507 ppb            | 13:37:25      |
| 1     | SiO2†              | 52330.2       | 50022.7             | 5536.4 µg/L        | 5536.4 ppb         | 13:37:05      |
| 1     | Si 251.611†        | 151256.0      | 152730.4            | 2590.2 µg/L        | 2590.2 ppb         | 13:37:05      |
| 1     | Sn 189.927†        | 3849.1        | 3929.0              | 502.37 µg/L        | 502.37 ppb         | 13:37:25      |
| 1     | Ti 334.940†        | 347112.8      | 352726.9            | 501.03 µg/L        | 501.03 ppb         | 13:37:05      |
| 1     | Tl 190.801†        | 1518.3        | 1625.0              | 499.23 µg/L        | 499.23 ppb         | 13:37:25      |
| 1     | U 367.007†         | 3783.3        | 4119.0              | 478.66 µg/L        | 478.66 ppb         | 13:37:05      |
| 1     | V 292.402†         | 110764.8      | 112169.2            | 504.00 µg/L        | 504.00 ppb         | 13:37:05      |
| 1     | Zn 213.857†        | 87868.7       | 89018.3             | 503.72 µg/L        | 503.72 ppb         | 13:37:05      |
| 2     | Sc RADIAL          | 73266.6       | 73266.6             | 102 %              |                    | 13:36:55      |
| 2     | Al 396.153Radial†  | 13906.5       | 13571.6             | 4955.4 µg/L        | 4955.4 ppb         | 13:36:55      |
| 2     | Ca 317.933Radial†  | 45855.3       | 44743.1             | 4980.8 µg/L        | 4980.8 ppb         | 13:36:55      |
| 2     | Fe 238.204 Radial† | 53859.3       | 53474.1             | 5058.4 µg/L        | 5058.4 ppb         | 13:36:55      |
| 2     | K 766.490 Radial†  | 10808.3       | 9556.8              | 5023.6 µg/L        | 5023.6 ppb         | 13:36:55      |
| 2     | Mg 279.077 IEC†    | 9295.2        | 9112.5              | 4914.5 µg/L        | 4914.5 ppb         | 13:36:55      |
| 2     | Na 589.592 Radial† | 58221.3       | 57205.2             | 9539.2 µg/L        | 9539.2 ppb         | 13:36:53      |
| 2     | Sr 421.552†        | 170071.0      | 167677.8            | 486.31 µg/L        | 486.31 ppb         | 13:36:53      |
| 2     | Sc 361.383         | 1318344.6     | 1318344.6           | 99.034 %           |                    | 13:37:27      |
| 2     | Y 371.029          | 701231.1      | 701231.1            | 96.795 %           |                    | 13:37:27      |
| 2     | Ag 328.068†        | 92229.4       | 95019.9             | 490.34 µg/L        | 490.34 ppb         | 13:37:30      |
| 2     | As 188.979†        | 893.8         | 932.5               | 511.73 µg/L        | 511.73 ppb         | 13:37:50      |
| 2     | B 249.677†         | 34886.8       | 34342.3             | 497.60 µg/L        | 497.60 ppb         | 13:37:30      |
| 2     | Ba 233.527†        | 54434.4       | 55206.1             | 492.28 µg/L        | 492.28 ppb         | 13:37:30      |
| 2     | Be 313.107†        | 1766509.2     | 1787396.2           | 475.52 µg/L        | 475.52 ppb         | 13:37:27      |
| 2     | Cd 226.502†        | 63950.2       | 64754.0             | 489.38 µg/L        | 489.38 ppb         | 13:37:30      |
| 2     | Co 228.616†        | 32756.5       | 33167.6             | 493.22 µg/L        | 493.22 ppb         | 13:37:30      |
| 2     | Cr 267.716†        | 41630.4       | 41907.4             | 492.48 µg/L        | 492.48 ppb         | 13:37:30      |
| 2     | Cu 324.752†        | 116098.0      | 111453.6            | 492.60 µg/L        | 492.60 ppb         | 13:37:30      |
| 2     | Mn 257.610†        | 279301.8      | 281874.2            | 493.84 µg/L        | 493.84 ppb         | 13:37:30      |
| 2     | Mo 202.031†        | 9476.4        | 9598.6              | 499.04 µg/L        | 499.04 ppb         | 13:37:50      |
| 2     | Ni 231.604†        | 30285.7       | 30778.9             | 489.33 µg/L        | 489.33 ppb         | 13:37:30      |
| 2     | P 214.914†         | 6720.3        | 6880.9              | 2479.9 µg/L        | 2479.9 ppb         | 13:37:50      |
| 2     | Pb 220.353†        | 4954.8        | 4929.5              | 498.24 µg/L        | 498.24 ppb         | 13:37:50      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 973.6     | 880.4     | 981.59 µg/L | 981.59 ppb | 13:37:50 |
| 2 | Sb 206.836†        | 2604.6    | 2585.7    | 491.53 µg/L | 491.53 ppb | 13:37:50 |
| 2 | Se 196.026†        | 961.7     | 963.0     | 507 µg/L    | 507 ppb    | 13:37:50 |
| 2 | SiO2†              | 51342.0   | 48823.1   | 5403.6 µg/L | 5403.6 ppb | 13:37:30 |
| 2 | Si 251.611†        | 148506.7  | 149370.8  | 2533.2 µg/L | 2533.2 ppb | 13:37:30 |
| 2 | Sn 189.927†        | 3844.3    | 3909.3    | 499.85 µg/L | 499.85 ppb | 13:37:50 |
| 2 | Ti 334.940†        | 339966.8  | 344172.2  | 488.89 µg/L | 488.89 ppb | 13:37:30 |
| 2 | Tl 190.801†        | 1513.2    | 1614.0    | 495.86 µg/L | 495.86 ppb | 13:37:50 |
| 2 | U 367.007†         | 3575.3    | 3894.4    | 451.18 µg/L | 451.18 ppb | 13:37:30 |
| 2 | V 292.402†         | 108555.3  | 109510.9  | 492.06 µg/L | 492.06 ppb | 13:37:30 |
| 2 | Zn 213.857†        | 86390.8   | 87187.0   | 493.35 µg/L | 493.35 ppb | 13:37:30 |
| 3 | Sc RADIAL          | 71465.8   | 71465.8   | 99.2 %      |            | 13:37:00 |
| 3 | Al 396.153Radial†  | 13835.4   | 13844.5   | 5055.0 µg/L | 5055.0 ppb | 13:37:00 |
| 3 | Ca 317.933Radial†  | 44827.4   | 44843.1   | 4991.9 µg/L | 4991.9 ppb | 13:37:00 |
| 3 | Fe 238.204 Radial† | 52763.3   | 53703.7   | 5080.1 µg/L | 5080.1 ppb | 13:37:00 |
| 3 | K 766.490 Radial†  | 10682.1   | 9697.4    | 5097.5 µg/L | 5097.5 ppb | 13:37:00 |
| 3 | Mg 279.077 IEC†    | 9040.3    | 9085.9    | 4900.2 µg/L | 4900.2 ppb | 13:37:00 |
| 3 | Na 589.592 Radial† | 58689.4   | 59119.4   | 9858.4 µg/L | 9858.4 ppb | 13:36:57 |
| 3 | Sr 421.552†        | 171996.2  | 173832.0  | 504.16 µg/L | 504.16 ppb | 13:36:57 |
| 3 | Sc 361.383         | 1331419.2 | 1331419.2 | 100.02 %    |            | 13:37:52 |
| 3 | Y 371.029          | 708119.4  | 708119.4  | 97.746 %    |            | 13:37:52 |
| 3 | Ag 328.068†        | 91694.0   | 93570.1   | 482.86 µg/L | 482.86 ppb | 13:37:54 |
| 3 | As 188.979†        | 903.6     | 933.4     | 512.15 µg/L | 512.15 ppb | 13:38:14 |
| 3 | B 249.677†         | 34677.9   | 33787.5   | 489.63 µg/L | 489.63 ppb | 13:37:54 |
| 3 | Ba 233.527†        | 54117.1   | 54349.2   | 484.64 µg/L | 484.64 ppb | 13:37:54 |
| 3 | Be 313.107†        | 1783654.9 | 1787022.7 | 475.61 µg/L | 475.61 ppb | 13:37:52 |
| 3 | Cd 226.502†        | 63405.7   | 63575.5   | 480.46 µg/L | 480.46 ppb | 13:37:54 |
| 3 | Co 228.616†        | 32507.3   | 32593.6   | 484.68 µg/L | 484.68 ppb | 13:37:54 |
| 3 | Cr 267.716†        | 41316.5   | 41180.9   | 483.93 µg/L | 483.93 ppb | 13:37:54 |
| 3 | Cu 324.752†        | 115552.1  | 109756.6  | 485.11 µg/L | 485.11 ppb | 13:37:54 |
| 3 | Mn 257.610†        | 277495.2  | 277298.4  | 485.82 µg/L | 485.82 ppb | 13:37:54 |
| 3 | Mo 202.031†        | 9418.8    | 9447.0    | 491.16 µg/L | 491.16 ppb | 13:38:14 |
| 3 | Ni 231.604†        | 30220.7   | 30413.5   | 483.52 µg/L | 483.52 ppb | 13:37:54 |
| 3 | P 214.914†         | 6707.3    | 6801.3    | 2451.2 µg/L | 2451.2 ppb | 13:38:14 |
| 3 | Pb 220.353†        | 4936.5    | 4862.0    | 491.42 µg/L | 491.42 ppb | 13:38:14 |
| 3 | S 181.975 Axial†   | 968.7     | 865.8     | 965.35 µg/L | 965.35 ppb | 13:38:14 |
| 3 | Sb 206.836†        | 2627.0    | 2582.3    | 490.99 µg/L | 490.99 ppb | 13:38:14 |
| 3 | Se 196.026†        | 949.0     | 940.9     | 496 µg/L    | 496 ppb    | 13:38:14 |
| 3 | SiO2†              | 51159.9   | 48131.9   | 5327.1 µg/L | 5327.1 ppb | 13:37:54 |
| 3 | Si 251.611†        | 147915.3  | 147307.0  | 2498.2 µg/L | 2498.2 ppb | 13:37:54 |
| 3 | Sn 189.927†        | 3826.9    | 3853.7    | 492.75 µg/L | 492.75 ppb | 13:38:14 |
| 3 | Ti 334.940†        | 338233.6  | 339068.2  | 481.64 µg/L | 481.64 ppb | 13:37:54 |
| 3 | Tl 190.801†        | 1515.3    | 1601.1    | 491.91 µg/L | 491.91 ppb | 13:38:14 |
| 3 | U 367.007†         | 3589.4    | 3873.0    | 448.43 µg/L | 448.43 ppb | 13:37:54 |
| 3 | V 292.402†         | 107893.1  | 107772.3  | 484.25 µg/L | 484.25 ppb | 13:37:54 |
| 3 | Zn 213.857†        | 85742.6   | 85682.2   | 484.81 µg/L | 484.81 ppb | 13:37:54 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc 361.383   | 1321030.4                | 99.236 %           | 0.7016   |                    |          | 0.71% |
| Sc RADIAL  | 72200.7                  | 100 %              | 1.3      |                    |          | 1.31% |
| Y 371.029  | 703161.8                 | 97.062 %           | 0.5975   |                    |          | 0.62% |
| Ag 328.068†  | 95250.0                  | 491.52 µg/L        | 9.311    | 491.52 ppb         | 9.311    | 1.89% |
| QC value within limits for Ag 328.068 Recovery = 98.30%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 13727.9                  | 5012.5 µg/L        | 51.37    | 5012.5 ppb         | 51.37    | 1.02% |
| QC value within limits for Al 396.153Radial Recovery = 100.25% |                          |                    |          |                    |          |       |
| As 188.979†  | 935.3                    | 513.24 µg/L        | 2.265    | 513.24 ppb         | 2.265    | 0.44% |
| QC value within limits for As 188.979 Recovery = 102.65%       |                          |                    |          |                    |          |       |
| B 249.677†   | 34402.5                  | 498.48 µg/L        | 9.313    | 498.48 ppb         | 9.313    | 1.87% |
| QC value within limits for B 249.677 Recovery = 99.70%         |                          |                    |          |                    |          |       |
| Ba 233.527†  | 55388.4                  | 493.91 µg/L        | 10.177   | 493.91 ppb         | 10.177   | 2.06% |
| QC value within limits for Ba 233.527 Recovery = 98.78%        |                          |                    |          |                    |          |       |
| Be 313.107†  | 1788078.6                | 475.67 µg/L        | 0.189    | 475.67 ppb         | 0.189    | 0.04% |
| QC value within limits for Be 313.107 Recovery = 95.13%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 44873.8                  | 4995.4 µg/L        | 16.54    | 4995.4 ppb         | 16.54    | 0.33% |
| QC value within limits for Ca 317.933Radial Recovery = 99.91%  |                          |                    |          |                    |          |       |
| Cd 226.502†  | 64890.7                  | 490.41 µg/L        | 10.507   | 490.41 ppb         | 10.507   | 2.14% |
| QC value within limits for Cd 226.502 Recovery = 98.08%        |                          |                    |          |                    |          |       |
| Co 228.616†  | 33273.0                  | 494.79 µg/L        | 10.972   | 494.79 ppb         | 10.972   | 2.22% |

|   |          |             |        |            |        |       |  |
|---|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Co 228.616 Recovery = 98.96%         |          |             |        |            |        |       |  |
| Cr 267.716†   | 41991.0  | 493.45 µg/L | 10.042 | 493.45 ppb | 10.042 | 2.03% |  |
| QC value within limits for Cr 267.716 Recovery = 98.69%         |          |             |        |            |        |       |  |
| Cu 324.752†   | 111720.8 | 493.79 µg/L | 9.327  | 493.79 ppb | 9.327  | 1.89% |  |
| QC value within limits for Cu 324.752 Recovery = 98.76%         |          |             |        |            |        |       |  |
| Fe 238.204 Radial†  | 53651.1  | 5075.1 µg/L | 14.89  | 5075.1 ppb | 14.89  | 0.29% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 101.50% |          |             |        |            |        |       |  |
| K 766.490 Radial†   | 9622.3   | 5058.1 µg/L | 37.18  | 5058.1 ppb | 37.18  | 0.74% |  |
| QC value within limits for K 766.490 Radial Recovery = 101.16%  |          |             |        |            |        |       |  |
| Mg 279.077 IEC†   | 9130.0   | 4924.0 µg/L | 29.63  | 4924.0 ppb | 29.63  | 0.60% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 98.48%     |          |             |        |            |        |       |  |
| Mn 257.610†   | 282555.6 | 495.03 µg/L | 9.864  | 495.03 ppb | 9.864  | 1.99% |  |
| QC value within limits for Mn 257.610 Recovery = 99.01%         |          |             |        |            |        |       |  |
| Mo 202.031†   | 9571.6   | 497.63 µg/L | 5.899  | 497.63 ppb | 5.899  | 1.19% |  |
| QC value within limits for Mo 202.031 Recovery = 99.53%         |          |             |        |            |        |       |  |
| Na 589.592 Radial†  | 58033.3  | 9677.3 µg/L | 163.89 | 9677.3 ppb | 163.89 | 1.69% |  |
| QC value within limits for Na 589.592 Radial Recovery = 96.77%  |          |             |        |            |        |       |  |
| Ni 231.604†   | 30952.0  | 492.08 µg/L | 10.219 | 492.08 ppb | 10.219 | 2.08% |  |
| QC value within limits for Ni 231.604 Recovery = 98.42%         |          |             |        |            |        |       |  |
| P 214.914†  | 6871.6   | 2476.6 µg/L | 23.85  | 2476.6 ppb | 23.85  | 0.96% |  |
| QC value within limits for P 214.914 Recovery = 99.06%          |          |             |        |            |        |       |  |
| Pb 220.353†   | 4919.0   | 497.17 µg/L | 5.295  | 497.17 ppb | 5.295  | 1.07% |  |
| QC value within limits for Pb 220.353 Recovery = 99.43%         |          |             |        |            |        |       |  |
| S 181.975 Axial†  | 875.7    | 976.39 µg/L | 9.565  | 976.39 ppb | 9.565  | 0.98% |  |
| QC value within limits for S 181.975 Axial Recovery = 97.64%    |          |             |        |            |        |       |  |
| Sb 206.836†   | 2599.1   | 494.10 µg/L | 4.916  | 494.10 ppb | 4.916  | 1.00% |  |
| QC value within limits for Sb 206.836 Recovery = 98.82%         |          |             |        |            |        |       |  |
| Se 196.026†   | 955.3    | 503 µg/L    | 6.6    | 503 ppb    | 6.6    | 1.31% |  |
| QC value within limits for Se 196.026 Recovery = 100.64%        |          |             |        |            |        |       |  |
| SiO2†   | 48992.6  | 5422.4 µg/L | 105.89 | 5422.4 ppb | 105.89 | 1.95% |  |
| QC value within limits for SiO2 Recovery = 101.40%              |          |             |        |            |        |       |  |
| Si 251.611†   | 149802.7 | 2540.5 µg/L | 46.41  | 2540.5 ppb | 46.41  | 1.83% |  |
| QC value within limits for Si 251.611 Recovery = 101.62%        |          |             |        |            |        |       |  |
| Sn 189.927†   | 3897.3   | 498.32 µg/L | 4.991  | 498.32 ppb | 4.991  | 1.00% |  |
| QC value within limits for Sn 189.927 Recovery = 99.66%         |          |             |        |            |        |       |  |
| Sr 421.552†   | 170246.1 | 493.76 µg/L | 9.286  | 493.76 ppb | 9.286  | 1.88% |  |
| QC value within limits for Sr 421.552 Recovery = 98.75%         |          |             |        |            |        |       |  |
| Ti 334.940†   | 345322.4 | 490.52 µg/L | 9.799  | 490.52 ppb | 9.799  | 2.00% |  |
| QC value within limits for Ti 334.940 Recovery = 98.10%         |          |             |        |            |        |       |  |
| Tl 190.801†   | 1613.4   | 495.67 µg/L | 3.664  | 495.67 ppb | 3.664  | 0.74% |  |
| QC value within limits for Tl 190.801 Recovery = 99.13%         |          |             |        |            |        |       |  |
| U 367.007†  | 3962.1   | 459.43 µg/L | 16.715 | 459.43 ppb | 16.715 | 3.64% |  |
| QC value within limits for U 367.007 Recovery = 91.89%          |          |             |        |            |        |       |  |
| V 292.402†  | 109817.5 | 493.44 µg/L | 9.946  | 493.44 ppb | 9.946  | 2.02% |  |
| QC value within limits for V 292.402 Recovery = 98.69%          |          |             |        |            |        |       |  |
| Zn 213.857†   | 87295.8  | 493.96 µg/L | 9.467  | 493.96 ppb | 9.467  | 1.92% |  |
| QC value within limits for Zn 213.857 Recovery = 98.79%         |          |             |        |            |        |       |  |
| All analyte(s) passed QC.                                       |          |             |        |            |        |       |  |

=====  
Analysis Begun

Start Time: 11/11/2016 13:38:26

Plasma On Time: 11/7/2016 06:01:25

Logged In Analyst: lab

Technique: ICP Continuous

Spectrometer Model: Optima 7300 DV, S/N No Serial #Autosampler Model: AS-93plus

Sample Information File: C:\pe\optima4\Sample Information\111116.sif

Batch ID:

Results Data Set: 111116

Results Library: C:\pe\optima4\Results\Results.mdb

=====  
Sequence No.: 1

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/11/2016 13:38:28

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:  
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## Replicate Data: CCB

| Repl# | Analyte            | Net<br>Intensity | Corrected<br>Intensity | Calib.<br>Conc. Units | Sample<br>Conc. Units | Analysis<br>Time |
|-------|--------------------|------------------|------------------------|-----------------------|-----------------------|------------------|
| 1     | Sc RADIAL          | 71500.4          | 71500.4                | 99.3 %                |                       | 13:38:53         |
| 1     | Al 396.153Radial†  | 121.0            | 20.2                   | 7.3838 µg/L           | 7.3838 ppb            | 13:39:13         |
| 1     | Ca 317.933Radial†  | 407.8            | 67.7                   | 7.5382 µg/L           | 7.5382 ppb            | 13:39:13         |
| 1     | Fe 238.204 Radial† | -430.2           | 84.6                   | 8.0046 µg/L           | 8.0046 ppb            | 13:39:13         |
| 1     | K 766.490 Radial†  | 873.4            | -190.3                 | -99.987 µg/L          | -99.987 ppb           | 13:38:53         |
| 1     | Mg 279.077 IEC†    | 18.2             | -8.5                   | -4.5620 µg/L          | -4.5620 ppb           | 13:39:13         |
| 1     | Na 589.592 Radial† | 253.1            | 215.3                  | 35.900 µg/L           | 35.900 ppb            | 13:38:53         |
| 1     | Sr 421.552†        | -409.6           | 46.3                   | 0.1341 µg/L           | 0.1341 ppb            | 13:39:13         |
| 1     | Sc 361.383         | 1329409.3        | 1329409.3              | 99.865 %              |                       | 13:40:00         |
| 1     | Y 371.029          | 718434.3         | 718434.3               | 99.170 %              |                       | 13:40:00         |
| 1     | Ag 328.068†        | -1890.5          | -2.2                   | -0.0067 µg/L          | -0.0067 ppb           | 13:40:02         |
| 1     | As 188.979†        | -29.7            | 0.2                    | 0.1224 µg/L           | 0.1224 ppb            | 13:40:23         |
| 1     | B 249.677†         | 737.4            | -146.5                 | -2.1006 µg/L          | -2.1006 ppb           | 13:40:02         |
| 1     | Ba 233.527†        | -239.8           | 0.7                    | 0.0059 µg/L           | 0.0059 ppb            | 13:40:23         |
| 1     | Be 313.107†        | -2874.1          | 777.9                  | 0.2093 µg/L           | 0.2093 ppb            | 13:40:02         |
| 1     | Cd 226.502†        | -176.3           | 3.5                    | 0.0256 µg/L           | 0.0256 ppb            | 13:40:23         |
| 1     | Co 228.616†        | -86.7            | 4.7                    | 0.0700 µg/L           | 0.0700 ppb            | 13:40:23         |
| 1     | Cr 267.716†        | 136.5            | 7.6                    | 0.0968 µg/L           | 0.0968 ppb            | 13:40:23         |
| 1     | Cu 324.752†        | 5588.8           | -180.6                 | -0.8022 µg/L          | -0.8022 ppb           | 13:40:02         |
| 1     | Mn 257.610†        | 247.9            | 96.3                   | 0.1689 µg/L           | 0.1689 ppb            | 13:40:23         |
| 1     | Mo 202.031†        | -25.4            | 4.3                    | 0.2240 µg/L           | 0.2240 ppb            | 13:40:23         |
| 1     | Ni 231.604†        | -186.7           | 10.8                   | 0.1719 µg/L           | 0.1719 ppb            | 13:40:23         |
| 1     | P 214.914†         | -79.8            | 15.2                   | 5.4657 µg/L           | 5.4657 ppb            | 13:40:23         |
| 1     | Pb 220.353†        | 78.0             | 4.4                    | 0.4565 µg/L           | 0.4565 ppb            | 13:40:23         |
| 1     | S 181.975 Axial†   | 90.4             | -12.2                  | -13.569 µg/L          | -13.569 ppb           | 13:40:23         |
| 1     | Sb 206.836†        | 57.8             | 13.6                   | 2.6281 µg/L           | 2.6281 ppb            | 13:40:23         |
| 1     | Se 196.026†        | -0.4             | -8.4                   | -4.42 µg/L            | -4.42 ppb             | 13:40:23         |
| 1     | SiO2†              | 2884.3           | -131.5                 | -14.558 µg/L          | -14.558 ppb           | 13:40:02         |
| 1     | Si 251.611†        | 562.6            | -21.1                  | -0.3560 µg/L          | -0.3560 ppb           | 13:40:02         |
| 1     | Sn 189.927†        | -26.4            | 1.1                    | 0.1356 µg/L           | 0.1356 ppb            | 13:40:23         |
| 1     | Ti 334.940†        | -783.4           | 104.8                  | 0.1528 µg/L           | 0.1528 ppb            | 13:40:02         |
| 1     | Tl 190.801†        | -87.1            | -1.2                   | -0.3574 µg/L          | -0.3574 ppb           | 13:40:23         |
| 1     | U 367.007†         | -343.8           | -60.1                  | -7.4364 µg/L          | -7.4364 ppb           | 13:40:02         |
| 1     | V 292.402†         | 118.8            | 15.6                   | 0.0680 µg/L           | 0.0680 ppb            | 13:40:02         |
| 1     | Zn 213.857†        | 26.0             | -20.5                  | -0.1161 µg/L          | -0.1161 ppb           | 13:40:23         |
| 2     | Sc RADIAL          | 70154.2          | 70154.2                | 97.4 %                |                       | 13:39:15         |
| 2     | Al 396.153Radial†  | 128.2            | 30.0                   | 10.944 µg/L           | 10.944 ppb            | 13:39:35         |
| 2     | Ca 317.933Radial†  | 395.9            | 63.3                   | 7.0474 µg/L           | 7.0474 ppb            | 13:39:35         |
| 2     | Fe 238.204 Radial† | -441.2           | 65.0                   | 6.1462 µg/L           | 6.1462 ppb            | 13:39:35         |
| 2     | K 766.490 Radial†  | 891.5            | -154.8                 | -81.351 µg/L          | -81.351 ppb           | 13:39:15         |
| 2     | Mg 279.077 IEC†    | 29.1             | 3.1                    | 1.6547 µg/L           | 1.6547 ppb            | 13:39:35         |
| 2     | Na 589.592 Radial† | 127.5            | 91.2                   | 15.209 µg/L           | 15.209 ppb            | 13:39:15         |
| 2     | Sr 421.552†        | -435.0           | 12.4                   | 0.0356 µg/L           | 0.0356 ppb            | 13:39:35         |
| 2     | Sc 361.383         | 1317570.4        | 1317570.4              | 98.976 %              |                       | 13:40:25         |
| 2     | Y 371.029          | 711373.4         | 711373.4               | 98.195 %              |                       | 13:40:25         |
| 2     | Ag 328.068†        | -1810.4          | 61.7                   | 0.3228 µg/L           | 0.3228 ppb            | 13:40:27         |
| 2     | As 188.979†        | -34.8            | -5.2                   | -2.8162 µg/L          | -2.8162 ppb           | 13:40:47         |



|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | B 249.677†         | 844.3     | -31.8     | -0.4529 µg/L | -0.4529 ppb | 13:40:27 |
| 2 | Ba 233.527†        | -239.9    | -1.6      | -0.0146 µg/L | -0.0146 ppb | 13:40:47 |
| 2 | Be 313.107†        | -2763.1   | 864.2     | 0.2334 µg/L  | 0.2334 ppb  | 13:40:27 |
| 2 | Cd 226.502†        | -151.5    | 27.0      | 0.2036 µg/L  | 0.2036 ppb  | 13:40:47 |
| 2 | Co 228.616†        | -76.6     | 14.1      | 0.2097 µg/L  | 0.2097 ppb  | 13:40:47 |
| 2 | Cr 267.716†        | 136.0     | 8.4       | 0.1058 µg/L  | 0.1058 ppb  | 13:40:47 |
| 2 | Cu 324.752†        | 5420.5    | -300.3    | -1.3307 µg/L | -1.3307 ppb | 13:40:27 |
| 2 | Mn 257.610†        | 246.9     | 97.5      | 0.1708 µg/L  | 0.1708 ppb  | 13:40:47 |
| 2 | Mo 202.031†        | -19.2     | 10.4      | 0.5383 µg/L  | 0.5383 ppb  | 13:40:47 |
| 2 | Ni 231.604†        | -141.2    | 55.1      | 0.8756 µg/L  | 0.8756 ppb  | 13:40:47 |
| 2 | P 214.914†         | -89.3     | 4.9       | 1.7597 µg/L  | 1.7597 ppb  | 13:40:47 |
| 2 | Pb 220.353†        | 86.9      | 14.1      | 1.4313 µg/L  | 1.4313 ppb  | 13:40:47 |
| 2 | S 181.975 Axial†   | 93.7      | -8.1      | -8.9939 µg/L | -8.9939 ppb | 13:40:47 |
| 2 | Sb 206.836†        | 74.9      | 31.4      | 6.0594 µg/L  | 6.0594 ppb  | 13:40:47 |
| 2 | Se 196.026†        | 2.9       | -5.1      | -2.66 µg/L   | -2.66 ppb   | 13:40:47 |
| 2 | SiO2†              | 2951.6    | -37.7     | -4.1670 µg/L | -4.1670 ppb | 13:40:27 |
| 2 | Si 251.611†        | 590.8     | 12.5      | 0.2124 µg/L  | 0.2124 ppb  | 13:40:27 |
| 2 | Sn 189.927†        | -17.5     | 9.8       | 1.2503 µg/L  | 1.2503 ppb  | 13:40:47 |
| 2 | Ti 334.940†        | -762.3    | 119.1     | 0.1732 µg/L  | 0.1732 ppb  | 13:40:27 |
| 2 | Tl 190.801†        | -78.8     | 6.5       | 1.9871 µg/L  | 1.9871 ppb  | 13:40:47 |
| 2 | U 367.007†         | -340.7    | -60.0     | -7.4151 µg/L | -7.4151 ppb | 13:40:27 |
| 2 | V 292.402†         | 56.8      | -46.0     | -0.2081 µg/L | -0.2081 ppb | 13:40:27 |
| 2 | Zn 213.857†        | -7.4      | -54.0     | -0.3058 µg/L | -0.3058 ppb | 13:40:47 |
| 3 | Sc RADIAL          | 70435.9   | 70435.9   | 97.8 %       |             | 13:39:37 |
| 3 | Al 396.153Radial†  | 137.0     | 38.5      | 14.045 µg/L  | 14.045 ppb  | 13:39:57 |
| 3 | Ca 317.933Radial†  | 370.0     | 35.3      | 3.9241 µg/L  | 3.9241 ppb  | 13:39:57 |
| 3 | Fe 238.204 Radial† | -443.5    | 64.5      | 6.1034 µg/L  | 6.1034 ppb  | 13:39:57 |
| 3 | K 766.490 Radial†  | 891.6     | -158.4    | -83.228 µg/L | -83.228 ppb | 13:39:37 |
| 3 | Mg 279.077 IEC†    | 35.8      | 9.8       | 5.2986 µg/L  | 5.2986 ppb  | 13:39:57 |
| 3 | Na 589.592 Radial† | 57.7      | 19.3      | 3.2138 µg/L  | 3.2138 ppb  | 13:39:37 |
| 3 | Sr 421.552†        | -438.7    | 10.3      | 0.0298 µg/L  | 0.0298 ppb  | 13:39:57 |
| 3 | Sc 361.383         | 1318099.9 | 1318099.9 | 99.016 %     |             | 13:40:49 |
| 3 | Y 371.029          | 711815.2  | 711815.2  | 98.256 %     |             | 13:40:49 |
| 3 | Ag 328.068†        | -1719.5   | 154.3     | 0.7919 µg/L  | 0.7919 ppb  | 13:40:51 |
| 3 | As 188.979†        | -29.1     | 0.5       | 0.2899 µg/L  | 0.2899 ppb  | 13:41:11 |
| 3 | B 249.677†         | 766.2     | -111.1    | -1.5928 µg/L | -1.5928 ppb | 13:40:51 |
| 3 | Ba 233.527†        | -218.1    | 20.5      | 0.1829 µg/L  | 0.1829 ppb  | 13:41:11 |
| 3 | Be 313.107†        | -2604.3   | 1025.7    | 0.2782 µg/L  | 0.2782 ppb  | 13:40:51 |
| 3 | Cd 226.502†        | -141.5    | 37.1      | 0.2800 µg/L  | 0.2800 ppb  | 13:41:11 |
| 3 | Co 228.616†        | -75.5     | 15.2      | 0.2264 µg/L  | 0.2264 ppb  | 13:41:11 |
| 3 | Cr 267.716†        | 128.7     | 1.0       | 0.0047 µg/L  | 0.0047 ppb  | 13:41:11 |
| 3 | Cu 324.752†        | 5640.0    | -80.8     | -0.3496 µg/L | -0.3496 ppb | 13:40:51 |
| 3 | Mn 257.610†        | 258.2     | 108.8     | 0.1905 µg/L  | 0.1905 ppb  | 13:41:11 |
| 3 | Mo 202.031†        | -17.3     | 12.2      | 0.6352 µg/L  | 0.6352 ppb  | 13:41:11 |
| 3 | Ni 231.604†        | -168.6    | 27.5      | 0.4372 µg/L  | 0.4372 ppb  | 13:41:11 |
| 3 | P 214.914†         | -83.9     | 10.4      | 3.7430 µg/L  | 3.7430 ppb  | 13:41:11 |
| 3 | Pb 220.353†        | 79.5      | 6.6       | 0.6545 µg/L  | 0.6545 ppb  | 13:41:11 |
| 3 | S 181.975 Axial†   | 95.1      | -6.6      | -7.3609 µg/L | -7.3609 ppb | 13:41:11 |
| 3 | Sb 206.836†        | 76.4      | 32.8      | 6.3414 µg/L  | 6.3414 ppb  | 13:41:11 |
| 3 | Se 196.026†        | 5.5       | -2.4      | -1.26 µg/L   | -1.26 ppb   | 13:41:11 |
| 3 | SiO2†              | 2863.8    | -127.5    | -14.106 µg/L | -14.106 ppb | 13:40:51 |
| 3 | Si 251.611†        | 490.3     | -89.3     | -1.5132 µg/L | -1.5132 ppb | 13:40:51 |
| 3 | Sn 189.927†        | -23.2     | 4.0       | 0.5162 µg/L  | 0.5162 ppb  | 13:41:11 |
| 3 | Ti 334.940†        | -600.4    | 282.9     | 0.3979 µg/L  | 0.3979 ppb  | 13:40:51 |
| 3 | Tl 190.801†        | -75.9     | 9.4       | 2.8993 µg/L  | 2.8993 ppb  | 13:41:11 |
| 3 | U 367.007†         | -215.9    | 66.2      | 8.1116 µg/L  | 8.1116 ppb  | 13:40:51 |
| 3 | V 292.402†         | 4.4       | -98.9     | -0.4397 µg/L | -0.4397 ppb | 13:40:51 |
| 3 | Zn 213.857†        | 3.7       | -42.8     | -0.2434 µg/L | -0.2434 ppb | 13:41:11 |

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Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Conc.   | Calib. Units | Std.Dev. | Sample Conc. | Units | Std.Dev. | RSD     |
|---|--------------------------|---------|--------------|----------|--------------|-------|----------|---------|
| Sc 361.383  | 1321693.2                | 99.286  | %            | 0.5024   |              |       |          | 0.51%   |
| Sc RADIAL   | 70696.8                  | 98.1    | %            | 0.99     |              |       |          | 1.00%   |
| Y 371.029   | 713874.3                 | 98.541  | %            | 0.5460   |              |       |          | 0.55%   |
| Ag 328.068†   | 71.3                     | 0.3693  | µg/L         | 0.40129  | 0.3693       | ppb   | 0.40129  | 108.66% |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |         |              |          |              |       |          |         |
| Al 396.153Radial†   | 29.6                     | 10.791  | µg/L         | 3.3331   | 10.791       | ppb   | 3.3331   | 30.89%  |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |         |              |          |              |       |          |         |
| As 188.979†   | -1.5                     | -0.8013 | µg/L         | 1.74692  | -0.8013      | ppb   | 1.74692  | 218.01% |

|  |        |              |         |             |         |         |  |
|--|--------|--------------|---------|-------------|---------|---------|--|
| QC value within limits for As 188.979 Recovery = Not calculated        |        |              |         |             |         |         |  |
| B 249.677†   | -96.4  | -1.3821 µg/L | 0.84383 | -1.3821 ppb | 0.84383 | 61.05%  |  |
| QC value within limits for B 249.677 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Ba 233.527†  | 6.5    | 0.0581 µg/L  | 0.10861 | 0.0581 ppb  | 0.10861 | 187.09% |  |
| QC value within limits for Ba 233.527 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Be 313.107†  | 889.3  | 0.2403 µg/L  | 0.03493 | 0.2403 ppb  | 0.03493 | 14.54%  |  |
| QC value within limits for Be 313.107 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Ca 317.933Radial†  | 55.4   | 6.1699 µg/L  | 1.96033 | 6.1699 ppb  | 1.96033 | 31.77%  |  |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated  |        |              |         |             |         |         |  |
| Cd 226.502†  | 22.5   | 0.1697 µg/L  | 0.13052 | 0.1697 ppb  | 0.13052 | 76.91%  |  |
| QC value within limits for Cd 226.502 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Co 228.616†  | 11.4   | 0.1687 µg/L  | 0.08588 | 0.1687 ppb  | 0.08588 | 50.91%  |  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Cr 267.716†  | 5.7    | 0.0691 µg/L  | 0.05593 | 0.0691 ppb  | 0.05593 | 80.93%  |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Cu 324.752†  | -187.2 | -0.8275 µg/L | 0.49104 | -0.8275 ppb | 0.49104 | 59.34%  |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Fe 238.204 Radial†   | 71.4   | 6.7514 µg/L  | 1.08553 | 6.7514 ppb  | 1.08553 | 16.08%  |  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |         |             |         |         |  |
| K 766.490 Radial†  | -167.8 | -88.188 µg/L | 10.2606 | -88.188 ppb | 10.2606 | 11.63%  |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |         |             |         |         |  |
| Mg 279.077 IEC†  | 1.5    | 0.7971 µg/L  | 4.98595 | 0.7971 ppb  | 4.98595 | 625.52% |  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |         |             |         |         |  |
| Mn 257.610†  | 100.9  | 0.1767 µg/L  | 0.01195 | 0.1767 ppb  | 0.01195 | 6.76%   |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Mo 202.031†  | 9.0    | 0.4658 µg/L  | 0.21498 | 0.4658 ppb  | 0.21498 | 46.15%  |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Na 589.592 Radial†   | 108.6  | 18.107 µg/L  | 16.5346 | 18.107 ppb  | 16.5346 | 91.31%  |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |         |             |         |         |  |
| Ni 231.604†  | 31.1   | 0.4949 µg/L  | 0.35535 | 0.4949 ppb  | 0.35535 | 71.80%  |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |         |             |         |         |  |
| P 214.914†   | 10.1   | 3.6561 µg/L  | 1.85455 | 3.6561 ppb  | 1.85455 | 50.72%  |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Pb 220.353†  | 8.3    | 0.8474 µg/L  | 0.51521 | 0.8474 ppb  | 0.51521 | 60.80%  |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |         |             |         |         |  |
| S 181.975 Axial†   | -8.9   | -9.9747 µg/L | 3.21832 | -9.9747 ppb | 3.21832 | 32.26%  |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |         |             |         |         |  |
| Sb 206.836†  | 25.9   | 5.0097 µg/L  | 2.06727 | 5.0097 ppb  | 2.06727 | 41.27%  |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Se 196.026†  | -5.3   | -2.78 µg/L   | 1.586   | -2.78 ppb   | 1.586   | 57.04%  |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |         |             |         |         |  |
| SiO2†  | -98.9  | -10.944 µg/L | 5.8733  | -10.944 ppb | 5.8733  | 53.67%  |  |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |         |             |         |         |  |
| Si 251.611†  | -32.6  | -0.5523 µg/L | 0.87938 | -0.5523 ppb | 0.87938 | 159.23% |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Sn 189.927†  | 5.0    | 0.6340 µg/L  | 0.56664 | 0.6340 ppb  | 0.56664 | 89.37%  |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Sr 421.552†  | 23.0   | 0.0665 µg/L  | 0.05860 | 0.0665 ppb  | 0.05860 | 88.11%  |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Ti 334.940†  | 168.9  | 0.2413 µg/L  | 0.13602 | 0.2413 ppb  | 0.13602 | 56.37%  |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Tl 190.801†  | 4.9    | 1.5097 µg/L  | 1.68003 | 1.5097 ppb  | 1.68003 | 111.28% |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |         |             |         |         |  |
| U 367.007†   | -18.0  | -2.2467 µg/L | 8.97050 | -2.2467 ppb | 8.97050 | 399.28% |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |         |             |         |         |  |
| V 292.402†   | -43.1  | -0.1933 µg/L | 0.25416 | -0.1933 ppb | 0.25416 | 131.51% |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Zn 213.857†  | -39.1  | -0.2218 µg/L | 0.09672 | -0.2218 ppb | 0.09672 | 43.61%  |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |         |             |         |         |  |
| All analyte(s) passed QC.  |        |              |         |             |         |         |  |

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Analysis Begun

Start Time: 11/11/2016 13:41:23

Plasma On Time: 11/7/2016 06:01:25

Logged In Analyst: lab

Technique: ICP Continuous

Spectrometer Model: Optima 7300 DV, S/N No Serial #Autosampler Model: AS-93plus

Sample Information File: C:\pe\optima4\Sample Information\111116.sif

Batch ID:

Results Data Set: 111116

Results Library: C:\pe\optima4\Results\Results.mdb

=====  
Sequence No.: 1

Autosampler Location: 358

Sample ID: 409254020|1611117|20

Date Collected: 11/11/2016 13:41:24

Analyst: TXT1

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

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Replicate Data: 409254020|1611117|20

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 72562.0       | 72562.0             | 101 %              |                    | 13:41:52      |
| 1     | Al 396.153Radial†  | 14962.3       | 14752.6             | 5386.7 µg/L        | 5386.7 ppb         | 13:41:54      |
| 1     | Ca 317.933Radial†  | 52101.5       | 51381.9             | 5719.9 µg/L        | 5719.9 ppb         | 13:41:54      |
| 1     | Fe 238.204 Radial† | 107362.4      | 107104.9            | 10132 µg/L         | 10132 ppb          | 13:41:52      |
| 1     | K 766.490 Radial†  | 2851.9        | 1761.0              | 928.63 µg/L        | 928.63 ppb         | 13:41:54      |
| 1     | Mg 279.077 IEC†    | 4761.3        | 4700.1              | 2537.3 µg/L        | 2537.3 ppb         | 13:41:54      |
| 1     | Na 589.592 Radial† | 4709.5        | 4635.7              | 773.03 µg/L        | 773.03 ppb         | 13:41:54      |
| 1     | Sr 421.552†        | 9491.1        | 9881.6              | 28.472 µg/L        | 28.472 ppb         | 13:41:54      |
| 1     | Sc 361.383         | 1351709.4     | 1351709.4           | 101.54 %           |                    | 13:42:05      |
| 1     | Y 371.029          | 735029.7      | 735029.7            | 101.46 %           |                    | 13:42:05      |
| 1     | Ag 328.068†        | -1842.1       | 76.7                | 0.9111 µg/L        | 0.9111 ppb         | 13:42:05      |
| 1     | As 188.979†        | -22.1         | 8.2                 | 5.7722 µg/L        | 5.7722 ppb         | 13:42:25      |
| 1     | B 249.677†         | 569.8         | -323.7              | 2.7767 µg/L        | 2.7767 ppb         | 13:42:05      |
| 1     | Ba 233.527†        | 18005.6       | 17973.2             | 160.31 µg/L        | 160.31 ppb         | 13:42:05      |
| 1     | Be 313.107†        | -1658.2       | 2022.9              | -3.3712 µg/L       | -3.3712 ppb        | 13:42:05      |
| 1     | Cd 226.502†        | 39.6          | 219.0               | 0.4972 µg/L        | 0.4972 ppb         | 13:42:25      |
| 1     | Co 228.616†        | 200.6         | 289.1               | 4.3589 µg/L        | 4.3589 ppb         | 13:42:25      |
| 1     | Cr 267.716†        | 777.6         | 636.9               | 7.6128 µg/L        | 7.6128 ppb         | 13:42:25      |
| 1     | Cu 324.752†        | 7647.4        | 1754.5              | 8.4621 µg/L        | 8.4621 ppb         | 13:42:05      |
| 1     | Mn 257.610†        | 235519.8      | 231795.0            | 406.16 µg/L        | 406.16 ppb         | 13:42:05      |
| 1     | Mo 202.031†        | -37.3         | -7.0                | -0.0893 µg/L       | -0.0893 ppb        | 13:42:25      |
| 1     | Ni 231.604†        | 576.9         | 765.9               | 12.176 µg/L        | 12.176 ppb         | 13:42:25      |
| 1     | P 214.914†         | 761.3         | 844.8               | 303.97 µg/L        | 303.97 ppb         | 13:42:25      |
| 1     | Pb 220.353†        | 148.9         | 73.0                | 7.5743 µg/L        | 7.5743 ppb         | 13:42:25      |
| 1     | S 181.975 Axial†   | 753.4         | 639.3               | 711.34 µg/L        | 711.34 ppb         | 13:42:25      |
| 1     | Sb 206.836†        | 40.9          | -4.0                | -1.8178 µg/L       | -1.8178 ppb        | 13:42:25      |
| 1     | Se 196.026†        | -4.1          | -12.0               | -1.74 µg/L         | -1.74 ppb          | 13:42:25      |
| 1     | SiO2†              | 34854.7       | 31306.2             | 3464.9 µg/L        | 3464.9 ppb         | 13:42:05      |
| 1     | Si 251.611†        | 97645.8       | 95580.1             | 1621.8 µg/L        | 1621.8 ppb         | 13:42:05      |
| 1     | Sn 189.927†        | -20.7         | 7.1                 | 0.9194 µg/L        | 0.9194 ppb         | 13:42:25      |
| 1     | Ti 334.940†        | 57916.0       | 57926.7             | 82.381 µg/L        | 82.381 ppb         | 13:42:05      |
| 1     | Tl 190.801†        | -77.7         | 9.6                 | 3.1077 µg/L        | 3.1077 ppb         | 13:42:25      |
| 1     | U 367.007†         | 128.5         | 410.7               | -5.0448 µg/L       | -5.0448 ppb        | 13:42:05      |
| 1     | V 292.402†         | 3736.9        | 3576.9              | 16.735 µg/L        | 16.735 ppb         | 13:42:05      |
| 1     | Zn 213.857†        | 6663.6        | 6516.0              | 35.746 µg/L        | 35.746 ppb         | 13:42:25      |
| 2     | Sc RADIAL          | 72886.2       | 72886.2             | 101 %              |                    | 13:41:56      |
| 2     | Al 396.153Radial†  | 14707.6       | 14434.7             | 5270.6 µg/L        | 5270.6 ppb         | 13:41:58      |
| 2     | Ca 317.933Radial†  | 51059.2       | 50121.7             | 5579.6 µg/L        | 5579.6 ppb         | 13:41:58      |
| 2     | Fe 238.204 Radial† | 108214.2      | 107472.6            | 10166 µg/L         | 10166 ppb          | 13:41:56      |
| 2     | K 766.490 Radial†  | 2743.4        | 1641.3              | 865.71 µg/L        | 865.71 ppb         | 13:41:58      |
| 2     | Mg 279.077 IEC†    | 4706.2        | 4624.6              | 2496.6 µg/L        | 2496.6 ppb         | 13:41:58      |
| 2     | Na 589.592 Radial† | 4636.9        | 4543.2              | 757.60 µg/L        | 757.60 ppb         | 13:41:58      |
| 2     | Sr 421.552†        | 9320.6        | 9671.2              | 27.866 µg/L        | 27.866 ppb         | 13:41:58      |
| 2     | Sc 361.383         | 1323255.0     | 1323255.0           | 99.403 %           |                    | 13:42:28      |
| 2     | Y 371.029          | 719220.3      | 719220.3            | 99.279 %           |                    | 13:42:28      |
| 2     | Ag 328.068†        | -1946.5       | -67.3               | 0.1687 µg/L        | 0.1687 ppb         | 13:42:28      |
| 2     | As 188.979†        | -25.3         | 4.5                 | 3.7601 µg/L        | 3.7601 ppb         | 13:42:48      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | B 249.677†         | 490.9     | -391.0    | 1.8347 µg/L  | 1.8347 ppb  | 13:42:28 |
| 2 | Ba 233.527†        | 17931.3   | 18279.8   | 163.04 µg/L  | 163.04 ppb  | 13:42:28 |
| 2 | Be 313.107†        | -1494.8   | 2152.1    | -3.4015 µg/L | -3.4015 ppb | 13:42:28 |
| 2 | Cd 226.502†        | 30.8      | 211.0     | 0.4325 µg/L  | 0.4325 ppb  | 13:42:48 |
| 2 | Co 228.616†        | 197.5     | 290.2     | 4.3780 µg/L  | 4.3780 ppb  | 13:42:48 |
| 2 | Cr 267.716†        | 777.0     | 652.7     | 7.7958 µg/L  | 7.7958 ppb  | 13:42:48 |
| 2 | Cu 324.752†        | 7539.1    | 1807.5    | 8.7013 µg/L  | 8.7013 ppb  | 13:42:28 |
| 2 | Mn 257.610†        | 236547.1  | 237816.1  | 416.71 µg/L  | 416.71 ppb  | 13:42:28 |
| 2 | Mo 202.031†        | -28.4     | 1.1       | 0.3317 µg/L  | 0.3317 ppb  | 13:42:48 |
| 2 | Ni 231.604†        | 601.9     | 803.2     | 12.770 µg/L  | 12.770 ppb  | 13:42:48 |
| 2 | P 214.914†         | 766.5     | 866.2     | 311.69 µg/L  | 311.69 ppb  | 13:42:48 |
| 2 | Pb 220.353†        | 157.6     | 84.8      | 8.7628 µg/L  | 8.7628 ppb  | 13:42:48 |
| 2 | S 181.975 Axial†   | 765.2     | 667.1     | 742.36 µg/L  | 742.36 ppb  | 13:42:48 |
| 2 | Sb 206.836†        | 48.3      | 4.3       | -0.2367 µg/L | -0.2367 ppb | 13:42:48 |
| 2 | Se 196.026†        | -10.2     | -18.3     | -5.01 µg/L   | -5.01 ppb   | 13:42:48 |
| 2 | SiO2†              | 34986.0   | 32176.5   | 3561.2 µg/L  | 3561.2 ppb  | 13:42:28 |
| 2 | Si 251.611†        | 98008.2   | 98012.6   | 1663.1 µg/L  | 1663.1 ppb  | 13:42:28 |
| 2 | Sn 189.927†        | -28.5     | -1.2      | -0.1359 µg/L | -0.1359 ppb | 13:42:48 |
| 2 | Ti 334.940†        | 58131.1   | 59369.6   | 84.428 µg/L  | 84.428 ppb  | 13:42:28 |
| 2 | Tl 190.801†        | -84.0     | 1.6       | 0.6631 µg/L  | 0.6631 ppb  | 13:42:48 |
| 2 | U 367.007†         | 162.7     | 447.9     | -0.6497 µg/L | -0.6497 ppb | 13:42:28 |
| 2 | V 292.402†         | 3655.8    | 3574.4    | 16.728 µg/L  | 16.728 ppb  | 13:42:28 |
| 2 | Zn 213.857†        | 6809.0    | 6803.4    | 37.374 µg/L  | 37.374 ppb  | 13:42:48 |
| 3 | Sc RADIAL          | 71098.0   | 71098.0   | 98.7 %       |             | 13:42:00 |
| 3 | Al 396.153Radial†  | 14850.3   | 14945.0   | 5456.9 µg/L  | 5456.9 ppb  | 13:42:02 |
| 3 | Ca 317.933Radial†  | 51612.6   | 51951.7   | 5783.3 µg/L  | 5783.3 ppb  | 13:42:02 |
| 3 | Fe 238.204 Radial† | 105732.1  | 107647.9  | 10183 µg/L   | 10183 ppb   | 13:42:00 |
| 3 | K 766.490 Radial†  | 2734.7    | 1700.6    | 896.90 µg/L  | 896.90 ppb  | 13:42:02 |
| 3 | Mg 279.077 IEC†    | 4745.6    | 4781.5    | 2581.2 µg/L  | 2581.2 ppb  | 13:42:02 |
| 3 | Na 589.592 Radial† | 4729.4    | 4752.2    | 792.45 µg/L  | 792.45 ppb  | 13:42:02 |
| 3 | Sr 421.552†        | 9274.6    | 9856.3    | 28.396 µg/L  | 28.396 ppb  | 13:42:02 |
| 3 | Sc 361.383         | 1354155.0 | 1354155.0 | 101.72 %     |             | 13:42:50 |
| 3 | Y 371.029          | 735128.9  | 735128.9  | 101.47 %     |             | 13:42:50 |
| 3 | Ag 328.068†        | -1871.9   | 50.7      | 0.7847 µg/L  | 0.7847 ppb  | 13:42:50 |
| 3 | As 188.979†        | -25.0     | 5.4       | 4.2584 µg/L  | 4.2584 ppb  | 13:43:10 |
| 3 | B 249.677†         | 486.1     | -407.0    | 1.6162 µg/L  | 1.6162 ppb  | 13:42:50 |
| 3 | Ba 233.527†        | 18781.1   | 18703.6   | 166.82 µg/L  | 166.82 ppb  | 13:42:50 |
| 3 | Be 313.107†        | -1583.0   | 2099.7    | -3.5138 µg/L | -3.5138 ppb | 13:42:50 |
| 3 | Cd 226.502†        | 38.3      | 217.7     | 0.4812 µg/L  | 0.4812 ppb  | 13:43:10 |
| 3 | Co 228.616†        | 207.7     | 295.7     | 4.4643 µg/L  | 4.4643 ppb  | 13:43:10 |
| 3 | Cr 267.716†        | 803.8     | 661.2     | 7.9082 µg/L  | 7.9082 ppb  | 13:43:10 |
| 3 | Cu 324.752†        | 7717.9    | 1810.2    | 8.7045 µg/L  | 8.7045 ppb  | 13:42:50 |
| 3 | Mn 257.610†        | 246152.6  | 241828.7  | 423.74 µg/L  | 423.74 ppb  | 13:42:50 |
| 3 | Mo 202.031†        | -40.3     | -9.8      | -0.2362 µg/L | -0.2362 ppb | 13:43:10 |
| 3 | Ni 231.604†        | 596.2     | 783.9     | 12.462 µg/L  | 12.462 ppb  | 13:43:10 |
| 3 | P 214.914†         | 788.8     | 870.6     | 313.25 µg/L  | 313.25 ppb  | 13:43:10 |
| 3 | Pb 220.353†        | 160.3     | 83.9      | 8.6885 µg/L  | 8.6885 ppb  | 13:43:10 |
| 3 | S 181.975 Axial†   | 787.6     | 671.6     | 747.34 µg/L  | 747.34 ppb  | 13:43:10 |
| 3 | Sb 206.836†        | 54.7      | 9.5       | 0.7791 µg/L  | 0.7791 ppb  | 13:43:10 |
| 3 | Se 196.026†        | -5.7      | -13.6     | -2.57 µg/L   | -2.57 ppb   | 13:43:10 |
| 3 | SiO2†              | 36313.4   | 32678.2   | 3616.7 µg/L  | 3616.7 ppb  | 13:42:50 |
| 3 | Si 251.611†        | 101971.8  | 99659.1   | 1691.0 µg/L  | 1691.0 ppb  | 13:42:50 |
| 3 | Sn 189.927†        | -24.7     | 3.2       | 0.4306 µg/L  | 0.4306 ppb  | 13:43:10 |
| 3 | Ti 334.940†        | 60246.6   | 60114.8   | 85.497 µg/L  | 85.497 ppb  | 13:42:50 |
| 3 | Tl 190.801†        | -84.3     | 3.2       | 1.1635 µg/L  | 1.1635 ppb  | 13:43:10 |
| 3 | U 367.007†         | 50.9      | 334.2     | -14.746 µg/L | -14.746 ppb | 13:42:50 |
| 3 | V 292.402†         | 3814.1    | 3646.1    | 17.045 µg/L  | 17.045 ppb  | 13:42:50 |
| 3 | Zn 213.857†        | 6934.9    | 6770.8    | 37.183 µg/L  | 37.183 ppb  | 13:43:10 |

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Mean Data: 409254020|1611117|20

| Analyte           | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|-------------------|--------------------------|-------------|--------------|----------|--------------------|----------|--------|
| Sc 361.383        | 1343039.8                | 100.89      | %            | 1.290    |                    |          | 1.28%  |
| Sc RADIAL         | 72182.1                  | 100         | %            | 1.3      |                    |          | 1.32%  |
| Y 371.029         | 729793.0                 | 100.74      | %            | 1.264    |                    |          | 1.25%  |
| Ag 328.068†       | 20.0                     | 0.6215      | µg/L         | 0.39723  | 0.6215 ppb         | 0.39723  | 63.91% |
| Al 396.153Radial† | 14710.7                  | 5371.4      | µg/L         | 94.09    | 5371.4 ppb         | 94.09    | 1.75%  |
| As 188.979†       | 6.0                      | 4.5969      | µg/L         | 1.04790  | 4.5969 ppb         | 1.04790  | 22.80% |
| B 249.677†        | -373.9                   | 2.0759      | µg/L         | 0.61672  | 2.0759 ppb         | 0.61672  | 29.71% |
| Ba 233.527†       | 18318.9                  | 163.39      | µg/L         | 3.270    | 163.39 ppb         | 3.270    | 2.00%  |

|                    |          |              |         |             |         |         |
|--------------------|----------|--------------|---------|-------------|---------|---------|
| Be 313.107†        | 2091.6   | -3.4288 µg/L | 0.07512 | -3.4288 ppb | 0.07512 | 2.19%   |
| Ca 317.933Radial†  | 51151.8  | 5694.2 µg/L  | 104.25  | 5694.2 ppb  | 104.25  | 1.83%   |
| Cd 226.502†        | 215.9    | 0.4703 µg/L  | 0.03369 | 0.4703 ppb  | 0.03369 | 7.16%   |
| Co 228.616†        | 291.7    | 4.4004 µg/L  | 0.05615 | 4.4004 ppb  | 0.05615 | 1.28%   |
| Cr 267.716†        | 650.2    | 7.7723 µg/L  | 0.14908 | 7.7723 ppb  | 0.14908 | 1.92%   |
| Cu 324.752†        | 1790.7   | 8.6226 µg/L  | 0.13903 | 8.6226 ppb  | 0.13903 | 1.61%   |
| Fe 238.204 Radial† | 107408.5 | 10160 µg/L   | 26.2    | 10160 ppb   | 26.2    | 0.26%   |
| K 766.490 Radial†  | 1701.0   | 897.08 µg/L  | 31.459  | 897.08 ppb  | 31.459  | 3.51%   |
| Mg 279.077 IEC†    | 4702.1   | 2538.4 µg/L  | 42.32   | 2538.4 ppb  | 42.32   | 1.67%   |
| Mn 257.610†        | 237146.6 | 415.53 µg/L  | 8.850   | 415.53 ppb  | 8.850   | 2.13%   |
| Mo 202.031†        | -5.2     | 0.0021 µg/L  | 0.29475 | 0.0021 ppb  | 0.29475 | >999.9% |
| Na 589.592 Radial† | 4643.7   | 774.36 µg/L  | 17.463  | 774.36 ppb  | 17.463  | 2.26%   |
| Ni 231.604†        | 784.3    | 12.469 µg/L  | 0.2972  | 12.469 ppb  | 0.2972  | 2.38%   |
| P 214.914†         | 860.5    | 309.64 µg/L  | 4.969   | 309.64 ppb  | 4.969   | 1.60%   |
| Pb 220.353†        | 80.6     | 8.3419 µg/L  | 0.66574 | 8.3419 ppb  | 0.66574 | 7.98%   |
| S 181.975 Axial†   | 659.3    | 733.68 µg/L  | 19.507  | 733.68 ppb  | 19.507  | 2.66%   |
| Sb 206.836†        | 3.3      | -0.4251 µg/L | 1.30868 | -0.4251 ppb | 1.30868 | 307.83% |
| Se 196.026†        | -14.7    | -3.11 µg/L   | 1.696   | -3.11 ppb   | 1.696   | 54.63%  |
| SiO2†              | 32053.6  | 3547.6 µg/L  | 76.83   | 3547.6 ppb  | 76.83   | 2.17%   |
| Si 251.611†        | 97750.6  | 1658.6 µg/L  | 34.80   | 1658.6 ppb  | 34.80   | 2.10%   |
| Sn 189.927†        | 3.0      | 0.4047 µg/L  | 0.52813 | 0.4047 ppb  | 0.52813 | 130.51% |
| Sr 421.552†        | 9803.0   | 28.245 µg/L  | 0.3301  | 28.245 ppb  | 0.3301  | 1.17%   |
| Ti 334.940†        | 59137.0  | 84.102 µg/L  | 1.5833  | 84.102 ppb  | 1.5833  | 1.88%   |
| Tl 190.801†        | 4.8      | 1.6448 µg/L  | 1.29142 | 1.6448 ppb  | 1.29142 | 78.52%  |
| U 367.007†         | 397.6    | -6.8135 µg/L | 7.21275 | -6.8135 ppb | 7.21275 | 105.86% |
| V 292.402†         | 3599.1   | 16.836 µg/L  | 0.1812  | 16.836 ppb  | 0.1812  | 1.08%   |
| Zn 213.857†        | 6696.7   | 36.768 µg/L  | 0.8901  | 36.768 ppb  | 0.8901  | 2.42%   |

Sequence No.: 2

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 11/11/2016 13:43:18

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 70285.3       | 70285.3             | 97.6 %             |                    | 13:43:47      |
| 1     | Al 396.153Radial†  | 13510.3       | 13745.5             | 5018.9 µg/L        | 5018.9 ppb         | 13:43:47      |
| 1     | Ca 317.933Radial†  | 43602.1       | 44346.2             | 4936.6 µg/L        | 4936.6 ppb         | 13:43:47      |
| 1     | Fe 238.204 Radial† | 51481.5       | 53283.3             | 5040.4 µg/L        | 5040.4 ppb         | 13:43:47      |
| 1     | K 766.490 Radial†  | 10373.8       | 9562.3              | 5026.5 µg/L        | 5026.5 ppb         | 13:43:47      |
| 1     | Mg 279.077 IEC†    | 8873.7        | 9068.2              | 4890.6 µg/L        | 4890.6 ppb         | 13:43:47      |
| 1     | Na 589.592 Radial† | 57468.4       | 58861.6             | 9815.5 µg/L        | 9815.5 ppb         | 13:43:45      |
| 1     | Sr 421.552†        | 167361.3      | 171993.5            | 498.83 µg/L        | 498.83 ppb         | 13:43:45      |
| 1     | Sc 361.383         | 1326968.0     | 1326968.0           | 99.682 %           |                    | 13:43:59      |
| 1     | Y 371.029          | 707559.8      | 707559.8            | 97.669 %           |                    | 13:43:59      |
| 1     | Ag 328.068†        | 92982.5       | 95170.1             | 491.12 µg/L        | 491.12 ppb         | 13:44:01      |
| 1     | As 188.979†        | 896.4         | 929.3               | 509.98 µg/L        | 509.98 ppb         | 13:44:21      |
| 1     | B 249.677†         | 35131.9       | 34359.2             | 497.83 µg/L        | 497.83 ppb         | 13:44:01      |
| 1     | Ba 233.527†        | 54907.4       | 55323.5             | 493.33 µg/L        | 493.33 ppb         | 13:44:01      |
| 1     | Be 313.107†        | 1793425.3     | 1802806.5           | 479.70 µg/L        | 479.70 ppb         | 13:43:59      |
| 1     | Cd 226.502†        | 64437.8       | 64823.5             | 489.90 µg/L        | 489.90 ppb         | 13:44:01      |
| 1     | Co 228.616†        | 33019.9       | 33216.9             | 493.95 µg/L        | 493.95 ppb         | 13:44:01      |
| 1     | Cr 267.716†        | 42081.5       | 42086.9             | 494.59 µg/L        | 494.59 ppb         | 13:44:01      |
| 1     | Cu 324.752†        | 117401.5      | 111999.4            | 495.01 µg/L        | 495.01 ppb         | 13:44:01      |
| 1     | Mn 257.610†        | 281636.6      | 282383.7            | 494.73 µg/L        | 494.73 ppb         | 13:44:01      |
| 1     | Mo 202.031†        | 9490.9        | 9551.0              | 496.56 µg/L        | 496.56 ppb         | 13:44:21      |
| 1     | Ni 231.604†        | 30645.3       | 30940.9             | 491.90 µg/L        | 491.90 ppb         | 13:44:01      |
| 1     | P 214.914†         | 6724.2        | 6840.8              | 2465.4 µg/L        | 2465.4 ppb         | 13:44:21      |
| 1     | Pb 220.353†        | 4965.1        | 4907.2              | 495.99 µg/L        | 495.99 ppb         | 13:44:21      |
| 1     | S 181.975 Axial†   | 961.6         | 862.0               | 961.05 µg/L        | 961.05 ppb         | 13:44:21      |
| 1     | Sb 206.836†        | 2638.5        | 2602.7              | 494.77 µg/L        | 494.77 ppb         | 13:44:21      |
| 1     | Se 196.026†        | 960.3         | 955.4               | 503 µg/L           | 503 ppb            | 13:44:21      |
| 1     | SiO2†              | 51961.9       | 49108.0             | 5435.1 µg/L        | 5435.1 ppb         | 13:44:01      |
| 1     | Si 251.611†        | 149830.6      | 149724.4            | 2539.2 µg/L        | 2539.2 ppb         | 13:44:01      |
| 1     | Sn 189.927†        | 3832.4        | 3872.1              | 495.09 µg/L        | 495.09 ppb         | 13:44:21      |
| 1     | Ti 334.940†        | 344877.7      | 346867.9            | 492.72 µg/L        | 492.72 ppb         | 13:43:59      |
| 1     | Tl 190.801†        | 1517.6        | 1608.5              | 494.18 µg/L        | 494.18 ppb         | 13:44:21      |
| 1     | U 367.007†         | 3596.1        | 3891.8              | 450.96 µg/L        | 450.96 ppb         | 13:44:01      |
| 1     | V 292.402†         | 109621.5      | 109868.1            | 493.66 µg/L        | 493.66 ppb         | 13:44:01      |
| 1     | Zn 213.857†        | 86921.4       | 87152.4             | 493.15 µg/L        | 493.15 ppb         | 13:44:01      |
| 2     | Sc RADIAL          | 71743.8       | 71743.8             | 99.6 %             |                    | 13:43:51      |
| 2     | Al 396.153Radial†  | 13784.1       | 13738.9             | 5016.5 µg/L        | 5016.5 ppb         | 13:43:51      |
| 2     | Ca 317.933Radial†  | 44780.4       | 44620.8             | 4967.2 µg/L        | 4967.2 ppb         | 13:43:51      |
| 2     | Fe 238.204 Radial† | 52589.0       | 53322.6             | 5044.1 µg/L        | 5044.1 ppb         | 13:43:51      |
| 2     | K 766.490 Radial†  | 10759.1       | 9733.0              | 5116.2 µg/L        | 5116.2 ppb         | 13:43:51      |
| 2     | Mg 279.077 IEC†    | 9079.5        | 9089.9              | 4902.3 µg/L        | 4902.3 ppb         | 13:43:51      |
| 2     | Na 589.592 Radial† | 57294.1       | 57489.2             | 9586.6 µg/L        | 9586.6 ppb         | 13:43:49      |
| 2     | Sr 421.552†        | 166823.2      | 167966.1            | 487.15 µg/L        | 487.15 ppb         | 13:43:49      |
| 2     | Sc 361.383         | 1338000.2     | 1338000.2           | 100.51 %           |                    | 13:44:23      |
| 2     | Y 371.029          | 711910.1      | 711910.1            | 98.270 %           |                    | 13:44:23      |
| 2     | Ag 328.068†        | 92229.1       | 93651.5             | 483.27 µg/L        | 483.27 ppb         | 13:44:26      |
| 2     | As 188.979†        | 898.6         | 923.9               | 507.01 µg/L        | 507.01 ppb         | 13:44:46      |
| 2     | B 249.677†         | 34978.8       | 33916.3             | 491.46 µg/L        | 491.46 ppb         | 13:44:26      |
| 2     | Ba 233.527†        | 54720.2       | 54683.1             | 487.62 µg/L        | 487.62 ppb         | 13:44:26      |
| 2     | Be 313.107†        | 1802240.4     | 1796742.5           | 478.19 µg/L        | 478.19 ppb         | 13:44:23      |
| 2     | Cd 226.502†        | 63945.6       | 63800.9             | 482.17 µg/L        | 482.17 ppb         | 13:44:26      |
| 2     | Co 228.616†        | 32748.1       | 32673.3             | 485.87 µg/L        | 485.87 ppb         | 13:44:26      |
| 2     | Cr 267.716†        | 41637.2       | 41296.7             | 485.29 µg/L        | 485.29 ppb         | 13:44:26      |
| 2     | Cu 324.752†        | 116481.0      | 110112.5            | 486.69 µg/L        | 486.69 ppb         | 13:44:26      |
| 2     | Mn 257.610†        | 279783.3      | 278210.3            | 487.42 µg/L        | 487.42 ppb         | 13:44:26      |
| 2     | Mo 202.031†        | 9518.1        | 9499.5              | 493.89 µg/L        | 493.89 ppb         | 13:44:46      |
| 2     | Ni 231.604†        | 30368.4       | 30411.9             | 483.49 µg/L        | 483.49 ppb         | 13:44:26      |
| 2     | P 214.914†         | 6769.9        | 6830.6              | 2461.8 µg/L        | 2461.8 ppb         | 13:44:46      |
| 2     | Pb 220.353†        | 4990.4        | 4891.3              | 494.38 µg/L        | 494.38 ppb         | 13:44:46      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 982.8     | 875.1     | 975.68 µg/L | 975.68 ppb | 13:44:46 |
| 2 | Sb 206.836†        | 2620.3    | 2562.7    | 487.18 µg/L | 487.18 ppb | 13:44:46 |
| 2 | Se 196.026†        | 960.1     | 947.3     | 499 µg/L    | 499 ppb    | 13:44:46 |
| 2 | SiO2†              | 51680.0   | 48397.7   | 5356.5 µg/L | 5356.5 ppb | 13:44:26 |
| 2 | Si 251.611†        | 148917.0  | 147576.2  | 2502.8 µg/L | 2502.8 ppb | 13:44:26 |
| 2 | Sn 189.927†        | 3839.4    | 3847.4    | 491.93 µg/L | 491.93 ppb | 13:44:46 |
| 2 | Ti 334.940†        | 347377.6  | 346502.5  | 492.20 µg/L | 492.20 ppb | 13:44:23 |
| 2 | Tl 190.801†        | 1520.9    | 1599.2    | 491.32 µg/L | 491.32 ppb | 13:44:46 |
| 2 | U 367.007†         | 3698.7    | 3964.1    | 459.84 µg/L | 459.84 ppb | 13:44:26 |
| 2 | V 292.402†         | 108790.0  | 108134.1  | 485.88 µg/L | 485.88 ppb | 13:44:26 |
| 2 | Zn 213.857†        | 86395.1   | 85909.8   | 486.11 µg/L | 486.11 ppb | 13:44:26 |
| 3 | Sc RADIAL          | 72750.8   | 72750.8   | 101 %       |            | 13:43:55 |
| 3 | Al 396.153Radial†  | 13987.9   | 13749.1   | 5020.2 µg/L | 5020.2 ppb | 13:43:55 |
| 3 | Ca 317.933Radial†  | 45472.2   | 44683.4   | 4974.2 µg/L | 4974.2 ppb | 13:43:55 |
| 3 | Fe 238.204 Radial† | 53371.2   | 53366.2   | 5048.2 µg/L | 5048.2 ppb | 13:43:55 |
| 3 | K 766.490 Radial†  | 10767.2   | 9591.5    | 5041.8 µg/L | 5041.8 ppb | 13:43:55 |
| 3 | Mg 279.077 IEC†    | 9237.6    | 9120.3    | 4918.7 µg/L | 4918.7 ppb | 13:43:55 |
| 3 | Na 589.592 Radial† | 58280.7   | 57669.8   | 9616.7 µg/L | 9616.7 ppb | 13:43:53 |
| 3 | Sr 421.552†        | 170078.1  | 168870.3  | 489.77 µg/L | 489.77 ppb | 13:43:53 |
| 3 | Sc 361.383         | 1342592.1 | 1342592.1 | 100.86 %    |            | 13:44:48 |
| 3 | Y 371.029          | 713731.1  | 713731.1  | 98.521 %    |            | 13:44:48 |
| 3 | Ag 328.068†        | 94392.2   | 95482.4   | 492.72 µg/L | 492.72 ppb | 13:44:50 |
| 3 | As 188.979†        | 888.8     | 911.3     | 500.20 µg/L | 500.20 ppb | 13:45:10 |
| 3 | B 249.677†         | 35944.5   | 34754.8   | 503.52 µg/L | 503.52 ppb | 13:44:50 |
| 3 | Ba 233.527†        | 55912.0   | 55678.5   | 496.49 µg/L | 496.49 ppb | 13:44:50 |
| 3 | Be 313.107†        | 1804136.1 | 1792489.4 | 476.81 µg/L | 476.81 ppb | 13:44:48 |
| 3 | Cd 226.502†        | 65750.2   | 65372.5   | 494.06 µg/L | 494.06 ppb | 13:44:50 |
| 3 | Co 228.616†        | 33614.9   | 33421.3   | 496.99 µg/L | 496.99 ppb | 13:44:50 |
| 3 | Cr 267.716†        | 42620.7   | 42130.2   | 495.09 µg/L | 495.09 ppb | 13:44:50 |
| 3 | Cu 324.752†        | 119244.0  | 112455.7  | 497.03 µg/L | 497.03 ppb | 13:44:50 |
| 3 | Mn 257.610†        | 286668.4  | 284084.9  | 497.71 µg/L | 497.71 ppb | 13:44:50 |
| 3 | Mo 202.031†        | 9403.1    | 9353.1    | 486.28 µg/L | 486.28 ppb | 13:45:10 |
| 3 | Ni 231.604†        | 31302.2   | 31234.5   | 496.57 µg/L | 496.57 ppb | 13:44:50 |
| 3 | P 214.914†         | 6687.3    | 6725.7    | 2424.0 µg/L | 2424.0 ppb | 13:45:10 |
| 3 | Pb 220.353†        | 4919.5    | 4804.0    | 485.54 µg/L | 485.54 ppb | 13:45:10 |
| 3 | S 181.975 Axial†   | 971.8     | 860.9     | 959.79 µg/L | 959.79 ppb | 13:45:10 |
| 3 | Sb 206.836†        | 2606.9    | 2540.5    | 482.76 µg/L | 482.76 ppb | 13:45:10 |
| 3 | Se 196.026†        | 935.7     | 919.8     | 485 µg/L    | 485 ppb    | 13:45:10 |
| 3 | SiO2†              | 53024.5   | 49555.0   | 5484.6 µg/L | 5484.6 ppb | 13:44:50 |
| 3 | Si 251.611†        | 152506.2  | 150628.2  | 2554.5 µg/L | 2554.5 ppb | 13:44:50 |
| 3 | Sn 189.927†        | 3809.0    | 3804.2    | 486.41 µg/L | 486.41 ppb | 13:45:10 |
| 3 | Ti 334.940†        | 347578.7  | 345519.8  | 490.80 µg/L | 490.80 ppb | 13:44:48 |
| 3 | Tl 190.801†        | 1512.7    | 1585.9    | 487.24 µg/L | 487.24 ppb | 13:45:10 |
| 3 | U 367.007†         | 3734.7    | 3987.2    | 462.66 µg/L | 462.66 ppb | 13:44:50 |
| 3 | V 292.402†         | 111366.2  | 110318.3  | 495.68 µg/L | 495.68 ppb | 13:44:50 |
| 3 | Zn 213.857†        | 88649.8   | 87851.3   | 497.11 µg/L | 497.11 ppb | 13:44:50 |

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Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Conc. Units | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|-------------|-----------------|--------------------|----------|-------|
| Sc 361.383   | 1335853.4                | 100.35 %    | 0.603           |                    |          | 0.60% |
| Sc RADIAL  | 71593.3                  | 99.4 %      | 1.72            |                    |          | 1.73% |
| Y 371.029  | 711067.0                 | 98.153 %    | 0.4377          |                    |          | 0.45% |
| Ag 328.068†  | 94768.0                  | 489.04 µg/L | 5.055           | 489.04 ppb         | 5.055    | 1.03% |
| QC value within limits for Ag 328.068 Recovery = 97.81%        |                          |             |                 |                    |          |       |
| Al 396.153Radial†  | 13744.5                  | 5018.5 µg/L | 1.89            | 5018.5 ppb         | 1.89     | 0.04% |
| QC value within limits for Al 396.153Radial Recovery = 100.37% |                          |             |                 |                    |          |       |
| As 188.979†  | 921.5                    | 505.73 µg/L | 5.012           | 505.73 ppb         | 5.012    | 0.99% |
| QC value within limits for As 188.979 Recovery = 101.15%       |                          |             |                 |                    |          |       |
| B 249.677†   | 34343.4                  | 497.60 µg/L | 6.034           | 497.60 ppb         | 6.034    | 1.21% |
| QC value within limits for B 249.677 Recovery = 99.52%         |                          |             |                 |                    |          |       |
| Ba 233.527†  | 55228.3                  | 492.48 µg/L | 4.498           | 492.48 ppb         | 4.498    | 0.91% |
| QC value within limits for Ba 233.527 Recovery = 98.50%        |                          |             |                 |                    |          |       |
| Be 313.107†  | 1797346.1                | 478.23 µg/L | 1.444           | 478.23 ppb         | 1.444    | 0.30% |
| QC value within limits for Be 313.107 Recovery = 95.65%        |                          |             |                 |                    |          |       |
| Ca 317.933Radial†  | 44550.1                  | 4959.3 µg/L | 19.97           | 4959.3 ppb         | 19.97    | 0.40% |
| QC value within limits for Ca 317.933Radial Recovery = 99.19%  |                          |             |                 |                    |          |       |
| Cd 226.502†  | 64665.6                  | 488.71 µg/L | 6.035           | 488.71 ppb         | 6.035    | 1.23% |
| QC value within limits for Cd 226.502 Recovery = 97.74%        |                          |             |                 |                    |          |       |
| Co 228.616†  | 33103.8                  | 492.27 µg/L | 5.748           | 492.27 ppb         | 5.748    | 1.17% |

|   |          |             |        |            |        |       |  |
|---|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Co 228.616 Recovery = 98.45%         |          |             |        |            |        |       |  |
| Cr 267.716†   | 41837.9  | 491.65 µg/L | 5.519  | 491.65 ppb | 5.519  | 1.12% |  |
| QC value within limits for Cr 267.716 Recovery = 98.33%         |          |             |        |            |        |       |  |
| Cu 324.752†   | 111522.5 | 492.91 µg/L | 5.482  | 492.91 ppb | 5.482  | 1.11% |  |
| QC value within limits for Cu 324.752 Recovery = 98.58%         |          |             |        |            |        |       |  |
| Fe 238.204 Radial†  | 53324.1  | 5044.2 µg/L | 3.92   | 5044.2 ppb | 3.92   | 0.08% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 100.88% |          |             |        |            |        |       |  |
| K 766.490 Radial†   | 9628.9   | 5061.5 µg/L | 47.99  | 5061.5 ppb | 47.99  | 0.95% |  |
| QC value within limits for K 766.490 Radial Recovery = 101.23%  |          |             |        |            |        |       |  |
| Mg 279.077 IEC†   | 9092.8   | 4903.9 µg/L | 14.12  | 4903.9 ppb | 14.12  | 0.29% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 98.08%     |          |             |        |            |        |       |  |
| Mn 257.610†   | 281559.6 | 493.29 µg/L | 5.298  | 493.29 ppb | 5.298  | 1.07% |  |
| QC value within limits for Mn 257.610 Recovery = 98.66%         |          |             |        |            |        |       |  |
| Mo 202.031†   | 9467.9   | 492.24 µg/L | 5.335  | 492.24 ppb | 5.335  | 1.08% |  |
| QC value within limits for Mo 202.031 Recovery = 98.45%         |          |             |        |            |        |       |  |
| Na 589.592 Radial†  | 58006.9  | 9672.9 µg/L | 124.36 | 9672.9 ppb | 124.36 | 1.29% |  |
| QC value within limits for Na 589.592 Radial Recovery = 96.73%  |          |             |        |            |        |       |  |
| Ni 231.604†   | 30862.4  | 490.65 µg/L | 6.627  | 490.65 ppb | 6.627  | 1.35% |  |
| QC value within limits for Ni 231.604 Recovery = 98.13%         |          |             |        |            |        |       |  |
| P 214.914†  | 6799.0   | 2450.4 µg/L | 22.97  | 2450.4 ppb | 22.97  | 0.94% |  |
| QC value within limits for P 214.914 Recovery = 98.02%          |          |             |        |            |        |       |  |
| Pb 220.353†   | 4867.5   | 491.97 µg/L | 5.627  | 491.97 ppb | 5.627  | 1.14% |  |
| QC value within limits for Pb 220.353 Recovery = 98.39%         |          |             |        |            |        |       |  |
| S 181.975 Axial†  | 866.0    | 965.51 µg/L | 8.833  | 965.51 ppb | 8.833  | 0.91% |  |
| QC value within limits for S 181.975 Axial Recovery = 96.55%    |          |             |        |            |        |       |  |
| Sb 206.836†   | 2568.6   | 488.24 µg/L | 6.076  | 488.24 ppb | 6.076  | 1.24% |  |
| QC value within limits for Sb 206.836 Recovery = 97.65%         |          |             |        |            |        |       |  |
| Se 196.026†   | 940.8    | 496 µg/L    | 9.8    | 496 ppb    | 9.8    | 1.97% |  |
| QC value within limits for Se 196.026 Recovery = 99.11%         |          |             |        |            |        |       |  |
| SiO2†   | 49020.2  | 5425.4 µg/L | 64.59  | 5425.4 ppb | 64.59  | 1.19% |  |
| QC value within limits for SiO2 Recovery = 101.46%              |          |             |        |            |        |       |  |
| Si 251.611†   | 149309.6 | 2532.2 µg/L | 26.58  | 2532.2 ppb | 26.58  | 1.05% |  |
| QC value within limits for Si 251.611 Recovery = 101.29%        |          |             |        |            |        |       |  |
| Sn 189.927†   | 3841.2   | 491.15 µg/L | 4.395  | 491.15 ppb | 4.395  | 0.89% |  |
| QC value within limits for Sn 189.927 Recovery = 98.23%         |          |             |        |            |        |       |  |
| Sr 421.552†   | 169609.9 | 491.92 µg/L | 6.131  | 491.92 ppb | 6.131  | 1.25% |  |
| QC value within limits for Sr 421.552 Recovery = 98.38%         |          |             |        |            |        |       |  |
| Ti 334.940†   | 346296.7 | 491.90 µg/L | 0.994  | 491.90 ppb | 0.994  | 0.20% |  |
| QC value within limits for Ti 334.940 Recovery = 98.38%         |          |             |        |            |        |       |  |
| Tl 190.801†   | 1597.9   | 490.91 µg/L | 3.489  | 490.91 ppb | 3.489  | 0.71% |  |
| QC value within limits for Tl 190.801 Recovery = 98.18%         |          |             |        |            |        |       |  |
| U 367.007†  | 3947.7   | 457.82 µg/L | 6.105  | 457.82 ppb | 6.105  | 1.33% |  |
| QC value within limits for U 367.007 Recovery = 91.56%          |          |             |        |            |        |       |  |
| V 292.402†  | 109440.1 | 491.74 µg/L | 5.177  | 491.74 ppb | 5.177  | 1.05% |  |
| QC value within limits for V 292.402 Recovery = 98.35%          |          |             |        |            |        |       |  |
| Zn 213.857†   | 86971.2  | 492.12 µg/L | 5.573  | 492.12 ppb | 5.573  | 1.13% |  |
| QC value within limits for Zn 213.857 Recovery = 98.42%         |          |             |        |            |        |       |  |
| All analyte(s) passed QC.                                       |          |             |        |            |        |       |  |



Sequence No.: 3

Autosampler Location: 101

Sample ID: PQL

Date Collected: 11/11/2016 13:45:18

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: PQL

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71106.2       | 71106.2             | 98.7 %             |                    | 13:45:44      |
| 1     | Al 396.153Radial†  | 673.1         | 580.2               | 211.85 µg/L        | 211.85 ppb         | 13:46:04      |
| 1     | Ca 317.933Radial†  | 2255.9        | 1942.3              | 216.22 µg/L        | 216.22 ppb         | 13:46:04      |
| 1     | Fe 238.204 Radial† | 637.6         | 1164.0              | 110.11 µg/L        | 110.11 ppb         | 13:46:04      |
| 1     | K 766.490 Radial†  | 1251.7        | 197.9               | 104.02 µg/L        | 104.02 ppb         | 13:45:44      |
| 1     | Mg 279.077 IEC†    | 568.9         | 549.6               | 296.34 µg/L        | 296.34 ppb         | 13:46:04      |
| 1     | Na 589.592 Radial† | 1961.1        | 1947.1              | 324.68 µg/L        | 324.68 ppb         | 13:45:44      |
| 1     | Sr 421.552†        | 1317.3        | 1793.6              | 5.1963 µg/L        | 5.1963 ppb         | 13:46:04      |
| 1     | Sc 361.383         | 1343792.6     | 1343792.6           | 100.95 %           |                    | 13:46:52      |
| 1     | Y 371.029          | 726577.5      | 726577.5            | 100.29 %           |                    | 13:46:52      |
| 1     | Ag 328.068†        | -874.0        | 1025.0              | 5.2581 µg/L        | 5.2581 ppb         | 13:46:54      |
| 1     | As 188.979†        | 29.3          | 59.0                | 32.119 µg/L        | 32.119 ppb         | 13:47:14      |
| 1     | B 249.677†         | 4205.6        | 3281.3              | 47.270 µg/L        | 47.270 ppb         | 13:46:54      |
| 1     | Ba 233.527†        | 345.6         | 583.1               | 5.1998 µg/L        | 5.1998 ppb         | 13:47:14      |
| 1     | Be 313.107†        | 15771.2       | 19279.4             | 5.1529 µg/L        | 5.1529 ppb         | 13:46:54      |
| 1     | Cd 226.502†        | 524.2         | 699.3               | 5.2787 µg/L        | 5.2787 ppb         | 13:47:14      |
| 1     | Co 228.616†        | 251.9         | 341.1               | 5.0713 µg/L        | 5.0713 ppb         | 13:47:14      |
| 1     | Cr 267.716†        | 587.6         | 453.1               | 5.2714 µg/L        | 5.2714 ppb         | 13:47:14      |
| 1     | Cu 324.752†        | 7892.5        | 2041.7              | 9.0711 µg/L        | 9.0711 ppb         | 13:46:54      |
| 1     | Mn 257.610†        | 6196.5        | 5986.5              | 10.481 µg/L        | 10.481 ppb         | 13:46:54      |
| 1     | Mo 202.031†        | 168.7         | 196.8               | 10.236 µg/L        | 10.236 ppb         | 13:47:14      |
| 1     | Ni 231.604†        | 159.0         | 355.3               | 5.6483 µg/L        | 5.6483 ppb         | 13:47:14      |
| 1     | P 214.914†         | 321.7         | 413.8               | 149.14 µg/L        | 149.14 ppb         | 13:47:14      |
| 1     | Pb 220.353†        | 183.7         | 108.2               | 10.883 µg/L        | 10.883 ppb         | 13:47:14      |
| 1     | S 181.975 Axial†   | 175.6         | 71.2                | 79.503 µg/L        | 79.503 ppb         | 13:47:14      |
| 1     | Sb 206.836†        | 116.9         | 71.5                | 13.716 µg/L        | 13.716 ppb         | 13:47:14      |
| 1     | Se 196.026†        | 60.2          | 51.6                | 27.2 µg/L          | 27.2 ppb           | 13:47:14      |
| 1     | SiO2†              | 4847.7        | 1782.5              | 197.28 µg/L        | 197.28 ppb         | 13:46:54      |
| 1     | Si 251.611†        | 6147.8        | 5505.8              | 93.364 µg/L        | 93.364 ppb         | 13:46:54      |
| 1     | Sn 189.927†        | 54.5          | 81.4                | 10.414 µg/L        | 10.414 ppb         | 13:47:14      |
| 1     | Ti 334.940†        | 3005.8        | 3866.9              | 5.4646 µg/L        | 5.4646 ppb         | 13:46:54      |
| 1     | Tl 190.801†        | -6.3          | 79.8                | 24.510 µg/L        | 24.510 ppb         | 13:47:14      |
| 1     | U 367.007†         | 232.7         | 514.7               | 62.705 µg/L        | 62.705 ppb         | 13:46:54      |
| 1     | V 292.402†         | 1231.6        | 1116.8              | 5.0437 µg/L        | 5.0437 ppb         | 13:46:54      |
| 1     | Zn 213.857†        | 1844.2        | 1780.5              | 10.065 µg/L        | 10.065 ppb         | 13:47:14      |
| 2     | Sc RADIAL          | 72167.1       | 72167.1             | 100 %              |                    | 13:46:07      |
| 2     | Al 396.153Radial†  | 686.3         | 583.4               | 213.03 µg/L        | 213.03 ppb         | 13:46:27      |
| 2     | Ca 317.933Radial†  | 2234.3        | 1887.1              | 210.08 µg/L        | 210.08 ppb         | 13:46:27      |
| 2     | Fe 238.204 Radial† | 645.3         | 1162.2              | 109.94 µg/L        | 109.94 ppb         | 13:46:27      |
| 2     | K 766.490 Radial†  | 1229.8        | 157.3               | 82.705 µg/L        | 82.705 ppb         | 13:46:07      |
| 2     | Mg 279.077 IEC†    | 590.3         | 562.5               | 303.29 µg/L        | 303.29 ppb         | 13:46:27      |
| 2     | Na 589.592 Radial† | 1952.4        | 1909.1              | 318.35 µg/L        | 318.35 ppb         | 13:46:07      |
| 2     | Sr 421.552†        | 1335.3        | 1792.0              | 5.1918 µg/L        | 5.1918 ppb         | 13:46:27      |
| 2     | Sc 361.383         | 1320339.5     | 1320339.5           | 99.184 %           |                    | 13:47:16      |
| 2     | Y 371.029          | 713769.4      | 713769.4            | 98.526 %           |                    | 13:47:16      |
| 2     | Ag 328.068†        | -891.7        | 991.8               | 5.1013 µg/L        | 5.1013 ppb         | 13:47:18      |
| 2     | As 188.979†        | 29.6          | 59.8                | 32.563 µg/L        | 32.563 ppb         | 13:47:38      |
| 2     | B 249.677†         | 4187.3        | 3336.9              | 48.070 µg/L        | 48.070 ppb         | 13:47:18      |
| 2     | Ba 233.527†        | 348.6         | 592.3               | 5.2818 µg/L        | 5.2818 ppb         | 13:47:38      |
| 2     | Be 313.107†        | 15501.2       | 19284.7             | 5.1430 µg/L        | 5.1430 ppb         | 13:47:18      |
| 2     | Cd 226.502†        | 535.3         | 719.7               | 5.4329 µg/L        | 5.4329 ppb         | 13:47:38      |
| 2     | Co 228.616†        | 244.9         | 338.5               | 5.0326 µg/L        | 5.0326 ppb         | 13:47:38      |
| 2     | Cr 267.716†        | 587.9         | 463.8               | 5.4202 µg/L        | 5.4202 ppb         | 13:47:38      |
| 2     | Cu 324.752†        | 7783.9        | 2071.1              | 9.1804 µg/L        | 9.1804 ppb         | 13:47:18      |
| 2     | Mn 257.610†        | 6130.5        | 6029.0              | 10.555 µg/L        | 10.555 ppb         | 13:47:18      |
| 2     | Mo 202.031†        | 173.8         | 204.9               | 10.656 µg/L        | 10.656 ppb         | 13:47:38      |
| 2     | Ni 231.604†        | 162.9         | 361.9               | 5.7539 µg/L        | 5.7539 ppb         | 13:47:38      |
| 2     | P 214.914†         | 328.1         | 425.9               | 153.50 µg/L        | 153.50 ppb         | 13:47:38      |
| 2     | Pb 220.353†        | 210.6         | 138.6               | 13.983 µg/L        | 13.983 ppb         | 13:47:38      |

|   |                    |           |           |             |            |          |
|---|--------------------|-----------|-----------|-------------|------------|----------|
| 2 | S 181.975 Axial†   | 176.7     | 75.5      | 84.208 µg/L | 84.208 ppb | 13:47:38 |
| 2 | Sb 206.836†        | 117.1     | 73.8      | 14.167 µg/L | 14.167 ppb | 13:47:38 |
| 2 | Se 196.026†        | 60.1      | 52.6      | 27.6 µg/L   | 27.6 ppb   | 13:47:38 |
| 2 | SiO2†              | 4675.1    | 1693.8    | 187.47 µg/L | 187.47 ppb | 13:47:18 |
| 2 | Si 251.611†        | 6163.9    | 5630.1    | 95.473 µg/L | 95.473 ppb | 13:47:18 |
| 2 | Sn 189.927†        | 50.2      | 78.1      | 9.9858 µg/L | 9.9858 ppb | 13:47:38 |
| 2 | Ti 334.940†        | 2852.7    | 3765.5    | 5.3338 µg/L | 5.3338 ppb | 13:47:18 |
| 2 | Tl 190.801†        | -0.9      | 85.2      | 26.164 µg/L | 26.164 ppb | 13:47:38 |
| 2 | U 367.007†         | 20.6      | 305.0     | 36.907 µg/L | 36.907 ppb | 13:47:18 |
| 2 | V 292.402†         | 1329.0    | 1236.6    | 5.5714 µg/L | 5.5714 ppb | 13:47:18 |
| 2 | Zn 213.857†        | 1835.2    | 1803.8    | 10.197 µg/L | 10.197 ppb | 13:47:38 |
| 3 | Sc RADIAL          | 71811.1   | 71811.1   | 99.7 %      |            | 13:46:29 |
| 3 | Al 396.153Radial†  | 690.0     | 590.5     | 215.63 µg/L | 215.63 ppb | 13:46:49 |
| 3 | Ca 317.933Radial†  | 2214.8    | 1878.6    | 209.13 µg/L | 209.13 ppb | 13:46:49 |
| 3 | Fe 238.204 Radial† | 650.6     | 1170.7    | 110.74 µg/L | 110.74 ppb | 13:46:49 |
| 3 | K 766.490 Radial†  | 1355.4    | 289.4     | 152.11 µg/L | 152.11 ppb | 13:46:29 |
| 3 | Mg 279.077 IEC†    | 609.3     | 584.5     | 315.14 µg/L | 315.14 ppb | 13:46:49 |
| 3 | Na 589.592 Radial† | 1894.8    | 1861.0    | 310.33 µg/L | 310.33 ppb | 13:46:29 |
| 3 | Sr 421.552†        | 1349.2    | 1812.5    | 5.2513 µg/L | 5.2513 ppb | 13:46:49 |
| 3 | Sc 361.383         | 1299374.8 | 1299374.8 | 97.609 %    |            | 13:47:40 |
| 3 | Y 371.029          | 703625.1  | 703625.1  | 97.126 %    |            | 13:47:40 |
| 3 | Ag 328.068†        | -1013.4   | 852.6     | 4.3797 µg/L | 4.3797 ppb | 13:47:42 |
| 3 | As 188.979†        | 29.7      | 60.4      | 32.862 µg/L | 32.862 ppb | 13:48:02 |
| 3 | B 249.677†         | 4349.2    | 3570.9    | 51.435 µg/L | 51.435 ppb | 13:47:42 |
| 3 | Ba 233.527†        | 345.5     | 594.7     | 5.3032 µg/L | 5.3032 ppb | 13:48:02 |
| 3 | Be 313.107†        | 15187.7   | 19215.7   | 5.1258 µg/L | 5.1258 ppb | 13:47:42 |
| 3 | Cd 226.502†        | 532.1     | 725.1     | 5.4737 µg/L | 5.4737 ppb | 13:48:02 |
| 3 | Co 228.616†        | 269.3     | 367.4     | 5.4633 µg/L | 5.4633 ppb | 13:48:02 |
| 3 | Cr 267.716†        | 593.2     | 478.7     | 5.5911 µg/L | 5.5911 ppb | 13:48:02 |
| 3 | Cu 324.752†        | 7662.6    | 2073.4    | 9.1958 µg/L | 9.1958 ppb | 13:47:42 |
| 3 | Mn 257.610†        | 6055.3    | 6051.7    | 10.595 µg/L | 10.595 ppb | 13:47:42 |
| 3 | Mo 202.031†        | 179.8     | 214.0     | 11.126 µg/L | 11.126 ppb | 13:48:02 |
| 3 | Ni 231.604†        | 187.5     | 389.8     | 6.1974 µg/L | 6.1974 ppb | 13:48:02 |
| 3 | P 214.914†         | 345.1     | 448.6     | 161.70 µg/L | 161.70 ppb | 13:48:02 |
| 3 | Pb 220.353†        | 180.3     | 111.0     | 11.183 µg/L | 11.183 ppb | 13:48:02 |
| 3 | S 181.975 Axial†   | 173.1     | 74.6      | 83.260 µg/L | 83.260 ppb | 13:48:02 |
| 3 | Sb 206.836†        | 121.0     | 79.6      | 15.295 µg/L | 15.295 ppb | 13:48:02 |
| 3 | Se 196.026†        | 63.3      | 56.8      | 29.9 µg/L   | 29.9 ppb   | 13:48:02 |
| 3 | SiO2†              | 4639.2    | 1733.1    | 191.81 µg/L | 191.81 ppb | 13:47:42 |
| 3 | Si 251.611†        | 5988.1    | 5550.3    | 94.119 µg/L | 94.119 ppb | 13:47:42 |
| 3 | Sn 189.927†        | 53.8      | 82.6      | 10.566 µg/L | 10.566 ppb | 13:48:02 |
| 3 | Ti 334.940†        | 3018.1    | 3981.3    | 5.6375 µg/L | 5.6375 ppb | 13:47:42 |
| 3 | Tl 190.801†        | -1.1      | 85.0      | 26.101 µg/L | 26.101 ppb | 13:48:02 |
| 3 | U 367.007†         | 67.6      | 353.4     | 42.863 µg/L | 42.863 ppb | 13:47:42 |
| 3 | V 292.402†         | 1308.3    | 1237.0    | 5.5756 µg/L | 5.5756 ppb | 13:47:42 |
| 3 | Zn 213.857†        | 1851.1    | 1849.9    | 10.458 µg/L | 10.458 ppb | 13:48:02 |

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Mean Data: PQL

| Analyte  | Mean Corrected Intensity | Conc. Units | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|-------------|-----------------|--------------------|----------|-------|
| Sc 361.383   | 1321169.0                | 99.246 %    | 1.6692          |                    |          | 1.68% |
| Sc RADIAL  | 71694.8                  | 99.5 %      | 0.75            |                    |          | 0.75% |
| Y 371.029  | 714657.4                 | 98.649 %    | 1.5877          |                    |          | 1.61% |
| Ag 328.068†  | 956.5                    | 4.9131 µg/L | 0.46850         | 4.9131 ppb         | 0.46850  | 9.54% |
| QC value within limits for Ag 328.068 Recovery = 98.26%        |                          |             |                 |                    |          |       |
| Al 396.153Radial†  | 584.7                    | 213.50 µg/L | 1.932           | 213.50 ppb         | 1.932    | 0.90% |
| QC value within limits for Al 396.153Radial Recovery = 106.75% |                          |             |                 |                    |          |       |
| As 188.979†  | 59.7                     | 32.515 µg/L | 0.3739          | 32.515 ppb         | 0.3739   | 1.15% |
| QC value within limits for As 188.979 Recovery = 108.38%       |                          |             |                 |                    |          |       |
| B 249.677†   | 3396.4                   | 48.925 µg/L | 2.2101          | 48.925 ppb         | 2.2101   | 4.52% |
| QC value within limits for B 249.677 Recovery = 97.85%         |                          |             |                 |                    |          |       |
| Ba 233.527†  | 590.0                    | 5.2616 µg/L | 0.05454         | 5.2616 ppb         | 0.05454  | 1.04% |
| QC value within limits for Ba 233.527 Recovery = 105.23%       |                          |             |                 |                    |          |       |
| Be 313.107†  | 19259.9                  | 5.1405 µg/L | 0.01370         | 5.1405 ppb         | 0.01370  | 0.27% |
| QC value within limits for Be 313.107 Recovery = 102.81%       |                          |             |                 |                    |          |       |
| Ca 317.933Radial†  | 1902.7                   | 211.81 µg/L | 3.850           | 211.81 ppb         | 3.850    | 1.82% |
| QC value within limits for Ca 317.933Radial Recovery = 105.90% |                          |             |                 |                    |          |       |
| Cd 226.502†  | 714.7                    | 5.3951 µg/L | 0.10286         | 5.3951 ppb         | 0.10286  | 1.91% |
| QC value within limits for Cd 226.502 Recovery = 107.90%       |                          |             |                 |                    |          |       |
| Co 228.616†  | 349.0                    | 5.1891 µg/L | 0.23823         | 5.1891 ppb         | 0.23823  | 4.59% |

|   |        |             |         |            |         |        |  |
|---|--------|-------------|---------|------------|---------|--------|--|
| QC value within limits for Co 228.616 Recovery = 103.78%                |        |             |         |            |         |        |  |
| Cr 267.716†   | 465.2  | 5.4276 µg/L | 0.15994 | 5.4276 ppb | 0.15994 | 2.95%  |  |
| QC value within limits for Cr 267.716 Recovery = 108.55%                |        |             |         |            |         |        |  |
| Cu 324.752†   | 2062.1 | 9.1491 µg/L | 0.06797 | 9.1491 ppb | 0.06797 | 0.74%  |  |
| QC value within limits for Cu 324.752 Recovery = 91.49%                 |        |             |         |            |         |        |  |
| Fe 238.204 Radial†  | 1165.6 | 110.26 µg/L | 0.423   | 110.26 ppb | 0.423   | 0.38%  |  |
| QC value within limits for Fe 238.204 Radial Recovery = 110.26%         |        |             |         |            |         |        |  |
| K 766.490 Radial†   | 214.9  | 112.95 µg/L | 35.554  | 112.95 ppb | 35.554  | 31.48% |  |
| QC value within limits for K 766.490 Radial Recovery = 75.30%           |        |             |         |            |         |        |  |
| Mg 279.077 IEC†   | 565.5  | 304.93 µg/L | 9.506   | 304.93 ppb | 9.506   | 3.12%  |  |
| QC value within limits for Mg 279.077 IEC Recovery = 101.64%            |        |             |         |            |         |        |  |
| Mn 257.610†   | 6022.4 | 10.544 µg/L | 0.0577  | 10.544 ppb | 0.0577  | 0.55%  |  |
| QC value within limits for Mn 257.610 Recovery = 105.44%                |        |             |         |            |         |        |  |
| Mo 202.031†   | 205.2  | 10.673 µg/L | 0.4454  | 10.673 ppb | 0.4454  | 4.17%  |  |
| QC value within limits for Mo 202.031 Recovery = 106.73%                |        |             |         |            |         |        |  |
| Na 589.592 Radial†  | 1905.7 | 317.79 µg/L | 7.192   | 317.79 ppb | 7.192   | 2.26%  |  |
| QC value within limits for Na 589.592 Radial Recovery = 105.93%         |        |             |         |            |         |        |  |
| Ni 231.604†   | 369.0  | 5.8665 µg/L | 0.29138 | 5.8665 ppb | 0.29138 | 4.97%  |  |
| QC value within limits for Ni 231.604 Recovery = 117.33%                |        |             |         |            |         |        |  |
| P 214.914†  | 429.4  | 154.78 µg/L | 6.378   | 154.78 ppb | 6.378   | 4.12%  |  |
| QC value within limits for P 214.914 Recovery = 103.19%                 |        |             |         |            |         |        |  |
| Pb 220.353†   | 119.3  | 12.016 µg/L | 1.7095  | 12.016 ppb | 1.7095  | 14.23% |  |
| QC value within limits for Pb 220.353 Recovery = 120.16%                |        |             |         |            |         |        |  |
| S 181.975 Axial†  | 73.8   | 82.323 µg/L | 2.4882  | 82.323 ppb | 2.4882  | 3.02%  |  |
| QC value within limits for S 181.975 Axial Recovery = 82.32%            |        |             |         |            |         |        |  |
| Sb 206.836†   | 75.0   | 14.393 µg/L | 0.8129  | 14.393 ppb | 0.8129  | 5.65%  |  |
| QC value greater than the upper limit for Sb 206.836 Recovery = 143.93% |        |             |         |            |         |        |  |
| Se 196.026†   | 53.7   | 28.2 µg/L   | 1.45    | 28.2 ppb   | 1.45    | 5.15%  |  |
| QC value within limits for Se 196.026 Recovery = 94.05%                 |        |             |         |            |         |        |  |
| SiO2†   | 1736.5 | 192.19 µg/L | 4.916   | 192.19 ppb | 4.916   | 2.56%  |  |
| QC value within limits for SiO2 Recovery = 90.23%                       |        |             |         |            |         |        |  |
| Si 251.611†   | 5562.1 | 94.319 µg/L | 1.0683  | 94.319 ppb | 1.0683  | 1.13%  |  |
| QC value within limits for Si 251.611 Recovery = 94.32%                 |        |             |         |            |         |        |  |
| Sn 189.927†   | 80.7   | 10.322 µg/L | 0.3008  | 10.322 ppb | 0.3008  | 2.91%  |  |
| QC value within limits for Sn 189.927 Recovery = 103.22%                |        |             |         |            |         |        |  |
| Sr 421.552†   | 1799.4 | 5.2131 µg/L | 0.03310 | 5.2131 ppb | 0.03310 | 0.64%  |  |
| QC value within limits for Sr 421.552 Recovery = 104.26%                |        |             |         |            |         |        |  |
| Ti 334.940†   | 3871.2 | 5.4786 µg/L | 0.15231 | 5.4786 ppb | 0.15231 | 2.78%  |  |
| QC value within limits for Ti 334.940 Recovery = 109.57%                |        |             |         |            |         |        |  |
| Tl 190.801†   | 83.3   | 25.592 µg/L | 0.9372  | 25.592 ppb | 0.9372  | 3.66%  |  |
| QC value within limits for Tl 190.801 Recovery = 127.96%                |        |             |         |            |         |        |  |
| U 367.007†  | 391.0  | 47.492 µg/L | 13.5075 | 47.492 ppb | 13.5075 | 28.44% |  |
| QC value within limits for U 367.007 Recovery = 94.98%                  |        |             |         |            |         |        |  |
| V 292.402†  | 1196.8 | 5.3969 µg/L | 0.30589 | 5.3969 ppb | 0.30589 | 5.67%  |  |
| QC value within limits for V 292.402 Recovery = 107.94%                 |        |             |         |            |         |        |  |
| Zn 213.857†   | 1811.4 | 10.240 µg/L | 0.1999  | 10.240 ppb | 0.1999  | 1.95%  |  |
| QC value within limits for Zn 213.857 Recovery = 102.40%                |        |             |         |            |         |        |  |
| QC Failed. Continue with analysis.                                      |        |             |         |            |         |        |  |

Sequence No.: 4

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/11/2016 13:48:10

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 71686.7       | 71686.7             | 99.5 %             |                    | 13:48:36      |
| 1     | Al 396.153Radial†  | 124.3         | 23.2                | 8.4681 µg/L        | 8.4681 ppb         | 13:48:56      |
| 1     | Ca 317.933Radial†  | 324.5         | -17.1               | -1.8981 µg/L       | -1.8981 ppb        | 13:48:56      |
| 1     | Fe 238.204 Radial† | -482.2        | 33.5                | 3.1686 µg/L        | 3.1686 ppb         | 13:48:56      |
| 1     | K 766.490 Radial†  | 1035.4        | -29.7               | -15.609 µg/L       | -15.609 ppb        | 13:48:36      |
| 1     | Mg 279.077 IEC†    | 13.6          | -13.2               | -7.0991 µg/L       | -7.0991 ppb        | 13:48:56      |
| 1     | Na 589.592 Radial† | 134.7         | 95.6                | 15.949 µg/L        | 15.949 ppb         | 13:48:36      |
| 1     | Sr 421.552†        | -445.0        | 11.9                | 0.0346 µg/L        | 0.0346 ppb         | 13:48:56      |
| 1     | Sc 361.383         | 1322576.1     | 1322576.1           | 99.352 %           |                    | 13:49:44      |
| 1     | Y 371.029          | 714895.6      | 714895.6            | 98.682 %           |                    | 13:49:44      |
| 1     | Ag 328.068†        | -1744.8       | 134.7               | 0.6945 µg/L        | 0.6945 ppb         | 13:49:46      |
| 1     | As 188.979†        | -33.7         | -4.0                | -2.1752 µg/L       | -2.1752 ppb        | 13:50:06      |
| 1     | B 249.677†         | 886.4         | 7.3                 | 0.1069 µg/L        | 0.1069 ppb         | 13:49:46      |
| 1     | Ba 233.527†        | -239.8        | -0.6                | -0.0054 µg/L       | -0.0054 ppb        | 13:50:06      |
| 1     | Be 313.107†        | -2952.4       | 684.2               | 0.1873 µg/L        | 0.1873 ppb         | 13:49:46      |
| 1     | Cd 226.502†        | -161.0        | 18.0                | 0.1358 µg/L        | 0.1358 ppb         | 13:50:06      |
| 1     | Co 228.616†        | -96.2         | -5.3                | -0.0782 µg/L       | -0.0782 ppb        | 13:50:06      |
| 1     | Cr 267.716†        | 101.2         | -27.1               | -0.3203 µg/L       | -0.3203 ppb        | 13:50:06      |
| 1     | Cu 324.752†        | 5386.8        | -355.0              | -1.5650 µg/L       | -1.5650 ppb        | 13:49:46      |
| 1     | Mn 257.610†        | 188.2         | 37.4                | 0.0658 µg/L        | 0.0658 ppb         | 13:50:06      |
| 1     | Mo 202.031†        | -29.6         | -0.0                | -0.0025 µg/L       | -0.0025 ppb        | 13:50:06      |
| 1     | Ni 231.604†        | -167.4        | 29.3                | 0.4653 µg/L        | 0.4653 ppb         | 13:50:06      |
| 1     | P 214.914†         | -88.8         | 5.7                 | 2.0543 µg/L        | 2.0543 ppb         | 13:50:06      |
| 1     | Pb 220.353†        | 93.9          | 20.8                | 2.1010 µg/L        | 2.1010 ppb         | 13:50:06      |
| 1     | S 181.975 Axial†   | 96.6          | -5.5                | -6.0909 µg/L       | -6.0909 ppb        | 13:50:06      |
| 1     | Sb 206.836†        | 56.9          | 13.0                | 2.5162 µg/L        | 2.5162 ppb         | 13:50:06      |
| 1     | Se 196.026†        | 8.3           | 0.3                 | 0.172 µg/L         | 0.172 ppb          | 13:50:06      |
| 1     | SiO2†              | 2922.4        | -78.3               | -8.6629 µg/L       | -8.6629 ppb        | 13:49:46      |
| 1     | Si 251.611†        | 551.8         | -29.1               | -0.4927 µg/L       | -0.4927 ppb        | 13:49:46      |
| 1     | Sn 189.927†        | -28.0         | -0.7                | -0.0886 µg/L       | -0.0886 ppb        | 13:50:06      |
| 1     | Ti 334.940†        | -841.6        | 42.2                | 0.0592 µg/L        | 0.0592 ppb         | 13:49:46      |
| 1     | Tl 190.801†        | -80.3         | 5.3                 | 1.6151 µg/L        | 1.6151 ppb         | 13:50:06      |
| 1     | U 367.007†         | -270.0        | 12.5                | 1.5172 µg/L        | 1.5172 ppb         | 13:49:46      |
| 1     | V 292.402†         | 114.8         | 12.3                | 0.0552 µg/L        | 0.0552 ppb         | 13:49:46      |
| 1     | Zn 213.857†        | 11.0          | -35.5               | -0.1995 µg/L       | -0.1995 ppb        | 13:50:06      |
| 2     | Sc RADIAL          | 71262.8       | 71262.8             | 98.9 %             |                    | 13:48:58      |
| 2     | Al 396.153Radial†  | 108.1         | 7.6                 | 2.7739 µg/L        | 2.7739 ppb         | 13:49:18      |
| 2     | Ca 317.933Radial†  | 329.1         | -10.5               | -1.1740 µg/L       | -1.1740 ppb        | 13:49:18      |
| 2     | Fe 238.204 Radial† | -477.9        | 35.0                | 3.3105 µg/L        | 3.3105 ppb         | 13:49:18      |
| 2     | K 766.490 Radial†  | 1026.6        | -32.5               | -17.069 µg/L       | -17.069 ppb        | 13:48:58      |
| 2     | Mg 279.077 IEC†    | 24.3          | -2.2                | -1.2001 µg/L       | -1.2001 ppb        | 13:49:18      |
| 2     | Na 589.592 Radial† | 114.7         | 76.2                | 12.711 µg/L        | 12.711 ppb         | 13:48:58      |
| 2     | Sr 421.552†        | -479.8        | -26.0               | -0.0753 µg/L       | -0.0753 ppb        | 13:49:18      |
| 2     | Sc 361.383         | 1317155.7     | 1317155.7           | 98.945 %           |                    | 13:50:08      |
| 2     | Y 371.029          | 711391.7      | 711391.7            | 98.198 %           |                    | 13:50:08      |
| 2     | Ag 328.068†        | -1720.8       | 151.7               | 0.7865 µg/L        | 0.7865 ppb         | 13:50:10      |
| 2     | As 188.979†        | -27.9         | 1.7                 | 0.9450 µg/L        | 0.9450 ppb         | 13:50:30      |
| 2     | B 249.677†         | 776.7         | -99.9               | -1.4339 µg/L       | -1.4339 ppb        | 13:50:10      |
| 2     | Ba 233.527†        | -229.1        | 9.2                 | 0.0824 µg/L        | 0.0824 ppb         | 13:50:30      |
| 2     | Be 313.107†        | -2689.2       | 938.0               | 0.2516 µg/L        | 0.2516 ppb         | 13:50:10      |
| 2     | Cd 226.502†        | -166.4        | 11.9                | 0.0896 µg/L        | 0.0896 ppb         | 13:50:30      |
| 2     | Co 228.616†        | -80.2         | 10.5                | 0.1560 µg/L        | 0.1560 ppb         | 13:50:30      |
| 2     | Cr 267.716†        | 108.3         | -19.6               | -0.2245 µg/L       | -0.2245 ppb        | 13:50:30      |
| 2     | Cu 324.752†        | 5473.2        | -245.3              | -1.0873 µg/L       | -1.0873 ppb        | 13:50:10      |
| 2     | Mn 257.610†        | 176.8         | 26.7                | 0.0468 µg/L        | 0.0468 ppb         | 13:50:30      |
| 2     | Mo 202.031†        | -35.5         | -6.1                | -0.3166 µg/L       | -0.3166 ppb        | 13:50:30      |
| 2     | Ni 231.604†        | -172.2        | 23.7                | 0.3762 µg/L        | 0.3762 ppb         | 13:50:30      |
| 2     | P 214.914†         | -54.3         | 40.2                | 14.489 µg/L        | 14.489 ppb         | 13:50:30      |
| 2     | Pb 220.353†        | 79.8          | 6.9                 | 0.7093 µg/L        | 0.7093 ppb         | 13:50:30      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | S 181.975 Axial†   | 85.7      | -16.1     | -17.982 µg/L | -17.982 ppb | 13:50:30 |
| 2 | Sb 206.836†        | 48.4      | 4.6       | 0.8968 µg/L  | 0.8968 ppb  | 13:50:30 |
| 2 | Se 196.026†        | -4.1      | -12.1     | -6.36 µg/L   | -6.36 ppb   | 13:50:30 |
| 2 | SiO2†              | 2902.9    | -85.9     | -9.5074 µg/L | -9.5074 ppb | 13:50:10 |
| 2 | Si 251.611†        | 396.3     | -183.9    | -3.1175 µg/L | -3.1175 ppb | 13:50:10 |
| 2 | Sn 189.927†        | -29.0     | -1.9      | -0.2370 µg/L | -0.2370 ppb | 13:50:30 |
| 2 | Ti 334.940†        | -861.7    | 18.4      | 0.0293 µg/L  | 0.0293 ppb  | 13:50:10 |
| 2 | Tl 190.801†        | -79.2     | 6.0       | 1.8483 µg/L  | 1.8483 ppb  | 13:50:30 |
| 2 | U 367.007†         | -330.5    | -49.8     | -6.1402 µg/L | -6.1402 ppb | 13:50:10 |
| 2 | V 292.402†         | 97.0      | -5.3      | -0.0262 µg/L | -0.0262 ppb | 13:50:10 |
| 2 | Zn 213.857†        | 8.9       | -37.5     | -0.2119 µg/L | -0.2119 ppb | 13:50:30 |
| 3 | Sc RADIAL          | 70668.3   | 70668.3   | 98.1 %       |             | 13:49:20 |
| 3 | Al 396.153Radial†  | 122.6     | 23.3      | 8.5136 µg/L  | 8.5136 ppb  | 13:49:40 |
| 3 | Ca 317.933Radial†  | 354.1     | 17.8      | 1.9847 µg/L  | 1.9847 ppb  | 13:49:40 |
| 3 | Fe 238.204 Radial† | -475.3    | 33.5      | 3.1726 µg/L  | 3.1726 ppb  | 13:49:40 |
| 3 | K 766.490 Radial†  | 1036.4    | -13.7     | -7.2030 µg/L | -7.2030 ppb | 13:49:20 |
| 3 | Mg 279.077 IEC†    | 37.1      | 11.0      | 5.9121 µg/L  | 5.9121 ppb  | 13:49:40 |
| 3 | Na 589.592 Radial† | 62.5      | 23.9      | 3.9886 µg/L  | 3.9886 ppb  | 13:49:20 |
| 3 | Sr 421.552†        | -427.0    | 23.8      | 0.0690 µg/L  | 0.0690 ppb  | 13:49:40 |
| 3 | Sc 361.383         | 1341832.4 | 1341832.4 | 100.80 %     |             | 13:50:32 |
| 3 | Y 371.029          | 724225.9  | 724225.9  | 99.970 %     |             | 13:50:32 |
| 3 | Ag 328.068†        | -1908.6   | -2.6      | -0.0124 µg/L | -0.0124 ppb | 13:50:34 |
| 3 | As 188.979†        | -39.7     | -9.5      | -5.1551 µg/L | -5.1551 ppb | 13:50:54 |
| 3 | B 249.677†         | 830.5     | -60.9     | -0.8736 µg/L | -0.8736 ppb | 13:50:34 |
| 3 | Ba 233.527†        | -235.4    | 7.2       | 0.0646 µg/L  | 0.0646 ppb  | 13:50:54 |
| 3 | Be 313.107†        | -2904.8   | 774.1     | 0.2089 µg/L  | 0.2089 ppb  | 13:50:34 |
| 3 | Cd 226.502†        | -160.4    | 20.9      | 0.1580 µg/L  | 0.1580 ppb  | 13:50:54 |
| 3 | Co 228.616†        | -98.5     | -6.2      | -0.0916 µg/L | -0.0916 ppb | 13:50:54 |
| 3 | Cr 267.716†        | 90.7      | -39.1     | -0.4578 µg/L | -0.4578 ppb | 13:50:54 |
| 3 | Cu 324.752†        | 5563.8    | -257.2    | -1.1360 µg/L | -1.1360 ppb | 13:50:34 |
| 3 | Mn 257.610†        | 190.6     | 37.1      | 0.0649 µg/L  | 0.0649 ppb  | 13:50:54 |
| 3 | Mo 202.031†        | -49.8     | -19.6     | -1.0204 µg/L | -1.0204 ppb | 13:50:54 |
| 3 | Ni 231.604†        | -160.8    | 38.3      | 0.6081 µg/L  | 0.6081 ppb  | 13:50:54 |
| 3 | P 214.914†         | -69.3     | 26.3      | 9.4934 µg/L  | 9.4934 ppb  | 13:50:54 |
| 3 | Pb 220.353†        | 79.0      | 4.6       | 0.4719 µg/L  | 0.4719 ppb  | 13:50:54 |
| 3 | S 181.975 Axial†   | 89.4      | -14.0     | -15.636 µg/L | -15.636 ppb | 13:50:54 |
| 3 | Sb 206.836†        | 72.9      | 28.0      | 5.4258 µg/L  | 5.4258 ppb  | 13:50:54 |
| 3 | Se 196.026†        | -8.7      | -16.6     | -8.70 µg/L   | -8.70 ppb   | 13:50:54 |
| 3 | SiO2†              | 2909.4    | -133.4    | -14.765 µg/L | -14.765 ppb | 13:50:34 |
| 3 | Si 251.611†        | 488.6     | -99.7     | -1.6900 µg/L | -1.6900 ppb | 13:50:34 |
| 3 | Sn 189.927†        | -24.3     | 3.4       | 0.4317 µg/L  | 0.4317 ppb  | 13:50:54 |
| 3 | Ti 334.940†        | -862.7    | 33.4      | 0.0485 µg/L  | 0.0485 ppb  | 13:50:34 |
| 3 | Tl 190.801†        | -87.5     | -0.7      | -0.2173 µg/L | -0.2173 ppb | 13:50:54 |
| 3 | U 367.007†         | -300.4    | -13.8     | -1.7126 µg/L | -1.7126 ppb | 13:50:34 |
| 3 | V 292.402†         | 88.5      | -15.5     | -0.0708 µg/L | -0.0708 ppb | 13:50:34 |
| 3 | Zn 213.857†        | -21.0     | -67.3     | -0.3815 µg/L | -0.3815 ppb | 13:50:54 |

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Mean Data: CCB

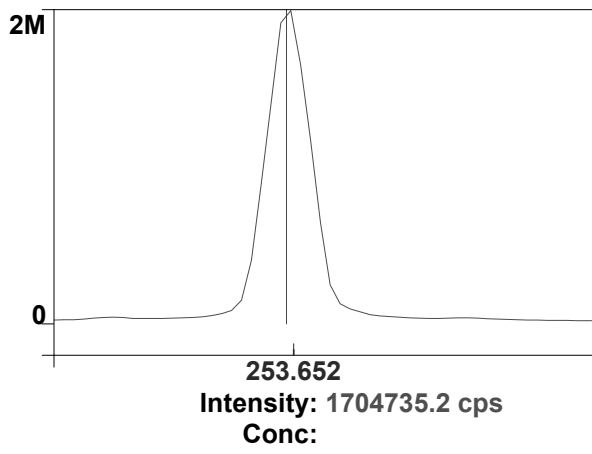
| Analyte   | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------|-----------------|--------------------|----------|---------|
| Sc 361.383  | 1327188.1                | 99.698 %     | 0.9742          |                    |          | 0.98%   |
| Sc RADIAL   | 71205.9                  | 98.8 %       | 0.71            |                    |          | 0.72%   |
| Y 371.029   | 716837.7                 | 98.950 %     | 0.9157          |                    |          | 0.93%   |
| Ag 328.068†   | 94.6                     | 0.4895 µg/L  | 0.43712         | 0.4895 ppb         | 0.43712  | 89.29%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Al 396.153Radial†   | 18.0                     | 6.5852 µg/L  | 3.30077         | 6.5852 ppb         | 3.30077  | 50.12%  |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |              |                 |                    |          |         |
| As 188.979†   | -3.9                     | -2.1285 µg/L | 3.05031         | -2.1285 ppb        | 3.05031  | 143.31% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| B 249.677†  | -51.2                    | -0.7336 µg/L | 0.77986         | -0.7336 ppb        | 0.77986  | 106.31% |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |              |                 |                    |          |         |
| Ba 233.527†   | 5.3                      | 0.0472 µg/L  | 0.04641         | 0.0472 ppb         | 0.04641  | 98.29%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Be 313.107†   | 798.8                    | 0.2159 µg/L  | 0.03271         | 0.2159 ppb         | 0.03271  | 15.15%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Ca 317.933Radial†   | -3.3                     | -0.3625 µg/L | 2.06471         | -0.3625 ppb        | 2.06471  | 569.62% |
| QC value within limits for Ca 317.933Radial Recovery = Not calculated |                          |              |                 |                    |          |         |
| Cd 226.502†   | 16.9                     | 0.1278 µg/L  | 0.03492         | 0.1278 ppb         | 0.03492  | 27.33%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated       |                          |              |                 |                    |          |         |
| Co 228.616†   | -0.3                     | -0.0046 µg/L | 0.13920         | -0.0046 ppb        | 0.13920  | >999.9% |

|  |        |              |         |             |         |         |  |
|--|--------|--------------|---------|-------------|---------|---------|--|
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Cr 267.716†  | -28.6  | -0.3342 µg/L | 0.11726 | -0.3342 ppb | 0.11726 | 35.09%  |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Cu 324.752†  | -285.8 | -1.2628 µg/L | 0.26289 | -1.2628 ppb | 0.26289 | 20.82%  |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Fe 238.204 Radial†   | 34.0   | 3.2172 µg/L  | 0.08080 | 3.2172 ppb  | 0.08080 | 2.51%   |  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |         |             |         |         |  |
| K 766.490 Radial†  | -25.3  | -13.294 µg/L | 5.3250  | -13.294 ppb | 5.3250  | 40.06%  |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |         |             |         |         |  |
| Mg 279.077 IEC†  | -1.5   | -0.7957 µg/L | 6.51503 | -0.7957 ppb | 6.51503 | 818.74% |  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |         |             |         |         |  |
| Mn 257.610†  | 33.8   | 0.0592 µg/L  | 0.01070 | 0.0592 ppb  | 0.01070 | 18.08%  |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Mo 202.031†  | -8.6   | -0.4465 µg/L | 0.52128 | -0.4465 ppb | 0.52128 | 116.75% |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Na 589.592 Radial†   | 65.3   | 10.883 µg/L  | 6.1862  | 10.883 ppb  | 6.1862  | 56.84%  |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |         |             |         |         |  |
| Ni 231.604†  | 30.4   | 0.4832 µg/L  | 0.11698 | 0.4832 ppb  | 0.11698 | 24.21%  |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |         |             |         |         |  |
| P 214.914†   | 24.1   | 8.6788 µg/L  | 6.25709 | 8.6788 ppb  | 6.25709 | 72.10%  |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Pb 220.353†  | 10.8   | 1.0941 µg/L  | 0.88010 | 1.0941 ppb  | 0.88010 | 80.44%  |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |         |             |         |         |  |
| S 181.975 Axial†   | -11.9  | -13.236 µg/L | 6.2984  | -13.236 ppb | 6.2984  | 47.58%  |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |         |             |         |         |  |
| Sb 206.836†  | 15.2   | 2.9462 µg/L  | 2.29491 | 2.9462 ppb  | 2.29491 | 77.89%  |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Se 196.026†  | -9.5   | -4.96 µg/L   | 4.600   | -4.96 ppb   | 4.600   | 92.65%  |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |         |             |         |         |  |
| SiO2†  | -99.2  | -10.978 µg/L | 3.3063  | -10.978 ppb | 3.3063  | 30.12%  |  |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |         |             |         |         |  |
| Si 251.611†  | -104.2 | -1.7667 µg/L | 1.31410 | -1.7667 ppb | 1.31410 | 74.38%  |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Sn 189.927†  | 0.3    | 0.0354 µg/L  | 0.35117 | 0.0354 ppb  | 0.35117 | 992.18% |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Sr 421.552†  | 3.2    | 0.0094 µg/L  | 0.07538 | 0.0094 ppb  | 0.07538 | 801.72% |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Ti 334.940†  | 31.3   | 0.0457 µg/L  | 0.01514 | 0.0457 ppb  | 0.01514 | 33.14%  |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |         |             |         |         |  |
| Tl 190.801†  | 3.5    | 1.0820 µg/L  | 1.13130 | 1.0820 ppb  | 1.13130 | 104.55% |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |         |             |         |         |  |
| U 367.007†   | -17.0  | -2.1119 µg/L | 3.84427 | -2.1119 ppb | 3.84427 | 182.03% |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |         |             |         |         |  |
| V 292.402†   | -2.9   | -0.0139 µg/L | 0.06388 | -0.0139 ppb | 0.06388 | 458.60% |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |         |             |         |         |  |
| Zn 213.857†  | -46.8  | -0.2643 µg/L | 0.10169 | -0.2643 ppb | 0.10169 | 38.48%  |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |         |             |         |         |  |

All analyte(s) passed QC.

Hg 253.652

Rep: 1



1

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11/2/2016 12:23:48 Hg ReAlign... Actual peak offset (nm): -0.005  
Drift (nm): 0.000 Slit adjustment: 2

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**Analysis Begun**

Start Time: 11/2/2016 12:25:08 Plasma On Time: 10/24/2016 12:24:53  
Logged In Analyst: optima5 Technique: ICP Continuous  
Spectrometer Model: Optima 7300 DV, S/N 077C0052701Autosampler Model: AS-93plus

Sample Information File: C:\pe\Administrator\Sample Information\110216.sif  
Batch ID:  
Results Data Set: 110216  
Results Library: C:\pe\Administrator\Results\Results.mdb

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**Method Loaded**

Method Name: Gen Eng fast\_new SiU

Method Last Saved: 11/2/2016 9:08:13

IEC File: 102616.iec

MSF File:

**Method Description:**

| Analyte           | Calibration Equation | Processing | View   | Internal Standard | IEC |
|-------------------|----------------------|------------|--------|-------------------|-----|
| Ag 328.068        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Al 396.153Radial  | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | Yes |
| As 188.979        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| B 249.677         | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Ba 233.527        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Be 313.107        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Ca 317.933Radial  | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | No  |
| Cd 226.502        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Co 228.616        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Cr 267.716        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Cu 324.752        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Fe 238.204 Radial | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | No  |
| K 766.490 Radial  | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | Yes |
| Mg 279.077 IEC    | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | No  |
| Mn 257.610        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Mo 202.031        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Na 589.592 Radial | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | No  |
| Ni 231.604        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| P 214.914         | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Pb 220.353        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| S 181.975 Axial   | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Sb 206.836        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Sc                | Lin, Calc Int        | Peak Area  | Axial  | n/a               | n/a |
| Sc RADIAL         | Lin, Calc Int        | Peak Area  | Radial | n/a               | n/a |
| Se 196.026        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| SiO2              | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Si 251.611        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | No  |
| Sn 189.927        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Sr 421.552        | Lin Thru 0           | Peak Area  | Radial | Sc RADIAL         | Yes |
| Ti 334.940        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Tl 190.801        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| U 367.007         | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| V 292.402         | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Y 371.029         | Lin, Calc Int        | Peak Area  | Axial  | n/a               | n/a |
| Zn 213.857        | Lin Thru 0           | Peak Area  | Axial  | Sc 357.253        | Yes |
| Sc 357.253        | Lin, Calc Int        | Peak Area  | Axial  | n/a               | n/a |

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Sequence No.: 1

Autosampler Location: 8

Sample ID: S0

Date Collected: 11/2/2016 12:25:10

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

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Replicate Data: S0

Net

Corrected

Calib.

Analysis



| Repl# | Analyte            | Intensity | Intensity | Conc. Units | Time     |
|-------|--------------------|-----------|-----------|-------------|----------|
| 1     | Sc RADIAL          | 4935.9    | 4935.9    | 0.000 %     | 12:25:40 |
| 1     | Al 396.153Radial†  | -85.7     | -85.4     | [0.00] µg/L | 12:25:40 |
| 1     | Ca 317.933Radial†  | 62.7      | 62.5      | [0.00] µg/L | 12:26:00 |
| 1     | Fe 238.204 Radial† | 35.5      | 35.3      | [0.00] µg/L | 12:26:00 |
| 1     | K 766.490 Radial†  | 10.8      | 10.8      | [0.00] µg/L | 12:25:40 |
| 1     | Mg 279.077 IEC†    | -13.2     | -13.2     | [0.00] µg/L | 12:26:00 |
| 1     | Na 589.592 Radial† | 797.9     | 795.4     | [0.00] µg/L | 12:25:40 |
| 1     | Sr 421.552†        | 158.8     | 158.3     | [0.00] µg/L | 12:25:40 |
| 1     | Sc                 | 399522.1  | 399522.1  | 0.000 %     | 12:26:48 |
| 1     | Y 371.029          | 317573.1  | 317573.1  | 0.0000 %    | 12:26:48 |
| 1     | Sc 357.253         | 255583.3  | 255583.3  | 0.000 %     | 12:26:48 |
| 1     | Ag 328.068†        | -461.8    | -464.1    | [0.00] µg/L | 12:26:48 |
| 1     | As 188.979†        | 6.4       | 6.4       | [0.00] µg/L | 12:27:08 |
| 1     | B 249.677†         | 450.6     | 452.9     | [0.00] µg/L | 12:26:48 |
| 1     | Ba 233.527†        | -42.3     | -42.5     | [0.00] µg/L | 12:27:08 |
| 1     | Be 313.107†        | -2238.8   | -2250.2   | [0.00] µg/L | 12:26:48 |
| 1     | Cd 226.502†        | -163.2    | -164.0    | [0.00] µg/L | 12:27:08 |
| 1     | Co 228.616†        | -57.9     | -58.2     | [0.00] µg/L | 12:27:08 |
| 1     | Cr 267.716†        | 148.0     | 148.7     | [0.00] µg/L | 12:26:48 |
| 1     | Cu 324.752†        | 2233.2    | 2244.6    | [0.00] µg/L | 12:26:48 |
| 1     | Mn 257.610†        | -151.6    | -152.3    | [0.00] µg/L | 12:27:08 |
| 1     | Mo 202.031†        | -43.0     | -43.2     | [0.00] µg/L | 12:27:08 |
| 1     | Ni 231.604†        | 2.2       | 2.2       | [0.00] µg/L | 12:27:08 |
| 1     | P 214.914†         | 26.5      | 26.7      | [0.00] µg/L | 12:27:08 |
| 1     | Pb 220.353†        | 49.7      | 50.0      | [0.00] µg/L | 12:27:08 |
| 1     | S 181.975 Axial†   | 56.3      | 56.6      | [0.00] µg/L | 12:27:08 |
| 1     | Sb 206.836†        | 1.6       | 1.6       | [0.00] µg/L | 12:27:08 |
| 1     | Se 196.026†        | 4.5       | 4.6       | [0.00] µg/L | 12:27:08 |
| 1     | SiO2†              | 750.5     | 754.3     | [0.00] µg/L | 12:26:48 |
| 1     | Si 251.611†        | 279.7     | 281.2     | [0.00] µg/L | 12:27:08 |
| 1     | Sn 189.927†        | -23.3     | -23.5     | [0.00] µg/L | 12:27:08 |
| 1     | Ti 334.940†        | -138.5    | -139.3    | [0.00] µg/L | 12:26:48 |
| 1     | Tl 190.801†        | 4.9       | 4.9       | [0.00] µg/L | 12:27:08 |
| 1     | U 367.007†         | -122.6    | -123.2    | [0.00] µg/L | 12:26:48 |
| 1     | V 292.402†         | 49.8      | 50.0      | [0.00] µg/L | 12:26:48 |
| 1     | Zn 213.857†        | 254.8     | 256.1     | [0.00] µg/L | 12:27:08 |
| 2     | Sc RADIAL          | 4964.7    | 4964.7    | 0.000 %     | 12:26:02 |
| 2     | Al 396.153Radial†  | -86.1     | -85.3     | [0.00] µg/L | 12:26:02 |
| 2     | Ca 317.933Radial†  | 60.3      | 59.7      | [0.00] µg/L | 12:26:22 |
| 2     | Fe 238.204 Radial† | 37.3      | 37.0      | [0.00] µg/L | 12:26:22 |
| 2     | K 766.490 Radial†  | -273.2    | -270.7    | [0.00] µg/L | 12:26:02 |
| 2     | Mg 279.077 IEC†    | -15.7     | -15.5     | [0.00] µg/L | 12:26:22 |
| 2     | Na 589.592 Radial† | 780.0     | 773.0     | [0.00] µg/L | 12:26:02 |
| 2     | Sr 421.552†        | 167.6     | 166.1     | [0.00] µg/L | 12:26:02 |
| 2     | Sc                 | 402453.4  | 402453.4  | 0.000 %     | 12:27:10 |
| 2     | Y 371.029          | 323242.2  | 323242.2  | 0.0000 %    | 12:27:10 |
| 2     | Sc 357.253         | 257620.3  | 257620.3  | 0.000 %     | 12:27:10 |
| 2     | Ag 328.068†        | -464.8    | -463.5    | [0.00] µg/L | 12:27:10 |
| 2     | As 188.979†        | 2.6       | 2.6       | [0.00] µg/L | 12:27:30 |
| 2     | B 249.677†         | 477.7     | 476.4     | [0.00] µg/L | 12:27:10 |
| 2     | Ba 233.527†        | -62.9     | -62.7     | [0.00] µg/L | 12:27:30 |
| 2     | Be 313.107†        | -2181.7   | -2175.5   | [0.00] µg/L | 12:27:10 |
| 2     | Cd 226.502†        | -189.1    | -188.5    | [0.00] µg/L | 12:27:30 |
| 2     | Co 228.616†        | -51.5     | -51.4     | [0.00] µg/L | 12:27:30 |
| 2     | Cr 267.716†        | 241.3     | 240.6     | [0.00] µg/L | 12:27:10 |
| 2     | Cu 324.752†        | 2044.3    | 2038.5    | [0.00] µg/L | 12:27:10 |
| 2     | Mn 257.610†        | -140.5    | -140.1    | [0.00] µg/L | 12:27:30 |
| 2     | Mo 202.031†        | -38.5     | -38.4     | [0.00] µg/L | 12:27:30 |
| 2     | Ni 231.604†        | 21.9      | 21.9      | [0.00] µg/L | 12:27:30 |
| 2     | P 214.914†         | 27.8      | 27.7      | [0.00] µg/L | 12:27:30 |
| 2     | Pb 220.353†        | 34.6      | 34.5      | [0.00] µg/L | 12:27:30 |
| 2     | S 181.975 Axial†   | 46.5      | 46.4      | [0.00] µg/L | 12:27:30 |
| 2     | Sb 206.836†        | 5.8       | 5.8       | [0.00] µg/L | 12:27:30 |
| 2     | Se 196.026†        | 5.8       | 5.8       | [0.00] µg/L | 12:27:30 |
| 2     | SiO2†              | 737.9     | 735.8     | [0.00] µg/L | 12:27:10 |
| 2     | Si 251.611†        | 278.8     | 278.0     | [0.00] µg/L | 12:27:30 |
| 2     | Sn 189.927†        | -23.4     | -23.3     | [0.00] µg/L | 12:27:30 |
| 2     | Ti 334.940†        | -47.4     | -47.3     | [0.00] µg/L | 12:27:10 |
| 2     | Tl 190.801†        | 5.1       | 5.1       | [0.00] µg/L | 12:27:30 |
| 2     | U 367.007†         | -132.2    | -131.8    | [0.00] µg/L | 12:27:10 |

|   |                    |          |          |        |      |          |
|---|--------------------|----------|----------|--------|------|----------|
| 2 | V 292.402†         | 184.9    | 184.4    | [0.00] | µg/L | 12:27:10 |
| 2 | Zn 213.857†        | 258.5    | 257.7    | [0.00] | µg/L | 12:27:30 |
| 3 | Sc RADIAL          | 4860.4   | 4860.4   | 0.000  | %    | 12:26:24 |
| 3 | Al 396.153Radial†  | -119.9   | -121.4   | [0.00] | µg/L | 12:26:24 |
| 3 | Ca 317.933Radial†  | 55.0     | 55.7     | [0.00] | µg/L | 12:26:44 |
| 3 | Fe 238.204 Radial† | 36.9     | 37.4     | [0.00] | µg/L | 12:26:44 |
| 3 | K 766.490 Radial†  | 27.2     | 27.5     | [0.00] | µg/L | 12:26:24 |
| 3 | Mg 279.077 IEC†    | -11.8    | -12.0    | [0.00] | µg/L | 12:26:44 |
| 3 | Na 589.592 Radial† | 688.7    | 697.2    | [0.00] | µg/L | 12:26:24 |
| 3 | Sr 421.552†        | 145.0    | 146.8    | [0.00] | µg/L | 12:26:24 |
| 3 | Sc                 | 404270.3 | 404270.3 | 0.000  | %    | 12:27:32 |
| 3 | Y 371.029          | 318687.7 | 318687.7 | 0.0000 | %    | 12:27:32 |
| 3 | Sc 357.253         | 257459.5 | 257459.5 | 0.000  | %    | 12:27:32 |
| 3 | Ag 328.068†        | -542.7   | -541.5   | [0.00] | µg/L | 12:27:32 |
| 3 | As 188.979†        | 5.1      | 5.1      | [0.00] | µg/L | 12:27:52 |
| 3 | B 249.677†         | 599.3    | 598.0    | [0.00] | µg/L | 12:27:32 |
| 3 | Ba 233.527†        | -55.1    | -55.0    | [0.00] | µg/L | 12:27:52 |
| 3 | Be 313.107†        | -2246.5  | -2241.5  | [0.00] | µg/L | 12:27:32 |
| 3 | Cd 226.502†        | -185.6   | -185.2   | [0.00] | µg/L | 12:27:52 |
| 3 | Co 228.616†        | -51.3    | -51.2    | [0.00] | µg/L | 12:27:52 |
| 3 | Cr 267.716†        | 99.2     | 99.0     | [0.00] | µg/L | 12:27:32 |
| 3 | Cu 324.752†        | 2186.0   | 2181.1   | [0.00] | µg/L | 12:27:32 |
| 3 | Mn 257.610†        | -138.9   | -138.6   | [0.00] | µg/L | 12:27:52 |
| 3 | Mo 202.031†        | -39.4    | -39.3    | [0.00] | µg/L | 12:27:52 |
| 3 | Ni 231.604†        | -2.4     | -2.4     | [0.00] | µg/L | 12:27:52 |
| 3 | P 214.914†         | 28.3     | 28.2     | [0.00] | µg/L | 12:27:52 |
| 3 | Pb 220.353†        | 31.1     | 31.1     | [0.00] | µg/L | 12:27:52 |
| 3 | S 181.975 Axial†   | 47.4     | 47.3     | [0.00] | µg/L | 12:27:52 |
| 3 | Sb 206.836†        | 4.0      | 4.0      | [0.00] | µg/L | 12:27:52 |
| 3 | Se 196.026†        | 1.6      | 1.6      | [0.00] | µg/L | 12:27:52 |
| 3 | SiO2†              | 721.8    | 720.2    | [0.00] | µg/L | 12:27:32 |
| 3 | Si 251.611†        | 269.8    | 269.2    | [0.00] | µg/L | 12:27:52 |
| 3 | Sn 189.927†        | -26.5    | -26.5    | [0.00] | µg/L | 12:27:52 |
| 3 | Ti 334.940†        | -110.4   | -110.2   | [0.00] | µg/L | 12:27:32 |
| 3 | Tl 190.801†        | 5.6      | 5.6      | [0.00] | µg/L | 12:27:52 |
| 3 | U 367.007†         | -147.2   | -146.9   | [0.00] | µg/L | 12:27:32 |
| 3 | V 292.402†         | 189.9    | 189.4    | [0.00] | µg/L | 12:27:32 |
| 3 | Zn 213.857†        | 242.6    | 242.0    | [0.00] | µg/L | 12:27:52 |

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Mean Data: S0

| Analyte            | Mean Corrected |          |         | Calib  |       |
|--------------------|----------------|----------|---------|--------|-------|
|                    | Intensity      | Std.Dev. | RSD     | Conc.  | Units |
| Sc                 | 402081.9       | 2395.80  | 0.60%   | 0.000  | %     |
| Sc RADIAL          | 4920.3         | 53.84    | 1.09%   | 0.000  | %     |
| Y 371.029          | 319834.3       | 3003.44  | 0.94%   | 0.0000 | %     |
| Sc 357.253         | 256887.7       | 1132.51  | 0.44%   | 0.000  | %     |
| Ag 328.068†        | -489.7         | 44.84    | 9.16%   | [0.00] | µg/L  |
| Al 396.153Radial†  | -97.4          | 20.81    | 21.37%  | [0.00] | µg/L  |
| As 188.979†        | 4.7            | 1.93     | 41.02%  | [0.00] | µg/L  |
| B 249.677†         | 509.1          | 77.85    | 15.29%  | [0.00] | µg/L  |
| Ba 233.527†        | -53.4          | 10.21    | 19.12%  | [0.00] | µg/L  |
| Be 313.107†        | -2222.4        | 40.87    | 1.84%   | [0.00] | µg/L  |
| Ca 317.933Radial†  | 59.3           | 3.44     | 5.80%   | [0.00] | µg/L  |
| Cd 226.502†        | -179.3         | 13.32    | 7.43%   | [0.00] | µg/L  |
| Co 228.616†        | -53.6          | 4.00     | 7.46%   | [0.00] | µg/L  |
| Cr 267.716†        | 162.8          | 71.86    | 44.15%  | [0.00] | µg/L  |
| Cu 324.752†        | 2154.7         | 105.52   | 4.90%   | [0.00] | µg/L  |
| Fe 238.204 Radial† | 36.6           | 1.07     | 2.94%   | [0.00] | µg/L  |
| K 766.490 Radial†  | -77.5          | 167.58   | 216.32% | [0.00] | µg/L  |
| Mg 279.077 IEC†    | -13.6          | 1.80     | 13.27%  | [0.00] | µg/L  |
| Mn 257.610†        | -143.7         | 7.54     | 5.24%   | [0.00] | µg/L  |
| Mo 202.031†        | -40.3          | 2.59     | 6.42%   | [0.00] | µg/L  |
| Na 589.592 Radial† | 755.2          | 51.44    | 6.81%   | [0.00] | µg/L  |
| Ni 231.604†        | 7.2            | 12.89    | 178.27% | [0.00] | µg/L  |
| P 214.914†         | 27.5           | 0.79     | 2.88%   | [0.00] | µg/L  |
| Pb 220.353†        | 38.5           | 10.06    | 26.13%  | [0.00] | µg/L  |
| S 181.975 Axial†   | 50.1           | 5.67     | 11.32%  | [0.00] | µg/L  |
| Sb 206.836†        | 3.8            | 2.12     | 55.39%  | [0.00] | µg/L  |
| Se 196.026†        | 4.0            | 2.14     | 53.96%  | [0.00] | µg/L  |
| SiO2†              | 736.8          | 17.05    | 2.31%   | [0.00] | µg/L  |

|             |        |       |        |        |      |
|-------------|--------|-------|--------|--------|------|
| Si 251.611† | 276.1  | 6.22  | 2.25%  | [0.00] | µg/L |
| Sn 189.927† | -24.4  | 1.78  | 7.28%  | [0.00] | µg/L |
| Sr 421.552† | 157.1  | 9.73  | 6.20%  | [0.00] | µg/L |
| Ti 334.940† | -98.9  | 47.01 | 47.53% | [0.00] | µg/L |
| Tl 190.801† | 5.2    | 0.35  | 6.74%  | [0.00] | µg/L |
| U 367.007†  | -134.0 | 11.97 | 8.94%  | [0.00] | µg/L |
| V 292.402†  | 141.3  | 79.05 | 55.95% | [0.00] | µg/L |
| Zn 213.857† | 251.9  | 8.62  | 3.42%  | [0.00] | µg/L |

Sequence No.: 2

Autosampler Location: 2

Sample ID: S0.1

Date Collected: 11/2/2016 12:28:01

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: S0.1

| Repl# | Analyte           | Net Intensity | Corrected Intensity | Conc. Units   | Calib. | Analysis Time |
|-------|-------------------|---------------|---------------------|---------------|--------|---------------|
| 1     | Sc RADIAL         | 5019.9        | 5019.9              | 102 %         |        | 12:28:31      |
| 1     | K 766.490 Radial† | 934.2         | 993.1               | [1000] µg/L   |        | 12:28:31      |
| 1     | Sr 421.552†       | 9342.8        | 9000.4              | [100] µg/L    |        | 12:28:31      |
| 1     | Sc                | 409171.7      | 409171.7            | 101.8 %       |        | 12:28:38      |
| 1     | Y 371.029         | 316475.8      | 316475.8            | 98.950 %      |        | 12:28:38      |
| 1     | Sc 357.253        | 258628.9      | 258628.9            | 100.7 %       |        | 12:28:38      |
| 1     | Ag 328.068†       | 8716.8        | 9147.9              | [100] µg/L    |        | 12:28:38      |
| 1     | As 188.979†       | 52.3          | 47.2                | [100] µg/L    |        | 12:28:58      |
| 1     | B 249.677†        | 2833.4        | 2305.2              | [100] µg/L    |        | 12:28:58      |
| 1     | Ba 233.527†       | 5326.6        | 5344.1              | [100] µg/L    |        | 12:28:58      |
| 1     | Be 313.107†       | 151833.9      | 153034.1            | [100] µg/L    |        | 12:28:38      |
| 1     | Cd 226.502†       | 8221.1        | 8345.0              | [100] µg/L    |        | 12:28:58      |
| 1     | Co 228.616†       | 949.2         | 996.4               | [100] µg/L    |        | 12:28:58      |
| 1     | Cr 267.716†       | 7370.4        | 7158.0              | [100] µg/L    |        | 12:28:38      |
| 1     | Cu 324.752†       | 12210.9       | 9974.0              | [100] µg/L    |        | 12:28:38      |
| 1     | Mn 257.610†       | 28161.5       | 28115.6             | [100] µg/L    |        | 12:28:38      |
| 1     | Mo 202.031†       | 767.7         | 802.8               | [100] µg/L    |        | 12:28:58      |
| 1     | Ni 231.604†       | 1504.5        | 1487.2              | [100] µg/L    |        | 12:28:58      |
| 1     | P 214.914†        | 275.9         | 246.6               | [500] µg/L    |        | 12:28:58      |
| 1     | Pb 220.353†       | 308.4         | 267.8               | [100] µg/L    |        | 12:28:58      |
| 1     | S 181.975 Axial†  | 102.1         | 51.4                | [200] µg/L    |        | 12:28:58      |
| 1     | Sb 206.836†       | 75.7          | 71.4                | [100] µg/L    |        | 12:28:58      |
| 1     | Se 196.026†       | 43.7          | 39.5                | [100] µg/L    |        | 12:28:58      |
| 1     | SiO2†             | 4261.5        | 3496.0              | [1069.5] µg/L |        | 12:28:58      |
| 1     | Si 251.611†       | 7079.8        | 6756.0              | [500] µg/L    |        | 12:28:58      |
| 1     | Sn 189.927†       | 197.9         | 221.0               | [100] µg/L    |        | 12:28:58      |
| 1     | Ti 334.940†       | 19804.2       | 19769.8             | [100] µg/L    |        | 12:28:38      |
| 1     | Tl 190.801†       | 113.8         | 107.8               | [100] µg/L    |        | 12:28:58      |
| 1     | U 367.007†        | 18.5          | 152.3               | [100] µg/L    |        | 12:28:38      |
| 1     | V 292.402†        | 6285.8        | 6102.2              | [100] µg/L    |        | 12:28:38      |
| 1     | Zn 213.857†       | 3167.0        | 2893.7              | [100] µg/L    |        | 12:28:58      |
| 2     | Sc RADIAL         | 4941.6        | 4941.6              | 100 %         |        | 12:28:33      |
| 2     | K 766.490 Radial† | 1028.7        | 1101.7              | [1000] µg/L   |        | 12:28:33      |
| 2     | Sr 421.552†       | 9245.3        | 9048.4              | [100] µg/L    |        | 12:28:33      |
| 2     | Sc                | 403766.1      | 403766.1            | 100.4 %       |        | 12:29:00      |
| 2     | Y 371.029         | 313774.8      | 313774.8            | 98.105 %      |        | 12:29:00      |
| 2     | Sc 357.253        | 255948.3      | 255948.3            | 99.63 %       |        | 12:29:00      |
| 2     | Ag 328.068†       | 8531.7        | 9052.7              | [100] µg/L    |        | 12:29:00      |
| 2     | As 188.979†       | 52.9          | 48.4                | [100] µg/L    |        | 12:29:21      |
| 2     | B 249.677†        | 2802.0        | 2303.1              | [100] µg/L    |        | 12:29:21      |
| 2     | Ba 233.527†       | 5281.2        | 5353.9              | [100] µg/L    |        | 12:29:21      |
| 2     | Be 313.107†       | 150180.6      | 152954.2            | [100] µg/L    |        | 12:29:00      |
| 2     | Cd 226.502†       | 8181.3        | 8390.6              | [100] µg/L    |        | 12:29:21      |
| 2     | Co 228.616†       | 936.1         | 993.2               | [100] µg/L    |        | 12:29:21      |
| 2     | Cr 267.716†       | 7251.5        | 7115.3              | [100] µg/L    |        | 12:29:00      |
| 2     | Cu 324.752†       | 11965.6       | 9854.7              | [100] µg/L    |        | 12:29:00      |
| 2     | Mn 257.610†       | 27760.7       | 28006.2             | [100] µg/L    |        | 12:29:00      |
| 2     | Mo 202.031†       | 747.2         | 790.2               | [100] µg/L    |        | 12:29:21      |
| 2     | Ni 231.604†       | 1505.7        | 1504.0              | [100] µg/L    |        | 12:29:21      |
| 2     | P 214.914†        | 267.8         | 241.3               | [500] µg/L    |        | 12:29:21      |
| 2     | Pb 220.353†       | 297.3         | 259.9               | [100] µg/L    |        | 12:29:21      |
| 2     | S 181.975 Axial†  | 106.1         | 56.4                | [200] µg/L    |        | 12:29:21      |
| 2     | Sb 206.836†       | 68.2          | 64.6                | [100] µg/L    |        | 12:29:21      |
| 2     | Se 196.026†       | 44.5          | 40.6                | [100] µg/L    |        | 12:29:21      |
| 2     | SiO2†             | 4222.9        | 3501.6              | [1069.5] µg/L |        | 12:29:21      |
| 2     | Si 251.611†       | 7066.5        | 6816.3              | [500] µg/L    |        | 12:29:21      |
| 2     | Sn 189.927†       | 199.0         | 224.2               | [100] µg/L    |        | 12:29:21      |
| 2     | Ti 334.940†       | 19575.9       | 19746.7             | [100] µg/L    |        | 12:29:00      |
| 2     | Tl 190.801†       | 98.9          | 94.0                | [100] µg/L    |        | 12:29:21      |

|   |                   |          |          |          |      |          |
|---|-------------------|----------|----------|----------|------|----------|
| 2 | U 367.007†        | -24.2    | 109.6    | [100]    | µg/L | 12:29:00 |
| 2 | V 292.402†        | 6296.8   | 6178.7   | [100]    | µg/L | 12:29:00 |
| 2 | Zn 213.857†       | 3138.9   | 2898.4   | [100]    | µg/L | 12:29:21 |
| 3 | Sc RADIAL         | 4976.4   | 4976.4   | 101      | %    | 12:28:35 |
| 3 | K 766.490 Radial† | 875.6    | 943.2    | [1000]   | µg/L | 12:28:35 |
| 3 | Sr 421.552†       | 9255.9   | 8994.6   | [100]    | µg/L | 12:28:35 |
| 3 | Sc                | 407708.5 | 407708.5 | 101.4    | %    | 12:29:23 |
| 3 | Y 371.029         | 319450.7 | 319450.7 | 99.880   | %    | 12:29:23 |
| 3 | Sc 357.253        | 258071.7 | 258071.7 | 100.5    | %    | 12:29:23 |
| 3 | Ag 328.068†       | 8593.8   | 9044.1   | [100]    | µg/L | 12:29:23 |
| 3 | As 188.979†       | 52.0     | 47.0     | [100]    | µg/L | 12:29:43 |
| 3 | B 249.677†        | 2805.5   | 2283.5   | [100]    | µg/L | 12:29:43 |
| 3 | Ba 233.527†       | 5297.1   | 5326.2   | [100]    | µg/L | 12:29:43 |
| 3 | Be 313.107†       | 152852.1 | 154373.3 | [100]    | µg/L | 12:29:23 |
| 3 | Cd 226.502†       | 8239.0   | 8380.5   | [100]    | µg/L | 12:29:43 |
| 3 | Co 228.616†       | 948.7    | 997.9    | [100]    | µg/L | 12:29:43 |
| 3 | Cr 267.716†       | 7457.6   | 7260.6   | [100]    | µg/L | 12:29:23 |
| 3 | Cu 324.752†       | 12177.8  | 9967.2   | [100]    | µg/L | 12:29:23 |
| 3 | Mn 257.610†       | 28226.2  | 28240.4  | [100]    | µg/L | 12:29:23 |
| 3 | Mo 202.031†       | 765.2    | 802.0    | [100]    | µg/L | 12:29:43 |
| 3 | Ni 231.604†       | 1513.7   | 1499.5   | [100]    | µg/L | 12:29:43 |
| 3 | P 214.914†        | 272.4    | 243.7    | [500]    | µg/L | 12:29:43 |
| 3 | Pb 220.353†       | 307.7    | 267.8    | [100]    | µg/L | 12:29:43 |
| 3 | S 181.975 Axial†  | 101.6    | 51.0     | [200]    | µg/L | 12:29:43 |
| 3 | Sb 206.836†       | 67.0     | 62.8     | [100]    | µg/L | 12:29:43 |
| 3 | Se 196.026†       | 45.7     | 41.6     | [100]    | µg/L | 12:29:43 |
| 3 | SiO2†             | 4260.0   | 3503.7   | [1069.5] | µg/L | 12:29:43 |
| 3 | Si 251.611†       | 7050.6   | 6742.2   | [500]    | µg/L | 12:29:43 |
| 3 | Sn 189.927†       | 210.0    | 233.4    | [100]    | µg/L | 12:29:43 |
| 3 | Ti 334.940†       | 19927.9  | 19935.4  | [100]    | µg/L | 12:29:23 |
| 3 | Tl 190.801†       | 107.6    | 101.9    | [100]    | µg/L | 12:29:43 |
| 3 | U 367.007†        | -21.5    | 112.6    | [100]    | µg/L | 12:29:23 |
| 3 | V 292.402†        | 6266.6   | 6096.6   | [100]    | µg/L | 12:29:23 |
| 3 | Zn 213.857†       | 3173.2   | 2906.7   | [100]    | µg/L | 12:29:43 |

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Mean Data: S0.1

| Analyte           | Mean Corrected |          | RSD    | Calib    |       |
|-------------------|----------------|----------|--------|----------|-------|
|                   | Intensity      | Std.Dev. |        | Conc.    | Units |
| Sc                | 406882.1       | 2795.95  | 0.69%  | 101.2    | %     |
| Sc RADIAL         | 4979.3         | 39.23    | 0.79%  | 101      | %     |
| Y 371.029         | 316567.1       | 2839.03  | 0.90%  | 98.978   | %     |
| Sc 357.253        | 257549.6       | 1414.48  | 0.55%  | 100.3    | %     |
| Ag 328.068†       | 9081.6         | 57.58    | 0.63%  | [100]    | µg/L  |
| As 188.979†       | 47.6           | 0.74     | 1.55%  | [100]    | µg/L  |
| B 249.677†        | 2297.3         | 11.96    | 0.52%  | [100]    | µg/L  |
| Ba 233.527†       | 5341.4         | 14.05    | 0.26%  | [100]    | µg/L  |
| Be 313.107†       | 153453.8       | 797.24   | 0.52%  | [100]    | µg/L  |
| Cd 226.502†       | 8372.0         | 23.97    | 0.29%  | [100]    | µg/L  |
| Co 228.616†       | 995.8          | 2.44     | 0.24%  | [100]    | µg/L  |
| Cr 267.716†       | 7178.0         | 74.67    | 1.04%  | [100]    | µg/L  |
| Cu 324.752†       | 9932.0         | 66.96    | 0.67%  | [100]    | µg/L  |
| K 766.490 Radial† | 1012.7         | 81.06    | 8.00%  | [1000]   | µg/L  |
| Mn 257.610†       | 28120.7        | 117.18   | 0.42%  | [100]    | µg/L  |
| Mo 202.031†       | 798.3          | 7.06     | 0.88%  | [100]    | µg/L  |
| Ni 231.604†       | 1496.9         | 8.71     | 0.58%  | [100]    | µg/L  |
| P 214.914†        | 243.8          | 2.65     | 1.09%  | [500]    | µg/L  |
| Pb 220.353†       | 265.2          | 4.54     | 1.71%  | [100]    | µg/L  |
| S 181.975 Axial†  | 52.9           | 2.98     | 5.64%  | [200]    | µg/L  |
| Sb 206.836†       | 66.3           | 4.53     | 6.84%  | [100]    | µg/L  |
| Se 196.026†       | 40.6           | 1.05     | 2.58%  | [100]    | µg/L  |
| SiO2†             | 3500.5         | 3.96     | 0.11%  | [1069.5] | µg/L  |
| Si 251.611†       | 6771.5         | 39.45    | 0.58%  | [500]    | µg/L  |
| Sn 189.927†       | 226.2          | 6.46     | 2.85%  | [100]    | µg/L  |
| Sr 421.552†       | 9014.5         | 29.53    | 0.33%  | [100]    | µg/L  |
| Ti 334.940†       | 19817.3        | 102.92   | 0.52%  | [100]    | µg/L  |
| Tl 190.801†       | 101.2          | 6.90     | 6.81%  | [100]    | µg/L  |
| U 367.007†        | 124.9          | 23.84    | 19.10% | [100]    | µg/L  |
| V 292.402†        | 6125.8         | 45.85    | 0.75%  | [100]    | µg/L  |
| Zn 213.857†       | 2899.6         | 6.56     | 0.23%  | [100]    | µg/L  |

Sequence No.: 3

Sample ID: S0.5

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 3

Date Collected: 11/2/2016 12:29:52

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: S0.5

| Repl# | Analyte           | Net Intensity | Corrected Intensity | Conc. Units   | Calib. | Analysis Time |
|-------|-------------------|---------------|---------------------|---------------|--------|---------------|
| 1     | Sc RADIAL         | 4833.8        | 4833.8              | 98.2 %        |        | 12:30:40      |
| 1     | Al 396.153Radial† | 2788.5        | 2935.8              | [5000] µg/L   |        | 12:30:40      |
| 1     | Ca 317.933Radial† | 6284.4        | 6337.5              | [5000] µg/L   |        | 12:30:40      |
| 1     | K 766.490 Radial† | 4662.6        | 4823.5              | [5000] µg/L   |        | 12:30:20      |
| 1     | Mg 279.077 IEC†   | 503.6         | 526.2               | [5000] µg/L   |        | 12:30:40      |
| 1     | Sr 421.552†       | 44928.6       | 45575.6             | [500] µg/L    |        | 12:30:20      |
| 1     | Sc                | 413221.6      | 413221.6            | 102.8 %       |        | 12:31:28      |
| 1     | Y 371.029         | 320521.3      | 320521.3            | 100.21 %      |        | 12:31:28      |
| 1     | Sc 357.253        | 260749.2      | 260749.2            | 101.5 %       |        | 12:31:28      |
| 1     | Ag 328.068†       | 43530.1       | 43375.2             | [500] µg/L    |        | 12:31:28      |
| 1     | As 188.979†       | 238.8         | 230.5               | [500] µg/L    |        | 12:31:48      |
| 1     | B 249.677†        | 12837.8       | 12138.6             | [500] µg/L    |        | 12:31:28      |
| 1     | Ba 233.527†       | 26738.9       | 26396.3             | [500] µg/L    |        | 12:31:28      |
| 1     | Be 313.107†       | 776243.1      | 766970.1            | [500] µg/L    |        | 12:31:28      |
| 1     | Cd 226.502†       | 43092.5       | 42633.6             | [500] µg/L    |        | 12:31:28      |
| 1     | Co 228.616†       | 4763.7        | 4746.8              | [500] µg/L    |        | 12:31:48      |
| 1     | Cr 267.716†       | 35635.9       | 34945.4             | [500] µg/L    |        | 12:31:28      |
| 1     | Cu 324.752†       | 51839.1       | 48916.7             | [500] µg/L    |        | 12:31:28      |
| 1     | Mn 257.610†       | 136671.5      | 134791.2            | [500] µg/L    |        | 12:31:28      |
| 1     | Mo 202.031†       | 3857.0        | 3840.2              | [500] µg/L    |        | 12:31:48      |
| 1     | Ni 231.604†       | 7172.5        | 7059.1              | [500] µg/L    |        | 12:31:48      |
| 1     | P 214.914†        | 1261.0        | 1214.8              | [2500] µg/L   |        | 12:31:48      |
| 1     | Pb 220.353†       | 1322.4        | 1264.3              | [500] µg/L    |        | 12:31:48      |
| 1     | S 181.975 Axial†  | 344.6         | 289.4               | [1000] µg/L   |        | 12:31:48      |
| 1     | Sb 206.836†       | 309.8         | 301.4               | [500] µg/L    |        | 12:31:48      |
| 1     | Se 196.026†       | 215.4         | 208.2               | [500] µg/L    |        | 12:31:48      |
| 1     | SiO2†             | 19213.8       | 18192.5             | [5347.5] µg/L |        | 12:31:28      |
| 1     | Si 251.611†       | 35905.6       | 35097.7             | [2500] µg/L   |        | 12:31:28      |
| 1     | Sn 189.927†       | 1050.9        | 1059.8              | [500] µg/L    |        | 12:31:48      |
| 1     | Ti 334.940†       | 97416.6       | 96072.9             | [500] µg/L    |        | 12:31:28      |
| 1     | Tl 190.801†       | 509.9         | 497.1               | [500] µg/L    |        | 12:31:48      |
| 1     | U 367.007†        | 704.7         | 828.2               | [500] µg/L    |        | 12:31:28      |
| 1     | V 292.402†        | 30915.7       | 30316.6             | [500] µg/L    |        | 12:31:28      |
| 1     | Zn 213.857†       | 14375.7       | 13910.8             | [500] µg/L    |        | 12:31:48      |
| 2     | Sc RADIAL         | 4803.1        | 4803.1              | 97.6 %        |        | 12:31:02      |
| 2     | Al 396.153Radial† | 2791.2        | 2956.7              | [5000] µg/L   |        | 12:31:02      |
| 2     | Ca 317.933Radial† | 6296.5        | 6390.8              | [5000] µg/L   |        | 12:31:02      |
| 2     | K 766.490 Radial† | 4454.5        | 4640.7              | [5000] µg/L   |        | 12:30:42      |
| 2     | Mg 279.077 IEC†   | 510.7         | 536.7               | [5000] µg/L   |        | 12:31:02      |
| 2     | Sr 421.552†       | 44626.0       | 45558.3             | [500] µg/L    |        | 12:30:42      |
| 2     | Sc                | 407761.5      | 407761.5            | 101.4 %       |        | 12:31:51      |
| 2     | Y 371.029         | 314435.2      | 314435.2            | 98.312 %      |        | 12:31:51      |
| 2     | Sc 357.253        | 258080.6      | 258080.6            | 100.5 %       |        | 12:31:51      |
| 2     | Ag 328.068†       | 42910.3       | 43201.7             | [500] µg/L    |        | 12:31:51      |
| 2     | As 188.979†       | 238.5         | 232.7               | [500] µg/L    |        | 12:32:11      |
| 2     | B 249.677†        | 12515.3       | 11948.4             | [500] µg/L    |        | 12:31:51      |
| 2     | Ba 233.527†       | 26627.6       | 26557.9             | [500] µg/L    |        | 12:31:51      |
| 2     | Be 313.107†       | 762608.7      | 761306.3            | [500] µg/L    |        | 12:31:51      |
| 2     | Cd 226.502†       | 42110.0       | 42094.6             | [500] µg/L    |        | 12:31:51      |
| 2     | Co 228.616†       | 4761.5        | 4793.1              | [500] µg/L    |        | 12:32:11      |
| 2     | Cr 267.716†       | 35159.1       | 34833.8             | [500] µg/L    |        | 12:31:51      |
| 2     | Cu 324.752†       | 50956.6       | 48566.3             | [500] µg/L    |        | 12:31:51      |
| 2     | Mn 257.610†       | 135038.4      | 134557.9            | [500] µg/L    |        | 12:31:51      |
| 2     | Mo 202.031†       | 3859.8        | 3882.3              | [500] µg/L    |        | 12:32:11      |
| 2     | Ni 231.604†       | 7147.7        | 7107.5              | [500] µg/L    |        | 12:32:11      |
| 2     | P 214.914†        | 1262.0        | 1228.6              | [2500] µg/L   |        | 12:32:11      |
| 2     | Pb 220.353†       | 1312.4        | 1267.8              | [500] µg/L    |        | 12:32:11      |
| 2     | S 181.975 Axial†  | 343.1         | 291.5               | [1000] µg/L   |        | 12:32:11      |
| 2     | Sb 206.836†       | 306.9         | 301.7               | [500] µg/L    |        | 12:32:11      |

|   |                   |          |          |          |      |          |
|---|-------------------|----------|----------|----------|------|----------|
| 2 | Se 196.026†       | 213.8    | 208.8    | [500]    | µg/L | 12:32:11 |
| 2 | SiO2†             | 19002.5  | 18177.9  | [5347.5] | µg/L | 12:31:51 |
| 2 | Si 251.611†       | 35490.4  | 35050.2  | [2500]   | µg/L | 12:31:51 |
| 2 | Sn 189.927†       | 1045.1   | 1064.7   | [500]    | µg/L | 12:32:11 |
| 2 | Ti 334.940†       | 95492.2  | 95149.7  | [500]    | µg/L | 12:31:51 |
| 2 | Tl 190.801†       | 514.5    | 506.9    | [500]    | µg/L | 12:32:11 |
| 2 | U 367.007†        | 769.4    | 899.8    | [500]    | µg/L | 12:31:51 |
| 2 | V 292.402†        | 30377.0  | 30095.3  | [500]    | µg/L | 12:31:51 |
| 2 | Zn 213.857†       | 14342.8  | 14024.6  | [500]    | µg/L | 12:32:11 |
| 3 | Sc RADIAL         | 4822.3   | 4822.3   | 98.0     | %    | 12:31:24 |
| 3 | Al 396.153Radial† | 2783.0   | 2937.0   | [5000]   | µg/L | 12:31:24 |
| 3 | Ca 317.933Radial† | 6307.2   | 6376.1   | [5000]   | µg/L | 12:31:24 |
| 3 | K 766.490 Radial† | 4441.1   | 4608.8   | [5000]   | µg/L | 12:31:04 |
| 3 | Mg 279.077 IEC†   | 505.9    | 529.7    | [5000]   | µg/L | 12:31:24 |
| 3 | Sr 421.552†       | 44493.9  | 45241.3  | [500]    | µg/L | 12:31:04 |
| 3 | Sc                | 411944.6 | 411944.6 | 102.5    | %    | 12:32:13 |
| 3 | Y 371.029         | 318989.1 | 318989.1 | 99.736   | %    | 12:32:13 |
| 3 | Sc 357.253        | 260407.6 | 260407.6 | 101.4    | %    | 12:32:13 |
| 3 | Ag 328.068†       | 43323.4  | 43227.5  | [500]    | µg/L | 12:32:13 |
| 3 | As 188.979†       | 238.3    | 230.4    | [500]    | µg/L | 12:32:33 |
| 3 | B 249.677†        | 12924.2  | 12240.4  | [500]    | µg/L | 12:32:13 |
| 3 | Ba 233.527†       | 26933.0  | 26622.4  | [500]    | µg/L | 12:32:13 |
| 3 | Be 313.107†       | 774780.7 | 766530.4 | [500]    | µg/L | 12:32:13 |
| 3 | Cd 226.502†       | 43245.7  | 42840.4  | [500]    | µg/L | 12:32:13 |
| 3 | Co 228.616†       | 4783.9   | 4772.9   | [500]    | µg/L | 12:32:33 |
| 3 | Cr 267.716†       | 35760.6  | 35114.5  | [500]    | µg/L | 12:32:13 |
| 3 | Cu 324.752†       | 51793.6  | 48938.8  | [500]    | µg/L | 12:32:13 |
| 3 | Mn 257.610†       | 136867.7 | 135161.3 | [500]    | µg/L | 12:32:13 |
| 3 | Mo 202.031†       | 3888.1   | 3875.8   | [500]    | µg/L | 12:32:33 |
| 3 | Ni 231.604†       | 7209.6   | 7104.9   | [500]    | µg/L | 12:32:33 |
| 3 | P 214.914†        | 1269.0   | 1224.3   | [2500]   | µg/L | 12:32:33 |
| 3 | Pb 220.353†       | 1346.8   | 1290.1   | [500]    | µg/L | 12:32:33 |
| 3 | S 181.975 Axial†  | 346.1    | 291.3    | [1000]   | µg/L | 12:32:33 |
| 3 | Sb 206.836†       | 302.5    | 294.6    | [500]    | µg/L | 12:32:33 |
| 3 | Se 196.026†       | 217.7    | 210.8    | [500]    | µg/L | 12:32:33 |
| 3 | SiO2†             | 19200.1  | 18203.8  | [5347.5] | µg/L | 12:32:13 |
| 3 | Si 251.611†       | 35995.3  | 35232.6  | [2500]   | µg/L | 12:32:13 |
| 3 | Sn 189.927†       | 1069.4   | 1079.3   | [500]    | µg/L | 12:32:33 |
| 3 | Ti 334.940†       | 97004.0  | 95791.7  | [500]    | µg/L | 12:32:13 |
| 3 | Tl 190.801†       | 509.2    | 497.1    | [500]    | µg/L | 12:32:33 |
| 3 | U 367.007†        | 814.3    | 937.3    | [500]    | µg/L | 12:32:13 |
| 3 | V 292.402†        | 31019.6  | 30459.0  | [500]    | µg/L | 12:32:13 |
| 3 | Zn 213.857†       | 14488.1  | 14040.3  | [500]    | µg/L | 12:32:33 |

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Mean Data: S0.5

| Analyte           | Mean Corrected<br>Intensity | Std.Dev. | RSD   | Conc.  | Calib<br>Units |
|-------------------|-----------------------------|----------|-------|--------|----------------|
| Sc                | 410975.9                    | 2856.03  | 0.69% | 102.2  | %              |
| Sc RADIAL         | 4819.7                      | 15.53    | 0.32% | 98.0   | %              |
| Y 371.029         | 317981.9                    | 3165.60  | 1.00% | 99.421 | %              |
| Sc 357.253        | 259745.8                    | 1452.19  | 0.56% | 101.1  | %              |
| Ag 328.068†       | 43268.1                     | 93.61    | 0.22% | [500]  | µg/L           |
| Al 396.153Radial† | 2943.2                      | 11.75    | 0.40% | [5000] | µg/L           |
| As 188.979†       | 231.2                       | 1.30     | 0.56% | [500]  | µg/L           |
| B 249.677†        | 12109.1                     | 148.22   | 1.22% | [500]  | µg/L           |
| Ba 233.527†       | 26525.5                     | 116.46   | 0.44% | [500]  | µg/L           |
| Be 313.107†       | 764935.6                    | 3150.76  | 0.41% | [500]  | µg/L           |
| Ca 317.933Radial† | 6368.1                      | 27.51    | 0.43% | [5000] | µg/L           |
| Cd 226.502†       | 42522.9                     | 385.03   | 0.91% | [500]  | µg/L           |
| Co 228.616†       | 4770.9                      | 23.25    | 0.49% | [500]  | µg/L           |
| Cr 267.716†       | 34964.6                     | 141.31   | 0.40% | [500]  | µg/L           |
| Cu 324.752†       | 48807.3                     | 208.96   | 0.43% | [500]  | µg/L           |
| K 766.490 Radial† | 4691.0                      | 115.85   | 2.47% | [5000] | µg/L           |
| Mg 279.077 IEC†   | 530.9                       | 5.36     | 1.01% | [5000] | µg/L           |
| Mn 257.610†       | 134836.8                    | 304.28   | 0.23% | [500]  | µg/L           |
| Mo 202.031†       | 3866.1                      | 22.68    | 0.59% | [500]  | µg/L           |
| Ni 231.604†       | 7090.5                      | 27.23    | 0.38% | [500]  | µg/L           |
| P 214.914†        | 1222.6                      | 7.09     | 0.58% | [2500] | µg/L           |
| Pb 220.353†       | 1274.1                      | 13.95    | 1.09% | [500]  | µg/L           |
| S 181.975 Axial†  | 290.7                       | 1.15     | 0.40% | [1000] | µg/L           |

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|             |         |        |       |          |      |
|-------------|---------|--------|-------|----------|------|
| Sb 206.836† | 299.2   | 3.99   | 1.33% | [500]    | µg/L |
| Se 196.026† | 209.3   | 1.34   | 0.64% | [500]    | µg/L |
| SiO2†       | 18191.4 | 13.00  | 0.07% | [5347.5] | µg/L |
| Si 251.611† | 35126.9 | 94.64  | 0.27% | [2500]   | µg/L |
| Sn 189.927† | 1067.9  | 10.17  | 0.95% | [500]    | µg/L |
| Sr 421.552† | 45458.4 | 188.21 | 0.41% | [500]    | µg/L |
| Ti 334.940† | 95671.4 | 473.18 | 0.49% | [500]    | µg/L |
| Tl 190.801† | 500.4   | 5.67   | 1.13% | [500]    | µg/L |
| U 367.007†  | 888.4   | 55.42  | 6.24% | [500]    | µg/L |
| V 292.402†  | 30290.3 | 183.28 | 0.61% | [500]    | µg/L |
| Zn 213.857† | 13991.9 | 70.65  | 0.50% | [500]    | µg/L |



Sequence No.: 4

Autosampler Location: 4

Sample ID: SCAL

Date Collected: 11/2/2016 12:32:42

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: SCAL

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units  | Calib. | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------|--------|---------------|
| 1     | Sc RADIAL          | 4830.5        | 4830.5              | 98.2 %       |        | 12:33:31      |
| 1     | Al 396.153Radial†  | 5788.1        | 5993.1              | [10000] µg/L |        | 12:33:31      |
| 1     | Ca 317.933Radial†  | 12941.7       | 13123.2             | [10000] µg/L |        | 12:33:31      |
| 1     | Fe 238.204 Radial† | 4395.5        | 4440.8              | [10000] µg/L |        | 12:33:31      |
| 1     | K 766.490 Radial†  | 9639.5        | 9896.3              | [10000] µg/L |        | 12:33:11      |
| 1     | Mg 279.077 IEC†    | 1047.8        | 1080.8              | [10000] µg/L |        | 12:33:31      |
| 1     | Na 589.592 Radial† | 27493.1       | 27249.4             | [10000] µg/L |        | 12:33:11      |
| 1     | Sr 421.552†        | 92428.7       | 93991.2             | [1000] µg/L  |        | 12:33:11      |
| 1     | Sc                 | 396679.9      | 396679.9            | 98.66 %      |        | 12:34:21      |
| 1     | Y 371.029          | 305145.3      | 305145.3            | 95.407 %     |        | 12:34:21      |
| 1     | Sc 357.253         | 253837.6      | 253837.6            | 98.81 %      |        | 12:34:21      |
| 1     | Ag 328.068†        | 90202.1       | 91775.7             | [1000] µg/L  |        | 12:34:21      |
| 1     | As 188.979†        | 486.0         | 487.1               | [1000] µg/L  |        | 12:34:41      |
| 1     | B 249.677†         | 25385.5       | 25181.5             | [1000] µg/L  |        | 12:34:21      |
| 1     | Ba 233.527†        | 54263.3       | 54968.7             | [1000] µg/L  |        | 12:34:21      |
| 1     | Be 313.107†        | 1596605.6     | 1618012.8           | [1000] µg/L  |        | 12:34:18      |
| 1     | Cd 226.502†        | 86289.7       | 87505.8             | [1000] µg/L  |        | 12:34:21      |
| 1     | Co 228.616†        | 9650.0        | 9819.6              | [1000] µg/L  |        | 12:34:41      |
| 1     | Cr 267.716†        | 71610.5       | 72308.2             | [1000] µg/L  |        | 12:34:21      |
| 1     | Cu 324.752†        | 101394.8      | 100458.4            | [1000] µg/L  |        | 12:34:21      |
| 1     | Mn 257.610†        | 271124.8      | 274526.3            | [1000] µg/L  |        | 12:34:21      |
| 1     | Mo 202.031†        | 8149.7        | 8287.9              | [1000] µg/L  |        | 12:34:41      |
| 1     | Ni 231.604†        | 15026.1       | 15199.4             | [1000] µg/L  |        | 12:34:21      |
| 1     | P 214.914†         | 2563.7        | 2566.9              | [5000] µg/L  |        | 12:34:41      |
| 1     | Pb 220.353†        | 2632.1        | 2625.2              | [1000] µg/L  |        | 12:34:41      |
| 1     | S 181.975 Axial†   | 672.6         | 630.6               | [2000] µg/L  |        | 12:34:41      |
| 1     | Sb 206.836†        | 630.1         | 633.8               | [1000] µg/L  |        | 12:34:41      |
| 1     | Se 196.026†        | 429.9         | 431.1               | [1000] µg/L  |        | 12:34:41      |
| 1     | SiO2†              | 37746.5       | 37463.3             | [10695] µg/L |        | 12:34:21      |
| 1     | Si 251.611†        | 71657.0       | 72241.9             | [5000] µg/L  |        | 12:34:21      |
| 1     | Sn 189.927†        | 2224.4        | 2275.5              | [1000] µg/L  |        | 12:34:41      |
| 1     | Ti 334.940†        | 199342.4      | 201836.6            | [1000] µg/L  |        | 12:34:21      |
| 1     | Tl 190.801†        | 1043.4        | 1050.7              | [1000] µg/L  |        | 12:34:41      |
| 1     | U 367.007†         | 1704.3        | 1858.7              | [1000] µg/L  |        | 12:34:21      |
| 1     | V 292.402†         | 62274.4       | 62881.4             | [1000] µg/L  |        | 12:34:21      |
| 1     | Zn 213.857†        | 29977.1       | 30085.4             | [1000] µg/L  |        | 12:34:21      |
| 2     | Sc RADIAL          | 4854.8        | 4854.8              | 98.7 %       |        | 12:33:53      |
| 2     | Al 396.153Radial†  | 5780.1        | 5955.6              | [10000] µg/L |        | 12:33:53      |
| 2     | Ca 317.933Radial†  | 12971.9       | 13087.8             | [10000] µg/L |        | 12:33:53      |
| 2     | Fe 238.204 Radial† | 4395.7        | 4418.6              | [10000] µg/L |        | 12:33:53      |
| 2     | K 766.490 Radial†  | 9322.0        | 9525.3              | [10000] µg/L |        | 12:33:33      |
| 2     | Mg 279.077 IEC†    | 1044.4        | 1072.0              | [10000] µg/L |        | 12:33:53      |
| 2     | Na 589.592 Radial† | 27154.5       | 26766.1             | [10000] µg/L |        | 12:33:33      |
| 2     | Sr 421.552†        | 91131.1       | 92205.0             | [1000] µg/L  |        | 12:33:33      |
| 2     | Sc                 | 401586.6      | 401586.6            | 99.88 %      |        | 12:34:45      |
| 2     | Y 371.029          | 313694.6      | 313694.6            | 98.080 %     |        | 12:34:45      |
| 2     | Sc 357.253         | 257235.1      | 257235.1            | 100.1 %      |        | 12:34:45      |
| 2     | Ag 328.068†        | 91907.9       | 92273.5             | [1000] µg/L  |        | 12:34:45      |
| 2     | As 188.979†        | 487.7         | 482.3               | [1000] µg/L  |        | 12:35:05      |
| 2     | B 249.677†         | 25865.2       | 25321.2             | [1000] µg/L  |        | 12:34:45      |
| 2     | Ba 233.527†        | 55412.7       | 55391.2             | [1000] µg/L  |        | 12:34:45      |
| 2     | Be 313.107†        | 1591717.1     | 1591789.8           | [1000] µg/L  |        | 12:34:43      |
| 2     | Cd 226.502†        | 88447.8       | 88507.6             | [1000] µg/L  |        | 12:34:45      |
| 2     | Co 228.616†        | 9730.8        | 9771.3              | [1000] µg/L  |        | 12:35:05      |
| 2     | Cr 267.716†        | 73187.5       | 72925.9             | [1000] µg/L  |        | 12:34:45      |
| 2     | Cu 324.752†        | 103312.6      | 101018.4            | [1000] µg/L  |        | 12:34:45      |
| 2     | Mn 257.610†        | 276723.3      | 276493.3            | [1000] µg/L  |        | 12:34:45      |
| 2     | Mo 202.031†        | 8204.9        | 8234.1              | [1000] µg/L  |        | 12:35:05      |
| 2     | Ni 231.604†        | 15203.6       | 15175.9             | [1000] µg/L  |        | 12:34:45      |

|   |                    |           |           |         |      |          |
|---|--------------------|-----------|-----------|---------|------|----------|
| 2 | P 214.914†         | 2558.1    | 2527.1    | [5000]  | µg/L | 12:35:05 |
| 2 | Pb 220.353†        | 2654.3    | 2612.2    | [1000]  | µg/L | 12:35:05 |
| 2 | S 181.975 Axial†   | 678.1     | 627.1     | [2000]  | µg/L | 12:35:05 |
| 2 | Sb 206.836†        | 642.3     | 637.6     | [1000]  | µg/L | 12:35:05 |
| 2 | Se 196.026†        | 427.9     | 423.3     | [1000]  | µg/L | 12:35:05 |
| 2 | SiO2†              | 38515.8   | 37727.0   | [10695] | µg/L | 12:34:45 |
| 2 | Si 251.611†        | 73279.4   | 72904.3   | [5000]  | µg/L | 12:34:45 |
| 2 | Sn 189.927†        | 2258.3    | 2279.6    | [1000]  | µg/L | 12:35:05 |
| 2 | Ti 334.940†        | 203462.5  | 203286.6  | [1000]  | µg/L | 12:34:45 |
| 2 | Tl 190.801†        | 1038.9    | 1032.3    | [1000]  | µg/L | 12:35:05 |
| 2 | U 367.007†         | 1723.9    | 1855.5    | [1000]  | µg/L | 12:34:45 |
| 2 | V 292.402†         | 63759.6   | 63532.2   | [1000]  | µg/L | 12:34:45 |
| 2 | Zn 213.857†        | 30507.5   | 30214.3   | [1000]  | µg/L | 12:34:45 |
| 3 | Sc RADIAL          | 4860.6    | 4860.6    | 98.8    | %    | 12:34:15 |
| 3 | Al 396.153Radial†  | 5768.8    | 5937.1    | [10000] | µg/L | 12:34:15 |
| 3 | Ca 317.933Radial†  | 12950.1   | 13049.9   | [10000] | µg/L | 12:34:15 |
| 3 | Fe 238.204 Radial† | 4417.2    | 4434.9    | [10000] | µg/L | 12:34:15 |
| 3 | K 766.490 Radial†  | 9291.8    | 9483.4    | [10000] | µg/L | 12:33:55 |
| 3 | Mg 279.077 IEC†    | 1044.5    | 1070.9    | [10000] | µg/L | 12:34:15 |
| 3 | Na 589.592 Radial† | 27251.2   | 26830.7   | [10000] | µg/L | 12:33:55 |
| 3 | Sr 421.552†        | 91758.5   | 92728.6   | [1000]  | µg/L | 12:33:55 |
| 3 | Sc                 | 402770.0  | 402770.0  | 100.2   | %    | 12:35:09 |
| 3 | Y 371.029          | 314437.0  | 314437.0  | 98.312  | %    | 12:35:09 |
| 3 | Sc 357.253         | 257309.1  | 257309.1  | 100.2   | %    | 12:35:09 |
| 3 | Ag 328.068†        | 91826.1   | 92165.4   | [1000]  | µg/L | 12:35:09 |
| 3 | As 188.979†        | 491.4     | 485.9     | [1000]  | µg/L | 12:35:29 |
| 3 | B 249.677†         | 25974.6   | 25423.0   | [1000]  | µg/L | 12:35:09 |
| 3 | Ba 233.527†        | 55620.1   | 55582.4   | [1000]  | µg/L | 12:35:09 |
| 3 | Be 313.107†        | 1596700.1 | 1596307.9 | [1000]  | µg/L | 12:35:07 |
| 3 | Cd 226.502†        | 88866.5   | 88900.2   | [1000]  | µg/L | 12:35:09 |
| 3 | Co 228.616†        | 9793.4    | 9830.9    | [1000]  | µg/L | 12:35:29 |
| 3 | Cr 267.716†        | 73043.5   | 72761.2   | [1000]  | µg/L | 12:35:09 |
| 3 | Cu 324.752†        | 103385.5  | 101061.4  | [1000]  | µg/L | 12:35:09 |
| 3 | Mn 257.610†        | 277639.8  | 277328.8  | [1000]  | µg/L | 12:35:09 |
| 3 | Mo 202.031†        | 8273.2    | 8299.9    | [1000]  | µg/L | 12:35:29 |
| 3 | Ni 231.604†        | 15264.6   | 15232.4   | [1000]  | µg/L | 12:35:09 |
| 3 | P 214.914†         | 2591.9    | 2560.1    | [5000]  | µg/L | 12:35:29 |
| 3 | Pb 220.353†        | 2689.0    | 2646.1    | [1000]  | µg/L | 12:35:29 |
| 3 | S 181.975 Axial†   | 695.7     | 644.4     | [2000]  | µg/L | 12:35:29 |
| 3 | Sb 206.836†        | 649.1     | 644.3     | [1000]  | µg/L | 12:35:29 |
| 3 | Se 196.026†        | 443.0     | 438.3     | [1000]  | µg/L | 12:35:29 |
| 3 | SiO2†              | 38709.1   | 37908.9   | [10695] | µg/L | 12:35:09 |
| 3 | Si 251.611†        | 73462.9   | 73066.5   | [5000]  | µg/L | 12:35:09 |
| 3 | Sn 189.927†        | 2285.3    | 2306.0    | [1000]  | µg/L | 12:35:29 |
| 3 | Ti 334.940†        | 203875.4  | 203640.5  | [1000]  | µg/L | 12:35:09 |
| 3 | Tl 190.801†        | 1056.3    | 1049.4    | [1000]  | µg/L | 12:35:29 |
| 3 | U 367.007†         | 1746.5    | 1877.6    | [1000]  | µg/L | 12:35:09 |
| 3 | V 292.402†         | 63413.2   | 63168.0   | [1000]  | µg/L | 12:35:09 |
| 3 | Zn 213.857†        | 30821.0   | 30518.6   | [1000]  | µg/L | 12:35:09 |

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Mean Data: SCAL

| Analyte            | Mean Corrected |          |       | Calib   |       |
|--------------------|----------------|----------|-------|---------|-------|
|                    | Intensity      | Std.Dev. | RSD   | Conc.   | Units |
| Sc                 | 400345.5       | 3229.16  | 0.81% | 99.57   | %     |
| Sc RADIAL          | 4848.6         | 15.99    | 0.33% | 98.5    | %     |
| Y 371.029          | 311092.3       | 5163.63  | 1.66% | 97.267  | %     |
| Sc 357.253         | 256127.3       | 1983.25  | 0.77% | 99.70   | %     |
| Ag 328.068†        | 92071.5        | 261.83   | 0.28% | [1000]  | µg/L  |
| Al 396.153Radial†  | 5961.9         | 28.56    | 0.48% | [10000] | µg/L  |
| As 188.979†        | 485.1          | 2.52     | 0.52% | [1000]  | µg/L  |
| B 249.677†         | 25308.6        | 121.27   | 0.48% | [1000]  | µg/L  |
| Ba 233.527†        | 55314.1        | 314.07   | 0.57% | [1000]  | µg/L  |
| Be 313.107†        | 1602036.9      | 14018.81 | 0.88% | [1000]  | µg/L  |
| Ca 317.933Radial†  | 13087.0        | 36.67    | 0.28% | [10000] | µg/L  |
| Cd 226.502†        | 88304.6        | 719.03   | 0.81% | [1000]  | µg/L  |
| Co 228.616†        | 9807.3         | 31.68    | 0.32% | [1000]  | µg/L  |
| Cr 267.716†        | 72665.1        | 319.84   | 0.44% | [1000]  | µg/L  |
| Cu 324.752†        | 100846.1       | 336.42   | 0.33% | [1000]  | µg/L  |
| Fe 238.204 Radial† | 4431.4         | 11.51    | 0.26% | [10000] | µg/L  |
| K 766.490 Radial†  | 9635.0         | 227.27   | 2.36% | [10000] | µg/L  |

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|                    |          |         |       |         |      |
|--------------------|----------|---------|-------|---------|------|
| Mg 279.077 IEC†    | 1074.6   | 5.45    | 0.51% | [10000] | µg/L |
| Mn 257.610†        | 276116.1 | 1438.82 | 0.52% | [1000]  | µg/L |
| Mo 202.031†        | 8274.0   | 35.04   | 0.42% | [1000]  | µg/L |
| Na 589.592 Radial† | 26948.7  | 262.36  | 0.97% | [10000] | µg/L |
| Ni 231.604†        | 15202.6  | 28.41   | 0.19% | [1000]  | µg/L |
| P 214.914†         | 2551.4   | 21.29   | 0.83% | [5000]  | µg/L |
| Pb 220.353†        | 2627.9   | 17.10   | 0.65% | [1000]  | µg/L |
| S 181.975 Axial†   | 634.0    | 9.18    | 1.45% | [2000]  | µg/L |
| Sb 206.836†        | 638.5    | 5.30    | 0.83% | [1000]  | µg/L |
| Se 196.026†        | 430.9    | 7.49    | 1.74% | [1000]  | µg/L |
| SiO2†              | 37699.7  | 224.07  | 0.59% | [10695] | µg/L |
| Si 251.611†        | 72737.6  | 436.83  | 0.60% | [5000]  | µg/L |
| Sn 189.927†        | 2287.0   | 16.55   | 0.72% | [1000]  | µg/L |
| Sr 421.552†        | 92974.9  | 918.26  | 0.99% | [1000]  | µg/L |
| Ti 334.940†        | 202921.2 | 955.84  | 0.47% | [1000]  | µg/L |
| Tl 190.801†        | 1044.1   | 10.28   | 0.98% | [1000]  | µg/L |
| U 367.007†         | 1864.0   | 11.94   | 0.64% | [1000]  | µg/L |
| V 292.402†         | 63193.9  | 326.19  | 0.52% | [1000]  | µg/L |
| Zn 213.857†        | 30272.8  | 222.42  | 0.73% | [1000]  | µg/L |

Sequence No.: 5

Autosampler Location: 5

Sample ID: S10

Date Collected: 11/2/2016 12:35:37

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: S10

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Conc. Units  | Calib. | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------|--------|---------------|
| 1     | Sc RADIAL          | 4896.2        | 4896.2              | 99.5 %       |        | 12:36:08      |
| 1     | Al 396.153Radial†  | 28778.0       | 29017.3             | [50000] µg/L |        | 12:36:06      |
| 1     | Ca 317.933Radial†  | 61619.9       | 61864.4             | [50000] µg/L |        | 12:36:08      |
| 1     | Fe 238.204 Radial† | 8354.9        | 8359.5              | [20000] µg/L |        | 12:36:08      |
| 1     | Mg 279.077 IEC†    | 5136.0        | 5174.9              | [50000] µg/L |        | 12:36:08      |
| 1     | Na 589.592 Radial† | 52970.2       | 52476.2             | [20000] µg/L |        | 12:36:06      |
| 1     | Sc                 | 412076.8      | 412076.8            | 102.5 %      |        | 12:36:20      |
| 1     | Y 371.029          | 317688.3      | 317688.3            | 99.329 %     |        | 12:36:20      |
| 1     | Sc 357.253         | 259908.8      | 259908.8            | 101.2 %      |        | 12:36:20      |
| 2     | Sc RADIAL          | 4952.0        | 4952.0              | 101 %        |        | 12:36:12      |
| 2     | Al 396.153Radial†  | 28796.2       | 28709.4             | [50000] µg/L |        | 12:36:10      |
| 2     | Ca 317.933Radial†  | 62542.4       | 62083.2             | [50000] µg/L |        | 12:36:12      |
| 2     | Fe 238.204 Radial† | 8426.6        | 8336.2              | [20000] µg/L |        | 12:36:12      |
| 2     | Mg 279.077 IEC†    | 5245.8        | 5225.8              | [50000] µg/L |        | 12:36:12      |
| 2     | Na 589.592 Radial† | 52998.7       | 51904.6             | [20000] µg/L |        | 12:36:10      |
| 2     | Sc                 | 409361.8      | 409361.8            | 101.8 %      |        | 12:36:22      |
| 2     | Y 371.029          | 315967.0      | 315967.0            | 98.791 %     |        | 12:36:22      |
| 2     | Sc 357.253         | 258711.7      | 258711.7            | 100.7 %      |        | 12:36:22      |
| 3     | Sc RADIAL          | 4785.4        | 4785.4              | 97.3 %       |        | 12:36:16      |
| 3     | Al 396.153Radial†  | 28813.7       | 29723.7             | [50000] µg/L |        | 12:36:14      |
| 3     | Ca 317.933Radial†  | 60573.1       | 62222.1             | [50000] µg/L |        | 12:36:16      |
| 3     | Fe 238.204 Radial† | 8282.9        | 8480.0              | [20000] µg/L |        | 12:36:16      |
| 3     | Mg 279.077 IEC†    | 4923.1        | 5075.5              | [50000] µg/L |        | 12:36:16      |
| 3     | Na 589.592 Radial† | 52959.2       | 53697.6             | [20000] µg/L |        | 12:36:14      |
| 3     | Sc                 | 408674.5      | 408674.5            | 101.6 %      |        | 12:36:24      |
| 3     | Y 371.029          | 318285.3      | 318285.3            | 99.516 %     |        | 12:36:24      |
| 3     | Sc 357.253         | 258494.0      | 258494.0            | 100.6 %      |        | 12:36:24      |

## Mean Data: S10

| Analyte            | Mean Corrected Intensity | Std.Dev. | RSD   | Conc. Units  | Calib |
|--------------------|--------------------------|----------|-------|--------------|-------|
| Sc                 | 410037.7                 | 1799.05  | 0.44% | 102.0 %      |       |
| Sc RADIAL          | 4877.9                   | 84.81    | 1.74% | 99.1 %       |       |
| Y 371.029          | 317313.5                 | 1203.71  | 0.38% | 99.212 %     |       |
| Sc 357.253         | 259038.2                 | 761.79   | 0.29% | 100.8 %      |       |
| Al 396.153Radial†  | 29150.1                  | 520.05   | 1.78% | [50000] µg/L |       |
| Ca 317.933Radial†  | 62056.6                  | 180.35   | 0.29% | [50000] µg/L |       |
| Fe 238.204 Radial† | 8391.9                   | 77.15    | 0.92% | [20000] µg/L |       |
| Mg 279.077 IEC†    | 5158.8                   | 76.46    | 1.48% | [50000] µg/L |       |
| Na 589.592 Radial† | 52692.8                  | 915.92   | 1.74% | [20000] µg/L |       |

## Calibration Summary

| Analyte            | Stds. | Equation   | Intercept | Slope  | Curvature | Corr. Coef. | Reslope |
|--------------------|-------|------------|-----------|--------|-----------|-------------|---------|
| Ag 328.068         | 3     | Lin Thru 0 | 0.0       | 90.96  | 0.00000   | 0.999706    |         |
| Al 396.153Radial 3 | 3     | Lin Thru 0 | 0.0       | 0.5836 | 0.00000   | 0.999990    |         |
| As 188.979         | 3     | Lin Thru 0 | 0.0       | 0.4805 | 0.00000   | 0.999823    |         |
| B 249.677          | 3     | Lin Thru 0 | 0.0       | 25.07  | 0.00000   | 0.999822    |         |
| Ba 233.527         | 3     | Lin Thru 0 | 0.0       | 54.85  | 0.00000   | 0.999862    |         |
| Be 313.107         | 3     | Lin Thru 0 | 0.0       | 1587   | 0.00000   | 0.999832    |         |
| Ca 317.933Radial 3 | 3     | Lin Thru 0 | 0.0       | 1.244  | 0.00000   | 0.999943    |         |
| Cd 226.502         | 3     | Lin Thru 0 | 0.0       | 87.62  | 0.00000   | 0.999882    |         |
| Co 228.616         | 3     | Lin Thru 0 | 0.0       | 9.756  | 0.00000   | 0.999940    |         |
| Cr 267.716         | 3     | Lin Thru 0 | 0.0       | 72.12  | 0.00000   | 0.999886    |         |
| Cu 324.752         | 3     | Lin Thru 0 | 0.0       | 100.2  | 0.00000   | 0.999917    |         |
| Fe 238.204 Radia 2 | 2     | Lin Thru 0 | 0.0       | 0.4243 | 0.00000   | 0.999754    |         |
| K 766.490 Radial 3 | 3     | Lin Thru 0 | 0.0       | 0.9589 | 0.00000   | 0.999932    |         |

|                  |   |            |     |        |         |          |
|------------------|---|------------|-----|--------|---------|----------|
| Mg 279.077 IEC   | 3 | Lin Thru 0 | 0.0 | 0.1034 | 0.00000 | 0.999965 |
| Mn 257.610       | 3 | Lin Thru 0 | 0.0 | 274.9  | 0.00000 | 0.999954 |
| Mo 202.031       | 3 | Lin Thru 0 | 0.0 | 8.164  | 0.00000 | 0.999649 |
| Na 589.592 Radia | 2 | Lin Thru 0 | 0.0 | 2.647  | 0.00000 | 0.999959 |
| Ni 231.604       | 3 | Lin Thru 0 | 0.0 | 15.00  | 0.00000 | 0.999632 |
| P 214.914        | 3 | Lin Thru 0 | 0.0 | 0.5059 | 0.00000 | 0.999855 |
| Pb 220.353       | 3 | Lin Thru 0 | 0.0 | 2.612  | 0.00000 | 0.999925 |
| S 181.975 Axial  | 3 | Lin Thru 0 | 0.0 | 0.3114 | 0.00000 | 0.999344 |
| Sb 206.836       | 3 | Lin Thru 0 | 0.0 | 0.6308 | 0.00000 | 0.999670 |
| Se 196.026       | 3 | Lin Thru 0 | 0.0 | 0.4283 | 0.00000 | 0.999923 |
| SiO2             | 3 | Lin Thru 0 | 0.0 | 3.499  | 0.00000 | 0.999885 |
| Si 251.611       | 3 | Lin Thru 0 | 0.0 | 14.44  | 0.00000 | 0.999891 |
| Sn 189.927       | 3 | Lin Thru 0 | 0.0 | 2.257  | 0.00000 | 0.999644 |
| Sr 421.552       | 3 | Lin Thru 0 | 0.0 | 92.54  | 0.00000 | 0.999958 |
| Ti 334.940       | 3 | Lin Thru 0 | 0.0 | 200.6  | 0.00000 | 0.999735 |
| Tl 190.801       | 3 | Lin Thru 0 | 0.0 | 1.035  | 0.00000 | 0.999859 |
| U 367.007        | 3 | Lin Thru 0 | 0.0 | 1.842  | 0.00000 | 0.999408 |
| V 292.402        | 3 | Lin Thru 0 | 0.0 | 62.66  | 0.00000 | 0.999860 |
| Zn 213.857       | 3 | Lin Thru 0 | 0.0 | 29.81  | 0.00000 | 0.999529 |

Sequence No.: 6

Sample ID: ICV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 9

Date Collected: 11/2/2016 12:36:33

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: ICV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4915.4        | 4915.4              | 99.9 %             |                    | 12:37:27      |
| 1     | Al 396.153Radial†  | 2846.6        | 2946.8              | 5049.7 µg/L        | 5049.7 ppb         | 12:37:27      |
| 1     | Ca 317.933Radial†  | 6524.6        | 6471.8              | 5202.4 µg/L        | 5202.4 ppb         | 12:37:27      |
| 1     | Fe 238.204 Radial† | 2242.8        | 2208.5              | 5204.9 µg/L        | 5204.9 ppb         | 12:37:27      |
| 1     | K 766.490 Radial†  | 2263.3        | 2343.0              | 2440.2 µg/L        | 2440.2 ppb         | 12:37:07      |
| 1     | Mg 279.077 IEC†    | 528.2         | 542.3               | 5246.5 µg/L        | 5246.5 ppb         | 12:37:27      |
| 1     | Na 589.592 Radial† | 7458.3        | 6710.5              | 2535.5 µg/L        | 2535.5 ppb         | 12:37:07      |
| 1     | Sr 421.552†        | 45540.0       | 45428.4             | 490.54 µg/L        | 490.54 ppb         | 12:37:07      |
| 1     | Sc                 | 416793.4      | 416793.4            | 103.7 %            |                    | 12:38:14      |
| 1     | Y 371.029          | 325388.6      | 325388.6            | 101.74 %           |                    | 12:38:14      |
| 1     | Sc 357.253         | 263493.4      | 263493.4            | 102.6 %            |                    | 12:38:14      |
| 1     | Ag 328.068†        | 23144.3       | 23053.8             | 253.51 µg/L        | 253.51 ppb         | 12:38:14      |
| 1     | As 188.979†        | 241.0         | 230.2               | 482.93 µg/L        | 482.93 ppb         | 12:38:34      |
| 1     | B 249.677†         | 13024.6       | 12189.0             | 484.96 µg/L        | 484.96 ppb         | 12:38:14      |
| 1     | Ba 233.527†        | 27750.1       | 27107.8             | 494.63 µg/L        | 494.63 ppb         | 12:38:14      |
| 1     | Be 313.107†        | 400403.9      | 392588.4            | 248.20 µg/L        | 248.20 ppb         | 12:38:14      |
| 1     | Cd 226.502†        | 44478.7       | 43542.9             | 496.27 µg/L        | 496.27 ppb         | 12:38:14      |
| 1     | Co 228.616†        | 4855.9        | 4787.8              | 490.94 µg/L        | 490.94 ppb         | 12:38:34      |
| 1     | Cr 267.716†        | 36755.7       | 35671.5             | 494.99 µg/L        | 494.99 ppb         | 12:38:14      |
| 1     | Cu 324.752†        | 53766.9       | 50264.2             | 502.29 µg/L        | 502.29 ppb         | 12:38:14      |
| 1     | Mn 257.610†        | 140931.3      | 137541.9            | 500.30 µg/L        | 500.30 ppb         | 12:38:14      |
| 1     | Mo 202.031†        | 3997.1        | 3937.2              | 482.65 µg/L        | 482.65 ppb         | 12:38:34      |
| 1     | Ni 231.604†        | 7266.4        | 7077.0              | 471.71 µg/L        | 471.71 ppb         | 12:38:34      |
| 1     | P 214.914†         | 1257.1        | 1198.1              | 2360.4 µg/L        | 2360.4 ppb         | 12:38:34      |
| 1     | Pb 220.353†        | 1381.7        | 1308.5              | 501.57 µg/L        | 501.57 ppb         | 12:38:34      |
| 1     | S 181.975 Axial†   | 835.8         | 764.8               | 2460.0 µg/L        | 2460.0 ppb         | 12:38:34      |
| 1     | Sb 206.836†        | 327.6         | 315.6               | 500.04 µg/L        | 500.04 ppb         | 12:38:34      |
| 1     | Se 196.026†        | 1074.6        | 1043.6              | 2440 µg/L          | 2440 ppb           | 12:38:34      |
| 1     | SiO2†              | 37684.0       | 36002.5             | 10296 µg/L         | 10296 ppb          | 12:38:14      |
| 1     | Si 251.611†        | 71512.2       | 69443.3             | 4808.8 µg/L        | 4808.8 ppb         | 12:38:14      |
| 1     | Sn 189.927†        | 1122.0        | 1118.3              | 497.09 µg/L        | 497.09 ppb         | 12:38:34      |
| 1     | Ti 334.940†        | 101064.8      | 98630.0             | 491.63 µg/L        | 491.63 ppb         | 12:38:14      |
| 1     | Tl 190.801†        | 536.3         | 517.6               | 503.36 µg/L        | 503.36 ppb         | 12:38:34      |
| 1     | U 367.007†         | 703.4         | 819.7               | 414.51 µg/L        | 414.51 ppb         | 12:38:14      |
| 1     | V 292.402†         | 31957.9       | 31015.5             | 498.27 µg/L        | 498.27 ppb         | 12:38:14      |
| 1     | Zn 213.857†        | 14722.8       | 14101.8             | 468.67 µg/L        | 468.67 ppb         | 12:38:34      |
| 2     | Sc RADIAL          | 4926.6        | 4926.6              | 100 %              |                    | 12:37:49      |
| 2     | Al 396.153Radial†  | 2845.3        | 2939.1              | 5036.5 µg/L        | 5036.5 ppb         | 12:37:49      |
| 2     | Ca 317.933Radial†  | 6531.4        | 6463.8              | 5196.0 µg/L        | 5196.0 ppb         | 12:37:49      |
| 2     | Fe 238.204 Radial† | 2250.1        | 2210.7              | 5210.1 µg/L        | 5210.1 ppb         | 12:37:49      |
| 2     | K 766.490 Radial†  | 2271.9        | 2346.5              | 2443.9 µg/L        | 2443.9 ppb         | 12:37:29      |
| 2     | Mg 279.077 IEC†    | 537.2         | 550.1               | 5321.5 µg/L        | 5321.5 ppb         | 12:37:49      |
| 2     | Na 589.592 Radial† | 7701.8        | 6936.9              | 2621.0 µg/L        | 2621.0 ppb         | 12:37:29      |
| 2     | Sr 421.552†        | 45963.9       | 45748.8             | 494.00 µg/L        | 494.00 ppb         | 12:37:29      |
| 2     | Sc                 | 414314.4      | 414314.4            | 103.0 %            |                    | 12:38:37      |
| 2     | Y 371.029          | 321151.0      | 321151.0            | 100.41 %           |                    | 12:38:37      |
| 2     | Sc 357.253         | 262732.4      | 262732.4            | 102.3 %            |                    | 12:38:37      |
| 2     | Ag 328.068†        | 22780.7       | 22763.7             | 250.28 µg/L        | 250.28 ppb         | 12:38:37      |
| 2     | As 188.979†        | 240.5         | 230.5               | 483.40 µg/L        | 483.40 ppb         | 12:38:57      |
| 2     | B 249.677†         | 12923.0       | 12126.4             | 482.46 µg/L        | 482.46 ppb         | 12:38:37      |
| 2     | Ba 233.527†        | 27577.1       | 27017.0             | 492.97 µg/L        | 492.97 ppb         | 12:38:37      |
| 2     | Be 313.107†        | 394327.4      | 387777.6            | 245.17 µg/L        | 245.17 ppb         | 12:38:37      |
| 2     | Cd 226.502†        | 44186.8       | 43383.1             | 494.45 µg/L        | 494.45 ppb         | 12:38:37      |
| 2     | Co 228.616†        | 4876.0        | 4821.1              | 494.35 µg/L        | 494.35 ppb         | 12:38:57      |
| 2     | Cr 267.716†        | 36056.4       | 35091.5             | 486.94 µg/L        | 486.94 ppb         | 12:38:37      |
| 2     | Cu 324.752†        | 53436.5       | 50093.0             | 500.60 µg/L        | 500.60 ppb         | 12:38:37      |
| 2     | Mn 257.610†        | 140313.1      | 137335.4            | 499.54 µg/L        | 499.54 ppb         | 12:38:37      |
| 2     | Mo 202.031†        | 4007.5        | 3958.6              | 485.28 µg/L        | 485.28 ppb         | 12:38:57      |
| 2     | Ni 231.604†        | 7262.5        | 7093.7              | 472.82 µg/L        | 472.82 ppb         | 12:38:57      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 1260.2   | 1204.6   | 2373.3 µg/L | 2373.3 ppb | 12:38:57 |
| 2 | Pb 220.353†        | 1365.9   | 1297.0   | 497.13 µg/L | 497.13 ppb | 12:38:57 |
| 2 | S 181.975 Axial†   | 830.6    | 762.1    | 2451.2 µg/L | 2451.2 ppb | 12:38:57 |
| 2 | Sb 206.836†        | 330.6    | 319.4    | 506.21 µg/L | 506.21 ppb | 12:38:57 |
| 2 | Se 196.026†        | 1077.1   | 1049.2   | 2450 µg/L   | 2450 ppb   | 12:38:57 |
| 2 | SiO2†              | 37571.5  | 35998.9  | 10294 µg/L  | 10294 ppb  | 12:38:37 |
| 2 | Si 251.611†        | 71031.8  | 69175.5  | 4790.2 µg/L | 4790.2 ppb | 12:38:37 |
| 2 | Sn 189.927†        | 1112.8   | 1112.4   | 494.48 µg/L | 494.48 ppb | 12:38:57 |
| 2 | Ti 334.940†        | 100442.9 | 98307.4  | 490.02 µg/L | 490.02 ppb | 12:38:37 |
| 2 | Tl 190.801†        | 524.8    | 507.9    | 494.00 µg/L | 494.00 ppb | 12:38:57 |
| 2 | U 367.007†         | 748.6    | 866.0    | 439.58 µg/L | 439.58 ppb | 12:38:37 |
| 2 | V 292.402†         | 31342.4  | 30503.8  | 490.12 µg/L | 490.12 ppb | 12:38:37 |
| 2 | Zn 213.857†        | 14771.8  | 14191.2  | 471.66 µg/L | 471.66 ppb | 12:38:57 |
| 3 | Sc RADIAL          | 4863.0   | 4863.0   | 98.8 %      |            | 12:38:11 |
| 3 | Al 396.153Radial†  | 2847.9   | 2978.8   | 5104.6 µg/L | 5104.6 ppb | 12:38:11 |
| 3 | Ca 317.933Radial†  | 6451.3   | 6468.1   | 5199.4 µg/L | 5199.4 ppb | 12:38:11 |
| 3 | Fe 238.204 Radial† | 2229.6   | 2219.4   | 5230.7 µg/L | 5230.7 ppb | 12:38:11 |
| 3 | K 766.490 Radial†  | 2310.3   | 2415.1   | 2515.4 µg/L | 2515.4 ppb | 12:37:51 |
| 3 | Mg 279.077 IEC†    | 521.3    | 541.0    | 5233.7 µg/L | 5233.7 ppb | 12:38:11 |
| 3 | Na 589.592 Radial† | 7513.7   | 6847.1   | 2587.1 µg/L | 2587.1 ppb | 12:37:51 |
| 3 | Sr 421.552†        | 45914.0  | 46298.6  | 499.94 µg/L | 499.94 ppb | 12:37:51 |
| 3 | Sc                 | 413640.2 | 413640.2 | 102.9 %     |            | 12:38:59 |
| 3 | Y 371.029          | 319929.6 | 319929.6 | 100.03 %    |            | 12:38:59 |
| 3 | Sc 357.253         | 262736.1 | 262736.1 | 102.3 %     |            | 12:38:59 |
| 3 | Ag 328.068†        | 22747.5  | 22730.9  | 249.95 µg/L | 249.95 ppb | 12:38:59 |
| 3 | As 188.979†        | 234.4    | 224.5    | 470.96 µg/L | 470.96 ppb | 12:39:19 |
| 3 | B 249.677†         | 12920.8  | 12124.1  | 482.36 µg/L | 482.36 ppb | 12:38:59 |
| 3 | Ba 233.527†        | 27630.1  | 27068.5  | 493.90 µg/L | 493.90 ppb | 12:38:59 |
| 3 | Be 313.107†        | 394485.5 | 387926.9 | 245.27 µg/L | 245.27 ppb | 12:38:59 |
| 3 | Cd 226.502†        | 44185.0  | 43380.7  | 494.42 µg/L | 494.42 ppb | 12:38:59 |
| 3 | Co 228.616†        | 4832.5   | 4778.5   | 489.99 µg/L | 489.99 ppb | 12:39:19 |
| 3 | Cr 267.716†        | 36118.8  | 35152.0  | 487.78 µg/L | 487.78 ppb | 12:38:59 |
| 3 | Cu 324.752†        | 53265.6  | 49925.2  | 498.90 µg/L | 498.90 ppb | 12:38:59 |
| 3 | Mn 257.610†        | 140506.6 | 137522.6 | 500.23 µg/L | 500.23 ppb | 12:38:59 |
| 3 | Mo 202.031†        | 4013.0   | 3964.0   | 485.94 µg/L | 485.94 ppb | 12:39:19 |
| 3 | Ni 231.604†        | 7292.5   | 7122.9   | 474.77 µg/L | 474.77 ppb | 12:39:19 |
| 3 | P 214.914†         | 1252.0   | 1196.6   | 2357.5 µg/L | 2357.5 ppb | 12:39:19 |
| 3 | Pb 220.353†        | 1375.6   | 1306.5   | 500.81 µg/L | 500.81 ppb | 12:39:19 |
| 3 | S 181.975 Axial†   | 826.5    | 758.0    | 2438.1 µg/L | 2438.1 ppb | 12:39:19 |
| 3 | Sb 206.836†        | 321.2    | 310.3    | 491.67 µg/L | 491.67 ppb | 12:39:19 |
| 3 | Se 196.026†        | 1068.3   | 1040.6   | 2430 µg/L   | 2430 ppb   | 12:39:19 |
| 3 | SiO2†              | 37697.5  | 36121.6  | 10329 µg/L  | 10329 ppb  | 12:38:59 |
| 3 | Si 251.611†        | 71344.2  | 69480.0  | 4811.3 µg/L | 4811.3 ppb | 12:38:59 |
| 3 | Sn 189.927†        | 1131.3   | 1130.5   | 502.51 µg/L | 502.51 ppb | 12:39:19 |
| 3 | Ti 334.940†        | 100718.0 | 98574.9  | 491.36 µg/L | 491.36 ppb | 12:38:59 |
| 3 | Tl 190.801†        | 536.6    | 519.4    | 505.09 µg/L | 505.09 ppb | 12:39:19 |
| 3 | U 367.007†         | 696.9    | 815.4    | 412.01 µg/L | 412.01 ppb | 12:38:59 |
| 3 | V 292.402†         | 31131.0  | 30296.7  | 486.81 µg/L | 486.81 ppb | 12:38:59 |
| 3 | Zn 213.857†        | 14798.3  | 14217.0  | 472.51 µg/L | 472.51 ppb | 12:39:19 |

## Mean Data: ICV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc   | 414916.0                 | 103.2 %            | 0.41     |                    |          | 0.40% |
| Sc RADIAL  | 4901.6                   | 99.6 %             | 0.69     |                    |          | 0.69% |
| Y 371.029  | 322156.4                 | 100.73 %           | 0.896    |                    |          | 0.89% |
| Sc 357.253   | 262987.3                 | 102.4 %            | 0.17     |                    |          | 0.17% |
| Ag 328.068†  | 22849.5                  | 251.25 µg/L        | 1.963    | 251.25 ppb         | 1.963    | 0.78% |
| QC value within limits for Ag 328.068 Recovery = 100.50%       |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 2954.9                   | 5063.6 µg/L        | 36.14    | 5063.6 ppb         | 36.14    | 0.71% |
| QC value within limits for Al 396.153Radial Recovery = 101.27% |                          |                    |          |                    |          |       |
| As 188.979†  | 228.4                    | 479.10 µg/L        | 7.050    | 479.10 ppb         | 7.050    | 1.47% |
| QC value within limits for As 188.979 Recovery = 95.82%        |                          |                    |          |                    |          |       |
| B 249.677†   | 12146.5                  | 483.26 µg/L        | 1.470    | 483.26 ppb         | 1.470    | 0.30% |
| QC value within limits for B 249.677 Recovery = 96.65%         |                          |                    |          |                    |          |       |
| Ba 233.527†  | 27064.4                  | 493.83 µg/L        | 0.833    | 493.83 ppb         | 0.833    | 0.17% |
| QC value within limits for Ba 233.527 Recovery = 98.77%        |                          |                    |          |                    |          |       |
| Be 313.107†  | 389431.0                 | 246.21 µg/L        | 1.724    | 246.21 ppb         | 1.724    | 0.70% |
| QC value within limits for Be 313.107 Recovery = 98.49%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 6467.9                   | 5199.2 µg/L        | 3.21     | 5199.2 ppb         | 3.21     | 0.06% |

|  |          |             |        |            |        |       |  |
|--|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Ca 317.933 Radial Recovery = 103.98%    |          |             |        |            |        |       |  |
| Cd 226.502†  | 43435.6  | 495.05 µg/L | 1.063  | 495.05 ppb | 1.063  | 0.21% |  |
| QC value within limits for Cd 226.502 Recovery = 99.01%            |          |             |        |            |        |       |  |
| Co 228.616†  | 4795.8   | 491.76 µg/L | 2.296  | 491.76 ppb | 2.296  | 0.47% |  |
| QC value within limits for Co 228.616 Recovery = 98.35%            |          |             |        |            |        |       |  |
| Cr 267.716†  | 35305.0  | 489.91 µg/L | 4.425  | 489.91 ppb | 4.425  | 0.90% |  |
| QC value within limits for Cr 267.716 Recovery = 97.98%            |          |             |        |            |        |       |  |
| Cu 324.752†  | 50094.2  | 500.59 µg/L | 1.692  | 500.59 ppb | 1.692  | 0.34% |  |
| QC value within limits for Cu 324.752 Recovery = 100.12%           |          |             |        |            |        |       |  |
| Fe 238.204 Radial†   | 2212.8   | 5215.2 µg/L | 13.62  | 5215.2 ppb | 13.62  | 0.26% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 104.30%    |          |             |        |            |        |       |  |
| K 766.490 Radial†  | 2368.2   | 2466.5 µg/L | 42.38  | 2466.5 ppb | 42.38  | 1.72% |  |
| QC value within limits for K 766.490 Radial Recovery = 98.66%      |          |             |        |            |        |       |  |
| Mg 279.077 IEC†  | 544.5    | 5267.2 µg/L | 47.41  | 5267.2 ppb | 47.41  | 0.90% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 105.34%       |          |             |        |            |        |       |  |
| Mn 257.610†  | 137466.6 | 500.02 µg/L | 0.416  | 500.02 ppb | 0.416  | 0.08% |  |
| QC value within limits for Mn 257.610 Recovery = 100.00%           |          |             |        |            |        |       |  |
| Mo 202.031†  | 3953.3   | 484.63 µg/L | 1.740  | 484.63 ppb | 1.740  | 0.36% |  |
| QC value within limits for Mo 202.031 Recovery = 96.93%            |          |             |        |            |        |       |  |
| Na 589.592 Radial†   | 6831.5   | 2581.2 µg/L | 43.06  | 2581.2 ppb | 43.06  | 1.67% |  |
| QC value within limits for Na 589.592 Radial Recovery = 103.25%    |          |             |        |            |        |       |  |
| Ni 231.604†  | 7097.9   | 473.10 µg/L | 1.551  | 473.10 ppb | 1.551  | 0.33% |  |
| QC value within limits for Ni 231.604 Recovery = 94.62%            |          |             |        |            |        |       |  |
| P 214.914†   | 1199.8   | 2363.7 µg/L | 8.42   | 2363.7 ppb | 8.42   | 0.36% |  |
| QC value within limits for P 214.914 Recovery = 94.55%             |          |             |        |            |        |       |  |
| Pb 220.353†  | 1304.0   | 499.84 µg/L | 2.375  | 499.84 ppb | 2.375  | 0.48% |  |
| QC value within limits for Pb 220.353 Recovery = 99.97%            |          |             |        |            |        |       |  |
| S 181.975 Axial†   | 761.6    | 2449.8 µg/L | 11.00  | 2449.8 ppb | 11.00  | 0.45% |  |
| QC value within limits for S 181.975 Axial Recovery = 97.99%       |          |             |        |            |        |       |  |
| Sb 206.836†  | 315.1    | 499.31 µg/L | 7.296  | 499.31 ppb | 7.296  | 1.46% |  |
| QC value within limits for Sb 206.836 Recovery = 99.86%            |          |             |        |            |        |       |  |
| Se 196.026†  | 1044.5   | 2440 µg/L   | 10.2   | 2440 ppb   | 10.2   | 0.42% |  |
| QC value within limits for Se 196.026 Recovery = 97.54%            |          |             |        |            |        |       |  |
| SiO2†  | 36041.0  | 10306 µg/L  | 19.9   | 10306 ppb  | 19.9   | 0.19% |  |
| QC value within limits for SiO2 Recovery = 96.37%                  |          |             |        |            |        |       |  |
| Si 251.611†  | 69366.3  | 4803.4 µg/L | 11.51  | 4803.4 ppb | 11.51  | 0.24% |  |
| QC value within limits for Si 251.611 Recovery = 96.07%            |          |             |        |            |        |       |  |
| Sn 189.927†  | 1120.4   | 498.03 µg/L | 4.096  | 498.03 ppb | 4.096  | 0.82% |  |
| QC value within limits for Sn 189.927 Recovery = 99.61%            |          |             |        |            |        |       |  |
| Sr 421.552†  | 45825.3  | 494.82 µg/L | 4.755  | 494.82 ppb | 4.755  | 0.96% |  |
| QC value within limits for Sr 421.552 Recovery = 98.96%            |          |             |        |            |        |       |  |
| Ti 334.940†  | 98504.1  | 491.00 µg/L | 0.859  | 491.00 ppb | 0.859  | 0.18% |  |
| QC value within limits for Ti 334.940 Recovery = 98.20%            |          |             |        |            |        |       |  |
| Tl 190.801†  | 515.0    | 500.82 µg/L | 5.966  | 500.82 ppb | 5.966  | 1.19% |  |
| QC value within limits for Tl 190.801 Recovery = 100.16%           |          |             |        |            |        |       |  |
| U 367.007†   | 833.7    | 422.03 µg/L | 15.248 | 422.03 ppb | 15.248 | 3.61% |  |
| QC value less than the lower limit for U 367.007 Recovery = 84.41% |          |             |        |            |        |       |  |
| V 292.402†   | 30605.4  | 491.73 µg/L | 5.900  | 491.73 ppb | 5.900  | 1.20% |  |
| QC value within limits for V 292.402 Recovery = 98.35%             |          |             |        |            |        |       |  |
| Zn 213.857†  | 14170.0  | 470.95 µg/L | 2.019  | 470.95 ppb | 2.019  | 0.43% |  |
| QC value within limits for Zn 213.857 Recovery = 94.19%            |          |             |        |            |        |       |  |
| QC Failed. Continue with analysis.                                 |          |             |        |            |        |       |  |



Sequence No.: 7

Autosampler Location: 10

Sample ID: ICB

Date Collected: 11/2/2016 12:39:27

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: ICB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 5068.8        | 5068.8              | 103 %              |                    | 12:39:56      |
| 1     | Al 396.153Radial†  | -115.3        | -14.5               | -24.833 µg/L       | -24.833 ppb        | 12:39:56      |
| 1     | Ca 317.933Radial†  | 38.9          | -21.6               | -17.353 µg/L       | -17.353 ppb        | 12:40:16      |
| 1     | Fe 238.204 Radial† | 37.7          | -0.0                | -0.0294 µg/L       | -0.0294 ppb        | 12:40:16      |
| 1     | K 766.490 Radial†  | 13.1          | 90.1                | 94.005 µg/L        | 94.005 ppb         | 12:39:56      |
| 1     | Mg 279.077 IEC†    | -13.4         | 0.6                 | 5.3853 µg/L        | 5.3853 ppb         | 12:40:16      |
| 1     | Na 589.592 Radial† | 806.5         | 27.7                | 10.458 µg/L        | 10.458 ppb         | 12:39:56      |
| 1     | Sr 421.552†        | 235.2         | 71.2                | 0.7701 µg/L        | 0.7701 ppb         | 12:39:56      |
| 1     | Sc                 | 410511.4      | 410511.4            | 102.1 %            |                    | 12:41:04      |
| 1     | Y 371.029          | 324571.7      | 324571.7            | 101.48 %           |                    | 12:41:04      |
| 1     | Sc 357.253         | 260515.5      | 260515.5            | 101.4 %            |                    | 12:41:04      |
| 1     | Ag 328.068†        | -403.4        | 91.9                | 1.0095 µg/L        | 1.0095 ppb         | 12:41:04      |
| 1     | As 188.979†        | 6.4           | 1.6                 | 3.3177 µg/L        | 3.3177 ppb         | 12:41:24      |
| 1     | B 249.677†         | 599.5         | 82.0                | 3.2710 µg/L        | 3.2710 ppb         | 12:41:04      |
| 1     | Ba 233.527†        | -41.5         | 12.4                | 0.2282 µg/L        | 0.2282 ppb         | 12:41:24      |
| 1     | Be 313.107†        | -2215.8       | 37.4                | 0.0238 µg/L        | 0.0238 ppb         | 12:41:04      |
| 1     | Cd 226.502†        | -168.5        | 13.1                | 0.1487 µg/L        | 0.1487 ppb         | 12:41:24      |
| 1     | Co 228.616†        | -56.5         | -2.1                | -0.2200 µg/L       | -0.2200 ppb        | 12:41:24      |
| 1     | Cr 267.716†        | 93.4          | -70.7               | -0.9784 µg/L       | -0.9784 ppb        | 12:41:04      |
| 1     | Cu 324.752†        | 2079.4        | -104.3              | -1.0394 µg/L       | -1.0394 ppb        | 12:41:04      |
| 1     | Mn 257.610†        | -129.0        | 16.5                | 0.0598 µg/L        | 0.0598 ppb         | 12:41:24      |
| 1     | Mo 202.031†        | -40.6         | 0.3                 | 0.0346 µg/L        | 0.0346 ppb         | 12:41:24      |
| 1     | Ni 231.604†        | 23.6          | 16.0                | 1.0688 µg/L        | 1.0688 ppb         | 12:41:24      |
| 1     | P 214.914†         | 16.2          | -11.6               | -22.837 µg/L       | -22.837 ppb        | 12:41:24      |
| 1     | Pb 220.353†        | 38.8          | -0.3                | -0.1129 µg/L       | -0.1129 ppb        | 12:41:24      |
| 1     | S 181.975 Axial†   | 43.1          | -7.6                | -24.441 µg/L       | -24.441 ppb        | 12:41:24      |
| 1     | Sb 206.836†        | 6.8           | 2.9                 | 4.5305 µg/L        | 4.5305 ppb         | 12:41:24      |
| 1     | Se 196.026†        | 3.7           | -0.3                | -0.692 µg/L        | -0.692 ppb         | 12:41:24      |
| 1     | SiO2†              | 790.9         | 43.1                | 12.313 µg/L        | 12.313 ppb         | 12:41:04      |
| 1     | Si 251.611†        | 291.2         | 11.1                | 0.7655 µg/L        | 0.7655 ppb         | 12:41:24      |
| 1     | Sn 189.927†        | -14.0         | 10.6                | 4.7003 µg/L        | 4.7003 ppb         | 12:41:24      |
| 1     | Ti 334.940†        | -75.0         | 25.0                | 0.1247 µg/L        | 0.1247 ppb         | 12:41:04      |
| 1     | Tl 190.801†        | 7.8           | 2.5                 | 2.3930 µg/L        | 2.3930 ppb         | 12:41:24      |
| 1     | U 367.007†         | -131.4        | 4.4                 | 2.3699 µg/L        | 2.3699 ppb         | 12:41:04      |
| 1     | V 292.402†         | 261.2         | 116.3               | 1.8558 µg/L        | 1.8558 ppb         | 12:41:04      |
| 1     | Zn 213.857†        | 190.9         | -63.7               | -2.1432 µg/L       | -2.1432 ppb        | 12:41:24      |
| 2     | Sc RADIAL          | 4952.2        | 4952.2              | 101 %              |                    | 12:40:18      |
| 2     | Al 396.153Radial†  | -100.8        | -2.7                | -4.7057 µg/L       | -4.7057 ppb        | 12:40:18      |
| 2     | Ca 317.933Radial†  | 48.5          | -11.2               | -8.9846 µg/L       | -8.9846 ppb        | 12:40:38      |
| 2     | Fe 238.204 Radial† | 31.3          | -5.4                | -12.829 µg/L       | -12.829 ppb        | 12:40:38      |
| 2     | K 766.490 Radial†  | -170.0        | -91.5               | -95.389 µg/L       | -95.389 ppb        | 12:40:18      |
| 2     | Mg 279.077 IEC†    | -13.4         | 0.2                 | 2.0539 µg/L        | 2.0539 ppb         | 12:40:38      |
| 2     | Na 589.592 Radial† | 604.4         | -154.7              | -58.456 µg/L       | -58.456 ppb        | 12:40:18      |
| 2     | Sr 421.552†        | 197.7         | 39.4                | 0.4264 µg/L        | 0.4264 ppb         | 12:40:18      |
| 2     | Sc                 | 406240.3      | 406240.3            | 101.0 %            |                    | 12:41:26      |
| 2     | Y 371.029          | 320877.9      | 320877.9            | 100.33 %           |                    | 12:41:26      |
| 2     | Sc 357.253         | 258474.9      | 258474.9            | 100.6 %            |                    | 12:41:26      |
| 2     | Ag 328.068†        | -463.1        | 29.5                | 0.3258 µg/L        | 0.3258 ppb         | 12:41:26      |
| 2     | As 188.979†        | 6.8           | 2.0                 | 4.1618 µg/L        | 4.1618 ppb         | 12:41:46      |
| 2     | B 249.677†         | 548.4         | 36.0                | 1.4371 µg/L        | 1.4371 ppb         | 12:41:26      |
| 2     | Ba 233.527†        | -47.9         | 5.8                 | 0.1067 µg/L        | 0.1067 ppb         | 12:41:46      |
| 2     | Be 313.107†        | -2263.8       | -27.5               | -0.0178 µg/L       | -0.0178 ppb        | 12:41:26      |
| 2     | Cd 226.502†        | -178.0        | 2.3                 | 0.0272 µg/L        | 0.0272 ppb         | 12:41:46      |
| 2     | Co 228.616†        | -55.3         | -1.4                | -0.1379 µg/L       | -0.1379 ppb        | 12:41:46      |
| 2     | Cr 267.716†        | 167.9         | 4.1                 | 0.0580 µg/L        | 0.0580 ppb         | 12:41:26      |
| 2     | Cu 324.752†        | 2192.0        | 23.8                | 0.2358 µg/L        | 0.2358 ppb         | 12:41:26      |
| 2     | Mn 257.610†        | -123.2        | 21.2                | 0.0769 µg/L        | 0.0769 ppb         | 12:41:46      |
| 2     | Mo 202.031†        | -41.6         | -1.1                | -0.1354 µg/L       | -0.1354 ppb        | 12:41:46      |
| 2     | Ni 231.604†        | 16.4          | 9.1                 | 0.6075 µg/L        | 0.6075 ppb         | 12:41:46      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 16.8     | -10.8    | -21.356 µg/L | -21.356 ppb | 12:41:46 |
| 2 | Pb 220.353†        | 34.2     | -4.6     | -1.7418 µg/L | -1.7418 ppb | 12:41:46 |
| 2 | S 181.975 Axial†   | 47.6     | -2.8     | -8.8792 µg/L | -8.8792 ppb | 12:41:46 |
| 2 | Sb 206.836†        | 9.8      | 6.0      | 9.4422 µg/L  | 9.4422 ppb  | 12:41:46 |
| 2 | Se 196.026†        | 2.6      | -1.3     | -3.13 µg/L   | -3.13 ppb   | 12:41:46 |
| 2 | SiO2†              | 716.2    | -24.9    | -7.1237 µg/L | -7.1237 ppb | 12:41:26 |
| 2 | Si 251.611†        | 269.9    | -7.9     | -0.5463 µg/L | -0.5463 ppb | 12:41:46 |
| 2 | Sn 189.927†        | -20.1    | 4.4      | 1.9493 µg/L  | 1.9493 ppb  | 12:41:46 |
| 2 | Ti 334.940†        | -151.1   | -51.3    | -0.2559 µg/L | -0.2559 ppb | 12:41:26 |
| 2 | Tl 190.801†        | -0.0     | -5.2     | -5.0624 µg/L | -5.0624 ppb | 12:41:46 |
| 2 | U 367.007†         | -136.7   | -1.9     | -0.9398 µg/L | -0.9398 ppb | 12:41:26 |
| 2 | V 292.402†         | 246.2    | 103.4    | 1.6498 µg/L  | 1.6498 ppb  | 12:41:26 |
| 2 | Zn 213.857†        | 183.8    | -69.3    | -2.3261 µg/L | -2.3261 ppb | 12:41:46 |
| 3 | Sc RADIAL          | 4947.1   | 4947.1   | 101 %        |             | 12:40:40 |
| 3 | Al 396.153Radial†  | -109.5   | -11.6    | -19.794 µg/L | -19.794 ppb | 12:40:40 |
| 3 | Ca 317.933Radial†  | 53.0     | -6.6     | -5.3029 µg/L | -5.3029 ppb | 12:41:00 |
| 3 | Fe 238.204 Radial† | 39.4     | 2.7      | 6.2874 µg/L  | 6.2874 ppb  | 12:41:00 |
| 3 | K 766.490 Radial†  | 36.2     | 113.5    | 118.36 µg/L  | 118.36 ppb  | 12:40:40 |
| 3 | Mg 279.077 IEC†    | -12.6    | 1.0      | 9.8834 µg/L  | 9.8834 ppb  | 12:41:00 |
| 3 | Na 589.592 Radial† | 883.1    | 123.1    | 46.525 µg/L  | 46.525 ppb  | 12:40:40 |
| 3 | Sr 421.552†        | 201.0    | 42.8     | 0.4625 µg/L  | 0.4625 ppb  | 12:40:40 |
| 3 | Sc                 | 403649.9 | 403649.9 | 100.4 %      |             | 12:41:48 |
| 3 | Y 371.029          | 315449.4 | 315449.4 | 98.629 %     |             | 12:41:48 |
| 3 | Sc 357.253         | 256075.0 | 256075.0 | 99.68 %      |             | 12:41:48 |
| 3 | Ag 328.068†        | -372.7   | 115.8    | 1.2816 µg/L  | 1.2816 ppb  | 12:41:48 |
| 3 | As 188.979†        | 4.0      | -0.7     | -1.4378 µg/L | -1.4378 ppb | 12:42:08 |
| 3 | B 249.677†         | 595.9    | 88.7     | 3.5343 µg/L  | 3.5343 ppb  | 12:41:48 |
| 3 | Ba 233.527†        | -55.4    | -2.2     | -0.0394 µg/L | -0.0394 ppb | 12:42:08 |
| 3 | Be 313.107†        | -2413.9  | -199.1   | -0.1262 µg/L | -0.1262 ppb | 12:41:48 |
| 3 | Cd 226.502†        | -180.3   | -1.7     | -0.0193 µg/L | -0.0193 ppb | 12:42:08 |
| 3 | Co 228.616†        | -61.7    | -8.3     | -0.8557 µg/L | -0.8557 ppb | 12:42:08 |
| 3 | Cr 267.716†        | 167.5    | 5.3      | 0.0745 µg/L  | 0.0745 ppb  | 12:41:48 |
| 3 | Cu 324.752†        | 2190.4   | 42.6     | 0.4205 µg/L  | 0.4205 ppb  | 12:41:48 |
| 3 | Mn 257.610†        | -116.4   | 26.9     | 0.0977 µg/L  | 0.0977 ppb  | 12:42:08 |
| 3 | Mo 202.031†        | -43.1    | -3.0     | -0.3630 µg/L | -0.3630 ppb | 12:42:08 |
| 3 | Ni 231.604†        | 7.6      | 0.4      | 0.0259 µg/L  | 0.0259 ppb  | 12:42:08 |
| 3 | P 214.914†         | 13.4     | -14.1    | -27.818 µg/L | -27.818 ppb | 12:42:08 |
| 3 | Pb 220.353†        | 39.0     | 0.6      | 0.2242 µg/L  | 0.2242 ppb  | 12:42:08 |
| 3 | S 181.975 Axial†   | 50.9     | 0.9      | 2.9795 µg/L  | 2.9795 ppb  | 12:42:08 |
| 3 | Sb 206.836†        | -3.2     | -7.0     | -11.106 µg/L | -11.106 ppb | 12:42:08 |
| 3 | Se 196.026†        | 4.0      | 0.1      | 0.192 µg/L   | 0.192 ppb   | 12:42:08 |
| 3 | SiO2†              | 687.5    | -47.1    | -13.459 µg/L | -13.459 ppb | 12:41:48 |
| 3 | Si 251.611†        | 335.6    | 60.6     | 4.1956 µg/L  | 4.1956 ppb  | 12:42:08 |
| 3 | Sn 189.927†        | -18.9    | 5.4      | 2.4084 µg/L  | 2.4084 ppb  | 12:42:08 |
| 3 | Ti 334.940†        | -185.5   | -87.1    | -0.4345 µg/L | -0.4345 ppb | 12:41:48 |
| 3 | Tl 190.801†        | 1.4      | -3.8     | -3.7013 µg/L | -3.7013 ppb | 12:42:08 |
| 3 | U 367.007†         | -146.2   | -12.7    | -6.9428 µg/L | -6.9428 ppb | 12:41:48 |
| 3 | V 292.402†         | 228.1    | 87.6     | 1.3921 µg/L  | 1.3921 ppb  | 12:41:48 |
| 3 | Zn 213.857†        | 182.9    | -68.5    | -2.2986 µg/L | -2.2986 ppb | 12:42:08 |

## Mean Data: ICB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc  | 406800.5                 | 101.2 %            | 0.86     |                    |          | 0.85%   |
| Sc RADIAL   | 4989.4                   | 101 %              | 1.4      |                    |          | 1.38%   |
| Y 371.029   | 320299.7                 | 100.15 %           | 1.435    |                    |          | 1.43%   |
| Sc 357.253  | 258355.2                 | 100.6 %            | 0.87     |                    |          | 0.86%   |
| Ag 328.068†   | 79.1                     | 0.8723 µg/L        | 0.49246  | 0.8723 ppb         | 0.49246  | 56.46%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | -9.6                     | -16.444 µg/L       | 10.4733  | -16.444 ppb        | 10.4733  | 63.69%  |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | 1.0                      | 2.0139 µg/L        | 3.01890  | 2.0139 ppb         | 3.01890  | 149.91% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 68.9                     | 2.7474 µg/L        | 1.14243  | 2.7474 ppb         | 1.14243  | 41.58%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | 5.3                      | 0.0985 µg/L        | 0.13400  | 0.0985 ppb         | 0.13400  | 136.01% |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | -63.0                    | -0.0401 µg/L       | 0.07745  | -0.0401 ppb        | 0.07745  | 193.39% |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | -13.1                    | -10.547 µg/L       | 6.1749   | -10.547 ppb        | 6.1749   | 58.55%  |

|  |       |              |          |             |          |         |  |
|--|-------|--------------|----------|-------------|----------|---------|--|
| QC value within limits for Ca 317.933 Radial Recovery = Not calculated |       |              |          |             |          |         |  |
| Cd 226.502†  | 4.6   | 0.0522 µg/L  | 0.08673  | 0.0522 ppb  | 0.08673  | 166.18% |  |
| QC value within limits for Cd 226.502 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Co 228.616†  | -3.9  | -0.4045 µg/L | 0.39285  | -0.4045 ppb | 0.39285  | 97.12%  |  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Cr 267.716†  | -20.4 | -0.2820 µg/L | 0.60317  | -0.2820 ppb | 0.60317  | 213.91% |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Cu 324.752†  | -12.7 | -0.1277 µg/L | 0.79493  | -0.1277 ppb | 0.79493  | 622.34% |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Fe 238.204 Radial†   | -0.9  | -2.1904 µg/L | 9.73978  | -2.1904 ppb | 9.73978  | 444.66% |  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |       |              |          |             |          |         |  |
| K 766.490 Radial†  | 37.4  | 38.991 µg/L  | 117.0119 | 38.991 ppb  | 117.0119 | 300.10% |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |       |              |          |             |          |         |  |
| Mg 279.077 IEC†  | 0.6   | 5.7742 µg/L  | 3.92921  | 5.7742 ppb  | 3.92921  | 68.05%  |  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |       |              |          |             |          |         |  |
| Mn 257.610†  | 21.5  | 0.0781 µg/L  | 0.01902  | 0.0781 ppb  | 0.01902  | 24.34%  |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Mo 202.031†  | -1.3  | -0.1546 µg/L | 0.19953  | -0.1546 ppb | 0.19953  | 129.06% |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Na 589.592 Radial†   | -1.3  | -0.4908 µg/L | 53.34005 | -0.4908 ppb | 53.34005 | >999.9% |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |       |              |          |             |          |         |  |
| Ni 231.604†  | 8.5   | 0.5674 µg/L  | 0.52261  | 0.5674 ppb  | 0.52261  | 92.11%  |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |       |              |          |             |          |         |  |
| P 214.914†   | -12.1 | -24.004 µg/L | 3.3853   | -24.004 ppb | 3.3853   | 14.10%  |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |       |              |          |             |          |         |  |
| Pb 220.353†  | -1.4  | -0.5435 µg/L | 1.05135  | -0.5435 ppb | 1.05135  | 193.45% |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |       |              |          |             |          |         |  |
| S 181.975 Axial†   | -3.1  | -10.114 µg/L | 13.7521  | -10.114 ppb | 13.7521  | 135.97% |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |       |              |          |             |          |         |  |
| Sb 206.836†  | 0.6   | 0.9555 µg/L  | 10.73059 | 0.9555 ppb  | 10.73059 | >999.9% |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Se 196.026†  | -0.5  | -1.21 µg/L   | 1.718    | -1.21 ppb   | 1.718    | 142.16% |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |       |              |          |             |          |         |  |
| SiO2†  | -9.6  | -2.7568 µg/L | 13.42960 | -2.7568 ppb | 13.42960 | 487.15% |  |
| QC value within limits for SiO2 Recovery = Not calculated              |       |              |          |             |          |         |  |
| Si 251.611†  | 21.3  | 1.4716 µg/L  | 2.44851  | 1.4716 ppb  | 2.44851  | 166.39% |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Sn 189.927†  | 6.8   | 3.0193 µg/L  | 1.47373  | 3.0193 ppb  | 1.47373  | 48.81%  |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Sr 421.552†  | 51.2  | 0.5530 µg/L  | 0.18887  | 0.5530 ppb  | 0.18887  | 34.15%  |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Ti 334.940†  | -37.8 | -0.1886 µg/L | 0.28561  | -0.1886 ppb | 0.28561  | 151.44% |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Tl 190.801†  | -2.2  | -2.1236 µg/L | 3.97018  | -2.1236 ppb | 3.97018  | 186.96% |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |       |              |          |             |          |         |  |
| U 367.007†   | -3.4  | -1.8376 µg/L | 4.72082  | -1.8376 ppb | 4.72082  | 256.91% |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |       |              |          |             |          |         |  |
| V 292.402†   | 102.4 | 1.6325 µg/L  | 0.23235  | 1.6325 ppb  | 0.23235  | 14.23%  |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |       |              |          |             |          |         |  |
| Zn 213.857†  | -67.1 | -2.2560 µg/L | 0.09860  | -2.2560 ppb | 0.09860  | 4.37%   |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |       |              |          |             |          |         |  |
| All analyte(s) passed QC.  |       |              |          |             |          |         |  |

Sequence No.: 8

Autosampler Location: 101

Sample ID: PQL

Date Collected: 11/2/2016 12:42:18

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: PQL

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4911.3        | 4911.3              | 99.8 %             |                    | 12:42:47      |
| 1     | Al 396.153Radial†  | 41.5          | 138.9               | 238.04 µg/L        | 238.04 ppb         | 12:42:47      |
| 1     | Ca 317.933Radial†  | 323.9         | 265.2               | 213.19 µg/L        | 213.19 ppb         | 12:43:07      |
| 1     | Fe 238.204 Radial† | 83.1          | 46.7                | 109.99 µg/L        | 109.99 ppb         | 12:43:07      |
| 1     | K 766.490 Radial†  | 57.0          | 134.6               | 140.32 µg/L        | 140.32 ppb         | 12:42:47      |
| 1     | Mg 279.077 IEC†    | 19.0          | 32.6                | 314.97 µg/L        | 314.97 ppb         | 12:43:07      |
| 1     | Na 589.592 Radial† | 1507.0        | 754.5               | 285.08 µg/L        | 285.08 ppb         | 12:42:47      |
| 1     | Sr 421.552†        | 634.5         | 478.6               | 5.1633 µg/L        | 5.1633 ppb         | 12:42:47      |
| 1     | Sc                 | 398722.7      | 398722.7            | 99.16 %            |                    | 12:43:54      |
| 1     | Y 371.029          | 317125.7      | 317125.7            | 99.153 %           |                    | 12:43:54      |
| 1     | Sc 357.253         | 254413.6      | 254413.6            | 99.04 %            |                    | 12:43:54      |
| 1     | Ag 328.068†        | -7.6          | 482.0               | 5.2822 µg/L        | 5.2822 ppb         | 12:43:54      |
| 1     | As 188.979†        | 19.3          | 14.8                | 30.864 µg/L        | 30.864 ppb         | 12:44:15      |
| 1     | B 249.677†         | 1749.3        | 1257.2              | 50.117 µg/L        | 50.117 ppb         | 12:43:54      |
| 1     | Ba 233.527†        | 210.9         | 266.3               | 4.8595 µg/L        | 4.8595 ppb         | 12:44:15      |
| 1     | Be 313.107†        | 5558.1        | 7834.5              | 4.9441 µg/L        | 4.9441 ppb         | 12:43:54      |
| 1     | Cd 226.502†        | 255.0         | 436.7               | 4.9732 µg/L        | 4.9732 ppb         | 12:44:15      |
| 1     | Co 228.616†        | -10.4         | 43.1                | 4.4146 µg/L        | 4.4146 ppb         | 12:44:15      |
| 1     | Cr 267.716†        | 584.4         | 427.4               | 5.9292 µg/L        | 5.9292 ppb         | 12:43:54      |
| 1     | Cu 324.752†        | 3124.4        | 1000.1              | 10.004 µg/L        | 10.004 ppb         | 12:43:54      |
| 1     | Mn 257.610†        | 2650.5        | 2819.9              | 10.250 µg/L        | 10.250 ppb         | 12:43:54      |
| 1     | Mo 202.031†        | 31.8          | 72.4                | 8.8716 µg/L        | 8.8716 ppb         | 12:44:15      |
| 1     | Ni 231.604†        | 95.9          | 89.6                | 5.9715 µg/L        | 5.9715 ppb         | 12:44:15      |
| 1     | P 214.914†         | 101.8         | 75.2                | 148.55 µg/L        | 148.55 ppb         | 12:44:15      |
| 1     | Pb 220.353†        | 61.8          | 23.8                | 9.1300 µg/L        | 9.1300 ppb         | 12:44:15      |
| 1     | S 181.975 Axial†   | 76.4          | 27.0                | 86.904 µg/L        | 86.904 ppb         | 12:44:15      |
| 1     | Sb 206.836†        | 15.1          | 11.5                | 18.202 µg/L        | 18.202 ppb         | 12:44:15      |
| 1     | Se 196.026†        | 17.4          | 13.6                | 31.7 µg/L          | 31.7 ppb           | 12:44:15      |
| 1     | SiO2†              | 1456.5        | 733.8               | 209.82 µg/L        | 209.82 ppb         | 12:43:54      |
| 1     | Si 251.611†        | 1596.6        | 1336.0              | 92.513 µg/L        | 92.513 ppb         | 12:44:15      |
| 1     | Sn 189.927†        | 4.1           | 28.6                | 12.684 µg/L        | 12.684 ppb         | 12:44:15      |
| 1     | Ti 334.940†        | 813.9         | 920.7               | 4.5919 µg/L        | 4.5919 ppb         | 12:43:54      |
| 1     | Tl 190.801†        | 33.7          | 28.8                | 27.842 µg/L        | 27.842 ppb         | 12:44:15      |
| 1     | U 367.007†         | -89.6         | 43.5                | 22.953 µg/L        | 22.953 ppb         | 12:43:54      |
| 1     | V 292.402†         | 471.3         | 334.6               | 5.4029 µg/L        | 5.4029 ppb         | 12:43:54      |
| 1     | Zn 213.857†        | 580.4         | 334.1               | 11.128 µg/L        | 11.128 ppb         | 12:44:15      |
| 2     | Sc RADIAL          | 4951.8        | 4951.8              | 101 %              |                    | 12:43:09      |
| 2     | Al 396.153Radial†  | 48.2          | 145.2               | 248.90 µg/L        | 248.90 ppb         | 12:43:09      |
| 2     | Ca 317.933Radial†  | 322.5         | 261.1               | 209.92 µg/L        | 209.92 ppb         | 12:43:29      |
| 2     | Fe 238.204 Radial† | 81.8          | 44.8                | 105.49 µg/L        | 105.49 ppb         | 12:43:29      |
| 2     | K 766.490 Radial†  | 93.7          | 170.6               | 177.85 µg/L        | 177.85 ppb         | 12:43:09      |
| 2     | Mg 279.077 IEC†    | 16.5          | 30.0                | 290.27 µg/L        | 290.27 ppb         | 12:43:29      |
| 2     | Na 589.592 Radial† | 1570.2        | 805.0               | 304.14 µg/L        | 304.14 ppb         | 12:43:09      |
| 2     | Sr 421.552†        | 629.0         | 468.0               | 5.0488 µg/L        | 5.0488 ppb         | 12:43:09      |
| 2     | Sc                 | 398397.8      | 398397.8            | 99.08 %            |                    | 12:44:17      |
| 2     | Y 371.029          | 314736.1      | 314736.1            | 98.406 %           |                    | 12:44:17      |
| 2     | Sc 357.253         | 255722.0      | 255722.0            | 99.55 %            |                    | 12:44:17      |
| 2     | Ag 328.068†        | 57.7          | 547.7               | 6.0561 µg/L        | 6.0561 ppb         | 12:44:17      |
| 2     | As 188.979†        | 18.8          | 14.2                | 29.496 µg/L        | 29.496 ppb         | 12:44:37      |
| 2     | B 249.677†         | 1693.9        | 1192.6              | 47.539 µg/L        | 47.539 ppb         | 12:44:17      |
| 2     | Ba 233.527†        | 216.7         | 271.1               | 4.9465 µg/L        | 4.9465 ppb         | 12:44:37      |
| 2     | Be 313.107†        | 5617.3        | 7865.3              | 4.9634 µg/L        | 4.9634 ppb         | 12:44:17      |
| 2     | Cd 226.502†        | 262.2         | 442.6               | 5.0409 µg/L        | 5.0409 ppb         | 12:44:37      |
| 2     | Co 228.616†        | 10.2          | 63.8                | 6.5391 µg/L        | 6.5391 ppb         | 12:44:37      |
| 2     | Cr 267.716†        | 548.6         | 388.3               | 5.3884 µg/L        | 5.3884 ppb         | 12:44:17      |
| 2     | Cu 324.752†        | 3166.7        | 1026.4              | 10.233 µg/L        | 10.233 ppb         | 12:44:17      |
| 2     | Mn 257.610†        | 2661.0        | 2816.8              | 10.240 µg/L        | 10.240 ppb         | 12:44:17      |
| 2     | Mo 202.031†        | 28.8          | 69.3                | 8.4934 µg/L        | 8.4934 ppb         | 12:44:37      |
| 2     | Ni 231.604†        | 85.9          | 79.1                | 5.2695 µg/L        | 5.2695 ppb         | 12:44:37      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 99.8     | 72.7     | 143.52 µg/L  | 143.52 ppb  | 12:44:37 |
| 2 | Pb 220.353†        | 56.6     | 18.3     | 7.0673 µg/L  | 7.0673 ppb  | 12:44:37 |
| 2 | S 181.975 Axial†   | 68.6     | 18.8     | 60.608 µg/L  | 60.608 ppb  | 12:44:37 |
| 2 | Sb 206.836†        | 14.9     | 11.1     | 17.689 µg/L  | 17.689 ppb  | 12:44:37 |
| 2 | Se 196.026†        | 16.0     | 12.1     | 28.2 µg/L    | 28.2 ppb    | 12:44:37 |
| 2 | SiO2†              | 1379.4   | 648.9    | 185.52 µg/L  | 185.52 ppb  | 12:44:17 |
| 2 | Si 251.611†        | 1586.4   | 1317.5   | 91.235 µg/L  | 91.235 ppb  | 12:44:37 |
| 2 | Sn 189.927†        | -4.9     | 19.5     | 8.6563 µg/L  | 8.6563 ppb  | 12:44:37 |
| 2 | Ti 334.940†        | 808.9    | 911.5    | 4.5462 µg/L  | 4.5462 ppb  | 12:44:17 |
| 2 | Tl 190.801†        | 25.7     | 20.7     | 19.973 µg/L  | 19.973 ppb  | 12:44:37 |
| 2 | U 367.007†         | -178.2   | -45.0    | -25.065 µg/L | -25.065 ppb | 12:44:17 |
| 2 | V 292.402†         | 531.7    | 392.9    | 6.3070 µg/L  | 6.3070 ppb  | 12:44:17 |
| 2 | Zn 213.857†        | 579.6    | 330.3    | 11.006 µg/L  | 11.006 ppb  | 12:44:37 |
| 3 | Sc RADIAL          | 5054.5   | 5054.5   | 103 %        |             | 12:43:31 |
| 3 | Al 396.153Radial†  | -4.5     | 93.0     | 159.29 µg/L  | 159.29 ppb  | 12:43:31 |
| 3 | Ca 317.933Radial†  | 322.4    | 254.5    | 204.57 µg/L  | 204.57 ppb  | 12:43:51 |
| 3 | Fe 238.204 Radial† | 81.5     | 42.7     | 100.75 µg/L  | 100.75 ppb  | 12:43:51 |
| 3 | K 766.490 Radial†  | 45.4     | 121.6    | 126.78 µg/L  | 126.78 ppb  | 12:43:31 |
| 3 | Mg 279.077 IEC†    | 26.6     | 39.5     | 382.03 µg/L  | 382.03 ppb  | 12:43:51 |
| 3 | Na 589.592 Radial† | 1559.0   | 762.4    | 288.07 µg/L  | 288.07 ppb  | 12:43:31 |
| 3 | Sr 421.552†        | 602.5    | 429.4    | 4.6325 µg/L  | 4.6325 ppb  | 12:43:31 |
| 3 | Sc                 | 402027.4 | 402027.4 | 99.99 %      |             | 12:44:39 |
| 3 | Y 371.029          | 319346.8 | 319346.8 | 99.848 %     |             | 12:44:39 |
| 3 | Sc 357.253         | 258797.9 | 258797.9 | 100.7 %      |             | 12:44:39 |
| 3 | Ag 328.068†        | -10.2    | 479.6    | 5.3091 µg/L  | 5.3091 ppb  | 12:44:39 |
| 3 | As 188.979†        | 18.8     | 14.0     | 29.100 µg/L  | 29.100 ppb  | 12:44:59 |
| 3 | B 249.677†         | 1722.3   | 1200.5   | 47.858 µg/L  | 47.858 ppb  | 12:44:39 |
| 3 | Ba 233.527†        | 209.1    | 260.9    | 4.7615 µg/L  | 4.7615 ppb  | 12:44:59 |
| 3 | Be 313.107†        | 5489.5   | 7671.4   | 4.8407 µg/L  | 4.8407 ppb  | 12:44:39 |
| 3 | Cd 226.502†        | 267.9    | 445.2    | 5.0702 µg/L  | 5.0702 ppb  | 12:44:59 |
| 3 | Co 228.616†        | -3.4     | 50.2     | 5.1434 µg/L  | 5.1434 ppb  | 12:44:59 |
| 3 | Cr 267.716†        | 572.8    | 405.8    | 5.6314 µg/L  | 5.6314 ppb  | 12:44:39 |
| 3 | Cu 324.752†        | 3290.1   | 1111.1   | 11.076 µg/L  | 11.076 ppb  | 12:44:39 |
| 3 | Mn 257.610†        | 2705.8   | 2829.5   | 10.283 µg/L  | 10.283 ppb  | 12:44:39 |
| 3 | Mo 202.031†        | 35.0     | 75.1     | 9.2022 µg/L  | 9.2022 ppb  | 12:44:59 |
| 3 | Ni 231.604†        | 96.9     | 88.9     | 5.9256 µg/L  | 5.9256 ppb  | 12:44:59 |
| 3 | P 214.914†         | 97.1     | 68.8     | 135.87 µg/L  | 135.87 ppb  | 12:44:59 |
| 3 | Pb 220.353†        | 73.2     | 34.1     | 13.103 µg/L  | 13.103 ppb  | 12:44:59 |
| 3 | S 181.975 Axial†   | 70.4     | 19.8     | 63.716 µg/L  | 63.716 ppb  | 12:44:59 |
| 3 | Sb 206.836†        | 8.0      | 4.1      | 6.5207 µg/L  | 6.5207 ppb  | 12:44:59 |
| 3 | Se 196.026†        | 18.0     | 13.9     | 32.4 µg/L    | 32.4 ppb    | 12:44:59 |
| 3 | SiO2†              | 1434.8   | 687.4    | 196.55 µg/L  | 196.55 ppb  | 12:44:39 |
| 3 | Si 251.611†        | 1621.8   | 1333.7   | 92.357 µg/L  | 92.357 ppb  | 12:44:59 |
| 3 | Sn 189.927†        | 1.9      | 26.3     | 11.647 µg/L  | 11.647 ppb  | 12:44:59 |
| 3 | Ti 334.940†        | 751.2    | 844.5    | 4.2122 µg/L  | 4.2122 ppb  | 12:44:39 |
| 3 | Tl 190.801†        | 24.3     | 18.9     | 18.258 µg/L  | 18.258 ppb  | 12:44:59 |
| 3 | U 367.007†         | -185.2   | -49.9    | -27.674 µg/L | -27.674 ppb | 12:44:39 |
| 3 | V 292.402†         | 519.8    | 374.7    | 6.0203 µg/L  | 6.0203 ppb  | 12:44:39 |
| 3 | Zn 213.857†        | 582.1    | 325.8    | 10.846 µg/L  | 10.846 ppb  | 12:44:59 |

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Mean Data: PQL

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc   | 399715.9                 | 99.41 %            | 0.499    |                    |          | 0.50%  |
| Sc RADIAL  | 4972.5                   | 101 %              | 1.5      |                    |          | 1.49%  |
| Y 371.029  | 317069.5                 | 99.136 %           | 0.7209   |                    |          | 0.73%  |
| Sc 357.253   | 256311.2                 | 99.78 %            | 0.876    |                    |          | 0.88%  |
| Ag 328.068†  | 503.1                    | 5.5491 µg/L        | 0.43923  | 5.5491 ppb         | 0.43923  | 7.92%  |
| QC value within limits for Ag 328.068 Recovery = 110.98%       |                          |                    |          |                    |          |        |
| Al 396.153Radial†  | 125.7                    | 215.41 µg/L        | 48.902   | 215.41 ppb         | 48.902   | 22.70% |
| QC value within limits for Al 396.153Radial Recovery = 107.71% |                          |                    |          |                    |          |        |
| As 188.979†  | 14.3                     | 29.820 µg/L        | 0.9255   | 29.820 ppb         | 0.9255   | 3.10%  |
| QC value within limits for As 188.979 Recovery = 99.40%        |                          |                    |          |                    |          |        |
| B 249.677†   | 1216.8                   | 48.504 µg/L        | 1.4052   | 48.504 ppb         | 1.4052   | 2.90%  |
| QC value within limits for B 249.677 Recovery = 97.01%         |                          |                    |          |                    |          |        |
| Ba 233.527†  | 266.1                    | 4.8558 µg/L        | 0.09259  | 4.8558 ppb         | 0.09259  | 1.91%  |
| QC value within limits for Ba 233.527 Recovery = 97.12%        |                          |                    |          |                    |          |        |
| Be 313.107†  | 7790.4                   | 4.9160 µg/L        | 0.06599  | 4.9160 ppb         | 0.06599  | 1.34%  |
| QC value within limits for Be 313.107 Recovery = 98.32%        |                          |                    |          |                    |          |        |
| Ca 317.933Radial†  | 260.3                    | 209.23 µg/L        | 4.349    | 209.23 ppb         | 4.349    | 2.08%  |

|   |        |              |          |             |          |         |  |
|---|--------|--------------|----------|-------------|----------|---------|--|
| QC value within limits for Ca 317.933 Radial Recovery = 104.61%         |        |              |          |             |          |         |  |
| Cd 226.502†   | 441.5  | 5.0281 µg/L  | 0.04977  | 5.0281 ppb  | 0.04977  | 0.99%   |  |
| QC value within limits for Cd 226.502 Recovery = 100.56%                |        |              |          |             |          |         |  |
| Co 228.616†   | 52.4   | 5.3657 µg/L  | 1.07957  | 5.3657 ppb  | 1.07957  | 20.12%  |  |
| QC value within limits for Co 228.616 Recovery = 107.31%                |        |              |          |             |          |         |  |
| Cr 267.716†   | 407.2  | 5.6497 µg/L  | 0.27087  | 5.6497 ppb  | 0.27087  | 4.79%   |  |
| QC value within limits for Cr 267.716 Recovery = 112.99%                |        |              |          |             |          |         |  |
| Cu 324.752†   | 1045.8 | 10.438 µg/L  | 0.5646   | 10.438 ppb  | 0.5646   | 5.41%   |  |
| QC value within limits for Cu 324.752 Recovery = 104.38%                |        |              |          |             |          |         |  |
| Fe 238.204 Radial†  | 44.7   | 105.41 µg/L  | 4.619    | 105.41 ppb  | 4.619    | 4.38%   |  |
| QC value within limits for Fe 238.204 Radial Recovery = 105.41%         |        |              |          |             |          |         |  |
| K 766.490 Radial†   | 142.3  | 148.32 µg/L  | 26.455   | 148.32 ppb  | 26.455   | 17.84%  |  |
| QC value within limits for K 766.490 Radial Recovery = 98.88%           |        |              |          |             |          |         |  |
| Mg 279.077 IEC†   | 34.0   | 329.09 µg/L  | 47.482   | 329.09 ppb  | 47.482   | 14.43%  |  |
| QC value within limits for Mg 279.077 IEC Recovery = 109.70%            |        |              |          |             |          |         |  |
| Mn 257.610†   | 2822.1 | 10.258 µg/L  | 0.0224   | 10.258 ppb  | 0.0224   | 0.22%   |  |
| QC value within limits for Mn 257.610 Recovery = 102.58%                |        |              |          |             |          |         |  |
| Mo 202.031†   | 72.2   | 8.8557 µg/L  | 0.35467  | 8.8557 ppb  | 0.35467  | 4.00%   |  |
| QC value within limits for Mo 202.031 Recovery = 88.56%                 |        |              |          |             |          |         |  |
| Na 589.592 Radial†  | 774.0  | 292.43 µg/L  | 10.252   | 292.43 ppb  | 10.252   | 3.51%   |  |
| QC value within limits for Na 589.592 Radial Recovery = 97.48%          |        |              |          |             |          |         |  |
| Ni 231.604†   | 85.9   | 5.7222 µg/L  | 0.39274  | 5.7222 ppb  | 0.39274  | 6.86%   |  |
| QC value within limits for Ni 231.604 Recovery = 114.44%                |        |              |          |             |          |         |  |
| P 214.914†  | 72.2   | 142.65 µg/L  | 6.388    | 142.65 ppb  | 6.388    | 4.48%   |  |
| QC value within limits for P 214.914 Recovery = 95.10%                  |        |              |          |             |          |         |  |
| Pb 220.353†   | 25.4   | 9.7669 µg/L  | 3.06803  | 9.7669 ppb  | 3.06803  | 31.41%  |  |
| QC value within limits for Pb 220.353 Recovery = 97.67%                 |        |              |          |             |          |         |  |
| S 181.975 Axial†  | 21.9   | 70.409 µg/L  | 14.3689  | 70.409 ppb  | 14.3689  | 20.41%  |  |
| QC value within limits for S 181.975 Axial Recovery = 70.41%            |        |              |          |             |          |         |  |
| Sb 206.836†   | 8.9    | 14.137 µg/L  | 6.6010   | 14.137 ppb  | 6.6010   | 46.69%  |  |
| QC value greater than the upper limit for Sb 206.836 Recovery = 141.37% |        |              |          |             |          |         |  |
| Se 196.026†   | 13.2   | 30.8 µg/L    | 2.22     | 30.8 ppb    | 2.22     | 7.20%   |  |
| QC value within limits for Se 196.026 Recovery = 102.56%                |        |              |          |             |          |         |  |
| SiO2†   | 690.1  | 197.29 µg/L  | 12.164   | 197.29 ppb  | 12.164   | 6.17%   |  |
| QC value within limits for SiO2 Recovery = 92.63%                       |        |              |          |             |          |         |  |
| Si 251.611†   | 1329.1 | 92.035 µg/L  | 0.6975   | 92.035 ppb  | 0.6975   | 0.76%   |  |
| QC value within limits for Si 251.611 Recovery = 92.03%                 |        |              |          |             |          |         |  |
| Sn 189.927†   | 24.8   | 10.996 µg/L  | 2.0914   | 10.996 ppb  | 2.0914   | 19.02%  |  |
| QC value within limits for Sn 189.927 Recovery = 109.96%                |        |              |          |             |          |         |  |
| Sr 421.552†   | 458.7  | 4.9482 µg/L  | 0.27930  | 4.9482 ppb  | 0.27930  | 5.64%   |  |
| QC value within limits for Sr 421.552 Recovery = 98.96%                 |        |              |          |             |          |         |  |
| Ti 334.940†   | 892.2  | 4.4501 µg/L  | 0.20728  | 4.4501 ppb  | 0.20728  | 4.66%   |  |
| QC value within limits for Ti 334.940 Recovery = 89.00%                 |        |              |          |             |          |         |  |
| Tl 190.801†   | 22.8   | 22.024 µg/L  | 5.1109   | 22.024 ppb  | 5.1109   | 23.21%  |  |
| QC value within limits for Tl 190.801 Recovery = 110.12%                |        |              |          |             |          |         |  |
| U 367.007†  | -17.1  | -9.9288 µg/L | 28.50636 | -9.9288 ppb | 28.50636 | 287.11% |  |
| QC value less than the lower limit for U 367.007 Recovery = -19.86%     |        |              |          |             |          |         |  |
| V 292.402†  | 367.4  | 5.9101 µg/L  | 0.46201  | 5.9101 ppb  | 0.46201  | 7.82%   |  |
| QC value within limits for V 292.402 Recovery = 118.20%                 |        |              |          |             |          |         |  |
| Zn 213.857†   | 330.1  | 10.993 µg/L  | 0.1415   | 10.993 ppb  | 0.1415   | 1.29%   |  |
| QC value within limits for Zn 213.857 Recovery = 109.93%                |        |              |          |             |          |         |  |
| QC Failed. Continue with analysis.                                      |        |              |          |             |          |         |  |

Sequence No.: 9

Autosampler Location: 103

Sample ID: ICSEA

Date Collected: 11/2/2016 12:45:07

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: ICSEA

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4558.3        | 4558.3              | 92.6 %             |                    | 12:45:39      |
| 1     | Al 396.153Radial†  | 260963.4      | 281786.4            | 482880 µg/L        | 482880 ppb         | 12:45:37      |
| 1     | Ca 317.933Radial†  | 559332.0      | 603694.5            | 485280 µg/L        | 485280 ppb         | 12:45:37      |
| 1     | Fe 238.204 Radial† | 76245.5       | 82264.3             | 193880 µg/L        | 193880 ppb         | 12:45:37      |
| 1     | K 766.490 Radial†  | -95.5         | -25.6               | -148.75 µg/L       | -148.75 ppb        | 12:45:39      |
| 1     | Mg 279.077 IEC†    | 44369.3       | 47906.6             | 463460 µg/L        | 463460 ppb         | 12:45:39      |
| 1     | Na 589.592 Radial† | 782.9         | 89.8                | 33.945 µg/L        | 33.945 ppb         | 12:45:39      |
| 1     | Sr 421.552†        | 1517.4        | 1480.9              | 0.2105 µg/L        | 0.2105 ppb         | 12:45:39      |
| 1     | Sc                 | 360085.3      | 360085.3            | 89.56 %            |                    | 12:45:51      |
| 1     | Y 371.029          | 276399.4      | 276399.4            | 86.420 %           |                    | 12:45:51      |
| 1     | Sc 357.253         | 231021.4      | 231021.4            | 89.93 %            |                    | 12:45:51      |
| 1     | Ag 328.068†        | -710.8        | -300.7              | 4.0084 µg/L        | 4.0084 ppb         | 12:45:51      |
| 1     | As 188.979†        | 8.4           | 4.6                 | 4.8304 µg/L        | 4.8304 ppb         | 12:46:11      |
| 1     | B 249.677†         | 1339.3        | 980.2               | -4.4930 µg/L       | -4.4930 ppb        | 12:45:51      |
| 1     | Ba 233.527†        | 200.8         | 276.6               | 2.4851 µg/L        | 2.4851 ppb         | 12:46:11      |
| 1     | Be 313.107†        | -2288.9       | -322.8              | -0.2235 µg/L       | -0.2235 ppb        | 12:45:51      |
| 1     | Cd 226.502†        | 794.8         | 1063.1              | -0.0431 µg/L       | -0.0431 ppb        | 12:46:11      |
| 1     | Co 228.616†        | 92.6          | 156.6               | -1.6656 µg/L       | -1.6656 ppb        | 12:46:11      |
| 1     | Cr 267.716†        | 314.7         | 187.1               | 0.8440 µg/L        | 0.8440 ppb         | 12:46:11      |
| 1     | Cu 324.752†        | -194.8        | -2371.4             | -11.629 µg/L       | -11.629 ppb        | 12:46:11      |
| 1     | Mn 257.610†        | 2847.9        | 3310.4              | 0.2449 µg/L        | 0.2449 ppb         | 12:45:51      |
| 1     | Mo 202.031†        | -143.9        | -119.7              | 0.3619 µg/L        | 0.3619 ppb         | 12:46:11      |
| 1     | Ni 231.604†        | 107.7         | 112.6               | 1.8873 µg/L        | 1.8873 ppb         | 12:46:11      |
| 1     | P 214.914†         | 81.1          | 62.6                | 17.875 µg/L        | 17.875 ppb         | 12:46:11      |
| 1     | Pb 220.353†        | -3.9          | -42.9               | 11.025 µg/L        | 11.025 ppb         | 12:46:11      |
| 1     | S 181.975 Axial†   | 24.4          | -23.0               | -6.2176 µg/L       | -6.2176 ppb        | 12:46:11      |
| 1     | Sb 206.836†        | 1.1           | -2.6                | -5.4052 µg/L       | -5.4052 ppb        | 12:46:11      |
| 1     | Se 196.026†        | 6.2           | 2.9                 | -2.59 µg/L         | -2.59 ppb          | 12:46:11      |
| 1     | SiO2†              | 904.7         | 269.2               | 76.972 µg/L        | 76.972 ppb         | 12:46:11      |
| 1     | Si 251.611†        | 686.1         | 486.8               | 33.708 µg/L        | 33.708 ppb         | 12:46:11      |
| 1     | Sn 189.927†        | -27.5         | -6.2                | 1.5201 µg/L        | 1.5201 ppb         | 12:46:11      |
| 1     | Ti 334.940†        | -2179.6       | -2324.8             | -2.3686 µg/L       | -2.3686 ppb        | 12:46:11      |
| 1     | Tl 190.801†        | 17.8          | 14.6                | -5.1241 µg/L       | -5.1241 ppb        | 12:46:11      |
| 1     | U 367.007†         | 1851.2        | 2192.5              | 52.182 µg/L        | 52.182 ppb         | 12:45:51      |
| 1     | V 292.402†         | 974.6         | 942.5               | 1.0396 µg/L        | 1.0396 ppb         | 12:46:11      |
| 1     | Zn 213.857†        | 1324.2        | 1220.5              | -18.552 µg/L       | -18.552 ppb        | 12:46:11      |
| 2     | Sc RADIAL          | 4624.6        | 4624.6              | 94.0 %             |                    | 12:45:43      |
| 2     | Al 396.153Radial†  | 264331.9      | 281331.6            | 482100 µg/L        | 482100 ppb         | 12:45:41      |
| 2     | Ca 317.933Radial†  | 568191.9      | 604464.8            | 485900 µg/L        | 485900 ppb         | 12:45:41      |
| 2     | Fe 238.204 Radial† | 77760.5       | 82696.2             | 194900 µg/L        | 194900 ppb         | 12:45:41      |
| 2     | K 766.490 Radial†  | -181.3        | -115.4              | -243.01 µg/L       | -243.01 ppb        | 12:45:43      |
| 2     | Mg 279.077 IEC†    | 44644.7       | 47513.0             | 459650 µg/L        | 459650 ppb         | 12:45:43      |
| 2     | Na 589.592 Radial† | 737.5         | 29.4                | 11.120 µg/L        | 11.120 ppb         | 12:45:43      |
| 2     | Sr 421.552†        | 1550.6        | 1492.7              | 0.2747 µg/L        | 0.2747 ppb         | 12:45:43      |
| 2     | Sc                 | 362441.4      | 362441.4            | 90.14 %            |                    | 12:46:13      |
| 2     | Y 371.029          | 278854.7      | 278854.7            | 87.187 %           |                    | 12:46:13      |
| 2     | Sc 357.253         | 232724.2      | 232724.2            | 90.59 %            |                    | 12:46:13      |
| 2     | Ag 328.068†        | -622.3        | -197.2              | 5.1749 µg/L        | 5.1749 ppb         | 12:46:13      |
| 2     | As 188.979†        | 11.6          | 8.1                 | 12.046 µg/L        | 12.046 ppb         | 12:46:33      |
| 2     | B 249.677†         | 1676.9        | 1341.9              | 9.7067 µg/L        | 9.7067 ppb         | 12:46:13      |
| 2     | Ba 233.527†        | 165.8         | 236.4               | 1.7374 µg/L        | 1.7374 ppb         | 12:46:33      |
| 2     | Be 313.107†        | -2435.5       | -466.0              | -0.3138 µg/L       | -0.3138 ppb        | 12:46:13      |
| 2     | Cd 226.502†        | 774.9         | 1034.6              | -0.4316 µg/L       | -0.4316 ppb        | 12:46:33      |
| 2     | Co 228.616†        | 92.4          | 155.6               | -1.8603 µg/L       | -1.8603 ppb        | 12:46:33      |
| 2     | Cr 267.716†        | 314.7         | 184.6               | 0.7997 µg/L        | 0.7997 ppb         | 12:46:33      |
| 2     | Cu 324.752†        | 239.3         | -1890.6             | -6.7673 µg/L       | -6.7673 ppb        | 12:46:33      |
| 2     | Mn 257.610†        | 2912.3        | 3358.3              | 0.5652 µg/L        | 0.5652 ppb         | 12:46:13      |
| 2     | Mo 202.031†        | -137.5        | -111.5              | 1.4523 µg/L        | 1.4523 ppb         | 12:46:33      |
| 2     | Ni 231.604†        | 103.5         | 107.1               | 1.4908 µg/L        | 1.4908 ppb         | 12:46:33      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 75.7     | 56.0     | 4.1346 µg/L  | 4.1346 ppb  | 12:46:33 |
| 2 | Pb 220.353†        | 18.1     | -18.5    | 20.291 µg/L  | 20.291 ppb  | 12:46:33 |
| 2 | S 181.975 Axial†   | 13.4     | -35.3    | -45.252 µg/L | -45.252 ppb | 12:46:33 |
| 2 | Sb 206.836†        | -4.5     | -8.8     | -15.322 µg/L | -15.322 ppb | 12:46:33 |
| 2 | Se 196.026†        | 3.8      | 0.2      | -8.87 µg/L   | -8.87 ppb   | 12:46:33 |
| 2 | SiO2†              | 902.4    | 259.3    | 74.134 µg/L  | 74.134 ppb  | 12:46:33 |
| 2 | Si 251.611†        | 700.5    | 497.1    | 34.423 µg/L  | 34.423 ppb  | 12:46:33 |
| 2 | Sn 189.927†        | -27.8    | -6.3     | 1.4844 µg/L  | 1.4844 ppb  | 12:46:33 |
| 2 | Ti 334.940†        | -2205.1  | -2335.2  | -2.4087 µg/L | -2.4087 ppb | 12:46:33 |
| 2 | Tl 190.801†        | 14.5     | 10.7     | -8.9208 µg/L | -8.9208 ppb | 12:46:33 |
| 2 | U 367.007†         | 1874.5   | 2203.1   | 51.964 µg/L  | 51.964 ppb  | 12:46:13 |
| 2 | V 292.402†         | 976.0    | 936.1    | 0.8693 µg/L  | 0.8693 ppb  | 12:46:33 |
| 2 | Zn 213.857†        | 1351.4   | 1239.8   | -17.792 µg/L | -17.792 ppb | 12:46:33 |
| 3 | Sc RADIAL          | 4578.7   | 4578.7   | 93.1 %       |             | 12:45:48 |
| 3 | Al 396.153Radial†  | 260712.6 | 280264.7 | 480270 µg/L  | 480270 ppb  | 12:45:45 |
| 3 | Ca 317.933Radial†  | 558417.8 | 600028.3 | 482330 µg/L  | 482330 ppb  | 12:45:45 |
| 3 | Fe 238.204 Radial† | 76741.3  | 82431.2  | 194270 µg/L  | 194270 ppb  | 12:45:45 |
| 3 | K 766.490 Radial†  | -172.1   | -107.4   | -234.31 µg/L | -234.31 ppb | 12:45:48 |
| 3 | Mg 279.077 IEC†    | 44489.7  | 47823.2  | 462650 µg/L  | 462650 ppb  | 12:45:48 |
| 3 | Na 589.592 Radial† | 728.1    | 27.2     | 10.269 µg/L  | 10.269 ppb  | 12:45:48 |
| 3 | Sr 421.552†        | 1519.8   | 1476.2   | 0.1665 µg/L  | 0.1665 ppb  | 12:45:48 |
| 3 | Sc                 | 366421.5 | 366421.5 | 91.13 %      |             | 12:46:35 |
| 3 | Y 371.029          | 282943.4 | 282943.4 | 88.466 %     |             | 12:46:35 |
| 3 | Sc 357.253         | 235599.7 | 235599.7 | 91.71 %      |             | 12:46:35 |
| 3 | Ag 328.068†        | -726.3   | -302.2   | 3.9778 µg/L  | 3.9778 ppb  | 12:46:35 |
| 3 | As 188.979†        | 12.2     | 8.6      | 13.168 µg/L  | 13.168 ppb  | 12:46:56 |
| 3 | B 249.677†         | 1538.3   | 1168.2   | 2.9182 µg/L  | 2.9182 ppb  | 12:46:35 |
| 3 | Ba 233.527†        | 195.5    | 266.6    | 2.2943 µg/L  | 2.2943 ppb  | 12:46:56 |
| 3 | Be 313.107†        | -2250.4  | -231.3   | -0.1660 µg/L | -0.1660 ppb | 12:46:35 |
| 3 | Cd 226.502†        | 811.4    | 1064.0   | -0.0591 µg/L | -0.0591 ppb | 12:46:56 |
| 3 | Co 228.616†        | 79.7     | 140.5    | -3.3471 µg/L | -3.3471 ppb | 12:46:56 |
| 3 | Cr 267.716†        | 301.8    | 166.3    | 0.5497 µg/L  | 0.5497 ppb  | 12:46:56 |
| 3 | Cu 324.752†        | -115.8   | -2281.0  | -10.698 µg/L | -10.698 ppb | 12:46:56 |
| 3 | Mn 257.610†        | 2991.1   | 3405.1   | 0.6235 µg/L  | 0.6235 ppb  | 12:46:35 |
| 3 | Mo 202.031†        | -130.9   | -102.4   | 2.5138 µg/L  | 2.5138 ppb  | 12:46:56 |
| 3 | Ni 231.604†        | 132.9    | 137.7    | 3.5489 µg/L  | 3.5489 ppb  | 12:46:56 |
| 3 | P 214.914†         | 67.3     | 45.8     | -15.618 µg/L | -15.618 ppb | 12:46:56 |
| 3 | Pb 220.353†        | -1.8     | -40.5    | 11.766 µg/L  | 11.766 ppb  | 12:46:56 |
| 3 | S 181.975 Axial†   | 25.8     | -21.9    | -2.6127 µg/L | -2.6127 ppb | 12:46:56 |
| 3 | Sb 206.836†        | 5.7      | 2.4      | 2.5145 µg/L  | 2.5145 ppb  | 12:46:56 |
| 3 | Se 196.026†        | 3.1      | -0.6     | -10.7 µg/L   | -10.7 ppb   | 12:46:56 |
| 3 | SiO2†              | 890.7    | 234.4    | 67.013 µg/L  | 67.013 ppb  | 12:46:56 |
| 3 | Si 251.611†        | 680.5    | 465.8    | 32.258 µg/L  | 32.258 ppb  | 12:46:56 |
| 3 | Sn 189.927†        | -21.0    | 1.6      | 4.9293 µg/L  | 4.9293 ppb  | 12:46:56 |
| 3 | Ti 334.940†        | -2230.8  | -2333.5  | -2.4678 µg/L | -2.4678 ppb | 12:46:56 |
| 3 | Tl 190.801†        | 14.8     | 10.9     | -8.6800 µg/L | -8.6800 ppb | 12:46:56 |
| 3 | U 367.007†         | 1902.7   | 2208.6   | 58.633 µg/L  | 58.633 ppb  | 12:46:35 |
| 3 | V 292.402†         | 883.7    | 822.3    | -0.8926 µg/L | -0.8926 ppb | 12:46:56 |
| 3 | Zn 213.857†        | 1342.4   | 1211.8   | -18.858 µg/L | -18.858 ppb | 12:46:56 |

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Mean Data: ICSA

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc  | 362982.8                 | 90.28 %            | 0.796    |                    |          | 0.88%   |
| Sc RADIAL   | 4587.2                   | 93.2 %             | 0.69     |                    |          | 0.74%   |
| Y 371.029   | 279399.2                 | 87.357 %           | 1.0336   |                    |          | 1.18%   |
| Sc 357.253  | 233115.1                 | 90.75 %            | 0.901    |                    |          | 0.99%   |
| Ag 328.068†   | -266.7                   | 4.3870 µg/L        | 0.68251  | 4.3870 ppb         | 0.68251  | 15.56%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 281127.5                 | 481750 µg/L        | 1338.5   | 481750 ppb         | 1338.5   | 0.28%   |
| QC value within limits for Al 396.153Radial Recovery = 96.35%   |                          |                    |          |                    |          |         |
| As 188.979†   | 7.1                      | 10.015 µg/L        | 4.5248   | 10.015 ppb         | 4.5248   | 45.18%  |
| QC value within limits for As 188.979 Recovery = Not calculated |                          |                    |          |                    |          |         |
| B 249.677†  | 1163.4                   | 2.7106 µg/L        | 7.10214  | 2.7106 ppb         | 7.10214  | 262.01% |
| QC value within limits for B 249.677 Recovery = Not calculated  |                          |                    |          |                    |          |         |
| Ba 233.527†   | 259.9                    | 2.1722 µg/L        | 0.38849  | 2.1722 ppb         | 0.38849  | 17.88%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated |                          |                    |          |                    |          |         |
| Be 313.107†   | -340.0                   | -0.2344 µg/L       | 0.07454  | -0.2344 ppb        | 0.07454  | 31.80%  |
| QC value within limits for Be 313.107 Recovery = Not calculated |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 602729.2                 | 484500 µg/L        | 1905.5   | 484500 ppb         | 1905.5   | 0.39%   |



|  |         |              |          |             |          |         |  |
|--|---------|--------------|----------|-------------|----------|---------|--|
| QC value within limits for Ca 317.933Radial Recovery = 96.90%          |         |              |          |             |          |         |  |
| Cd 226.502†  | 1053.9  | -0.1779 µg/L | 0.21986  | -0.1779 ppb | 0.21986  | 123.57% |  |
| QC value within limits for Cd 226.502 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Co 228.616†  | 150.9   | -2.2910 µg/L | 0.91977  | -2.2910 ppb | 0.91977  | 40.15%  |  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Cr 267.716†  | 179.3   | 0.7311 µg/L  | 0.15867  | 0.7311 ppb  | 0.15867  | 21.70%  |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Cu 324.752†  | -2181.0 | -9.6981 µg/L | 2.58045  | -9.6981 ppb | 2.58045  | 26.61%  |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Fe 238.204 Radial†   | 82463.9 | 194350 µg/L  | 513.3    | 194350 ppb  | 513.3    | 0.26%   |  |
| QC value within limits for Fe 238.204 Radial Recovery = 97.18%         |         |              |          |             |          |         |  |
| K 766.490 Radial†  | -82.8   | -208.69 µg/L | 52.094   | -208.69 ppb | 52.094   | 24.96%  |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |         |              |          |             |          |         |  |
| Mg 279.077 IEC†  | 47747.6 | 461920 µg/L  | 2006.3   | 461920 ppb  | 2006.3   | 0.43%   |  |
| QC value within limits for Mg 279.077 IEC Recovery = 92.38%            |         |              |          |             |          |         |  |
| Mn 257.610†  | 3357.9  | 0.4779 µg/L  | 0.20387  | 0.4779 ppb  | 0.20387  | 42.66%  |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Mo 202.031†  | -111.2  | 1.4427 µg/L  | 1.07597  | 1.4427 ppb  | 1.07597  | 74.58%  |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Na 589.592 Radial†   | 48.8    | 18.444 µg/L  | 13.4302  | 18.444 ppb  | 13.4302  | 72.81%  |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |         |              |          |             |          |         |  |
| Ni 231.604†  | 119.1   | 2.3090 µg/L  | 1.09197  | 2.3090 ppb  | 1.09197  | 47.29%  |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |         |              |          |             |          |         |  |
| P 214.914†   | 54.8    | 2.1304 µg/L  | 16.83627 | 2.1304 ppb  | 16.83627 | 790.28% |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |         |              |          |             |          |         |  |
| Pb 220.353†  | -34.0   | 14.360 µg/L  | 5.1492   | 14.360 ppb  | 5.1492   | 35.86%  |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |         |              |          |             |          |         |  |
| S 181.975 Axial†   | -26.7   | -18.027 µg/L | 23.6458  | -18.027 ppb | 23.6458  | 131.17% |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |         |              |          |             |          |         |  |
| Sb 206.836†  | -3.0    | -6.0710 µg/L | 8.93700  | -6.0710 ppb | 8.93700  | 147.21% |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Se 196.026†  | 0.8     | -7.38 µg/L   | 4.246    | -7.38 ppb   | 4.246    | 57.52%  |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |         |              |          |             |          |         |  |
| SiO2†  | 254.3   | 72.706 µg/L  | 5.1309   | 72.706 ppb  | 5.1309   | 7.06%   |  |
| QC value within limits for SiO2 Recovery = Not calculated              |         |              |          |             |          |         |  |
| Si 251.611†  | 483.2   | 33.463 µg/L  | 1.1032   | 33.463 ppb  | 1.1032   | 3.30%   |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Sn 189.927†  | -3.6    | 2.6446 µg/L  | 1.97871  | 2.6446 ppb  | 1.97871  | 74.82%  |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Sr 421.552†  | 1483.3  | 0.2172 µg/L  | 0.05441  | 0.2172 ppb  | 0.05441  | 25.05%  |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Ti 334.940†  | -2331.1 | -2.4150 µg/L | 0.04993  | -2.4150 ppb | 0.04993  | 2.07%   |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Tl 190.801†  | 12.1    | -7.5750 µg/L | 2.12591  | -7.5750 ppb | 2.12591  | 28.06%  |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |         |              |          |             |          |         |  |
| U 367.007†   | 2201.4  | 54.260 µg/L  | 3.7887   | 54.260 ppb  | 3.7887   | 6.98%   |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |         |              |          |             |          |         |  |
| V 292.402†   | 900.3   | 0.3388 µg/L  | 1.06976  | 0.3388 ppb  | 1.06976  | 315.76% |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |         |              |          |             |          |         |  |
| Zn 213.857†  | 1224.0  | -18.400 µg/L | 0.5490   | -18.400 ppb | 0.5490   | 2.98%   |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |         |              |          |             |          |         |  |
| All analyte(s) passed QC.  |         |              |          |             |          |         |  |

Sequence No.: 10

Autosampler Location: 104

Sample ID: ICSAB

Date Collected: 11/2/2016 12:47:05

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: ICSAB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4529.5        | 4529.5              | 92.1 %             |                    | 12:47:35      |
| 1     | Al 396.153Radial†  | 258219.5      | 280600.5            | 480840 µg/L        | 480840 ppb         | 12:47:33      |
| 1     | Ca 317.933Radial†  | 555067.0      | 602908.4            | 484650 µg/L        | 484650 ppb         | 12:47:33      |
| 1     | Fe 238.204 Radial† | 73793.1       | 80124.6             | 188840 µg/L        | 188840 ppb         | 12:47:33      |
| 1     | K 766.490 Radial†  | 4555.6        | 5026.3              | 5123.0 µg/L        | 5123.0 ppb         | 12:47:35      |
| 1     | Mg 279.077 IEC†    | 44378.0       | 48221.3             | 466510 µg/L        | 466510 ppb         | 12:47:35      |
| 1     | Na 589.592 Radial† | 13611.4       | 14030.8             | 5301.3 µg/L        | 5301.3 ppb         | 12:47:33      |
| 1     | Sr 421.552†        | 43526.9       | 47126.1             | 493.73 µg/L        | 493.73 ppb         | 12:47:33      |
| 1     | Sc                 | 372611.6      | 372611.6            | 92.67 %            |                    | 12:47:47      |
| 1     | Y 371.029          | 291463.1      | 291463.1            | 91.129 %           |                    | 12:47:47      |
| 1     | Sc 357.253         | 238797.6      | 238797.6            | 92.96 %            |                    | 12:47:47      |
| 1     | Ag 328.068†        | 20554.9       | 22601.7             | 255.56 µg/L        | 255.56 ppb         | 12:47:47      |
| 1     | As 188.979†        | 221.9         | 234.0               | 486.01 µg/L        | 486.01 ppb         | 12:48:07      |
| 1     | B 249.677†         | 12562.2       | 13004.7             | 476.21 µg/L        | 476.21 ppb         | 12:47:47      |
| 1     | Ba 233.527†        | 23532.5       | 25368.6             | 460.48 µg/L        | 460.48 ppb         | 12:48:07      |
| 1     | Be 313.107†        | 343418.8      | 371657.0            | 234.98 µg/L        | 234.98 ppb         | 12:47:47      |
| 1     | Cd 226.502†        | 37274.1       | 40277.1             | 447.51 µg/L        | 447.51 ppb         | 12:47:47      |
| 1     | Co 228.616†        | 3983.5        | 4338.9              | 428.10 µg/L        | 428.10 ppb         | 12:48:07      |
| 1     | Cr 267.716†        | 31045.7       | 33234.8             | 459.54 µg/L        | 459.54 ppb         | 12:47:47      |
| 1     | Cu 324.752†        | 47604.1       | 49055.6             | 501.63 µg/L        | 501.63 ppb         | 12:47:47      |
| 1     | Mn 257.610†        | 119711.5      | 128923.9            | 457.03 µg/L        | 457.03 ppb         | 12:47:47      |
| 1     | Mo 202.031†        | 3484.0        | 3788.2              | 478.64 µg/L        | 478.64 ppb         | 12:48:07      |
| 1     | Ni 231.604†        | 5924.2        | 6365.7              | 418.97 µg/L        | 418.97 ppb         | 12:48:07      |
| 1     | P 214.914†         | 1199.9        | 1263.3              | 2388.8 µg/L        | 2388.8 ppb         | 12:48:07      |
| 1     | Pb 220.353†        | 1110.6        | 1156.2              | 470.32 µg/L        | 470.32 ppb         | 12:48:07      |
| 1     | S 181.975 Axial†   | 740.8         | 746.9               | 2466.4 µg/L        | 2466.4 ppb         | 12:48:07      |
| 1     | Sb 206.836†        | 287.4         | 305.3               | 482.84 µg/L        | 482.84 ppb         | 12:48:07      |
| 1     | Se 196.026†        | 898.1         | 962.2               | 2240 µg/L          | 2240 ppb           | 12:48:07      |
| 1     | SiO2†              | 33381.3       | 35173.4             | 10058 µg/L         | 10058 ppb          | 12:47:47      |
| 1     | Si 251.611†        | 63502.7       | 68037.3             | 4711.4 µg/L        | 4711.4 ppb         | 12:47:47      |
| 1     | Sn 189.927†        | 929.2         | 1024.0              | 459.50 µg/L        | 459.50 ppb         | 12:48:07      |
| 1     | Ti 334.940†        | 87986.6       | 94750.9             | 481.41 µg/L        | 481.41 ppb         | 12:47:47      |
| 1     | Tl 190.801†        | 445.9         | 474.4               | 443.40 µg/L        | 443.40 ppb         | 12:48:07      |
| 1     | U 367.007†         | 2567.9        | 2896.5              | 464.01 µg/L        | 464.01 ppb         | 12:47:47      |
| 1     | V 292.402†         | 29004.3       | 31060.2             | 485.65 µg/L        | 485.65 ppb         | 12:47:47      |
| 1     | Zn 213.857†        | 13667.4       | 14450.9             | 422.84 µg/L        | 422.84 ppb         | 12:48:07      |
| 2     | Sc RADIAL          | 4523.5        | 4523.5              | 91.9 %             |                    | 12:47:39      |
| 2     | Al 396.153Radial†  | 260449.7      | 283393.7            | 485630 µg/L        | 485630 ppb         | 12:47:37      |
| 2     | Ca 317.933Radial†  | 556104.9      | 604826.9            | 486190 µg/L        | 486190 ppb         | 12:47:37      |
| 2     | Fe 238.204 Radial† | 74500.7       | 80999.3             | 190900 µg/L        | 190900 ppb         | 12:47:37      |
| 2     | K 766.490 Radial†  | 4548.1        | 5024.6              | 5119.9 µg/L        | 5119.9 ppb         | 12:47:39      |
| 2     | Mg 279.077 IEC†    | 43947.8       | 47816.5             | 462590 µg/L        | 462590 ppb         | 12:47:39      |
| 2     | Na 589.592 Radial† | 13810.7       | 14266.9             | 5390.5 µg/L        | 5390.5 ppb         | 12:47:37      |
| 2     | Sr 421.552†        | 43997.4       | 47699.8             | 499.80 µg/L        | 499.80 ppb         | 12:47:37      |
| 2     | Sc                 | 365534.7      | 365534.7            | 90.91 %            |                    | 12:48:09      |
| 2     | Y 371.029          | 285308.1      | 285308.1            | 89.205 %           |                    | 12:48:09      |
| 2     | Sc 357.253         | 235589.2      | 235589.2            | 91.71 %            |                    | 12:48:09      |
| 2     | Ag 328.068†        | 20406.1       | 22740.6             | 257.16 µg/L        | 257.16 ppb         | 12:48:09      |
| 2     | As 188.979†        | 222.3         | 237.7               | 493.72 µg/L        | 493.72 ppb         | 12:48:30      |
| 2     | B 249.677†         | 12424.3       | 13038.4             | 477.09 µg/L        | 477.09 ppb         | 12:48:09      |
| 2     | Ba 233.527†        | 23385.8       | 25553.4             | 463.83 µg/L        | 463.83 ppb         | 12:48:30      |
| 2     | Be 313.107†        | 337115.8      | 369815.3            | 233.82 µg/L        | 233.82 ppb         | 12:48:09      |
| 2     | Cd 226.502†        | 37100.4       | 40633.8             | 451.45 µg/L        | 451.45 ppb         | 12:48:09      |
| 2     | Co 228.616†        | 3964.1        | 4376.1              | 431.73 µg/L        | 431.73 ppb         | 12:48:30      |
| 2     | Cr 267.716†        | 30502.6       | 33097.4             | 457.61 µg/L        | 457.61 ppb         | 12:48:09      |
| 2     | Cu 324.752†        | 47266.4       | 49384.8             | 505.03 µg/L        | 505.03 ppb         | 12:48:09      |
| 2     | Mn 257.610†        | 118091.8      | 128911.6            | 457.15 µg/L        | 457.15 ppb         | 12:48:09      |
| 2     | Mo 202.031†        | 3484.0        | 3839.3              | 485.05 µg/L        | 485.05 ppb         | 12:48:30      |
| 2     | Ni 231.604†        | 5878.0        | 6402.2              | 421.33 µg/L        | 421.33 ppb         | 12:48:30      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 1198.1   | 1278.9   | 2418.5 µg/L | 2418.5 ppb | 12:48:30 |
| 2 | Pb 220.353†        | 1101.8   | 1162.9   | 473.18 µg/L | 473.18 ppb | 12:48:30 |
| 2 | S 181.975 Axial†   | 723.7    | 739.0    | 2442.0 µg/L | 2442.0 ppb | 12:48:30 |
| 2 | Sb 206.836†        | 283.0    | 304.8    | 482.06 µg/L | 482.06 ppb | 12:48:30 |
| 2 | Se 196.026†        | 902.1    | 979.7    | 2280 µg/L   | 2280 ppb   | 12:48:30 |
| 2 | SiO2†              | 33059.2  | 35311.1  | 10098 µg/L  | 10098 ppb  | 12:48:09 |
| 2 | Si 251.611†        | 62603.0  | 67986.5  | 4707.9 µg/L | 4707.9 ppb | 12:48:09 |
| 2 | Sn 189.927†        | 918.7    | 1026.1   | 460.46 µg/L | 460.46 ppb | 12:48:30 |
| 2 | Ti 334.940†        | 86985.5  | 94948.3  | 482.43 µg/L | 482.43 ppb | 12:48:09 |
| 2 | Tl 190.801†        | 419.6    | 452.3    | 421.83 µg/L | 421.83 ppb | 12:48:30 |
| 2 | U 367.007†         | 2525.6   | 2887.9   | 447.27 µg/L | 447.27 ppb | 12:48:09 |
| 2 | V 292.402†         | 28643.3  | 31091.5  | 486.02 µg/L | 486.02 ppb | 12:48:09 |
| 2 | Zn 213.857†        | 13575.9  | 14551.3  | 426.16 µg/L | 426.16 ppb | 12:48:30 |
| 3 | Sc RADIAL          | 4644.3   | 4644.3   | 94.4 %      |            | 12:47:44 |
| 3 | Al 396.153Radial†  | 257978.4 | 273410.1 | 468520 µg/L | 468520 ppb | 12:47:42 |
| 3 | Ca 317.933Radial†  | 550613.2 | 583282.3 | 468870 µg/L | 468870 ppb | 12:47:42 |
| 3 | Fe 238.204 Radial† | 73105.1  | 77413.9  | 182450 µg/L | 182450 ppb | 12:47:42 |
| 3 | K 766.490 Radial†  | 4671.8   | 5027.0   | 5127.7 µg/L | 5127.7 ppb | 12:47:44 |
| 3 | Mg 279.077 IEC†    | 45073.1  | 47765.8  | 462100 µg/L | 462100 ppb | 12:47:44 |
| 3 | Na 589.592 Radial† | 13772.5  | 13836.0  | 5227.7 µg/L | 5227.7 ppb | 12:47:42 |
| 3 | Sr 421.552†        | 43418.1  | 45841.8  | 480.37 µg/L | 480.37 ppb | 12:47:42 |
| 3 | Sc                 | 368961.9 | 368961.9 | 91.76 %     |            | 12:48:32 |
| 3 | Y 371.029          | 286147.5 | 286147.5 | 89.467 %    |            | 12:48:32 |
| 3 | Sc 357.253         | 236788.5 | 236788.5 | 92.18 %     |            | 12:48:32 |
| 3 | Ag 328.068†        | 20509.9  | 22740.5  | 256.75 µg/L | 256.75 ppb | 12:48:32 |
| 3 | As 188.979†        | 223.3    | 237.6    | 493.61 µg/L | 493.61 ppb | 12:48:52 |
| 3 | B 249.677†         | 12458.5  | 13006.9  | 477.73 µg/L | 477.73 ppb | 12:48:32 |
| 3 | Ba 233.527†        | 23453.1  | 25497.2  | 462.92 µg/L | 462.92 ppb | 12:48:52 |
| 3 | Be 313.107†        | 338833.1 | 369816.5 | 233.82 µg/L | 233.82 ppb | 12:48:32 |
| 3 | Cd 226.502†        | 37357.5  | 40707.8  | 452.82 µg/L | 452.82 ppb | 12:48:32 |
| 3 | Co 228.616†        | 3986.2   | 4378.1   | 432.71 µg/L | 432.71 ppb | 12:48:52 |
| 3 | Cr 267.716†        | 30715.3  | 33159.7  | 458.55 µg/L | 458.55 ppb | 12:48:32 |
| 3 | Cu 324.752†        | 47373.4  | 49239.9  | 503.13 µg/L | 503.13 ppb | 12:48:32 |
| 3 | Mn 257.610†        | 118644.3 | 128858.8 | 456.82 µg/L | 456.82 ppb | 12:48:32 |
| 3 | Mo 202.031†        | 3480.8   | 3816.5   | 481.61 µg/L | 481.61 ppb | 12:48:52 |
| 3 | Ni 231.604†        | 5899.9   | 6393.5   | 421.00 µg/L | 421.00 ppb | 12:48:52 |
| 3 | P 214.914†         | 1198.4   | 1272.6   | 2410.7 µg/L | 2410.7 ppb | 12:48:52 |
| 3 | Pb 220.353†        | 1117.9   | 1174.3   | 476.49 µg/L | 476.49 ppb | 12:48:52 |
| 3 | S 181.975 Axial†   | 729.3    | 741.2    | 2445.9 µg/L | 2445.9 ppb | 12:48:52 |
| 3 | Sb 206.836†        | 295.9    | 317.2    | 501.64 µg/L | 501.64 ppb | 12:48:52 |
| 3 | Se 196.026†        | 888.0    | 959.4    | 2230 µg/L   | 2230 ppb   | 12:48:52 |
| 3 | SiO2†              | 33069.4  | 35139.6  | 10049 µg/L  | 10049 ppb  | 12:48:32 |
| 3 | Si 251.611†        | 63105.8  | 68186.3  | 4721.7 µg/L | 4721.7 ppb | 12:48:32 |
| 3 | Sn 189.927†        | 930.9    | 1034.3   | 463.93 µg/L | 463.93 ppb | 12:48:52 |
| 3 | Ti 334.940†        | 87245.2  | 94749.7  | 481.11 µg/L | 481.11 ppb | 12:48:32 |
| 3 | Tl 190.801†        | 440.9    | 473.2    | 442.79 µg/L | 442.79 ppb | 12:48:52 |
| 3 | U 367.007†         | 2627.0   | 2984.0   | 549.04 µg/L | 549.04 ppb | 12:48:32 |
| 3 | V 292.402†         | 28805.4  | 31109.2  | 486.95 µg/L | 486.95 ppb | 12:48:32 |
| 3 | Zn 213.857†        | 13665.2  | 14573.2  | 428.15 µg/L | 428.15 ppb | 12:48:52 |

## Mean Data: ICSAB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|---|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc  | 369036.1                 | 91.78 %            | 0.880    |                    |          | 0.96% |
| Sc RADIAL   | 4565.8                   | 92.8 %             | 1.38     |                    |          | 1.49% |
| Y 371.029   | 287639.5                 | 89.934 %           | 1.0436   |                    |          | 1.16% |
| Sc 357.253  | 237058.4                 | 92.28 %            | 0.631    |                    |          | 0.68% |
| Ag 328.068†   | 22694.3                  | 256.49 µg/L        | 0.834    | 256.49 ppb         | 0.834    | 0.33% |
| QC value within limits for Ag 328.068 Recovery = 102.60%      |                          |                    |          |                    |          |       |
| Al 396.153Radial†   | 279134.8                 | 478330 µg/L        | 8826.3   | 478330 ppb         | 8826.3   | 1.85% |
| QC value within limits for Al 396.153Radial Recovery = 95.67% |                          |                    |          |                    |          |       |
| As 188.979†   | 236.4                    | 491.11 µg/L        | 4.421    | 491.11 ppb         | 4.421    | 0.90% |
| QC value within limits for As 188.979 Recovery = 98.22%       |                          |                    |          |                    |          |       |
| B 249.677†  | 13016.7                  | 477.01 µg/L        | 0.765    | 477.01 ppb         | 0.765    | 0.16% |
| QC value within limits for B 249.677 Recovery = 95.40%        |                          |                    |          |                    |          |       |
| Ba 233.527†   | 25473.1                  | 462.41 µg/L        | 1.728    | 462.41 ppb         | 1.728    | 0.37% |
| QC value within limits for Ba 233.527 Recovery = 92.48%       |                          |                    |          |                    |          |       |
| Be 313.107†   | 370429.6                 | 234.21 µg/L        | 0.669    | 234.21 ppb         | 0.669    | 0.29% |
| QC value within limits for Be 313.107 Recovery = 93.68%       |                          |                    |          |                    |          |       |
| Ca 317.933Radial†   | 597005.9                 | 479900 µg/L        | 9584.8   | 479900 ppb         | 9584.8   | 2.00% |

|   |          |             |        |            |        |        |  |
|---|----------|-------------|--------|------------|--------|--------|--|
| QC value within limits for Ca 317.933Radial Recovery = 95.98%   |          |             |        |            |        |        |  |
| Cd 226.502†   | 40539.5  | 450.59 µg/L | 2.759  | 450.59 ppb | 2.759  | 0.61%  |  |
| QC value within limits for Cd 226.502 Recovery = 90.12%         |          |             |        |            |        |        |  |
| Co 228.616†   | 4364.4   | 430.85 µg/L | 2.429  | 430.85 ppb | 2.429  | 0.56%  |  |
| QC value within limits for Co 228.616 Recovery = 86.17%         |          |             |        |            |        |        |  |
| Cr 267.716†   | 33164.0  | 458.57 µg/L | 0.962  | 458.57 ppb | 0.962  | 0.21%  |  |
| QC value within limits for Cr 267.716 Recovery = 91.71%         |          |             |        |            |        |        |  |
| Cu 324.752†   | 49226.7  | 503.26 µg/L | 1.705  | 503.26 ppb | 1.705  | 0.34%  |  |
| QC value within limits for Cu 324.752 Recovery = 100.65%        |          |             |        |            |        |        |  |
| Fe 238.204 Radial†  | 79512.6  | 187400 µg/L | 4405.9 | 187400 ppb | 4405.9 | 2.35%  |  |
| QC value within limits for Fe 238.204 Radial Recovery = 93.70%  |          |             |        |            |        |        |  |
| K 766.490 Radial†   | 5025.9   | 5123.6 µg/L | 3.94   | 5123.6 ppb | 3.94   | 0.08%  |  |
| QC value within limits for K 766.490 Radial Recovery = 102.47%  |          |             |        |            |        |        |  |
| Mg 279.077 IEC†   | 47934.5  | 463730 µg/L | 2415.0 | 463730 ppb | 2415.0 | 0.52%  |  |
| QC value within limits for Mg 279.077 IEC Recovery = 92.75%     |          |             |        |            |        |        |  |
| Mn 257.610†   | 128898.1 | 457.00 µg/L | 0.169  | 457.00 ppb | 0.169  | 0.04%  |  |
| QC value within limits for Mn 257.610 Recovery = 91.40%         |          |             |        |            |        |        |  |
| Mo 202.031†   | 3814.7   | 481.77 µg/L | 3.210  | 481.77 ppb | 3.210  | 0.67%  |  |
| QC value within limits for Mo 202.031 Recovery = 96.35%         |          |             |        |            |        |        |  |
| Na 589.592 Radial†  | 14044.6  | 5306.5 µg/L | 81.54  | 5306.5 ppb | 81.54  | 1.54%  |  |
| QC value within limits for Na 589.592 Radial Recovery = 106.13% |          |             |        |            |        |        |  |
| Ni 231.604†   | 6387.1   | 420.43 µg/L | 1.282  | 420.43 ppb | 1.282  | 0.31%  |  |
| QC value within limits for Ni 231.604 Recovery = 84.09%         |          |             |        |            |        |        |  |
| P 214.914†  | 1271.6   | 2406.0 µg/L | 15.41  | 2406.0 ppb | 15.41  | 0.64%  |  |
| QC value within limits for P 214.914 Recovery = 96.24%          |          |             |        |            |        |        |  |
| Pb 220.353†   | 1164.4   | 473.33 µg/L | 3.089  | 473.33 ppb | 3.089  | 0.65%  |  |
| QC value within limits for Pb 220.353 Recovery = 94.67%         |          |             |        |            |        |        |  |
| S 181.975 Axial†  | 742.4    | 2451.4 µg/L | 13.13  | 2451.4 ppb | 13.13  | 0.54%  |  |
| QC value within limits for S 181.975 Axial Recovery = 98.06%    |          |             |        |            |        |        |  |
| Sb 206.836†   | 309.1    | 488.85 µg/L | 11.083 | 488.85 ppb | 11.083 | 2.27%  |  |
| QC value within limits for Sb 206.836 Recovery = 97.77%         |          |             |        |            |        |        |  |
| Se 196.026†   | 967.1    | 2250 µg/L   | 25.6   | 2250 ppb   | 25.6   | 1.14%  |  |
| QC value within limits for Se 196.026 Recovery = 89.97%         |          |             |        |            |        |        |  |
| SiO2†   | 35208.0  | 10068 µg/L  | 26.0   | 10068 ppb  | 26.0   | 0.26%  |  |
| QC value within limits for SiO2 Recovery = 94.14%               |          |             |        |            |        |        |  |
| Si 251.611†   | 68070.0  | 4713.7 µg/L | 7.19   | 4713.7 ppb | 7.19   | 0.15%  |  |
| QC value within limits for Si 251.611 Recovery = 94.27%         |          |             |        |            |        |        |  |
| Sn 189.927†   | 1028.2   | 461.30 µg/L | 2.332  | 461.30 ppb | 2.332  | 0.51%  |  |
| QC value within limits for Sn 189.927 Recovery = 92.26%         |          |             |        |            |        |        |  |
| Sr 421.552†   | 46889.2  | 491.30 µg/L | 9.939  | 491.30 ppb | 9.939  | 2.02%  |  |
| QC value within limits for Sr 421.552 Recovery = 98.26%         |          |             |        |            |        |        |  |
| Ti 334.940†   | 94816.3  | 481.65 µg/L | 0.691  | 481.65 ppb | 0.691  | 0.14%  |  |
| QC value within limits for Ti 334.940 Recovery = 96.33%         |          |             |        |            |        |        |  |
| Tl 190.801†   | 466.6    | 436.01 µg/L | 12.280 | 436.01 ppb | 12.280 | 2.82%  |  |
| QC value within limits for Tl 190.801 Recovery = 87.20%         |          |             |        |            |        |        |  |
| U 367.007†  | 2922.8   | 486.77 µg/L | 54.573 | 486.77 ppb | 54.573 | 11.21% |  |
| QC value within limits for U 367.007 Recovery = 97.35%          |          |             |        |            |        |        |  |
| V 292.402†  | 31087.0  | 486.21 µg/L | 0.669  | 486.21 ppb | 0.669  | 0.14%  |  |
| QC value within limits for V 292.402 Recovery = 97.24%          |          |             |        |            |        |        |  |
| Zn 213.857†   | 14525.1  | 425.72 µg/L | 2.681  | 425.72 ppb | 2.681  | 0.63%  |  |
| QC value within limits for Zn 213.857 Recovery = 85.14%         |          |             |        |            |        |        |  |
| All analyte(s) passed QC.                                       |          |             |        |            |        |        |  |

Sequence No.: 11

Sample ID: LR1

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 105

Date Collected: 11/2/2016 12:49:00

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: LR1

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4526.3        | 4526.3              | 92.0 %             |                    | 12:49:32      |
| 1     | Al 396.153Radial†  | 260013.4      | 282745.2            | 484520 µg/L        | 484520 ppb         | 12:49:30      |
| 1     | Ca 317.933Radial†  | 570514.7      | 620119.2            | 498480 µg/L        | 498480 ppb         | 12:49:30      |
| 1     | Fe 238.204 Radial† | 187461.0      | 203743.1            | 480180 µg/L        | 480180 ppb         | 12:49:30      |
| 1     | K 766.490 Radial†  | 277312.4      | 301530.2            | 314160 µg/L        | 314160 ppb         | 12:49:30      |
| 1     | Mg 279.077 IEC†    | 43290.3       | 47072.3             | 455390 µg/L        | 455390 ppb         | 12:49:32      |
| 1     | Na 589.592 Radial† | 1149411.1     | 1248713.2           | 471800 µg/L        | 471800 ppb         | 12:49:30      |
| 1     | Sr 421.552†        | 4339.9        | 4560.6              | 17.093 µg/L        | 17.093 ppb         | 12:49:32      |
| 1     | Sc                 | 357555.4      | 357555.4            | 88.93 %            |                    | 12:49:44      |
| 1     | Y 371.029          | 279729.7      | 279729.7            | 87.461 %           |                    | 12:49:44      |
| 1     | Sc 357.253         | 230944.7      | 230944.7            | 89.90 %            |                    | 12:49:44      |
| 1     | Ag 328.068†        | 2119.1        | 2846.9              | 31.150 µg/L        | 31.150 ppb         | 12:49:44      |
| 1     | As 188.979†        | 6.0           | 2.0                 | -7.7031 µg/L       | -7.7031 ppb        | 12:50:04      |
| 1     | B 249.677†         | 2573.5        | 2353.5              | -14.081 µg/L       | -14.081 ppb        | 12:49:44      |
| 1     | Ba 233.527†        | 494.7         | 603.6               | 4.6568 µg/L        | 4.6568 ppb         | 12:50:04      |
| 1     | Be 313.107†        | -3937.2       | -2157.1             | -1.3702 µg/L       | -1.3702 ppb        | 12:49:44      |
| 1     | Cd 226.502†        | 2130.0        | 2548.6              | -1.0675 µg/L       | -1.0675 ppb        | 12:50:04      |
| 1     | Co 228.616†        | 280.5         | 365.6               | -6.4082 µg/L       | -6.4082 ppb        | 12:50:04      |
| 1     | Cr 267.716†        | 372.3         | 251.3               | -0.8606 µg/L       | -0.8606 ppb        | 12:50:04      |
| 1     | Cu 324.752†        | -4120.2       | -6737.8             | -27.823 µg/L       | -27.823 ppb        | 12:49:44      |
| 1     | Mn 257.610†        | 2108.1        | 2488.6              | 2.9122 µg/L        | 2.9122 ppb         | 12:49:44      |
| 1     | Mo 202.031†        | -168.8        | -147.5              | 19.144 µg/L        | 19.144 ppb         | 12:50:04      |
| 1     | Ni 231.604†        | 222.4         | 240.2               | 2.1003 µg/L        | 2.1003 ppb         | 12:50:04      |
| 1     | P 214.914†         | 163.9         | 154.8               | 43.723 µg/L        | 43.723 ppb         | 12:50:04      |
| 1     | Pb 220.353†        | 27.1          | -8.3                | 9.8312 µg/L        | 9.8312 ppb         | 12:50:04      |
| 1     | S 181.975 Axial†   | 14306.4       | 15863.4             | 51111 µg/L         | 51111 ppb          | 12:50:04      |
| 1     | Sb 206.836†        | 12.1          | 9.6                 | 12.230 µg/L        | 12.230 ppb         | 12:50:04      |
| 1     | Se 196.026†        | -1.3          | -5.4                | -35.7 µg/L         | -35.7 ppb          | 12:50:04      |
| 1     | SiO2†              | 952.9         | 323.1               | 92.392 µg/L        | 92.392 ppb         | 12:50:04      |
| 1     | Si 251.611†        | 582.0         | 371.3               | 25.709 µg/L        | 25.709 ppb         | 12:50:04      |
| 1     | Sn 189.927†        | -24.0         | -2.3                | 3.3625 µg/L        | 3.3625 ppb         | 12:50:04      |
| 1     | Ti 334.940†        | -1243.3       | -1284.0             | 3.0705 µg/L        | 3.0705 ppb         | 12:50:04      |
| 1     | Tl 190.801†        | 9.9           | 5.7                 | -41.823 µg/L       | -41.823 ppb        | 12:50:04      |
| 1     | U 367.007†         | 27602.3       | 30837.0             | 13924 µg/L         | 13924 ppb          | 12:49:44      |
| 1     | V 292.402†         | 1544.7        | 1577.0              | -2.8794 µg/L       | -2.8794 ppb        | 12:50:04      |
| 1     | Zn 213.857†        | 2157.9        | 2148.4              | -27.884 µg/L       | -27.884 ppb        | 12:50:04      |
| 2     | Sc RADIAL          | 4477.0        | 4477.0              | 91.0 %             |                    | 12:49:36      |
| 2     | Al 396.153Radial†  | 258329.3      | 284008.7            | 486680 µg/L        | 486680 ppb         | 12:49:34      |
| 2     | Ca 317.933Radial†  | 565922.1      | 621905.4            | 499920 µg/L        | 499920 ppb         | 12:49:34      |
| 2     | Fe 238.204 Radial† | 185041.9      | 203329.8            | 479210 µg/L        | 479210 ppb         | 12:49:34      |
| 2     | K 766.490 Radial†  | 277106.8      | 304625.8            | 317390 µg/L        | 317390 ppb         | 12:49:34      |
| 2     | Mg 279.077 IEC†    | 43062.1       | 47340.0             | 457980 µg/L        | 457980 ppb         | 12:49:36      |
| 2     | Na 589.592 Radial† | 1145839.8     | 1258555.8           | 475520 µg/L        | 475520 ppb         | 12:49:34      |
| 2     | Sr 421.552†        | 4296.0        | 4564.4              | 17.174 µg/L        | 17.174 ppb         | 12:49:36      |
| 2     | Sc                 | 359973.4      | 359973.4            | 89.53 %            |                    | 12:50:06      |
| 2     | Y 371.029          | 281515.5      | 281515.5            | 88.019 %           |                    | 12:50:06      |
| 2     | Sc 357.253         | 232883.6      | 232883.6            | 90.66 %            |                    | 12:50:06      |
| 2     | Ag 328.068†        | 2284.8        | 3010.0              | 32.999 µg/L        | 32.999 ppb         | 12:50:06      |
| 2     | As 188.979†        | 2.7           | -1.7                | -15.368 µg/L       | -15.368 ppb        | 12:50:26      |
| 2     | B 249.677†         | 3101.1        | 2911.7              | 8.3997 µg/L        | 8.3997 ppb         | 12:50:06      |
| 2     | Ba 233.527†        | 473.7         | 576.0               | 4.1606 µg/L        | 4.1606 ppb         | 12:50:26      |
| 2     | Be 313.107†        | -3862.4       | -2038.1             | -1.2948 µg/L       | -1.2948 ppb        | 12:50:06      |
| 2     | Cd 226.502†        | 2112.3        | 2509.3              | -1.4545 µg/L       | -1.4545 ppb        | 12:50:26      |
| 2     | Co 228.616†        | 273.5         | 355.3               | -7.3735 µg/L       | -7.3735 ppb        | 12:50:26      |
| 2     | Cr 267.716†        | 347.6         | 220.7               | -1.2799 µg/L       | -1.2799 ppb        | 12:50:26      |
| 2     | Cu 324.752†        | -4690.6       | -7328.8             | -33.833 µg/L       | -33.833 ppb        | 12:50:06      |
| 2     | Mn 257.610†        | 2092.1        | 2451.4              | 2.6723 µg/L        | 2.6723 ppb         | 12:50:06      |
| 2     | Mo 202.031†        | -153.8        | -129.3              | 21.294 µg/L        | 21.294 ppb         | 12:50:26      |
| 2     | Ni 231.604†        | 226.2         | 242.3               | 2.2664 µg/L        | 2.2664 ppb         | 12:50:26      |

|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | P 214.914†         | 167.1     | 156.8     | 48.239 µg/L  | 48.239 ppb  | 12:50:26 |
| 2 | Pb 220.353†        | 56.5      | 23.8      | 22.329 µg/L  | 22.329 ppb  | 12:50:26 |
| 2 | S 181.975 Axial†   | 14203.3   | 15617.2   | 50321 µg/L   | 50321 ppb   | 12:50:26 |
| 2 | Sb 206.836†        | 8.3       | 5.3       | 5.4162 µg/L  | 5.4162 ppb  | 12:50:26 |
| 2 | Se 196.026†        | -0.3      | -4.3      | -33.1 µg/L   | -33.1 ppb   | 12:50:26 |
| 2 | SiO2†              | 938.2     | 298.1     | 85.232 µg/L  | 85.232 ppb  | 12:50:26 |
| 2 | Si 251.611†        | 592.1     | 377.0     | 26.103 µg/L  | 26.103 ppb  | 12:50:26 |
| 2 | Sn 189.927†        | -28.8     | -7.4      | 1.1338 µg/L  | 1.1338 ppb  | 12:50:26 |
| 2 | Ti 334.940†        | -1208.9   | -1234.6   | 3.3444 µg/L  | 3.3444 ppb  | 12:50:26 |
| 2 | Tl 190.801†        | 6.0       | 1.4       | -45.970 µg/L | -45.970 ppb | 12:50:26 |
| 2 | U 367.007†         | 27704.8   | 30694.4   | 13852 µg/L   | 13852 ppb   | 12:50:06 |
| 2 | V 292.402†         | 1301.7    | 1294.6    | -7.3375 µg/L | -7.3375 ppb | 12:50:26 |
| 2 | Zn 213.857†        | 2196.8    | 2171.3    | -27.149 µg/L | -27.149 ppb | 12:50:26 |
| 3 | Sc RADIAL          | 4489.5    | 4489.5    | 91.2 %       |             | 12:49:40 |
| 3 | Al 396.153Radial†  | 258239.6  | 283121.9  | 485160 µg/L  | 485160 ppb  | 12:49:38 |
| 3 | Ca 317.933Radial†  | 563867.3  | 617925.8  | 496720 µg/L  | 496720 ppb  | 12:49:38 |
| 3 | Fe 238.204 Radial† | 186488.6  | 204350.5  | 481610 µg/L  | 481610 ppb  | 12:49:38 |
| 3 | K 766.490 Radial†  | 277942.4  | 304695.8  | 317460 µg/L  | 317460 ppb  | 12:49:38 |
| 3 | Mg 279.077 IEC†    | 42778.1   | 46897.3   | 453700 µg/L  | 453700 ppb  | 12:49:40 |
| 3 | Na 589.592 Radial† | 1144125.8 | 1253179.5 | 473490 µg/L  | 473490 ppb  | 12:49:38 |
| 3 | Sr 421.552†        | 4232.0    | 4481.1    | 16.170 µg/L  | 16.170 ppb  | 12:49:40 |
| 3 | Sc                 | 354291.9  | 354291.9  | 88.11 %      |             | 12:50:28 |
| 3 | Y 371.029          | 277238.8  | 277238.8  | 86.682 %     |             | 12:50:28 |
| 3 | Sc 357.253         | 229847.9  | 229847.9  | 89.47 %      |             | 12:50:28 |
| 3 | Ag 328.068†        | 2227.1    | 2978.8    | 32.790 µg/L  | 32.790 ppb  | 12:50:28 |
| 3 | As 188.979†        | 2.4       | -2.0      | -16.016 µg/L | -16.016 ppb | 12:50:48 |
| 3 | B 249.677†         | 3144.4    | 3005.2    | 11.589 µg/L  | 11.589 ppb  | 12:50:28 |
| 3 | Ba 233.527†        | 524.0     | 639.0     | 5.2790 µg/L  | 5.2790 ppb  | 12:50:48 |
| 3 | Be 313.107†        | -3823.3   | -2050.7   | -1.3026 µg/L | -1.3026 ppb | 12:50:28 |
| 3 | Cd 226.502†        | 2113.1    | 2541.0    | -1.2445 µg/L | -1.2445 ppb | 12:50:48 |
| 3 | Co 228.616†        | 277.3     | 363.5     | -6.7527 µg/L | -6.7527 ppb | 12:50:48 |
| 3 | Cr 267.716†        | 386.3     | 269.0     | -0.6321 µg/L | -0.6321 ppb | 12:50:48 |
| 3 | Cu 324.752†        | -4294.4   | -6954.3   | -30.004 µg/L | -30.004 ppb | 12:50:28 |
| 3 | Mn 257.610†        | 2046.3    | 2430.8    | 2.7853 µg/L  | 2.7853 ppb  | 12:50:28 |
| 3 | Mo 202.031†        | -167.8    | -147.2    | 19.289 µg/L  | 19.289 ppb  | 12:50:48 |
| 3 | Ni 231.604†        | 231.2     | 251.2     | 2.7917 µg/L  | 2.7917 ppb  | 12:50:48 |
| 3 | P 214.914†         | 161.4     | 152.9     | 39.127 µg/L  | 39.127 ppb  | 12:50:48 |
| 3 | Pb 220.353†        | 26.2      | -9.3      | 9.6539 µg/L  | 9.6539 ppb  | 12:50:48 |
| 3 | S 181.975 Axial†   | 14274.0   | 15903.1   | 51240 µg/L   | 51240 ppb   | 12:50:48 |
| 3 | Sb 206.836†        | -0.8      | -4.7      | -10.475 µg/L | -10.475 ppb | 12:50:48 |
| 3 | Se 196.026†        | 2.7       | -1.0      | -25.4 µg/L   | -25.4 ppb   | 12:50:48 |
| 3 | SiO2†              | 949.1     | 324.0     | 92.647 µg/L  | 92.647 ppb  | 12:50:48 |
| 3 | Si 251.611†        | 587.0     | 380.0     | 26.313 µg/L  | 26.313 ppb  | 12:50:48 |
| 3 | Sn 189.927†        | -41.0     | -21.4     | -5.0972 µg/L | -5.0972 ppb | 12:50:48 |
| 3 | Ti 334.940†        | -1179.5   | -1219.4   | 3.3591 µg/L  | 3.3591 ppb  | 12:50:48 |
| 3 | Tl 190.801†        | -4.8      | -10.5     | -57.693 µg/L | -57.693 ppb | 12:50:48 |
| 3 | U 367.007†         | 27228.0   | 30565.2   | 13768 µg/L   | 13768 ppb   | 12:50:28 |
| 3 | V 292.402†         | 1337.8    | 1353.9    | -6.6162 µg/L | -6.6162 ppb | 12:50:48 |
| 3 | Zn 213.857†        | 2217.5    | 2226.5    | -25.356 µg/L | -25.356 ppb | 12:50:48 |

## Mean Data: LR1

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc  | 357273.5                 | 88.86 %            | 0.709    |                    |          | 0.80%   |
| Sc RADIAL   | 4497.6                   | 91.4 %             | 0.52     |                    |          | 0.57%   |
| Y 371.029   | 279494.7                 | 87.387 %           | 0.6716   |                    |          | 0.77%   |
| Sc 357.253  | 231225.4                 | 90.01 %            | 0.598    |                    |          | 0.66%   |
| Ag 328.068†   | 2945.2                   | 32.313 µg/L        | 1.0124   | 32.313 ppb         | 1.0124   | 3.13%   |
| Al 396.153Radial†   | 283291.9                 | 485460 µg/L        | 1111.6   | 485460 ppb         | 1111.6   | 0.23%   |
| QC value within limits for Al 396.153Radial Recovery = 97.09% |                          |                    |          |                    |          |         |
| As 188.979†   | -0.6                     | -13.029 µg/L       | 4.6239   | -13.029 ppb        | 4.6239   | 35.49%  |
| B 249.677†  | 2756.8                   | 1.9692 µg/L        | 13.99137 | 1.9692 ppb         | 13.99137 | 710.50% |
| Ba 233.527†   | 606.2                    | 4.6988 µg/L        | 0.56039  | 4.6988 ppb         | 0.56039  | 11.93%  |
| Be 313.107†   | -2082.0                  | -1.3225 µg/L       | 0.04147  | -1.3225 ppb        | 0.04147  | 3.14%   |
| Ca 317.933Radial†   | 619983.5                 | 498370 µg/L        | 1602.3   | 498370 ppb         | 1602.3   | 0.32%   |
| QC value within limits for Ca 317.933Radial Recovery = 99.67% |                          |                    |          |                    |          |         |
| Cd 226.502†   | 2533.0                   | -1.2555 µg/L       | 0.19373  | -1.2555 ppb        | 0.19373  | 15.43%  |
| Co 228.616†   | 361.4                    | -6.8448 µg/L       | 0.48923  | -6.8448 ppb        | 0.48923  | 7.15%   |
| Cr 267.716†   | 247.0                    | -0.9242 µg/L       | 0.32856  | -0.9242 ppb        | 0.32856  | 35.55%  |
| Cu 324.752†   | -7007.0                  | -30.553 µg/L       | 3.0420   | -30.553 ppb        | 3.0420   | 9.96%   |

|  |           |              |          |             |          |         |
|--|-----------|--------------|----------|-------------|----------|---------|
| Fe 238.204 Radial†   | 203807.8  | 480330 µg/L  | 1210.0   | 480330 ppb  | 1210.0   | 0.25%   |
| QC value within limits for Fe 238.204 Radial Recovery = 96.07% |           |              |          |             |          |         |
| K 766.490 Radial†  | 303617.2  | 316340 µg/L  | 1885.2   | 316340 ppb  | 1885.2   | 0.60%   |
| QC value within limits for K 766.490 Radial Recovery = 105.45% |           |              |          |             |          |         |
| Mg 279.077 IEC†  | 47103.2   | 455690 µg/L  | 2156.9   | 455690 ppb  | 2156.9   | 0.47%   |
| QC value within limits for Mg 279.077 IEC Recovery = 91.14%    |           |              |          |             |          |         |
| Mn 257.610†  | 2456.9    | 2.7899 µg/L  | 0.12002  | 2.7899 ppb  | 0.12002  | 4.30%   |
| Mo 202.031†  | -141.4    | 19.909 µg/L  | 1.2019   | 19.909 ppb  | 1.2019   | 6.04%   |
| Na 589.592 Radial†   | 1253482.8 | 473600 µg/L  | 1862.1   | 473600 ppb  | 1862.1   | 0.39%   |
| QC value within limits for Na 589.592 Radial Recovery = 94.72% |           |              |          |             |          |         |
| Ni 231.604†  | 244.6     | 2.3862 µg/L  | 0.36094  | 2.3862 ppb  | 0.36094  | 15.13%  |
| P 214.914†   | 154.8     | 43.696 µg/L  | 4.5559   | 43.696 ppb  | 4.5559   | 10.43%  |
| Pb 220.353†  | 2.1       | 13.938 µg/L  | 7.2671   | 13.938 ppb  | 7.2671   | 52.14%  |
| S 181.975 Axial†   | 15794.6   | 50891 µg/L   | 497.8    | 50891 ppb   | 497.8    | 0.98%   |
| QC value within limits for S 181.975 Axial Recovery = 101.78%  |           |              |          |             |          |         |
| Sb 206.836†  | 3.4       | 2.3903 µg/L  | 11.65104 | 2.3903 ppb  | 11.65104 | 487.42% |
| Se 196.026†  | -3.6      | -31.4 µg/L   | 5.34     | -31.4 ppb   | 5.34     | 16.99%  |
| SiO2†  | 315.1     | 90.090 µg/L  | 4.2094   | 90.090 ppb  | 4.2094   | 4.67%   |
| Si 251.611†  | 376.1     | 26.042 µg/L  | 0.3067   | 26.042 ppb  | 0.3067   | 1.18%   |
| Sn 189.927†  | -10.4     | -0.2003 µg/L | 4.38481  | -0.2003 ppb | 4.38481  | >999.9% |
| Sr 421.552†  | 4535.4    | 16.812 µg/L  | 0.5577   | 16.812 ppb  | 0.5577   | 3.32%   |
| Ti 334.940†  | -1246.0   | 3.2580 µg/L  | 0.16253  | 3.2580 ppb  | 0.16253  | 4.99%   |
| Tl 190.801†  | -1.1      | -48.495 µg/L | 8.2305   | -48.495 ppb | 8.2305   | 16.97%  |
| U 367.007†   | 30698.8   | 13848 µg/L   | 78.1     | 13848 ppb   | 78.1     | 0.56%   |
| QC value within limits for U 367.007 Recovery = 92.32%         |           |              |          |             |          |         |
| V 292.402†   | 1408.5    | -5.6110 µg/L | 2.39299  | -5.6110 ppb | 2.39299  | 42.65%  |
| Zn 213.857†  | 2182.0    | -26.796 µg/L | 1.3005   | -26.796 ppb | 1.3005   | 4.85%   |
| All analyte(s) passed QC.                                      |           |              |          |             |          |         |

Sequence No.: 12

Autosampler Location: 108

Sample ID: LR2

Date Collected: 11/2/2016 12:50:57

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: LR2

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4804.4        | 4804.4              | 97.6 %             |                    | 12:51:50      |
| 1     | Al 396.153Radial†  | 212.0         | 314.5               | 539.81 µg/L        | 539.81 ppb         | 12:51:30      |
| 1     | Ca 317.933Radial†  | 117.7         | 61.3                | 49.240 µg/L        | 49.240 ppb         | 12:51:50      |
| 1     | Fe 238.204 Radial† | 42.9          | 7.4                 | 17.337 µg/L        | 17.337 ppb         | 12:51:50      |
| 1     | K 766.490 Radial†  | -97.7         | -22.6               | -23.535 µg/L       | -23.535 ppb        | 12:51:30      |
| 1     | Mg 279.077 IEC†    | -16.3         | -3.2                | -30.750 µg/L       | -30.750 ppb        | 12:51:50      |
| 1     | Na 589.592 Radial† | 984.3         | 252.8               | 95.528 µg/L        | 95.528 ppb         | 12:51:30      |
| 1     | Sr 421.552†        | 901208.5      | 922792.4            | 9971.4 µg/L        | 9971.4 ppb         | 12:51:28      |
| 1     | Sc                 | 398391.4      | 398391.4            | 99.08 %            |                    | 12:52:45      |
| 1     | Y 371.029          | 318039.6      | 318039.6            | 99.439 %           |                    | 12:52:45      |
| 1     | Sc 357.253         | 256522.2      | 256522.2            | 99.86 %            |                    | 12:52:45      |
| 1     | Ag 328.068†        | -502.1        | -13.1               | 6.8018 µg/L        | 6.8018 ppb         | 12:52:45      |
| 1     | As 188.979†        | 4449.1        | 4450.7              | 9415.2 µg/L        | 9415.2 ppb         | 12:53:05      |
| 1     | B 249.677†         | 123137.2      | 122803.6            | 4897.7 µg/L        | 4897.7 ppb         | 12:52:45      |
| 1     | Ba 233.527†        | 815044.4      | 816259.3            | 14891 µg/L         | 14891 ppb          | 12:52:43      |
| 1     | Be 313.107†        | 4653852.1     | 4662706.4           | 2954.8 µg/L        | 2954.8 ppb         | 12:52:43      |
| 1     | Cd 226.502†        | 858269.1      | 859671.4            | 9803.9 µg/L        | 9803.9 ppb         | 12:52:43      |
| 1     | Co 228.616†        | 98033.5       | 98226.8             | 10088 µg/L         | 10088 ppb          | 12:52:45      |
| 1     | Cr 267.716†        | 1770388.5     | 1772748.6           | 24590 µg/L         | 24590 ppb          | 12:52:43      |
| 1     | Cu 324.752†        | 2086806.0     | 2087625.0           | 20836 µg/L         | 20836 ppb          | 12:52:43      |
| 1     | Mn 257.610†        | 2718671.9     | 2722689.8           | 9905.1 µg/L        | 9905.1 ppb         | 12:52:43      |
| 1     | Mo 202.031†        | 80983.7       | 81139.4             | 9938.5 µg/L        | 9938.5 ppb         | 12:52:45      |
| 1     | Ni 231.604†        | 150129.3      | 150336.0            | 10024 µg/L         | 10024 ppb          | 12:52:45      |
| 1     | P 214.914†         | 7479.2        | 7462.3              | 14541 µg/L         | 14541 ppb          | 12:52:45      |
| 1     | Pb 220.353†        | 68278.7       | 68337.5             | 26176 µg/L         | 26176 ppb          | 12:52:45      |
| 1     | S 181.975 Axial†   | 76.8          | 26.9                | 128.84 µg/L        | 128.84 ppb         | 12:53:05      |
| 1     | Sb 206.836†        | 6241.5        | 6246.6              | 9745.5 µg/L        | 9745.5 ppb         | 12:53:05      |
| 1     | Se 196.026†        | 4065.5        | 4067.3              | 9500 µg/L          | 9500 ppb           | 12:53:05      |
| 1     | SiO2†              | 334343.9      | 334083.6            | 95733 µg/L         | 95733 ppb          | 12:52:45      |
| 1     | Si 251.611†        | 666252.1      | 666925.4            | 46183 µg/L         | 46183 ppb          | 12:52:43      |
| 1     | Sn 189.927†        | 22671.7       | 22728.4             | 10101 µg/L         | 10101 ppb          | 12:52:45      |
| 1     | Ti 334.940†        | 1965279.3     | 1968178.8           | 9803.2 µg/L        | 9803.2 ppb         | 12:52:43      |
| 1     | Tl 190.801†        | 10218.7       | 10228.1             | 9957.3 µg/L        | 9957.3 ppb         | 12:53:05      |
| 1     | U 367.007†         | -232.7        | -99.1               | -53.904 µg/L       | -53.904 ppb        | 12:52:45      |
| 1     | V 292.402†         | 614957.2      | 615692.3            | 9917.6 µg/L        | 9917.6 ppb         | 12:52:43      |
| 1     | Zn 213.857†        | 411000.3      | 411334.0            | 13722 µg/L         | 13722 ppb          | 12:52:45      |
| 2     | Sc RADIAL          | 4795.6        | 4795.6              | 97.5 %             |                    | 12:52:14      |
| 2     | Al 396.153Radial†  | 170.6         | 272.4               | 467.79 µg/L        | 467.79 ppb         | 12:51:54      |
| 2     | Ca 317.933Radial†  | 99.5          | 42.8                | 34.378 µg/L        | 34.378 ppb         | 12:52:14      |
| 2     | Fe 238.204 Radial† | 41.7          | 6.2                 | 14.552 µg/L        | 14.552 ppb         | 12:52:14      |
| 2     | K 766.490 Radial†  | -303.5        | -234.0              | -244.02 µg/L       | -244.02 ppb        | 12:51:54      |
| 2     | Mg 279.077 IEC†    | -15.3         | -2.1                | -20.461 µg/L       | -20.461 ppb        | 12:52:14      |
| 2     | Na 589.592 Radial† | 1051.6        | 323.8               | 122.33 µg/L        | 122.33 ppb         | 12:51:54      |
| 2     | Sr 421.552†        | 895743.8      | 918879.8            | 9929.1 µg/L        | 9929.1 ppb         | 12:51:52      |
| 2     | Sc                 | 397402.9      | 397402.9            | 98.84 %            |                    | 12:53:11      |
| 2     | Y 371.029          | 315348.9      | 315348.9            | 98.598 %           |                    | 12:53:11      |
| 2     | Sc 357.253         | 256550.2      | 256550.2            | 99.87 %            |                    | 12:53:11      |
| 2     | Ag 328.068†        | -526.4        | -37.3               | 6.6065 µg/L        | 6.6065 ppb         | 12:53:11      |
| 2     | As 188.979†        | 4492.6        | 4493.8              | 9506.3 µg/L        | 9506.3 ppb         | 12:53:31      |
| 2     | B 249.677†         | 121949.0      | 121600.4            | 4849.7 µg/L        | 4849.7 ppb         | 12:53:11      |
| 2     | Ba 233.527†        | 817289.8      | 818418.2            | 14931 µg/L         | 14931 ppb          | 12:53:09      |
| 2     | Be 313.107†        | 4646375.6     | 4654709.8           | 2949.9 µg/L        | 2949.9 ppb         | 12:53:09      |
| 2     | Cd 226.502†        | 866671.1      | 867990.4            | 9898.9 µg/L        | 9898.9 ppb         | 12:53:09      |
| 2     | Co 228.616†        | 98600.3       | 98783.6             | 10145 µg/L         | 10145 ppb          | 12:53:11      |
| 2     | Cr 267.716†        | 1786097.6     | 1788284.3           | 24806 µg/L         | 24806 ppb          | 12:53:09      |
| 2     | Cu 324.752†        | 2111563.3     | 2112186.2           | 21081 µg/L         | 21081 ppb          | 12:53:09      |
| 2     | Mn 257.610†        | 2728227.9     | 2731960.3           | 9938.8 µg/L        | 9938.8 ppb         | 12:53:09      |
| 2     | Mo 202.031†        | 80530.2       | 80676.4             | 9881.8 µg/L        | 9881.8 ppb         | 12:53:11      |
| 2     | Ni 231.604†        | 148683.8      | 148872.2            | 9926.1 µg/L        | 9926.1 ppb         | 12:53:11      |



|   |                    |           |           |              |             |          |
|---|--------------------|-----------|-----------|--------------|-------------|----------|
| 2 | P 214.914†         | 7469.4    | 7451.7    | 14518 µg/L   | 14518 ppb   | 12:53:11 |
| 2 | Pb 220.353†        | 67411.8   | 67462.0   | 25841 µg/L   | 25841 ppb   | 12:53:11 |
| 2 | S 181.975 Axial†   | 68.5      | 18.5      | 101.90 µg/L  | 101.90 ppb  | 12:53:31 |
| 2 | Sb 206.836†        | 6231.3    | 6235.7    | 9725.7 µg/L  | 9725.7 ppb  | 12:53:31 |
| 2 | Se 196.026†        | 4052.7    | 4054.0    | 9470 µg/L    | 9470 ppb    | 12:53:31 |
| 2 | SiO2†              | 334833.4  | 334537.0  | 95865 µg/L   | 95865 ppb   | 12:53:11 |
| 2 | Si 251.611†        | 667618.2  | 668220.3  | 46273 µg/L   | 46273 ppb   | 12:53:09 |
| 2 | Sn 189.927†        | 22534.7   | 22588.7   | 10040 µg/L   | 10040 ppb   | 12:53:11 |
| 2 | Ti 334.940†        | 1983666.1 | 1986374.4 | 9893.9 µg/L  | 9893.9 ppb  | 12:53:09 |
| 2 | Tl 190.801†        | 10190.8   | 10199.0   | 9930.0 µg/L  | 9930.0 ppb  | 12:53:31 |
| 2 | U 367.007†         | -179.8    | -46.1     | -25.103 µg/L | -25.103 ppb | 12:53:11 |
| 2 | V 292.402†         | 624131.8  | 624811.5  | 10063 µg/L   | 10063 ppb   | 12:53:09 |
| 2 | Zn 213.857†        | 408386.7  | 408671.9  | 13634 µg/L   | 13634 ppb   | 12:53:11 |
| 3 | Sc RADIAL          | 4813.1    | 4813.1    | 97.8 %       |             | 12:52:38 |
| 3 | Al 396.153Radial†  | 234.8     | 337.4     | 579.07 µg/L  | 579.07 ppb  | 12:52:18 |
| 3 | Ca 317.933Radial†  | 92.7      | 35.4      | 28.453 µg/L  | 28.453 ppb  | 12:52:38 |
| 3 | Fe 238.204 Radial† | 41.8      | 6.2       | 14.643 µg/L  | 14.643 ppb  | 12:52:38 |
| 3 | K 766.490 Radial†  | -65.0     | 11.0      | 11.504 µg/L  | 11.504 ppb  | 12:52:18 |
| 3 | Mg 279.077 IEC†    | -8.2      | 5.2       | 50.402 µg/L  | 50.402 ppb  | 12:52:38 |
| 3 | Na 589.592 Radial† | 917.2     | 182.5     | 68.941 µg/L  | 68.941 ppb  | 12:52:18 |
| 3 | Sr 421.552†        | 901500.2  | 921425.3  | 9956.6 µg/L  | 9956.6 ppb  | 12:52:16 |
| 3 | Sc                 | 397789.3  | 397789.3  | 98.93 %      |             | 12:53:36 |
| 3 | Y 371.029          | 314450.4  | 314450.4  | 98.317 %     |             | 12:53:36 |
| 3 | Sc 357.253         | 254478.3  | 254478.3  | 99.06 %      |             | 12:53:36 |
| 3 | Ag 328.068†        | -691.8    | -208.6    | 4.6692 µg/L  | 4.6692 ppb  | 12:53:36 |
| 3 | As 188.979†        | 4471.3    | 4508.9    | 9536.2 µg/L  | 9536.2 ppb  | 12:53:56 |
| 3 | B 249.677†         | 118786.0  | 119401.6  | 4762.0 µg/L  | 4762.0 ppb  | 12:53:36 |
| 3 | Ba 233.527†        | 801572.4  | 809215.2  | 14763 µg/L   | 14763 ppb   | 12:53:34 |
| 3 | Be 313.107†        | 4589709.7 | 4635388.2 | 2937.6 µg/L  | 2937.6 ppb  | 12:53:34 |
| 3 | Cd 226.502†        | 850825.1  | 859060.1  | 9797.1 µg/L  | 9797.1 ppb  | 12:53:34 |
| 3 | Co 228.616†        | 97616.6   | 98594.5   | 10126 µg/L   | 10126 ppb   | 12:53:36 |
| 3 | Cr 267.716†        | 1752771.6 | 1769204.3 | 24541 µg/L   | 24541 ppb   | 12:53:34 |
| 3 | Cu 324.752†        | 2086299.5 | 2103898.2 | 20998 µg/L   | 20998 ppb   | 12:53:34 |
| 3 | Mn 257.610†        | 2683651.8 | 2709204.8 | 9856.0 µg/L  | 9856.0 ppb  | 12:53:34 |
| 3 | Mo 202.031†        | 78739.8   | 79525.7   | 9740.8 µg/L  | 9740.8 ppb  | 12:53:36 |
| 3 | Ni 231.604†        | 145762.3  | 147135.2  | 9810.3 µg/L  | 9810.3 ppb  | 12:53:36 |
| 3 | P 214.914†         | 7421.0    | 7463.8    | 14543 µg/L   | 14543 ppb   | 12:53:36 |
| 3 | Pb 220.353†        | 66506.0   | 67097.1   | 25701 µg/L   | 25701 ppb   | 12:53:36 |
| 3 | S 181.975 Axial†   | 71.6      | 22.2      | 113.13 µg/L  | 113.13 ppb  | 12:53:56 |
| 3 | Sb 206.836†        | 6199.1    | 6253.9    | 9756.2 µg/L  | 9756.2 ppb  | 12:53:56 |
| 3 | Se 196.026†        | 4057.1    | 4091.5    | 9550 µg/L    | 9550 ppb    | 12:53:56 |
| 3 | SiO2†              | 331819.0  | 334224.0  | 95773 µg/L   | 95773 ppb   | 12:53:36 |
| 3 | Si 251.611†        | 656944.0  | 662887.9  | 45903 µg/L   | 45903 ppb   | 12:53:34 |
| 3 | Sn 189.927†        | 21944.3   | 22176.5   | 9857.0 µg/L  | 9857.0 ppb  | 12:53:36 |
| 3 | Ti 334.940†        | 1954996.1 | 1973605.2 | 9830.3 µg/L  | 9830.3 ppb  | 12:53:34 |
| 3 | Tl 190.801†        | 10149.7   | 10240.5   | 9969.6 µg/L  | 9969.6 ppb  | 12:53:56 |
| 3 | U 367.007†         | -267.6    | -136.1    | -74.007 µg/L | -74.007 ppb | 12:53:36 |
| 3 | V 292.402†         | 609697.5  | 615328.9  | 9910.6 µg/L  | 9910.6 ppb  | 12:53:34 |
| 3 | Zn 213.857†        | 410073.4  | 413704.1  | 13803 µg/L   | 13803 ppb   | 12:53:36 |

## Mean Data: LR2

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc  | 397861.2                 | 98.95 %            | 0.124    |                    |          | 0.13%  |
| Sc RADIAL   | 4804.4                   | 97.6 %             | 0.18     |                    |          | 0.18%  |
| Y 371.029   | 315946.3                 | 98.784 %           | 0.5839   |                    |          | 0.59%  |
| Sc 357.253  | 255850.2                 | 99.60 %            | 0.463    |                    |          | 0.46%  |
| Ag 328.068†   | -86.4                    | 6.0259 µg/L        | 1.17895  | 6.0259 ppb         | 1.17895  | 19.56% |
| Al 396.153Radial†                                       | 308.1                    | 528.89 µg/L        | 56.441   | 528.89 ppb         | 56.441   | 10.67% |
| As 188.979†   | 4484.5                   | 9485.9 µg/L        | 63.02    | 9485.9 ppb         | 63.02    | 0.66%  |
| QC value within limits for As 188.979 Recovery = 94.86% |                          |                    |          |                    |          |        |
| B 249.677†  | 121268.5                 | 4836.5 µg/L        | 68.80    | 4836.5 ppb         | 68.80    | 1.42%  |
| QC value within limits for B 249.677 Recovery = 96.73%  |                          |                    |          |                    |          |        |
| Ba 233.527†   | 814630.9                 | 14862 µg/L         | 87.8     | 14862 ppb          | 87.8     | 0.59%  |
| QC value within limits for Ba 233.527 Recovery = 99.08% |                          |                    |          |                    |          |        |
| Be 313.107†   | 4650934.8                | 2947.4 µg/L        | 8.84     | 2947.4 ppb         | 8.84     | 0.30%  |
| QC value within limits for Be 313.107 Recovery = 98.25% |                          |                    |          |                    |          |        |
| Ca 317.933Radial†                                       | 46.5                     | 37.357 µg/L        | 10.7085  | 37.357 ppb         | 10.7085  | 28.67% |
| Cd 226.502†   | 862240.6                 | 9833.3 µg/L        | 56.93    | 9833.3 ppb         | 56.93    | 0.58%  |
| QC value within limits for Cd 226.502 Recovery = 98.33% |                          |                    |          |                    |          |        |

|   |           |              |          |             |          |         |
|---|-----------|--------------|----------|-------------|----------|---------|
| Co 228.616†   | 98535.0   | 10120 µg/L   | 29.0     | 10120 ppb   | 29.0     | 0.29%   |
| QC value within limits for Co 228.616 Recovery = 101.20%      |           |              |          |             |          |         |
| Cr 267.716†   | 1776745.7 | 24645 µg/L   | 140.8    | 24645 ppb   | 140.8    | 0.57%   |
| QC value within limits for Cr 267.716 Recovery = 98.58%       |           |              |          |             |          |         |
| Cu 324.752†   | 2101236.5 | 20972 µg/L   | 124.7    | 20972 ppb   | 124.7    | 0.59%   |
| QC value within limits for Cu 324.752 Recovery = 104.86%      |           |              |          |             |          |         |
| Fe 238.204 Radial†  | 6.6       | 15.511 µg/L  | 1.5820   | 15.511 ppb  | 1.5820   | 10.20%  |
| K 766.490 Radial†   | -81.8     | -85.349 µg/L | 138.5217 | -85.349 ppb | 138.5217 | 162.30% |
| Mg 279.077 IEC†   | -0.0      | -0.2696 µg/L | 44.18385 | -0.2696 ppb | 44.18385 | >999.9% |
| Mn 257.610†   | 2721284.9 | 9900.0 µg/L  | 41.63    | 9900.0 ppb  | 41.63    | 0.42%   |
| QC value within limits for Mn 257.610 Recovery = 99.00%       |           |              |          |             |          |         |
| Mo 202.031†   | 80447.1   | 9853.7 µg/L  | 101.78   | 9853.7 ppb  | 101.78   | 1.03%   |
| QC value within limits for Mo 202.031 Recovery = 98.54%       |           |              |          |             |          |         |
| Na 589.592 Radial†  | 253.0     | 95.600 µg/L  | 26.6952  | 95.600 ppb  | 26.6952  | 27.92%  |
| Ni 231.604†   | 148781.1  | 9920.0 µg/L  | 106.84   | 9920.0 ppb  | 106.84   | 1.08%   |
| QC value within limits for Ni 231.604 Recovery = 99.20%       |           |              |          |             |          |         |
| P 214.914†  | 7459.2    | 14534 µg/L   | 13.9     | 14534 ppb   | 13.9     | 0.10%   |
| QC value within limits for P 214.914 Recovery = 96.89%        |           |              |          |             |          |         |
| Pb 220.353†   | 67632.2   | 25906 µg/L   | 244.2    | 25906 ppb   | 244.2    | 0.94%   |
| QC value within limits for Pb 220.353 Recovery = 103.63%      |           |              |          |             |          |         |
| S 181.975 Axial†  | 22.5      | 114.62 µg/L  | 13.532   | 114.62 ppb  | 13.532   | 11.81%  |
| Sb 206.836†   | 6245.4    | 9742.5 µg/L  | 15.47    | 9742.5 ppb  | 15.47    | 0.16%   |
| QC value within limits for Sb 206.836 Recovery = 97.42%       |           |              |          |             |          |         |
| Se 196.026†   | 4071.0    | 9510 µg/L    | 44.4     | 9510 ppb    | 44.4     | 0.47%   |
| QC value within limits for Se 196.026 Recovery = 95.06%       |           |              |          |             |          |         |
| SiO2†   | 334281.5  | 95790 µg/L   | 67.6     | 95790 ppb   | 67.6     | 0.07%   |
| QC value less than the lower limit for SiO2 Recovery = 89.52% |           |              |          |             |          |         |
| Si 251.611†   | 666011.2  | 46120 µg/L   | 192.6    | 46120 ppb   | 192.6    | 0.42%   |
| QC value within limits for Si 251.611 Recovery = 92.24%       |           |              |          |             |          |         |
| Sn 189.927†   | 22497.9   | 9999.4 µg/L  | 127.15   | 9999.4 ppb  | 127.15   | 1.27%   |
| QC value within limits for Sn 189.927 Recovery = 99.99%       |           |              |          |             |          |         |
| Sr 421.552†   | 921032.5  | 9952.4 µg/L  | 21.46    | 9952.4 ppb  | 21.46    | 0.22%   |
| QC value within limits for Sr 421.552 Recovery = 99.52%       |           |              |          |             |          |         |
| Ti 334.940†   | 1976052.8 | 9842.5 µg/L  | 46.53    | 9842.5 ppb  | 46.53    | 0.47%   |
| QC value within limits for Ti 334.940 Recovery = 98.42%       |           |              |          |             |          |         |
| Tl 190.801†   | 10222.5   | 9952.3 µg/L  | 20.27    | 9952.3 ppb  | 20.27    | 0.20%   |
| QC value within limits for Tl 190.801 Recovery = 99.52%       |           |              |          |             |          |         |
| U 367.007†  | -93.8     | -51.005 µg/L | 24.5807  | -51.005 ppb | 24.5807  | 48.19%  |
| V 292.402†  | 618610.9  | 9963.8 µg/L  | 86.12    | 9963.8 ppb  | 86.12    | 0.86%   |
| QC value within limits for V 292.402 Recovery = 99.64%        |           |              |          |             |          |         |
| Zn 213.857†   | 411236.7  | 13720 µg/L   | 84.8     | 13720 ppb   | 84.8     | 0.62%   |
| QC value within limits for Zn 213.857 Recovery = 91.46%       |           |              |          |             |          |         |
| QC Failed. Continue with analysis.                            |           |              |          |             |          |         |

Sequence No.: 13

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 11/2/2016 12:54:04

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4829.0        | 4829.0              | 98.1 %             |                    | 12:54:55      |
| 1     | Al 396.153Radial†  | 2779.5        | 2929.5              | 5020.1 µg/L        | 5020.1 ppb         | 12:54:55      |
| 1     | Ca 317.933Radial†  | 6285.9        | 6345.4              | 5100.8 µg/L        | 5100.8 ppb         | 12:54:55      |
| 1     | Fe 238.204 Radial† | 2161.4        | 2165.7              | 5104.2 µg/L        | 5104.2 ppb         | 12:54:55      |
| 1     | K 766.490 Radial†  | 4615.8        | 4780.6              | 4982.4 µg/L        | 4982.4 ppb         | 12:54:35      |
| 1     | Mg 279.077 IEC†    | 506.8         | 530.0               | 5127.1 µg/L        | 5127.1 ppb         | 12:54:55      |
| 1     | Na 589.592 Radial† | 25877.0       | 25611.2             | 9676.7 µg/L        | 9676.7 ppb         | 12:54:35      |
| 1     | Sr 421.552†        | 44546.5       | 45232.0             | 488.42 µg/L        | 488.42 ppb         | 12:54:35      |
| 1     | Sc                 | 407290.5      | 407290.5            | 101.3 %            |                    | 12:55:43      |
| 1     | Y 371.029          | 315981.1      | 315981.1            | 98.795 %           |                    | 12:55:43      |
| 1     | Sc 357.253         | 257864.2      | 257864.2            | 100.4 %            |                    | 12:55:43      |
| 1     | Ag 328.068†        | 42813.9       | 43141.4             | 474.29 µg/L        | 474.29 ppb         | 12:55:43      |
| 1     | As 188.979†        | 239.7         | 234.1               | 490.93 µg/L        | 490.93 ppb         | 12:56:03      |
| 1     | B 249.677†         | 12716.7       | 12159.5             | 483.80 µg/L        | 483.80 ppb         | 12:55:43      |
| 1     | Ba 233.527†        | 26651.0       | 26603.4             | 485.42 µg/L        | 485.42 ppb         | 12:55:43      |
| 1     | Be 313.107†        | 763206.3      | 762538.5            | 481.26 µg/L        | 481.26 ppb         | 12:55:43      |
| 1     | Cd 226.502†        | 41998.4       | 42018.6             | 478.88 µg/L        | 478.88 ppb         | 12:55:43      |
| 1     | Co 228.616†        | 4690.9        | 4726.7              | 484.68 µg/L        | 484.68 ppb         | 12:56:03      |
| 1     | Cr 267.716†        | 35154.9       | 34859.0             | 483.72 µg/L        | 483.72 ppb         | 12:55:43      |
| 1     | Cu 324.752†        | 51052.3       | 48704.2             | 486.73 µg/L        | 486.73 ppb         | 12:55:43      |
| 1     | Mn 257.610†        | 135178.4      | 134810.2            | 490.36 µg/L        | 490.36 ppb         | 12:55:43      |
| 1     | Mo 202.031†        | 3834.9        | 3860.7              | 473.28 µg/L        | 473.28 ppb         | 12:56:03      |
| 1     | Ni 231.604†        | 7141.6        | 7107.3              | 473.73 µg/L        | 473.73 ppb         | 12:56:03      |
| 1     | P 214.914†         | 1236.1        | 1203.9              | 2372.1 µg/L        | 2372.1 ppb         | 12:56:03      |
| 1     | Pb 220.353†        | 1325.7        | 1282.1              | 491.43 µg/L        | 491.43 ppb         | 12:56:03      |
| 1     | S 181.975 Axial†   | 339.2         | 287.8               | 927.97 µg/L        | 927.97 ppb         | 12:56:03      |
| 1     | Sb 206.836†        | 302.4         | 297.4               | 471.18 µg/L        | 471.18 ppb         | 12:56:03      |
| 1     | Se 196.026†        | 212.3         | 207.6               | 484 µg/L           | 484 ppb            | 12:56:03      |
| 1     | SiO2†              | 19055.5       | 18246.6             | 5220.2 µg/L        | 5220.2 ppb         | 12:55:43      |
| 1     | Si 251.611†        | 35615.0       | 35204.0             | 2437.8 µg/L        | 2437.8 ppb         | 12:55:43      |
| 1     | Sn 189.927†        | 1053.3        | 1073.7              | 477.30 µg/L        | 477.30 ppb         | 12:56:03      |
| 1     | Ti 334.940†        | 95438.2       | 95175.7             | 474.41 µg/L        | 474.41 ppb         | 12:55:43      |
| 1     | Tl 190.801†        | 518.0         | 510.8               | 496.66 µg/L        | 496.66 ppb         | 12:56:03      |
| 1     | U 367.007†         | 749.6         | 880.7               | 448.20 µg/L        | 448.20 ppb         | 12:55:43      |
| 1     | V 292.402†         | 30541.8       | 30284.8             | 486.56 µg/L        | 486.56 ppb         | 12:55:43      |
| 1     | Zn 213.857†        | 14396.4       | 14090.0             | 468.29 µg/L        | 468.29 ppb         | 12:56:03      |
| 2     | Sc RADIAL          | 4792.8        | 4792.8              | 97.4 %             |                    | 12:55:17      |
| 2     | Al 396.153Radial†  | 2769.3        | 2940.4              | 5038.8 µg/L        | 5038.8 ppb         | 12:55:17      |
| 2     | Ca 317.933Radial†  | 6278.0        | 6385.7              | 5133.1 µg/L        | 5133.1 ppb         | 12:55:17      |
| 2     | Fe 238.204 Radial† | 2157.5        | 2178.3              | 5133.9 µg/L        | 5133.9 ppb         | 12:55:17      |
| 2     | K 766.490 Radial†  | 4424.3        | 4619.5              | 4814.4 µg/L        | 4814.4 ppb         | 12:54:57      |
| 2     | Mg 279.077 IEC†    | 513.8         | 541.0               | 5233.6 µg/L        | 5233.6 ppb         | 12:55:17      |
| 2     | Na 589.592 Radial† | 25970.2       | 25906.0             | 9788.1 µg/L        | 9788.1 ppb         | 12:54:57      |
| 2     | Sr 421.552†        | 44401.8       | 45426.3             | 490.52 µg/L        | 490.52 ppb         | 12:54:57      |
| 2     | Sc                 | 408490.8      | 408490.8            | 101.6 %            |                    | 12:56:06      |
| 2     | Y 371.029          | 314897.2      | 314897.2            | 98.456 %           |                    | 12:56:06      |
| 2     | Sc 357.253         | 258968.5      | 258968.5            | 100.8 %            |                    | 12:56:06      |
| 2     | Ag 328.068†        | 42680.5       | 42827.3             | 470.89 µg/L        | 470.89 ppb         | 12:56:06      |
| 2     | As 188.979†        | 237.5         | 230.9               | 484.24 µg/L        | 484.24 ppb         | 12:56:26      |
| 2     | B 249.677†         | 12780.4       | 12168.6             | 484.16 µg/L        | 484.16 ppb         | 12:56:06      |
| 2     | Ba 233.527†        | 26610.9       | 26450.5             | 482.63 µg/L        | 482.63 ppb         | 12:56:06      |
| 2     | Be 313.107†        | 762149.6      | 758248.2            | 478.56 µg/L        | 478.56 ppb         | 12:56:06      |
| 2     | Cd 226.502†        | 42410.2       | 42248.7             | 481.51 µg/L        | 481.51 ppb         | 12:56:06      |
| 2     | Co 228.616†        | 4730.6        | 4746.1              | 486.66 µg/L        | 486.66 ppb         | 12:56:26      |
| 2     | Cr 267.716†        | 35267.1       | 34820.9             | 483.19 µg/L        | 483.19 ppb         | 12:56:06      |
| 2     | Cu 324.752†        | 51314.1       | 48747.1             | 487.13 µg/L        | 487.13 ppb         | 12:56:06      |
| 2     | Mn 257.610†        | 135370.5      | 134426.5            | 488.96 µg/L        | 488.96 ppb         | 12:56:06      |
| 2     | Mo 202.031†        | 3839.8        | 3849.3              | 471.88 µg/L        | 471.88 ppb         | 12:56:26      |
| 2     | Ni 231.604†        | 7147.7        | 7083.0              | 472.11 µg/L        | 472.11 ppb         | 12:56:26      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 1237.4   | 1199.9   | 2364.2 µg/L | 2364.2 ppb | 12:56:26 |
| 2 | Pb 220.353†        | 1323.3   | 1274.2   | 488.42 µg/L | 488.42 ppb | 12:56:26 |
| 2 | S 181.975 Axial†   | 341.2    | 288.3    | 929.75 µg/L | 929.75 ppb | 12:56:26 |
| 2 | Sb 206.836†        | 300.0    | 293.8    | 465.46 µg/L | 465.46 ppb | 12:56:26 |
| 2 | Se 196.026†        | 219.1    | 213.4    | 498 µg/L    | 498 ppb    | 12:56:26 |
| 2 | SiO2†              | 18930.3  | 18041.4  | 5161.6 µg/L | 5161.6 ppb | 12:56:06 |
| 2 | Si 251.611†        | 35554.1  | 34992.3  | 2423.1 µg/L | 2423.1 ppb | 12:56:06 |
| 2 | Sn 189.927†        | 1047.1   | 1063.1   | 472.57 µg/L | 472.57 ppb | 12:56:26 |
| 2 | Ti 334.940†        | 96209.2  | 95535.1  | 476.20 µg/L | 476.20 ppb | 12:56:06 |
| 2 | Tl 190.801†        | 507.9    | 498.6    | 484.90 µg/L | 484.90 ppb | 12:56:26 |
| 2 | U 367.007†         | 657.3    | 786.0    | 396.60 µg/L | 396.60 ppb | 12:56:06 |
| 2 | V 292.402†         | 30590.4  | 30203.4  | 485.23 µg/L | 485.23 ppb | 12:56:06 |
| 2 | Zn 213.857†        | 14423.7  | 14055.9  | 467.15 µg/L | 467.15 ppb | 12:56:26 |
| 3 | Sc RADIAL          | 4821.8   | 4821.8   | 98.0 %      |            | 12:55:39 |
| 3 | Al 396.153Radial†  | 2798.6   | 2953.2   | 5060.6 µg/L | 5060.6 ppb | 12:55:39 |
| 3 | Ca 317.933Radial†  | 6303.8   | 6373.4   | 5123.2 µg/L | 5123.2 ppb | 12:55:39 |
| 3 | Fe 238.204 Radial† | 2153.1   | 2160.6   | 5092.0 µg/L | 5092.0 ppb | 12:55:39 |
| 3 | K 766.490 Radial†  | 4389.5   | 4556.7   | 4749.0 µg/L | 4749.0 ppb | 12:55:19 |
| 3 | Mg 279.077 IEC†    | 514.0    | 538.0    | 5205.1 µg/L | 5205.1 ppb | 12:55:39 |
| 3 | Na 589.592 Radial† | 25832.6  | 25605.4  | 9674.5 µg/L | 9674.5 ppb | 12:55:19 |
| 3 | Sr 421.552†        | 44547.0  | 45300.6  | 489.16 µg/L | 489.16 ppb | 12:55:19 |
| 3 | Sc                 | 415179.6 | 415179.6 | 103.3 %     |            | 12:56:28 |
| 3 | Y 371.029          | 319969.5 | 319969.5 | 100.04 %    |            | 12:56:28 |
| 3 | Sc 357.253         | 262269.3 | 262269.3 | 102.1 %     |            | 12:56:28 |
| 3 | Ag 328.068†        | 43742.8  | 43334.9  | 476.42 µg/L | 476.42 ppb | 12:56:28 |
| 3 | As 188.979†        | 245.4    | 235.6    | 494.09 µg/L | 494.09 ppb | 12:56:48 |
| 3 | B 249.677†         | 13047.6  | 12270.8  | 488.24 µg/L | 488.24 ppb | 12:56:28 |
| 3 | Ba 233.527†        | 27161.6  | 26657.7  | 486.42 µg/L | 486.42 ppb | 12:56:28 |
| 3 | Be 313.107†        | 778595.8 | 764841.8 | 482.71 µg/L | 482.71 ppb | 12:56:28 |
| 3 | Cd 226.502†        | 43334.2  | 42624.2  | 485.80 µg/L | 485.80 ppb | 12:56:28 |
| 3 | Co 228.616†        | 4743.0   | 4699.3   | 481.87 µg/L | 481.87 ppb | 12:56:48 |
| 3 | Cr 267.716†        | 36040.1  | 35137.8  | 487.59 µg/L | 487.59 ppb | 12:56:28 |
| 3 | Cu 324.752†        | 52172.1  | 48946.8  | 489.15 µg/L | 489.15 ppb | 12:56:28 |
| 3 | Mn 257.610†        | 137834.8 | 135150.1 | 491.60 µg/L | 491.60 ppb | 12:56:28 |
| 3 | Mo 202.031†        | 3867.2   | 3828.2   | 469.30 µg/L | 469.30 ppb | 12:56:48 |
| 3 | Ni 231.604†        | 7154.2   | 7000.2   | 466.59 µg/L | 466.59 ppb | 12:56:48 |
| 3 | P 214.914†         | 1242.4   | 1189.4   | 2343.3 µg/L | 2343.3 ppb | 12:56:48 |
| 3 | Pb 220.353†        | 1330.9   | 1265.1   | 484.88 µg/L | 484.88 ppb | 12:56:48 |
| 3 | S 181.975 Axial†   | 348.0    | 290.8    | 937.68 µg/L | 937.68 ppb | 12:56:48 |
| 3 | Sb 206.836†        | 308.3    | 298.2    | 472.35 µg/L | 472.35 ppb | 12:56:48 |
| 3 | Se 196.026†        | 219.1    | 210.6    | 492 µg/L    | 492 ppb    | 12:56:48 |
| 3 | SiO2†              | 19314.0  | 18181.0  | 5201.5 µg/L | 5201.5 ppb | 12:56:28 |
| 3 | Si 251.611†        | 36198.6  | 35179.7  | 2436.1 µg/L | 2436.1 ppb | 12:56:28 |
| 3 | Sn 189.927†        | 1064.4   | 1067.0   | 474.30 µg/L | 474.30 ppb | 12:56:48 |
| 3 | Ti 334.940†        | 97437.0  | 95536.5  | 476.21 µg/L | 476.21 ppb | 12:56:28 |
| 3 | Tl 190.801†        | 523.2    | 507.3    | 493.25 µg/L | 493.25 ppb | 12:56:48 |
| 3 | U 367.007†         | 758.0    | 876.4    | 445.96 µg/L | 445.96 ppb | 12:56:28 |
| 3 | V 292.402†         | 31324.1  | 30540.1  | 490.62 µg/L | 490.62 ppb | 12:56:28 |
| 3 | Zn 213.857†        | 14473.2  | 13924.3  | 462.77 µg/L | 462.77 ppb | 12:56:48 |

## Mean Data: CCV

| Analyte  | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc   | 410320.3                 | 102.0 %            | 1.06     |                    |          | 1.04% |
| Sc RADIAL  | 4814.5                   | 97.8 %             | 0.39     |                    |          | 0.40% |
| Y 371.029  | 316949.3                 | 99.098 %           | 0.8352   |                    |          | 0.84% |
| Sc 357.253   | 259700.7                 | 101.1 %            | 0.89     |                    |          | 0.88% |
| Ag 328.068†  | 43101.2                  | 473.87 µg/L        | 2.789    | 473.87 ppb         | 2.789    | 0.59% |
| QC value within limits for Ag 328.068 Recovery = 94.77%        |                          |                    |          |                    |          |       |
| Al 396.153Radial†  | 2941.0                   | 5039.8 µg/L        | 20.30    | 5039.8 ppb         | 20.30    | 0.40% |
| QC value within limits for Al 396.153Radial Recovery = 100.80% |                          |                    |          |                    |          |       |
| As 188.979†  | 233.5                    | 489.76 µg/L        | 5.029    | 489.76 ppb         | 5.029    | 1.03% |
| QC value within limits for As 188.979 Recovery = 97.95%        |                          |                    |          |                    |          |       |
| B 249.677†   | 12199.6                  | 485.40 µg/L        | 2.467    | 485.40 ppb         | 2.467    | 0.51% |
| QC value within limits for B 249.677 Recovery = 97.08%         |                          |                    |          |                    |          |       |
| Ba 233.527†  | 26570.5                  | 484.83 µg/L        | 1.961    | 484.83 ppb         | 1.961    | 0.40% |
| QC value within limits for Ba 233.527 Recovery = 96.97%        |                          |                    |          |                    |          |       |
| Be 313.107†  | 761876.2                 | 480.84 µg/L        | 2.108    | 480.84 ppb         | 2.108    | 0.44% |
| QC value within limits for Be 313.107 Recovery = 96.17%        |                          |                    |          |                    |          |       |
| Ca 317.933Radial†  | 6368.2                   | 5119.0 µg/L        | 16.58    | 5119.0 ppb         | 16.58    | 0.32% |

|  |          |             |        |            |        |       |  |
|--|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Ca 317.933 Radial Recovery = 102.38%    |          |             |        |            |        |       |  |
| Cd 226.502†  | 42297.2  | 482.06 µg/L | 3.492  | 482.06 ppb | 3.492  | 0.72% |  |
| QC value within limits for Cd 226.502 Recovery = 96.41%            |          |             |        |            |        |       |  |
| Co 228.616†  | 4724.1   | 484.40 µg/L | 2.407  | 484.40 ppb | 2.407  | 0.50% |  |
| QC value within limits for Co 228.616 Recovery = 96.88%            |          |             |        |            |        |       |  |
| Cr 267.716†  | 34939.2  | 484.83 µg/L | 2.401  | 484.83 ppb | 2.401  | 0.50% |  |
| QC value within limits for Cr 267.716 Recovery = 96.97%            |          |             |        |            |        |       |  |
| Cu 324.752†  | 48799.4  | 487.67 µg/L | 1.298  | 487.67 ppb | 1.298  | 0.27% |  |
| QC value within limits for Cu 324.752 Recovery = 97.53%            |          |             |        |            |        |       |  |
| Fe 238.204 Radial†   | 2168.2   | 5110.1 µg/L | 21.54  | 5110.1 ppb | 21.54  | 0.42% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 102.20%    |          |             |        |            |        |       |  |
| K 766.490 Radial†  | 4652.3   | 4848.6 µg/L | 120.41 | 4848.6 ppb | 120.41 | 2.48% |  |
| QC value within limits for K 766.490 Radial Recovery = 96.97%      |          |             |        |            |        |       |  |
| Mg 279.077 IEC†  | 536.3    | 5188.6 µg/L | 55.13  | 5188.6 ppb | 55.13  | 1.06% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 103.77%       |          |             |        |            |        |       |  |
| Mn 257.610†  | 134795.6 | 490.31 µg/L | 1.317  | 490.31 ppb | 1.317  | 0.27% |  |
| QC value within limits for Mn 257.610 Recovery = 98.06%            |          |             |        |            |        |       |  |
| Mo 202.031†  | 3846.0   | 471.48 µg/L | 2.020  | 471.48 ppb | 2.020  | 0.43% |  |
| QC value within limits for Mo 202.031 Recovery = 94.30%            |          |             |        |            |        |       |  |
| Na 589.592 Radial†   | 25707.6  | 9713.1 µg/L | 64.95  | 9713.1 ppb | 64.95  | 0.67% |  |
| QC value within limits for Na 589.592 Radial Recovery = 97.13%     |          |             |        |            |        |       |  |
| Ni 231.604†  | 7063.5   | 470.81 µg/L | 3.745  | 470.81 ppb | 3.745  | 0.80% |  |
| QC value within limits for Ni 231.604 Recovery = 94.16%            |          |             |        |            |        |       |  |
| P 214.914†   | 1197.7   | 2359.9 µg/L | 14.88  | 2359.9 ppb | 14.88  | 0.63% |  |
| QC value within limits for P 214.914 Recovery = 94.40%             |          |             |        |            |        |       |  |
| Pb 220.353†  | 1273.8   | 488.24 µg/L | 3.276  | 488.24 ppb | 3.276  | 0.67% |  |
| QC value within limits for Pb 220.353 Recovery = 97.65%            |          |             |        |            |        |       |  |
| S 181.975 Axial†   | 289.0    | 931.80 µg/L | 5.168  | 931.80 ppb | 5.168  | 0.55% |  |
| QC value within limits for S 181.975 Axial Recovery = 93.18%       |          |             |        |            |        |       |  |
| Sb 206.836†  | 296.5    | 469.66 µg/L | 3.688  | 469.66 ppb | 3.688  | 0.79% |  |
| QC value within limits for Sb 206.836 Recovery = 93.93%            |          |             |        |            |        |       |  |
| Se 196.026†  | 210.5    | 491 µg/L    | 6.8    | 491 ppb    | 6.8    | 1.38% |  |
| QC value within limits for Se 196.026 Recovery = 98.25%            |          |             |        |            |        |       |  |
| SiO2†  | 18156.3  | 5194.4 µg/L | 29.96  | 5194.4 ppb | 29.96  | 0.58% |  |
| QC value within limits for SiO2 Recovery = 97.14%                  |          |             |        |            |        |       |  |
| Si 251.611†  | 35125.4  | 2432.3 µg/L | 8.02   | 2432.3 ppb | 8.02   | 0.33% |  |
| QC value within limits for Si 251.611 Recovery = 97.29%            |          |             |        |            |        |       |  |
| Sn 189.927†  | 1067.9   | 474.72 µg/L | 2.392  | 474.72 ppb | 2.392  | 0.50% |  |
| QC value within limits for Sn 189.927 Recovery = 94.94%            |          |             |        |            |        |       |  |
| Sr 421.552†  | 45319.6  | 489.37 µg/L | 1.063  | 489.37 ppb | 1.063  | 0.22% |  |
| QC value within limits for Sr 421.552 Recovery = 97.87%            |          |             |        |            |        |       |  |
| Ti 334.940†  | 95415.8  | 475.61 µg/L | 1.036  | 475.61 ppb | 1.036  | 0.22% |  |
| QC value within limits for Ti 334.940 Recovery = 95.12%            |          |             |        |            |        |       |  |
| Tl 190.801†  | 505.6    | 491.60 µg/L | 6.047  | 491.60 ppb | 6.047  | 1.23% |  |
| QC value within limits for Tl 190.801 Recovery = 98.32%            |          |             |        |            |        |       |  |
| U 367.007†   | 847.7    | 430.25 µg/L | 29.168 | 430.25 ppb | 29.168 | 6.78% |  |
| QC value less than the lower limit for U 367.007 Recovery = 86.05% |          |             |        |            |        |       |  |
| V 292.402†   | 30342.8  | 487.47 µg/L | 2.808  | 487.47 ppb | 2.808  | 0.58% |  |
| QC value within limits for V 292.402 Recovery = 97.49%             |          |             |        |            |        |       |  |
| Zn 213.857†  | 14023.4  | 466.07 µg/L | 2.912  | 466.07 ppb | 2.912  | 0.62% |  |
| QC value within limits for Zn 213.857 Recovery = 93.21%            |          |             |        |            |        |       |  |
| QC Failed. Continue with analysis.                                 |          |             |        |            |        |       |  |

Sequence No.: 14

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 11/2/2016 12:56:57

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4944.0        | 4944.0              | 100 %              |                    | 12:57:26      |
| 1     | Al 396.153Radial†  | -77.9         | 19.8                | 33.965 µg/L        | 33.965 ppb         | 12:57:26      |
| 1     | Ca 317.933Radial†  | 65.7          | 6.0                 | 4.8408 µg/L        | 4.8408 ppb         | 12:57:46      |
| 1     | Fe 238.204 Radial† | 37.0          | 0.3                 | 0.6689 µg/L        | 0.6689 ppb         | 12:57:46      |
| 1     | K 766.490 Radial†  | 29.1          | 106.5               | 111.03 µg/L        | 111.03 ppb         | 12:57:26      |
| 1     | Mg 279.077 IEC†    | -10.9         | 2.7                 | 26.129 µg/L        | 26.129 ppb         | 12:57:46      |
| 1     | Na 589.592 Radial† | 736.1         | -22.6               | -8.5444 µg/L       | -8.5444 ppb        | 12:57:26      |
| 1     | Sr 421.552†        | 197.2         | 39.2                | 0.4234 µg/L        | 0.4234 ppb         | 12:57:26      |
| 1     | Sc                 | 394854.8      | 394854.8            | 98.20 %            |                    | 12:58:34      |
| 1     | Y 371.029          | 315228.5      | 315228.5            | 98.560 %           |                    | 12:58:34      |
| 1     | Sc 357.253         | 251072.1      | 251072.1            | 97.74 %            |                    | 12:58:34      |
| 1     | Ag 328.068†        | -356.6        | 124.9               | 1.4313 µg/L        | 1.4313 ppb         | 12:58:34      |
| 1     | As 188.979†        | 6.6           | 2.0                 | 4.1464 µg/L        | 4.1464 ppb         | 12:58:54      |
| 1     | B 249.677†         | 553.8         | 57.5                | 2.2931 µg/L        | 2.2931 ppb         | 12:58:34      |
| 1     | Ba 233.527†        | -53.0         | -0.9                | -0.0130 µg/L       | -0.0130 ppb        | 12:58:54      |
| 1     | Be 313.107†        | -2181.3       | -9.4                | -0.0054 µg/L       | -0.0054 ppb        | 12:58:34      |
| 1     | Cd 226.502†        | -121.7        | 54.8                | 0.6250 µg/L        | 0.6250 ppb         | 12:58:54      |
| 1     | Co 228.616†        | -47.1         | 5.4                 | 0.5556 µg/L        | 0.5556 ppb         | 12:58:54      |
| 1     | Cr 267.716†        | 260.2         | 103.5               | 1.4366 µg/L        | 1.4366 ppb         | 12:58:34      |
| 1     | Cu 324.752†        | 2144.0        | 38.9                | 0.3511 µg/L        | 0.3511 ppb         | 12:58:34      |
| 1     | Mn 257.610†        | -121.7        | 19.1                | 0.0687 µg/L        | 0.0687 ppb         | 12:58:54      |
| 1     | Mo 202.031†        | -34.3         | 5.2                 | 0.6380 µg/L        | 0.6380 ppb         | 12:58:54      |
| 1     | Ni 231.604†        | 8.2           | 1.2                 | 0.0785 µg/L        | 0.0785 ppb         | 12:58:54      |
| 1     | P 214.914†         | 18.0          | -9.1                | -17.961 µg/L       | -17.961 ppb        | 12:58:54      |
| 1     | Pb 220.353†        | 32.3          | -5.4                | -2.0221 µg/L       | -2.0221 ppb        | 12:58:54      |
| 1     | S 181.975 Axial†   | 50.8          | 1.9                 | 6.0218 µg/L        | 6.0218 ppb         | 12:58:54      |
| 1     | Sb 206.836†        | 2.4           | -1.3                | -2.1431 µg/L       | -2.1431 ppb        | 12:58:54      |
| 1     | Se 196.026†        | 3.3           | -0.6                | -1.49 µg/L         | -1.49 ppb          | 12:58:54      |
| 1     | SiO2†              | 744.1         | 24.6                | 7.0379 µg/L        | 7.0379 ppb         | 12:58:34      |
| 1     | Si 251.611†        | 299.2         | 30.0                | 2.0787 µg/L        | 2.0787 ppb         | 12:58:54      |
| 1     | Sn 189.927†        | -11.9         | 12.3                | 5.4307 µg/L        | 5.4307 ppb         | 12:58:54      |
| 1     | Ti 334.940†        | -40.1         | 57.8                | 0.2880 µg/L        | 0.2880 ppb         | 12:58:34      |
| 1     | Tl 190.801†        | 5.4           | 0.3                 | 0.3383 µg/L        | 0.3383 ppb         | 12:58:54      |
| 1     | U 367.007†         | -227.5        | -98.8               | -53.649 µg/L       | -53.649 ppb        | 12:58:34      |
| 1     | V 292.402†         | 295.9         | 161.5               | 2.5576 µg/L        | 2.5576 ppb         | 12:58:34      |
| 1     | Zn 213.857†        | 275.8         | 30.2                | 1.0108 µg/L        | 1.0108 ppb         | 12:58:54      |
| 2     | Sc RADIAL          | 4949.9        | 4949.9              | 101 %              |                    | 12:57:48      |
| 2     | Al 396.153Radial†  | -104.2        | -6.2                | -10.696 µg/L       | -10.696 ppb        | 12:57:48      |
| 2     | Ca 317.933Radial†  | 62.7          | 3.0                 | 2.4078 µg/L        | 2.4078 ppb         | 12:58:08      |
| 2     | Fe 238.204 Radial† | 39.9          | 3.1                 | 7.2688 µg/L        | 7.2688 ppb         | 12:58:08      |
| 2     | K 766.490 Radial†  | -8.8          | 68.7                | 71.689 µg/L        | 71.689 ppb         | 12:57:48      |
| 2     | Mg 279.077 IEC†    | -10.6         | 3.0                 | 28.964 µg/L        | 28.964 ppb         | 12:58:08      |
| 2     | Na 589.592 Radial† | 665.2         | -94.0               | -35.526 µg/L       | -35.526 ppb        | 12:57:48      |
| 2     | Sr 421.552†        | 182.8         | 24.7                | 0.2660 µg/L        | 0.2660 ppb         | 12:57:48      |
| 2     | Sc                 | 396214.6      | 396214.6            | 98.54 %            |                    | 12:58:56      |
| 2     | Y 371.029          | 311797.1      | 311797.1            | 97.487 %           |                    | 12:58:56      |
| 2     | Sc 357.253         | 253360.3      | 253360.3            | 98.63 %            |                    | 12:58:56      |
| 2     | Ag 328.068†        | -409.8        | 74.2                | 0.8130 µg/L        | 0.8130 ppb         | 12:58:56      |
| 2     | As 188.979†        | 10.6          | 6.0                 | 12.555 µg/L        | 12.555 ppb         | 12:59:16      |
| 2     | B 249.677†         | 559.1         | 57.8                | 2.3039 µg/L        | 2.3039 ppb         | 12:58:56      |
| 2     | Ba 233.527†        | -58.7         | -6.1                | -0.1103 µg/L       | -0.1103 ppb        | 12:59:16      |
| 2     | Be 313.107†        | -1978.9       | 215.9               | 0.1378 µg/L        | 0.1378 ppb         | 12:58:56      |
| 2     | Cd 226.502†        | -136.8        | 40.5                | 0.4611 µg/L        | 0.4611 ppb         | 12:59:16      |
| 2     | Co 228.616†        | -55.8         | -3.0                | -0.3040 µg/L       | -0.3040 ppb        | 12:59:16      |
| 2     | Cr 267.716†        | 180.6         | 20.4                | 0.2835 µg/L        | 0.2835 ppb         | 12:58:56      |
| 2     | Cu 324.752†        | 2067.8        | -58.2               | -0.5780 µg/L       | -0.5780 ppb        | 12:58:56      |
| 2     | Mn 257.610†        | -115.7        | 26.4                | 0.0951 µg/L        | 0.0951 ppb         | 12:59:16      |
| 2     | Mo 202.031†        | -34.9         | 4.9                 | 0.6014 µg/L        | 0.6014 ppb         | 12:59:16      |
| 2     | Ni 231.604†        | 23.2          | 16.3                | 1.0839 µg/L        | 1.0839 ppb         | 12:59:16      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 15.3     | -12.0    | -23.805 µg/L | -23.805 ppb | 12:59:16 |
| 2 | Pb 220.353†        | 38.0     | -0.0     | -0.0086 µg/L | -0.0086 ppb | 12:59:16 |
| 2 | S 181.975 Axial†   | 52.6     | 3.2      | 10.442 µg/L  | 10.442 ppb  | 12:59:16 |
| 2 | Sb 206.836†        | 11.5     | 7.8      | 12.356 µg/L  | 12.356 ppb  | 12:59:16 |
| 2 | Se 196.026†        | 2.7      | -1.3     | -2.97 µg/L   | -2.97 ppb   | 12:59:16 |
| 2 | SiO2†              | 755.4    | 29.1     | 8.3211 µg/L  | 8.3211 ppb  | 12:58:56 |
| 2 | Si 251.611†        | 282.4    | 10.2     | 0.7097 µg/L  | 0.7097 ppb  | 12:59:16 |
| 2 | Sn 189.927†        | -21.1    | 3.0      | 1.3472 µg/L  | 1.3472 ppb  | 12:59:16 |
| 2 | Ti 334.940†        | 102.1    | 202.5    | 1.0093 µg/L  | 1.0093 ppb  | 12:58:56 |
| 2 | Tl 190.801†        | 7.1      | 2.0      | 1.9044 µg/L  | 1.9044 ppb  | 12:59:16 |
| 2 | U 367.007†         | -126.0   | 6.3      | 3.3571 µg/L  | 3.3571 ppb  | 12:58:56 |
| 2 | V 292.402†         | 231.1    | 93.0     | 1.4891 µg/L  | 1.4891 ppb  | 12:58:56 |
| 2 | Zn 213.857†        | 264.1    | 15.8     | 0.5207 µg/L  | 0.5207 ppb  | 12:59:16 |
| 3 | Sc RADIAL          | 4867.6   | 4867.6   | 98.9 %       |             | 12:58:10 |
| 3 | Al 396.153Radial†  | -75.7    | 20.8     | 35.681 µg/L  | 35.681 ppb  | 12:58:10 |
| 3 | Ca 317.933Radial†  | 59.2     | 0.6      | 0.4487 µg/L  | 0.4487 ppb  | 12:58:30 |
| 3 | Fe 238.204 Radial† | 39.8     | 3.6      | 8.5755 µg/L  | 8.5755 ppb  | 12:58:30 |
| 3 | K 766.490 Radial†  | -208.4   | -133.2   | -138.88 µg/L | -138.88 ppb | 12:58:10 |
| 3 | Mg 279.077 IEC†    | -16.6    | -3.2     | -31.240 µg/L | -31.240 ppb | 12:58:30 |
| 3 | Na 589.592 Radial† | 773.0    | 26.2     | 9.8952 µg/L  | 9.8952 ppb  | 12:58:10 |
| 3 | Sr 421.552†        | 166.7    | 11.5     | 0.1235 µg/L  | 0.1235 ppb  | 12:58:10 |
| 3 | Sc                 | 400914.7 | 400914.7 | 99.71 %      |             | 12:59:18 |
| 3 | Y 371.029          | 309858.6 | 309858.6 | 96.881 %     |             | 12:59:18 |
| 3 | Sc 357.253         | 255245.3 | 255245.3 | 99.36 %      |             | 12:59:18 |
| 3 | Ag 328.068†        | -374.6   | 112.7    | 1.2821 µg/L  | 1.2821 ppb  | 12:59:18 |
| 3 | As 188.979†        | 9.3      | 4.7      | 9.7428 µg/L  | 9.7428 ppb  | 12:59:38 |
| 3 | B 249.677†         | 602.5    | 97.3     | 3.8770 µg/L  | 3.8770 ppb  | 12:59:18 |
| 3 | Ba 233.527†        | -57.8    | -4.8     | -0.0872 µg/L | -0.0872 ppb | 12:59:38 |
| 3 | Be 313.107†        | -2260.7  | -52.8    | -0.0322 µg/L | -0.0322 ppb | 12:59:18 |
| 3 | Cd 226.502†        | -133.8   | 44.6     | 0.5081 µg/L  | 0.5081 ppb  | 12:59:38 |
| 3 | Co 228.616†        | -63.1    | -9.9     | -1.0129 µg/L | -1.0129 ppb | 12:59:38 |
| 3 | Cr 267.716†        | 93.2     | -69.0    | -0.9566 µg/L | -0.9566 ppb | 12:59:18 |
| 3 | Cu 324.752†        | 2065.5   | -76.0    | -0.7856 µg/L | -0.7856 ppb | 12:59:18 |
| 3 | Mn 257.610†        | -133.8   | 9.1      | 0.0341 µg/L  | 0.0341 ppb  | 12:59:38 |
| 3 | Mo 202.031†        | -42.2    | -2.2     | -0.2669 µg/L | -0.2669 ppb | 12:59:38 |
| 3 | Ni 231.604†        | 19.3     | 12.2     | 0.8129 µg/L  | 0.8129 ppb  | 12:59:38 |
| 3 | P 214.914†         | 20.9     | -6.5     | -12.857 µg/L | -12.857 ppb | 12:59:38 |
| 3 | Pb 220.353†        | 34.5     | -3.8     | -1.4106 µg/L | -1.4106 ppb | 12:59:38 |
| 3 | S 181.975 Axial†   | 46.3     | -3.5     | -11.358 µg/L | -11.358 ppb | 12:59:38 |
| 3 | Sb 206.836†        | 16.6     | 12.9     | 20.474 µg/L  | 20.474 ppb  | 12:59:38 |
| 3 | Se 196.026†        | 8.5      | 4.6      | 10.6 µg/L    | 10.6 ppb    | 12:59:38 |
| 3 | SiO2†              | 732.8    | 0.7      | 0.2024 µg/L  | 0.2024 ppb  | 12:59:18 |
| 3 | Si 251.611†        | 310.1    | 35.9     | 2.4874 µg/L  | 2.4874 ppb  | 12:59:38 |
| 3 | Sn 189.927†        | -18.7    | 5.6      | 2.4919 µg/L  | 2.4919 ppb  | 12:59:38 |
| 3 | Ti 334.940†        | 29.6     | 128.7    | 0.6418 µg/L  | 0.6418 ppb  | 12:59:18 |
| 3 | Tl 190.801†        | 10.3     | 5.1      | 4.9484 µg/L  | 4.9484 ppb  | 12:59:38 |
| 3 | U 367.007†         | -206.4   | -73.8    | -40.094 µg/L | -40.094 ppb | 12:59:18 |
| 3 | V 292.402†         | 163.0    | 22.8     | 0.3412 µg/L  | 0.3412 ppb  | 12:59:18 |
| 3 | Zn 213.857†        | 272.5    | 22.4     | 0.7465 µg/L  | 0.7465 ppb  | 12:59:38 |

## Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc  | 397328.0                 | 98.82 %            | 0.791    |                    |          | 0.80%   |
| Sc RADIAL   | 4920.5                   | 100 %              | 0.9      |                    |          | 0.93%   |
| Y 371.029   | 312294.7                 | 97.643 %           | 0.8502   |                    |          | 0.87%   |
| Sc 357.253  | 253225.9                 | 98.57 %            | 0.814    |                    |          | 0.83%   |
| Ag 328.068†   | 103.9                    | 1.1755 µg/L        | 0.32265  | 1.1755 ppb         | 0.32265  | 27.45%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 11.5                     | 19.650 µg/L        | 26.2943  | 19.650 ppb         | 26.2943  | 133.81% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | 4.2                      | 8.8148 µg/L        | 4.28042  | 8.8148 ppb         | 4.28042  | 48.56%  |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 70.9                     | 2.8247 µg/L        | 0.91137  | 2.8247 ppb         | 0.91137  | 32.26%  |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | -3.9                     | -0.0702 µg/L       | 0.05079  | -0.0702 ppb        | 0.05079  | 72.40%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 51.2                     | 0.0334 µg/L        | 0.09140  | 0.0334 ppb         | 0.09140  | 273.71% |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 3.2                      | 2.5658 µg/L        | 2.20031  | 2.5658 ppb         | 2.20031  | 85.76%  |

|  |       |              |          |             |          |         |  |
|--|-------|--------------|----------|-------------|----------|---------|--|
| QC value within limits for Ca 317.933 Radial Recovery = Not calculated         |       |              |          |             |          |         |  |
| Cd 226.502†  | 46.6  | 0.5314 µg/L  | 0.08441  | 0.5314 ppb  | 0.08441  | 15.88%  |  |
| QC value within limits for Cd 226.502 Recovery = Not calculated                |       |              |          |             |          |         |  |
| Co 228.616†  | -2.5  | -0.2538 µg/L | 0.78542  | -0.2538 ppb | 0.78542  | 309.51% |  |
| QC value within limits for Co 228.616 Recovery = Not calculated                |       |              |          |             |          |         |  |
| Cr 267.716†  | 18.3  | 0.2545 µg/L  | 1.19684  | 0.2545 ppb  | 1.19684  | 470.29% |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated                |       |              |          |             |          |         |  |
| Cu 324.752†  | -31.7 | -0.3375 µg/L | 0.60529  | -0.3375 ppb | 0.60529  | 179.36% |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated                |       |              |          |             |          |         |  |
| Fe 238.204 Radial†   | 2.3   | 5.5044 µg/L  | 4.23833  | 5.5044 ppb  | 4.23833  | 77.00%  |  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated         |       |              |          |             |          |         |  |
| K 766.490 Radial†  | 14.0  | 14.613 µg/L  | 134.3763 | 14.613 ppb  | 134.3763 | 919.59% |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated          |       |              |          |             |          |         |  |
| Mg 279.077 IEC†  | 0.8   | 7.9509 µg/L  | 33.97017 | 7.9509 ppb  | 33.97017 | 427.25% |  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated            |       |              |          |             |          |         |  |
| Mn 257.610†  | 18.2  | 0.0660 µg/L  | 0.03056  | 0.0660 ppb  | 0.03056  | 46.31%  |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated                |       |              |          |             |          |         |  |
| Mo 202.031†  | 2.6   | 0.3242 µg/L  | 0.51218  | 0.3242 ppb  | 0.51218  | 158.00% |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated                |       |              |          |             |          |         |  |
| Na 589.592 Radial†   | -30.2 | -11.392 µg/L | 22.8440  | -11.392 ppb | 22.8440  | 200.53% |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated         |       |              |          |             |          |         |  |
| Ni 231.604†  | 9.9   | 0.6584 µg/L  | 0.52022  | 0.6584 ppb  | 0.52022  | 79.01%  |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated                |       |              |          |             |          |         |  |
| P 214.914†   | -9.2  | -18.208 µg/L | 5.4783   | -18.208 ppb | 5.4783   | 30.09%  |  |
| QC value within limits for P 214.914 Recovery = Not calculated                 |       |              |          |             |          |         |  |
| Pb 220.353†  | -3.1  | -1.1471 µg/L | 1.03226  | -1.1471 ppb | 1.03226  | 89.99%  |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated                |       |              |          |             |          |         |  |
| S 181.975 Axial†   | 0.5   | 1.7018 µg/L  | 11.52424 | 1.7018 ppb  | 11.52424 | 677.17% |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated           |       |              |          |             |          |         |  |
| Sb 206.836†  | 6.5   | 10.229 µg/L  | 11.4576  | 10.229 ppb  | 11.4576  | 112.01% |  |
| QC value greater than the upper limit for Sb 206.836 Recovery = Not calculated |       |              |          |             |          |         |  |
| Se 196.026†  | 0.9   | 2.06 µg/L    | 7.464    | 2.06 ppb    | 7.464    | 363.11% |  |
| QC value within limits for Se 196.026 Recovery = Not calculated                |       |              |          |             |          |         |  |
| SiO2†  | 18.1  | 5.1871 µg/L  | 4.36435  | 5.1871 ppb  | 4.36435  | 84.14%  |  |
| QC value within limits for SiO2 Recovery = Not calculated                      |       |              |          |             |          |         |  |
| Si 251.611†  | 25.4  | 1.7586 µg/L  | 0.93107  | 1.7586 ppb  | 0.93107  | 52.94%  |  |
| QC value within limits for Si 251.611 Recovery = Not calculated                |       |              |          |             |          |         |  |
| Sn 189.927†  | 7.0   | 3.0900 µg/L  | 2.10641  | 3.0900 ppb  | 2.10641  | 68.17%  |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated                |       |              |          |             |          |         |  |
| Sr 421.552†  | 25.1  | 0.2710 µg/L  | 0.15000  | 0.2710 ppb  | 0.15000  | 55.36%  |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated                |       |              |          |             |          |         |  |
| Ti 334.940†  | 129.7 | 0.6464 µg/L  | 0.36068  | 0.6464 ppb  | 0.36068  | 55.80%  |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated                |       |              |          |             |          |         |  |
| Tl 190.801†  | 2.5   | 2.3971 µg/L  | 2.34416  | 2.3971 ppb  | 2.34416  | 97.79%  |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated                |       |              |          |             |          |         |  |
| U 367.007†   | -55.4 | -30.129 µg/L | 29.7810  | -30.129 ppb | 29.7810  | 98.85%  |  |
| QC value within limits for U 367.007 Recovery = Not calculated                 |       |              |          |             |          |         |  |
| V 292.402†   | 92.4  | 1.4626 µg/L  | 1.10842  | 1.4626 ppb  | 1.10842  | 75.78%  |  |
| QC value within limits for V 292.402 Recovery = Not calculated                 |       |              |          |             |          |         |  |
| Zn 213.857†  | 22.8  | 0.7594 µg/L  | 0.24530  | 0.7594 ppb  | 0.24530  | 32.30%  |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated                |       |              |          |             |          |         |  |
| QC Failed. Continue with analysis.   |       |              |          |             |          |         |  |



Sequence No.: 41

Sample ID: ICSA

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 103

Date Collected: 11/2/2016 15:03:26

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: ICSA

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4621.4        | 4621.4              | 93.9 %             |                    | 15:03:59      |
| 1     | Al 396.153Radial†  | 261663.2      | 278684.1            | 477560 µg/L        | 477560 ppb         | 15:03:57      |
| 1     | Ca 317.933Radial†  | 556836.4      | 592791.5            | 476510 µg/L        | 476510 ppb         | 15:03:57      |
| 1     | Fe 238.204 Radial† | 76171.7       | 81061.7             | 191050 µg/L        | 191050 ppb         | 15:03:57      |
| 1     | K 766.490 Radial†  | -65.0         | 8.2                 | -111.65 µg/L       | -111.65 ppb        | 15:03:59      |
| 1     | Mg 279.077 IEC†    | 43448.9       | 46272.6             | 447650 µg/L        | 447650 ppb         | 15:03:59      |
| 1     | Na 589.592 Radial† | 816.1         | 113.6               | 42.929 µg/L        | 42.929 ppb         | 15:03:59      |
| 1     | Sr 421.552†        | 1545.7        | 1488.6              | 0.5409 µg/L        | 0.5409 ppb         | 15:03:59      |
| 1     | Sc                 | 372979.2      | 372979.2            | 92.76 %            |                    | 15:04:10      |
| 1     | Y 371.029          | 289992.5      | 289992.5            | 90.670 %           |                    | 15:04:10      |
| 1     | Sc 357.253         | 239027.4      | 239027.4            | 93.05 %            |                    | 15:04:10      |
| 1     | Ag 328.068†        | -734.2        | -299.3              | 3.8924 µg/L        | 3.8924 ppb         | 15:04:10      |
| 1     | As 188.979†        | 9.7           | 5.7                 | 7.1326 µg/L        | 7.1326 ppb         | 15:04:30      |
| 1     | B 249.677†         | 1557.8        | 1165.1              | 3.5186 µg/L        | 3.5186 ppb         | 15:04:10      |
| 1     | Ba 233.527†        | 256.3         | 328.9               | 3.4753 µg/L        | 3.4753 ppb         | 15:04:30      |
| 1     | Be 313.107†        | -2169.2       | -108.9              | -0.0884 µg/L       | -0.0884 ppb        | 15:04:10      |
| 1     | Cd 226.502†        | 801.3         | 1040.4              | -0.1245 µg/L       | -0.1245 ppb        | 15:04:30      |
| 1     | Co 228.616†        | 91.6          | 152.1               | -1.8686 µg/L       | -1.8686 ppb        | 15:04:30      |
| 1     | Cr 267.716†        | 370.9         | 235.9               | 1.5460 µg/L        | 1.5460 ppb         | 15:04:30      |
| 1     | Cu 324.752†        | -480.4        | -2671.0             | -14.785 µg/L       | -14.785 ppb        | 15:04:30      |
| 1     | Mn 257.610†        | 2784.1        | 3135.8              | 0.0831 µg/L        | 0.0831 ppb         | 15:04:10      |
| 1     | Mo 202.031†        | -135.3        | -105.1              | 1.9362 µg/L        | 1.9362 ppb         | 15:04:30      |
| 1     | Ni 231.604†        | 130.7         | 133.3               | 3.3499 µg/L        | 3.3499 ppb         | 15:04:30      |
| 1     | P 214.914†         | 70.9          | 48.7                | -8.1075 µg/L       | -8.1075 ppb        | 15:04:30      |
| 1     | Pb 220.353†        | 15.6          | -21.7               | 18.816 µg/L        | 18.816 ppb         | 15:04:30      |
| 1     | S 181.975 Axial†   | 24.1          | -24.2               | -10.925 µg/L       | -10.925 ppb        | 15:04:30      |
| 1     | Sb 206.836†        | 1.5           | -2.2                | -4.7853 µg/L       | -4.7853 ppb        | 15:04:30      |
| 1     | Se 196.026†        | 4.6           | 1.0                 | -6.82 µg/L         | -6.82 ppb          | 15:04:30      |
| 1     | SiO2†              | 894.1         | 224.2               | 64.112 µg/L        | 64.112 ppb         | 15:04:30      |
| 1     | Si 251.611†        | 679.2         | 453.8               | 31.428 µg/L        | 31.428 ppb         | 15:04:30      |
| 1     | Sn 189.927†        | -25.3         | -2.8                | 2.9576 µg/L        | 2.9576 ppb         | 15:04:30      |
| 1     | Ti 334.940†        | -2217.5       | -2284.3             | -2.3337 µg/L       | -2.3337 ppb        | 15:04:30      |
| 1     | Tl 190.801†        | 22.0          | 18.4                | -1.1644 µg/L       | -1.1644 ppb        | 15:04:30      |
| 1     | U 367.007†         | 1911.2        | 2188.0              | 66.371 µg/L        | 66.371 ppb         | 15:04:10      |
| 1     | V 292.402†         | 1046.7        | 983.7               | 1.9184 µg/L        | 1.9184 ppb         | 15:04:30      |
| 1     | Zn 213.857†        | 1277.3        | 1120.8              | -20.416 µg/L       | -20.416 ppb        | 15:04:30      |
| 2     | Sc RADIAL          | 4640.3        | 4640.3              | 94.3 %             |                    | 15:04:03      |
| 2     | Al 396.153Radial†  | 262655.4      | 278606.4            | 477430 µg/L        | 477430 ppb         | 15:04:01      |
| 2     | Ca 317.933Radial†  | 558066.8      | 591691.9            | 475630 µg/L        | 475630 ppb         | 15:04:01      |
| 2     | Fe 238.204 Radial† | 76369.2       | 80942.2             | 190760 µg/L        | 190760 ppb         | 15:04:01      |
| 2     | K 766.490 Radial†  | 28.7          | 107.9               | -7.4951 µg/L       | -7.4951 ppb        | 15:04:03      |
| 2     | Mg 279.077 IEC†    | 44070.2       | 46743.8             | 452210 µg/L        | 452210 ppb         | 15:04:03      |
| 2     | Na 589.592 Radial† | 741.2         | 30.7                | 11.593 µg/L        | 11.593 ppb         | 15:04:03      |
| 2     | Sr 421.552†        | 1563.8        | 1501.2              | 0.7018 µg/L        | 0.7018 ppb         | 15:04:03      |
| 2     | Sc                 | 371559.4      | 371559.4            | 92.41 %            |                    | 15:04:32      |
| 2     | Y 371.029          | 292785.8      | 292785.8            | 91.543 %           |                    | 15:04:32      |
| 2     | Sc 357.253         | 238866.9      | 238866.9            | 92.98 %            |                    | 15:04:32      |
| 2     | Ag 328.068†        | -802.9        | -373.7              | 3.1020 µg/L        | 3.1020 ppb         | 15:04:32      |
| 2     | As 188.979†        | 12.4          | 8.6                 | 13.297 µg/L        | 13.297 ppb         | 15:04:53      |
| 2     | B 249.677†         | 1500.4        | 1104.5              | 1.1663 µg/L        | 1.1663 ppb         | 15:04:32      |
| 2     | Ba 233.527†        | 249.6         | 321.8               | 3.3490 µg/L        | 3.3490 ppb         | 15:04:53      |
| 2     | Be 313.107†        | -2064.3       | 2.4                 | -0.0184 µg/L       | -0.0184 ppb        | 15:04:32      |
| 2     | Cd 226.502†        | 826.6         | 1068.2              | 0.2106 µg/L        | 0.2106 ppb         | 15:04:53      |
| 2     | Co 228.616†        | 88.3          | 148.6               | -2.1978 µg/L       | -2.1978 ppb        | 15:04:53      |
| 2     | Cr 267.716†        | 322.4         | 184.0               | 0.8286 µg/L        | 0.8286 ppb         | 15:04:53      |
| 2     | Cu 324.752†        | -335.0        | -2515.0             | -13.271 µg/L       | -13.271 ppb        | 15:04:53      |
| 2     | Mn 257.610†        | 2871.1        | 3231.4              | 0.2736 µg/L        | 0.2736 ppb         | 15:04:32      |
| 2     | Mo 202.031†        | -123.7        | -92.7               | 3.4228 µg/L        | 3.4228 ppb         | 15:04:53      |
| 2     | Ni 231.604†        | 121.9         | 123.9               | 2.7310 µg/L        | 2.7310 ppb         | 15:04:53      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 73.8     | 51.9     | -1.6909 µg/L | -1.6909 ppb | 15:04:53 |
| 2 | Pb 220.353†        | 22.9     | -13.8    | 21.854 µg/L  | 21.854 ppb  | 15:04:53 |
| 2 | S 181.975 Axial†   | 29.3     | -18.6    | 6.8222 µg/L  | 6.8222 ppb  | 15:04:53 |
| 2 | Sb 206.836†        | -2.9     | -7.0     | -12.345 µg/L | -12.345 ppb | 15:04:53 |
| 2 | Se 196.026†        | 10.5     | 7.4      | 8.00 µg/L    | 8.00 ppb    | 15:04:53 |
| 2 | SiO2†              | 903.7    | 235.1    | 67.219 µg/L  | 67.219 ppb  | 15:04:53 |
| 2 | Si 251.611†        | 683.5    | 458.9    | 31.778 µg/L  | 31.778 ppb  | 15:04:53 |
| 2 | Sn 189.927†        | -36.0    | -14.3    | -2.1723 µg/L | -2.1723 ppb | 15:04:53 |
| 2 | Ti 334.940†        | -2229.2  | -2298.4  | -2.4207 µg/L | -2.4207 ppb | 15:04:53 |
| 2 | Tl 190.801†        | 16.3     | 12.4     | -6.9591 µg/L | -6.9591 ppb | 15:04:53 |
| 2 | U 367.007†         | 1842.8   | 2115.8   | 28.844 µg/L  | 28.844 ppb  | 15:04:32 |
| 2 | V 292.402†         | 996.5    | 930.4    | 1.0786 µg/L  | 1.0786 ppb  | 15:04:53 |
| 2 | Zn 213.857†        | 1298.1   | 1144.1   | -19.905 µg/L | -19.905 ppb | 15:04:53 |
| 3 | Sc RADIAL          | 4592.6   | 4592.6   | 93.3 %       |             | 15:04:07 |
| 3 | Al 396.153Radial†  | 257858.9 | 276357.3 | 473570 µg/L  | 473570 ppb  | 15:04:05 |
| 3 | Ca 317.933Radial†  | 548097.5 | 587150.9 | 471980 µg/L  | 471980 ppb  | 15:04:05 |
| 3 | Fe 238.204 Radial† | 74927.6  | 80238.0  | 189100 µg/L  | 189100 ppb  | 15:04:05 |
| 3 | K 766.490 Radial†  | -168.9   | -103.5   | -226.98 µg/L | -226.98 ppb | 15:04:07 |
| 3 | Mg 279.077 IEC†    | 43400.4  | 46511.0  | 449960 µg/L  | 449960 ppb  | 15:04:07 |
| 3 | Na 589.592 Radial† | 837.0    | 141.5    | 53.467 µg/L  | 53.467 ppb  | 15:04:07 |
| 3 | Sr 421.552†        | 1567.6   | 1522.4   | 1.0613 µg/L  | 1.0613 ppb  | 15:04:07 |
| 3 | Sc                 | 367090.0 | 367090.0 | 91.30 %      |             | 15:04:55 |
| 3 | Y 371.029          | 289149.3 | 289149.3 | 90.406 %     |             | 15:04:55 |
| 3 | Sc 357.253         | 235694.0 | 235694.0 | 91.75 %      |             | 15:04:55 |
| 3 | Ag 328.068†        | -696.0   | -268.9   | 4.1609 µg/L  | 4.1609 ppb  | 15:04:55 |
| 3 | As 188.979†        | 10.1     | 6.3      | 8.5060 µg/L  | 8.5060 ppb  | 15:05:15 |
| 3 | B 249.677†         | 1668.8   | 1309.7   | 9.7240 µg/L  | 9.7240 ppb  | 15:04:55 |
| 3 | Ba 233.527†        | 229.0    | 303.0    | 3.0291 µg/L  | 3.0291 ppb  | 15:05:15 |
| 3 | Be 313.107†        | -2171.7  | -144.6   | -0.1112 µg/L | -0.1112 ppb | 15:04:55 |
| 3 | Cd 226.502†        | 808.9    | 1060.9   | 0.2302 µg/L  | 0.2302 ppb  | 15:05:15 |
| 3 | Co 228.616†        | 99.9     | 162.4    | -0.6304 µg/L | -0.6304 ppb | 15:05:15 |
| 3 | Cr 267.716†        | 328.1    | 194.8    | 0.9948 µg/L  | 0.9948 ppb  | 15:05:15 |
| 3 | Cu 324.752†        | -498.3   | -2697.8  | -15.176 µg/L | -15.176 ppb | 15:05:15 |
| 3 | Mn 257.610†        | 2790.4   | 3185.0   | 0.1486 µg/L  | 0.1486 ppb  | 15:04:55 |
| 3 | Mo 202.031†        | -123.1   | -93.9    | 3.1529 µg/L  | 3.1529 ppb  | 15:05:15 |
| 3 | Ni 231.604†        | 130.8    | 135.3    | 3.5429 µg/L  | 3.5429 ppb  | 15:05:15 |
| 3 | P 214.914†         | 83.3     | 63.3     | 21.847 µg/L  | 21.847 ppb  | 15:05:15 |
| 3 | Pb 220.353†        | 12.0     | -25.4    | 17.187 µg/L  | 17.187 ppb  | 15:05:15 |
| 3 | S 181.975 Axial†   | 30.3     | -17.0    | 11.319 µg/L  | 11.319 ppb  | 15:05:15 |
| 3 | Sb 206.836†        | 9.8      | 6.9      | 9.6826 µg/L  | 9.6826 ppb  | 15:05:15 |
| 3 | Se 196.026†        | 2.5      | -1.2     | -12.0 µg/L   | -12.0 ppb   | 15:05:15 |
| 3 | SiO2†              | 875.5    | 217.4    | 62.171 µg/L  | 62.171 ppb  | 15:05:15 |
| 3 | Si 251.611†        | 683.3    | 468.6    | 32.450 µg/L  | 32.450 ppb  | 15:05:15 |
| 3 | Sn 189.927†        | -20.5    | 2.0      | 5.0403 µg/L  | 5.0403 ppb  | 15:05:15 |
| 3 | Ti 334.940†        | -2218.7  | -2319.3  | -2.5943 µg/L | -2.5943 ppb | 15:05:15 |
| 3 | Tl 190.801†        | 15.6     | 11.7     | -7.3847 µg/L | -7.3847 ppb | 15:05:15 |
| 3 | U 367.007†         | 1856.2   | 2157.1   | 60.997 µg/L  | 60.997 ppb  | 15:04:55 |
| 3 | V 292.402†         | 1022.3   | 972.9    | 1.8909 µg/L  | 1.8909 ppb  | 15:05:15 |
| 3 | Zn 213.857†        | 1286.7   | 1150.5   | -19.301 µg/L | -19.301 ppb | 15:05:15 |

## Mean Data: ICSA

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc  | 370542.9                 | 92.16 %            | 0.764    |                    |          | 0.83%  |
| Sc RADIAL   | 4618.1                   | 93.9 %             | 0.49     |                    |          | 0.52%  |
| Y 371.029   | 290642.5                 | 90.873 %           | 0.5951   |                    |          | 0.65%  |
| Sc 357.253  | 237862.8                 | 92.59 %            | 0.732    |                    |          | 0.79%  |
| Ag 328.068†   | -314.0                   | 3.7184 µg/L        | 0.55044  | 3.7184 ppb         | 0.55044  | 14.80% |
| QC value within limits for Ag 328.068 Recovery = Not calculated |                          |                    |          |                    |          |        |
| Al 396.153Radial†   | 277882.6                 | 476190 µg/L        | 2264.6   | 476190 ppb         | 2264.6   | 0.48%  |
| QC value within limits for Al 396.153Radial Recovery = 95.24%   |                          |                    |          |                    |          |        |
| As 188.979†   | 6.9                      | 9.6452 µg/L        | 3.23618  | 9.6452 ppb         | 3.23618  | 33.55% |
| QC value within limits for As 188.979 Recovery = Not calculated |                          |                    |          |                    |          |        |
| B 249.677†  | 1193.1                   | 4.8030 µg/L        | 4.42105  | 4.8030 ppb         | 4.42105  | 92.05% |
| QC value within limits for B 249.677 Recovery = Not calculated  |                          |                    |          |                    |          |        |
| Ba 233.527†   | 317.9                    | 3.2845 µg/L        | 0.22999  | 3.2845 ppb         | 0.22999  | 7.00%  |
| QC value within limits for Ba 233.527 Recovery = Not calculated |                          |                    |          |                    |          |        |
| Be 313.107†   | -83.7                    | -0.0726 µg/L       | 0.04835  | -0.0726 ppb        | 0.04835  | 66.55% |
| QC value within limits for Be 313.107 Recovery = Not calculated |                          |                    |          |                    |          |        |
| Ca 317.933Radial†   | 590544.8                 | 474710 µg/L        | 2403.6   | 474710 ppb         | 2403.6   | 0.51%  |

|  |         |              |          |             |          |         |
|--|---------|--------------|----------|-------------|----------|---------|
| QC value within limits for Ca 317.933Radial Recovery = 94.94%          |         |              |          |             |          |         |
| Cd 226.502†  | 1056.5  | 0.1054 µg/L  | 0.19936  | 0.1054 ppb  | 0.19936  | 189.06% |
| QC value within limits for Cd 226.502 Recovery = Not calculated        |         |              |          |             |          |         |
| Co 228.616†  | 154.4   | -1.5656 µg/L | 0.82646  | -1.5656 ppb | 0.82646  | 52.79%  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |         |              |          |             |          |         |
| Cr 267.716†  | 204.9   | 1.1232 µg/L  | 0.37555  | 1.1232 ppb  | 0.37555  | 33.44%  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |         |              |          |             |          |         |
| Cu 324.752†  | -2627.9 | -14.411 µg/L | 1.0062   | -14.411 ppb | 1.0062   | 6.98%   |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |         |              |          |             |          |         |
| Fe 238.204 Radial†   | 80747.3 | 190310 µg/L  | 1049.1   | 190310 ppb  | 1049.1   | 0.55%   |
| QC value within limits for Fe 238.204 Radial Recovery = 95.15%         |         |              |          |             |          |         |
| K 766.490 Radial†  | 4.2     | -115.38 µg/L | 109.790  | -115.38 ppb | 109.790  | 95.16%  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |         |              |          |             |          |         |
| Mg 279.077 IEC†  | 46509.1 | 449940 µg/L  | 2279.4   | 449940 ppb  | 2279.4   | 0.51%   |
| QC value within limits for Mg 279.077 IEC Recovery = 89.99%            |         |              |          |             |          |         |
| Mn 257.610†  | 3184.0  | 0.1684 µg/L  | 0.09675  | 0.1684 ppb  | 0.09675  | 57.44%  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |         |              |          |             |          |         |
| Mo 202.031†  | -97.2   | 2.8373 µg/L  | 0.79194  | 2.8373 ppb  | 0.79194  | 27.91%  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |         |              |          |             |          |         |
| Na 589.592 Radial†   | 95.3    | 35.996 µg/L  | 21.7807  | 35.996 ppb  | 21.7807  | 60.51%  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |         |              |          |             |          |         |
| Ni 231.604†  | 130.8   | 3.2079 µg/L  | 0.42415  | 3.2079 ppb  | 0.42415  | 13.22%  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |         |              |          |             |          |         |
| P 214.914†   | 54.6    | 4.0162 µg/L  | 15.77172 | 4.0162 ppb  | 15.77172 | 392.70% |
| QC value within limits for P 214.914 Recovery = Not calculated         |         |              |          |             |          |         |
| Pb 220.353†  | -20.3   | 19.285 µg/L  | 2.3687   | 19.285 ppb  | 2.3687   | 12.28%  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |         |              |          |             |          |         |
| S 181.975 Axial†   | -19.9   | 2.4052 µg/L  | 11.76157 | 2.4052 ppb  | 11.76157 | 489.00% |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |         |              |          |             |          |         |
| Sb 206.836†  | -0.8    | -2.4825 µg/L | 11.19283 | -2.4825 ppb | 11.19283 | 450.86% |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |         |              |          |             |          |         |
| Se 196.026†  | 2.4     | -3.59 µg/L   | 10.368   | -3.59 ppb   | 10.368   | 288.40% |
| QC value within limits for Se 196.026 Recovery = Not calculated        |         |              |          |             |          |         |
| SiO2†  | 225.6   | 64.501 µg/L  | 2.5466   | 64.501 ppb  | 2.5466   | 3.95%   |
| QC value within limits for SiO2 Recovery = Not calculated              |         |              |          |             |          |         |
| Si 251.611†  | 460.5   | 31.885 µg/L  | 0.5197   | 31.885 ppb  | 0.5197   | 1.63%   |
| QC value within limits for Si 251.611 Recovery = Not calculated        |         |              |          |             |          |         |
| Sn 189.927†  | -5.0    | 1.9419 µg/L  | 3.71207  | 1.9419 ppb  | 3.71207  | 191.16% |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |         |              |          |             |          |         |
| Sr 421.552†  | 1504.1  | 0.7680 µg/L  | 0.26642  | 0.7680 ppb  | 0.26642  | 34.69%  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |         |              |          |             |          |         |
| Ti 334.940†  | -2300.7 | -2.4496 µg/L | 0.13267  | -2.4496 ppb | 0.13267  | 5.42%   |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |         |              |          |             |          |         |
| Tl 190.801†  | 14.2    | -5.1694 µg/L | 3.47495  | -5.1694 ppb | 3.47495  | 67.22%  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |         |              |          |             |          |         |
| U 367.007†   | 2153.6  | 52.071 µg/L  | 20.2933  | 52.071 ppb  | 20.2933  | 38.97%  |
| QC value within limits for U 367.007 Recovery = Not calculated         |         |              |          |             |          |         |
| V 292.402†   | 962.3   | 1.6293 µg/L  | 0.47713  | 1.6293 ppb  | 0.47713  | 29.28%  |
| QC value within limits for V 292.402 Recovery = Not calculated         |         |              |          |             |          |         |
| Zn 213.857†  | 1138.4  | -19.874 µg/L | 0.5582   | -19.874 ppb | 0.5582   | 2.81%   |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |         |              |          |             |          |         |
| All analyte(s) passed QC.  |         |              |          |             |          |         |

Sequence No.: 42

Sample ID: ICSAB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 104

Date Collected: 11/2/2016 15:05:25

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: ICSAB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4600.5        | 4600.5              | 93.5 %             |                    | 15:05:56      |
| 1     | Al 396.153Radial†  | 258079.7      | 276121.2            | 473170 µg/L        | 473170 ppb         | 15:05:54      |
| 1     | Ca 317.933Radial†  | 543294.3      | 581010.0            | 467040 µg/L        | 467040 ppb         | 15:05:54      |
| 1     | Fe 238.204 Radial† | 73441.6       | 78511.4             | 185040 µg/L        | 185040 ppb         | 15:05:54      |
| 1     | K 766.490 Radial†  | 4670.9        | 5073.1              | 5174.3 µg/L        | 5174.3 ppb         | 15:05:56      |
| 1     | Mg 279.077 IEC†    | 43092.6       | 46102.4             | 446010 µg/L        | 446010 ppb         | 15:05:56      |
| 1     | Na 589.592 Radial† | 13664.6       | 13859.5             | 5236.5 µg/L        | 5236.5 ppb         | 15:05:54      |
| 1     | Sr 421.552†        | 43303.2       | 46157.0             | 483.65 µg/L        | 483.65 ppb         | 15:05:54      |
| 1     | Sc                 | 368816.7      | 368816.7            | 91.73 %            |                    | 15:06:08      |
| 1     | Y 371.029          | 289384.3      | 289384.3            | 90.479 %           |                    | 15:06:08      |
| 1     | Sc 357.253         | 237980.7      | 237980.7            | 92.64 %            |                    | 15:06:08      |
| 1     | Ag 328.068†        | 20061.9       | 22145.5             | 250.31 µg/L        | 250.31 ppb         | 15:06:08      |
| 1     | As 188.979†        | 207.9         | 219.7               | 456.33 µg/L        | 456.33 ppb         | 15:06:28      |
| 1     | B 249.677†         | 12239.1       | 12702.3             | 465.00 µg/L        | 465.00 ppb         | 15:06:08      |
| 1     | Ba 233.527†        | 23348.3       | 25256.7             | 458.48 µg/L        | 458.48 ppb         | 15:06:28      |
| 1     | Be 313.107†        | 332392.6      | 361022.8            | 228.27 µg/L        | 228.27 ppb         | 15:06:08      |
| 1     | Cd 226.502†        | 35927.2       | 38960.8             | 432.73 µg/L        | 432.73 ppb         | 15:06:08      |
| 1     | Co 228.616†        | 3947.6        | 4314.8              | 425.97 µg/L        | 425.97 ppb         | 15:06:28      |
| 1     | Cr 267.716†        | 30036.1       | 32259.6             | 446.04 µg/L        | 446.04 ppb         | 15:06:08      |
| 1     | Cu 324.752†        | 46452.9       | 47988.8             | 490.76 µg/L        | 490.76 ppb         | 15:06:08      |
| 1     | Mn 257.610†        | 116491.0      | 125889.6            | 446.60 µg/L        | 446.60 ppb         | 15:06:08      |
| 1     | Mo 202.031†        | 3498.8        | 3817.1              | 481.88 µg/L        | 481.88 ppb         | 15:06:28      |
| 1     | Ni 231.604†        | 5833.5        | 6289.7              | 414.01 µg/L        | 414.01 ppb         | 15:06:28      |
| 1     | P 214.914†         | 1184.3        | 1250.9              | 2366.5 µg/L        | 2366.5 ppb         | 15:06:28      |
| 1     | Pb 220.353†        | 1087.7        | 1135.6              | 461.99 µg/L        | 461.99 ppb         | 15:06:28      |
| 1     | S 181.975 Axial†   | 727.7         | 735.4               | 2428.2 µg/L        | 2428.2 ppb         | 15:06:28      |
| 1     | Sb 206.836†        | 276.2         | 294.3               | 465.51 µg/L        | 465.51 ppb         | 15:06:28      |
| 1     | Se 196.026†        | 880.1         | 946.1               | 2200 µg/L          | 2200 ppb           | 15:06:28      |
| 1     | SiO2†              | 32742.5       | 34607.0             | 9896.2 µg/L        | 9896.2 ppb         | 15:06:08      |
| 1     | Si 251.611†        | 62258.9       | 66929.1             | 4634.7 µg/L        | 4634.7 ppb         | 15:06:08      |
| 1     | Sn 189.927†        | 906.5         | 1002.9              | 449.96 µg/L        | 449.96 ppb         | 15:06:28      |
| 1     | Ti 334.940†        | 86023.5       | 92956.8             | 472.14 µg/L        | 472.14 ppb         | 15:06:08      |
| 1     | Tl 190.801†        | 450.7         | 481.2               | 450.28 µg/L        | 450.28 ppb         | 15:06:28      |
| 1     | U 367.007†         | 2572.0        | 2910.3              | 493.85 µg/L        | 493.85 ppb         | 15:06:08      |
| 1     | V 292.402†         | 28148.5       | 30243.5             | 472.90 µg/L        | 472.90 ppb         | 15:06:08      |
| 1     | Zn 213.857†        | 13356.4       | 14165.6             | 415.26 µg/L        | 415.26 ppb         | 15:06:28      |
| 2     | Sc RADIAL          | 4605.4        | 4605.4              | 93.6 %             |                    | 15:06:00      |
| 2     | Al 396.153Radial†  | 257298.2      | 274991.0            | 471230 µg/L        | 471230 ppb         | 15:05:58      |
| 2     | Ca 317.933Radial†  | 546614.9      | 583936.0            | 469400 µg/L        | 469400 ppb         | 15:05:58      |
| 2     | Fe 238.204 Radial† | 72910.7       | 77860.1             | 183500 µg/L        | 183500 ppb         | 15:05:58      |
| 2     | K 766.490 Radial†  | 4523.2        | 4909.9              | 5005.1 µg/L        | 5005.1 ppb         | 15:06:00      |
| 2     | Mg 279.077 IEC†    | 44243.9       | 47283.1             | 457430 µg/L        | 457430 ppb         | 15:06:00      |
| 2     | Na 589.592 Radial† | 13697.5       | 13879.0             | 5243.9 µg/L        | 5243.9 ppb         | 15:05:58      |
| 2     | Sr 421.552†        | 43360.5       | 46168.6             | 483.84 µg/L        | 483.84 ppb         | 15:05:58      |
| 2     | Sc                 | 373879.7      | 373879.7            | 92.99 %            |                    | 15:06:30      |
| 2     | Y 371.029          | 293095.7      | 293095.7            | 91.640 %           |                    | 15:06:30      |
| 2     | Sc 357.253         | 240217.4      | 240217.4            | 93.51 %            |                    | 15:06:30      |
| 2     | Ag 328.068†        | 20489.0       | 22400.5             | 253.09 µg/L        | 253.09 ppb         | 15:06:30      |
| 2     | As 188.979†        | 208.7         | 218.5               | 453.75 µg/L        | 453.75 ppb         | 15:06:50      |
| 2     | B 249.677†         | 12271.3       | 12613.8             | 461.82 µg/L        | 461.82 ppb         | 15:06:30      |
| 2     | Ba 233.527†        | 23344.4       | 25017.8             | 454.15 µg/L        | 454.15 ppb         | 15:06:50      |
| 2     | Be 313.107†        | 336813.8      | 362410.0            | 229.14 µg/L        | 229.14 ppb         | 15:06:30      |
| 2     | Cd 226.502†        | 36431.2       | 39138.6             | 434.86 µg/L        | 434.86 ppb         | 15:06:30      |
| 2     | Co 228.616†        | 3941.4        | 4268.5              | 421.37 µg/L        | 421.37 ppb         | 15:06:50      |
| 2     | Cr 267.716†        | 30065.3       | 31989.0             | 442.30 µg/L        | 442.30 ppb         | 15:06:30      |
| 2     | Cu 324.752†        | 46983.8       | 48089.5             | 491.67 µg/L        | 491.67 ppb         | 15:06:30      |
| 2     | Mn 257.610†        | 117985.6      | 126317.1            | 447.75 µg/L        | 447.75 ppb         | 15:06:30      |
| 2     | Mo 202.031†        | 3476.5        | 3758.1              | 474.53 µg/L        | 474.53 ppb         | 15:06:50      |
| 2     | Ni 231.604†        | 5835.5        | 6233.2              | 410.29 µg/L        | 410.29 ppb         | 15:06:50      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 1190.2   | 1245.3   | 2356.2 µg/L | 2356.2 ppb | 15:06:50 |
| 2 | Pb 220.353†        | 1083.3   | 1120.0   | 455.88 µg/L | 455.88 ppb | 15:06:50 |
| 2 | S 181.975 Axial†   | 740.4    | 741.7    | 2448.0 µg/L | 2448.0 ppb | 15:06:50 |
| 2 | Sb 206.836†        | 280.6    | 296.2    | 468.55 µg/L | 468.55 ppb | 15:06:50 |
| 2 | Se 196.026†        | 883.3    | 940.6    | 2190 µg/L   | 2190 ppb   | 15:06:50 |
| 2 | SiO2†              | 33143.3  | 34706.5  | 9924.6 µg/L | 9924.6 ppb | 15:06:30 |
| 2 | Si 251.611†        | 62673.0  | 66746.2  | 4622.0 µg/L | 4622.0 ppb | 15:06:30 |
| 2 | Sn 189.927†        | 912.0    | 999.7    | 448.59 µg/L | 448.59 ppb | 15:06:50 |
| 2 | Ti 334.940†        | 86948.0  | 93080.8  | 472.80 µg/L | 472.80 ppb | 15:06:30 |
| 2 | Tl 190.801†        | 432.8    | 457.6    | 427.64 µg/L | 427.64 ppb | 15:06:50 |
| 2 | U 367.007†         | 2580.0   | 2893.0   | 493.47 µg/L | 493.47 ppb | 15:06:30 |
| 2 | V 292.402†         | 28460.9  | 30294.7  | 473.78 µg/L | 473.78 ppb | 15:06:30 |
| 2 | Zn 213.857†        | 13406.6  | 14085.1  | 412.02 µg/L | 412.02 ppb | 15:06:50 |
| 3 | Sc RADIAL          | 4632.9   | 4632.9   | 94.2 %      |            | 15:06:04 |
| 3 | Al 396.153Radial†  | 261367.2 | 277681.1 | 475840 µg/L | 475840 ppb | 15:06:02 |
| 3 | Ca 317.933Radial†  | 556259.3 | 590713.2 | 474840 µg/L | 474840 ppb | 15:06:02 |
| 3 | Fe 238.204 Radial† | 74717.3  | 79316.6  | 186930 µg/L | 186930 ppb | 15:06:02 |
| 3 | K 766.490 Radial†  | 4580.4   | 4942.1   | 5036.4 µg/L | 5036.4 ppb | 15:06:04 |
| 3 | Mg 279.077 IEC†    | 43380.9  | 46086.1  | 445850 µg/L | 445850 ppb | 15:06:04 |
| 3 | Na 589.592 Radial† | 13822.3  | 13924.6  | 5261.2 µg/L | 5261.2 ppb | 15:06:02 |
| 3 | Sr 421.552†        | 44038.7  | 46614.1  | 488.40 µg/L | 488.40 ppb | 15:06:02 |
| 3 | Sc                 | 370863.4 | 370863.4 | 92.24 %     |            | 15:06:53 |
| 3 | Y 371.029          | 290204.2 | 290204.2 | 90.736 %    |            | 15:06:53 |
| 3 | Sc 357.253         | 238516.0 | 238516.0 | 92.85 %     |            | 15:06:53 |
| 3 | Ag 328.068†        | 20291.2  | 22343.9  | 252.63 µg/L | 252.63 ppb | 15:06:53 |
| 3 | As 188.979†        | 210.1    | 221.5    | 460.04 µg/L | 460.04 ppb | 15:07:13 |
| 3 | B 249.677†         | 12311.5  | 12750.7  | 466.51 µg/L | 466.51 ppb | 15:06:53 |
| 3 | Ba 233.527†        | 23334.2  | 25184.9  | 457.14 µg/L | 457.14 ppb | 15:07:13 |
| 3 | Be 313.107†        | 331174.1 | 358905.1 | 226.93 µg/L | 226.93 ppb | 15:06:53 |
| 3 | Cd 226.502†        | 36167.8  | 39132.8  | 434.57 µg/L | 434.57 ppb | 15:06:53 |
| 3 | Co 228.616†        | 3938.1   | 4295.1   | 423.78 µg/L | 423.78 ppb | 15:07:13 |
| 3 | Cr 267.716†        | 29872.9  | 32011.1  | 442.57 µg/L | 442.57 ppb | 15:06:53 |
| 3 | Cu 324.752†        | 47033.9  | 48501.9  | 495.97 µg/L | 495.97 ppb | 15:06:53 |
| 3 | Mn 257.610†        | 116680.3 | 125811.3 | 446.36 µg/L | 446.36 ppb | 15:06:53 |
| 3 | Mo 202.031†        | 3480.0   | 3788.4   | 478.51 µg/L | 478.51 ppb | 15:07:13 |
| 3 | Ni 231.604†        | 5823.8   | 6265.2   | 412.32 µg/L | 412.32 ppb | 15:07:13 |
| 3 | P 214.914†         | 1184.0   | 1247.6   | 2359.0 µg/L | 2359.0 ppb | 15:07:13 |
| 3 | Pb 220.353†        | 1085.9   | 1131.1   | 460.43 µg/L | 460.43 ppb | 15:07:13 |
| 3 | S 181.975 Axial†   | 741.5    | 748.6    | 2471.2 µg/L | 2471.2 ppb | 15:07:13 |
| 3 | Sb 206.836†        | 282.6    | 300.6    | 475.41 µg/L | 475.41 ppb | 15:07:13 |
| 3 | Se 196.026†        | 875.8    | 939.3    | 2180 µg/L   | 2180 ppb   | 15:07:13 |
| 3 | SiO2†              | 32763.1  | 34550.0  | 9879.8 µg/L | 9879.8 ppb | 15:06:53 |
| 3 | Si 251.611†        | 62185.4  | 66699.1  | 4618.7 µg/L | 4618.7 ppb | 15:06:53 |
| 3 | Sn 189.927†        | 897.1    | 990.6    | 444.57 µg/L | 444.57 ppb | 15:07:13 |
| 3 | Ti 334.940†        | 86121.2  | 92853.5  | 471.77 µg/L | 471.77 ppb | 15:06:53 |
| 3 | Tl 190.801†        | 445.3    | 474.4    | 443.45 µg/L | 443.45 ppb | 15:07:13 |
| 3 | U 367.007†         | 2517.8   | 2845.7   | 447.66 µg/L | 447.66 ppb | 15:06:53 |
| 3 | V 292.402†         | 27973.1  | 29986.5  | 468.62 µg/L | 468.62 ppb | 15:06:53 |
| 3 | Zn 213.857†        | 13387.3  | 14166.5  | 415.03 µg/L | 415.03 ppb | 15:07:13 |

## Mean Data: ICSAB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|---|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc  | 371186.6                 | 92.32 %            | 0.633    |                    |          | 0.69% |
| Sc RADIAL   | 4612.9                   | 93.8 %             | 0.36     |                    |          | 0.38% |
| Y 371.029   | 290894.7                 | 90.952 %           | 0.6096   |                    |          | 0.67% |
| Sc 357.253  | 238904.7                 | 93.00 %            | 0.455    |                    |          | 0.49% |
| Ag 328.068†   | 22296.6                  | 252.01 µg/L        | 1.488    | 252.01 ppb         | 1.488    | 0.59% |
| QC value within limits for Ag 328.068 Recovery = 100.80%      |                          |                    |          |                    |          |       |
| Al 396.153Radial†   | 276264.5                 | 473410 µg/L        | 2314.7   | 473410 ppb         | 2314.7   | 0.49% |
| QC value within limits for Al 396.153Radial Recovery = 94.68% |                          |                    |          |                    |          |       |
| As 188.979†   | 219.9                    | 456.70 µg/L        | 3.163    | 456.70 ppb         | 3.163    | 0.69% |
| QC value within limits for As 188.979 Recovery = 91.34%       |                          |                    |          |                    |          |       |
| B 249.677†  | 12688.9                  | 464.44 µg/L        | 2.394    | 464.44 ppb         | 2.394    | 0.52% |
| QC value within limits for B 249.677 Recovery = 92.89%        |                          |                    |          |                    |          |       |
| Ba 233.527†   | 25153.1                  | 456.59 µg/L        | 2.219    | 456.59 ppb         | 2.219    | 0.49% |
| QC value within limits for Ba 233.527 Recovery = 91.32%       |                          |                    |          |                    |          |       |
| Be 313.107†   | 360779.3                 | 228.11 µg/L        | 1.113    | 228.11 ppb         | 1.113    | 0.49% |
| QC value within limits for Be 313.107 Recovery = 91.25%       |                          |                    |          |                    |          |       |
| Ca 317.933Radial†   | 585219.7                 | 470430 µg/L        | 4001.1   | 470430 ppb         | 4001.1   | 0.85% |

|   |          |             |        |            |        |       |  |
|---|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Ca 317.933 Radial Recovery = 94.09%  |          |             |        |            |        |       |  |
| Cd 226.502†   | 39077.4  | 434.05 µg/L | 1.156  | 434.05 ppb | 1.156  | 0.27% |  |
| QC value within limits for Cd 226.502 Recovery = 86.81%         |          |             |        |            |        |       |  |
| Co 228.616†   | 4292.8   | 423.71 µg/L | 2.305  | 423.71 ppb | 2.305  | 0.54% |  |
| QC value within limits for Co 228.616 Recovery = 84.74%         |          |             |        |            |        |       |  |
| Cr 267.716†   | 32086.6  | 443.64 µg/L | 2.084  | 443.64 ppb | 2.084  | 0.47% |  |
| QC value within limits for Cr 267.716 Recovery = 88.73%         |          |             |        |            |        |       |  |
| Cu 324.752†   | 48193.4  | 492.80 µg/L | 2.781  | 492.80 ppb | 2.781  | 0.56% |  |
| QC value within limits for Cu 324.752 Recovery = 98.56%         |          |             |        |            |        |       |  |
| Fe 238.204 Radial†  | 78562.7  | 185160 µg/L | 1719.4 | 185160 ppb | 1719.4 | 0.93% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 92.58%  |          |             |        |            |        |       |  |
| K 766.490 Radial†   | 4975.0   | 5071.9 µg/L | 90.01  | 5071.9 ppb | 90.01  | 1.77% |  |
| QC value within limits for K 766.490 Radial Recovery = 101.44%  |          |             |        |            |        |       |  |
| Mg 279.077 IEC†   | 46490.5  | 449760 µg/L | 6641.1 | 449760 ppb | 6641.1 | 1.48% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 89.95%     |          |             |        |            |        |       |  |
| Mn 257.610†   | 126006.0 | 446.90 µg/L | 0.742  | 446.90 ppb | 0.742  | 0.17% |  |
| QC value within limits for Mn 257.610 Recovery = 89.38%         |          |             |        |            |        |       |  |
| Mo 202.031†   | 3787.8   | 478.31 µg/L | 3.681  | 478.31 ppb | 3.681  | 0.77% |  |
| QC value within limits for Mo 202.031 Recovery = 95.66%         |          |             |        |            |        |       |  |
| Na 589.592 Radial†  | 13887.7  | 5247.2 µg/L | 12.64  | 5247.2 ppb | 12.64  | 0.24% |  |
| QC value within limits for Na 589.592 Radial Recovery = 104.94% |          |             |        |            |        |       |  |
| Ni 231.604†   | 6262.7   | 412.20 µg/L | 1.863  | 412.20 ppb | 1.863  | 0.45% |  |
| QC value within limits for Ni 231.604 Recovery = 82.44%         |          |             |        |            |        |       |  |
| P 214.914†  | 1247.9   | 2360.6 µg/L | 5.31   | 2360.6 ppb | 5.31   | 0.22% |  |
| QC value within limits for P 214.914 Recovery = 94.42%          |          |             |        |            |        |       |  |
| Pb 220.353†   | 1128.9   | 459.43 µg/L | 3.173  | 459.43 ppb | 3.173  | 0.69% |  |
| QC value within limits for Pb 220.353 Recovery = 91.89%         |          |             |        |            |        |       |  |
| S 181.975 Axial†  | 741.9    | 2449.2 µg/L | 21.49  | 2449.2 ppb | 21.49  | 0.88% |  |
| QC value within limits for S 181.975 Axial Recovery = 97.97%    |          |             |        |            |        |       |  |
| Sb 206.836†   | 297.0    | 469.82 µg/L | 5.075  | 469.82 ppb | 5.075  | 1.08% |  |
| QC value within limits for Sb 206.836 Recovery = 93.96%         |          |             |        |            |        |       |  |
| Se 196.026†   | 942.0    | 2190 µg/L   | 8.4    | 2190 ppb   | 8.4    | 0.38% |  |
| QC value within limits for Se 196.026 Recovery = 87.63%         |          |             |        |            |        |       |  |
| SiO2†   | 34621.2  | 9900.2 µg/L | 22.65  | 9900.2 ppb | 22.65  | 0.23% |  |
| QC value within limits for SiO2 Recovery = 92.57%               |          |             |        |            |        |       |  |
| Si 251.611†   | 66791.5  | 4625.1 µg/L | 8.41   | 4625.1 ppb | 8.41   | 0.18% |  |
| QC value within limits for Si 251.611 Recovery = 92.50%         |          |             |        |            |        |       |  |
| Sn 189.927†   | 997.7    | 447.71 µg/L | 2.798  | 447.71 ppb | 2.798  | 0.62% |  |
| QC value within limits for Sn 189.927 Recovery = 89.54%         |          |             |        |            |        |       |  |
| Sr 421.552†   | 46313.2  | 485.30 µg/L | 2.692  | 485.30 ppb | 2.692  | 0.55% |  |
| QC value within limits for Sr 421.552 Recovery = 97.06%         |          |             |        |            |        |       |  |
| Ti 334.940†   | 92963.7  | 472.24 µg/L | 0.522  | 472.24 ppb | 0.522  | 0.11% |  |
| QC value within limits for Ti 334.940 Recovery = 94.45%         |          |             |        |            |        |       |  |
| Tl 190.801†   | 471.1    | 440.46 µg/L | 11.611 | 440.46 ppb | 11.611 | 2.64% |  |
| QC value within limits for Tl 190.801 Recovery = 88.09%         |          |             |        |            |        |       |  |
| U 367.007†  | 2883.0   | 478.33 µg/L | 26.561 | 478.33 ppb | 26.561 | 5.55% |  |
| QC value within limits for U 367.007 Recovery = 95.67%          |          |             |        |            |        |       |  |
| V 292.402†  | 30174.9  | 471.77 µg/L | 2.764  | 471.77 ppb | 2.764  | 0.59% |  |
| QC value within limits for V 292.402 Recovery = 94.35%          |          |             |        |            |        |       |  |
| Zn 213.857†   | 14139.1  | 414.10 µg/L | 1.809  | 414.10 ppb | 1.809  | 0.44% |  |
| QC value within limits for Zn 213.857 Recovery = 82.82%         |          |             |        |            |        |       |  |
| All analyte(s) passed QC.                                       |          |             |        |            |        |       |  |

Sequence No.: 52

Sample ID: ICSA

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 103

Date Collected: 11/2/2016 15:33:01

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: ICSA

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4549.8        | 4549.8              | 92.5 %             |                    | 15:33:34      |
| 1     | Al 396.153Radial†  | 256878.7      | 277893.9            | 476210 µg/L        | 476210 ppb         | 15:33:32      |
| 1     | Ca 317.933Radial†  | 545776.1      | 590159.7            | 474400 µg/L        | 474400 ppb         | 15:33:32      |
| 1     | Fe 238.204 Radial† | 75447.5       | 81554.7             | 192210 µg/L        | 192210 ppb         | 15:33:32      |
| 1     | K 766.490 Radial†  | -95.0         | -25.3               | -147.32 µg/L       | -147.32 ppb        | 15:33:34      |
| 1     | Mg 279.077 IEC†    | 42747.7       | 46242.2             | 447360 µg/L        | 447360 ppb         | 15:33:34      |
| 1     | Na 589.592 Radial† | 823.9         | 135.8               | 51.296 µg/L        | 51.296 ppb         | 15:33:34      |
| 1     | Sr 421.552†        | 1571.7        | 1542.6              | 1.0795 µg/L        | 1.0795 ppb         | 15:33:34      |
| 1     | Sc                 | 365838.2      | 365838.2            | 90.99 %            |                    | 15:33:46      |
| 1     | Y 371.029          | 288533.3      | 288533.3            | 90.213 %           |                    | 15:33:46      |
| 1     | Sc 357.253         | 234920.1      | 234920.1            | 91.45 %            |                    | 15:33:46      |
| 1     | Ag 328.068†        | -785.2        | -369.0              | 3.1639 µg/L        | 3.1639 ppb         | 15:33:46      |
| 1     | As 188.979†        | 8.0           | 4.0                 | 3.6180 µg/L        | 3.6180 ppb         | 15:34:06      |
| 1     | B 249.677†         | 1737.7        | 1391.1              | 12.271 µg/L        | 12.271 ppb         | 15:33:46      |
| 1     | Ba 233.527†        | 247.5         | 324.0               | 3.3744 µg/L        | 3.3744 ppb         | 15:34:06      |
| 1     | Be 313.107†        | -2150.9       | -129.6              | -0.1014 µg/L       | -0.1014 ppb        | 15:33:46      |
| 1     | Cd 226.502†        | 813.4         | 1068.7              | 0.1256 µg/L        | 0.1256 ppb         | 15:34:06      |
| 1     | Co 228.616†        | 84.3          | 145.8               | -2.6202 µg/L       | -2.6202 ppb        | 15:34:06      |
| 1     | Cr 267.716†        | 343.2         | 212.6               | 1.2143 µg/L        | 1.2143 ppb         | 15:34:06      |
| 1     | Cu 324.752†        | -489.8        | -2690.3             | -14.917 µg/L       | -14.917 ppb        | 15:34:06      |
| 1     | Mn 257.610†        | 2787.4        | 3191.7              | 0.3183 µg/L        | 0.3183 ppb         | 15:33:46      |
| 1     | Mo 202.031†        | -126.5        | -98.0               | 2.8862 µg/L        | 2.8862 ppb         | 15:34:06      |
| 1     | Ni 231.604†        | 121.5         | 125.6               | 2.8028 µg/L        | 2.8028 ppb         | 15:34:06      |
| 1     | P 214.914†         | 84.3          | 64.7                | 22.877 µg/L        | 22.877 ppb         | 15:34:06      |
| 1     | Pb 220.353†        | 11.5          | -26.0               | 17.104 µg/L        | 17.104 ppb         | 15:34:06      |
| 1     | S 181.975 Axial†   | 28.7          | -18.8               | 6.8362 µg/L        | 6.8362 ppb         | 15:34:06      |
| 1     | Sb 206.836†        | 2.3           | -1.4                | -3.4389 µg/L       | -3.4389 ppb        | 15:34:06      |
| 1     | Se 196.026†        | 5.8           | 2.3                 | -3.81 µg/L         | -3.81 ppb          | 15:34:06      |
| 1     | SiO2†              | 870.8         | 215.4               | 61.601 µg/L        | 61.601 ppb         | 15:34:06      |
| 1     | Si 251.611†        | 657.9         | 443.3               | 30.697 µg/L        | 30.697 ppb         | 15:34:06      |
| 1     | Sn 189.927†        | -27.5         | -5.6                | 1.6684 µg/L        | 1.6684 ppb         | 15:34:06      |
| 1     | Ti 334.940†        | -2175.8       | -2280.4             | -2.3543 µg/L       | -2.3543 ppb        | 15:34:06      |
| 1     | Tl 190.801†        | 9.4           | 5.1                 | -14.152 µg/L       | -14.152 ppb        | 15:34:06      |
| 1     | U 367.007†         | 1862.7        | 2170.8              | 50.235 µg/L        | 50.235 ppb         | 15:33:46      |
| 1     | V 292.402†         | 1168.6        | 1136.6              | 4.2730 µg/L        | 4.2730 ppb         | 15:34:06      |
| 1     | Zn 213.857†        | 1244.0        | 1108.4              | -20.977 µg/L       | -20.977 ppb        | 15:34:06      |
| 2     | Sc RADIAL          | 4609.2        | 4609.2              | 93.7 %             |                    | 15:33:38      |
| 2     | Al 396.153Radial†  | 258565.7      | 276117.6            | 473160 µg/L        | 473160 ppb         | 15:33:36      |
| 2     | Ca 317.933Radial†  | 548066.2      | 585004.3            | 470260 µg/L        | 470260 ppb         | 15:33:36      |
| 2     | Fe 238.204 Radial† | 75506.7       | 80567.3             | 189880 µg/L        | 189880 ppb         | 15:33:36      |
| 2     | K 766.490 Radial†  | -238.9        | -177.6              | -304.70 µg/L       | -304.70 ppb        | 15:33:38      |
| 2     | Mg 279.077 IEC†    | 42633.8       | 45525.4             | 440430 µg/L        | 440430 ppb         | 15:33:38      |
| 2     | Na 589.592 Radial† | 674.4         | -35.3               | -13.335 µg/L       | -13.335 ppb        | 15:33:38      |
| 2     | Sr 421.552†        | 1499.1        | 1443.2              | 0.1789 µg/L        | 0.1789 ppb         | 15:33:38      |
| 2     | Sc                 | 365887.9      | 365887.9            | 91.00 %            |                    | 15:34:08      |
| 2     | Y 371.029          | 284991.7      | 284991.7            | 89.106 %           |                    | 15:34:08      |
| 2     | Sc 357.253         | 235092.0      | 235092.0            | 91.52 %            |                    | 15:34:08      |
| 2     | Ag 328.068†        | -744.9        | -324.2              | 3.5817 µg/L        | 3.5817 ppb         | 15:34:08      |
| 2     | As 188.979†        | 9.5           | 5.6                 | 7.0633 µg/L        | 7.0633 ppb         | 15:34:28      |
| 2     | B 249.677†         | 1621.8        | 1263.1              | 7.6888 µg/L        | 7.6888 ppb         | 15:34:08      |
| 2     | Ba 233.527†        | 215.7         | 289.1               | 2.7670 µg/L        | 2.7670 ppb         | 15:34:28      |
| 2     | Be 313.107†        | -2074.3       | -44.2               | -0.0478 µg/L       | -0.0478 ppb        | 15:34:08      |
| 2     | Cd 226.502†        | 802.8         | 1056.5              | 0.1328 µg/L        | 0.1328 ppb         | 15:34:28      |
| 2     | Co 228.616†        | 85.9          | 147.5               | -2.2314 µg/L       | -2.2314 ppb        | 15:34:28      |
| 2     | Cr 267.716†        | 344.1         | 213.2               | 1.2431 µg/L        | 1.2431 ppb         | 15:34:28      |
| 2     | Cu 324.752†        | -356.4        | -2544.2             | -13.607 µg/L       | -13.607 ppb        | 15:34:28      |
| 2     | Mn 257.610†        | 2675.0        | 3066.7              | 0.0508 µg/L        | 0.0508 ppb         | 15:34:08      |
| 2     | Mo 202.031†        | -114.3        | -84.6               | 4.3532 µg/L        | 4.3532 ppb         | 15:34:28      |
| 2     | Ni 231.604†        | 115.5         | 118.9               | 2.4278 µg/L        | 2.4278 ppb         | 15:34:28      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 71.0     | 50.1     | -4.7416 µg/L | -4.7416 ppb | 15:34:28 |
| 2 | Pb 220.353†        | 12.6     | -24.7    | 17.429 µg/L  | 17.429 ppb  | 15:34:28 |
| 2 | S 181.975 Axial†   | 27.1     | -20.5    | 0.5716 µg/L  | 0.5716 ppb  | 15:34:28 |
| 2 | Sb 206.836†        | 2.4      | -1.2     | -3.2208 µg/L | -3.2208 ppb | 15:34:28 |
| 2 | Se 196.026†        | 7.7      | 4.5      | 1.28 µg/L    | 1.28 ppb    | 15:34:28 |
| 2 | SiO2†              | 912.1    | 259.9    | 74.314 µg/L  | 74.314 ppb  | 15:34:28 |
| 2 | Si 251.611†        | 638.9    | 422.0    | 29.220 µg/L  | 29.220 ppb  | 15:34:28 |
| 2 | Sn 189.927†        | -8.9     | 14.7     | 10.655 µg/L  | 10.655 ppb  | 15:34:28 |
| 2 | Ti 334.940†        | -2196.5  | -2301.2  | -2.5370 µg/L | -2.5370 ppb | 15:34:28 |
| 2 | Tl 190.801†        | 7.6      | 3.0      | -15.870 µg/L | -15.870 ppb | 15:34:28 |
| 2 | U 367.007†         | 1830.8   | 2134.5   | 44.170 µg/L  | 44.170 ppb  | 15:34:08 |
| 2 | V 292.402†         | 1074.4   | 1032.8   | 2.7894 µg/L  | 2.7894 ppb  | 15:34:28 |
| 2 | Zn 213.857†        | 1266.4   | 1131.9   | -19.377 µg/L | -19.377 ppb | 15:34:28 |
| 3 | Sc RADIAL          | 4571.8   | 4571.8   | 92.9 %       |             | 15:33:42 |
| 3 | Al 396.153Radial†  | 260360.1 | 280305.9 | 480340 µg/L  | 480340 ppb  | 15:33:40 |
| 3 | Ca 317.933Radial†  | 552700.0 | 594775.5 | 478110 µg/L  | 478110 ppb  | 15:33:40 |
| 3 | Fe 238.204 Radial† | 75994.6  | 81751.5  | 192670 µg/L  | 192670 ppb  | 15:33:40 |
| 3 | K 766.490 Radial†  | 31.9     | 111.9    | -4.5959 µg/L | -4.5959 ppb | 15:33:42 |
| 3 | Mg 279.077 IEC†    | 42930.9  | 46217.2  | 447120 µg/L  | 447120 ppb  | 15:33:42 |
| 3 | Na 589.592 Radial† | 763.4    | 66.4     | 25.081 µg/L  | 25.081 ppb  | 15:33:42 |
| 3 | Sr 421.552†        | 1576.4   | 1539.6   | 0.9839 µg/L  | 0.9839 ppb  | 15:33:42 |
| 3 | Sc                 | 363908.5 | 363908.5 | 90.51 %      |             | 15:34:30 |
| 3 | Y 371.029          | 287575.8 | 287575.8 | 89.914 %     |             | 15:34:30 |
| 3 | Sc 357.253         | 233750.3 | 233750.3 | 90.99 %      |             | 15:34:30 |
| 3 | Ag 328.068†        | -755.2   | -340.2   | 3.5197 µg/L  | 3.5197 ppb  | 15:34:30 |
| 3 | As 188.979†        | 7.3      | 3.3      | 2.0728 µg/L  | 2.0728 ppb  | 15:34:50 |
| 3 | B 249.677†         | 1713.4   | 1373.9   | 11.481 µg/L  | 11.481 ppb  | 15:34:30 |
| 3 | Ba 233.527†        | 240.3    | 317.5    | 3.2474 µg/L  | 3.2474 ppb  | 15:34:50 |
| 3 | Be 313.107†        | -2234.9  | -233.8   | -0.1675 µg/L | -0.1675 ppb | 15:34:30 |
| 3 | Cd 226.502†        | 789.2    | 1046.6   | -0.1557 µg/L | -0.1557 ppb | 15:34:50 |
| 3 | Co 228.616†        | 80.7     | 142.3    | -3.0183 µg/L | -3.0183 ppb | 15:34:50 |
| 3 | Cr 267.716†        | 375.4    | 249.8    | 1.7255 µg/L  | 1.7255 ppb  | 15:34:50 |
| 3 | Cu 324.752†        | -566.3   | -2777.1  | -15.761 µg/L | -15.761 ppb | 15:34:50 |
| 3 | Mn 257.610†        | 2716.0   | 3128.6   | 0.1053 µg/L  | 0.1053 ppb  | 15:34:30 |
| 3 | Mo 202.031†        | -130.3   | -102.9   | 2.3216 µg/L  | 2.3216 ppb  | 15:34:50 |
| 3 | Ni 231.604†        | 111.1    | 114.8    | 2.0739 µg/L  | 2.0739 ppb  | 15:34:50 |
| 3 | P 214.914†         | 81.1     | 61.6     | 16.504 µg/L  | 16.504 ppb  | 15:34:50 |
| 3 | Pb 220.353†        | 2.0      | -36.3    | 13.420 µg/L  | 13.420 ppb  | 15:34:50 |
| 3 | S 181.975 Axial†   | 19.9     | -28.2    | -23.442 µg/L | -23.442 ppb | 15:34:50 |
| 3 | Sb 206.836†        | 3.6      | 0.1      | -1.0755 µg/L | -1.0755 ppb | 15:34:50 |
| 3 | Se 196.026†        | -1.1     | -5.1     | -21.2 µg/L   | -21.2 ppb   | 15:34:50 |
| 3 | SiO2†              | 896.3    | 248.2    | 70.978 µg/L  | 70.978 ppb  | 15:34:50 |
| 3 | Si 251.611†        | 683.7    | 475.2    | 32.908 µg/L  | 32.908 ppb  | 15:34:50 |
| 3 | Sn 189.927†        | -27.3    | -5.6     | 1.7416 µg/L  | 1.7416 ppb  | 15:34:50 |
| 3 | Ti 334.940†        | -2215.4  | -2335.8  | -2.5600 µg/L | -2.5600 ppb | 15:34:50 |
| 3 | Tl 190.801†        | 15.4     | 11.7     | -7.7450 µg/L | -7.7450 ppb | 15:34:50 |
| 3 | U 367.007†         | 1841.7   | 2158.0   | 40.559 µg/L  | 40.559 ppb  | 15:34:30 |
| 3 | V 292.402†         | 1090.1   | 1056.7   | 2.9564 µg/L  | 2.9564 ppb  | 15:34:50 |
| 3 | Zn 213.857†        | 1283.4   | 1158.5   | -19.339 µg/L | -19.339 ppb | 15:34:50 |

## Mean Data: ICSA

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|---|--------------------------|--------------------|----------|--------------------|----------|--------|
| Sc  | 365211.5                 | 90.83 %            | 0.281    |                    |          | 0.31%  |
| Sc RADIAL   | 4576.9                   | 93.0 %             | 0.61     |                    |          | 0.66%  |
| Y 371.029   | 287033.6                 | 89.744 %           | 0.5728   |                    |          | 0.64%  |
| Sc 357.253  | 234587.5                 | 91.32 %            | 0.284    |                    |          | 0.31%  |
| Ag 328.068†   | -344.5                   | 3.4218 µg/L        | 0.22543  | 3.4218 ppb         | 0.22543  | 6.59%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated |                          |                    |          |                    |          |        |
| Al 396.153Radial†   | 278105.8                 | 476570 µg/L        | 3602.3   | 476570 ppb         | 3602.3   | 0.76%  |
| QC value within limits for Al 396.153Radial Recovery = 95.31%   |                          |                    |          |                    |          |        |
| As 188.979†   | 4.3                      | 4.2513 µg/L        | 2.55485  | 4.2513 ppb         | 2.55485  | 60.10% |
| QC value within limits for As 188.979 Recovery = Not calculated |                          |                    |          |                    |          |        |
| B 249.677†  | 1342.7                   | 10.480 µg/L        | 2.4495   | 10.480 ppb         | 2.4495   | 23.37% |
| QC value within limits for B 249.677 Recovery = Not calculated  |                          |                    |          |                    |          |        |
| Ba 233.527†   | 310.2                    | 3.1296 µg/L        | 0.32036  | 3.1296 ppb         | 0.32036  | 10.24% |
| QC value within limits for Ba 233.527 Recovery = Not calculated |                          |                    |          |                    |          |        |
| Be 313.107†   | -135.9                   | -0.1056 µg/L       | 0.05997  | -0.1056 ppb        | 0.05997  | 56.80% |
| QC value within limits for Be 313.107 Recovery = Not calculated |                          |                    |          |                    |          |        |
| Ca 317.933Radial†   | 589979.8                 | 474250 µg/L        | 3929.3   | 474250 ppb         | 3929.3   | 0.83%  |



|  |         |              |          |             |          |         |  |
|--|---------|--------------|----------|-------------|----------|---------|--|
| QC value within limits for Ca 317.933Radial Recovery = 94.85%          |         |              |          |             |          |         |  |
| Cd 226.502†  | 1057.3  | 0.0343 µg/L  | 0.16452  | 0.0343 ppb  | 0.16452  | 480.08% |  |
| QC value within limits for Cd 226.502 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Co 228.616†  | 145.2   | -2.6233 µg/L | 0.39348  | -2.6233 ppb | 0.39348  | 15.00%  |  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Cr 267.716†  | 225.2   | 1.3943 µg/L  | 0.28723  | 1.3943 ppb  | 0.28723  | 20.60%  |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Cu 324.752†  | -2670.5 | -14.762 µg/L | 1.0854   | -14.762 ppb | 1.0854   | 7.35%   |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Fe 238.204 Radial†   | 81291.1 | 191590 µg/L  | 1495.5   | 191590 ppb  | 1495.5   | 0.78%   |  |
| QC value within limits for Fe 238.204 Radial Recovery = 95.79%         |         |              |          |             |          |         |  |
| K 766.490 Radial†  | -30.3   | -152.20 µg/L | 150.110  | -152.20 ppb | 150.110  | 98.63%  |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |         |              |          |             |          |         |  |
| Mg 279.077 IEC†  | 45995.0 | 444970 µg/L  | 3935.9   | 444970 ppb  | 3935.9   | 0.88%   |  |
| QC value within limits for Mg 279.077 IEC Recovery = 88.99%            |         |              |          |             |          |         |  |
| Mn 257.610†  | 3129.0  | 0.1581 µg/L  | 0.14132  | 0.1581 ppb  | 0.14132  | 89.37%  |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Mo 202.031†  | -95.2   | 3.1870 µg/L  | 1.04868  | 3.1870 ppb  | 1.04868  | 32.90%  |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Na 589.592 Radial†   | 55.6    | 21.014 µg/L  | 32.5066  | 21.014 ppb  | 32.5066  | 154.69% |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |         |              |          |             |          |         |  |
| Ni 231.604†  | 119.8   | 2.4349 µg/L  | 0.36451  | 2.4349 ppb  | 0.36451  | 14.97%  |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |         |              |          |             |          |         |  |
| P 214.914†   | 58.8    | 11.546 µg/L  | 14.4611  | 11.546 ppb  | 14.4611  | 125.25% |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |         |              |          |             |          |         |  |
| Pb 220.353†  | -29.0   | 15.984 µg/L  | 2.2265   | 15.984 ppb  | 2.2265   | 13.93%  |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |         |              |          |             |          |         |  |
| S 181.975 Axial†   | -22.5   | -5.3448 µg/L | 15.98271 | -5.3448 ppb | 15.98271 | 299.03% |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |         |              |          |             |          |         |  |
| Sb 206.836†  | -0.8    | -2.5784 µg/L | 1.30610  | -2.5784 ppb | 1.30610  | 50.66%  |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Se 196.026†  | 0.5     | -7.93 µg/L   | 11.814   | -7.93 ppb   | 11.814   | 148.99% |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |         |              |          |             |          |         |  |
| SiO2†  | 241.2   | 68.964 µg/L  | 6.5912   | 68.964 ppb  | 6.5912   | 9.56%   |  |
| QC value within limits for SiO2 Recovery = Not calculated              |         |              |          |             |          |         |  |
| Si 251.611†  | 446.8   | 30.942 µg/L  | 1.8563   | 30.942 ppb  | 1.8563   | 6.00%   |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Sn 189.927†  | 1.2     | 4.6883 µg/L  | 5.16734  | 4.6883 ppb  | 5.16734  | 110.22% |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Sr 421.552†  | 1508.5  | 0.7474 µg/L  | 0.49466  | 0.7474 ppb  | 0.49466  | 66.18%  |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Ti 334.940†  | -2305.8 | -2.4837 µg/L | 0.11273  | -2.4837 ppb | 0.11273  | 4.54%   |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |         |              |          |             |          |         |  |
| Tl 190.801†  | 6.6     | -12.589 µg/L | 4.2822   | -12.589 ppb | 4.2822   | 34.02%  |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |         |              |          |             |          |         |  |
| U 367.007†   | 2154.4  | 44.988 µg/L  | 4.8898   | 44.988 ppb  | 4.8898   | 10.87%  |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |         |              |          |             |          |         |  |
| V 292.402†   | 1075.4  | 3.3396 µg/L  | 0.81266  | 3.3396 ppb  | 0.81266  | 24.33%  |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |         |              |          |             |          |         |  |
| Zn 213.857†  | 1132.9  | -19.898 µg/L | 0.9349   | -19.898 ppb | 0.9349   | 4.70%   |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |         |              |          |             |          |         |  |
| All analyte(s) passed QC.  |         |              |          |             |          |         |  |

Sequence No.: 53

Sample ID: ICSAB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 104

Date Collected: 11/2/2016 15:35:00

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: ICSAB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4555.4        | 4555.4              | 92.6 %             |                    | 15:35:31      |
| 1     | Al 396.153Radial†  | 258115.6      | 278890.1            | 477910 µg/L        | 477910 ppb         | 15:35:29      |
| 1     | Ca 317.933Radial†  | 546416.9      | 590130.1            | 474380 µg/L        | 474380 ppb         | 15:35:29      |
| 1     | Fe 238.204 Radial† | 73297.7       | 79132.9             | 186500 µg/L        | 186500 ppb         | 15:35:29      |
| 1     | K 766.490 Radial†  | 4767.3        | 5226.7              | 5333.5 µg/L        | 5333.5 ppb         | 15:35:31      |
| 1     | Mg 279.077 IEC†    | 42682.8       | 46115.6             | 446140 µg/L        | 446140 ppb         | 15:35:31      |
| 1     | Na 589.592 Radial† | 12803.4       | 13073.9             | 4939.7 µg/L        | 4939.7 ppb         | 15:35:31      |
| 1     | Sr 421.552†        | 43402.7       | 46722.6             | 489.60 µg/L        | 489.60 ppb         | 15:35:29      |
| 1     | Sc                 | 370040.9      | 370040.9            | 92.03 %            |                    | 15:35:43      |
| 1     | Y 371.029          | 287656.7      | 287656.7            | 89.939 %           |                    | 15:35:43      |
| 1     | Sc 357.253         | 236926.2      | 236926.2            | 92.23 %            |                    | 15:35:43      |
| 1     | Ag 328.068†        | 20082.7       | 22264.4             | 251.67 µg/L        | 251.67 ppb         | 15:35:43      |
| 1     | As 188.979†        | 211.4         | 224.5               | 466.17 µg/L        | 466.17 ppb         | 15:36:03      |
| 1     | B 249.677†         | 12196.1       | 12714.5             | 465.16 µg/L        | 465.16 ppb         | 15:35:43      |
| 1     | Ba 233.527†        | 23143.4       | 25146.7             | 456.46 µg/L        | 456.46 ppb         | 15:36:03      |
| 1     | Be 313.107†        | 330554.5      | 360626.8            | 228.02 µg/L        | 228.02 ppb         | 15:35:43      |
| 1     | Cd 226.502†        | 36055.6       | 39272.7             | 436.20 µg/L        | 436.20 ppb         | 15:35:43      |
| 1     | Co 228.616†        | 3905.6        | 4288.2              | 423.11 µg/L        | 423.11 ppb         | 15:36:03      |
| 1     | Cr 267.716†        | 29992.6       | 32356.8             | 447.37 µg/L        | 447.37 ppb         | 15:35:43      |
| 1     | Cu 324.752†        | 46235.1       | 47975.7             | 490.74 µg/L        | 490.74 ppb         | 15:35:43      |
| 1     | Mn 257.610†        | 115717.3      | 125610.5            | 445.61 µg/L        | 445.61 ppb         | 15:35:43      |
| 1     | Mo 202.031†        | 3445.1        | 3775.7              | 476.93 µg/L        | 476.93 ppb         | 15:36:03      |
| 1     | Ni 231.604†        | 5782.9        | 6262.9              | 412.18 µg/L        | 412.18 ppb         | 15:36:03      |
| 1     | P 214.914†         | 1178.4        | 1250.2              | 2364.3 µg/L        | 2364.3 ppb         | 15:36:03      |
| 1     | Pb 220.353†        | 1077.6        | 1129.8              | 460.02 µg/L        | 460.02 ppb         | 15:36:03      |
| 1     | S 181.975 Axial†   | 721.8         | 732.5               | 2419.6 µg/L        | 2419.6 ppb         | 15:36:03      |
| 1     | Sb 206.836†        | 282.5         | 302.5               | 478.45 µg/L        | 478.45 ppb         | 15:36:03      |
| 1     | Se 196.026†        | 872.0         | 941.5               | 2190 µg/L          | 2190 ppb           | 15:36:03      |
| 1     | SiO2†              | 32518.9       | 34521.9             | 9871.9 µg/L        | 9871.9 ppb         | 15:35:43      |
| 1     | Si 251.611†        | 61583.9       | 66496.4             | 4604.7 µg/L        | 4604.7 ppb         | 15:35:43      |
| 1     | Sn 189.927†        | 898.8         | 999.0               | 448.29 µg/L        | 448.29 ppb         | 15:36:03      |
| 1     | Ti 334.940†        | 85727.5       | 93049.1             | 472.74 µg/L        | 472.74 ppb         | 15:35:43      |
| 1     | Tl 190.801†        | 417.6         | 447.5               | 417.59 µg/L        | 417.59 ppb         | 15:36:03      |
| 1     | U 367.007†         | 2614.4        | 2968.6              | 516.93 µg/L        | 516.93 ppb         | 15:35:43      |
| 1     | V 292.402†         | 28079.5       | 30304.0             | 473.75 µg/L        | 473.75 ppb         | 15:35:43      |
| 1     | Zn 213.857†        | 13240.3       | 14103.9             | 412.98 µg/L        | 412.98 ppb         | 15:36:03      |
| 2     | Sc RADIAL          | 4638.0        | 4638.0              | 94.3 %             |                    | 15:35:35      |
| 2     | Al 396.153Radial†  | 254559.4      | 270154.4            | 462940 µg/L        | 462940 ppb         | 15:35:33      |
| 2     | Ca 317.933Radial†  | 539058.4      | 571817.0            | 459650 µg/L        | 459650 ppb         | 15:35:33      |
| 2     | Fe 238.204 Radial† | 72009.2       | 76356.5             | 179960 µg/L        | 179960 ppb         | 15:35:33      |
| 2     | K 766.490 Radial†  | 4538.3        | 4892.0              | 4988.6 µg/L        | 4988.6 ppb         | 15:35:35      |
| 2     | Mg 279.077 IEC†    | 43578.3       | 46244.9             | 447390 µg/L        | 447390 ppb         | 15:35:35      |
| 2     | Na 589.592 Radial† | 12897.2       | 12927.1             | 4884.3 µg/L        | 4884.3 ppb         | 15:35:35      |
| 2     | Sr 421.552†        | 42783.7       | 45231.4             | 474.01 µg/L        | 474.01 ppb         | 15:35:33      |
| 2     | Sc                 | 369185.4      | 369185.4            | 91.82 %            |                    | 15:36:05      |
| 2     | Y 371.029          | 289182.9      | 289182.9            | 90.416 %           |                    | 15:36:05      |
| 2     | Sc 357.253         | 237826.6      | 237826.6            | 92.58 %            |                    | 15:36:05      |
| 2     | Ag 328.068†        | 20088.4       | 22188.2             | 250.62 µg/L        | 250.62 ppb         | 15:36:05      |
| 2     | As 188.979†        | 213.1         | 225.5               | 468.46 µg/L        | 468.46 ppb         | 15:36:25      |
| 2     | B 249.677†         | 12121.8       | 12584.3             | 461.44 µg/L        | 461.44 ppb         | 15:36:05      |
| 2     | Ba 233.527†        | 23138.5       | 25046.4             | 454.72 µg/L        | 454.72 ppb         | 15:36:25      |
| 2     | Be 313.107†        | 330942.2      | 359688.6            | 227.42 µg/L        | 227.42 ppb         | 15:36:05      |
| 2     | Cd 226.502†        | 35760.9       | 38806.2             | 431.29 µg/L        | 431.29 ppb         | 15:36:05      |
| 2     | Co 228.616†        | 3884.9        | 4249.9              | 419.78 µg/L        | 419.78 ppb         | 15:36:25      |
| 2     | Cr 267.716†        | 30041.4       | 32286.3             | 446.46 µg/L        | 446.46 ppb         | 15:36:05      |
| 2     | Cu 324.752†        | 46633.5       | 48216.3             | 492.72 µg/L        | 492.72 ppb         | 15:36:05      |
| 2     | Mn 257.610†        | 116024.0      | 125466.6            | 444.92 µg/L        | 444.92 ppb         | 15:36:05      |
| 2     | Mo 202.031†        | 3420.5        | 3735.0              | 471.43 µg/L        | 471.43 ppb         | 15:36:25      |
| 2     | Ni 231.604†        | 5733.2        | 6185.4              | 407.20 µg/L        | 407.20 ppb         | 15:36:25      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 1155.3   | 1220.4   | 2308.9 µg/L | 2308.9 ppb | 15:36:25 |
| 2 | Pb 220.353†        | 1063.4   | 1110.1   | 451.65 µg/L | 451.65 ppb | 15:36:25 |
| 2 | S 181.975 Axial†   | 737.4    | 746.4    | 2461.7 µg/L | 2461.7 ppb | 15:36:25 |
| 2 | Sb 206.836†        | 279.6    | 298.2    | 471.56 µg/L | 471.56 ppb | 15:36:25 |
| 2 | Se 196.026†        | 865.7    | 931.1    | 2170 µg/L   | 2170 ppb   | 15:36:25 |
| 2 | SiO2†              | 32737.8  | 34624.8  | 9901.3 µg/L | 9901.3 ppb | 15:36:05 |
| 2 | Si 251.611†        | 61873.1  | 66556.0  | 4608.8 µg/L | 4608.8 ppb | 15:36:05 |
| 2 | Sn 189.927†        | 884.2    | 979.4    | 439.50 µg/L | 439.50 ppb | 15:36:25 |
| 2 | Ti 334.940†        | 85602.1  | 92561.8  | 470.03 µg/L | 470.03 ppb | 15:36:05 |
| 2 | Tl 190.801†        | 430.6    | 459.9    | 430.19 µg/L | 430.19 ppb | 15:36:25 |
| 2 | U 367.007†         | 2512.9   | 2848.3   | 489.99 µg/L | 489.99 ppb | 15:36:05 |
| 2 | V 292.402†         | 28265.5  | 30389.6  | 475.54 µg/L | 475.54 ppb | 15:36:05 |
| 2 | Zn 213.857†        | 13179.5  | 13983.9  | 409.84 µg/L | 409.84 ppb | 15:36:25 |
| 3 | Sc RADIAL          | 4555.1   | 4555.1   | 92.6 %      |            | 15:35:39 |
| 3 | Al 396.153Radial†  | 257574.0 | 278321.9 | 476940 µg/L | 476940 ppb | 15:35:37 |
| 3 | Ca 317.933Radial†  | 543145.2 | 586631.5 | 471560 µg/L | 471560 ppb | 15:35:37 |
| 3 | Fe 238.204 Radial† | 73324.7  | 79166.8  | 186580 µg/L | 186580 ppb | 15:35:37 |
| 3 | K 766.490 Radial†  | 4404.6   | 4835.2   | 4925.2 µg/L | 4925.2 ppb | 15:35:39 |
| 3 | Mg 279.077 IEC†    | 43041.4  | 46505.8  | 449910 µg/L | 449910 ppb | 15:35:39 |
| 3 | Na 589.592 Radial† | 12827.0  | 13100.2  | 4949.7 µg/L | 4949.7 ppb | 15:35:39 |
| 3 | Sr 421.552†        | 43474.6  | 46803.0  | 490.50 µg/L | 490.50 ppb | 15:35:37 |
| 3 | Sc                 | 368414.9 | 368414.9 | 91.63 %     |            | 15:36:28 |
| 3 | Y 371.029          | 288521.2 | 288521.2 | 90.210 %    |            | 15:36:28 |
| 3 | Sc 357.253         | 236307.3 | 236307.3 | 91.99 %     |            | 15:36:28 |
| 3 | Ag 328.068†        | 20353.1  | 22615.4  | 255.55 µg/L | 255.55 ppb | 15:36:28 |
| 3 | As 188.979†        | 207.3    | 220.7    | 458.30 µg/L | 458.30 ppb | 15:36:48 |
| 3 | B 249.677†         | 12224.1  | 12779.7  | 467.74 µg/L | 467.74 ppb | 15:36:28 |
| 3 | Ba 233.527†        | 23007.5  | 25064.6  | 454.97 µg/L | 454.97 ppb | 15:36:48 |
| 3 | Be 313.107†        | 331043.2 | 362096.7 | 228.95 µg/L | 228.95 ppb | 15:36:28 |
| 3 | Cd 226.502†        | 36060.7  | 39380.6  | 437.42 µg/L | 437.42 ppb | 15:36:28 |
| 3 | Co 228.616†        | 3867.7   | 4258.1   | 420.02 µg/L | 420.02 ppb | 15:36:48 |
| 3 | Cr 267.716†        | 29972.6  | 32420.2  | 448.26 µg/L | 448.26 ppb | 15:36:28 |
| 3 | Cu 324.752†        | 46224.8  | 48095.8  | 491.92 µg/L | 491.92 ppb | 15:36:28 |
| 3 | Mn 257.610†        | 115862.5 | 126096.8 | 447.25 µg/L | 447.25 ppb | 15:36:28 |
| 3 | Mo 202.031†        | 3421.1   | 3759.4   | 474.93 µg/L | 474.93 ppb | 15:36:48 |
| 3 | Ni 231.604†        | 5759.5   | 6253.9   | 411.57 µg/L | 411.57 ppb | 15:36:48 |
| 3 | P 214.914†         | 1159.3   | 1232.7   | 2329.7 µg/L | 2329.7 ppb | 15:36:48 |
| 3 | Pb 220.353†        | 1069.0   | 1123.6   | 457.59 µg/L | 457.59 ppb | 15:36:48 |
| 3 | S 181.975 Axial†   | 720.6    | 733.3    | 2422.0 µg/L | 2422.0 ppb | 15:36:48 |
| 3 | Sb 206.836†        | 280.0    | 300.6    | 475.42 µg/L | 475.42 ppb | 15:36:48 |
| 3 | Se 196.026†        | 860.1    | 931.1    | 2170 µg/L   | 2170 ppb   | 15:36:48 |
| 3 | SiO2†              | 32589.1  | 34690.6  | 9920.1 µg/L | 9920.1 ppb | 15:36:28 |
| 3 | Si 251.611†        | 61930.3  | 67047.8  | 4642.9 µg/L | 4642.9 ppb | 15:36:28 |
| 3 | Sn 189.927†        | 897.7    | 1000.3   | 448.88 µg/L | 448.88 ppb | 15:36:48 |
| 3 | Ti 334.940†        | 85842.4  | 93417.5  | 474.52 µg/L | 474.52 ppb | 15:36:28 |
| 3 | Tl 190.801†        | 423.7    | 455.4    | 425.19 µg/L | 425.19 ppb | 15:36:48 |
| 3 | U 367.007†         | 2560.2   | 2917.1   | 488.47 µg/L | 488.47 ppb | 15:36:28 |
| 3 | V 292.402†         | 28331.9  | 30658.1  | 479.37 µg/L | 479.37 ppb | 15:36:28 |
| 3 | Zn 213.857†        | 13213.2  | 14112.0  | 412.98 µg/L | 412.98 ppb | 15:36:48 |

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Mean Data: ICSAB

| Analyte   | Mean Corrected<br>Intensity | Calib.<br>Conc. Units | Std.Dev. | Sample<br>Conc. Units | Std.Dev. | RSD   |
|---|-----------------------------|-----------------------|----------|-----------------------|----------|-------|
| Sc  | 369213.8                    | 91.83 %               | 0.202    |                       |          | 0.22% |
| Sc RADIAL   | 4582.8                      | 93.1 %                | 0.97     |                       |          | 1.04% |
| Y 371.029   | 288453.6                    | 90.188 %              | 0.2393   |                       |          | 0.27% |
| Sc 357.253  | 237020.0                    | 92.27 %               | 0.297    |                       |          | 0.32% |
| Ag 328.068†   | 22356.0                     | 252.62 µg/L           | 2.596    | 252.62 ppb            | 2.596    | 1.03% |
| QC value within limits for Ag 328.068 Recovery = 101.05%      |                             |                       |          |                       |          |       |
| Al 396.153Radial†   | 275788.8                    | 472600 µg/L           | 8375.9   | 472600 ppb            | 8375.9   | 1.77% |
| QC value within limits for Al 396.153Radial Recovery = 94.52% |                             |                       |          |                       |          |       |
| As 188.979†   | 223.5                       | 464.31 µg/L           | 5.330    | 464.31 ppb            | 5.330    | 1.15% |
| QC value within limits for As 188.979 Recovery = 92.86%       |                             |                       |          |                       |          |       |
| B 249.677†  | 12692.8                     | 464.78 µg/L           | 3.169    | 464.78 ppb            | 3.169    | 0.68% |
| QC value within limits for B 249.677 Recovery = 92.96%        |                             |                       |          |                       |          |       |
| Ba 233.527†   | 25085.9                     | 455.38 µg/L           | 0.942    | 455.38 ppb            | 0.942    | 0.21% |
| QC value within limits for Ba 233.527 Recovery = 91.08%       |                             |                       |          |                       |          |       |
| Be 313.107†   | 360804.1                    | 228.13 µg/L           | 0.768    | 228.13 ppb            | 0.768    | 0.34% |
| QC value within limits for Be 313.107 Recovery = 91.25%       |                             |                       |          |                       |          |       |
| Ca 317.933Radial†   | 582859.5                    | 468530 µg/L           | 7814.8   | 468530 ppb            | 7814.8   | 1.67% |

|  |          |             |        |            |        |       |  |
|--|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Ca 317.933 Radial Recovery = 93.71% |          |             |        |            |        |       |  |
| Cd 226.502†  | 39153.2  | 434.97 µg/L | 3.247  | 434.97 ppb | 3.247  | 0.75% |  |
| QC value within limits for Cd 226.502 Recovery = 86.99%        |          |             |        |            |        |       |  |
| Co 228.616†  | 4265.4   | 420.97 µg/L | 1.858  | 420.97 ppb | 1.858  | 0.44% |  |
| QC value within limits for Co 228.616 Recovery = 84.19%        |          |             |        |            |        |       |  |
| Cr 267.716†  | 32354.4  | 447.36 µg/L | 0.900  | 447.36 ppb | 0.900  | 0.20% |  |
| QC value within limits for Cr 267.716 Recovery = 89.47%        |          |             |        |            |        |       |  |
| Cu 324.752†  | 48096.0  | 491.79 µg/L | 0.995  | 491.79 ppb | 0.995  | 0.20% |  |
| QC value within limits for Cu 324.752 Recovery = 98.36%        |          |             |        |            |        |       |  |
| Fe 238.204 Radial†   | 78218.7  | 184350 µg/L | 3801.1 | 184350 ppb | 3801.1 | 2.06% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 92.17% |          |             |        |            |        |       |  |
| K 766.490 Radial†  | 4984.7   | 5082.4 µg/L | 219.74 | 5082.4 ppb | 219.74 | 4.32% |  |
| QC value within limits for K 766.490 Radial Recovery = 101.65% |          |             |        |            |        |       |  |
| Mg 279.077 IEC†  | 46288.7  | 447810 µg/L | 1922.8 | 447810 ppb | 1922.8 | 0.43% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 89.56%    |          |             |        |            |        |       |  |
| Mn 257.610†  | 125724.6 | 445.93 µg/L | 1.199  | 445.93 ppb | 1.199  | 0.27% |  |
| QC value within limits for Mn 257.610 Recovery = 89.19%        |          |             |        |            |        |       |  |
| Mo 202.031†  | 3756.7   | 474.43 µg/L | 2.783  | 474.43 ppb | 2.783  | 0.59% |  |
| QC value within limits for Mo 202.031 Recovery = 94.89%        |          |             |        |            |        |       |  |
| Na 589.592 Radial†   | 13033.7  | 4924.5 µg/L | 35.23  | 4924.5 ppb | 35.23  | 0.72% |  |
| QC value within limits for Na 589.592 Radial Recovery = 98.49% |          |             |        |            |        |       |  |
| Ni 231.604†  | 6234.1   | 410.32 µg/L | 2.716  | 410.32 ppb | 2.716  | 0.66% |  |
| QC value within limits for Ni 231.604 Recovery = 82.06%        |          |             |        |            |        |       |  |
| P 214.914†   | 1234.4   | 2334.3 µg/L | 27.98  | 2334.3 ppb | 27.98  | 1.20% |  |
| QC value within limits for P 214.914 Recovery = 93.37%         |          |             |        |            |        |       |  |
| Pb 220.353†  | 1121.2   | 456.42 µg/L | 4.306  | 456.42 ppb | 4.306  | 0.94% |  |
| QC value within limits for Pb 220.353 Recovery = 91.28%        |          |             |        |            |        |       |  |
| S 181.975 Axial†   | 737.4    | 2434.4 µg/L | 23.63  | 2434.4 ppb | 23.63  | 0.97% |  |
| QC value within limits for S 181.975 Axial Recovery = 97.38%   |          |             |        |            |        |       |  |
| Sb 206.836†  | 300.4    | 475.15 µg/L | 3.452  | 475.15 ppb | 3.452  | 0.73% |  |
| QC value within limits for Sb 206.836 Recovery = 95.03%        |          |             |        |            |        |       |  |
| Se 196.026†  | 934.6    | 2170 µg/L   | 13.9   | 2170 ppb   | 13.9   | 0.64% |  |
| QC value within limits for Se 196.026 Recovery = 86.93%        |          |             |        |            |        |       |  |
| SiO2†  | 34612.5  | 9897.8 µg/L | 24.30  | 9897.8 ppb | 24.30  | 0.25% |  |
| QC value within limits for SiO2 Recovery = 92.55%              |          |             |        |            |        |       |  |
| Si 251.611†  | 66700.0  | 4618.8 µg/L | 20.96  | 4618.8 ppb | 20.96  | 0.45% |  |
| QC value within limits for Si 251.611 Recovery = 92.38%        |          |             |        |            |        |       |  |
| Sn 189.927†  | 992.9    | 445.55 µg/L | 5.254  | 445.55 ppb | 5.254  | 1.18% |  |
| QC value within limits for Sn 189.927 Recovery = 89.11%        |          |             |        |            |        |       |  |
| Sr 421.552†  | 46252.3  | 484.70 µg/L | 9.273  | 484.70 ppb | 9.273  | 1.91% |  |
| QC value within limits for Sr 421.552 Recovery = 96.94%        |          |             |        |            |        |       |  |
| Ti 334.940†  | 93009.5  | 472.43 µg/L | 2.262  | 472.43 ppb | 2.262  | 0.48% |  |
| QC value within limits for Ti 334.940 Recovery = 94.49%        |          |             |        |            |        |       |  |
| Tl 190.801†  | 454.3    | 424.32 µg/L | 6.347  | 424.32 ppb | 6.347  | 1.50% |  |
| QC value within limits for Tl 190.801 Recovery = 84.86%        |          |             |        |            |        |       |  |
| U 367.007†   | 2911.3   | 498.46 µg/L | 16.009 | 498.46 ppb | 16.009 | 3.21% |  |
| QC value within limits for U 367.007 Recovery = 99.69%         |          |             |        |            |        |       |  |
| V 292.402†   | 30450.6  | 476.22 µg/L | 2.871  | 476.22 ppb | 2.871  | 0.60% |  |
| QC value within limits for V 292.402 Recovery = 95.24%         |          |             |        |            |        |       |  |
| Zn 213.857†  | 14066.6  | 411.93 µg/L | 1.817  | 411.93 ppb | 1.817  | 0.44% |  |
| QC value within limits for Zn 213.857 Recovery = 82.39%        |          |             |        |            |        |       |  |
| All analyte(s) passed QC.                                      |          |             |        |            |        |       |  |

Sequence No.: 54

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 1

Date Collected: 11/2/2016 15:36:56

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4881.3        | 4881.3              | 99.2 %             |                    | 15:37:47      |
| 1     | Al 396.153Radial†  | 2797.6        | 2917.4              | 4999.3 µg/L        | 4999.3 ppb         | 15:37:47      |
| 1     | Ca 317.933Radial†  | 6304.3        | 6295.4              | 5060.5 µg/L        | 5060.5 ppb         | 15:37:47      |
| 1     | Fe 238.204 Radial† | 2156.8        | 2137.4              | 5037.5 µg/L        | 5037.5 ppb         | 15:37:47      |
| 1     | K 766.490 Radial†  | 4463.6        | 4576.7              | 4769.9 µg/L        | 4769.9 ppb         | 15:37:27      |
| 1     | Mg 279.077 IEC†    | 510.9         | 528.5               | 5112.8 µg/L        | 5112.8 ppb         | 15:37:47      |
| 1     | Na 589.592 Radial† | 25901.0       | 25352.7             | 9579.0 µg/L        | 9579.0 ppb         | 15:37:27      |
| 1     | Sr 421.552†        | 44297.1       | 44493.8             | 480.45 µg/L        | 480.45 ppb         | 15:37:27      |
| 1     | Sc                 | 422093.4      | 422093.4            | 105.0 %            |                    | 15:38:35      |
| 1     | Y 371.029          | 324800.3      | 324800.3            | 101.55 %           |                    | 15:38:35      |
| 1     | Sc 357.253         | 265415.4      | 265415.4            | 103.3 %            |                    | 15:38:35      |
| 1     | Ag 328.068†        | 43575.7       | 42665.4             | 469.02 µg/L        | 469.02 ppb         | 15:38:35      |
| 1     | As 188.979†        | 230.1         | 218.0               | 457.27 µg/L        | 457.27 ppb         | 15:38:55      |
| 1     | B 249.677†         | 12726.1       | 11808.1             | 469.80 µg/L        | 469.80 ppb         | 15:38:35      |
| 1     | Ba 233.527†        | 26727.9       | 25922.5             | 473.01 µg/L        | 473.01 ppb         | 15:38:35      |
| 1     | Be 313.107†        | 767874.5      | 745425.6            | 470.46 µg/L        | 470.46 ppb         | 15:38:35      |
| 1     | Cd 226.502†        | 42454.8       | 41270.0             | 470.36 µg/L        | 470.36 ppb         | 15:38:35      |
| 1     | Co 228.616†        | 4668.4        | 4572.0              | 468.80 µg/L        | 468.80 ppb         | 15:38:55      |
| 1     | Cr 267.716†        | 35515.4       | 34211.6             | 474.74 µg/L        | 474.74 ppb         | 15:38:35      |
| 1     | Cu 324.752†        | 51450.9       | 47643.1             | 476.16 µg/L        | 476.16 ppb         | 15:38:35      |
| 1     | Mn 257.610†        | 135886.8      | 131664.5            | 478.92 µg/L        | 478.92 ppb         | 15:38:35      |
| 1     | Mo 202.031†        | 3823.0        | 3740.4              | 458.54 µg/L        | 458.54 ppb         | 15:38:55      |
| 1     | Ni 231.604†        | 7061.8        | 6827.7              | 455.09 µg/L        | 455.09 ppb         | 15:38:55      |
| 1     | P 214.914†         | 1234.0        | 1166.8              | 2299.0 µg/L        | 2299.0 ppb         | 15:38:55      |
| 1     | Pb 220.353†        | 1278.2        | 1198.6              | 459.38 µg/L        | 459.38 ppb         | 15:38:55      |
| 1     | S 181.975 Axial†   | 342.2         | 281.1               | 906.40 µg/L        | 906.40 ppb         | 15:38:55      |
| 1     | Sb 206.836†        | 296.1         | 282.8               | 447.96 µg/L        | 447.96 ppb         | 15:38:55      |
| 1     | Se 196.026†        | 211.1         | 200.3               | 468 µg/L           | 468 ppb            | 15:38:55      |
| 1     | SiO2†              | 19087.1       | 17737.1             | 5074.5 µg/L        | 5074.5 ppb         | 15:38:35      |
| 1     | Si 251.611†        | 35579.8       | 34160.6             | 2365.5 µg/L        | 2365.5 ppb         | 15:38:35      |
| 1     | Sn 189.927†        | 1027.0        | 1018.4              | 452.75 µg/L        | 452.75 ppb         | 15:38:55      |
| 1     | Ti 334.940†        | 96715.4       | 93706.9             | 467.09 µg/L        | 467.09 ppb         | 15:38:35      |
| 1     | Tl 190.801†        | 503.8         | 482.4               | 469.19 µg/L        | 469.19 ppb         | 15:38:55      |
| 1     | U 367.007†         | 832.9         | 940.1               | 480.86 µg/L        | 480.86 ppb         | 15:38:35      |
| 1     | V 292.402†         | 31101.4       | 29960.9             | 481.32 µg/L        | 481.32 ppb         | 15:38:35      |
| 1     | Zn 213.857†        | 14150.1       | 13443.6             | 446.74 µg/L        | 446.74 ppb         | 15:38:55      |
| 2     | Sc RADIAL          | 4886.6        | 4886.6              | 99.3 %             |                    | 15:38:09      |
| 2     | Al 396.153Radial†  | 2804.8        | 2921.5              | 5006.4 µg/L        | 5006.4 ppb         | 15:38:09      |
| 2     | Ca 317.933Radial†  | 6261.9        | 6245.8              | 5020.7 µg/L        | 5020.7 ppb         | 15:38:09      |
| 2     | Fe 238.204 Radial† | 2155.6        | 2133.9              | 5029.1 µg/L        | 5029.1 ppb         | 15:38:09      |
| 2     | K 766.490 Radial†  | 4505.1        | 4613.6              | 4808.4 µg/L        | 4808.4 ppb         | 15:37:49      |
| 2     | Mg 279.077 IEC†    | 499.7         | 516.7               | 4998.8 µg/L        | 4998.8 ppb         | 15:38:09      |
| 2     | Na 589.592 Radial† | 26016.8       | 25441.0             | 9612.4 µg/L        | 9612.4 ppb         | 15:37:49      |
| 2     | Sr 421.552†        | 44337.9       | 44486.6             | 480.37 µg/L        | 480.37 ppb         | 15:37:49      |
| 2     | Sc                 | 415536.0      | 415536.0            | 103.3 %            |                    | 15:38:57      |
| 2     | Y 371.029          | 322801.7      | 322801.7            | 100.93 %           |                    | 15:38:57      |
| 2     | Sc 357.253         | 263982.1      | 263982.1            | 102.8 %            |                    | 15:38:57      |
| 2     | Ag 328.068†        | 42540.0       | 41886.5             | 460.51 µg/L        | 460.51 ppb         | 15:38:57      |
| 2     | As 188.979†        | 231.4         | 220.5               | 462.50 µg/L        | 462.50 ppb         | 15:39:17      |
| 2     | B 249.677†         | 12523.7       | 11678.1             | 464.62 µg/L        | 464.62 ppb         | 15:38:57      |
| 2     | Ba 233.527†        | 26757.8       | 26092.1             | 476.08 µg/L        | 476.08 ppb         | 15:38:57      |
| 2     | Be 313.107†        | 758875.6      | 740703.6            | 467.49 µg/L        | 467.49 ppb         | 15:38:57      |
| 2     | Cd 226.502†        | 41839.1       | 40894.0             | 466.06 µg/L        | 466.06 ppb         | 15:38:57      |
| 2     | Co 228.616†        | 4710.4        | 4637.5              | 475.52 µg/L        | 475.52 ppb         | 15:39:17      |
| 2     | Cr 267.716†        | 34786.5       | 33688.8             | 467.48 µg/L        | 467.48 ppb         | 15:38:57      |
| 2     | Cu 324.752†        | 50947.6       | 47423.7             | 473.93 µg/L        | 473.93 ppb         | 15:38:57      |
| 2     | Mn 257.610†        | 135887.8      | 132379.6            | 481.52 µg/L        | 481.52 ppb         | 15:38:57      |
| 2     | Mo 202.031†        | 3841.8        | 3778.8              | 463.25 µg/L        | 463.25 ppb         | 15:39:17      |
| 2     | Ni 231.604†        | 7098.3        | 6900.3              | 459.93 µg/L        | 459.93 ppb         | 15:39:17      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 1237.5   | 1176.7   | 2318.6 µg/L | 2318.6 ppb | 15:39:17 |
| 2 | Pb 220.353†        | 1300.6   | 1227.1   | 470.36 µg/L | 470.36 ppb | 15:39:17 |
| 2 | S 181.975 Axial†   | 338.8    | 279.6    | 901.56 µg/L | 901.56 ppb | 15:39:17 |
| 2 | Sb 206.836†        | 304.3    | 292.3    | 463.23 µg/L | 463.23 ppb | 15:39:17 |
| 2 | Se 196.026†        | 211.1    | 201.4    | 470 µg/L    | 470 ppb    | 15:39:17 |
| 2 | SiO2†              | 19044.3  | 17795.8  | 5091.2 µg/L | 5091.2 ppb | 15:38:57 |
| 2 | Si 251.611†        | 35711.5  | 34475.6  | 2387.3 µg/L | 2387.3 ppb | 15:38:57 |
| 2 | Sn 189.927†        | 1035.8   | 1032.4   | 458.94 µg/L | 458.94 ppb | 15:39:17 |
| 2 | Ti 334.940†        | 96396.0  | 93904.3  | 468.08 µg/L | 468.08 ppb | 15:38:57 |
| 2 | Tl 190.801†        | 512.8    | 493.8    | 480.15 µg/L | 480.15 ppb | 15:39:17 |
| 2 | U 367.007†         | 710.1    | 825.0    | 418.40 µg/L | 418.40 ppb | 15:38:57 |
| 2 | V 292.402†         | 29861.8  | 28918.0  | 464.66 µg/L | 464.66 ppb | 15:38:57 |
| 2 | Zn 213.857†        | 14217.4  | 13583.4  | 451.41 µg/L | 451.41 ppb | 15:39:17 |
| 3 | Sc RADIAL          | 4846.8   | 4846.8   | 98.5 %      |            | 15:38:31 |
| 3 | Al 396.153Radial†  | 2745.4   | 2884.5   | 4942.9 µg/L | 4942.9 ppb | 15:38:31 |
| 3 | Ca 317.933Radial†  | 6196.0   | 6230.7   | 5008.6 µg/L | 5008.6 ppb | 15:38:31 |
| 3 | Fe 238.204 Radial† | 2138.0   | 2133.8   | 5029.0 µg/L | 5029.0 ppb | 15:38:31 |
| 3 | K 766.490 Radial†  | 4430.0   | 4574.7   | 4767.8 µg/L | 4767.8 ppb | 15:38:11 |
| 3 | Mg 279.077 IEC†    | 495.1    | 516.2    | 4994.0 µg/L | 4994.0 ppb | 15:38:31 |
| 3 | Na 589.592 Radial† | 25978.4  | 25617.5  | 9679.1 µg/L | 9679.1 ppb | 15:38:11 |
| 3 | Sr 421.552†        | 44507.9  | 45026.5  | 486.21 µg/L | 486.21 ppb | 15:38:11 |
| 3 | Sc                 | 418968.1 | 418968.1 | 104.2 %     |            | 15:39:20 |
| 3 | Y 371.029          | 328966.2 | 328966.2 | 102.86 %    |            | 15:39:20 |
| 3 | Sc 357.253         | 264185.2 | 264185.2 | 102.8 %     |            | 15:39:20 |
| 3 | Ag 328.068†        | 43009.1  | 42310.8  | 465.18 µg/L | 465.18 ppb | 15:39:20 |
| 3 | As 188.979†        | 235.9    | 224.7    | 471.26 µg/L | 471.26 ppb | 15:39:40 |
| 3 | B 249.677†         | 12570.6  | 11714.2  | 466.06 µg/L | 466.06 ppb | 15:39:20 |
| 3 | Ba 233.527†        | 26611.9  | 25930.2  | 473.14 µg/L | 473.14 ppb | 15:39:20 |
| 3 | Be 313.107†        | 774032.4 | 754874.1 | 476.42 µg/L | 476.42 ppb | 15:39:20 |
| 3 | Cd 226.502†        | 42043.2  | 41061.1  | 467.97 µg/L | 467.97 ppb | 15:39:20 |
| 3 | Co 228.616†        | 4709.6   | 4633.1   | 475.08 µg/L | 475.08 ppb | 15:39:40 |
| 3 | Cr 267.716†        | 35247.3  | 34110.9  | 473.34 µg/L | 473.34 ppb | 15:39:20 |
| 3 | Cu 324.752†        | 51045.4  | 47480.7  | 474.50 µg/L | 474.50 ppb | 15:39:20 |
| 3 | Mn 257.610†        | 135193.9 | 131603.2 | 478.70 µg/L | 478.70 ppb | 15:39:20 |
| 3 | Mo 202.031†        | 3850.6   | 3784.5   | 463.94 µg/L | 463.94 ppb | 15:39:40 |
| 3 | Ni 231.604†        | 7088.5   | 6885.4   | 458.94 µg/L | 458.94 ppb | 15:39:40 |
| 3 | P 214.914†         | 1229.9   | 1168.4   | 2302.0 µg/L | 2302.0 ppb | 15:39:40 |
| 3 | Pb 220.353†        | 1301.9   | 1227.4   | 470.48 µg/L | 470.48 ppb | 15:39:40 |
| 3 | S 181.975 Axial†   | 339.4    | 279.9    | 902.61 µg/L | 902.61 ppb | 15:39:40 |
| 3 | Sb 206.836†        | 304.8    | 292.6    | 463.58 µg/L | 463.58 ppb | 15:39:40 |
| 3 | Se 196.026†        | 214.5    | 204.6    | 478 µg/L    | 478 ppb    | 15:39:40 |
| 3 | SiO2†              | 19141.5  | 17876.0  | 5114.2 µg/L | 5114.2 ppb | 15:39:20 |
| 3 | Si 251.611†        | 35426.5  | 34171.8  | 2366.3 µg/L | 2366.3 ppb | 15:39:20 |
| 3 | Sn 189.927†        | 1036.7   | 1032.5   | 458.99 µg/L | 458.99 ppb | 15:39:40 |
| 3 | Ti 334.940†        | 96306.4  | 93745.0  | 467.28 µg/L | 467.28 ppb | 15:39:20 |
| 3 | Tl 190.801†        | 496.4    | 477.5    | 464.42 µg/L | 464.42 ppb | 15:39:40 |
| 3 | U 367.007†         | 725.7    | 839.6    | 426.32 µg/L | 426.32 ppb | 15:39:20 |
| 3 | V 292.402†         | 30869.2  | 29875.3  | 479.95 µg/L | 479.95 ppb | 15:39:20 |
| 3 | Zn 213.857†        | 14252.3  | 13606.7  | 452.20 µg/L | 452.20 ppb | 15:39:40 |

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Mean Data: CCV

| Analyte   | Mean Corrected<br>Intensity | Calib.<br>Conc. Units | Std.Dev. | Sample<br>Conc. Units | Std.Dev. | RSD   |
|---|-----------------------------|-----------------------|----------|-----------------------|----------|-------|
| Sc  | 418865.9                    | 104.2 %               | 0.82     |                       |          | 0.78% |
| Sc RADIAL   | 4871.6                      | 99.0 %                | 0.44     |                       |          | 0.44% |
| Y 371.029   | 325522.7                    | 101.78 %              | 0.983    |                       |          | 0.97% |
| Sc 357.253  | 264527.5                    | 103.0 %               | 0.30     |                       |          | 0.29% |
| Ag 328.068†   | 42287.5                     | 464.90 µg/L           | 4.261    | 464.90 ppb            | 4.261    | 0.92% |
| QC value within limits for Ag 328.068 Recovery = 92.98%       |                             |                       |          |                       |          |       |
| Al 396.153Radial†   | 2907.8                      | 4982.9 µg/L           | 34.81    | 4982.9 ppb            | 34.81    | 0.70% |
| QC value within limits for Al 396.153Radial Recovery = 99.66% |                             |                       |          |                       |          |       |
| As 188.979†   | 221.1                       | 463.68 µg/L           | 7.073    | 463.68 ppb            | 7.073    | 1.53% |
| QC value within limits for As 188.979 Recovery = 92.74%       |                             |                       |          |                       |          |       |
| B 249.677†  | 11733.5                     | 466.83 µg/L           | 2.676    | 466.83 ppb            | 2.676    | 0.57% |
| QC value within limits for B 249.677 Recovery = 93.37%        |                             |                       |          |                       |          |       |
| Ba 233.527†   | 25981.6                     | 474.08 µg/L           | 1.737    | 474.08 ppb            | 1.737    | 0.37% |
| QC value within limits for Ba 233.527 Recovery = 94.82%       |                             |                       |          |                       |          |       |
| Be 313.107†   | 747001.1                    | 471.46 µg/L           | 4.545    | 471.46 ppb            | 4.545    | 0.96% |
| QC value within limits for Be 313.107 Recovery = 94.29%       |                             |                       |          |                       |          |       |
| Ca 317.933Radial†   | 6257.3                      | 5029.9 µg/L           | 27.18    | 5029.9 ppb            | 27.18    | 0.54% |

|  |          |             |        |            |        |       |  |
|--|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Ca 317.933 Radial Recovery = 100.60%    |          |             |        |            |        |       |  |
| Cd 226.502†  | 41075.0  | 468.13 µg/L | 2.152  | 468.13 ppb | 2.152  | 0.46% |  |
| QC value within limits for Cd 226.502 Recovery = 93.63%            |          |             |        |            |        |       |  |
| Co 228.616†  | 4614.2   | 473.13 µg/L | 3.756  | 473.13 ppb | 3.756  | 0.79% |  |
| QC value within limits for Co 228.616 Recovery = 94.63%            |          |             |        |            |        |       |  |
| Cr 267.716†  | 34003.8  | 471.85 µg/L | 3.853  | 471.85 ppb | 3.853  | 0.82% |  |
| QC value within limits for Cr 267.716 Recovery = 94.37%            |          |             |        |            |        |       |  |
| Cu 324.752†  | 47515.8  | 474.86 µg/L | 1.160  | 474.86 ppb | 1.160  | 0.24% |  |
| QC value within limits for Cu 324.752 Recovery = 94.97%            |          |             |        |            |        |       |  |
| Fe 238.204 Radial†   | 2135.1   | 5031.9 µg/L | 4.89   | 5031.9 ppb | 4.89   | 0.10% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 100.64%    |          |             |        |            |        |       |  |
| K 766.490 Radial†  | 4588.4   | 4782.0 µg/L | 22.85  | 4782.0 ppb | 22.85  | 0.48% |  |
| QC value within limits for K 766.490 Radial Recovery = 95.64%      |          |             |        |            |        |       |  |
| Mg 279.077 IEC†  | 520.5    | 5035.2 µg/L | 67.24  | 5035.2 ppb | 67.24  | 1.34% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 100.70%       |          |             |        |            |        |       |  |
| Mn 257.610†  | 131882.4 | 479.71 µg/L | 1.571  | 479.71 ppb | 1.571  | 0.33% |  |
| QC value within limits for Mn 257.610 Recovery = 95.94%            |          |             |        |            |        |       |  |
| Mo 202.031†  | 3767.9   | 461.91 µg/L | 2.935  | 461.91 ppb | 2.935  | 0.64% |  |
| QC value within limits for Mo 202.031 Recovery = 92.38%            |          |             |        |            |        |       |  |
| Na 589.592 Radial†   | 25470.4  | 9623.5 µg/L | 50.94  | 9623.5 ppb | 50.94  | 0.53% |  |
| QC value within limits for Na 589.592 Radial Recovery = 96.23%     |          |             |        |            |        |       |  |
| Ni 231.604†  | 6871.1   | 457.99 µg/L | 2.556  | 457.99 ppb | 2.556  | 0.56% |  |
| QC value within limits for Ni 231.604 Recovery = 91.60%            |          |             |        |            |        |       |  |
| P 214.914†   | 1170.6   | 2306.5 µg/L | 10.53  | 2306.5 ppb | 10.53  | 0.46% |  |
| QC value within limits for P 214.914 Recovery = 92.26%             |          |             |        |            |        |       |  |
| Pb 220.353†  | 1217.7   | 466.74 µg/L | 6.375  | 466.74 ppb | 6.375  | 1.37% |  |
| QC value within limits for Pb 220.353 Recovery = 93.35%            |          |             |        |            |        |       |  |
| S 181.975 Axial†   | 280.2    | 903.52 µg/L | 2.548  | 903.52 ppb | 2.548  | 0.28% |  |
| QC value within limits for S 181.975 Axial Recovery = 90.35%       |          |             |        |            |        |       |  |
| Sb 206.836†  | 289.2    | 458.25 µg/L | 8.919  | 458.25 ppb | 8.919  | 1.95% |  |
| QC value within limits for Sb 206.836 Recovery = 91.65%            |          |             |        |            |        |       |  |
| Se 196.026†  | 202.1    | 472 µg/L    | 5.2    | 472 ppb    | 5.2    | 1.10% |  |
| QC value within limits for Se 196.026 Recovery = 94.34%            |          |             |        |            |        |       |  |
| SiO2†  | 17802.9  | 5093.3 µg/L | 19.93  | 5093.3 ppb | 19.93  | 0.39% |  |
| QC value within limits for SiO2 Recovery = 95.25%                  |          |             |        |            |        |       |  |
| Si 251.611†  | 34269.3  | 2373.1 µg/L | 12.38  | 2373.1 ppb | 12.38  | 0.52% |  |
| QC value within limits for Si 251.611 Recovery = 94.92%            |          |             |        |            |        |       |  |
| Sn 189.927†  | 1027.8   | 456.89 µg/L | 3.591  | 456.89 ppb | 3.591  | 0.79% |  |
| QC value within limits for Sn 189.927 Recovery = 91.38%            |          |             |        |            |        |       |  |
| Sr 421.552†  | 44669.0  | 482.34 µg/L | 3.346  | 482.34 ppb | 3.346  | 0.69% |  |
| QC value within limits for Sr 421.552 Recovery = 96.47%            |          |             |        |            |        |       |  |
| Ti 334.940†  | 93785.4  | 467.48 µg/L | 0.523  | 467.48 ppb | 0.523  | 0.11% |  |
| QC value within limits for Ti 334.940 Recovery = 93.50%            |          |             |        |            |        |       |  |
| Tl 190.801†  | 484.6    | 471.25 µg/L | 8.063  | 471.25 ppb | 8.063  | 1.71% |  |
| QC value within limits for Tl 190.801 Recovery = 94.25%            |          |             |        |            |        |       |  |
| U 367.007†   | 868.2    | 441.86 µg/L | 34.004 | 441.86 ppb | 34.004 | 7.70% |  |
| QC value less than the lower limit for U 367.007 Recovery = 88.37% |          |             |        |            |        |       |  |
| V 292.402†   | 29584.7  | 475.31 µg/L | 9.248  | 475.31 ppb | 9.248  | 1.95% |  |
| QC value within limits for V 292.402 Recovery = 95.06%             |          |             |        |            |        |       |  |
| Zn 213.857†  | 13544.5  | 450.12 µg/L | 2.950  | 450.12 ppb | 2.950  | 0.66% |  |
| QC value within limits for Zn 213.857 Recovery = 90.02%            |          |             |        |            |        |       |  |
| QC Failed. Continue with analysis.                                 |          |             |        |            |        |       |  |

Sequence No.: 55

Autosampler Location: 6

Sample ID: CCB

Date Collected: 11/2/2016 15:39:49

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4978.2        | 4978.2              | 101 %              |                    | 15:40:19      |
| 1     | Al 396.153Radial†  | -140.2        | -41.2               | -70.570 µg/L       | -70.570 ppb        | 15:40:19      |
| 1     | Ca 317.933Radial†  | 62.5          | 2.5                 | 1.9923 µg/L        | 1.9923 ppb         | 15:40:39      |
| 1     | Fe 238.204 Radial† | 38.5          | 1.5                 | 3.4383 µg/L        | 3.4383 ppb         | 15:40:39      |
| 1     | K 766.490 Radial†  | -111.4        | -32.6               | -34.044 µg/L       | -34.044 ppb        | 15:40:19      |
| 1     | Mg 279.077 IEC†    | -13.2         | 0.5                 | 5.1225 µg/L        | 5.1225 ppb         | 15:40:39      |
| 1     | Na 589.592 Radial† | 655.3         | -107.5              | -40.632 µg/L       | -40.632 ppb        | 15:40:19      |
| 1     | Sr 421.552†        | 187.3         | 28.1                | 0.3033 µg/L        | 0.3033 ppb         | 15:40:19      |
| 1     | Sc                 | 408907.2      | 408907.2            | 101.7 %            |                    | 15:41:27      |
| 1     | Y 371.029          | 322454.7      | 322454.7            | 100.82 %           |                    | 15:41:27      |
| 1     | Sc 357.253         | 259475.7      | 259475.7            | 101.0 %            |                    | 15:41:27      |
| 1     | Ag 328.068†        | -367.4        | 125.9               | 1.3826 µg/L        | 1.3826 ppb         | 15:41:27      |
| 1     | As 188.979†        | 7.3           | 2.5                 | 5.2945 µg/L        | 5.2945 ppb         | 15:41:47      |
| 1     | B 249.677†         | 561.9         | 47.2                | 1.8808 µg/L        | 1.8808 ppb         | 15:41:27      |
| 1     | Ba 233.527†        | -48.0         | 5.9                 | 0.1085 µg/L        | 0.1085 ppb         | 15:41:47      |
| 1     | Be 313.107†        | -2051.1       | 191.8               | 0.1213 µg/L        | 0.1213 ppb         | 15:41:27      |
| 1     | Cd 226.502†        | -175.6        | 5.4                 | 0.0616 µg/L        | 0.0616 ppb         | 15:41:47      |
| 1     | Co 228.616†        | -51.8         | 2.3                 | 0.2332 µg/L        | 0.2332 ppb         | 15:41:47      |
| 1     | Cr 267.716†        | 180.3         | 15.8                | 0.2193 µg/L        | 0.2193 ppb         | 15:41:27      |
| 1     | Cu 324.752†        | 2138.4        | -37.6               | -0.3737 µg/L       | -0.3737 ppb        | 15:41:27      |
| 1     | Mn 257.610†        | -116.5        | 28.3                | 0.1030 µg/L        | 0.1030 ppb         | 15:41:47      |
| 1     | Mo 202.031†        | -43.9         | -3.1                | -0.3831 µg/L       | -0.3831 ppb        | 15:41:47      |
| 1     | Ni 231.604†        | 9.9           | 2.6                 | 0.1735 µg/L        | 0.1735 ppb         | 15:41:47      |
| 1     | P 214.914†         | 27.2          | -0.6                | -1.1456 µg/L       | -1.1456 ppb        | 15:41:47      |
| 1     | Pb 220.353†        | 42.3          | 3.4                 | 1.2915 µg/L        | 1.2915 ppb         | 15:41:47      |
| 1     | S 181.975 Axial†   | 44.4          | -6.1                | -19.601 µg/L       | -19.601 ppb        | 15:41:47      |
| 1     | Sb 206.836†        | 11.8          | 7.8                 | 12.415 µg/L        | 12.415 ppb         | 15:41:47      |
| 1     | Se 196.026†        | 4.7           | 0.6                 | 1.48 µg/L          | 1.48 ppb           | 15:41:47      |
| 1     | SiO2†              | 815.3         | 70.4                | 20.124 µg/L        | 20.124 ppb         | 15:41:27      |
| 1     | Si 251.611†        | 262.6         | -16.1               | -1.1180 µg/L       | -1.1180 ppb        | 15:41:47      |
| 1     | Sn 189.927†        | -22.9         | 1.7                 | 0.7670 µg/L        | 0.7670 ppb         | 15:41:47      |
| 1     | Ti 334.940†        | -50.6         | 48.8                | 0.2433 µg/L        | 0.2433 ppb         | 15:41:27      |
| 1     | Tl 190.801†        | 7.4           | 2.2                 | 2.0879 µg/L        | 2.0879 ppb         | 15:41:47      |
| 1     | U 367.007†         | -130.5        | 4.8                 | 2.5802 µg/L        | 2.5802 ppb         | 15:41:27      |
| 1     | V 292.402†         | 202.0         | 58.7                | 0.9362 µg/L        | 0.9362 ppb         | 15:41:27      |
| 1     | Zn 213.857†        | 237.3         | -17.0               | -0.5733 µg/L       | -0.5733 ppb        | 15:41:47      |
| 2     | Sc RADIAL          | 5029.5        | 5029.5              | 102 %              |                    | 15:40:41      |
| 2     | Al 396.153Radial†  | -117.3        | -17.4               | -29.771 µg/L       | -29.771 ppb        | 15:40:41      |
| 2     | Ca 317.933Radial†  | 62.8          | 2.1                 | 1.6861 µg/L        | 1.6861 ppb         | 15:41:02      |
| 2     | Fe 238.204 Radial† | 33.6          | -3.7                | -8.7582 µg/L       | -8.7582 ppb        | 15:41:02      |
| 2     | K 766.490 Radial†  | -81.9         | -2.6                | -2.7341 µg/L       | -2.7341 ppb        | 15:40:41      |
| 2     | Mg 279.077 IEC†    | -12.3         | 1.6                 | 15.081 µg/L        | 15.081 ppb         | 15:41:02      |
| 2     | Na 589.592 Radial† | 750.4         | -21.1               | -7.9645 µg/L       | -7.9645 ppb        | 15:40:41      |
| 2     | Sr 421.552†        | 126.7         | -33.1               | -0.3570 µg/L       | -0.3570 ppb        | 15:40:41      |
| 2     | Sc                 | 410043.8      | 410043.8            | 102.0 %            |                    | 15:41:49      |
| 2     | Y 371.029          | 326738.8      | 326738.8            | 102.16 %           |                    | 15:41:49      |
| 2     | Sc 357.253         | 259386.2      | 259386.2            | 101.0 %            |                    | 15:41:49      |
| 2     | Ag 328.068†        | -460.4        | 33.8                | 0.4182 µg/L        | 0.4182 ppb         | 15:41:49      |
| 2     | As 188.979†        | 7.4           | 2.6                 | 5.4265 µg/L        | 5.4265 ppb         | 15:42:09      |
| 2     | B 249.677†         | 642.5         | 127.3               | 5.0770 µg/L        | 5.0770 ppb         | 15:41:49      |
| 2     | Ba 233.527†        | -59.1         | -5.1                | -0.0914 µg/L       | -0.0914 ppb        | 15:42:09      |
| 2     | Be 313.107†        | -2186.4       | 57.1                | 0.0364 µg/L        | 0.0364 ppb         | 15:41:49      |
| 2     | Cd 226.502†        | -165.1        | 15.7                | 0.1799 µg/L        | 0.1799 ppb         | 15:42:09      |
| 2     | Co 228.616†        | -51.7         | 2.3                 | 0.2411 µg/L        | 0.2411 ppb         | 15:42:09      |
| 2     | Cr 267.716†        | 137.5         | -26.6               | -0.3673 µg/L       | -0.3673 ppb        | 15:41:49      |
| 2     | Cu 324.752†        | 1926.3        | -247.0              | -2.4963 µg/L       | -2.4963 ppb        | 15:41:49      |
| 2     | Mn 257.610†        | -116.7        | 28.1                | 0.1016 µg/L        | 0.1016 ppb         | 15:42:09      |
| 2     | Mo 202.031†        | -35.7         | 5.0                 | 0.6069 µg/L        | 0.6069 ppb         | 15:42:09      |
| 2     | Ni 231.604†        | 5.9           | -1.4                | -0.0954 µg/L       | -0.0954 ppb        | 15:42:09      |



|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 18.9     | -8.9     | -17.469 µg/L | -17.469 ppb | 15:42:09 |
| 2 | Pb 220.353†        | 42.7     | 3.7      | 1.4743 µg/L  | 1.4743 ppb  | 15:42:09 |
| 2 | S 181.975 Axial†   | 43.0     | -7.5     | -23.968 µg/L | -23.968 ppb | 15:42:09 |
| 2 | Sb 206.836†        | 9.1      | 5.2      | 8.2844 µg/L  | 8.2844 ppb  | 15:42:09 |
| 2 | Se 196.026†        | 3.7      | -0.3     | -0.602 µg/L  | -0.602 ppb  | 15:42:09 |
| 2 | SiO2†              | 713.1    | -30.5    | -8.7237 µg/L | -8.7237 ppb | 15:41:49 |
| 2 | Si 251.611†        | 238.4    | -40.0    | -2.7683 µg/L | -2.7683 ppb | 15:42:09 |
| 2 | Sn 189.927†        | -23.1    | 1.5      | 0.6675 µg/L  | 0.6675 ppb  | 15:42:09 |
| 2 | Ti 334.940†        | -43.4    | 55.9     | 0.2788 µg/L  | 0.2788 ppb  | 15:41:49 |
| 2 | Tl 190.801†        | -0.3     | -5.5     | -5.3142 µg/L | -5.3142 ppb | 15:42:09 |
| 2 | U 367.007†         | -215.9   | -79.9    | -43.305 µg/L | -43.305 ppb | 15:41:49 |
| 2 | V 292.402†         | 254.1    | 110.4    | 1.7452 µg/L  | 1.7452 ppb  | 15:41:49 |
| 2 | Zn 213.857†        | 239.7    | -14.5    | -0.4840 µg/L | -0.4840 ppb | 15:42:09 |
| 3 | Sc RADIAL          | 4980.3   | 4980.3   | 101 %        |             | 15:41:04 |
| 3 | Al 396.153Radial†  | -115.7   | -17.0    | -29.057 µg/L | -29.057 ppb | 15:41:04 |
| 3 | Ca 317.933Radial†  | 54.5     | -5.5     | -4.4199 µg/L | -4.4199 ppb | 15:41:24 |
| 3 | Fe 238.204 Radial† | 37.3     | 0.3      | 0.6687 µg/L  | 0.6687 ppb  | 15:41:24 |
| 3 | K 766.490 Radial†  | -266.2   | -185.5   | -193.51 µg/L | -193.51 ppb | 15:41:04 |
| 3 | Mg 279.077 IEC†    | -13.2    | 0.5      | 5.1599 µg/L  | 5.1599 ppb  | 15:41:24 |
| 3 | Na 589.592 Radial† | 564.2    | -197.8   | -74.728 µg/L | -74.728 ppb | 15:41:04 |
| 3 | Sr 421.552†        | 137.7    | -21.0    | -0.2273 µg/L | -0.2273 ppb | 15:41:04 |
| 3 | Sc                 | 406161.0 | 406161.0 | 101.0 %      |             | 15:42:11 |
| 3 | Y 371.029          | 323179.5 | 323179.5 | 101.05 %     |             | 15:42:11 |
| 3 | Sc 357.253         | 260994.5 | 260994.5 | 101.6 %      |             | 15:42:11 |
| 3 | Ag 328.068†        | -563.1   | -64.5    | -0.6432 µg/L | -0.6432 ppb | 15:42:11 |
| 3 | As 188.979†        | 7.9      | 3.1      | 6.3679 µg/L  | 6.3679 ppb  | 15:42:31 |
| 3 | B 249.677†         | 461.0    | -55.4    | -2.2079 µg/L | -2.2079 ppb | 15:42:11 |
| 3 | Ba 233.527†        | -47.5    | 6.6      | 0.1232 µg/L  | 0.1232 ppb  | 15:42:31 |
| 3 | Be 313.107†        | -2169.5  | 87.0     | 0.0551 µg/L  | 0.0551 ppb  | 15:42:11 |
| 3 | Cd 226.502†        | -175.1   | 6.9      | 0.0787 µg/L  | 0.0787 ppb  | 15:42:31 |
| 3 | Co 228.616†        | -50.0    | 4.4      | 0.4462 µg/L  | 0.4462 ppb  | 15:42:31 |
| 3 | Cr 267.716†        | 194.0    | 28.2     | 0.3925 µg/L  | 0.3925 ppb  | 15:42:11 |
| 3 | Cu 324.752†        | 2105.9   | -82.0    | -0.8604 µg/L | -0.8604 ppb | 15:42:11 |
| 3 | Mn 257.610†        | -132.7   | 13.1     | 0.0474 µg/L  | 0.0474 ppb  | 15:42:31 |
| 3 | Mo 202.031†        | -45.4    | -4.3     | -0.5321 µg/L | -0.5321 ppb | 15:42:31 |
| 3 | Ni 231.604†        | 10.0     | 2.6      | 0.1717 µg/L  | 0.1717 ppb  | 15:42:31 |
| 3 | P 214.914†         | 16.7     | -11.1    | -21.841 µg/L | -21.841 ppb | 15:42:31 |
| 3 | Pb 220.353†        | 43.2     | 4.0      | 1.5935 µg/L  | 1.5935 ppb  | 15:42:31 |
| 3 | S 181.975 Axial†   | 46.0     | -4.8     | -15.506 µg/L | -15.506 ppb | 15:42:31 |
| 3 | Sb 206.836†        | 9.3      | 5.3      | 8.4057 µg/L  | 8.4057 ppb  | 15:42:31 |
| 3 | Se 196.026†        | 8.4      | 4.3      | 10.1 µg/L    | 10.1 ppb    | 15:42:31 |
| 3 | SiO2†              | 761.8    | 13.0     | 3.7266 µg/L  | 3.7266 ppb  | 15:42:11 |
| 3 | Si 251.611†        | 259.0    | -21.2    | -1.4658 µg/L | -1.4658 ppb | 15:42:31 |
| 3 | Sn 189.927†        | -19.8    | 4.9      | 2.1877 µg/L  | 2.1877 ppb  | 15:42:31 |
| 3 | Ti 334.940†        | -75.1    | 25.0     | 0.1245 µg/L  | 0.1245 ppb  | 15:42:11 |
| 3 | Tl 190.801†        | 0.6      | -4.6     | -4.4238 µg/L | -4.4238 ppb | 15:42:31 |
| 3 | U 367.007†         | -249.9   | -112.0   | -60.796 µg/L | -60.796 ppb | 15:42:11 |
| 3 | V 292.402†         | 313.5    | 167.3    | 2.6378 µg/L  | 2.6378 ppb  | 15:42:11 |
| 3 | Zn 213.857†        | 240.1    | -15.6    | -0.5247 µg/L | -0.5247 ppb | 15:42:31 |

## Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc  | 408370.7                 | 101.6 %            | 0.50     |                    |          | 0.49%   |
| Sc RADIAL   | 4996.0                   | 102 %              | 0.6      |                    |          | 0.58%   |
| Y 371.029   | 324124.4                 | 101.34 %           | 0.717    |                    |          | 0.71%   |
| Sc 357.253  | 259952.1                 | 101.2 %            | 0.35     |                    |          | 0.35%   |
| Ag 328.068†   | 31.7                     | 0.3859 µg/L        | 1.01326  | 0.3859 ppb         | 1.01326  | 262.59% |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | -25.2                    | -43.133 µg/L       | 23.7643  | -43.133 ppb        | 23.7643  | 55.10%  |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | 2.7                      | 5.6963 µg/L        | 0.58535  | 5.6963 ppb         | 0.58535  | 10.28%  |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | 39.7                     | 1.5833 µg/L        | 3.65157  | 1.5833 ppb         | 3.65157  | 230.63% |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | 2.5                      | 0.0468 µg/L        | 0.11990  | 0.0468 ppb         | 0.11990  | 256.23% |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 112.0                    | 0.0709 µg/L        | 0.04459  | 0.0709 ppb         | 0.04459  | 62.87%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | -0.3                     | -0.2472 µg/L       | 3.61691  | -0.2472 ppb        | 3.61691  | >999.9% |

|  |                 |  |        |              |          |             |          |          |         |
|--|-----------------|--|--------|--------------|----------|-------------|----------|----------|---------|
| QC value within limits for Ca 317.933 Radial Recovery = Not calculated |                 |  |        |              |          |             |          |          |         |
| Cd   | 226.502†        |  | 9.4    | 0.1068 µg/L  | 0.06394  | 0.1068 ppb  |          | 0.06394  | 59.89%  |
| QC value within limits for Cd 226.502 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Co   | 228.616†        |  | 3.0    | 0.3068 µg/L  | 0.12074  | 0.3068 ppb  |          | 0.12074  | 39.35%  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Cr   | 267.716†        |  | 5.8    | 0.0815 µg/L  | 0.39819  | 0.0815 ppb  |          | 0.39819  | 488.52% |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Cu   | 324.752†        |  | -122.2 | -1.2435 µg/L | 1.11194  | -1.2435 ppb |          | 1.11194  | 89.42%  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Fe   | 238.204 Radial† |  | -0.7   | -1.5504 µg/L | 6.39390  | -1.5504 ppb |          | 6.39390  | 412.40% |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |                 |  |        |              |          |             |          |          |         |
| K  | 766.490 Radial† |  | -73.6  | -76.761 µg/L | 102.3088 | -76.761 ppb | 102.3088 | 133.28%  |         |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |                 |  |        |              |          |             |          |          |         |
| Mg   | 279.077 IEC†    |  | 0.9    | 8.4545 µg/L  | 5.73884  | 8.4545 ppb  |          | 5.73884  | 67.88%  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |                 |  |        |              |          |             |          |          |         |
| Mn   | 257.610†        |  | 23.2   | 0.0840 µg/L  | 0.03175  | 0.0840 ppb  |          | 0.03175  | 37.79%  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Mo   | 202.031†        |  | -0.8   | -0.1028 µg/L | 0.61909  | -0.1028 ppb |          | 0.61909  | 602.43% |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Na   | 589.592 Radial† |  | -108.8 | -41.108 µg/L | 33.3842  | -41.108 ppb |          | 33.3842  | 81.21%  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |                 |  |        |              |          |             |          |          |         |
| Ni   | 231.604†        |  | 1.2    | 0.0833 µg/L  | 0.15472  | 0.0833 ppb  |          | 0.15472  | 185.83% |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| P  | 214.914†        |  | -6.8   | -13.485 µg/L | 10.9077  | -13.485 ppb |          | 10.9077  | 80.89%  |
| QC value within limits for P 214.914 Recovery = Not calculated         |                 |  |        |              |          |             |          |          |         |
| Pb   | 220.353†        |  | 3.7    | 1.4531 µg/L  | 0.15213  | 1.4531 ppb  |          | 0.15213  | 10.47%  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| S  | 181.975 Axial†  |  | -6.1   | -19.692 µg/L | 4.2316   | -19.692 ppb |          | 4.2316   | 21.49%  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |                 |  |        |              |          |             |          |          |         |
| Sb   | 206.836†        |  | 6.1    | 9.7017 µg/L  | 2.35062  | 9.7017 ppb  |          | 2.35062  | 24.23%  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Se   | 196.026†        |  | 1.6    | 3.67 µg/L    | 5.684    | 3.67 ppb    |          | 5.684    | 155.05% |
| QC value within limits for Se 196.026 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| SiO2†  |                 |  | 17.6   | 5.0422 µg/L  | 14.46853 | 5.0422 ppb  |          | 14.46853 | 286.95% |
| QC value within limits for SiO2 Recovery = Not calculated              |                 |  |        |              |          |             |          |          |         |
| Si   | 251.611†        |  | -25.8  | -1.7840 µg/L | 0.86997  | -1.7840 ppb |          | 0.86997  | 48.76%  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Sn   | 189.927†        |  | 2.7    | 1.2074 µg/L  | 0.85040  | 1.2074 ppb  |          | 0.85040  | 70.43%  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Sr   | 421.552†        |  | -8.7   | -0.0937 µg/L | 0.34988  | -0.0937 ppb |          | 0.34988  | 373.53% |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Ti   | 334.940†        |  | 43.2   | 0.2156 µg/L  | 0.08080  | 0.2156 ppb  |          | 0.08080  | 37.49%  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| Tl   | 190.801†        |  | -2.6   | -2.5500 µg/L | 4.04119  | -2.5500 ppb |          | 4.04119  | 158.48% |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| U  | 367.007†        |  | -62.3  | -33.840 µg/L | 32.7312  | -33.840 ppb |          | 32.7312  | 96.72%  |
| QC value within limits for U 367.007 Recovery = Not calculated         |                 |  |        |              |          |             |          |          |         |
| V  | 292.402†        |  | 112.1  | 1.7731 µg/L  | 0.85117  | 1.7731 ppb  |          | 0.85117  | 48.01%  |
| QC value within limits for V 292.402 Recovery = Not calculated         |                 |  |        |              |          |             |          |          |         |
| Zn   | 213.857†        |  | -15.7  | -0.5273 µg/L | 0.04470  | -0.5273 ppb |          | 0.04470  | 8.48%   |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |                 |  |        |              |          |             |          |          |         |
| All analyte(s) passed QC.  |                 |  |        |              |          |             |          |          |         |

Sequence No.: 56

Autosampler Location: 331

Sample ID: 1203658086|1611348|1|

Date Collected: 11/2/2016 15:42:41

Analyst: HSC

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Replicate Data: 1203658086|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 5031.6        | 5031.6              | 102 %              |                    | 15:43:12      |
| 1     | Al 396.153Radial†  | -45.3         | 53.1                | 90.973 µg/L        | 90.973 ppb         | 15:43:12      |
| 1     | Ca 317.933Radial†  | 63.4          | 2.7                 | 2.1920 µg/L        | 2.1920 ppb         | 15:43:32      |
| 1     | Fe 238.204 Radial† | 38.6          | 1.1                 | 2.6769 µg/L        | 2.6769 ppb         | 15:43:32      |
| 1     | K 766.490 Radial†  | -235.2        | -152.5              | -159.06 µg/L       | -159.06 ppb        | 15:43:12      |
| 1     | Mg 279.077 IEC†    | -14.6         | -0.7                | -7.2306 µg/L       | -7.2306 ppb        | 15:43:32      |
| 1     | Na 589.592 Radial† | 752.5         | -19.3               | -7.3047 µg/L       | -7.3047 ppb        | 15:43:12      |
| 1     | Sr 421.552†        | 119.3         | -40.4               | -0.4369 µg/L       | -0.4369 ppb        | 15:43:12      |
| 1     | Sc                 | 417926.7      | 417926.7            | 103.9 %            |                    | 15:44:19      |
| 1     | Y 371.029          | 332321.5      | 332321.5            | 103.90 %           |                    | 15:44:19      |
| 1     | Sc 357.253         | 269009.3      | 269009.3            | 104.7 %            |                    | 15:44:19      |
| 1     | Ag 328.068†        | -493.4        | 18.6                | 0.2757 µg/L        | 0.2757 ppb         | 15:44:19      |
| 1     | As 188.979†        | 3.7           | -1.2                | -2.4731 µg/L       | -2.4731 ppb        | 15:44:39      |
| 1     | B 249.677†         | 580.4         | 45.2                | 1.8013 µg/L        | 1.8013 ppb         | 15:44:19      |
| 1     | Ba 233.527†        | -52.8         | 3.0                 | 0.0559 µg/L        | 0.0559 ppb         | 15:44:39      |
| 1     | Be 313.107†        | -2103.3       | 213.9               | 0.1360 µg/L        | 0.1360 ppb         | 15:44:19      |
| 1     | Cd 226.502†        | -169.7        | 17.2                | 0.1966 µg/L        | 0.1966 ppb         | 15:44:39      |
| 1     | Co 228.616†        | -59.1         | -2.9                | -0.2945 µg/L       | -0.2945 ppb        | 15:44:39      |
| 1     | Cr 267.716†        | 147.9         | -21.5               | -0.2974 µg/L       | -0.2974 ppb        | 15:44:19      |
| 1     | Cu 324.752†        | 2066.3        | -181.5              | -1.8578 µg/L       | -1.8578 ppb        | 15:44:19      |
| 1     | Mn 257.610†        | -130.7        | 18.9                | 0.0689 µg/L        | 0.0689 ppb         | 15:44:39      |
| 1     | Mo 202.031†        | -52.8         | -10.1               | -1.2417 µg/L       | -1.2417 ppb        | 15:44:39      |
| 1     | Ni 231.604†        | -6.6          | -13.5               | -0.9001 µg/L       | -0.9001 ppb        | 15:44:39      |
| 1     | P 214.914†         | 18.4          | -9.9                | -19.577 µg/L       | -19.577 ppb        | 15:44:39      |
| 1     | Pb 220.353†        | 40.7          | 0.4                 | 0.2036 µg/L        | 0.2036 ppb         | 15:44:39      |
| 1     | S 181.975 Axial†   | 44.4          | -7.7                | -24.788 µg/L       | -24.788 ppb        | 15:44:39      |
| 1     | Sb 206.836†        | 2.6           | -1.4                | -2.1929 µg/L       | -2.1929 ppb        | 15:44:39      |
| 1     | Se 196.026†        | 6.6           | 2.3                 | 5.43 µg/L          | 5.43 ppb           | 15:44:39      |
| 1     | SiO2†              | 774.5         | 2.8                 | 0.7941 µg/L        | 0.7941 ppb         | 15:44:19      |
| 1     | Si 251.611†        | 329.7         | 38.8                | 2.6836 µg/L        | 2.6836 ppb         | 15:44:39      |
| 1     | Sn 189.927†        | -19.9         | 5.4                 | 2.3974 µg/L        | 2.3974 ppb         | 15:44:39      |
| 1     | Ti 334.940†        | 44.6          | 141.5               | 0.7056 µg/L        | 0.7056 ppb         | 15:44:19      |
| 1     | Tl 190.801†        | -0.3          | -5.5                | -5.3477 µg/L       | -5.3477 ppb        | 15:44:39      |
| 1     | U 367.007†         | -268.2        | -122.2              | -66.350 µg/L       | -66.350 ppb        | 15:44:19      |
| 1     | V 292.402†         | 238.1         | 86.1                | 1.3348 µg/L        | 1.3348 ppb         | 15:44:19      |
| 1     | Zn 213.857†        | 199.1         | -61.8               | -2.0667 µg/L       | -2.0667 ppb        | 15:44:39      |
| 2     | Sc RADIAL          | 5155.4        | 5155.4              | 105 %              |                    | 15:43:34      |
| 2     | Al 396.153Radial†  | -118.3        | -15.5               | -26.546 µg/L       | -26.546 ppb        | 15:43:34      |
| 2     | Ca 317.933Radial†  | 68.4          | 5.9                 | 4.7726 µg/L        | 4.7726 ppb         | 15:43:54      |
| 2     | Fe 238.204 Radial† | 41.3          | 2.9                 | 6.7937 µg/L        | 6.7937 ppb         | 15:43:54      |
| 2     | K 766.490 Radial†  | -305.0        | -213.6              | -222.80 µg/L       | -222.80 ppb        | 15:43:34      |
| 2     | Mg 279.077 IEC†    | -10.3         | 3.7                 | 35.896 µg/L        | 35.896 ppb         | 15:43:54      |
| 2     | Na 589.592 Radial† | 907.1         | 110.5               | 41.746 µg/L        | 41.746 ppb         | 15:43:34      |
| 2     | Sr 421.552†        | 155.1         | -9.0                | -0.0981 µg/L       | -0.0981 ppb        | 15:43:34      |
| 2     | Sc                 | 416927.7      | 416927.7            | 103.7 %            |                    | 15:44:41      |
| 2     | Y 371.029          | 334464.1      | 334464.1            | 104.57 %           |                    | 15:44:41      |
| 2     | Sc 357.253         | 267452.7      | 267452.7            | 104.1 %            |                    | 15:44:41      |
| 2     | Ag 328.068†        | -451.9        | 55.7                | 0.6313 µg/L        | 0.6313 ppb         | 15:44:41      |
| 2     | As 188.979†        | 8.9           | 3.8                 | 7.9331 µg/L        | 7.9331 ppb         | 15:45:01      |
| 2     | B 249.677†         | 591.5         | 59.1                | 2.3548 µg/L        | 2.3548 ppb         | 15:44:41      |
| 2     | Ba 233.527†        | -36.4         | 18.4                | 0.3376 µg/L        | 0.3376 ppb         | 15:45:01      |
| 2     | Be 313.107†        | -2211.3       | 98.5                | 0.0621 µg/L        | 0.0621 ppb         | 15:44:41      |
| 2     | Cd 226.502†        | -188.7        | -2.0                | -0.0233 µg/L       | -0.0233 ppb        | 15:45:01      |
| 2     | Co 228.616†        | -52.0         | 3.6                 | 0.3721 µg/L        | 0.3721 ppb         | 15:45:01      |
| 2     | Cr 267.716†        | 180.7         | 10.8                | 0.1509 µg/L        | 0.1509 ppb         | 15:44:41      |
| 2     | Cu 324.752†        | 2144.3        | -95.1               | -0.9602 µg/L       | -0.9602 ppb        | 15:44:41      |
| 2     | Mn 257.610†        | -119.9        | 28.5                | 0.1027 µg/L        | 0.1027 ppb         | 15:45:01      |
| 2     | Mo 202.031†        | -38.4         | 3.4                 | 0.4161 µg/L        | 0.4161 ppb         | 15:45:01      |
| 2     | Ni 231.604†        | 10.9          | 3.2                 | 0.2139 µg/L        | 0.2139 ppb         | 15:45:01      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 28.4     | -0.3     | -0.5148 µg/L | -0.5148 ppb | 15:45:01 |
| 2 | Pb 220.353†        | 40.7     | 0.5      | 0.2234 µg/L  | 0.2234 ppb  | 15:45:01 |
| 2 | S 181.975 Axial†   | 47.3     | -4.6     | -14.833 µg/L | -14.833 ppb | 15:45:01 |
| 2 | Sb 206.836†        | 8.4      | 4.3      | 6.7864 µg/L  | 6.7864 ppb  | 15:45:01 |
| 2 | Se 196.026†        | 5.3      | 1.2      | 2.71 µg/L    | 2.71 ppb    | 15:45:01 |
| 2 | SiO2†              | 781.0    | 13.4     | 3.8315 µg/L  | 3.8315 ppb  | 15:44:41 |
| 2 | Si 251.611†        | 303.6    | 15.5     | 1.0736 µg/L  | 1.0736 ppb  | 15:45:01 |
| 2 | Sn 189.927†        | -21.6    | 3.6      | 1.6119 µg/L  | 1.6119 ppb  | 15:45:01 |
| 2 | Ti 334.940†        | -93.4    | 9.2      | 0.0457 µg/L  | 0.0457 ppb  | 15:44:41 |
| 2 | Tl 190.801†        | 0.9      | -4.3     | -4.1697 µg/L | -4.1697 ppb | 15:45:01 |
| 2 | U 367.007†         | -170.7   | -30.0    | -16.317 µg/L | -16.317 ppb | 15:44:41 |
| 2 | V 292.402†         | 302.3    | 149.1    | 2.3737 µg/L  | 2.3737 ppb  | 15:44:41 |
| 2 | Zn 213.857†        | 188.9    | -70.5    | -2.3676 µg/L | -2.3676 ppb | 15:45:01 |
| 3 | Sc RADIAL          | 5057.3   | 5057.3   | 103 %        |             | 15:43:56 |
| 3 | Al 396.153Radial†  | -56.3    | 42.6     | 72.939 µg/L  | 72.939 ppb  | 15:43:56 |
| 3 | Ca 317.933Radial†  | 64.0     | 3.0      | 2.4068 µg/L  | 2.4068 ppb  | 15:44:16 |
| 3 | Fe 238.204 Radial† | 30.0     | -7.3     | -17.295 µg/L | -17.295 ppb | 15:44:16 |
| 3 | K 766.490 Radial†  | -208.6   | -125.5   | -130.89 µg/L | -130.89 ppb | 15:43:56 |
| 3 | Mg 279.077 IEC†    | -12.6    | 1.3      | 12.483 µg/L  | 12.483 ppb  | 15:44:16 |
| 3 | Na 589.592 Radial† | 919.8    | 139.6    | 52.759 µg/L  | 52.759 ppb  | 15:43:56 |
| 3 | Sr 421.552†        | 167.9    | 6.3      | 0.0685 µg/L  | 0.0685 ppb  | 15:43:56 |
| 3 | Sc                 | 416339.0 | 416339.0 | 103.5 %      |             | 15:45:04 |
| 3 | Y 371.029          | 331622.6 | 331622.6 | 103.69 %     |             | 15:45:04 |
| 3 | Sc 357.253         | 266867.7 | 266867.7 | 103.9 %      |             | 15:45:04 |
| 3 | Ag 328.068†        | -504.1   | 4.5      | 0.0497 µg/L  | 0.0497 ppb  | 15:45:04 |
| 3 | As 188.979†        | 3.9      | -0.9     | -1.9288 µg/L | -1.9288 ppb | 15:45:24 |
| 3 | B 249.677†         | 485.4    | -41.8    | -1.6633 µg/L | -1.6633 ppb | 15:45:04 |
| 3 | Ba 233.527†        | -55.6    | -0.1     | -0.0013 µg/L | -0.0013 ppb | 15:45:24 |
| 3 | Be 313.107†        | -2241.6  | 64.6     | 0.0404 µg/L  | 0.0404 ppb  | 15:45:04 |
| 3 | Cd 226.502†        | -183.9   | 2.2      | 0.0265 µg/L  | 0.0265 ppb  | 15:45:24 |
| 3 | Co 228.616†        | -45.8    | 9.5      | 0.9759 µg/L  | 0.9759 ppb  | 15:45:24 |
| 3 | Cr 267.716†        | 276.0    | 102.9    | 1.4283 µg/L  | 1.4283 ppb  | 15:45:04 |
| 3 | Cu 324.752†        | 2055.0   | -176.6   | -1.7638 µg/L | -1.7638 ppb | 15:45:04 |
| 3 | Mn 257.610†        | -107.4   | 40.3     | 0.1458 µg/L  | 0.1458 ppb  | 15:45:24 |
| 3 | Mo 202.031†        | -54.3    | -12.0    | -1.4654 µg/L | -1.4654 ppb | 15:45:24 |
| 3 | Ni 231.604†        | 7.8      | 0.3      | 0.0178 µg/L  | 0.0178 ppb  | 15:45:24 |
| 3 | P 214.914†         | 25.7     | -2.8     | -5.5538 µg/L | -5.5538 ppb | 15:45:24 |
| 3 | Pb 220.353†        | 41.0     | 0.9      | 0.3517 µg/L  | 0.3517 ppb  | 15:45:24 |
| 3 | S 181.975 Axial†   | 45.9     | -5.9     | -19.042 µg/L | -19.042 ppb | 15:45:24 |
| 3 | Sb 206.836†        | 9.2      | 5.0      | 7.9175 µg/L  | 7.9175 ppb  | 15:45:24 |
| 3 | Se 196.026†        | 1.9      | -2.1     | -4.96 µg/L   | -4.96 ppb   | 15:45:24 |
| 3 | SiO2†              | 782.5    | 16.5     | 4.7252 µg/L  | 4.7252 ppb  | 15:45:04 |
| 3 | Si 251.611†        | 331.0    | 42.5     | 2.9408 µg/L  | 2.9408 ppb  | 15:45:24 |
| 3 | Sn 189.927†        | -19.8    | 5.3      | 2.3616 µg/L  | 2.3616 ppb  | 15:45:24 |
| 3 | Ti 334.940†        | -142.4   | -38.2    | -0.1907 µg/L | -0.1907 ppb | 15:45:04 |
| 3 | Tl 190.801†        | 3.5      | -1.9     | -1.8239 µg/L | -1.8239 ppb | 15:45:24 |
| 3 | U 367.007†         | -139.0   | 0.1      | 0.1792 µg/L  | 0.1792 ppb  | 15:45:04 |
| 3 | V 292.402†         | 210.1    | 60.9     | 0.9672 µg/L  | 0.9672 ppb  | 15:45:04 |
| 3 | Zn 213.857†        | 185.6    | -73.2    | -2.4546 µg/L | -2.4546 ppb | 15:45:24 |

Mean Data: 1203658086|1611348|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc                 | 417064.5                 | 103.7 %            | 0.20     |                    |          | 0.19%   |
| Sc RADIAL          | 5081.4                   | 103 %              | 1.3      |                    |          | 1.29%   |
| Y 371.029          | 332802.7                 | 104.05 %           | 0.463    |                    |          | 0.44%   |
| Sc 357.253         | 267776.6                 | 104.2 %            | 0.43     |                    |          | 0.41%   |
| Ag 328.068†        | 26.3                     | 0.3189 µg/L        | 0.29322  | 0.3189 ppb         | 0.29322  | 91.95%  |
| Al 396.153Radial†  | 26.7                     | 45.789 µg/L        | 63.2892  | 45.789 ppb         | 63.2892  | 138.22% |
| As 188.979†        | 0.6                      | 1.1771 µg/L        | 5.85724  | 1.1771 ppb         | 5.85724  | 497.61% |
| B 249.677†         | 20.8                     | 0.8309 µg/L        | 2.17770  | 0.8309 ppb         | 2.17770  | 262.08% |
| Ba 233.527†        | 7.1                      | 0.1308 µg/L        | 0.18140  | 0.1308 ppb         | 0.18140  | 138.72% |
| Be 313.107†        | 125.7                    | 0.0795 µg/L        | 0.05011  | 0.0795 ppb         | 0.05011  | 63.04%  |
| Ca 317.933Radial†  | 3.9                      | 3.1238 µg/L        | 1.43197  | 3.1238 ppb         | 1.43197  | 45.84%  |
| Cd 226.502†        | 5.8                      | 0.0666 µg/L        | 0.11533  | 0.0666 ppb         | 0.11533  | 173.14% |
| Co 228.616†        | 3.4                      | 0.3511 µg/L        | 0.63547  | 0.3511 ppb         | 0.63547  | 180.97% |
| Cr 267.716†        | 30.7                     | 0.4273 µg/L        | 0.89542  | 0.4273 ppb         | 0.89542  | 209.56% |
| Cu 324.752†        | -151.1                   | -1.5273 µg/L       | 0.49334  | -1.5273 ppb        | 0.49334  | 32.30%  |
| Fe 238.204 Radial† | -1.1                     | -2.6081 µg/L       | 12.88462 | -2.6081 ppb        | 12.88462 | 494.02% |
| K 766.490 Radial†  | -163.9                   | -170.92 µg/L       | 47.091   | -170.92 ppb        | 47.091   | 27.55%  |

|   |       |              |         |             |         |         |  |
|---|-------|--------------|---------|-------------|---------|---------|--|
| Concentration less than lower limit for K 766.490 Radial. |       |              |         |             |         |         |  |
| Mg 279.077 IEC†   | 1.4   | 13.716 µg/L  | 21.5895 | 13.716 ppb  | 21.5895 | 157.40% |  |
| Mn 257.610†   | 29.2  | 0.1058 µg/L  | 0.03853 | 0.1058 ppb  | 0.03853 | 36.41%  |  |
| Mo 202.031†   | -6.2  | -0.7637 µg/L | 1.02779 | -0.7637 ppb | 1.02779 | 134.58% |  |
| Na 589.592 Radial†  | 76.9  | 29.066 µg/L  | 31.9761 | 29.066 ppb  | 31.9761 | 110.01% |  |
| Ni 231.604†   | -3.3  | -0.2228 µg/L | 0.59472 | -0.2228 ppb | 0.59472 | 266.90% |  |
| P 214.914†  | -4.3  | -8.5485 µg/L | 9.87756 | -8.5485 ppb | 9.87756 | 115.55% |  |
| Pb 220.353†   | 0.6   | 0.2596 µg/L  | 0.08041 | 0.2596 ppb  | 0.08041 | 30.98%  |  |
| S 181.975 Axial†  | -6.1  | -19.554 µg/L | 4.9976  | -19.554 ppb | 4.9976  | 25.56%  |  |
| Sb 206.836†   | 2.6   | 4.1703 µg/L  | 5.53962 | 4.1703 ppb  | 5.53962 | 132.83% |  |
| Se 196.026†   | 0.5   | 1.06 µg/L    | 5.384   | 1.06 ppb    | 5.384   | 508.10% |  |
| SiO2†   | 10.9  | 3.1169 µg/L  | 2.06068 | 3.1169 ppb  | 2.06068 | 66.11%  |  |
| Si 251.611†   | 32.2  | 2.2327 µg/L  | 1.01197 | 2.2327 ppb  | 1.01197 | 45.33%  |  |
| Sn 189.927†   | 4.8   | 2.1237 µg/L  | 0.44355 | 2.1237 ppb  | 0.44355 | 20.89%  |  |
| Sr 421.552†   | -14.4 | -0.1555 µg/L | 0.25754 | -0.1555 ppb | 0.25754 | 165.64% |  |
| Ti 334.940†   | 37.5  | 0.1869 µg/L  | 0.46455 | 0.1869 ppb  | 0.46455 | 248.59% |  |
| Tl 190.801†   | -3.9  | -3.7805 µg/L | 1.79387 | -3.7805 ppb | 1.79387 | 47.45%  |  |
| U 367.007†  | -50.7 | -27.496 µg/L | 34.6447 | -27.496 ppb | 34.6447 | 126.00% |  |
| V 292.402†  | 98.7  | 1.5586 µg/L  | 0.72943 | 1.5586 ppb  | 0.72943 | 46.80%  |  |
| Zn 213.857†   | -68.5 | -2.2963 µg/L | 0.20354 | -2.2963 ppb | 0.20354 | 8.86%   |  |

Sequence No.: 57

Autosampler Location: 332

Sample ID: 1203657517|1611348|1|

Date Collected: 11/2/2016 15:45:32

Analyst: HSC

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Replicate Data: 1203657517|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 5105.7        | 5105.7              | 104 %              |                    | 15:46:01      |
| 1     | Al 396.153Radial†  | -127.2        | -25.2               | -43.117 µg/L       | -43.117 ppb        | 15:46:01      |
| 1     | Ca 317.933Radial†  | 69.8          | 7.9                 | 6.3524 µg/L        | 6.3524 ppb         | 15:46:21      |
| 1     | Fe 238.204 Radial† | 35.8          | -2.1                | -4.8523 µg/L       | -4.8523 ppb        | 15:46:21      |
| 1     | K 766.490 Radial†  | -71.0         | 9.0                 | 9.3998 µg/L        | 9.3998 ppb         | 15:46:01      |
| 1     | Mg 279.077 IEC†    | -14.8         | -0.7                | -7.1434 µg/L       | -7.1434 ppb        | 15:46:21      |
| 1     | Na 589.592 Radial† | 810.2         | 25.6                | 9.6546 µg/L        | 9.6546 ppb         | 15:46:01      |
| 1     | Sr 421.552†        | 151.3         | -11.2               | -0.1209 µg/L       | -0.1209 ppb        | 15:46:01      |
| 1     | Sc                 | 416097.4      | 416097.4            | 103.5 %            |                    | 15:47:09      |
| 1     | Y 371.029          | 329386.0      | 329386.0            | 102.99 %           |                    | 15:47:09      |
| 1     | Sc 357.253         | 265496.5      | 265496.5            | 103.4 %            |                    | 15:47:09      |
| 1     | Ag 328.068†        | -568.4        | -60.3               | -0.6348 µg/L       | -0.6348 ppb        | 15:47:09      |
| 1     | As 188.979†        | 5.6           | 0.7                 | 1.4384 µg/L        | 1.4384 ppb         | 15:47:29      |
| 1     | B 249.677†         | 477.3         | -47.3               | -1.8844 µg/L       | -1.8844 ppb        | 15:47:09      |
| 1     | Ba 233.527†        | -55.0         | 0.2                 | 0.0014 µg/L        | 0.0014 ppb         | 15:47:29      |
| 1     | Be 313.107†        | -2125.6       | 165.7               | 0.1053 µg/L        | 0.1053 ppb         | 15:47:09      |
| 1     | Cd 226.502†        | -171.7        | 13.2                | 0.1505 µg/L        | 0.1505 ppb         | 15:47:29      |
| 1     | Co 228.616†        | -60.2         | -4.7                | -0.4767 µg/L       | -0.4767 ppb        | 15:47:29      |
| 1     | Cr 267.716†        | 118.1         | -48.5               | -0.6735 µg/L       | -0.6735 ppb        | 15:47:09      |
| 1     | Cu 324.752†        | 2040.8        | -180.1              | -1.8174 µg/L       | -1.8174 ppb        | 15:47:09      |
| 1     | Mn 257.610†        | -119.3        | 28.3                | 0.1030 µg/L        | 0.1030 ppb         | 15:47:29      |
| 1     | Mo 202.031†        | -47.9         | -6.0                | -0.7359 µg/L       | -0.7359 ppb        | 15:47:29      |
| 1     | Ni 231.604†        | 8.5           | 1.0                 | 0.0662 µg/L        | 0.0662 ppb         | 15:47:29      |
| 1     | P 214.914†         | 21.8          | -6.4                | -12.686 µg/L       | -12.686 ppb        | 15:47:29      |
| 1     | Pb 220.353†        | 38.5          | -1.3                | -0.4596 µg/L       | -0.4596 ppb        | 15:47:29      |
| 1     | S 181.975 Axial†   | 46.4          | -5.2                | -16.779 µg/L       | -16.779 ppb        | 15:47:29      |
| 1     | Sb 206.836†        | 8.8           | 4.7                 | 7.3964 µg/L        | 7.3964 ppb         | 15:47:29      |
| 1     | Se 196.026†        | 6.5           | 2.3                 | 5.40 µg/L          | 5.40 ppb           | 15:47:29      |
| 1     | SiO2†              | 839.4         | 75.4                | 21.546 µg/L        | 21.546 ppb         | 15:47:09      |
| 1     | Si 251.611†        | 347.6         | 60.2                | 4.1713 µg/L        | 4.1713 ppb         | 15:47:29      |
| 1     | Sn 189.927†        | -21.5         | 3.6                 | 1.5782 µg/L        | 1.5782 ppb         | 15:47:29      |
| 1     | Ti 334.940†        | 6.8           | 105.5               | 0.5261 µg/L        | 0.5261 ppb         | 15:47:09      |
| 1     | Tl 190.801†        | 1.8           | -3.5                | -3.3581 µg/L       | -3.3581 ppb        | 15:47:29      |
| 1     | U 367.007†         | -191.0        | -50.8               | -27.568 µg/L       | -27.568 ppb        | 15:47:09      |
| 1     | V 292.402†         | 20.9          | -121.1              | -1.9504 µg/L       | -1.9504 ppb        | 15:47:09      |
| 1     | Zn 213.857†        | 197.0         | -61.4               | -2.0564 µg/L       | -2.0564 ppb        | 15:47:29      |
| 2     | Sc RADIAL          | 5150.6        | 5150.6              | 105 %              |                    | 15:46:23      |
| 2     | Al 396.153Radial†  | -38.1         | 61.0                | 104.57 µg/L        | 104.57 ppb         | 15:46:23      |
| 2     | Ca 317.933Radial†  | 66.0          | 3.8                 | 3.0290 µg/L        | 3.0290 ppb         | 15:46:43      |
| 2     | Fe 238.204 Radial† | 35.9          | -2.3                | -5.4171 µg/L       | -5.4171 ppb        | 15:46:43      |
| 2     | K 766.490 Radial†  | -174.3        | -89.0               | -92.805 µg/L       | -92.805 ppb        | 15:46:23      |
| 2     | Mg 279.077 IEC†    | -16.4         | -2.1                | -20.406 µg/L       | -20.406 ppb        | 15:46:43      |
| 2     | Na 589.592 Radial† | 717.4         | -69.8               | -26.388 µg/L       | -26.388 ppb        | 15:46:23      |
| 2     | Sr 421.552†        | 197.1         | 31.3                | 0.3382 µg/L        | 0.3382 ppb         | 15:46:23      |
| 2     | Sc                 | 415642.7      | 415642.7            | 103.4 %            |                    | 15:47:31      |
| 2     | Y 371.029          | 332387.1      | 332387.1            | 103.92 %           |                    | 15:47:31      |
| 2     | Sc 357.253         | 268094.2      | 268094.2            | 104.4 %            |                    | 15:47:31      |
| 2     | Ag 328.068†        | -490.4        | 19.9                | 0.2221 µg/L        | 0.2221 ppb         | 15:47:31      |
| 2     | As 188.979†        | 4.6           | -0.3                | -0.6672 µg/L       | -0.6672 ppb        | 15:47:51      |
| 2     | B 249.677†         | 577.4         | 44.2                | 1.7641 µg/L        | 1.7641 ppb         | 15:47:31      |
| 2     | Ba 233.527†        | -62.3         | -6.4                | -0.1139 µg/L       | -0.1139 ppb        | 15:47:51      |
| 2     | Be 313.107†        | -2301.5       | 17.1                | 0.0113 µg/L        | 0.0113 ppb         | 15:47:31      |
| 2     | Cd 226.502†        | -158.5        | 27.3                | 0.3123 µg/L        | 0.3123 ppb         | 15:47:51      |
| 2     | Co 228.616†        | -48.3         | 7.4                 | 0.7549 µg/L        | 0.7549 ppb         | 15:47:51      |
| 2     | Cr 267.716†        | 154.2         | -15.0               | -0.2070 µg/L       | -0.2070 ppb        | 15:47:31      |
| 2     | Cu 324.752†        | 2105.2        | -137.5              | -1.3747 µg/L       | -1.3747 ppb        | 15:47:31      |
| 2     | Mn 257.610†        | -128.2        | 20.8                | 0.0763 µg/L        | 0.0763 ppb         | 15:47:51      |
| 2     | Mo 202.031†        | -40.3         | 1.7                 | 0.2017 µg/L        | 0.2017 ppb         | 15:47:51      |
| 2     | Ni 231.604†        | 9.7           | 2.0                 | 0.1356 µg/L        | 0.1356 ppb         | 15:47:51      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 16.5     | -11.7    | -23.153 µg/L | -23.153 ppb | 15:47:51 |
| 2 | Pb 220.353†        | 41.2     | 1.0      | 0.3922 µg/L  | 0.3922 ppb  | 15:47:51 |
| 2 | S 181.975 Axial†   | 51.4     | -0.8     | -2.6842 µg/L | -2.6842 ppb | 15:47:51 |
| 2 | Sb 206.836†        | 6.0      | 1.9      | 3.0718 µg/L  | 3.0718 ppb  | 15:47:51 |
| 2 | Se 196.026†        | -0.4     | -4.3     | -10.1 µg/L   | -10.1 ppb   | 15:47:51 |
| 2 | SiO2†              | 814.9    | 44.0     | 12.582 µg/L  | 12.582 ppb  | 15:47:31 |
| 2 | Si 251.611†        | 333.9    | 43.8     | 3.0313 µg/L  | 3.0313 ppb  | 15:47:51 |
| 2 | Sn 189.927†        | -18.4    | 6.8      | 3.0066 µg/L  | 3.0066 ppb  | 15:47:51 |
| 2 | Ti 334.940†        | -43.0    | 57.7     | 0.2877 µg/L  | 0.2877 ppb  | 15:47:31 |
| 2 | Tl 190.801†        | 5.9      | 0.4      | 0.4264 µg/L  | 0.4264 ppb  | 15:47:51 |
| 2 | U 367.007†         | -144.5   | -4.5     | -2.4281 µg/L | -2.4281 ppb | 15:47:31 |
| 2 | V 292.402†         | 276.8    | 124.0    | 1.9783 µg/L  | 1.9783 ppb  | 15:47:31 |
| 2 | Zn 213.857†        | 190.8    | -69.1    | -2.3158 µg/L | -2.3158 ppb | 15:47:51 |
| 3 | Sc RADIAL          | 5039.0   | 5039.0   | 102 %        |             | 15:46:45 |
| 3 | Al 396.153Radial†  | -125.2   | -24.9    | -42.653 µg/L | -42.653 ppb | 15:46:45 |
| 3 | Ca 317.933Radial†  | 57.6     | -3.1     | -2.4556 µg/L | -2.4556 ppb | 15:47:05 |
| 3 | Fe 238.204 Radial† | 36.6     | -0.8     | -1.9641 µg/L | -1.9641 ppb | 15:47:05 |
| 3 | K 766.490 Radial†  | -158.3   | -77.1    | -80.367 µg/L | -80.367 ppb | 15:46:45 |
| 3 | Mg 279.077 IEC†    | -8.3     | 5.5      | 53.193 µg/L  | 53.193 ppb  | 15:47:05 |
| 3 | Na 589.592 Radial† | 729.1    | -43.3    | -16.343 µg/L | -16.343 ppb | 15:46:45 |
| 3 | Sr 421.552†        | 160.8    | -0.1     | -0.0007 µg/L | -0.0007 ppb | 15:46:45 |
| 3 | Sc                 | 415902.8 | 415902.8 | 103.4 %      |             | 15:47:53 |
| 3 | Y 371.029          | 333153.4 | 333153.4 | 104.16 %     |             | 15:47:53 |
| 3 | Sc 357.253         | 268626.0 | 268626.0 | 104.6 %      |             | 15:47:53 |
| 3 | Ag 328.068†        | -673.4   | -154.3   | -1.6635 µg/L | -1.6635 ppb | 15:47:53 |
| 3 | As 188.979†        | 8.0      | 3.0      | 6.1847 µg/L  | 6.1847 ppb  | 15:48:13 |
| 3 | B 249.677†         | 593.2    | 58.2     | 2.3220 µg/L  | 2.3220 ppb  | 15:47:53 |
| 3 | Ba 233.527†        | -46.2    | 9.2      | 0.1697 µg/L  | 0.1697 ppb  | 15:48:13 |
| 3 | Be 313.107†        | -2305.3  | 17.8     | 0.0111 µg/L  | 0.0111 ppb  | 15:47:53 |
| 3 | Cd 226.502†        | -184.3   | 3.0      | 0.0344 µg/L  | 0.0344 ppb  | 15:48:13 |
| 3 | Co 228.616†        | -52.1    | 3.8      | 0.3913 µg/L  | 0.3913 ppb  | 15:48:13 |
| 3 | Cr 267.716†        | 216.9    | 44.6     | 0.6205 µg/L  | 0.6205 ppb  | 15:47:53 |
| 3 | Cu 324.752†        | 2062.9   | -182.0   | -1.8370 µg/L | -1.8370 ppb | 15:47:53 |
| 3 | Mn 257.610†        | -124.1   | 25.0     | 0.0891 µg/L  | 0.0891 ppb  | 15:48:13 |
| 3 | Mo 202.031†        | -52.6    | -10.0    | -1.2221 µg/L | -1.2221 ppb | 15:48:13 |
| 3 | Ni 231.604†        | 9.1      | 1.4      | 0.0965 µg/L  | 0.0965 ppb  | 15:48:13 |
| 3 | P 214.914†         | 23.4     | -5.2     | -10.176 µg/L | -10.176 ppb | 15:48:13 |
| 3 | Pb 220.353†        | 40.3     | -0.0     | 0.0207 µg/L  | 0.0207 ppb  | 15:48:13 |
| 3 | S 181.975 Axial†   | 51.2     | -1.2     | -3.7708 µg/L | -3.7708 ppb | 15:48:13 |
| 3 | Sb 206.836†        | 6.8      | 2.7      | 4.1962 µg/L  | 4.1962 ppb  | 15:48:13 |
| 3 | Se 196.026†        | 3.2      | -0.9     | -2.04 µg/L   | -2.04 ppb   | 15:48:13 |
| 3 | SiO2†              | 776.9    | 6.2      | 1.7702 µg/L  | 1.7702 ppb  | 15:47:53 |
| 3 | Si 251.611†        | 363.3    | 71.3     | 4.9381 µg/L  | 4.9381 ppb  | 15:48:13 |
| 3 | Sn 189.927†        | -24.6    | 0.9      | 0.4007 µg/L  | 0.4007 ppb  | 15:48:13 |
| 3 | Ti 334.940†        | -123.3   | -19.0    | -0.0952 µg/L | -0.0952 ppb | 15:47:53 |
| 3 | Tl 190.801†        | -4.7     | -9.7     | -9.4107 µg/L | -9.4107 ppb | 15:48:13 |
| 3 | U 367.007†         | -196.7   | -54.1    | -29.368 µg/L | -29.368 ppb | 15:47:53 |
| 3 | V 292.402†         | 305.7    | 151.1    | 2.3912 µg/L  | 2.3912 ppb  | 15:47:53 |
| 3 | Zn 213.857†        | 193.2    | -67.2    | -2.2559 µg/L | -2.2559 ppb | 15:48:13 |

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Mean Data: 1203657517|1611348|1|

| Analyte            | Mean Corrected Intensity | Conc.   | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|---------|--------------|----------|--------------------|----------|---------|
| Sc                 | 415880.9                 | 103.4   | %            | 0.06     |                    |          | 0.05%   |
| Sc RADIAL          | 5098.4                   | 104     | %            | 1.1      |                    |          | 1.10%   |
| Y 371.029          | 331642.2                 | 103.69  | %            | 0.623    |                    |          | 0.60%   |
| Sc 357.253         | 267405.5                 | 104.1   | %            | 0.65     |                    |          | 0.63%   |
| Ag 328.068†        | -64.9                    | -0.6921 | µg/L         | 0.94410  | -0.6921 ppb        | 0.94410  | 136.42% |
| Al 396.153Radial†  | 3.7                      | 6.2659  | µg/L         | 85.13154 | 6.2659 ppb         | 85.13154 | >999.9% |
| As 188.979†        | 1.1                      | 2.3186  | µg/L         | 3.50974  | 2.3186 ppb         | 3.50974  | 151.37% |
| B 249.677†         | 18.4                     | 0.7339  | µg/L         | 2.28460  | 0.7339 ppb         | 2.28460  | 311.30% |
| Ba 233.527†        | 1.0                      | 0.0191  | µg/L         | 0.14259  | 0.0191 ppb         | 0.14259  | 746.95% |
| Be 313.107†        | 66.9                     | 0.0426  | µg/L         | 0.05435  | 0.0426 ppb         | 0.05435  | 127.72% |
| Ca 317.933Radial†  | 2.9                      | 2.3086  | µg/L         | 4.44798  | 2.3086 ppb         | 4.44798  | 192.67% |
| Cd 226.502†        | 14.5                     | 0.1658  | µg/L         | 0.13958  | 0.1658 ppb         | 0.13958  | 84.20%  |
| Co 228.616†        | 2.2                      | 0.2232  | µg/L         | 0.63278  | 0.2232 ppb         | 0.63278  | 283.55% |
| Cr 267.716†        | -6.3                     | -0.0867 | µg/L         | 0.65537  | -0.0867 ppb        | 0.65537  | 756.18% |
| Cu 324.752†        | -166.6                   | -1.6764 | µg/L         | 0.26145  | -1.6764 ppb        | 0.26145  | 15.60%  |
| Fe 238.204 Radial† | -1.7                     | -4.0778 | µg/L         | 1.85219  | -4.0778 ppb        | 1.85219  | 45.42%  |
| K 766.490 Radial†  | -52.3                    | -54.591 | µg/L         | 55.7653  | -54.591 ppb        | 55.7653  | 102.15% |

|                    |       |              |          |             |          |         |
|--------------------|-------|--------------|----------|-------------|----------|---------|
| Mg 279.077 IEC†    | 0.9   | 8.5477 µg/L  | 39.22846 | 8.5477 ppb  | 39.22846 | 458.93% |
| Mn 257.610†        | 24.7  | 0.0895 µg/L  | 0.01334  | 0.0895 ppb  | 0.01334  | 14.90%  |
| Mo 202.031†        | -4.8  | -0.5854 µg/L | 0.72374  | -0.5854 ppb | 0.72374  | 123.63% |
| Na 589.592 Radial† | -29.2 | -11.025 µg/L | 18.6003  | -11.025 ppb | 18.6003  | 168.70% |
| Ni 231.604†        | 1.5   | 0.0994 µg/L  | 0.03479  | 0.0994 ppb  | 0.03479  | 34.99%  |
| P 214.914†         | -7.8  | -15.338 µg/L | 6.8830   | -15.338 ppb | 6.8830   | 44.87%  |
| Pb 220.353†        | -0.1  | -0.0156 µg/L | 0.42705  | -0.0156 ppb | 0.42705  | >999.9% |
| S 181.975 Axial†   | -2.4  | -7.7448 µg/L | 7.84309  | -7.7448 ppb | 7.84309  | 101.27% |
| Sb 206.836†        | 3.1   | 4.8881 µg/L  | 2.24379  | 4.8881 ppb  | 2.24379  | 45.90%  |
| Se 196.026†        | -1.0  | -2.26 µg/L   | 7.769    | -2.26 ppb   | 7.769    | 343.93% |
| SiO2†              | 41.9  | 11.966 µg/L  | 9.9020   | 11.966 ppb  | 9.9020   | 82.75%  |
| Si 251.611†        | 58.4  | 4.0469 µg/L  | 0.95945  | 4.0469 ppb  | 0.95945  | 23.71%  |
| Sn 189.927†        | 3.7   | 1.6618 µg/L  | 1.30498  | 1.6618 ppb  | 1.30498  | 78.53%  |
| Sr 421.552†        | 6.7   | 0.0722 µg/L  | 0.23807  | 0.0722 ppb  | 0.23807  | 329.77% |
| Ti 334.940†        | 48.0  | 0.2396 µg/L  | 0.31348  | 0.2396 ppb  | 0.31348  | 130.86% |
| Tl 190.801†        | -4.3  | -4.1142 µg/L | 4.96195  | -4.1142 ppb | 4.96195  | 120.61% |
| U 367.007†         | -36.5 | -19.788 µg/L | 15.0611  | -19.788 ppb | 15.0611  | 76.11%  |
| V 292.402†         | 51.3  | 0.8064 µg/L  | 2.39637  | 0.8064 ppb  | 2.39637  | 297.19% |
| Zn 213.857†        | -65.9 | -2.2094 µg/L | 0.13582  | -2.2094 ppb | 0.13582  | 6.15%   |



Sequence No.: 58

Sample ID: 1203658087|1611348|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 333

Date Collected: 11/2/2016 15:48:23

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1203658087|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 5015.7        | 5015.7              | 102 %              |                    | 15:49:12      |
| 1     | Al 396.153Radial†  | 2849.6        | 2892.9              | 4957.3 µg/L        | 4957.3 ppb         | 15:49:12      |
| 1     | Ca 317.933Radial†  | 6161.9        | 5985.5              | 4811.4 µg/L        | 4811.4 ppb         | 15:49:12      |
| 1     | Fe 238.204 Radial† | 2203.2        | 2124.7              | 5007.5 µg/L        | 5007.5 ppb         | 15:49:12      |
| 1     | K 766.490 Radial†  | 4616.4        | 4606.1              | 4800.5 µg/L        | 4800.5 ppb         | 15:48:52      |
| 1     | Mg 279.077 IEC†    | 506.3         | 510.2               | 4935.9 µg/L        | 4935.9 ppb         | 15:49:12      |
| 1     | Na 589.592 Radial† | 14034.6       | 13012.6             | 4916.6 µg/L        | 4916.6 ppb         | 15:48:52      |
| 1     | Sr 421.552†        | 45196.7       | 44180.6             | 477.07 µg/L        | 477.07 ppb         | 15:48:52      |
| 1     | Sc                 | 431579.2      | 431579.2            | 107.3 %            |                    | 15:50:00      |
| 1     | Y 371.029          | 332500.3      | 332500.3            | 103.96 %           |                    | 15:50:00      |
| 1     | Sc 357.253         | 271196.2      | 271196.2            | 105.6 %            |                    | 15:50:00      |
| 1     | Ag 328.068†        | 44899.4       | 43020.2             | 472.94 µg/L        | 472.94 ppb         | 15:50:00      |
| 1     | As 188.979†        | 237.2         | 220.0               | 461.53 µg/L        | 461.53 ppb         | 15:50:20      |
| 1     | B 249.677†         | 12215.2       | 11061.7             | 440.04 µg/L        | 440.04 ppb         | 15:50:00      |
| 1     | Ba 233.527†        | 27168.3       | 25788.3             | 470.55 µg/L        | 470.55 ppb         | 15:50:00      |
| 1     | Be 313.107†        | 780180.1      | 741239.8            | 467.84 µg/L        | 467.84 ppb         | 15:50:00      |
| 1     | Cd 226.502†        | 42890.0       | 40806.4             | 465.07 µg/L        | 465.07 ppb         | 15:50:00      |
| 1     | Co 228.616†        | 4813.8        | 4613.4              | 473.05 µg/L        | 473.05 ppb         | 15:50:20      |
| 1     | Cr 267.716†        | 36006.9       | 33944.4             | 471.02 µg/L        | 471.02 ppb         | 15:50:00      |
| 1     | Cu 324.752†        | 52193.3       | 47284.8             | 472.56 µg/L        | 472.56 ppb         | 15:50:00      |
| 1     | Mn 257.610†        | 136638.5      | 129573.0            | 471.31 µg/L        | 471.31 ppb         | 15:50:00      |
| 1     | Mo 202.031†        | 4005.4        | 3834.3              | 470.04 µg/L        | 470.04 ppb         | 15:50:20      |
| 1     | Ni 231.604†        | 7221.9        | 6833.7              | 455.49 µg/L        | 455.49 ppb         | 15:50:20      |
| 1     | P 214.914†         | 272.1         | 230.2               | 447.54 µg/L        | 447.54 ppb         | 15:50:20      |
| 1     | Pb 220.353†        | 1327.7        | 1219.1              | 467.28 µg/L        | 467.28 ppb         | 15:50:20      |
| 1     | S 181.975 Axial†   | 1617.4        | 1482.0              | 4763.1 µg/L        | 4763.1 ppb         | 15:50:20      |
| 1     | Sb 206.836†        | 319.3         | 298.6               | 473.22 µg/L        | 473.22 ppb         | 15:50:20      |
| 1     | Se 196.026†        | 214.3         | 199.0               | 464 µg/L           | 464 ppb            | 15:50:20      |
| 1     | SiO2†              | 2561.3        | 1689.4              | 487.50 µg/L        | 487.50 ppb         | 15:50:20      |
| 1     | Si 251.611†        | 3960.4        | 3475.3              | 240.66 µg/L        | 240.66 ppb         | 15:50:20      |
| 1     | Sn 189.927†        | 1077.0        | 1044.6              | 464.37 µg/L        | 464.37 ppb         | 15:50:20      |
| 1     | Ti 334.940†        | 100919.9      | 95694.2             | 476.99 µg/L        | 476.99 ppb         | 15:50:00      |
| 1     | Tl 190.801†        | 517.9         | 485.4               | 472.14 µg/L        | 472.14 ppb         | 15:50:20      |
| 1     | U 367.007†         | 791.5         | 883.7               | 450.40 µg/L        | 450.40 ppb         | 15:50:00      |
| 1     | V 292.402†         | 31105.2       | 29322.8             | 471.18 µg/L        | 471.18 ppb         | 15:50:00      |
| 1     | Zn 213.857†        | 14247.5       | 13243.9             | 440.06 µg/L        | 440.06 ppb         | 15:50:20      |
| 2     | Sc RADIAL          | 5004.9        | 5004.9              | 102 %              |                    | 15:49:34      |
| 2     | Al 396.153Radial†  | 2847.1        | 2896.4              | 4963.4 µg/L        | 4963.4 ppb         | 15:49:34      |
| 2     | Ca 317.933Radial†  | 6176.8        | 6013.0              | 4833.6 µg/L        | 4833.6 ppb         | 15:49:34      |
| 2     | Fe 238.204 Radial† | 2203.0        | 2129.2              | 5018.2 µg/L        | 5018.2 ppb         | 15:49:34      |
| 2     | K 766.490 Radial†  | 4485.7        | 4487.4              | 4676.7 µg/L        | 4676.7 ppb         | 15:49:14      |
| 2     | Mg 279.077 IEC†    | 507.4         | 512.4               | 4957.4 µg/L        | 4957.4 ppb         | 15:49:34      |
| 2     | Na 589.592 Radial† | 14009.8       | 13017.8             | 4918.5 µg/L        | 4918.5 ppb         | 15:49:14      |
| 2     | Sr 421.552†        | 45232.1       | 44310.6             | 478.47 µg/L        | 478.47 ppb         | 15:49:14      |
| 2     | Sc                 | 428235.9      | 428235.9            | 106.5 %            |                    | 15:50:22      |
| 2     | Y 371.029          | 332445.9      | 332445.9            | 103.94 %           |                    | 15:50:22      |
| 2     | Sc 357.253         | 269080.0      | 269080.0            | 104.7 %            |                    | 15:50:22      |
| 2     | Ag 328.068†        | 44346.9       | 42827.3             | 470.81 µg/L        | 470.81 ppb         | 15:50:22      |
| 2     | As 188.979†        | 229.5         | 214.4               | 449.82 µg/L        | 449.82 ppb         | 15:50:42      |
| 2     | B 249.677†         | 12118.6       | 11060.4             | 439.99 µg/L        | 439.99 ppb         | 15:50:22      |
| 2     | Ba 233.527†        | 27016.7       | 25845.9             | 471.60 µg/L        | 471.60 ppb         | 15:50:22      |
| 2     | Be 313.107†        | 777185.4      | 744192.9            | 469.71 µg/L        | 469.71 ppb         | 15:50:22      |
| 2     | Cd 226.502†        | 42498.4       | 40752.0             | 464.44 µg/L        | 464.44 ppb         | 15:50:22      |
| 2     | Co 228.616†        | 4763.3        | 4601.1              | 471.79 µg/L        | 471.79 ppb         | 15:50:42      |
| 2     | Cr 267.716†        | 35502.4       | 33731.0             | 468.06 µg/L        | 468.06 ppb         | 15:50:22      |
| 2     | Cu 324.752†        | 51595.9       | 47103.3             | 470.76 µg/L        | 470.76 ppb         | 15:50:22      |
| 2     | Mn 257.610†        | 135866.6      | 129854.1            | 472.33 µg/L        | 472.33 ppb         | 15:50:22      |
| 2     | Mo 202.031†        | 3988.4        | 3848.0              | 471.71 µg/L        | 471.71 ppb         | 15:50:42      |
| 2     | Ni 231.604†        | 7213.9        | 6879.8              | 458.57 µg/L        | 458.57 ppb         | 15:50:42      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 268.8    | 229.1    | 445.36 µg/L | 445.36 ppb | 15:50:42 |
| 2 | Pb 220.353†        | 1315.5   | 1217.3   | 466.59 µg/L | 466.59 ppb | 15:50:42 |
| 2 | S 181.975 Axial†   | 1610.0   | 1487.0   | 4779.1 µg/L | 4779.1 ppb | 15:50:42 |
| 2 | Sb 206.836†        | 313.4    | 295.4    | 468.19 µg/L | 468.19 ppb | 15:50:42 |
| 2 | Se 196.026†        | 206.1    | 192.8    | 450 µg/L    | 450 ppb    | 15:50:42 |
| 2 | SiO2†              | 2567.3   | 1714.2   | 494.57 µg/L | 494.57 ppb | 15:50:42 |
| 2 | Si 251.611†        | 3999.6   | 3542.3   | 245.29 µg/L | 245.29 ppb | 15:50:42 |
| 2 | Sn 189.927†        | 1066.0   | 1042.1   | 463.30 µg/L | 463.30 ppb | 15:50:42 |
| 2 | Ti 334.940†        | 100322.7 | 95875.9  | 477.90 µg/L | 477.90 ppb | 15:50:22 |
| 2 | Tl 190.801†        | 507.3    | 479.1    | 466.07 µg/L | 466.07 ppb | 15:50:42 |
| 2 | U 367.007†         | 813.1    | 910.2    | 464.73 µg/L | 464.73 ppb | 15:50:22 |
| 2 | V 292.402†         | 30840.1  | 29301.4  | 470.85 µg/L | 470.85 ppb | 15:50:22 |
| 2 | Zn 213.857†        | 14231.4  | 13334.6  | 443.08 µg/L | 443.08 ppb | 15:50:42 |
| 3 | Sc RADIAL          | 4989.5   | 4989.5   | 101 %       |            | 15:49:56 |
| 3 | Al 396.153Radial†  | 2837.4   | 2895.5   | 4961.8 µg/L | 4961.8 ppb | 15:49:56 |
| 3 | Ca 317.933Radial†  | 6176.2   | 6031.2   | 4848.2 µg/L | 4848.2 ppb | 15:49:56 |
| 3 | Fe 238.204 Radial† | 2190.8   | 2123.8   | 5005.4 µg/L | 5005.4 ppb | 15:49:56 |
| 3 | K 766.490 Radial†  | 4687.2   | 4699.6   | 4898.1 µg/L | 4898.1 ppb | 15:49:36 |
| 3 | Mg 279.077 IEC†    | 508.1    | 514.6    | 4978.4 µg/L | 4978.4 ppb | 15:49:56 |
| 3 | Na 589.592 Radial† | 14200.9  | 13248.8  | 5005.8 µg/L | 5005.8 ppb | 15:49:36 |
| 3 | Sr 421.552†        | 45500.3  | 44712.3  | 482.81 µg/L | 482.81 ppb | 15:49:36 |
| 3 | Sc                 | 425256.5 | 425256.5 | 105.8 %     |            | 15:50:45 |
| 3 | Y 371.029          | 332183.3 | 332183.3 | 103.86 %    |            | 15:50:45 |
| 3 | Sc 357.253         | 269281.6 | 269281.6 | 104.8 %     |            | 15:50:45 |
| 3 | Ag 328.068†        | 44182.1  | 42638.3  | 468.77 µg/L | 468.77 ppb | 15:50:45 |
| 3 | As 188.979†        | 235.9    | 220.3    | 462.16 µg/L | 462.16 ppb | 15:51:05 |
| 3 | B 249.677†         | 12017.7  | 10955.4  | 435.80 µg/L | 435.80 ppb | 15:50:45 |
| 3 | Ba 233.527†        | 27170.0  | 25972.9  | 473.91 µg/L | 473.91 ppb | 15:50:45 |
| 3 | Be 313.107†        | 776609.9 | 743088.3 | 469.01 µg/L | 469.01 ppb | 15:50:45 |
| 3 | Cd 226.502†        | 42236.2  | 40471.5  | 461.24 µg/L | 461.24 ppb | 15:50:45 |
| 3 | Co 228.616†        | 4814.4   | 4646.4   | 476.44 µg/L | 476.44 ppb | 15:51:05 |
| 3 | Cr 267.716†        | 35312.3  | 33524.2  | 465.20 µg/L | 465.20 ppb | 15:50:45 |
| 3 | Cu 324.752†        | 51167.1  | 46657.3  | 466.28 µg/L | 466.28 ppb | 15:50:45 |
| 3 | Mn 257.610†        | 136325.0 | 130194.3 | 473.57 µg/L | 473.57 ppb | 15:50:45 |
| 3 | Mo 202.031†        | 4004.8   | 3860.8   | 473.28 µg/L | 473.28 ppb | 15:51:05 |
| 3 | Ni 231.604†        | 7189.0   | 6850.9   | 456.64 µg/L | 456.64 ppb | 15:51:05 |
| 3 | P 214.914†         | 277.7    | 237.4    | 461.92 µg/L | 461.92 ppb | 15:51:05 |
| 3 | Pb 220.353†        | 1327.2   | 1227.6   | 470.56 µg/L | 470.56 ppb | 15:51:05 |
| 3 | S 181.975 Axial†   | 1622.1   | 1497.3   | 4812.3 µg/L | 4812.3 ppb | 15:51:05 |
| 3 | Sb 206.836†        | 326.6    | 307.7    | 487.73 µg/L | 487.73 ppb | 15:51:05 |
| 3 | Se 196.026†        | 209.3    | 195.7    | 457 µg/L    | 457 ppb    | 15:51:05 |
| 3 | SiO2†              | 2470.5   | 1620.0   | 467.61 µg/L | 467.61 ppb | 15:51:05 |
| 3 | Si 251.611†        | 3767.4   | 3317.9   | 229.76 µg/L | 229.76 ppb | 15:51:05 |
| 3 | Sn 189.927†        | 1066.2   | 1041.5   | 463.01 µg/L | 463.01 ppb | 15:51:05 |
| 3 | Ti 334.940†        | 100073.0 | 95566.0  | 476.36 µg/L | 476.36 ppb | 15:50:45 |
| 3 | Tl 190.801†        | 514.8    | 485.9    | 472.63 µg/L | 472.63 ppb | 15:51:05 |
| 3 | U 367.007†         | 732.4    | 832.7    | 422.72 µg/L | 422.72 ppb | 15:50:45 |
| 3 | V 292.402†         | 30746.5  | 29190.1  | 469.06 µg/L | 469.06 ppb | 15:50:45 |
| 3 | Zn 213.857†        | 14185.2  | 13280.4  | 441.28 µg/L | 441.28 ppb | 15:51:05 |

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Mean Data: 1203658087|1611348|1|

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|--------------------|--------------------------|-------------|--------------|----------|--------------------|----------|-------|
| Sc                 | 428357.2                 | 106.5       | %            | 0.79     |                    |          | 0.74% |
| Sc RADIAL          | 5003.4                   | 102         | %            | 0.3      |                    |          | 0.26% |
| Y 371.029          | 332376.5                 | 103.92      | %            | 0.053    |                    |          | 0.05% |
| Sc 357.253         | 269852.6                 | 105.0       | %            | 0.45     |                    |          | 0.43% |
| Ag 328.068†        | 42828.6                  | 470.84      | µg/L         | 2.086    | 470.84 ppb         | 2.086    | 0.44% |
| Al 396.153Radial†  | 2894.9                   | 4960.8      | µg/L         | 3.15     | 4960.8 ppb         | 3.15     | 0.06% |
| As 188.979†        | 218.2                    | 457.83      | µg/L         | 6.952    | 457.83 ppb         | 6.952    | 1.52% |
| B 249.677†         | 11025.8                  | 438.61      | µg/L         | 2.430    | 438.61 ppb         | 2.430    | 0.55% |
| Ba 233.527†        | 25869.0                  | 472.02      | µg/L         | 1.721    | 472.02 ppb         | 1.721    | 0.36% |
| Be 313.107†        | 742840.3                 | 468.85      | µg/L         | 0.941    | 468.85 ppb         | 0.941    | 0.20% |
| Ca 317.933Radial†  | 6009.9                   | 4831.1      | µg/L         | 18.51    | 4831.1 ppb         | 18.51    | 0.38% |
| Cd 226.502†        | 40676.6                  | 463.58      | µg/L         | 2.050    | 463.58 ppb         | 2.050    | 0.44% |
| Co 228.616†        | 4620.3                   | 473.76      | µg/L         | 2.403    | 473.76 ppb         | 2.403    | 0.51% |
| Cr 267.716†        | 33733.2                  | 468.10      | µg/L         | 2.914    | 468.10 ppb         | 2.914    | 0.62% |
| Cu 324.752†        | 47015.2                  | 469.87      | µg/L         | 3.235    | 469.87 ppb         | 3.235    | 0.69% |
| Fe 238.204 Radial† | 2125.9                   | 5010.4      | µg/L         | 6.83     | 5010.4 ppb         | 6.83     | 0.14% |
| K 766.490 Radial†  | 4597.7                   | 4791.7      | µg/L         | 110.95   | 4791.7 ppb         | 110.95   | 2.32% |

|                    |          |             |        |            |        |       |
|--------------------|----------|-------------|--------|------------|--------|-------|
| Mg 279.077 IEC†    | 512.4    | 4957.2 µg/L | 21.29  | 4957.2 ppb | 21.29  | 0.43% |
| Mn 257.610†        | 129873.8 | 472.41 µg/L | 1.131  | 472.41 ppb | 1.131  | 0.24% |
| Mo 202.031†        | 3847.7   | 471.68 µg/L | 1.618  | 471.68 ppb | 1.618  | 0.34% |
| Na 589.592 Radial† | 13093.1  | 4947.0 µg/L | 50.95  | 4947.0 ppb | 50.95  | 1.03% |
| Ni 231.604†        | 6854.8   | 456.90 µg/L | 1.553  | 456.90 ppb | 1.553  | 0.34% |
| P 214.914†         | 232.2    | 451.60 µg/L | 8.997  | 451.60 ppb | 8.997  | 1.99% |
| Pb 220.353†        | 1221.3   | 468.15 µg/L | 2.121  | 468.15 ppb | 2.121  | 0.45% |
| S 181.975 Axial†   | 1488.8   | 4784.8 µg/L | 25.10  | 4784.8 ppb | 25.10  | 0.52% |
| Sb 206.836†        | 300.6    | 476.38 µg/L | 10.147 | 476.38 ppb | 10.147 | 2.13% |
| Se 196.026†        | 195.8    | 457 µg/L    | 7.2    | 457 ppb    | 7.2    | 1.58% |
| SiO2†              | 1674.5   | 483.23 µg/L | 13.978 | 483.23 ppb | 13.978 | 2.89% |
| Si 251.611†        | 3445.2   | 238.57 µg/L | 7.977  | 238.57 ppb | 7.977  | 3.34% |
| Sn 189.927†        | 1042.7   | 463.56 µg/L | 0.716  | 463.56 ppb | 0.716  | 0.15% |
| Sr 421.552†        | 44401.2  | 479.45 µg/L | 2.995  | 479.45 ppb | 2.995  | 0.62% |
| Ti 334.940†        | 95712.0  | 477.08 µg/L | 0.776  | 477.08 ppb | 0.776  | 0.16% |
| Tl 190.801†        | 483.5    | 470.28 µg/L | 3.653  | 470.28 ppb | 3.653  | 0.78% |
| U 367.007†         | 875.5    | 445.95 µg/L | 21.353 | 445.95 ppb | 21.353 | 4.79% |
| V 292.402†         | 29271.4  | 470.37 µg/L | 1.141  | 470.37 ppb | 1.141  | 0.24% |
| Zn 213.857†        | 13286.3  | 441.47 µg/L | 1.521  | 441.47 ppb | 1.521  | 0.34% |

Sequence No.: 59

Sample ID: 409254021|1611348|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 334

Date Collected: 11/2/2016 15:51:14

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254021|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4896.2        | 4896.2              | 99.5 %             |                    | 15:52:03      |
| 1     | Al 396.153Radial†  | 137.0         | 235.0               | 402.77 µg/L        | 402.77 ppb         | 15:51:43      |
| 1     | Ca 317.933Radial†  | 1072.8        | 1018.8              | 818.94 µg/L        | 818.94 ppb         | 15:52:03      |
| 1     | Fe 238.204 Radial† | 234.6         | 199.2               | 469.40 µg/L        | 469.40 ppb         | 15:52:03      |
| 1     | K 766.490 Radial†  | 32.2          | 109.8               | 114.19 µg/L        | 114.19 ppb         | 15:51:43      |
| 1     | Mg 279.077 IEC†    | 15.9          | 29.5                | 285.45 µg/L        | 285.45 ppb         | 15:52:03      |
| 1     | Na 589.592 Radial† | 17973.2       | 17306.5             | 6538.9 µg/L        | 6538.9 ppb         | 15:51:43      |
| 1     | Sr 421.552†        | 482.2         | 327.5               | 3.5039 µg/L        | 3.5039 ppb         | 15:51:43      |
| 1     | Sc                 | 413648.2      | 413648.2            | 102.9 %            |                    | 15:52:50      |
| 1     | Y 371.029          | 327689.1      | 327689.1            | 102.46 %           |                    | 15:52:50      |
| 1     | Sc 357.253         | 263718.3      | 263718.3            | 102.7 %            |                    | 15:52:50      |
| 1     | Ag 328.068†        | -558.9        | -54.7               | -0.5704 µg/L       | -0.5704 ppb        | 15:52:50      |
| 1     | As 188.979†        | 12.7          | 7.6                 | 15.864 µg/L        | 15.864 ppb         | 15:53:10      |
| 1     | B 249.677†         | 812.7         | 282.6               | 11.165 µg/L        | 11.165 ppb         | 15:53:10      |
| 1     | Ba 233.527†        | 302.3         | 347.8               | 6.3379 µg/L        | 6.3379 ppb         | 15:53:10      |
| 1     | Be 313.107†        | -2199.3       | 80.1                | 0.0605 µg/L        | 0.0605 ppb         | 15:52:50      |
| 1     | Cd 226.502†        | -146.6        | 36.5                | 0.3866 µg/L        | 0.3866 ppb         | 15:53:10      |
| 1     | Co 228.616†        | -62.6         | -7.4                | -0.7906 µg/L       | -0.7906 ppb        | 15:53:10      |
| 1     | Cr 267.716†        | 228.6         | 59.9                | 0.8285 µg/L        | 0.8285 ppb         | 15:53:10      |
| 1     | Cu 324.752†        | 2173.9        | -37.2               | -0.3509 µg/L       | -0.3509 ppb        | 15:52:50      |
| 1     | Mn 257.610†        | 2179.1        | 2266.3              | 8.2442 µg/L        | 8.2442 ppb         | 15:53:10      |
| 1     | Mo 202.031†        | -46.1         | -4.6                | -0.5302 µg/L       | -0.5302 ppb        | 15:53:10      |
| 1     | Ni 231.604†        | 7.6           | 0.2                 | 0.0003 µg/L        | 0.0003 ppb         | 15:53:10      |
| 1     | P 214.914†         | 34.2          | 5.8                 | 11.183 µg/L        | 11.183 ppb         | 15:53:10      |
| 1     | Pb 220.353†        | 26.8          | -12.4               | -4.7047 µg/L       | -4.7047 ppb        | 15:53:10      |
| 1     | S 181.975 Axial†   | 696.1         | 628.0               | 2016.8 µg/L        | 2016.8 ppb         | 15:53:10      |
| 1     | Sb 206.836†        | 4.4           | 0.5                 | 0.7988 µg/L        | 0.7988 ppb         | 15:53:10      |
| 1     | Se 196.026†        | 5.5           | 1.4                 | 3.13 µg/L          | 3.13 ppb           | 15:53:10      |
| 1     | SiO2†              | 3385.3        | 2560.8              | 731.98 µg/L        | 731.98 ppb         | 15:53:10      |
| 1     | Si 251.611†        | 5421.5        | 5005.0              | 346.58 µg/L        | 346.58 ppb         | 15:53:10      |
| 1     | Sn 189.927†        | -22.0         | 3.0                 | 1.3595 µg/L        | 1.3595 ppb         | 15:53:10      |
| 1     | Ti 334.940†        | 1083.9        | 1154.7              | 5.7720 µg/L        | 5.7720 ppb         | 15:52:50      |
| 1     | Tl 190.801†        | 5.6           | 0.3                 | 0.2451 µg/L        | 0.2451 ppb         | 15:53:10      |
| 1     | U 367.007†         | -156.9        | -18.8               | -12.982 µg/L       | -12.982 ppb        | 15:52:50      |
| 1     | V 292.402†         | 303.3         | 154.2               | 2.4190 µg/L        | 2.4190 ppb         | 15:53:10      |
| 1     | Zn 213.857†        | 495.7         | 230.9               | 7.6603 µg/L        | 7.6603 ppb         | 15:53:10      |
| 2     | Sc RADIAL          | 4925.2        | 4925.2              | 100 %              |                    | 15:52:25      |
| 2     | Al 396.153Radial†  | 140.0         | 237.2               | 406.51 µg/L        | 406.51 ppb         | 15:52:05      |
| 2     | Ca 317.933Radial†  | 1076.6        | 1016.2              | 816.89 µg/L        | 816.89 ppb         | 15:52:25      |
| 2     | Fe 238.204 Radial† | 236.9         | 200.1               | 471.53 µg/L        | 471.53 ppb         | 15:52:25      |
| 2     | K 766.490 Radial†  | -190.1        | -112.4              | -117.56 µg/L       | -117.56 ppb        | 15:52:05      |
| 2     | Mg 279.077 IEC†    | 15.9          | 29.4                | 284.71 µg/L        | 284.71 ppb         | 15:52:25      |
| 2     | Na 589.592 Radial† | 18078.9       | 17305.8             | 6538.7 µg/L        | 6538.7 ppb         | 15:52:05      |
| 2     | Sr 421.552†        | 445.5         | 288.0               | 3.0773 µg/L        | 3.0773 ppb         | 15:52:05      |
| 2     | Sc                 | 411169.2      | 411169.2            | 102.3 %            |                    | 15:53:12      |
| 2     | Y 371.029          | 323339.2      | 323339.2            | 101.10 %           |                    | 15:53:12      |
| 2     | Sc 357.253         | 263084.4      | 263084.4            | 102.4 %            |                    | 15:53:12      |
| 2     | Ag 328.068†        | -412.1        | 87.4                | 0.9723 µg/L        | 0.9723 ppb         | 15:53:12      |
| 2     | As 188.979†        | 10.1          | 5.2                 | 10.818 µg/L        | 10.818 ppb         | 15:53:32      |
| 2     | B 249.677†         | 782.0         | 254.5               | 10.045 µg/L        | 10.045 ppb         | 15:53:32      |
| 2     | Ba 233.527†        | 283.4         | 330.1               | 6.0137 µg/L        | 6.0137 ppb         | 15:53:32      |
| 2     | Be 313.107†        | -2065.5       | 205.5               | 0.1399 µg/L        | 0.1399 ppb         | 15:53:12      |
| 2     | Cd 226.502†        | -178.6        | 4.9                 | 0.0259 µg/L        | 0.0259 ppb         | 15:53:32      |
| 2     | Co 228.616†        | -46.1         | 8.6                 | 0.8429 µg/L        | 0.8429 ppb         | 15:53:32      |
| 2     | Cr 267.716†        | 236.3         | 68.0                | 0.9407 µg/L        | 0.9407 ppb         | 15:53:32      |
| 2     | Cu 324.752†        | 2229.0        | 21.7                | 0.2499 µg/L        | 0.2499 ppb         | 15:53:12      |
| 2     | Mn 257.610†        | 2192.5        | 2284.5              | 8.3104 µg/L        | 8.3104 ppb         | 15:53:32      |
| 2     | Mo 202.031†        | -33.0         | 8.1                 | 1.0245 µg/L        | 1.0245 ppb         | 15:53:32      |
| 2     | Ni 231.604†        | 12.6          | 5.0                 | 0.3216 µg/L        | 0.3216 ppb         | 15:53:32      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 34.2     | 5.9      | 11.346 µg/L  | 11.346 ppb  | 15:53:32 |
| 2 | Pb 220.353†        | 39.1     | -0.3     | -0.1088 µg/L | -0.1088 ppb | 15:53:32 |
| 2 | S 181.975 Axial†   | 687.7    | 621.4    | 1995.8 µg/L  | 1995.8 ppb  | 15:53:32 |
| 2 | Sb 206.836†        | 4.0      | 0.1      | 0.1296 µg/L  | 0.1296 ppb  | 15:53:32 |
| 2 | Se 196.026†        | 6.3      | 2.2      | 5.15 µg/L    | 5.15 ppb    | 15:53:32 |
| 2 | SiO2†              | 3373.1   | 2556.9   | 730.86 µg/L  | 730.86 ppb  | 15:53:32 |
| 2 | Si 251.611†        | 5351.6   | 4949.4   | 342.73 µg/L  | 342.73 ppb  | 15:53:32 |
| 2 | Sn 189.927†        | -24.4    | 0.6      | 0.2839 µg/L  | 0.2839 ppb  | 15:53:32 |
| 2 | Ti 334.940†        | 1128.8   | 1201.1   | 6.0034 µg/L  | 6.0034 ppb  | 15:53:12 |
| 2 | Tl 190.801†        | -15.2    | -20.1    | -19.391 µg/L | -19.391 ppb | 15:53:32 |
| 2 | U 367.007†         | -121.5   | 15.3     | 5.5371 µg/L  | 5.5371 ppb  | 15:53:12 |
| 2 | V 292.402†         | 295.2    | 147.0    | 2.3215 µg/L  | 2.3215 ppb  | 15:53:32 |
| 2 | Zn 213.857†        | 493.5    | 230.0    | 7.6253 µg/L  | 7.6253 ppb  | 15:53:32 |
| 3 | Sc RADIAL          | 4889.4   | 4889.4   | 99.4 %       |             | 15:52:47 |
| 3 | Al 396.153Radial†  | 136.8    | 235.0    | 402.74 µg/L  | 402.74 ppb  | 15:52:27 |
| 3 | Ca 317.933Radial†  | 1062.2   | 1009.6   | 811.57 µg/L  | 811.57 ppb  | 15:52:47 |
| 3 | Fe 238.204 Radial† | 236.0    | 200.9    | 473.50 µg/L  | 473.50 ppb  | 15:52:47 |
| 3 | K 766.490 Radial†  | 139.4    | 217.8    | 226.81 µg/L  | 226.81 ppb  | 15:52:27 |
| 3 | Mg 279.077 IEC†    | 12.4     | 26.0     | 251.84 µg/L  | 251.84 ppb  | 15:52:47 |
| 3 | Na 589.592 Radial† | 18480.6  | 17842.1  | 6741.3 µg/L  | 6741.3 ppb  | 15:52:27 |
| 3 | Sr 421.552†        | 490.9    | 336.9    | 3.6057 µg/L  | 3.6057 ppb  | 15:52:27 |
| 3 | Sc                 | 415526.5 | 415526.5 | 103.3 %      |             | 15:53:35 |
| 3 | Y 371.029          | 329399.9 | 329399.9 | 102.99 %     |             | 15:53:35 |
| 3 | Sc 357.253         | 265515.3 | 265515.3 | 103.4 %      |             | 15:53:35 |
| 3 | Ag 328.068†        | -470.0   | 34.9     | 0.4141 µg/L  | 0.4141 ppb  | 15:53:35 |
| 3 | As 188.979†        | 5.6      | 0.7      | 1.5350 µg/L  | 1.5350 ppb  | 15:53:55 |
| 3 | B 249.677†         | 810.7    | 275.3    | 10.874 µg/L  | 10.874 ppb  | 15:53:55 |
| 3 | Ba 233.527†        | 292.0    | 335.9    | 6.1193 µg/L  | 6.1193 ppb  | 15:53:55 |
| 3 | Be 313.107†        | -2096.9  | 193.7    | 0.1324 µg/L  | 0.1324 ppb  | 15:53:35 |
| 3 | Cd 226.502†        | -176.5   | 8.5      | 0.0672 µg/L  | 0.0672 ppb  | 15:53:55 |
| 3 | Co 228.616†        | -55.1    | 0.2      | -0.0098 µg/L | -0.0098 ppb | 15:53:55 |
| 3 | Cr 267.716†        | 228.8    | 58.6     | 0.8092 µg/L  | 0.8092 ppb  | 15:53:55 |
| 3 | Cu 324.752†        | 2171.1   | -54.2    | -0.5196 µg/L | -0.5196 ppb | 15:53:35 |
| 3 | Mn 257.610†        | 2172.8   | 2245.9   | 8.1711 µg/L  | 8.1711 ppb  | 15:53:55 |
| 3 | Mo 202.031†        | -30.2    | 11.1     | 1.3955 µg/L  | 1.3955 ppb  | 15:53:55 |
| 3 | Ni 231.604†        | 18.1     | 10.3     | 0.6706 µg/L  | 0.6706 ppb  | 15:53:55 |
| 3 | P 214.914†         | 34.7     | 6.1      | 11.776 µg/L  | 11.776 ppb  | 15:53:55 |
| 3 | Pb 220.353†        | 43.4     | 3.5      | 1.3605 µg/L  | 1.3605 ppb  | 15:53:55 |
| 3 | S 181.975 Axial†   | 682.0    | 609.7    | 1958.3 µg/L  | 1958.3 ppb  | 15:53:55 |
| 3 | Sb 206.836†        | 10.0     | 5.8      | 9.2584 µg/L  | 9.2584 ppb  | 15:53:55 |
| 3 | Se 196.026†        | 6.3      | 2.1      | 4.92 µg/L    | 4.92 ppb    | 15:53:55 |
| 3 | SiO2†              | 3287.6   | 2444.0   | 698.58 µg/L  | 698.58 ppb  | 15:53:55 |
| 3 | Si 251.611†        | 5232.9   | 4786.7   | 331.47 µg/L  | 331.47 ppb  | 15:53:55 |
| 3 | Sn 189.927†        | -25.1    | 0.1      | 0.0850 µg/L  | 0.0850 ppb  | 15:53:55 |
| 3 | Ti 334.940†        | 1135.7   | 1197.7   | 5.9862 µg/L  | 5.9862 ppb  | 15:53:35 |
| 3 | Tl 190.801†        | 0.4      | -4.8     | -4.6813 µg/L | -4.6813 ppb | 15:53:55 |
| 3 | U 367.007†         | -155.9   | -16.8    | -11.920 µg/L | -11.920 ppb | 15:53:35 |
| 3 | V 292.402†         | 264.5    | 114.6    | 1.7978 µg/L  | 1.7978 ppb  | 15:53:55 |
| 3 | Zn 213.857†        | 497.1    | 229.0    | 7.5946 µg/L  | 7.5946 ppb  | 15:53:55 |

Mean Data: 409254021|1611348|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc                 | 413447.9                 | 102.8 %            | 0.54     |                    |          | 0.53%   |
| Sc RADIAL          | 4903.6                   | 99.7 %             | 0.39     |                    |          | 0.39%   |
| Y 371.029          | 326809.4                 | 102.18 %           | 0.977    |                    |          | 0.96%   |
| Sc 357.253         | 264106.0                 | 102.8 %            | 0.49     |                    |          | 0.48%   |
| Ag 328.068†        | 22.5                     | 0.2720 µg/L        | 0.78110  | 0.2720 ppb         | 0.78110  | 287.19% |
| Al 396.153Radial†  | 235.8                    | 404.00 µg/L        | 2.173    | 404.00 ppb         | 2.173    | 0.54%   |
| As 188.979†        | 4.5                      | 9.4059 µg/L        | 7.26837  | 9.4059 ppb         | 7.26837  | 77.27%  |
| B 249.677†         | 270.8                    | 10.695 µg/L        | 0.5812   | 10.695 ppb         | 0.5812   | 5.43%   |
| Ba 233.527†        | 337.9                    | 6.1570 µg/L        | 0.16537  | 6.1570 ppb         | 0.16537  | 2.69%   |
| Be 313.107†        | 159.8                    | 0.1109 µg/L        | 0.04385  | 0.1109 ppb         | 0.04385  | 39.54%  |
| Ca 317.933Radial†  | 1014.9                   | 815.80 µg/L        | 3.804    | 815.80 ppb         | 3.804    | 0.47%   |
| Cd 226.502†        | 16.6                     | 0.1599 µg/L        | 0.19741  | 0.1599 ppb         | 0.19741  | 123.44% |
| Co 228.616†        | 0.5                      | 0.0141 µg/L        | 0.81702  | 0.0141 ppb         | 0.81702  | >999.9% |
| Cr 267.716†        | 62.2                     | 0.8595 µg/L        | 0.07099  | 0.8595 ppb         | 0.07099  | 8.26%   |
| Cu 324.752†        | -23.2                    | -0.2069 µg/L       | 0.40444  | -0.2069 ppb        | 0.40444  | 195.49% |
| Fe 238.204 Radial† | 200.0                    | 471.48 µg/L        | 2.049    | 471.48 ppb         | 2.049    | 0.43%   |
| K 766.490 Radial†  | 71.7                     | 74.480 µg/L        | 175.5865 | 74.480 ppb         | 175.5865 | 235.75% |

|                    |         |              |          |             |          |         |
|--------------------|---------|--------------|----------|-------------|----------|---------|
| Mg 279.077 IEC†    | 28.3    | 274.00 µg/L  | 19.199   | 274.00 ppb  | 19.199   | 7.01%   |
| Mn 257.610†        | 2265.6  | 8.2419 µg/L  | 0.06970  | 8.2419 ppb  | 0.06970  | 0.85%   |
| Mo 202.031†        | 4.8     | 0.6299 µg/L  | 1.02173  | 0.6299 ppb  | 1.02173  | 162.19% |
| Na 589.592 Radial† | 17484.8 | 6606.3 µg/L  | 116.92   | 6606.3 ppb  | 116.92   | 1.77%   |
| Ni 231.604†        | 5.2     | 0.3308 µg/L  | 0.33528  | 0.3308 ppb  | 0.33528  | 101.34% |
| P 214.914†         | 5.9     | 11.435 µg/L  | 0.3064   | 11.435 ppb  | 0.3064   | 2.68%   |
| Pb 220.353†        | -3.1    | -1.1510 µg/L | 3.16407  | -1.1510 ppb | 3.16407  | 274.90% |
| S 181.975 Axial†   | 619.7   | 1990.3 µg/L  | 29.62    | 1990.3 ppb  | 29.62    | 1.49%   |
| Sb 206.836†        | 2.1     | 3.3956 µg/L  | 5.08836  | 3.3956 ppb  | 5.08836  | 149.85% |
| Se 196.026†        | 1.9     | 4.40 µg/L    | 1.106    | 4.40 ppb    | 1.106    | 25.13%  |
| SiO2†              | 2520.6  | 720.47 µg/L  | 18.968   | 720.47 ppb  | 18.968   | 2.63%   |
| Si 251.611†        | 4913.7  | 340.26 µg/L  | 7.853    | 340.26 ppb  | 7.853    | 2.31%   |
| Sn 189.927†        | 1.2     | 0.5761 µg/L  | 0.68566  | 0.5761 ppb  | 0.68566  | 119.02% |
| Sr 421.552†        | 317.5   | 3.3956 µg/L  | 0.28036  | 3.3956 ppb  | 0.28036  | 8.26%   |
| Ti 334.940†        | 1184.5  | 5.9205 µg/L  | 0.12892  | 5.9205 ppb  | 0.12892  | 2.18%   |
| Tl 190.801†        | -8.2    | -7.9423 µg/L | 10.21592 | -7.9423 ppb | 10.21592 | 128.63% |
| U 367.007†         | -6.8    | -6.4552 µg/L | 10.39922 | -6.4552 ppb | 10.39922 | 161.10% |
| V 292.402†         | 138.6   | 2.1794 µg/L  | 0.33410  | 2.1794 ppb  | 0.33410  | 15.33%  |
| Zn 213.857†        | 230.0   | 7.6267 µg/L  | 0.03291  | 7.6267 ppb  | 0.03291  | 0.43%   |

Sequence No.: 60

Sample ID: 1203658088|1611348|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 335

Date Collected: 11/2/2016 15:54:04

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1203658088|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4968.3        | 4968.3              | 101 %              |                    | 15:54:53      |
| 1     | Al 396.153Radial†  | 165.9         | 261.7               | 448.47 µg/L        | 448.47 ppb         | 15:54:33      |
| 1     | Ca 317.933Radial†  | 966.2         | 897.5               | 721.47 µg/L        | 721.47 ppb         | 15:54:53      |
| 1     | Fe 238.204 Radial† | 231.2         | 192.4               | 453.51 µg/L        | 453.51 ppb         | 15:54:53      |
| 1     | K 766.490 Radial†  | 12.6          | 89.9                | 93.504 µg/L        | 93.504 ppb         | 15:54:33      |
| 1     | Mg 279.077 IEC†    | 17.6          | 31.0                | 300.04 µg/L        | 300.04 ppb         | 15:54:53      |
| 1     | Na 589.592 Radial† | 18368.5       | 17435.9             | 6587.8 µg/L        | 6587.8 ppb         | 15:54:33      |
| 1     | Sr 421.552†        | 353.6         | 193.2               | 2.0543 µg/L        | 2.0543 ppb         | 15:54:33      |
| 1     | Sc                 | 418330.9      | 418330.9            | 104.0 %            |                    | 15:55:41      |
| 1     | Y 371.029          | 331638.6      | 331638.6            | 103.69 %           |                    | 15:55:41      |
| 1     | Sc 357.253         | 268117.1      | 268117.1            | 104.4 %            |                    | 15:55:41      |
| 1     | Ag 328.068†        | -426.4        | 81.2                | 0.9269 µg/L        | 0.9269 ppb         | 15:55:41      |
| 1     | As 188.979†        | 10.6          | 5.4                 | 11.318 µg/L        | 11.318 ppb         | 15:56:01      |
| 1     | B 249.677†         | 816.8         | 273.5               | 10.806 µg/L        | 10.806 ppb         | 15:56:01      |
| 1     | Ba 233.527†        | 272.6         | 314.6               | 5.7314 µg/L        | 5.7314 ppb         | 15:56:01      |
| 1     | Be 313.107†        | -2177.7       | 135.9               | 0.0958 µg/L        | 0.0958 ppb         | 15:55:41      |
| 1     | Cd 226.502†        | -181.9        | 5.0                 | 0.0276 µg/L        | 0.0276 ppb         | 15:56:01      |
| 1     | Co 228.616†        | -44.4         | 11.0                | 1.0961 µg/L        | 1.0961 ppb         | 15:56:01      |
| 1     | Cr 267.716†        | 214.3         | 42.6                | 0.5880 µg/L        | 0.5880 ppb         | 15:56:01      |
| 1     | Cu 324.752†        | 2096.9        | -145.6              | -1.4370 µg/L       | -1.4370 ppb        | 15:55:41      |
| 1     | Mn 257.610†        | 2150.8        | 2204.4              | 8.0182 µg/L        | 8.0182 ppb         | 15:56:01      |
| 1     | Mo 202.031†        | -27.8         | 13.7                | 1.7117 µg/L        | 1.7117 ppb         | 15:56:01      |
| 1     | Ni 231.604†        | 25.1          | 16.8                | 1.1103 µg/L        | 1.1103 ppb         | 15:56:01      |
| 1     | P 214.914†         | 25.1          | -3.5                | -7.1309 µg/L       | -7.1309 ppb        | 15:56:01      |
| 1     | Pb 220.353†        | 37.9          | -2.2                | -0.7999 µg/L       | -0.7999 ppb        | 15:56:01      |
| 1     | S 181.975 Axial†   | 691.6         | 612.5               | 1967.2 µg/L        | 1967.2 ppb         | 15:56:01      |
| 1     | Sb 206.836†        | -0.2          | -4.0                | -6.3430 µg/L       | -6.3430 ppb        | 15:56:01      |
| 1     | Se 196.026†        | 8.5           | 4.2                 | 9.67 µg/L          | 9.67 ppb           | 15:56:01      |
| 1     | SiO2†              | 3009.0        | 2146.2              | 613.46 µg/L        | 613.46 ppb         | 15:56:01      |
| 1     | Si 251.611†        | 4677.4        | 4205.4              | 291.21 µg/L        | 291.21 ppb         | 15:56:01      |
| 1     | Sn 189.927†        | -20.2         | 5.1                 | 2.2774 µg/L        | 2.2774 ppb         | 15:56:01      |
| 1     | Ti 334.940†        | 1125.4        | 1177.2              | 5.8821 µg/L        | 5.8821 ppb         | 15:55:41      |
| 1     | Tl 190.801†        | 5.1           | -0.3                | -0.3031 µg/L       | -0.3031 ppb        | 15:56:01      |
| 1     | U 367.007†         | -166.7        | -25.7               | -16.634 µg/L       | -16.634 ppb        | 15:55:41      |
| 1     | V 292.402†         | 296.8         | 143.1               | 2.2540 µg/L        | 2.2540 ppb         | 15:56:01      |
| 1     | Zn 213.857†        | 307.2         | 42.4                | 1.3300 µg/L        | 1.3300 ppb         | 15:56:01      |
| 2     | Sc RADIAL          | 4942.3        | 4942.3              | 100 %              |                    | 15:55:15      |
| 2     | Al 396.153Radial†  | 140.0         | 236.8               | 405.71 µg/L        | 405.71 ppb         | 15:54:55      |
| 2     | Ca 317.933Radial†  | 961.0         | 897.4               | 721.38 µg/L        | 721.38 ppb         | 15:55:15      |
| 2     | Fe 238.204 Radial† | 230.4         | 192.8               | 454.42 µg/L        | 454.42 ppb         | 15:55:15      |
| 2     | K 766.490 Radial†  | 42.9          | 120.2               | 125.07 µg/L        | 125.07 ppb         | 15:54:55      |
| 2     | Mg 279.077 IEC†    | 15.2          | 28.7                | 277.64 µg/L        | 277.64 ppb         | 15:55:15      |
| 2     | Na 589.592 Radial† | 18103.0       | 17267.4             | 6524.1 µg/L        | 6524.1 ppb         | 15:54:55      |
| 2     | Sr 421.552†        | 452.2         | 293.1               | 3.1344 µg/L        | 3.1344 ppb         | 15:54:55      |
| 2     | Sc                 | 419490.7      | 419490.7            | 104.3 %            |                    | 15:56:03      |
| 2     | Y 371.029          | 336611.9      | 336611.9            | 105.25 %           |                    | 15:56:03      |
| 2     | Sc 357.253         | 269010.9      | 269010.9            | 104.7 %            |                    | 15:56:03      |
| 2     | Ag 328.068†        | -417.6        | 91.0                | 1.0286 µg/L        | 1.0286 ppb         | 15:56:03      |
| 2     | As 188.979†        | 8.1           | 3.0                 | 6.1928 µg/L        | 6.1928 ppb         | 15:56:23      |
| 2     | B 249.677†         | 833.8         | 287.2               | 11.351 µg/L        | 11.351 ppb         | 15:56:23      |
| 2     | Ba 233.527†        | 286.8         | 327.3               | 5.9626 µg/L        | 5.9626 ppb         | 15:56:23      |
| 2     | Be 313.107†        | -2136.4       | 182.3               | 0.1242 µg/L        | 0.1242 ppb         | 15:56:03      |
| 2     | Cd 226.502†        | -167.7        | 19.1                | 0.1891 µg/L        | 0.1891 ppb         | 15:56:23      |
| 2     | Co 228.616†        | -61.7         | -5.3                | -0.5808 µg/L       | -0.5808 ppb        | 15:56:23      |
| 2     | Cr 267.716†        | 229.7         | 56.6                | 0.7825 µg/L        | 0.7825 ppb         | 15:56:23      |
| 2     | Cu 324.752†        | 2243.8        | -12.1               | -0.1006 µg/L       | -0.1006 ppb        | 15:56:03      |
| 2     | Mn 257.610†        | 2172.2        | 2218.0              | 8.0683 µg/L        | 8.0683 ppb         | 15:56:23      |
| 2     | Mo 202.031†        | -36.5         | 5.4                 | 0.6969 µg/L        | 0.6969 ppb         | 15:56:23      |
| 2     | Ni 231.604†        | 17.1          | 9.1                 | 0.5944 µg/L        | 0.5944 ppb         | 15:56:23      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 40.3     | 11.0     | 21.438 µg/L  | 21.438 ppb  | 15:56:23 |
| 2 | Pb 220.353†        | 34.0     | -6.0     | -2.2659 µg/L | -2.2659 ppb | 15:56:23 |
| 2 | S 181.975 Axial†   | 694.3    | 612.9    | 1968.4 µg/L  | 1968.4 ppb  | 15:56:23 |
| 2 | Sb 206.836†        | 6.6      | 2.5      | 4.0166 µg/L  | 4.0166 ppb  | 15:56:23 |
| 2 | Se 196.026†        | 0.3      | -3.7     | -8.56 µg/L   | -8.56 ppb   | 15:56:23 |
| 2 | SiO2†              | 2978.3   | 2107.4   | 602.36 µg/L  | 602.36 ppb  | 15:56:23 |
| 2 | Si 251.611†        | 4615.5   | 4131.4   | 286.09 µg/L  | 286.09 ppb  | 15:56:23 |
| 2 | Sn 189.927†        | -17.6    | 7.6      | 3.3882 µg/L  | 3.3882 ppb  | 15:56:23 |
| 2 | Ti 334.940†        | 1030.9   | 1083.3   | 5.4143 µg/L  | 5.4143 ppb  | 15:56:03 |
| 2 | Tl 190.801†        | 3.3      | -2.1     | -2.0389 µg/L | -2.0389 ppb | 15:56:23 |
| 2 | U 367.007†         | -157.5   | -16.5    | -11.611 µg/L | -11.611 ppb | 15:56:03 |
| 2 | V 292.402†         | 274.5    | 120.8    | 1.8948 µg/L  | 1.8948 ppb  | 15:56:23 |
| 2 | Zn 213.857†        | 316.9    | 50.6     | 1.6113 µg/L  | 1.6113 ppb  | 15:56:23 |
| 3 | Sc RADIAL          | 4946.1   | 4946.1   | 101 %        |             | 15:55:37 |
| 3 | Al 396.153Radial†  | 159.4    | 256.0    | 438.61 µg/L  | 438.61 ppb  | 15:55:17 |
| 3 | Ca 317.933Radial†  | 967.4    | 903.1    | 725.92 µg/L  | 725.92 ppb  | 15:55:37 |
| 3 | Fe 238.204 Radial† | 229.4    | 191.6    | 451.60 µg/L  | 451.60 ppb  | 15:55:37 |
| 3 | K 766.490 Radial†  | 40.8     | 118.1    | 122.87 µg/L  | 122.87 ppb  | 15:55:17 |
| 3 | Mg 279.077 IEC†    | 9.7      | 23.2     | 224.48 µg/L  | 224.48 ppb  | 15:55:37 |
| 3 | Na 589.592 Radial† | 18098.4  | 17248.9  | 6517.2 µg/L  | 6517.2 ppb  | 15:55:17 |
| 3 | Sr 421.552†        | 448.8    | 289.4    | 3.0947 µg/L  | 3.0947 ppb  | 15:55:17 |
| 3 | Sc                 | 420431.3 | 420431.3 | 104.6 %      |             | 15:56:25 |
| 3 | Y 371.029          | 333213.8 | 333213.8 | 104.18 %     |             | 15:56:25 |
| 3 | Sc 357.253         | 270173.6 | 270173.6 | 105.2 %      |             | 15:56:25 |
| 3 | Ag 328.068†        | -540.0   | -23.7    | -0.2127 µg/L | -0.2127 ppb | 15:56:25 |
| 3 | As 188.979†        | 6.4      | 1.4      | 2.8655 µg/L  | 2.8655 ppb  | 15:56:45 |
| 3 | B 249.677†         | 816.4    | 267.2    | 10.554 µg/L  | 10.554 ppb  | 15:56:45 |
| 3 | Ba 233.527†        | 282.1    | 321.6    | 5.8604 µg/L  | 5.8604 ppb  | 15:56:45 |
| 3 | Be 313.107†        | -2122.2  | 204.6    | 0.1381 µg/L  | 0.1381 ppb  | 15:56:25 |
| 3 | Cd 226.502†        | -193.6   | -4.8     | -0.0835 µg/L | -0.0835 ppb | 15:56:45 |
| 3 | Co 228.616†        | -56.3    | 0.1      | -0.0280 µg/L | -0.0280 ppb | 15:56:45 |
| 3 | Cr 267.716†        | 222.2    | 48.5     | 0.6709 µg/L  | 0.6709 ppb  | 15:56:45 |
| 3 | Cu 324.752†        | 2161.2   | -99.8    | -0.9889 µg/L | -0.9889 ppb | 15:56:25 |
| 3 | Mn 257.610†        | 2177.1   | 2213.7   | 8.0544 µg/L  | 8.0544 ppb  | 15:56:45 |
| 3 | Mo 202.031†        | -34.1    | 7.9      | 1.0024 µg/L  | 1.0024 ppb  | 15:56:45 |
| 3 | Ni 231.604†        | 20.5     | 12.2     | 0.8016 µg/L  | 0.8016 ppb  | 15:56:45 |
| 3 | P 214.914†         | 30.1     | 1.1      | 1.9575 µg/L  | 1.9575 ppb  | 15:56:45 |
| 3 | Pb 220.353†        | 46.6     | 5.8      | 2.2832 µg/L  | 2.2832 ppb  | 15:56:45 |
| 3 | S 181.975 Axial†   | 698.4    | 613.9    | 1971.8 µg/L  | 1971.8 ppb  | 15:56:45 |
| 3 | Sb 206.836†        | 3.8      | -0.2     | -0.3146 µg/L | -0.3146 ppb | 15:56:45 |
| 3 | Se 196.026†        | 5.4      | 1.2      | 2.80 µg/L    | 2.80 ppb    | 15:56:45 |
| 3 | SiO2†              | 2930.7   | 2049.8   | 585.92 µg/L  | 585.92 ppb  | 15:56:45 |
| 3 | Si 251.611†        | 4523.7   | 4025.1   | 278.73 µg/L  | 278.73 ppb  | 15:56:45 |
| 3 | Sn 189.927†        | -15.5    | 9.7      | 4.3263 µg/L  | 4.3263 ppb  | 15:56:45 |
| 3 | Ti 334.940†        | 1016.5   | 1065.4   | 5.3251 µg/L  | 5.3251 ppb  | 15:56:25 |
| 3 | Tl 190.801†        | 2.0      | -3.3     | -3.1813 µg/L | -3.1813 ppb | 15:56:45 |
| 3 | U 367.007†         | -192.6   | -49.2    | -29.348 µg/L | -29.348 ppb | 15:56:25 |
| 3 | V 292.402†         | 300.3    | 144.2    | 2.2617 µg/L  | 2.2617 ppb  | 15:56:45 |
| 3 | Zn 213.857†        | 309.5    | 42.4     | 1.3367 µg/L  | 1.3367 ppb  | 15:56:45 |

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Mean Data: 1203658088|1611348|1|

| Analyte            | Mean Corrected<br>Intensity | Calib.<br>Conc. Units | Std.Dev. | Sample<br>Conc. Units | Std.Dev. | RSD     |
|--------------------|-----------------------------|-----------------------|----------|-----------------------|----------|---------|
| Sc                 | 419417.6                    | 104.3 %               | 0.26     |                       |          | 0.25%   |
| Sc RADIAL          | 4952.2                      | 101 %                 | 0.3      |                       |          | 0.28%   |
| Y 371.029          | 333821.4                    | 104.37 %              | 0.795    |                       |          | 0.76%   |
| Sc 357.253         | 269100.5                    | 104.8 %               | 0.40     |                       |          | 0.38%   |
| Ag 328.068†        | 49.5                        | 0.5809 µg/L           | 0.68917  | 0.5809 ppb            | 0.68917  | 118.63% |
| Al 396.153Radial†  | 251.5                       | 430.93 µg/L           | 22.391   | 430.93 ppb            | 22.391   | 5.20%   |
| As 188.979†        | 3.3                         | 6.7920 µg/L           | 4.25782  | 6.7920 ppb            | 4.25782  | 62.69%  |
| B 249.677†         | 276.0                       | 10.904 µg/L           | 0.4072   | 10.904 ppb            | 0.4072   | 3.73%   |
| Ba 233.527†        | 321.2                       | 5.8515 µg/L           | 0.11585  | 5.8515 ppb            | 0.11585  | 1.98%   |
| Be 313.107†        | 174.3                       | 0.1194 µg/L           | 0.02156  | 0.1194 ppb            | 0.02156  | 18.06%  |
| Ca 317.933Radial†  | 899.3                       | 722.92 µg/L           | 2.593    | 722.92 ppb            | 2.593    | 0.36%   |
| Cd 226.502†        | 6.4                         | 0.0444 µg/L           | 0.13707  | 0.0444 ppb            | 0.13707  | 308.50% |
| Co 228.616†        | 1.9                         | 0.1624 µg/L           | 0.85450  | 0.1624 ppb            | 0.85450  | 526.13% |
| Cr 267.716†        | 49.2                        | 0.6805 µg/L           | 0.09760  | 0.6805 ppb            | 0.09760  | 14.34%  |
| Cu 324.752†        | -85.9                       | -0.8422 µg/L          | 0.68021  | -0.8422 ppb           | 0.68021  | 80.77%  |
| Fe 238.204 Radial† | 192.3                       | 453.17 µg/L           | 1.439    | 453.17 ppb            | 1.439    | 0.32%   |
| K 766.490 Radial†  | 109.4                       | 113.81 µg/L           | 17.623   | 113.81 ppb            | 17.623   | 15.48%  |



|                    |         |              |          |             |          |         |
|--------------------|---------|--------------|----------|-------------|----------|---------|
| Mg 279.077 IEC†    | 27.6    | 267.39 µg/L  | 38.808   | 267.39 ppb  | 38.808   | 14.51%  |
| Mn 257.610†        | 2212.0  | 8.0470 µg/L  | 0.02583  | 8.0470 ppb  | 0.02583  | 0.32%   |
| Mo 202.031†        | 9.0     | 1.1370 µg/L  | 0.52063  | 1.1370 ppb  | 0.52063  | 45.79%  |
| Na 589.592 Radial† | 17317.4 | 6543.1 µg/L  | 38.94    | 6543.1 ppb  | 38.94    | 0.60%   |
| Ni 231.604†        | 12.7    | 0.8354 µg/L  | 0.25960  | 0.8354 ppb  | 0.25960  | 31.07%  |
| P 214.914†         | 2.9     | 5.4217 µg/L  | 14.59626 | 5.4217 ppb  | 14.59626 | 269.22% |
| Pb 220.353†        | -0.8    | -0.2608 µg/L | 2.32197  | -0.2608 ppb | 2.32197  | 890.19% |
| S 181.975 Axial†   | 613.1   | 1969.1 µg/L  | 2.37     | 1969.1 ppb  | 2.37     | 0.12%   |
| Sb 206.836†        | -0.6    | -0.8803 µg/L | 5.20291  | -0.8803 ppb | 5.20291  | 591.04% |
| Se 196.026†        | 0.6     | 1.30 µg/L    | 9.207    | 1.30 ppb    | 9.207    | 706.68% |
| SiO2†              | 2101.1  | 600.58 µg/L  | 13.858   | 600.58 ppb  | 13.858   | 2.31%   |
| Si 251.611†        | 4120.6  | 285.34 µg/L  | 6.275    | 285.34 ppb  | 6.275    | 2.20%   |
| Sn 189.927†        | 7.5     | 3.3306 µg/L  | 1.02569  | 3.3306 ppb  | 1.02569  | 30.80%  |
| Sr 421.552†        | 258.6   | 2.7611 µg/L  | 0.61243  | 2.7611 ppb  | 0.61243  | 22.18%  |
| Ti 334.940†        | 1108.6  | 5.5405 µg/L  | 0.29915  | 5.5405 ppb  | 0.29915  | 5.40%   |
| Tl 190.801†        | -1.9    | -1.8411 µg/L | 1.44929  | -1.8411 ppb | 1.44929  | 78.72%  |
| U 367.007†         | -30.5   | -19.198 µg/L | 9.1420   | -19.198 ppb | 9.1420   | 47.62%  |
| V 292.402†         | 136.1   | 2.1369 µg/L  | 0.20962  | 2.1369 ppb  | 0.20962  | 9.81%   |
| Zn 213.857†        | 45.1    | 1.4260 µg/L  | 0.16051  | 1.4260 ppb  | 0.16051  | 11.26%  |

Sequence No.: 61

Sample ID: 1203657516|1611348|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 336

Date Collected: 11/2/2016 15:56:54

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1203657516|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4915.9        | 4915.9              | 99.9 %             |                    | 15:57:43      |
| 1     | Al 396.153Radial†  | 784.5         | 882.6               | 1512.4 µg/L        | 1512.4 ppb         | 15:57:23      |
| 1     | Ca 317.933Radial†  | 2247.0        | 2189.8              | 1760.2 µg/L        | 1760.2 ppb         | 15:57:43      |
| 1     | Fe 238.204 Radial† | 681.1         | 645.2               | 1520.5 µg/L        | 1520.5 ppb         | 15:57:43      |
| 1     | K 766.490 Radial†  | 1060.7        | 1139.1              | 1187.0 µg/L        | 1187.0 ppb         | 15:57:23      |
| 1     | Mg 279.077 IEC†    | 118.8         | 132.5               | 1281.4 µg/L        | 1281.4 ppb         | 15:57:43      |
| 1     | Na 589.592 Radial† | 20545.8       | 19809.3             | 7484.6 µg/L        | 7484.6 ppb         | 15:57:23      |
| 1     | Sr 421.552†        | 19117.1       | 18977.4             | 204.96 µg/L        | 204.96 ppb         | 15:57:23      |
| 1     | Sc                 | 419743.8      | 419743.8            | 104.4 %            |                    | 15:58:31      |
| 1     | Y 371.029          | 329593.9      | 329593.9            | 103.05 %           |                    | 15:58:31      |
| 1     | Sc 357.253         | 269112.3      | 269112.3            | 104.8 %            |                    | 15:58:31      |
| 1     | Ag 328.068†        | 4132.7        | 4434.7              | 48.863 µg/L        | 48.863 ppb         | 15:58:31      |
| 1     | As 188.979†        | 241.2         | 225.5               | 471.71 µg/L        | 471.71 ppb         | 15:58:51      |
| 1     | B 249.677†         | 5555.2        | 4793.8              | 190.85 µg/L        | 190.85 ppb         | 15:58:31      |
| 1     | Ba 233.527†        | 50096.3       | 47874.0             | 872.98 µg/L        | 872.98 ppb         | 15:58:31      |
| 1     | Be 313.107†        | 316317.4      | 304170.9            | 191.66 µg/L        | 191.66 ppb         | 15:58:31      |
| 1     | Cd 226.502†        | 8308.2        | 8110.0              | 92.323 µg/L        | 92.323 ppb         | 15:58:51      |
| 1     | Co 228.616†        | 1979.2        | 1942.8              | 200.16 µg/L        | 200.16 ppb         | 15:58:51      |
| 1     | Cr 267.716†        | 36208.2       | 34400.7             | 477.16 µg/L        | 477.16 ppb         | 15:58:31      |
| 1     | Cu 324.752†        | 23017.7       | 19817.3             | 197.93 µg/L        | 197.93 ppb         | 15:58:31      |
| 1     | Mn 257.610†        | 58302.6       | 55797.9             | 202.98 µg/L        | 202.98 ppb         | 15:58:31      |
| 1     | Mo 202.031†        | 1690.9        | 1654.4              | 202.76 µg/L        | 202.76 ppb         | 15:58:51      |
| 1     | Ni 231.604†        | 2999.6        | 2856.1              | 190.39 µg/L        | 190.39 ppb         | 15:58:51      |
| 1     | P 214.914†         | 32.2          | 3.2                 | 3.5402 µg/L        | 3.5402 ppb         | 15:58:51      |
| 1     | Pb 220.353†        | 1377.5        | 1276.4              | 488.98 µg/L        | 488.98 ppb         | 15:58:51      |
| 1     | S 181.975 Axial†   | 679.1         | 598.1               | 1922.3 µg/L        | 1922.3 ppb         | 15:58:51      |
| 1     | Sb 206.836†        | 122.6         | 113.2               | 176.05 µg/L        | 176.05 ppb         | 15:58:51      |
| 1     | Se 196.026†        | 44.6          | 38.6                | 90.2 µg/L          | 90.2 ppb           | 15:58:51      |
| 1     | SiO2†              | 3928.4        | 3013.2              | 865.94 µg/L        | 865.94 ppb         | 15:58:51      |
| 1     | Si 251.611†        | 6502.3        | 5930.8              | 410.69 µg/L        | 410.69 ppb         | 15:58:51      |
| 1     | Sn 189.927†        | 465.8         | 469.0               | 207.87 µg/L        | 207.87 ppb         | 15:58:51      |
| 1     | Ti 334.940†        | 1828.2        | 1844.0              | 9.0542 µg/L        | 9.0542 ppb         | 15:58:31      |
| 1     | Tl 190.801†        | 219.3         | 204.1               | 197.10 µg/L        | 197.10 ppb         | 15:58:51      |
| 1     | U 367.007†         | 3.5           | 137.3               | 65.638 µg/L        | 65.638 ppb         | 15:58:31      |
| 1     | V 292.402†         | 12635.6       | 11920.3             | 192.00 µg/L        | 192.00 ppb         | 15:58:31      |
| 1     | Zn 213.857†        | 6139.6        | 5608.8              | 186.52 µg/L        | 186.52 ppb         | 15:58:51      |
| 2     | Sc RADIAL          | 4904.4        | 4904.4              | 99.7 %             |                    | 15:58:05      |
| 2     | Al 396.153Radial†  | 842.9         | 943.1               | 1616.1 µg/L        | 1616.1 ppb         | 15:57:45      |
| 2     | Ca 317.933Radial†  | 2238.9        | 2186.9              | 1757.9 µg/L        | 1757.9 ppb         | 15:58:05      |
| 2     | Fe 238.204 Radial† | 683.3         | 649.0               | 1529.5 µg/L        | 1529.5 ppb         | 15:58:05      |
| 2     | K 766.490 Radial†  | 1070.4        | 1151.4              | 1199.8 µg/L        | 1199.8 ppb         | 15:57:45      |
| 2     | Mg 279.077 IEC†    | 130.4         | 144.4               | 1396.6 µg/L        | 1396.6 ppb         | 15:58:05      |
| 2     | Na 589.592 Radial† | 20733.1       | 20045.4             | 7573.8 µg/L        | 7573.8 ppb         | 15:57:45      |
| 2     | Sr 421.552†        | 19271.9       | 19177.6             | 207.12 µg/L        | 207.12 ppb         | 15:57:45      |
| 2     | Sc                 | 426612.7      | 426612.7            | 106.1 %            |                    | 15:58:53      |
| 2     | Y 371.029          | 329115.1      | 329115.1            | 102.90 %           |                    | 15:58:53      |
| 2     | Sc 357.253         | 272682.2      | 272682.2            | 106.1 %            |                    | 15:58:53      |
| 2     | Ag 328.068†        | 4249.9        | 4493.4              | 49.433 µg/L        | 49.433 ppb         | 15:58:53      |
| 2     | As 188.979†        | 242.3         | 223.5               | 467.61 µg/L        | 467.61 ppb         | 15:59:13      |
| 2     | B 249.677†         | 5717.6        | 4877.3              | 194.18 µg/L        | 194.18 ppb         | 15:58:53      |
| 2     | Ba 233.527†        | 51057.1       | 48153.1             | 878.07 µg/L        | 878.07 ppb         | 15:58:53      |
| 2     | Be 313.107†        | 319167.6      | 302903.0            | 190.86 µg/L        | 190.86 ppb         | 15:58:53      |
| 2     | Cd 226.502†        | 8275.1        | 7975.1              | 90.786 µg/L        | 90.786 ppb         | 15:59:13      |
| 2     | Co 228.616†        | 1979.8        | 1918.8              | 197.70 µg/L        | 197.70 ppb         | 15:59:13      |
| 2     | Cr 267.716†        | 37019.7       | 34712.7             | 481.49 µg/L        | 481.49 ppb         | 15:58:53      |
| 2     | Cu 324.752†        | 23456.2       | 19942.8             | 199.24 µg/L        | 199.24 ppb         | 15:58:53      |
| 2     | Mn 257.610†        | 59167.0       | 55883.5             | 203.29 µg/L        | 203.29 ppb         | 15:58:53      |
| 2     | Mo 202.031†        | 1685.9        | 1628.6              | 199.60 µg/L        | 199.60 ppb         | 15:59:13      |
| 2     | Ni 231.604†        | 2969.7        | 2790.5              | 186.01 µg/L        | 186.01 ppb         | 15:59:13      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 41.3     | 11.4     | 19.609 µg/L | 19.609 ppb | 15:59:13 |
| 2 | Pb 220.353†        | 1372.7   | 1254.6   | 480.57 µg/L | 480.57 ppb | 15:59:13 |
| 2 | S 181.975 Axial†   | 675.7    | 586.5    | 1884.9 µg/L | 1884.9 ppb | 15:59:13 |
| 2 | Sb 206.836†        | 119.4    | 108.6    | 168.75 µg/L | 168.75 ppb | 15:59:13 |
| 2 | Se 196.026†        | 39.5     | 33.2     | 77.6 µg/L   | 77.6 ppb   | 15:59:13 |
| 2 | SiO2†              | 3945.4   | 2980.1   | 856.52 µg/L | 856.52 ppb | 15:59:13 |
| 2 | Si 251.611†        | 6607.4   | 5948.5   | 411.92 µg/L | 411.92 ppb | 15:59:13 |
| 2 | Sn 189.927†        | 466.1    | 463.5    | 205.44 µg/L | 205.44 ppb | 15:59:13 |
| 2 | Ti 334.940†        | 1561.6   | 1570.1   | 7.6867 µg/L | 7.6867 ppb | 15:58:53 |
| 2 | Tl 190.801†        | 218.1    | 200.2    | 193.30 µg/L | 193.30 ppb | 15:59:13 |
| 2 | U 367.007†         | 146.3    | 271.8    | 138.61 µg/L | 138.61 ppb | 15:58:53 |
| 2 | V 292.402†         | 12924.3  | 12034.4  | 193.84 µg/L | 193.84 ppb | 15:58:53 |
| 2 | Zn 213.857†        | 6104.9   | 5499.4   | 182.87 µg/L | 182.87 ppb | 15:59:13 |
| 3 | Sc RADIAL          | 4933.3   | 4933.3   | 100 %       |            | 15:58:27 |
| 3 | Al 396.153Radial†  | 880.9    | 976.0    | 1672.5 µg/L | 1672.5 ppb | 15:58:07 |
| 3 | Ca 317.933Radial†  | 2259.7   | 2194.5   | 1764.0 µg/L | 1764.0 ppb | 15:58:27 |
| 3 | Fe 238.204 Radial† | 686.3    | 648.0    | 1527.1 µg/L | 1527.1 ppb | 15:58:27 |
| 3 | K 766.490 Radial†  | 1316.8   | 1390.8   | 1449.5 µg/L | 1449.5 ppb | 15:58:07 |
| 3 | Mg 279.077 IEC†    | 120.0    | 133.2    | 1288.9 µg/L | 1288.9 ppb | 15:58:27 |
| 3 | Na 589.592 Radial† | 20607.2  | 19798.0  | 7480.3 µg/L | 7480.3 ppb | 15:58:07 |
| 3 | Sr 421.552†        | 19468.0  | 19260.0  | 208.01 µg/L | 208.01 ppb | 15:58:07 |
| 3 | Sc                 | 420653.7 | 420653.7 | 104.6 %     |            | 15:59:15 |
| 3 | Y 371.029          | 332218.6 | 332218.6 | 103.87 %    |            | 15:59:15 |
| 3 | Sc 357.253         | 270084.9 | 270084.9 | 105.1 %     |            | 15:59:15 |
| 3 | Ag 328.068†        | 4033.9   | 4326.6   | 47.640 µg/L | 47.640 ppb | 15:59:15 |
| 3 | As 188.979†        | 249.4    | 232.5    | 486.33 µg/L | 486.33 ppb | 15:59:36 |
| 3 | B 249.677†         | 5644.1   | 4859.3   | 193.46 µg/L | 193.46 ppb | 15:59:15 |
| 3 | Ba 233.527†        | 50873.0  | 48440.5  | 883.31 µg/L | 883.31 ppb | 15:59:15 |
| 3 | Be 313.107†        | 319365.6 | 305982.8 | 192.80 µg/L | 192.80 ppb | 15:59:15 |
| 3 | Cd 226.502†        | 8267.4   | 8042.7   | 91.556 µg/L | 91.556 ppb | 15:59:36 |
| 3 | Co 228.616†        | 1977.9   | 1934.8   | 199.35 µg/L | 199.35 ppb | 15:59:36 |
| 3 | Cr 267.716†        | 36361.3  | 34421.8  | 477.46 µg/L | 477.46 ppb | 15:59:15 |
| 3 | Cu 324.752†        | 22995.9  | 19717.5  | 196.96 µg/L | 196.96 ppb | 15:59:15 |
| 3 | Mn 257.610†        | 58767.0  | 56039.1  | 203.85 µg/L | 203.85 ppb | 15:59:15 |
| 3 | Mo 202.031†        | 1693.8   | 1651.3   | 202.38 µg/L | 202.38 ppb | 15:59:36 |
| 3 | Ni 231.604†        | 2968.7   | 2816.4   | 187.74 µg/L | 187.74 ppb | 15:59:36 |
| 3 | P 214.914†         | 38.3     | 8.9      | 14.698 µg/L | 14.698 ppb | 15:59:36 |
| 3 | Pb 220.353†        | 1377.5   | 1271.7   | 487.15 µg/L | 487.15 ppb | 15:59:36 |
| 3 | S 181.975 Axial†   | 684.1    | 600.6    | 1930.2 µg/L | 1930.2 ppb | 15:59:36 |
| 3 | Sb 206.836†        | 120.5    | 110.8    | 172.20 µg/L | 172.20 ppb | 15:59:36 |
| 3 | Se 196.026†        | 43.2     | 37.1     | 86.6 µg/L   | 86.6 ppb   | 15:59:36 |
| 3 | SiO2†              | 3837.3   | 2913.0   | 837.32 µg/L | 837.32 ppb | 15:59:36 |
| 3 | Si 251.611†        | 6295.5   | 5711.7   | 395.52 µg/L | 395.52 ppb | 15:59:36 |
| 3 | Sn 189.927†        | 470.2    | 471.6    | 209.01 µg/L | 209.01 ppb | 15:59:36 |
| 3 | Ti 334.940†        | 1790.2   | 1801.6   | 8.8427 µg/L | 8.8427 ppb | 15:59:15 |
| 3 | Tl 190.801†        | 212.0    | 196.4    | 189.63 µg/L | 189.63 ppb | 15:59:36 |
| 3 | U 367.007†         | 68.0     | 198.7    | 98.909 µg/L | 98.909 ppb | 15:59:15 |
| 3 | V 292.402†         | 12763.5  | 11998.5  | 193.26 µg/L | 193.26 ppb | 15:59:15 |
| 3 | Zn 213.857†        | 6103.1   | 5553.0   | 184.67 µg/L | 184.67 ppb | 15:59:36 |

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Mean Data: 1203657516|1611348|1|

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD    |
|--------------------|--------------------------|-------------|--------|----------|--------------------|----------|--------|
| Sc                 | 422336.7                 | 105.0       | %      | 0.93     |                    |          | 0.88%  |
| Sc RADIAL          | 4917.8                   | 99.9        | %      | 0.30     |                    |          | 0.30%  |
| Y 371.029          | 330309.2                 | 103.28      | %      | 0.522    |                    |          | 0.51%  |
| Sc 357.253         | 270626.5                 | 105.3       | %      | 0.72     |                    |          | 0.68%  |
| Ag 328.068†        | 4418.2                   | 48.646      | µg/L   | 0.9160   | 48.646 ppb         | 0.9160   | 1.88%  |
| Al 396.153Radial†  | 933.9                    | 1600.3      | µg/L   | 81.18    | 1600.3 ppb         | 81.18    | 5.07%  |
| As 188.979†        | 227.2                    | 475.22      | µg/L   | 9.840    | 475.22 ppb         | 9.840    | 2.07%  |
| B 249.677†         | 4843.5                   | 192.83      | µg/L   | 1.752    | 192.83 ppb         | 1.752    | 0.91%  |
| Ba 233.527†        | 48155.9                  | 878.12      | µg/L   | 5.165    | 878.12 ppb         | 5.165    | 0.59%  |
| Be 313.107†        | 304352.2                 | 191.77      | µg/L   | 0.976    | 191.77 ppb         | 0.976    | 0.51%  |
| Ca 317.933Radial†  | 2190.4                   | 1760.7      | µg/L   | 3.08     | 1760.7 ppb         | 3.08     | 0.17%  |
| Cd 226.502†        | 8042.6                   | 91.555      | µg/L   | 0.7686   | 91.555 ppb         | 0.7686   | 0.84%  |
| Co 228.616†        | 1932.1                   | 199.07      | µg/L   | 1.255    | 199.07 ppb         | 1.255    | 0.63%  |
| Cr 267.716†        | 34511.7                  | 478.70      | µg/L   | 2.418    | 478.70 ppb         | 2.418    | 0.51%  |
| Cu 324.752†        | 19825.9                  | 198.04      | µg/L   | 1.142    | 198.04 ppb         | 1.142    | 0.58%  |
| Fe 238.204 Radial† | 647.4                    | 1525.7      | µg/L   | 4.67     | 1525.7 ppb         | 4.67     | 0.31%  |
| K 766.490 Radial†  | 1227.1                   | 1278.8      | µg/L   | 148.00   | 1278.8 ppb         | 148.00   | 11.57% |

|                    |         |             |         |            |         |        |
|--------------------|---------|-------------|---------|------------|---------|--------|
| Mg 279.077 IEC†    | 136.7   | 1322.3 µg/L | 64.46   | 1322.3 ppb | 64.46   | 4.87%  |
| Mn 257.610†        | 55906.8 | 203.37 µg/L | 0.445   | 203.37 ppb | 0.445   | 0.22%  |
| Mo 202.031†        | 1644.8  | 201.58 µg/L | 1.727   | 201.58 ppb | 1.727   | 0.86%  |
| Na 589.592 Radial† | 19884.3 | 7512.9 µg/L | 52.78   | 7512.9 ppb | 52.78   | 0.70%  |
| Ni 231.604†        | 2821.0  | 188.05 µg/L | 2.203   | 188.05 ppb | 2.203   | 1.17%  |
| P 214.914†         | 7.8     | 12.616 µg/L | 8.2343  | 12.616 ppb | 8.2343  | 65.27% |
| Pb 220.353†        | 1267.6  | 485.56 µg/L | 4.423   | 485.56 ppb | 4.423   | 0.91%  |
| S 181.975 Axial†   | 595.1   | 1912.5 µg/L | 24.22   | 1912.5 ppb | 24.22   | 1.27%  |
| Sb 206.836†        | 110.9   | 172.34 µg/L | 3.651   | 172.34 ppb | 3.651   | 2.12%  |
| Se 196.026†        | 36.3    | 84.8 µg/L   | 6.50    | 84.8 ppb   | 6.50    | 7.66%  |
| SiO2†              | 2968.8  | 853.26 µg/L | 14.590  | 853.26 ppb | 14.590  | 1.71%  |
| Si 251.611†        | 5863.7  | 406.04 µg/L | 9.132   | 406.04 ppb | 9.132   | 2.25%  |
| Sn 189.927†        | 468.1   | 207.44 µg/L | 1.826   | 207.44 ppb | 1.826   | 0.88%  |
| Sr 421.552†        | 19138.3 | 206.70 µg/L | 1.570   | 206.70 ppb | 1.570   | 0.76%  |
| Ti 334.940†        | 1738.6  | 8.5279 µg/L | 0.73611 | 8.5279 ppb | 0.73611 | 8.63%  |
| Tl 190.801†        | 200.2   | 193.34 µg/L | 3.733   | 193.34 ppb | 3.733   | 1.93%  |
| U 367.007†         | 202.6   | 101.05 µg/L | 36.534  | 101.05 ppb | 36.534  | 36.15% |
| V 292.402†         | 11984.4 | 193.03 µg/L | 0.942   | 193.03 ppb | 0.942   | 0.49%  |
| Zn 213.857†        | 5553.7  | 184.69 µg/L | 1.827   | 184.69 ppb | 1.827   | 0.99%  |

Sequence No.: 62

Sample ID: 1203658090|1611348|5|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 337

Date Collected: 11/2/2016 15:59:44

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1203658090|1611348|5|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4922.9        | 4922.9              | 100 %              |                    | 16:00:33      |
| 1     | Al 396.153Radial†  | -101.7        | -4.2                | -7.2575 µg/L       | -7.2575 ppb        | 16:00:13      |
| 1     | Ca 317.933Radial†  | 264.9         | 205.4               | 165.11 µg/L        | 165.11 ppb         | 16:00:33      |
| 1     | Fe 238.204 Radial† | 78.9          | 42.3                | 99.703 µg/L        | 99.703 ppb         | 16:00:33      |
| 1     | K 766.490 Radial†  | -39.7         | 37.8                | 39.317 µg/L        | 39.317 ppb         | 16:00:13      |
| 1     | Mg 279.077 IEC†    | -10.6         | 3.0                 | 29.102 µg/L        | 29.102 ppb         | 16:00:33      |
| 1     | Na 589.592 Radial† | 4165.5        | 3408.2              | 1287.7 µg/L        | 1287.7 ppb         | 16:00:13      |
| 1     | Sr 421.552†        | 257.2         | 100.0               | 1.0729 µg/L        | 1.0729 ppb         | 16:00:13      |
| 1     | Sc                 | 410019.0      | 410019.0            | 102.0 %            |                    | 16:01:21      |
| 1     | Y 371.029          | 327375.8      | 327375.8            | 102.36 %           |                    | 16:01:21      |
| 1     | Sc 357.253         | 262443.6      | 262443.6            | 102.2 %            |                    | 16:01:21      |
| 1     | Ag 328.068†        | -347.9        | 149.2               | 1.6803 µg/L        | 1.6803 ppb         | 16:01:21      |
| 1     | As 188.979†        | 4.3           | -0.5                | -0.9667 µg/L       | -0.9667 ppb        | 16:01:41      |
| 1     | B 249.677†         | 560.2         | 39.2                | 1.5425 µg/L        | 1.5425 ppb         | 16:01:41      |
| 1     | Ba 233.527†        | 16.7          | 69.8                | 1.2719 µg/L        | 1.2719 ppb         | 16:01:41      |
| 1     | Be 313.107†        | -2073.3       | 193.0               | 0.1236 µg/L        | 0.1236 ppb         | 16:01:21      |
| 1     | Cd 226.502†        | -181.1        | 2.0                 | 0.0156 µg/L        | 0.0156 ppb         | 16:01:41      |
| 1     | Co 228.616†        | -53.7         | 1.1                 | 0.1027 µg/L        | 0.1027 ppb         | 16:01:41      |
| 1     | Cr 267.716†        | 181.7         | 15.1                | 0.2098 µg/L        | 0.2098 ppb         | 16:01:41      |
| 1     | Cu 324.752†        | 2170.0        | -30.7               | -0.3239 µg/L       | -0.3239 ppb        | 16:01:21      |
| 1     | Mn 257.610†        | 326.8         | 463.6               | 1.6875 µg/L        | 1.6875 ppb         | 16:01:41      |
| 1     | Mo 202.031†        | -45.9         | -4.6                | -0.5567 µg/L       | -0.5567 ppb        | 16:01:41      |
| 1     | Ni 231.604†        | 15.7          | 8.1                 | 0.5389 µg/L        | 0.5389 ppb         | 16:01:41      |
| 1     | P 214.914†         | 17.1          | -10.8               | -21.369 µg/L       | -21.369 ppb        | 16:01:41      |
| 1     | Pb 220.353†        | 39.7          | 0.4                 | 0.1709 µg/L        | 0.1709 ppb         | 16:01:41      |
| 1     | S 181.975 Axial†   | 168.1         | 114.4               | 367.44 µg/L        | 367.44 ppb         | 16:01:41      |
| 1     | Sb 206.836†        | 5.3           | 1.4                 | 2.2253 µg/L        | 2.2253 ppb         | 16:01:41      |
| 1     | Se 196.026†        | 4.4           | 0.3                 | 0.666 µg/L         | 0.666 ppb          | 16:01:41      |
| 1     | SiO2†              | 1259.2        | 495.8               | 141.70 µg/L        | 141.70 ppb         | 16:01:41      |
| 1     | Si 251.611†        | 1339.0        | 1034.5              | 71.638 µg/L        | 71.638 ppb         | 16:01:41      |
| 1     | Sn 189.927†        | -25.6         | -0.6                | -0.2627 µg/L       | -0.2627 ppb        | 16:01:41      |
| 1     | Ti 334.940†        | 132.3         | 228.4               | 1.1416 µg/L        | 1.1416 ppb         | 16:01:21      |
| 1     | Tl 190.801†        | -4.3          | -9.5                | -9.1310 µg/L       | -9.1310 ppb        | 16:01:41      |
| 1     | U 367.007†         | -199.9        | -61.7               | -34.069 µg/L       | -34.069 ppb        | 16:01:21      |
| 1     | V 292.402†         | 216.3         | 70.4                | 1.0973 µg/L        | 1.0973 ppb         | 16:01:41      |
| 1     | Zn 213.857†        | 297.8         | 39.5                | 1.3067 µg/L        | 1.3067 ppb         | 16:01:41      |
| 2     | Sc RADIAL          | 4918.6        | 4918.6              | 100.0 %            |                    | 16:00:55      |
| 2     | Al 396.153Radial†  | -91.6         | 5.7                 | 9.7961 µg/L        | 9.7961 ppb         | 16:00:35      |
| 2     | Ca 317.933Radial†  | 261.1         | 201.8               | 162.24 µg/L        | 162.24 ppb         | 16:00:55      |
| 2     | Fe 238.204 Radial† | 77.2          | 40.7                | 95.911 µg/L        | 95.911 ppb         | 16:00:55      |
| 2     | K 766.490 Radial†  | -88.9         | -11.4               | -11.965 µg/L       | -11.965 ppb        | 16:00:35      |
| 2     | Mg 279.077 IEC†    | -11.8         | 1.8                 | 17.468 µg/L        | 17.468 ppb         | 16:00:55      |
| 2     | Na 589.592 Radial† | 4284.5        | 3530.7              | 1334.0 µg/L        | 1334.0 ppb         | 16:00:35      |
| 2     | Sr 421.552†        | 216.3         | 59.3                | 0.6341 µg/L        | 0.6341 ppb         | 16:00:35      |
| 2     | Sc                 | 410532.6      | 410532.6            | 102.1 %            |                    | 16:01:43      |
| 2     | Y 371.029          | 325195.8      | 325195.8            | 101.68 %           |                    | 16:01:43      |
| 2     | Sc 357.253         | 264327.2      | 264327.2            | 102.9 %            |                    | 16:01:43      |
| 2     | Ag 328.068†        | -519.8        | -15.4               | -0.1761 µg/L       | -0.1761 ppb        | 16:01:43      |
| 2     | As 188.979†        | 2.3           | -2.5                | -5.1974 µg/L       | -5.1974 ppb        | 16:02:03      |
| 2     | B 249.677†         | 569.4         | 44.3                | 1.7443 µg/L        | 1.7443 ppb         | 16:02:03      |
| 2     | Ba 233.527†        | 31.0          | 83.5                | 1.5224 µg/L        | 1.5224 ppb         | 16:02:03      |
| 2     | Be 313.107†        | -2211.0       | 73.6                | 0.0482 µg/L        | 0.0482 ppb         | 16:01:43      |
| 2     | Cd 226.502†        | -201.4        | -16.5               | -0.1947 µg/L       | -0.1947 ppb        | 16:02:03      |
| 2     | Co 228.616†        | -59.1         | -3.8                | -0.3995 µg/L       | -0.3995 ppb        | 16:02:03      |
| 2     | Cr 267.716†        | 186.7         | 18.7                | 0.2596 µg/L        | 0.2596 ppb         | 16:02:03      |
| 2     | Cu 324.752†        | 2220.5        | 3.3                 | 0.0455 µg/L        | 0.0455 ppb         | 16:01:43      |
| 2     | Mn 257.610†        | 350.7         | 484.5               | 1.7639 µg/L        | 1.7639 ppb         | 16:02:03      |
| 2     | Mo 202.031†        | -42.0         | -0.5                | -0.0546 µg/L       | -0.0546 ppb        | 16:02:03      |
| 2     | Ni 231.604†        | 21.8          | 14.0                | 0.9308 µg/L        | 0.9308 ppb         | 16:02:03      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 18.9     | -9.2     | -18.189 µg/L | -18.189 ppb | 16:02:03 |
| 2 | Pb 220.353†        | 23.6     | -15.6    | -5.9765 µg/L | -5.9765 ppb | 16:02:03 |
| 2 | S 181.975 Axial†   | 171.4    | 116.4    | 373.98 µg/L  | 373.98 ppb  | 16:02:03 |
| 2 | Sb 206.836†        | 7.0      | 3.0      | 4.7839 µg/L  | 4.7839 ppb  | 16:02:03 |
| 2 | Se 196.026†        | 4.4      | 0.3      | 0.628 µg/L   | 0.628 ppb   | 16:02:03 |
| 2 | SiO2†              | 1267.6   | 495.2    | 141.54 µg/L  | 141.54 ppb  | 16:02:03 |
| 2 | Si 251.611†        | 1324.7   | 1011.3   | 70.032 µg/L  | 70.032 ppb  | 16:02:03 |
| 2 | Sn 189.927†        | -18.8    | 6.1      | 2.7267 µg/L  | 2.7267 ppb  | 16:02:03 |
| 2 | Ti 334.940†        | 116.5    | 212.1    | 1.0605 µg/L  | 1.0605 ppb  | 16:01:43 |
| 2 | Tl 190.801†        | -4.9     | -10.0    | -9.6148 µg/L | -9.6148 ppb | 16:02:03 |
| 2 | U 367.007†         | -118.0   | 19.3     | 9.9316 µg/L  | 9.9316 ppb  | 16:01:43 |
| 2 | V 292.402†         | 225.9    | 78.3     | 1.2473 µg/L  | 1.2473 ppb  | 16:02:03 |
| 2 | Zn 213.857†        | 298.0    | 37.7     | 1.2423 µg/L  | 1.2423 ppb  | 16:02:03 |
| 3 | Sc RADIAL          | 4898.5   | 4898.5   | 99.6 %       |             | 16:01:17 |
| 3 | Al 396.153Radial†  | 14.8     | 112.3    | 192.39 µg/L  | 192.39 ppb  | 16:00:57 |
| 3 | Ca 317.933Radial†  | 271.6    | 213.5    | 171.64 µg/L  | 171.64 ppb  | 16:01:17 |
| 3 | Fe 238.204 Radial† | 72.8     | 36.6     | 86.224 µg/L  | 86.224 ppb  | 16:01:17 |
| 3 | K 766.490 Radial†  | -55.0    | 22.2     | 23.149 µg/L  | 23.149 ppb  | 16:00:57 |
| 3 | Mg 279.077 IEC†    | -4.2     | 9.3      | 90.334 µg/L  | 90.334 ppb  | 16:01:17 |
| 3 | Na 589.592 Radial† | 4297.3   | 3561.2   | 1345.5 µg/L  | 1345.5 ppb  | 16:00:57 |
| 3 | Sr 421.552†        | 202.9    | 46.7     | 0.4980 µg/L  | 0.4980 ppb  | 16:00:57 |
| 3 | Sc                 | 410142.3 | 410142.3 | 102.0 %      |             | 16:02:05 |
| 3 | Y 371.029          | 325056.1 | 325056.1 | 101.63 %     |             | 16:02:05 |
| 3 | Sc 357.253         | 264259.0 | 264259.0 | 102.9 %      |             | 16:02:05 |
| 3 | Ag 328.068†        | -554.1   | -49.0    | -0.5202 µg/L | -0.5202 ppb | 16:02:05 |
| 3 | As 188.979†        | 8.5      | 3.5      | 7.3337 µg/L  | 7.3337 ppb  | 16:02:25 |
| 3 | B 249.677†         | 581.7    | 56.4     | 2.2285 µg/L  | 2.2285 ppb  | 16:02:25 |
| 3 | Ba 233.527†        | 11.6     | 64.7     | 1.1790 µg/L  | 1.1790 ppb  | 16:02:25 |
| 3 | Be 313.107†        | -2179.5  | 103.7    | 0.0668 µg/L  | 0.0668 ppb  | 16:02:05 |
| 3 | Cd 226.502†        | -155.9   | 27.7     | 0.3101 µg/L  | 0.3101 ppb  | 16:02:25 |
| 3 | Co 228.616†        | -51.0    | 4.0      | 0.4047 µg/L  | 0.4047 ppb  | 16:02:25 |
| 3 | Cr 267.716†        | 184.8    | 16.9     | 0.2345 µg/L  | 0.2345 ppb  | 16:02:25 |
| 3 | Cu 324.752†        | 2074.0   | -138.6   | -1.3876 µg/L | -1.3876 ppb | 16:02:05 |
| 3 | Mn 257.610†        | 337.2    | 471.5    | 1.7138 µg/L  | 1.7138 ppb  | 16:02:25 |
| 3 | Mo 202.031†        | -48.3    | -6.7     | -0.8135 µg/L | -0.8135 ppb | 16:02:25 |
| 3 | Ni 231.604†        | 19.0     | 11.2     | 0.7476 µg/L  | 0.7476 ppb  | 16:02:25 |
| 3 | P 214.914†         | 25.6     | -2.7     | -5.3324 µg/L | -5.3324 ppb | 16:02:25 |
| 3 | Pb 220.353†        | 43.8     | 4.1      | 1.5861 µg/L  | 1.5861 ppb  | 16:02:25 |
| 3 | S 181.975 Axial†   | 170.6    | 115.7    | 371.73 µg/L  | 371.73 ppb  | 16:02:25 |
| 3 | Sb 206.836†        | 7.6      | 3.6      | 5.6454 µg/L  | 5.6454 ppb  | 16:02:25 |
| 3 | Se 196.026†        | 5.0      | 0.9      | 2.11 µg/L    | 2.11 ppb    | 16:02:25 |
| 3 | SiO2†              | 1256.5   | 484.7    | 138.54 µg/L  | 138.54 ppb  | 16:02:25 |
| 3 | Si 251.611†        | 1288.2   | 976.1    | 67.595 µg/L  | 67.595 ppb  | 16:02:25 |
| 3 | Sn 189.927†        | -26.2    | -1.1     | -0.4834 µg/L | -0.4834 ppb | 16:02:25 |
| 3 | Ti 334.940†        | 70.8     | 167.7    | 0.8395 µg/L  | 0.8395 ppb  | 16:02:05 |
| 3 | Tl 190.801†        | -3.1     | -8.2     | -7.9076 µg/L | -7.9076 ppb | 16:02:25 |
| 3 | U 367.007†         | -162.6   | -24.1    | -13.571 µg/L | -13.571 ppb | 16:02:05 |
| 3 | V 292.402†         | 200.6    | 53.8     | 0.8410 µg/L  | 0.8410 ppb  | 16:02:25 |
| 3 | Zn 213.857†        | 301.4    | 41.0     | 1.3543 µg/L  | 1.3543 ppb  | 16:02:25 |

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Mean Data: 1203658090|1611348|5|

| Analyte            | Mean Corrected Intensity | Conc.   | Calib. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|---------|--------------|----------|--------------------|----------|---------|
| Sc                 | 410231.3                 | 102.0   | %            | 0.07     |                    |          | 0.07%   |
| Sc RADIAL          | 4913.3                   | 99.9    | %            | 0.26     |                    |          | 0.26%   |
| Y 371.029          | 325875.9                 | 101.89  | %            | 0.407    |                    |          | 0.40%   |
| Sc 357.253         | 263676.6                 | 102.6   | %            | 0.42     |                    |          | 0.41%   |
| Ag 328.068†        | 28.3                     | 0.3280  | µg/L         | 1.18374  | 0.3280 ppb         | 1.18374  | 360.89% |
| Al 396.153Radial†  | 37.9                     | 64.975  | µg/L         | 110.6699 | 64.975 ppb         | 110.6699 | 170.33% |
| As 188.979†        | 0.2                      | 0.3899  | µg/L         | 6.37475  | 0.3899 ppb         | 6.37475  | >999.9% |
| B 249.677†         | 46.6                     | 1.8384  | µg/L         | 0.35254  | 1.8384 ppb         | 0.35254  | 19.18%  |
| Ba 233.527†        | 72.7                     | 1.3244  | µg/L         | 0.17761  | 1.3244 ppb         | 0.17761  | 13.41%  |
| Be 313.107†        | 123.4                    | 0.0795  | µg/L         | 0.03927  | 0.0795 ppb         | 0.03927  | 49.39%  |
| Ca 317.933Radial†  | 206.9                    | 166.33  | µg/L         | 4.818    | 166.33 ppb         | 4.818    | 2.90%   |
| Cd 226.502†        | 4.4                      | 0.0437  | µg/L         | 0.25360  | 0.0437 ppb         | 0.25360  | 580.59% |
| Co 228.616†        | 0.4                      | 0.0360  | µg/L         | 0.40619  | 0.0360 ppb         | 0.40619  | >999.9% |
| Cr 267.716†        | 16.9                     | 0.2346  | µg/L         | 0.02491  | 0.2346 ppb         | 0.02491  | 10.62%  |
| Cu 324.752†        | -55.3                    | -0.5553 | µg/L         | 0.74405  | -0.5553 ppb        | 0.74405  | 133.99% |
| Fe 238.204 Radial† | 39.9                     | 93.946  | µg/L         | 6.9508   | 93.946 ppb         | 6.9508   | 7.40%   |
| K 766.490 Radial†  | 16.2                     | 16.834  | µg/L         | 26.2176  | 16.834 ppb         | 26.2176  | 155.75% |

|                    |        |              |         |             |         |         |
|--------------------|--------|--------------|---------|-------------|---------|---------|
| Mg 279.077 IEC†    | 4.7    | 45.635 µg/L  | 39.1454 | 45.635 ppb  | 39.1454 | 85.78%  |
| Mn 257.610†        | 473.2  | 1.7217 µg/L  | 0.03881 | 1.7217 ppb  | 0.03881 | 2.25%   |
| Mo 202.031†        | -3.9   | -0.4750 µg/L | 0.38603 | -0.4750 ppb | 0.38603 | 81.28%  |
| Na 589.592 Radial† | 3500.0 | 1322.4 µg/L  | 30.60   | 1322.4 ppb  | 30.60   | 2.31%   |
| Ni 231.604†        | 11.1   | 0.7391 µg/L  | 0.19607 | 0.7391 ppb  | 0.19607 | 26.53%  |
| P 214.914†         | -7.5   | -14.964 µg/L | 8.4910  | -14.964 ppb | 8.4910  | 56.74%  |
| Pb 220.353†        | -3.7   | -1.4065 µg/L | 4.02047 | -1.4065 ppb | 4.02047 | 285.85% |
| S 181.975 Axial†   | 115.5  | 371.05 µg/L  | 3.320   | 371.05 ppb  | 3.320   | 0.89%   |
| Sb 206.836†        | 2.7    | 4.2182 µg/L  | 1.77883 | 4.2182 ppb  | 1.77883 | 42.17%  |
| Se 196.026†        | 0.5    | 1.13 µg/L    | 0.842   | 1.13 ppb    | 0.842   | 74.32%  |
| SiO2†              | 491.9  | 140.60 µg/L  | 1.780   | 140.60 ppb  | 1.780   | 1.27%   |
| Si 251.611†        | 1007.3 | 69.755 µg/L  | 2.0357  | 69.755 ppb  | 2.0357  | 2.92%   |
| Sn 189.927†        | 1.5    | 0.6602 µg/L  | 1.79304 | 0.6602 ppb  | 1.79304 | 271.60% |
| Sr 421.552†        | 68.7   | 0.7350 µg/L  | 0.30046 | 0.7350 ppb  | 0.30046 | 40.88%  |
| Ti 334.940†        | 202.7  | 1.0139 µg/L  | 0.15637 | 1.0139 ppb  | 0.15637 | 15.42%  |
| Tl 190.801†        | -9.2   | -8.8845 µg/L | 0.87992 | -8.8845 ppb | 0.87992 | 9.90%   |
| U 367.007†         | -22.1  | -12.569 µg/L | 22.0172 | -12.569 ppb | 22.0172 | 175.17% |
| V 292.402†         | 67.5   | 1.0618 µg/L  | 0.20545 | 1.0618 ppb  | 0.20545 | 19.35%  |
| Zn 213.857†        | 39.4   | 1.3011 µg/L  | 0.05621 | 1.3011 ppb  | 0.05621 | 4.32%   |

Sequence No.: 63

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 11/2/2016 16:02:35

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4920.5        | 4920.5              | 100 %              |                    | 16:03:25      |
| 1     | Al 396.153Radial†  | 2809.6        | 2906.9              | 4981.3 µg/L        | 4981.3 ppb         | 16:03:25      |
| 1     | Ca 317.933Radial†  | 6321.5        | 6261.9              | 5033.6 µg/L        | 5033.6 ppb         | 16:03:25      |
| 1     | Fe 238.204 Radial† | 2179.7        | 2143.0              | 5050.7 µg/L        | 5050.7 ppb         | 16:03:25      |
| 1     | K 766.490 Radial†  | 4413.3        | 4490.6              | 4680.1 µg/L        | 4680.1 ppb         | 16:03:05      |
| 1     | Mg 279.077 IEC†    | 508.5         | 522.0               | 5050.1 µg/L        | 5050.1 ppb         | 16:03:25      |
| 1     | Na 589.592 Radial† | 26242.7       | 25486.6             | 9629.6 µg/L        | 9629.6 ppb         | 16:03:05      |
| 1     | Sr 421.552†        | 44772.2       | 44613.6             | 481.74 µg/L        | 481.74 ppb         | 16:03:05      |
| 1     | Sc                 | 422654.6      | 422654.6            | 105.1 %            |                    | 16:04:13      |
| 1     | Y 371.029          | 329295.7      | 329295.7            | 102.96 %           |                    | 16:04:13      |
| 1     | Sc 357.253         | 266024.6      | 266024.6            | 103.6 %            |                    | 16:04:13      |
| 1     | Ag 328.068†        | 43910.0       | 42891.6             | 471.55 µg/L        | 471.55 ppb         | 16:04:13      |
| 1     | As 188.979†        | 223.2         | 210.8               | 442.44 µg/L        | 442.44 ppb         | 16:04:33      |
| 1     | B 249.677†         | 12759.9       | 11812.5             | 469.98 µg/L        | 469.98 ppb         | 16:04:13      |
| 1     | Ba 233.527†        | 26989.0       | 26115.4             | 476.52 µg/L        | 476.52 ppb         | 16:04:13      |
| 1     | Be 313.107†        | 775984.7      | 751555.0            | 474.33 µg/L        | 474.33 ppb         | 16:04:13      |
| 1     | Cd 226.502†        | 42865.9       | 41572.8             | 473.80 µg/L        | 473.80 ppb         | 16:04:13      |
| 1     | Co 228.616†        | 4772.2        | 4661.9              | 478.03 µg/L        | 478.03 ppb         | 16:04:33      |
| 1     | Cr 267.716†        | 35663.9       | 34276.2             | 475.63 µg/L        | 475.63 ppb         | 16:04:13      |
| 1     | Cu 324.752†        | 52199.2       | 48251.7             | 482.20 µg/L        | 482.20 ppb         | 16:04:13      |
| 1     | Mn 257.610†        | 136919.0      | 132360.0            | 481.45 µg/L        | 481.45 ppb         | 16:04:13      |
| 1     | Mo 202.031†        | 3927.9        | 3833.3              | 469.92 µg/L        | 469.92 ppb         | 16:04:33      |
| 1     | Ni 231.604†        | 7241.4        | 6985.4              | 465.61 µg/L        | 465.61 ppb         | 16:04:33      |
| 1     | P 214.914†         | 1263.8        | 1192.9              | 2350.4 µg/L        | 2350.4 ppb         | 16:04:33      |
| 1     | Pb 220.353†        | 1323.8        | 1239.9              | 475.24 µg/L        | 475.24 ppb         | 16:04:33      |
| 1     | S 181.975 Axial†   | 352.5         | 290.3               | 936.06 µg/L        | 936.06 ppb         | 16:04:33      |
| 1     | Sb 206.836†        | 303.8         | 289.5               | 458.74 µg/L        | 458.74 ppb         | 16:04:33      |
| 1     | Se 196.026†        | 209.5         | 198.4               | 463 µg/L           | 463 ppb            | 16:04:33      |
| 1     | SiO2†              | 19170.4       | 17775.2             | 5085.4 µg/L        | 5085.4 ppb         | 16:04:13      |
| 1     | Si 251.611†        | 35867.7       | 34359.6             | 2379.3 µg/L        | 2379.3 ppb         | 16:04:13      |
| 1     | Sn 189.927†        | 1037.4        | 1026.2              | 456.19 µg/L        | 456.19 ppb         | 16:04:33      |
| 1     | Ti 334.940†        | 97746.1       | 94487.8             | 470.98 µg/L        | 470.98 ppb         | 16:04:13      |
| 1     | Tl 190.801†        | 516.2         | 493.2               | 479.66 µg/L        | 479.66 ppb         | 16:04:33      |
| 1     | U 367.007†         | 750.0         | 858.2               | 436.33 µg/L        | 436.33 ppb         | 16:04:13      |
| 1     | V 292.402†         | 30932.8       | 29729.1             | 477.66 µg/L        | 477.66 ppb         | 16:04:13      |
| 1     | Zn 213.857†        | 14486.0       | 13736.5             | 456.50 µg/L        | 456.50 ppb         | 16:04:33      |
| 2     | Sc RADIAL          | 4923.0        | 4923.0              | 100 %              |                    | 16:03:47      |
| 2     | Al 396.153Radial†  | 2821.0        | 2916.8              | 4998.4 µg/L        | 4998.4 ppb         | 16:03:47      |
| 2     | Ca 317.933Radial†  | 6321.9        | 6259.1              | 5031.4 µg/L        | 5031.4 ppb         | 16:03:47      |
| 2     | Fe 238.204 Radial† | 2185.2        | 2147.4              | 5061.0 µg/L        | 5061.0 ppb         | 16:03:47      |
| 2     | K 766.490 Radial†  | 4677.6        | 4752.5              | 4953.2 µg/L        | 4953.2 ppb         | 16:03:27      |
| 2     | Mg 279.077 IEC†    | 508.4         | 521.7               | 5047.2 µg/L        | 5047.2 ppb         | 16:03:47      |
| 2     | Na 589.592 Radial† | 26518.3       | 25748.5             | 9728.6 µg/L        | 9728.6 ppb         | 16:03:27      |
| 2     | Sr 421.552†        | 45160.9       | 44979.0             | 485.69 µg/L        | 485.69 ppb         | 16:03:27      |
| 2     | Sc                 | 417051.5      | 417051.5            | 103.7 %            |                    | 16:04:35      |
| 2     | Y 371.029          | 319755.5      | 319755.5            | 99.975 %           |                    | 16:04:35      |
| 2     | Sc 357.253         | 264930.4      | 264930.4            | 103.1 %            |                    | 16:04:35      |
| 2     | Ag 328.068†        | 42792.8       | 41983.4             | 461.57 µg/L        | 461.57 ppb         | 16:04:35      |
| 2     | As 188.979†        | 228.6         | 216.9               | 455.09 µg/L        | 455.09 ppb         | 16:04:55      |
| 2     | B 249.677†         | 12535.3       | 11645.7             | 463.32 µg/L        | 463.32 ppb         | 16:04:35      |
| 2     | Ba 233.527†        | 26736.3       | 25978.1             | 474.00 µg/L        | 474.00 ppb         | 16:04:35      |
| 2     | Be 313.107†        | 758516.3      | 737711.7            | 465.61 µg/L        | 465.61 ppb         | 16:04:35      |
| 2     | Cd 226.502†        | 41966.3       | 40871.6             | 465.80 µg/L        | 465.80 ppb         | 16:04:35      |
| 2     | Co 228.616†        | 4751.3        | 4660.6              | 477.89 µg/L        | 477.89 ppb         | 16:04:55      |
| 2     | Cr 267.716†        | 34847.6       | 33627.0             | 466.62 µg/L        | 466.62 ppb         | 16:04:35      |
| 2     | Cu 324.752†        | 51325.1       | 47612.2             | 475.81 µg/L        | 475.81 ppb         | 16:04:35      |
| 2     | Mn 257.610†        | 135867.5      | 131886.6            | 479.73 µg/L        | 479.73 ppb         | 16:04:35      |
| 2     | Mo 202.031†        | 3905.5        | 3827.2              | 469.18 µg/L        | 469.18 ppb         | 16:04:55      |
| 2     | Ni 231.604†        | 7202.5        | 6976.6              | 465.02 µg/L        | 465.02 ppb         | 16:04:55      |



|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 1249.0   | 1183.6   | 2332.1 µg/L | 2332.1 ppb | 16:04:55 |
| 2 | Pb 220.353†        | 1308.6   | 1230.3   | 471.61 µg/L | 471.61 ppb | 16:04:55 |
| 2 | S 181.975 Axial†   | 339.5    | 279.1    | 900.03 µg/L | 900.03 ppb | 16:04:55 |
| 2 | Sb 206.836†        | 305.9    | 292.8    | 463.97 µg/L | 463.97 ppb | 16:04:55 |
| 2 | Se 196.026†        | 210.2    | 199.8    | 466 µg/L    | 466 ppb    | 16:04:55 |
| 2 | SiO2†              | 19057.7  | 17742.3  | 5075.9 µg/L | 5075.9 ppb | 16:04:35 |
| 2 | Si 251.611†        | 35623.7  | 34266.1  | 2372.8 µg/L | 2372.8 ppb | 16:04:35 |
| 2 | Sn 189.927†        | 1026.5   | 1019.7   | 453.34 µg/L | 453.34 ppb | 16:04:55 |
| 2 | Ti 334.940†        | 96696.3  | 93859.7  | 467.85 µg/L | 467.85 ppb | 16:04:35 |
| 2 | Tl 190.801†        | 509.2    | 488.6    | 475.12 µg/L | 475.12 ppb | 16:04:55 |
| 2 | U 367.007†         | 718.0    | 830.2    | 421.04 µg/L | 421.04 ppb | 16:04:35 |
| 2 | V 292.402†         | 30153.9  | 29097.2  | 467.55 µg/L | 467.55 ppb | 16:04:35 |
| 2 | Zn 213.857†        | 14385.7  | 13697.0  | 455.18 µg/L | 455.18 ppb | 16:04:55 |
| 3 | Sc RADIAL          | 4918.9   | 4918.9   | 100.0 %     |            | 16:04:09 |
| 3 | Al 396.153Radial†  | 2815.4   | 2913.6   | 4992.8 µg/L | 4992.8 ppb | 16:04:09 |
| 3 | Ca 317.933Radial†  | 6301.9   | 6244.4   | 5019.5 µg/L | 5019.5 ppb | 16:04:09 |
| 3 | Fe 238.204 Radial† | 2181.4   | 2145.5   | 5056.5 µg/L | 5056.5 ppb | 16:04:09 |
| 3 | K 766.490 Radial†  | 4833.5   | 4912.4   | 5119.9 µg/L | 5119.9 ppb | 16:03:49 |
| 3 | Mg 279.077 IEC†    | 510.6    | 524.4    | 5072.7 µg/L | 5072.7 ppb | 16:04:09 |
| 3 | Na 589.592 Radial† | 26690.0  | 25942.4  | 9801.8 µg/L | 9801.8 ppb | 16:03:49 |
| 3 | Sr 421.552†        | 45487.8  | 45343.5  | 489.63 µg/L | 489.63 ppb | 16:03:49 |
| 3 | Sc                 | 428013.2 | 428013.2 | 106.4 %     |            | 16:04:58 |
| 3 | Y 371.029          | 328526.2 | 328526.2 | 102.72 %    |            | 16:04:58 |
| 3 | Sc 357.253         | 269150.2 | 269150.2 | 104.8 %     |            | 16:04:58 |
| 3 | Ag 328.068†        | 44189.6  | 42666.0  | 469.06 µg/L | 469.06 ppb | 16:04:58 |
| 3 | As 188.979†        | 232.7    | 217.4    | 456.08 µg/L | 456.08 ppb | 16:05:18 |
| 3 | B 249.677†         | 13001.0  | 11899.6  | 473.45 µg/L | 473.45 ppb | 16:04:58 |
| 3 | Ba 233.527†        | 27273.3  | 26084.1  | 475.95 µg/L | 475.95 ppb | 16:04:58 |
| 3 | Be 313.107†        | 779554.0 | 746259.8 | 471.00 µg/L | 471.00 ppb | 16:04:58 |
| 3 | Cd 226.502†        | 43448.2  | 41647.9  | 474.66 µg/L | 474.66 ppb | 16:04:58 |
| 3 | Co 228.616†        | 4793.2   | 4628.4   | 474.59 µg/L | 474.59 ppb | 16:05:18 |
| 3 | Cr 267.716†        | 36005.1  | 34202.0  | 474.60 µg/L | 474.60 ppb | 16:04:58 |
| 3 | Cu 324.752†        | 52770.6  | 48211.7  | 481.82 µg/L | 481.82 ppb | 16:04:58 |
| 3 | Mn 257.610†        | 138466.9 | 132302.1 | 481.24 µg/L | 481.24 ppb | 16:04:58 |
| 3 | Mo 202.031†        | 3891.8   | 3754.8   | 460.31 µg/L | 460.31 ppb | 16:05:18 |
| 3 | Ni 231.604†        | 7213.1   | 6877.3   | 458.40 µg/L | 458.40 ppb | 16:05:18 |
| 3 | P 214.914†         | 1263.7   | 1178.6   | 2322.2 µg/L | 2322.2 ppb | 16:05:18 |
| 3 | Pb 220.353†        | 1307.0   | 1208.9   | 463.37 µg/L | 463.37 ppb | 16:05:18 |
| 3 | S 181.975 Axial†   | 349.1    | 283.1    | 913.03 µg/L | 913.03 ppb | 16:05:18 |
| 3 | Sb 206.836†        | 304.6    | 286.9    | 454.51 µg/L | 454.51 ppb | 16:05:18 |
| 3 | Se 196.026†        | 216.3    | 202.4    | 472 µg/L    | 472 ppb    | 16:05:18 |
| 3 | SiO2†              | 19419.8  | 17798.3  | 5092.0 µg/L | 5092.0 ppb | 16:04:58 |
| 3 | Si 251.611†        | 36392.7  | 34458.6  | 2386.2 µg/L | 2386.2 ppb | 16:04:58 |
| 3 | Sn 189.927†        | 1036.5   | 1013.7   | 450.67 µg/L | 450.67 ppb | 16:05:18 |
| 3 | Ti 334.940†        | 98706.6  | 94308.4  | 470.09 µg/L | 470.09 ppb | 16:04:58 |
| 3 | Tl 190.801†        | 511.3    | 482.8    | 469.58 µg/L | 469.58 ppb | 16:05:18 |
| 3 | U 367.007†         | 786.1    | 884.2    | 450.40 µg/L | 450.40 ppb | 16:04:58 |
| 3 | V 292.402†         | 31463.8  | 29889.0  | 480.16 µg/L | 480.16 ppb | 16:04:58 |
| 3 | Zn 213.857†        | 14426.1  | 13516.9  | 449.18 µg/L | 449.18 ppb | 16:05:18 |

## Mean Data: CCV

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|---|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc  | 422573.1                 | 105.1 %            | 1.36     |                    |          | 1.30% |
| Sc RADIAL   | 4920.8                   | 100 %              | 0.0      |                    |          | 0.04% |
| Y 371.029   | 325859.1                 | 101.88 %           | 1.657    |                    |          | 1.63% |
| Sc 357.253  | 266701.8                 | 103.8 %            | 0.85     |                    |          | 0.82% |
| Ag 328.068†   | 42513.7                  | 467.39 µg/L        | 5.191    | 467.39 ppb         | 5.191    | 1.11% |
| QC value within limits for Ag 328.068 Recovery = 93.48%       |                          |                    |          |                    |          |       |
| Al 396.153Radial†   | 2912.4                   | 4990.8 µg/L        | 8.70     | 4990.8 ppb         | 8.70     | 0.17% |
| QC value within limits for Al 396.153Radial Recovery = 99.82% |                          |                    |          |                    |          |       |
| As 188.979†   | 215.1                    | 451.21 µg/L        | 7.605    | 451.21 ppb         | 7.605    | 1.69% |
| QC value within limits for As 188.979 Recovery = 90.24%       |                          |                    |          |                    |          |       |
| B 249.677†  | 11785.9                  | 468.91 µg/L        | 5.145    | 468.91 ppb         | 5.145    | 1.10% |
| QC value within limits for B 249.677 Recovery = 93.78%        |                          |                    |          |                    |          |       |
| Ba 233.527†   | 26059.2                  | 475.49 µg/L        | 1.319    | 475.49 ppb         | 1.319    | 0.28% |
| QC value within limits for Ba 233.527 Recovery = 95.10%       |                          |                    |          |                    |          |       |
| Be 313.107†   | 745175.5                 | 470.31 µg/L        | 4.404    | 470.31 ppb         | 4.404    | 0.94% |
| QC value within limits for Be 313.107 Recovery = 94.06%       |                          |                    |          |                    |          |       |
| Ca 317.933Radial†   | 6255.1                   | 5028.2 µg/L        | 7.58     | 5028.2 ppb         | 7.58     | 0.15% |

|  |          |             |        |            |        |       |  |
|--|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Ca 317.933 Radial Recovery = 100.56%    |          |             |        |            |        |       |  |
| Cd 226.502†  | 41364.1  | 471.42 µg/L | 4.889  | 471.42 ppb | 4.889  | 1.04% |  |
| QC value within limits for Cd 226.502 Recovery = 94.28%            |          |             |        |            |        |       |  |
| Co 228.616†  | 4650.3   | 476.84 µg/L | 1.945  | 476.84 ppb | 1.945  | 0.41% |  |
| QC value within limits for Co 228.616 Recovery = 95.37%            |          |             |        |            |        |       |  |
| Cr 267.716†  | 34035.1  | 472.28 µg/L | 4.933  | 472.28 ppb | 4.933  | 1.04% |  |
| QC value within limits for Cr 267.716 Recovery = 94.46%            |          |             |        |            |        |       |  |
| Cu 324.752†  | 48025.2  | 479.94 µg/L | 3.584  | 479.94 ppb | 3.584  | 0.75% |  |
| QC value within limits for Cu 324.752 Recovery = 95.99%            |          |             |        |            |        |       |  |
| Fe 238.204 Radial†   | 2145.3   | 5056.0 µg/L | 5.12   | 5056.0 ppb | 5.12   | 0.10% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 101.12%    |          |             |        |            |        |       |  |
| K 766.490 Radial†  | 4718.5   | 4917.7 µg/L | 222.05 | 4917.7 ppb | 222.05 | 4.52% |  |
| QC value within limits for K 766.490 Radial Recovery = 98.35%      |          |             |        |            |        |       |  |
| Mg 279.077 IEC†  | 522.7    | 5056.7 µg/L | 13.98  | 5056.7 ppb | 13.98  | 0.28% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 101.13%       |          |             |        |            |        |       |  |
| Mn 257.610†  | 132182.9 | 480.80 µg/L | 0.939  | 480.80 ppb | 0.939  | 0.20% |  |
| QC value within limits for Mn 257.610 Recovery = 96.16%            |          |             |        |            |        |       |  |
| Mo 202.031†  | 3805.1   | 466.47 µg/L | 5.348  | 466.47 ppb | 5.348  | 1.15% |  |
| QC value within limits for Mo 202.031 Recovery = 93.29%            |          |             |        |            |        |       |  |
| Na 589.592 Radial†   | 25725.8  | 9720.0 µg/L | 86.41  | 9720.0 ppb | 86.41  | 0.89% |  |
| QC value within limits for Na 589.592 Radial Recovery = 97.20%     |          |             |        |            |        |       |  |
| Ni 231.604†  | 6946.4   | 463.01 µg/L | 4.006  | 463.01 ppb | 4.006  | 0.87% |  |
| QC value within limits for Ni 231.604 Recovery = 92.60%            |          |             |        |            |        |       |  |
| P 214.914†   | 1185.0   | 2334.9 µg/L | 14.33  | 2334.9 ppb | 14.33  | 0.61% |  |
| QC value within limits for P 214.914 Recovery = 93.40%             |          |             |        |            |        |       |  |
| Pb 220.353†  | 1226.4   | 470.08 µg/L | 6.087  | 470.08 ppb | 6.087  | 1.29% |  |
| QC value within limits for Pb 220.353 Recovery = 94.02%            |          |             |        |            |        |       |  |
| S 181.975 Axial†   | 284.2    | 916.37 µg/L | 18.246 | 916.37 ppb | 18.246 | 1.99% |  |
| QC value within limits for S 181.975 Axial Recovery = 91.64%       |          |             |        |            |        |       |  |
| Sb 206.836†  | 289.7    | 459.07 µg/L | 4.739  | 459.07 ppb | 4.739  | 1.03% |  |
| QC value within limits for Sb 206.836 Recovery = 91.81%            |          |             |        |            |        |       |  |
| Se 196.026†  | 200.2    | 467 µg/L    | 4.8    | 467 ppb    | 4.8    | 1.03% |  |
| QC value within limits for Se 196.026 Recovery = 93.45%            |          |             |        |            |        |       |  |
| SiO2†  | 17771.9  | 5084.4 µg/L | 8.08   | 5084.4 ppb | 8.08   | 0.16% |  |
| QC value within limits for SiO2 Recovery = 95.08%                  |          |             |        |            |        |       |  |
| Si 251.611†  | 34361.4  | 2379.4 µg/L | 6.67   | 2379.4 ppb | 6.67   | 0.28% |  |
| QC value within limits for Si 251.611 Recovery = 95.18%            |          |             |        |            |        |       |  |
| Sn 189.927†  | 1019.9   | 453.40 µg/L | 2.761  | 453.40 ppb | 2.761  | 0.61% |  |
| QC value within limits for Sn 189.927 Recovery = 90.68%            |          |             |        |            |        |       |  |
| Sr 421.552†  | 44978.7  | 485.69 µg/L | 3.944  | 485.69 ppb | 3.944  | 0.81% |  |
| QC value within limits for Sr 421.552 Recovery = 97.14%            |          |             |        |            |        |       |  |
| Ti 334.940†  | 94218.6  | 469.64 µg/L | 1.611  | 469.64 ppb | 1.611  | 0.34% |  |
| QC value within limits for Ti 334.940 Recovery = 93.93%            |          |             |        |            |        |       |  |
| Tl 190.801†  | 488.2    | 474.79 µg/L | 5.047  | 474.79 ppb | 5.047  | 1.06% |  |
| QC value within limits for Tl 190.801 Recovery = 94.96%            |          |             |        |            |        |       |  |
| U 367.007†   | 857.6    | 435.92 µg/L | 14.686 | 435.92 ppb | 14.686 | 3.37% |  |
| QC value less than the lower limit for U 367.007 Recovery = 87.18% |          |             |        |            |        |       |  |
| V 292.402†   | 29571.8  | 475.13 µg/L | 6.676  | 475.13 ppb | 6.676  | 1.41% |  |
| QC value within limits for V 292.402 Recovery = 95.03%             |          |             |        |            |        |       |  |
| Zn 213.857†  | 13650.1  | 453.62 µg/L | 3.903  | 453.62 ppb | 3.903  | 0.86% |  |
| QC value within limits for Zn 213.857 Recovery = 90.72%            |          |             |        |            |        |       |  |
| QC Failed. Continue with analysis.                                 |          |             |        |            |        |       |  |

Sequence No.: 64

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 11/2/2016 16:05:27

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 5145.4        | 5145.4              | 105 %              |                    | 16:05:56      |
| 1     | Al 396.153Radial†  | -117.0        | -14.5               | -24.908 µg/L       | -24.908 ppb        | 16:05:56      |
| 1     | Ca 317.933Radial†  | 79.4          | 16.6                | 13.338 µg/L        | 13.338 ppb         | 16:06:16      |
| 1     | Fe 238.204 Radial† | 38.6          | 0.3                 | 0.7084 µg/L        | 0.7084 ppb         | 16:06:16      |
| 1     | K 766.490 Radial†  | -247.7        | -159.4              | -166.24 µg/L       | -166.24 ppb        | 16:05:56      |
| 1     | Mg 279.077 IEC†    | -17.1         | -2.8                | -27.003 µg/L       | -27.003 ppb        | 16:06:16      |
| 1     | Na 589.592 Radial† | 765.9         | -22.9               | -8.6342 µg/L       | -8.6342 ppb        | 16:05:56      |
| 1     | Sr 421.552†        | 192.0         | 26.5                | 0.2864 µg/L        | 0.2864 ppb         | 16:05:56      |
| 1     | Sc                 | 408042.9      | 408042.9            | 101.5 %            |                    | 16:07:04      |
| 1     | Y 371.029          | 326549.2      | 326549.2            | 102.10 %           |                    | 16:07:04      |
| 1     | Sc 357.253         | 258590.0      | 258590.0            | 100.7 %            |                    | 16:07:04      |
| 1     | Ag 328.068†        | -452.8        | 39.9                | 0.5099 µg/L        | 0.5099 ppb         | 16:07:04      |
| 1     | As 188.979†        | 7.6           | 2.8                 | 5.8435 µg/L        | 5.8435 ppb         | 16:07:24      |
| 1     | B 249.677†         | 563.8         | 51.0                | 2.0347 µg/L        | 2.0347 ppb         | 16:07:04      |
| 1     | Ba 233.527†        | -59.8         | -6.1                | -0.1096 µg/L       | -0.1096 ppb        | 16:07:24      |
| 1     | Be 313.107†        | -2023.3       | 212.4               | 0.1336 µg/L        | 0.1336 ppb         | 16:07:04      |
| 1     | Cd 226.502†        | -175.7        | 4.8                 | 0.0541 µg/L        | 0.0541 ppb         | 16:07:24      |
| 1     | Co 228.616†        | -60.2         | -6.2                | -0.6352 µg/L       | -0.6352 ppb        | 16:07:24      |
| 1     | Cr 267.716†        | 231.3         | 67.0                | 0.9296 µg/L        | 0.9296 ppb         | 16:07:04      |
| 1     | Cu 324.752†        | 2102.2        | -66.4               | -0.7090 µg/L       | -0.7090 ppb        | 16:07:04      |
| 1     | Mn 257.610†        | -138.7        | 5.9                 | 0.0223 µg/L        | 0.0223 ppb         | 16:07:24      |
| 1     | Mo 202.031†        | -33.5         | 7.0                 | 0.8592 µg/L        | 0.8592 ppb         | 16:07:24      |
| 1     | Ni 231.604†        | 9.6           | 2.3                 | 0.1542 µg/L        | 0.1542 ppb         | 16:07:24      |
| 1     | P 214.914†         | 29.2          | 1.5                 | 2.8810 µg/L        | 2.8810 ppb         | 16:07:24      |
| 1     | Pb 220.353†        | 38.4          | -0.4                | -0.0753 µg/L       | -0.0753 ppb        | 16:07:24      |
| 1     | S 181.975 Axial†   | 43.5          | -6.9                | -22.121 µg/L       | -22.121 ppb        | 16:07:24      |
| 1     | Sb 206.836†        | 6.0           | 2.2                 | 3.4613 µg/L        | 3.4613 ppb         | 16:07:24      |
| 1     | Se 196.026†        | 5.7           | 1.7                 | 4.01 µg/L          | 4.01 ppb           | 16:07:24      |
| 1     | SiO2†              | 737.4         | -4.2                | -1.2042 µg/L       | -1.2042 ppb        | 16:07:04      |
| 1     | Si 251.611†        | 257.5         | -20.3               | -1.4083 µg/L       | -1.4083 ppb        | 16:07:24      |
| 1     | Sn 189.927†        | -27.1         | -2.5                | -1.1150 µg/L       | -1.1150 ppb        | 16:07:24      |
| 1     | Ti 334.940†        | -129.3        | -29.5               | -0.1473 µg/L       | -0.1473 ppb        | 16:07:04      |
| 1     | Tl 190.801†        | -1.9          | -7.1                | -6.8747 µg/L       | -6.8747 ppb        | 16:07:24      |
| 1     | U 367.007†         | -258.0        | -122.3              | -66.418 µg/L       | -66.418 ppb        | 16:07:04      |
| 1     | V 292.402†         | 204.2         | 61.6                | 0.9573 µg/L        | 0.9573 ppb         | 16:07:04      |
| 1     | Zn 213.857†        | 249.5         | -4.1                | -0.1366 µg/L       | -0.1366 ppb        | 16:07:24      |
| 2     | Sc RADIAL          | 5092.4        | 5092.4              | 103 %              |                    | 16:06:18      |
| 2     | Al 396.153Radial†  | -113.9        | -12.7               | -21.719 µg/L       | -21.719 ppb        | 16:06:18      |
| 2     | Ca 317.933Radial†  | 79.2          | 17.2                | 13.839 µg/L        | 13.839 ppb         | 16:06:38      |
| 2     | Fe 238.204 Radial† | 30.2          | -7.4                | -17.443 µg/L       | -17.443 ppb        | 16:06:38      |
| 2     | K 766.490 Radial†  | -91.4         | -10.9               | -11.341 µg/L       | -11.341 ppb        | 16:06:18      |
| 2     | Mg 279.077 IEC†    | -16.3         | -2.2                | -21.591 µg/L       | -21.591 ppb        | 16:06:38      |
| 2     | Na 589.592 Radial† | 708.3         | -70.9               | -26.770 µg/L       | -26.770 ppb        | 16:06:18      |
| 2     | Sr 421.552†        | 173.7         | 10.8                | 0.1177 µg/L        | 0.1177 ppb         | 16:06:18      |
| 2     | Sc                 | 408851.1      | 408851.1            | 101.7 %            |                    | 16:07:26      |
| 2     | Y 371.029          | 323964.8      | 323964.8            | 101.29 %           |                    | 16:07:26      |
| 2     | Sc 357.253         | 260119.0      | 260119.0            | 101.3 %            |                    | 16:07:26      |
| 2     | Ag 328.068†        | -467.4        | 28.1                | 0.3447 µg/L        | 0.3447 ppb         | 16:07:26      |
| 2     | As 188.979†        | 8.7           | 3.9                 | 8.1233 µg/L        | 8.1233 ppb         | 16:07:46      |
| 2     | B 249.677†         | 462.5         | -52.4               | -2.0848 µg/L       | -2.0848 ppb        | 16:07:26      |
| 2     | Ba 233.527†        | -52.4         | 1.6                 | 0.0321 µg/L        | 0.0321 ppb         | 16:07:46      |
| 2     | Be 313.107†        | -2118.1       | 130.6               | 0.0815 µg/L        | 0.0815 ppb         | 16:07:26      |
| 2     | Cd 226.502†        | -178.5        | 3.0                 | 0.0354 µg/L        | 0.0354 ppb         | 16:07:46      |
| 2     | Co 228.616†        | -59.4         | -5.1                | -0.5217 µg/L       | -0.5217 ppb        | 16:07:46      |
| 2     | Cr 267.716†        | 82.4          | -81.4               | -1.1272 µg/L       | -1.1272 ppb        | 16:07:26      |
| 2     | Cu 324.752†        | 1944.4        | -234.4              | -2.3636 µg/L       | -2.3636 ppb        | 16:07:26      |
| 2     | Mn 257.610†        | -133.6        | 11.7                | 0.0430 µg/L        | 0.0430 ppb         | 16:07:46      |
| 2     | Mo 202.031†        | -52.1         | -11.1               | -1.3664 µg/L       | -1.3664 ppb        | 16:07:46      |
| 2     | Ni 231.604†        | 10.3          | 3.0                 | 0.1986 µg/L        | 0.1986 ppb         | 16:07:46      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 22.1     | -5.7     | -11.249 µg/L | -11.249 ppb | 16:07:46 |
| 2 | Pb 220.353†        | 41.7     | 2.7      | 1.0413 µg/L  | 1.0413 ppb  | 16:07:46 |
| 2 | S 181.975 Axial†   | 44.2     | -6.4     | -20.690 µg/L | -20.690 ppb | 16:07:46 |
| 2 | Sb 206.836†        | 7.6      | 3.6      | 5.7799 µg/L  | 5.7799 ppb  | 16:07:46 |
| 2 | Se 196.026†        | 4.2      | 0.2      | 0.373 µg/L   | 0.373 ppb   | 16:07:46 |
| 2 | SiO2†              | 731.8    | -14.1    | -4.0400 µg/L | -4.0400 ppb | 16:07:26 |
| 2 | Si 251.611†        | 279.4    | -0.2     | -0.0109 µg/L | -0.0109 ppb | 16:07:46 |
| 2 | Sn 189.927†        | -23.2    | 1.5      | 0.6482 µg/L  | 0.6482 ppb  | 16:07:46 |
| 2 | Ti 334.940†        | -194.5   | -93.2    | -0.4640 µg/L | -0.4640 ppb | 16:07:26 |
| 2 | Tl 190.801†        | 1.9      | -3.4     | -3.2470 µg/L | -3.2470 ppb | 16:07:46 |
| 2 | U 367.007†         | -196.1   | -59.7    | -32.320 µg/L | -32.320 ppb | 16:07:26 |
| 2 | V 292.402†         | 284.5    | 139.7    | 2.2057 µg/L  | 2.2057 ppb  | 16:07:26 |
| 2 | Zn 213.857†        | 261.7    | 6.5      | 0.2235 µg/L  | 0.2235 ppb  | 16:07:46 |
| 3 | Sc RADIAL          | 5036.0   | 5036.0   | 102 %        |             | 16:06:40 |
| 3 | Al 396.153Radial†  | -85.9    | 13.5     | 23.091 µg/L  | 23.091 ppb  | 16:06:40 |
| 3 | Ca 317.933Radial†  | 86.3     | 25.0     | 20.105 µg/L  | 20.105 ppb  | 16:07:00 |
| 3 | Fe 238.204 Radial† | 40.5     | 3.0      | 7.0252 µg/L  | 7.0252 ppb  | 16:07:00 |
| 3 | K 766.490 Radial†  | -177.3   | -95.8    | -99.871 µg/L | -99.871 ppb | 16:06:40 |
| 3 | Mg 279.077 IEC†    | -2.3     | 11.3     | 109.58 µg/L  | 109.58 ppb  | 16:07:00 |
| 3 | Na 589.592 Radial† | 780.4    | 7.3      | 2.7624 µg/L  | 2.7624 ppb  | 16:06:40 |
| 3 | Sr 421.552†        | 144.7    | -15.7    | -0.1701 µg/L | -0.1701 ppb | 16:06:40 |
| 3 | Sc                 | 411565.5 | 411565.5 | 102.4 %      |             | 16:07:48 |
| 3 | Y 371.029          | 327876.8 | 327876.8 | 102.51 %     |             | 16:07:48 |
| 3 | Sc 357.253         | 265183.1 | 265183.1 | 103.2 %      |             | 16:07:48 |
| 3 | Ag 328.068†        | -450.6   | 53.3     | 0.6242 µg/L  | 0.6242 ppb  | 16:07:48 |
| 3 | As 188.979†        | 8.0      | 3.0      | 6.2608 µg/L  | 6.2608 ppb  | 16:08:08 |
| 3 | B 249.677†         | 513.4    | -11.8    | -0.4706 µg/L | -0.4706 ppb | 16:07:48 |
| 3 | Ba 233.527†        | -51.8    | 3.2      | 0.0586 µg/L  | 0.0586 ppb  | 16:08:08 |
| 3 | Be 313.107†        | -2237.5  | 54.9     | 0.0344 µg/L  | 0.0344 ppb  | 16:07:48 |
| 3 | Cd 226.502†        | -174.1   | 10.6     | 0.1205 µg/L  | 0.1205 ppb  | 16:08:08 |
| 3 | Co 228.616†        | -56.4    | -1.0     | -0.1069 µg/L | -0.1069 ppb | 16:08:08 |
| 3 | Cr 267.716†        | 175.0    | 6.8      | 0.0949 µg/L  | 0.0949 ppb  | 16:07:48 |
| 3 | Cu 324.752†        | 2241.9   | 17.0     | 0.1456 µg/L  | 0.1456 ppb  | 16:07:48 |
| 3 | Mn 257.610†        | -98.9    | 47.9     | 0.1708 µg/L  | 0.1708 ppb  | 16:08:08 |
| 3 | Mo 202.031†        | -48.9    | -7.1     | -0.8661 µg/L | -0.8661 ppb | 16:08:08 |
| 3 | Ni 231.604†        | 3.5      | -3.8     | -0.2561 µg/L | -0.2561 ppb | 16:08:08 |
| 3 | P 214.914†         | 15.9     | -12.2    | -24.049 µg/L | -24.049 ppb | 16:08:08 |
| 3 | Pb 220.353†        | 43.4     | 3.5      | 1.3735 µg/L  | 1.3735 ppb  | 16:08:08 |
| 3 | S 181.975 Axial†   | 39.5     | -11.8    | -38.008 µg/L | -38.008 ppb | 16:08:08 |
| 3 | Sb 206.836†        | 1.3      | -2.6     | -4.1122 µg/L | -4.1122 ppb | 16:08:08 |
| 3 | Se 196.026†        | 2.3      | -1.7     | -3.98 µg/L   | -3.98 ppb   | 16:08:08 |
| 3 | SiO2†              | 742.9    | -17.1    | -4.8822 µg/L | -4.8822 ppb | 16:07:48 |
| 3 | Si 251.611†        | 273.6    | -11.1    | -0.7674 µg/L | -0.7674 ppb | 16:08:08 |
| 3 | Sn 189.927†        | -16.4    | 8.5      | 3.7817 µg/L  | 3.7817 ppb  | 16:08:08 |
| 3 | Ti 334.940†        | -118.5   | -15.9    | -0.0789 µg/L | -0.0789 ppb | 16:07:48 |
| 3 | Tl 190.801†        | 2.4      | -2.9     | -2.8323 µg/L | -2.8323 ppb | 16:08:08 |
| 3 | U 367.007†         | -206.0   | -65.6    | -35.671 µg/L | -35.671 ppb | 16:07:48 |
| 3 | V 292.402†         | 214.2    | 66.3     | 1.0351 µg/L  | 1.0351 ppb  | 16:07:48 |
| 3 | Zn 213.857†        | 257.9    | -2.1     | -0.0788 µg/L | -0.0788 ppb | 16:08:08 |

## Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc  | 409486.5                 | 101.8 %            | 0.46     |                    |          | 0.45%   |
| Sc RADIAL   | 5091.3                   | 103 %              | 1.1      |                    |          | 1.07%   |
| Y 371.029   | 326130.3                 | 101.97 %           | 0.622    |                    |          | 0.61%   |
| Sc 357.253  | 261297.4                 | 101.7 %            | 1.34     |                    |          | 1.32%   |
| Ag 328.068†   | 40.4                     | 0.4930 µg/L        | 0.14052  | 0.4930 ppb         | 0.14052  | 28.51%  |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | -4.6                     | -7.8453 µg/L       | 26.83876 | -7.8453 ppb        | 26.83876 | 342.10% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | 3.2                      | 6.7425 µg/L        | 1.21388  | 6.7425 ppb         | 1.21388  | 18.00%  |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | -4.4                     | -0.1736 µg/L       | 2.07575  | -0.1736 ppb        | 2.07575  | >999.9% |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | -0.4                     | -0.0063 µg/L       | 0.09042  | -0.0063 ppb        | 0.09042  | >999.9% |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 132.6                    | 0.0832 µg/L        | 0.04959  | 0.0832 ppb         | 0.04959  | 59.62%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 19.6                     | 15.761 µg/L        | 3.7706   | 15.761 ppb         | 3.7706   | 23.92%  |

|  |       |              |          |             |          |         |  |
|--|-------|--------------|----------|-------------|----------|---------|--|
| QC value within limits for Ca 317.933Radial Recovery = Not calculated  |       |              |          |             |          |         |  |
| Cd 226.502†  | 6.1   | 0.0700 µg/L  | 0.04471  | 0.0700 ppb  | 0.04471  | 63.91%  |  |
| QC value within limits for Cd 226.502 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Co 228.616†  | -4.1  | -0.4213 µg/L | 0.27809  | -0.4213 ppb | 0.27809  | 66.01%  |  |
| QC value within limits for Co 228.616 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Cr 267.716†  | -2.6  | -0.0342 µg/L | 1.03444  | -0.0342 ppb | 1.03444  | >999.9% |  |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Cu 324.752†  | -94.6 | -0.9757 µg/L | 1.27566  | -0.9757 ppb | 1.27566  | 130.75% |  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Fe 238.204 Radial†   | -1.4  | -3.2366 µg/L | 12.70240 | -3.2366 ppb | 12.70240 | 392.46% |  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |       |              |          |             |          |         |  |
| K 766.490 Radial†  | -88.7 | -92.483 µg/L | 77.7126  | -92.483 ppb | 77.7126  | 84.03%  |  |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |       |              |          |             |          |         |  |
| Mg 279.077 IEC†  | 2.1   | 20.329 µg/L  | 77.3422  | 20.329 ppb  | 77.3422  | 380.44% |  |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |       |              |          |             |          |         |  |
| Mn 257.610†  | 21.8  | 0.0787 µg/L  | 0.08044  | 0.0787 ppb  | 0.08044  | 102.25% |  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Mo 202.031†  | -3.7  | -0.4577 µg/L | 1.16763  | -0.4577 ppb | 1.16763  | 255.08% |  |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Na 589.592 Radial†   | -28.8 | -10.881 µg/L | 14.8940  | -10.881 ppb | 14.8940  | 136.88% |  |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |       |              |          |             |          |         |  |
| Ni 231.604†  | 0.5   | 0.0322 µg/L  | 0.25065  | 0.0322 ppb  | 0.25065  | 777.68% |  |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |       |              |          |             |          |         |  |
| P 214.914†   | -5.5  | -10.805 µg/L | 13.4704  | -10.805 ppb | 13.4704  | 124.66% |  |
| QC value within limits for P 214.914 Recovery = Not calculated         |       |              |          |             |          |         |  |
| Pb 220.353†  | 1.9   | 0.7798 µg/L  | 0.75896  | 0.7798 ppb  | 0.75896  | 97.33%  |  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |       |              |          |             |          |         |  |
| S 181.975 Axial†   | -8.4  | -26.940 µg/L | 9.6121   | -26.940 ppb | 9.6121   | 35.68%  |  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |       |              |          |             |          |         |  |
| Sb 206.836†  | 1.1   | 1.7097 µg/L  | 5.17350  | 1.7097 ppb  | 5.17350  | 302.60% |  |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Se 196.026†  | 0.1   | 0.136 µg/L   | 3.9989   | 0.136 ppb   | 3.9989   | >999.9% |  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |       |              |          |             |          |         |  |
| SiO2†  | -11.8 | -3.3754 µg/L | 1.92692  | -3.3754 ppb | 1.92692  | 57.09%  |  |
| QC value within limits for SiO2 Recovery = Not calculated              |       |              |          |             |          |         |  |
| Si 251.611†  | -10.5 | -0.7288 µg/L | 0.69950  | -0.7288 ppb | 0.69950  | 95.98%  |  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Sn 189.927†  | 2.5   | 1.1050 µg/L  | 2.48013  | 1.1050 ppb  | 2.48013  | 224.45% |  |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Sr 421.552†  | 7.2   | 0.0780 µg/L  | 0.23081  | 0.0780 ppb  | 0.23081  | 295.98% |  |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Ti 334.940†  | -46.2 | -0.2301 µg/L | 0.20545  | -0.2301 ppb | 0.20545  | 89.30%  |  |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |       |              |          |             |          |         |  |
| Tl 190.801†  | -4.5  | -4.3180 µg/L | 2.22385  | -4.3180 ppb | 2.22385  | 51.50%  |  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |       |              |          |             |          |         |  |
| U 367.007†   | -82.6 | -44.803 µg/L | 18.7937  | -44.803 ppb | 18.7937  | 41.95%  |  |
| QC value within limits for U 367.007 Recovery = Not calculated         |       |              |          |             |          |         |  |
| V 292.402†   | 89.2  | 1.3994 µg/L  | 0.69939  | 1.3994 ppb  | 0.69939  | 49.98%  |  |
| QC value within limits for V 292.402 Recovery = Not calculated         |       |              |          |             |          |         |  |
| Zn 213.857†  | 0.1   | 0.0027 µg/L  | 0.19342  | 0.0027 ppb  | 0.19342  | >999.9% |  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |       |              |          |             |          |         |  |
| All analyte(s) passed QC.  |       |              |          |             |          |         |  |

Sequence No.: 65

Sample ID: 409254023|1611348|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 338

Date Collected: 11/2/2016 16:08:17

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254023|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4877.1        | 4877.1              | 99.1 %             |                    | 16:09:08      |
| 1     | Al 396.153Radial†  | 362.2         | 462.8               | 793.03 µg/L        | 793.03 ppb         | 16:08:48      |
| 1     | Ca 317.933Radial†  | 1287.9        | 1240.0              | 996.78 µg/L        | 996.78 ppb         | 16:09:08      |
| 1     | Fe 238.204 Radial† | 359.8         | 326.4               | 769.37 µg/L        | 769.37 ppb         | 16:09:08      |
| 1     | K 766.490 Radial†  | -86.1         | -9.3                | -10.234 µg/L       | -10.234 ppb        | 16:08:48      |
| 1     | Mg 279.077 IEC†    | 16.9          | 30.6                | 296.41 µg/L        | 296.41 ppb         | 16:09:08      |
| 1     | Na 589.592 Radial† | 13707.8       | 13074.2             | 4939.8 µg/L        | 4939.8 ppb         | 16:08:48      |
| 1     | Sr 421.552†        | 450.9         | 297.8               | 3.1644 µg/L        | 3.1644 ppb         | 16:08:48      |
| 1     | Sc                 | 407728.6      | 407728.6            | 101.4 %            |                    | 16:09:55      |
| 1     | Y 371.029          | 321380.0      | 321380.0            | 100.48 %           |                    | 16:09:55      |
| 1     | Sc 357.253         | 262368.1      | 262368.1            | 102.1 %            |                    | 16:09:55      |
| 1     | Ag 328.068†        | -444.7        | 54.3                | 0.6232 µg/L        | 0.6232 ppb         | 16:09:55      |
| 1     | As 188.979†        | 5.2           | 0.4                 | 0.8779 µg/L        | 0.8779 ppb         | 16:10:15      |
| 1     | B 249.677†         | 988.6         | 458.8               | 18.126 µg/L        | 18.126 ppb         | 16:10:15      |
| 1     | Ba 233.527†        | 420.7         | 465.3               | 8.4764 µg/L        | 8.4764 ppb         | 16:10:15      |
| 1     | Be 313.107†        | -2197.2       | 71.1                | 0.0623 µg/L        | 0.0623 ppb         | 16:09:55      |
| 1     | Cd 226.502†        | -181.3        | 1.8                 | -0.0292 µg/L       | -0.0292 ppb        | 16:10:15      |
| 1     | Co 228.616†        | -52.2         | 2.5                 | 0.1953 µg/L        | 0.1953 ppb         | 16:10:15      |
| 1     | Cr 267.716†        | 264.1         | 95.8                | 1.3243 µg/L        | 1.3243 ppb         | 16:10:15      |
| 1     | Cu 324.752†        | 2208.0        | 7.1                 | 0.1192 µg/L        | 0.1192 ppb         | 16:09:55      |
| 1     | Mn 257.610†        | 3146.5        | 3224.4              | 11.735 µg/L        | 11.735 ppb         | 16:10:15      |
| 1     | Mo 202.031†        | -50.8         | -9.4                | -1.0921 µg/L       | -1.0921 ppb        | 16:10:15      |
| 1     | Ni 231.604†        | 26.7          | 18.9                | 1.2399 µg/L        | 1.2399 ppb         | 16:10:15      |
| 1     | P 214.914†         | 46.5          | 18.0                | 35.151 µg/L        | 35.151 ppb         | 16:10:15      |
| 1     | Pb 220.353†        | 37.2          | -2.1                | -0.7712 µg/L       | -0.7712 ppb        | 16:10:15      |
| 1     | S 181.975 Axial†   | 135.8         | 82.8                | 266.26 µg/L        | 266.26 ppb         | 16:10:15      |
| 1     | Sb 206.836†        | 5.1           | 1.2                 | 1.9174 µg/L        | 1.9174 ppb         | 16:10:15      |
| 1     | Se 196.026†        | 4.1           | 0.0                 | 0.003 µg/L         | 0.003 ppb          | 16:10:15      |
| 1     | SiO2†              | 4400.2        | 3571.5              | 1020.9 µg/L        | 1020.9 ppb         | 16:10:15      |
| 1     | Si 251.611†        | 7324.0        | 6894.9              | 477.46 µg/L        | 477.46 ppb         | 16:10:15      |
| 1     | Sn 189.927†        | -23.1         | 1.8                 | 0.8405 µg/L        | 0.8405 ppb         | 16:10:15      |
| 1     | Ti 334.940†        | 1964.5        | 2022.4              | 10.101 µg/L        | 10.101 ppb         | 16:09:55      |
| 1     | Tl 190.801†        | -0.1          | -5.3                | -5.0830 µg/L       | -5.0830 ppb        | 16:10:15      |
| 1     | U 367.007†         | -127.8        | 8.9                 | 0.2937 µg/L        | 0.2937 ppb         | 16:09:55      |
| 1     | V 292.402†         | 384.2         | 234.9               | 3.6893 µg/L        | 3.6893 ppb         | 16:10:15      |
| 1     | Zn 213.857†        | 342.8         | 83.7                | 2.6692 µg/L        | 2.6692 ppb         | 16:10:15      |
| 2     | Sc RADIAL          | 4883.4        | 4883.4              | 99.2 %             |                    | 16:09:30      |
| 2     | Al 396.153Radial†  | 316.3         | 416.1               | 713.04 µg/L        | 713.04 ppb         | 16:09:10      |
| 2     | Ca 317.933Radial†  | 1292.3        | 1242.8              | 999.00 µg/L        | 999.00 ppb         | 16:09:30      |
| 2     | Fe 238.204 Radial† | 362.5         | 328.7               | 774.61 µg/L        | 774.61 ppb         | 16:09:30      |
| 2     | K 766.490 Radial†  | -106.3        | -29.6               | -31.342 µg/L       | -31.342 ppb        | 16:09:10      |
| 2     | Mg 279.077 IEC†    | 11.5          | 25.2                | 243.67 µg/L        | 243.67 ppb         | 16:09:30      |
| 2     | Na 589.592 Radial† | 13924.0       | 13274.2             | 5015.4 µg/L        | 5015.4 ppb         | 16:09:10      |
| 2     | Sr 421.552†        | 319.2         | 164.6               | 1.7244 µg/L        | 1.7244 ppb         | 16:09:10      |
| 2     | Sc                 | 416535.3      | 416535.3            | 103.6 %            |                    | 16:10:17      |
| 2     | Y 371.029          | 328853.9      | 328853.9            | 102.82 %           |                    | 16:10:17      |
| 2     | Sc 357.253         | 265979.3      | 265979.3            | 103.5 %            |                    | 16:10:17      |
| 2     | Ag 328.068†        | -507.3        | -0.2                | 0.0312 µg/L        | 0.0312 ppb         | 16:10:17      |
| 2     | As 188.979†        | 7.6           | 2.6                 | 5.4550 µg/L        | 5.4550 ppb         | 16:10:37      |
| 2     | B 249.677†         | 993.3         | 450.3               | 17.783 µg/L        | 17.783 ppb         | 16:10:37      |
| 2     | Ba 233.527†        | 423.6         | 462.5               | 8.4255 µg/L        | 8.4255 ppb         | 16:10:37      |
| 2     | Be 313.107†        | -2069.8       | 223.4               | 0.1585 µg/L        | 0.1585 ppb         | 16:10:17      |
| 2     | Cd 226.502†        | -178.4        | 7.0                 | 0.0306 µg/L        | 0.0306 ppb         | 16:10:37      |
| 2     | Co 228.616†        | -62.2         | -6.4                | -0.7188 µg/L       | -0.7188 ppb        | 16:10:37      |
| 2     | Cr 267.716†        | 265.3         | 93.5                | 1.2921 µg/L        | 1.2921 ppb         | 16:10:37      |
| 2     | Cu 324.752†        | 2202.3        | -27.7               | -0.2333 µg/L       | -0.2333 ppb        | 16:10:17      |
| 2     | Mn 257.610†        | 3148.2        | 3184.2              | 11.591 µg/L        | 11.591 ppb         | 16:10:37      |
| 2     | Mo 202.031†        | -34.1         | 7.3                 | 0.9599 µg/L        | 0.9599 ppb         | 16:10:37      |
| 2     | Ni 231.604†        | 11.1          | 3.5                 | 0.2098 µg/L        | 0.2098 ppb         | 16:10:37      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 40.3     | 11.4     | 22.034 µg/L  | 22.034 ppb  | 16:10:37 |
| 2 | Pb 220.353†        | 37.5     | -2.3     | -0.8199 µg/L | -0.8199 ppb | 16:10:37 |
| 2 | S 181.975 Axial†   | 138.2    | 83.4     | 267.95 µg/L  | 267.95 ppb  | 16:10:37 |
| 2 | Sb 206.836†        | 6.4      | 2.4      | 3.7852 µg/L  | 3.7852 ppb  | 16:10:37 |
| 2 | Se 196.026†        | 2.0      | -2.0     | -4.73 µg/L   | -4.73 ppb   | 16:10:37 |
| 2 | SiO2†              | 4341.0   | 3455.9   | 987.82 µg/L  | 987.82 ppb  | 16:10:37 |
| 2 | Si 251.611†        | 7290.8   | 6765.5   | 468.49 µg/L  | 468.49 ppb  | 16:10:37 |
| 2 | Sn 189.927†        | -15.8    | 9.2      | 4.1023 µg/L  | 4.1023 ppb  | 16:10:37 |
| 2 | Ti 334.940†        | 2024.2   | 2053.9   | 10.258 µg/L  | 10.258 ppb  | 16:10:17 |
| 2 | Tl 190.801†        | 8.6      | 3.1      | 3.0100 µg/L  | 3.0100 ppb  | 16:10:37 |
| 2 | U 367.007†         | -142.5   | -3.7     | -6.5579 µg/L | -6.5579 ppb | 16:10:17 |
| 2 | V 292.402†         | 354.4    | 201.0    | 3.1559 µg/L  | 3.1559 ppb  | 16:10:37 |
| 2 | Zn 213.857†        | 337.7    | 74.2     | 2.3598 µg/L  | 2.3598 ppb  | 16:10:37 |
| 3 | Sc RADIAL          | 4901.3   | 4901.3   | 99.6 %       |             | 16:09:52 |
| 3 | Al 396.153Radial†  | 214.2    | 312.5    | 535.45 µg/L  | 535.45 ppb  | 16:09:32 |
| 3 | Ca 317.933Radial†  | 1294.0   | 1239.7   | 996.51 µg/L  | 996.51 ppb  | 16:09:52 |
| 3 | Fe 238.204 Radial† | 360.6    | 325.4    | 766.93 µg/L  | 766.93 ppb  | 16:09:52 |
| 3 | K 766.490 Radial†  | 18.8     | 96.4     | 100.01 µg/L  | 100.01 ppb  | 16:09:32 |
| 3 | Mg 279.077 IEC†    | 13.1     | 26.7     | 258.08 µg/L  | 258.08 ppb  | 16:09:52 |
| 3 | Na 589.592 Radial† | 13975.0  | 13274.2  | 5015.4 µg/L  | 5015.4 ppb  | 16:09:32 |
| 3 | Sr 421.552†        | 430.0    | 274.6    | 2.9143 µg/L  | 2.9143 ppb  | 16:09:32 |
| 3 | Sc                 | 416031.2 | 416031.2 | 103.5 %      |             | 16:10:39 |
| 3 | Y 371.029          | 330034.0 | 330034.0 | 103.19 %     |             | 16:10:39 |
| 3 | Sc 357.253         | 266996.3 | 266996.3 | 103.9 %      |             | 16:10:39 |
| 3 | Ag 328.068†        | -415.6   | 89.8     | 1.0387 µg/L  | 1.0387 ppb  | 16:10:39 |
| 3 | As 188.979†        | 4.0      | -0.8     | -1.7058 µg/L | -1.7058 ppb | 16:11:00 |
| 3 | B 249.677†         | 969.4    | 423.6    | 16.724 µg/L  | 16.724 ppb  | 16:11:00 |
| 3 | Ba 233.527†        | 408.6    | 446.5    | 8.1337 µg/L  | 8.1337 ppb  | 16:11:00 |
| 3 | Be 313.107†        | -2200.5  | 105.2    | 0.0847 µg/L  | 0.0847 ppb  | 16:10:39 |
| 3 | Cd 226.502†        | -172.7   | 13.1     | 0.1002 µg/L  | 0.1002 ppb  | 16:11:00 |
| 3 | Co 228.616†        | -58.8    | -3.0     | -0.3666 µg/L | -0.3666 ppb | 16:11:00 |
| 3 | Cr 267.716†        | 243.7    | 71.7     | 0.9902 µg/L  | 0.9902 ppb  | 16:11:00 |
| 3 | Cu 324.752†        | 2215.0   | -23.6    | -0.2036 µg/L | -0.2036 ppb | 16:10:39 |
| 3 | Mn 257.610†        | 3132.3   | 3157.4   | 11.492 µg/L  | 11.492 ppb  | 16:11:00 |
| 3 | Mo 202.031†        | -38.8    | 2.9      | 0.4172 µg/L  | 0.4172 ppb  | 16:11:00 |
| 3 | Ni 231.604†        | 21.9     | 13.8     | 0.9004 µg/L  | 0.9004 ppb  | 16:11:00 |
| 3 | P 214.914†         | 32.9     | 4.1      | 7.7177 µg/L  | 7.7177 ppb  | 16:11:00 |
| 3 | Pb 220.353†        | 41.7     | 1.6      | 0.6763 µg/L  | 0.6763 ppb  | 16:11:00 |
| 3 | S 181.975 Axial†   | 131.8    | 76.7     | 246.65 µg/L  | 246.65 ppb  | 16:11:00 |
| 3 | Sb 206.836†        | 4.2      | 0.2      | 0.3904 µg/L  | 0.3904 ppb  | 16:11:00 |
| 3 | Se 196.026†        | 3.4      | -0.7     | -1.66 µg/L   | -1.66 ppb   | 16:11:00 |
| 3 | SiO2†              | 4230.4   | 3333.5   | 952.83 µg/L  | 952.83 ppb  | 16:11:00 |
| 3 | Si 251.611†        | 7034.0   | 6491.5   | 449.52 µg/L  | 449.52 ppb  | 16:11:00 |
| 3 | Sn 189.927†        | -19.9    | 5.3      | 2.3915 µg/L  | 2.3915 ppb  | 16:11:00 |
| 3 | Ti 334.940†        | 2108.9   | 2127.9   | 10.627 µg/L  | 10.627 ppb  | 16:10:39 |
| 3 | Tl 190.801†        | 3.7      | -1.7     | -1.6046 µg/L | -1.6046 ppb | 16:11:00 |
| 3 | U 367.007†         | -174.8   | -34.2    | -23.076 µg/L | -23.076 ppb | 16:10:39 |
| 3 | V 292.402†         | 392.9    | 236.7    | 3.7149 µg/L  | 3.7149 ppb  | 16:11:00 |
| 3 | Zn 213.857†        | 332.9    | 68.4     | 2.1612 µg/L  | 2.1612 ppb  | 16:11:00 |

Mean Data: 409254023|1611348|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc                 | 413431.7                 | 102.8 %            | 1.23     |                    |          | 1.20%   |
| Sc RADIAL          | 4887.2                   | 99.3 %             | 0.26     |                    |          | 0.26%   |
| Y 371.029          | 326756.0                 | 102.16 %           | 1.467    |                    |          | 1.44%   |
| Sc 357.253         | 265114.6                 | 103.2 %            | 0.95     |                    |          | 0.92%   |
| Ag 328.068†        | 47.9                     | 0.5643 µg/L        | 0.50633  | 0.5643 ppb         | 0.50633  | 89.72%  |
| Al 396.153Radial†  | 397.1                    | 680.51 µg/L        | 131.838  | 680.51 ppb         | 131.838  | 19.37%  |
| As 188.979†        | 0.7                      | 1.5424 µg/L        | 3.62634  | 1.5424 ppb         | 3.62634  | 235.12% |
| B 249.677†         | 444.2                    | 17.544 µg/L        | 0.7309   | 17.544 ppb         | 0.7309   | 4.17%   |
| Ba 233.527†        | 458.1                    | 8.3452 µg/L        | 0.18490  | 8.3452 ppb         | 0.18490  | 2.22%   |
| Be 313.107†        | 133.2                    | 0.1019 µg/L        | 0.05033  | 0.1019 ppb         | 0.05033  | 49.42%  |
| Ca 317.933Radial†  | 1240.8                   | 997.43 µg/L        | 1.365    | 997.43 ppb         | 1.365    | 0.14%   |
| Cd 226.502†        | 7.3                      | 0.0338 µg/L        | 0.06475  | 0.0338 ppb         | 0.06475  | 191.30% |
| Co 228.616†        | -2.3                     | -0.2967 µg/L       | 0.46104  | -0.2967 ppb        | 0.46104  | 155.38% |
| Cr 267.716†        | 87.0                     | 1.2022 µg/L        | 0.18431  | 1.2022 ppb         | 0.18431  | 15.33%  |
| Cu 324.752†        | -14.7                    | -0.1059 µg/L       | 0.19551  | -0.1059 ppb        | 0.19551  | 184.56% |
| Fe 238.204 Radial† | 326.8                    | 770.30 µg/L        | 3.922    | 770.30 ppb         | 3.922    | 0.51%   |
| K 766.490 Radial†  | 19.1                     | 19.477 µg/L        | 70.5352  | 19.477 ppb         | 70.5352  | 362.15% |

|                    |         |              |          |             |          |         |
|--------------------|---------|--------------|----------|-------------|----------|---------|
| Mg 279.077 IEC†    | 27.5    | 266.05 µg/L  | 27.258   | 266.05 ppb  | 27.258   | 10.25%  |
| Mn 257.610†        | 3188.7  | 11.606 µg/L  | 0.1220   | 11.606 ppb  | 0.1220   | 1.05%   |
| Mo 202.031†        | 0.3     | 0.0950 µg/L  | 1.06326  | 0.0950 ppb  | 1.06326  | >999.9% |
| Na 589.592 Radial† | 13207.5 | 4990.2 µg/L  | 43.62    | 4990.2 ppb  | 43.62    | 0.87%   |
| Ni 231.604†        | 12.1    | 0.7834 µg/L  | 0.52496  | 0.7834 ppb  | 0.52496  | 67.01%  |
| P 214.914†         | 11.2    | 21.634 µg/L  | 13.7210  | 21.634 ppb  | 13.7210  | 63.42%  |
| Pb 220.353†        | -0.9    | -0.3049 µg/L | 0.85013  | -0.3049 ppb | 0.85013  | 278.81% |
| S 181.975 Axial†   | 81.0    | 260.29 µg/L  | 11.839   | 260.29 ppb  | 11.839   | 4.55%   |
| Sb 206.836†        | 1.3     | 2.0310 µg/L  | 1.70029  | 2.0310 ppb  | 1.70029  | 83.72%  |
| Se 196.026†        | -0.9    | -2.13 µg/L   | 2.400    | -2.13 ppb   | 2.400    | 112.83% |
| SiO2†              | 3453.6  | 987.17 µg/L  | 34.015   | 987.17 ppb  | 34.015   | 3.45%   |
| Si 251.611†        | 6717.3  | 465.16 µg/L  | 14.263   | 465.16 ppb  | 14.263   | 3.07%   |
| Sn 189.927†        | 5.4     | 2.4447 µg/L  | 1.63151  | 2.4447 ppb  | 1.63151  | 66.74%  |
| Sr 421.552†        | 245.7   | 2.6010 µg/L  | 0.76944  | 2.6010 ppb  | 0.76944  | 29.58%  |
| Ti 334.940†        | 2068.1  | 10.329 µg/L  | 0.2703   | 10.329 ppb  | 0.2703   | 2.62%   |
| Tl 190.801†        | -1.3    | -1.2259 µg/L | 4.05980  | -1.2259 ppb | 4.05980  | 331.18% |
| U 367.007†         | -9.7    | -9.7800 µg/L | 12.01338 | -9.7800 ppb | 12.01338 | 122.84% |
| V 292.402†         | 224.2   | 3.5200 µg/L  | 0.31563  | 3.5200 ppb  | 0.31563  | 8.97%   |
| Zn 213.857†        | 75.4    | 2.3967 µg/L  | 0.25599  | 2.3967 ppb  | 0.25599  | 10.68%  |



Sequence No.: 66

Autosampler Location: 339

Sample ID: 409254025|1611348|1|

Date Collected: 11/2/2016 16:11:08

Analyst: HSC

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Replicate Data: 409254025|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4878.7        | 4878.7              | 99.2 %             |                    | 16:11:57      |
| 1     | Al 396.153Radial†  | 137.6         | 236.2               | 404.72 µg/L        | 404.72 ppb         | 16:11:37      |
| 1     | Ca 317.933Radial†  | 1668.4        | 1623.3              | 1304.9 µg/L        | 1304.9 ppb         | 16:11:57      |
| 1     | Fe 238.204 Radial† | 211.3         | 176.6               | 416.16 µg/L        | 416.16 ppb         | 16:11:57      |
| 1     | K 766.490 Radial†  | -64.1         | 12.8                | 13.089 µg/L        | 13.089 ppb         | 16:11:37      |
| 1     | Mg 279.077 IEC†    | 13.3          | 27.0                | 261.07 µg/L        | 261.07 ppb         | 16:11:57      |
| 1     | Na 589.592 Radial† | 9076.2        | 8398.3              | 3173.2 µg/L        | 3173.2 ppb         | 16:11:37      |
| 1     | Sr 421.552†        | 710.5         | 559.5               | 6.0093 µg/L        | 6.0093 ppb         | 16:11:37      |
| 1     | Sc                 | 413124.1      | 413124.1            | 102.7 %            |                    | 16:12:45      |
| 1     | Y 371.029          | 329853.2      | 329853.2            | 103.13 %           |                    | 16:12:45      |
| 1     | Sc 357.253         | 265707.2      | 265707.2            | 103.4 %            |                    | 16:12:45      |
| 1     | Ag 328.068†        | -344.8        | 156.4               | 1.7908 µg/L        | 1.7908 ppb         | 16:12:45      |
| 1     | As 188.979†        | 8.5           | 3.5                 | 7.3035 µg/L        | 7.3035 ppb         | 16:13:05      |
| 1     | B 249.677†         | 895.9         | 357.1               | 14.148 µg/L        | 14.148 ppb         | 16:13:05      |
| 1     | Ba 233.527†        | 313.0         | 356.0               | 6.4876 µg/L        | 6.4876 ppb         | 16:13:05      |
| 1     | Be 313.107†        | -2183.7       | 111.1               | 0.0800 µg/L        | 0.0800 ppb         | 16:12:45      |
| 1     | Cd 226.502†        | -174.8        | 10.3                | 0.0911 µg/L        | 0.0911 ppb         | 16:13:05      |
| 1     | Co 228.616†        | -57.0         | -1.5                | -0.1795 µg/L       | -0.1795 ppb        | 16:13:05      |
| 1     | Cr 267.716†        | 228.3         | 58.0                | 0.8023 µg/L        | 0.8023 ppb         | 16:13:05      |
| 1     | Cu 324.752†        | 2122.4        | -102.8              | -1.0348 µg/L       | -1.0348 ppb        | 16:12:45      |
| 1     | Mn 257.610†        | 989.6         | 1100.5              | 4.0026 µg/L        | 4.0026 ppb         | 16:13:05      |
| 1     | Mo 202.031†        | -31.7         | 9.7                 | 1.2196 µg/L        | 1.2196 ppb         | 16:13:05      |
| 1     | Ni 231.604†        | 10.9          | 3.3                 | 0.2100 µg/L        | 0.2100 ppb         | 16:13:05      |
| 1     | P 214.914†         | 36.8          | 8.0                 | 15.602 µg/L        | 15.602 ppb         | 16:13:05      |
| 1     | Pb 220.353†        | 39.7          | -0.1                | 0.0166 µg/L        | 0.0166 ppb         | 16:13:05      |
| 1     | S 181.975 Axial†   | 71.5          | 19.1                | 61.403 µg/L        | 61.403 ppb         | 16:13:05      |
| 1     | Sb 206.836†        | 12.3          | 8.1                 | 12.792 µg/L        | 12.792 ppb         | 16:13:05      |
| 1     | Se 196.026†        | 5.1           | 0.9                 | 2.11 µg/L          | 2.11 ppb           | 16:13:05      |
| 1     | SiO2†              | 2926.4        | 2092.5              | 598.10 µg/L        | 598.10 ppb         | 16:13:05      |
| 1     | Si 251.611†        | 4515.6        | 4089.6              | 283.20 µg/L        | 283.20 ppb         | 16:13:05      |
| 1     | Sn 189.927†        | -25.8         | -0.6                | -0.2150 µg/L       | -0.2150 ppb        | 16:13:05      |
| 1     | Ti 334.940†        | 1088.7        | 1151.5              | 5.7652 µg/L        | 5.7652 ppb         | 16:12:45      |
| 1     | Tl 190.801†        | 6.2           | 0.8                 | 0.7878 µg/L        | 0.7878 ppb         | 16:13:05      |
| 1     | U 367.007†         | -228.0        | -86.5               | -49.402 µg/L       | -49.402 ppb        | 16:12:45      |
| 1     | V 292.402†         | 321.3         | 169.4               | 2.6576 µg/L        | 2.6576 ppb         | 16:13:05      |
| 1     | Zn 213.857†        | 254.5         | -5.9                | -0.2765 µg/L       | -0.2765 ppb        | 16:13:05      |
| 2     | Sc RADIAL          | 4907.5        | 4907.5              | 99.7 %             |                    | 16:12:19      |
| 2     | Al 396.153Radial†  | 127.7         | 225.4               | 386.24 µg/L        | 386.24 ppb         | 16:11:59      |
| 2     | Ca 317.933Radial†  | 1685.2        | 1630.3              | 1310.5 µg/L        | 1310.5 ppb         | 16:12:19      |
| 2     | Fe 238.204 Radial† | 207.1         | 171.1               | 403.28 µg/L        | 403.28 ppb         | 16:12:19      |
| 2     | K 766.490 Radial†  | 94.4          | 172.1               | 179.21 µg/L        | 179.21 ppb         | 16:11:59      |
| 2     | Mg 279.077 IEC†    | 13.2          | 26.8                | 259.58 µg/L        | 259.58 ppb         | 16:12:19      |
| 2     | Na 589.592 Radial† | 9031.4        | 8299.8              | 3135.9 µg/L        | 3135.9 ppb         | 16:11:59      |
| 2     | Sr 421.552†        | 704.1         | 548.9               | 5.8954 µg/L        | 5.8954 ppb         | 16:11:59      |
| 2     | Sc                 | 409674.7      | 409674.7            | 101.9 %            |                    | 16:13:07      |
| 2     | Y 371.029          | 324154.8      | 324154.8            | 101.35 %           |                    | 16:13:07      |
| 2     | Sc 357.253         | 261831.4      | 261831.4            | 101.9 %            |                    | 16:13:07      |
| 2     | Ag 328.068†        | -372.1        | 124.7               | 1.4447 µg/L        | 1.4447 ppb         | 16:13:07      |
| 2     | As 188.979†        | 10.2          | 5.3                 | 10.960 µg/L        | 10.960 ppb         | 16:13:27      |
| 2     | B 249.677†         | 918.7         | 392.3               | 15.553 µg/L        | 15.553 ppb         | 16:13:27      |
| 2     | Ba 233.527†        | 300.7         | 348.4               | 6.3492 µg/L        | 6.3492 ppb         | 16:13:27      |
| 2     | Be 313.107†        | -2184.1       | 79.6                | 0.0600 µg/L        | 0.0600 ppb         | 16:13:07      |
| 2     | Cd 226.502†        | -172.0        | 10.5                | 0.0938 µg/L        | 0.0938 ppb         | 16:13:27      |
| 2     | Co 228.616†        | -57.5         | -2.8                | -0.3175 µg/L       | -0.3175 ppb        | 16:13:27      |
| 2     | Cr 267.716†        | 208.7         | 42.0                | 0.5807 µg/L        | 0.5807 ppb         | 16:13:27      |
| 2     | Cu 324.752†        | 2250.8        | 53.6                | 0.5239 µg/L        | 0.5239 ppb         | 16:13:07      |
| 2     | Mn 257.610†        | 996.1         | 1121.0              | 4.0771 µg/L        | 4.0771 ppb         | 16:13:27      |
| 2     | Mo 202.031†        | -41.8         | -0.7                | -0.0535 µg/L       | -0.0535 ppb        | 16:13:27      |
| 2     | Ni 231.604†        | 20.6          | 13.0                | 0.8539 µg/L        | 0.8539 ppb         | 16:13:27      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 36.9     | 8.7      | 16.946 µg/L  | 16.946 ppb  | 16:13:27 |
| 2 | Pb 220.353†        | 44.8     | 5.4      | 2.1358 µg/L  | 2.1358 ppb  | 16:13:27 |
| 2 | S 181.975 Axial†   | 75.5     | 24.0     | 77.121 µg/L  | 77.121 ppb  | 16:13:27 |
| 2 | Sb 206.836†        | 8.6      | 4.7      | 7.3990 µg/L  | 7.3990 ppb  | 16:13:27 |
| 2 | Se 196.026†        | 2.7      | -1.4     | -3.20 µg/L   | -3.20 ppb   | 16:13:27 |
| 2 | SiO2†              | 2878.6   | 2087.4   | 596.66 µg/L  | 596.66 ppb  | 16:13:27 |
| 2 | Si 251.611†        | 4477.9   | 4117.2   | 285.11 µg/L  | 285.11 ppb  | 16:13:27 |
| 2 | Sn 189.927†        | -26.5    | -1.6     | -0.6576 µg/L | -0.6576 ppb | 16:13:27 |
| 2 | Ti 334.940†        | 1065.4   | 1144.2   | 5.7290 µg/L  | 5.7290 ppb  | 16:13:07 |
| 2 | Tl 190.801†        | 5.2      | -0.1     | -0.1215 µg/L | -0.1215 ppb | 16:13:27 |
| 2 | U 367.007†         | -229.5   | -91.2    | -51.883 µg/L | -51.883 ppb | 16:13:07 |
| 2 | V 292.402†         | 344.9    | 197.1    | 3.0921 µg/L  | 3.0921 ppb  | 16:13:27 |
| 2 | Zn 213.857†        | 251.5    | -5.2     | -0.2565 µg/L | -0.2565 ppb | 16:13:27 |
| 3 | Sc RADIAL          | 4896.8   | 4896.8   | 99.5 %       |             | 16:12:41 |
| 3 | Al 396.153Radial†  | 94.3     | 192.1    | 329.25 µg/L  | 329.25 ppb  | 16:12:21 |
| 3 | Ca 317.933Radial†  | 1683.9   | 1632.7   | 1312.4 µg/L  | 1312.4 ppb  | 16:12:41 |
| 3 | Fe 238.204 Radial† | 205.4    | 169.8    | 400.22 µg/L  | 400.22 ppb  | 16:12:41 |
| 3 | K 766.490 Radial†  | 107.6    | 185.6    | 193.31 µg/L  | 193.31 ppb  | 16:12:21 |
| 3 | Mg 279.077 IEC†    | 13.1     | 26.7     | 258.36 µg/L  | 258.36 ppb  | 16:12:41 |
| 3 | Na 589.592 Radial† | 9137.8   | 8426.4   | 3183.8 µg/L  | 3183.8 ppb  | 16:12:21 |
| 3 | Sr 421.552†        | 659.3    | 505.4    | 5.4259 µg/L  | 5.4259 ppb  | 16:12:21 |
| 3 | Sc                 | 412170.4 | 412170.4 | 102.5 %      |             | 16:13:29 |
| 3 | Y 371.029          | 329438.6 | 329438.6 | 103.00 %     |             | 16:13:29 |
| 3 | Sc 357.253         | 263219.6 | 263219.6 | 102.5 %      |             | 16:13:29 |
| 3 | Ag 328.068†        | -345.0   | 153.0    | 1.6911 µg/L  | 1.6911 ppb  | 16:13:29 |
| 3 | As 188.979†        | 6.9      | 2.0      | 4.2043 µg/L  | 4.2043 ppb  | 16:13:49 |
| 3 | B 249.677†         | 947.6    | 415.7    | 16.489 µg/L  | 16.489 ppb  | 16:13:49 |
| 3 | Ba 233.527†        | 287.9    | 334.4    | 6.0935 µg/L  | 6.0935 ppb  | 16:13:49 |
| 3 | Be 313.107†        | -2159.1  | 115.2    | 0.0816 µg/L  | 0.0816 ppb  | 16:13:29 |
| 3 | Cd 226.502†        | -172.2   | 11.2     | 0.1024 µg/L  | 0.1024 ppb  | 16:13:49 |
| 3 | Co 228.616†        | -68.5    | -13.3    | -1.3914 µg/L | -1.3914 ppb | 16:13:49 |
| 3 | Cr 267.716†        | 241.7    | 73.1     | 1.0119 µg/L  | 1.0119 ppb  | 16:13:49 |
| 3 | Cu 324.752†        | 2042.7   | -161.1   | -1.5774 µg/L | -1.5774 ppb | 16:13:29 |
| 3 | Mn 257.610†        | 994.0    | 1113.8   | 4.0509 µg/L  | 4.0509 ppb  | 16:13:49 |
| 3 | Mo 202.031†        | -25.6    | 15.3     | 1.9064 µg/L  | 1.9064 ppb  | 16:13:49 |
| 3 | Ni 231.604†        | 5.8      | -1.5     | -0.1134 µg/L | -0.1134 ppb | 16:13:49 |
| 3 | P 214.914†         | 34.3     | 5.9      | 11.485 µg/L  | 11.485 ppb  | 16:13:49 |
| 3 | Pb 220.353†        | 42.9     | 3.4      | 1.2960 µg/L  | 1.2960 ppb  | 16:13:49 |
| 3 | S 181.975 Axial†   | 70.1     | 18.4     | 59.107 µg/L  | 59.107 ppb  | 16:13:49 |
| 3 | Sb 206.836†        | 12.5     | 8.4      | 13.269 µg/L  | 13.269 ppb  | 16:13:49 |
| 3 | Se 196.026†        | 3.4      | -0.7     | -1.63 µg/L   | -1.63 ppb   | 16:13:49 |
| 3 | SiO2†              | 2840.7   | 2035.6   | 581.86 µg/L  | 581.86 ppb  | 16:13:49 |
| 3 | Si 251.611†        | 4374.4   | 3993.0   | 276.51 µg/L  | 276.51 ppb  | 16:13:49 |
| 3 | Sn 189.927†        | -15.6    | 9.2      | 4.0998 µg/L  | 4.0998 ppb  | 16:13:49 |
| 3 | Ti 334.940†        | 964.1    | 1039.9   | 5.2087 µg/L  | 5.2087 ppb  | 16:13:29 |
| 3 | Tl 190.801†        | -5.0     | -10.1    | -9.7406 µg/L | -9.7406 ppb | 16:13:49 |
| 3 | U 367.007†         | -116.6   | 20.2     | 8.6200 µg/L  | 8.6200 ppb  | 16:13:29 |
| 3 | V 292.402†         | 299.3    | 150.8    | 2.3937 µg/L  | 2.3937 ppb  | 16:13:49 |
| 3 | Zn 213.857†        | 262.6    | 4.3      | 0.0725 µg/L  | 0.0725 ppb  | 16:13:49 |

Mean Data: 409254025|1611348|1|

| Analyte            | Mean Corrected Intensity | Conc. Units  | Calib. Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|--------------|-----------------|--------------------|----------|---------|
| Sc                 | 411656.4                 | 102.4 %      | 0.44            |                    |          | 0.43%   |
| Sc RADIAL          | 4894.3                   | 99.5 %       | 0.30            |                    |          | 0.30%   |
| Y 371.029          | 327815.5                 | 102.50 %     | 0.993           |                    |          | 0.97%   |
| Sc 357.253         | 263586.1                 | 102.6 %      | 0.76            |                    |          | 0.74%   |
| Ag 328.068†        | 144.7                    | 1.6422 µg/L  | 0.17813         | 1.6422 ppb         | 0.17813  | 10.85%  |
| Al 396.153Radial†  | 217.9                    | 373.40 µg/L  | 39.338          | 373.40 ppb         | 39.338   | 10.54%  |
| As 188.979†        | 3.6                      | 7.4891 µg/L  | 3.38144         | 7.4891 ppb         | 3.38144  | 45.15%  |
| B 249.677†         | 388.3                    | 15.397 µg/L  | 1.1785          | 15.397 ppb         | 1.1785   | 7.65%   |
| Ba 233.527†        | 346.3                    | 6.3101 µg/L  | 0.19990         | 6.3101 ppb         | 0.19990  | 3.17%   |
| Be 313.107†        | 102.0                    | 0.0739 µg/L  | 0.01202         | 0.0739 ppb         | 0.01202  | 16.26%  |
| Ca 317.933Radial†  | 1628.8                   | 1309.3 µg/L  | 3.92            | 1309.3 ppb         | 3.92     | 0.30%   |
| Cd 226.502†        | 10.6                     | 0.0958 µg/L  | 0.00591         | 0.0958 ppb         | 0.00591  | 6.17%   |
| Co 228.616†        | -5.9                     | -0.6294 µg/L | 0.66342         | -0.6294 ppb        | 0.66342  | 105.40% |
| Cr 267.716†        | 57.7                     | 0.7983 µg/L  | 0.21563         | 0.7983 ppb         | 0.21563  | 27.01%  |
| Cu 324.752†        | -70.1                    | -0.6961 µg/L | 1.09082         | -0.6961 ppb        | 1.09082  | 156.70% |
| Fe 238.204 Radial† | 172.5                    | 406.55 µg/L  | 8.457           | 406.55 ppb         | 8.457    | 2.08%   |
| K 766.490 Radial†  | 123.5                    | 128.54 µg/L  | 100.229         | 128.54 ppb         | 100.229  | 77.98%  |

|                    |        |              |         |             |         |         |
|--------------------|--------|--------------|---------|-------------|---------|---------|
| Mg 279.077 IEC†    | 26.8   | 259.67 µg/L  | 1.359   | 259.67 ppb  | 1.359   | 0.52%   |
| Mn 257.610†        | 1111.8 | 4.0436 µg/L  | 0.03780 | 4.0436 ppb  | 0.03780 | 0.93%   |
| Mo 202.031†        | 8.1    | 1.0242 µg/L  | 0.99443 | 1.0242 ppb  | 0.99443 | 97.10%  |
| Na 589.592 Radial† | 8374.9 | 3164.3 µg/L  | 25.13   | 3164.3 ppb  | 25.13   | 0.79%   |
| Ni 231.604†        | 4.9    | 0.3168 µg/L  | 0.49242 | 0.3168 ppb  | 0.49242 | 155.43% |
| P 214.914†         | 7.5    | 14.678 µg/L  | 2.8450  | 14.678 ppb  | 2.8450  | 19.38%  |
| Pb 220.353†        | 2.9    | 1.1495 µg/L  | 1.06717 | 1.1495 ppb  | 1.06717 | 92.84%  |
| S 181.975 Axial†   | 20.5   | 65.877 µg/L  | 9.8053  | 65.877 ppb  | 9.8053  | 14.88%  |
| Sb 206.836†        | 7.0    | 11.153 µg/L  | 3.2601  | 11.153 ppb  | 3.2601  | 29.23%  |
| Se 196.026†        | -0.4   | -0.907 µg/L  | 2.7321  | -0.907 ppb  | 2.7321  | 301.13% |
| SiO2†              | 2071.8 | 592.21 µg/L  | 8.990   | 592.21 ppb  | 8.990   | 1.52%   |
| Si 251.611†        | 4066.6 | 281.60 µg/L  | 4.516   | 281.60 ppb  | 4.516   | 1.60%   |
| Sn 189.927†        | 2.4    | 1.0757 µg/L  | 2.62822 | 1.0757 ppb  | 2.62822 | 244.32% |
| Sr 421.552†        | 537.9  | 5.7769 µg/L  | 0.30926 | 5.7769 ppb  | 0.30926 | 5.35%   |
| Ti 334.940†        | 1111.9 | 5.5676 µg/L  | 0.31138 | 5.5676 ppb  | 0.31138 | 5.59%   |
| Tl 190.801†        | -3.1   | -3.0248 µg/L | 5.83384 | -3.0248 ppb | 5.83384 | 192.87% |
| U 367.007†         | -52.5  | -30.888 µg/L | 34.2375 | -30.888 ppb | 34.2375 | 110.84% |
| V 292.402†         | 172.4  | 2.7145 µg/L  | 0.35265 | 2.7145 ppb  | 0.35265 | 12.99%  |
| Zn 213.857†        | -2.3   | -0.1535 µg/L | 0.19598 | -0.1535 ppb | 0.19598 | 127.71% |

Sequence No.: 67

Sample ID: 409254030|1611348|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 340

Date Collected: 11/2/2016 16:13:59

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254030|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4909.4        | 4909.4              | 99.8 %             |                    | 16:14:48      |
| 1     | Al 396.153Radial†  | 230.0         | 327.9               | 561.94 µg/L        | 561.94 ppb         | 16:14:28      |
| 1     | Ca 317.933Radial†  | 2023.2        | 1968.4              | 1582.3 µg/L        | 1582.3 ppb         | 16:14:48      |
| 1     | Fe 238.204 Radial† | 378.9         | 343.2               | 808.87 µg/L        | 808.87 ppb         | 16:14:48      |
| 1     | K 766.490 Radial†  | -81.0         | -3.7                | -4.3458 µg/L       | -4.3458 ppb        | 16:14:28      |
| 1     | Mg 279.077 IEC†    | 15.8          | 29.4                | 284.28 µg/L        | 284.28 ppb         | 16:14:48      |
| 1     | Na 589.592 Radial† | 10984.7       | 10254.0             | 3874.3 µg/L        | 3874.3 ppb         | 16:14:28      |
| 1     | Sr 421.552†        | 920.9         | 765.9               | 8.2141 µg/L        | 8.2141 ppb         | 16:14:28      |
| 1     | Sc                 | 413336.9      | 413336.9            | 102.8 %            |                    | 16:15:35      |
| 1     | Y 371.029          | 323306.7      | 323306.7            | 101.09 %           |                    | 16:15:35      |
| 1     | Sc 357.253         | 264401.8      | 264401.8            | 102.9 %            |                    | 16:15:35      |
| 1     | Ag 328.068†        | -462.3        | 40.6                | 0.5187 µg/L        | 0.5187 ppb         | 16:15:35      |
| 1     | As 188.979†        | 8.4           | 3.4                 | 7.1332 µg/L        | 7.1332 ppb         | 16:15:55      |
| 1     | B 249.677†         | 1158.4        | 616.4               | 24.400 µg/L        | 24.400 ppb         | 16:15:35      |
| 1     | Ba 233.527†        | 482.6         | 522.3               | 9.5134 µg/L        | 9.5134 ppb         | 16:15:55      |
| 1     | Be 313.107†        | -2187.5       | 97.0                | 0.0779 µg/L        | 0.0779 ppb         | 16:15:35      |
| 1     | Cd 226.502†        | -173.5        | 10.7                | 0.0712 µg/L        | 0.0712 ppb         | 16:15:55      |
| 1     | Co 228.616†        | -63.4         | -8.0                | -0.8863 µg/L       | -0.8863 ppb        | 16:15:55      |
| 1     | Cr 267.716†        | 159.3         | -8.0                | -0.1160 µg/L       | -0.1160 ppb        | 16:15:35      |
| 1     | Cu 324.752†        | 2185.3        | -31.6               | -0.2934 µg/L       | -0.2934 ppb        | 16:15:35      |
| 1     | Mn 257.610†        | 1677.9        | 1773.9              | 6.4591 µg/L        | 6.4591 ppb         | 16:15:55      |
| 1     | Mo 202.031†        | -41.4         | 0.1                 | 0.0749 µg/L        | 0.0749 ppb         | 16:15:55      |
| 1     | Ni 231.604†        | 13.8          | 6.2                 | 0.3871 µg/L        | 0.3871 ppb         | 16:15:55      |
| 1     | P 214.914†         | 34.8          | 6.3                 | 12.008 µg/L        | 12.008 ppb         | 16:15:55      |
| 1     | Pb 220.353†        | 46.0          | 6.2                 | 2.4258 µg/L        | 2.4258 ppb         | 16:15:55      |
| 1     | S 181.975 Axial†   | 94.0          | 41.2                | 132.72 µg/L        | 132.72 ppb         | 16:15:55      |
| 1     | Sb 206.836†        | 6.2           | 2.2                 | 3.4950 µg/L        | 3.4950 ppb         | 16:15:55      |
| 1     | Se 196.026†        | 2.4           | -1.7                | -3.91 µg/L         | -3.91 ppb          | 16:15:55      |
| 1     | SiO2†              | 3252.8        | 2423.6              | 692.74 µg/L        | 692.74 ppb         | 16:15:35      |
| 1     | Si 251.611†        | 5071.9        | 4651.6              | 322.11 µg/L        | 322.11 ppb         | 16:15:35      |
| 1     | Sn 189.927†        | -18.1         | 6.8                 | 3.0776 µg/L        | 3.0776 ppb         | 16:15:55      |
| 1     | Ti 334.940†        | 1895.2        | 1940.2              | 9.7030 µg/L        | 9.7030 ppb         | 16:15:35      |
| 1     | Tl 190.801†        | 1.5           | -3.7                | -3.6173 µg/L       | -3.6173 ppb        | 16:15:55      |
| 1     | U 367.007†         | -205.9        | -66.0               | -40.609 µg/L       | -40.609 ppb        | 16:15:35      |
| 1     | V 292.402†         | 281.3         | 132.0               | 2.0288 µg/L        | 2.0288 ppb         | 16:15:35      |
| 1     | Zn 213.857†        | 318.8         | 57.8                | 1.8010 µg/L        | 1.8010 ppb         | 16:15:55      |
| 2     | Sc RADIAL          | 4913.4        | 4913.4              | 99.9 %             |                    | 16:15:10      |
| 2     | Al 396.153Radial†  | 243.8         | 341.5               | 585.26 µg/L        | 585.26 ppb         | 16:14:50      |
| 2     | Ca 317.933Radial†  | 2034.6        | 1978.1              | 1590.1 µg/L        | 1590.1 ppb         | 16:15:10      |
| 2     | Fe 238.204 Radial† | 379.5         | 343.5               | 809.58 µg/L        | 809.58 ppb         | 16:15:10      |
| 2     | K 766.490 Radial†  | -42.6         | 34.8                | 35.778 µg/L        | 35.778 ppb         | 16:14:50      |
| 2     | Mg 279.077 IEC†    | 10.2          | 23.7                | 229.61 µg/L        | 229.61 ppb         | 16:15:10      |
| 2     | Na 589.592 Radial† | 10795.7       | 10055.8             | 3799.4 µg/L        | 3799.4 ppb         | 16:14:50      |
| 2     | Sr 421.552†        | 864.1         | 708.2               | 7.5914 µg/L        | 7.5914 ppb         | 16:14:50      |
| 2     | Sc                 | 411635.2      | 411635.2            | 102.4 %            |                    | 16:15:57      |
| 2     | Y 371.029          | 327065.0      | 327065.0            | 102.26 %           |                    | 16:15:57      |
| 2     | Sc 357.253         | 262749.9      | 262749.9            | 102.3 %            |                    | 16:15:57      |
| 2     | Ag 328.068†        | -512.5        | -11.4               | -0.0219 µg/L       | -0.0219 ppb        | 16:15:57      |
| 2     | As 188.979†        | 4.8           | -0.0                | -0.0094 µg/L       | -0.0094 ppb        | 16:16:17      |
| 2     | B 249.677†         | 1120.6        | 586.5               | 23.210 µg/L        | 23.210 ppb         | 16:15:57      |
| 2     | Ba 233.527†        | 467.3         | 510.2               | 9.2945 µg/L        | 9.2945 ppb         | 16:16:17      |
| 2     | Be 313.107†        | -2059.6       | 208.7               | 0.1472 µg/L        | 0.1472 ppb         | 16:15:57      |
| 2     | Cd 226.502†        | -195.7        | -12.1               | -0.1887 µg/L       | -0.1887 ppb        | 16:16:17      |
| 2     | Co 228.616†        | -61.5         | -6.6                | -0.7334 µg/L       | -0.7334 ppb        | 16:16:17      |
| 2     | Cr 267.716†        | 235.7         | 67.6                | 0.9331 µg/L        | 0.9331 ppb         | 16:15:57      |
| 2     | Cu 324.752†        | 2167.3        | -35.8               | -0.3542 µg/L       | -0.3542 ppb        | 16:15:57      |
| 2     | Mn 257.610†        | 1660.5        | 1767.2              | 6.4365 µg/L        | 6.4365 ppb         | 16:16:17      |
| 2     | Mo 202.031†        | -40.1         | 1.1                 | 0.1936 µg/L        | 0.1936 ppb         | 16:16:17      |
| 2     | Ni 231.604†        | 14.1          | 6.5                 | 0.4124 µg/L        | 0.4124 ppb         | 16:16:17      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 29.9     | 1.7      | 2.9342 µg/L  | 2.9342 ppb  | 16:16:17 |
| 2 | Pb 220.353†        | 47.3     | 7.7      | 3.0486 µg/L  | 3.0486 ppb  | 16:16:17 |
| 2 | S 181.975 Axial†   | 96.8     | 44.6     | 143.47 µg/L  | 143.47 ppb  | 16:16:17 |
| 2 | Sb 206.836†        | 9.7      | 5.7      | 9.0298 µg/L  | 9.0298 ppb  | 16:16:17 |
| 2 | Se 196.026†        | 3.7      | -0.3     | -0.785 µg/L  | -0.785 ppb  | 16:16:17 |
| 2 | SiO2†              | 3161.9   | 2354.6   | 673.02 µg/L  | 673.02 ppb  | 16:15:57 |
| 2 | Si 251.611†        | 4912.3   | 4526.6   | 313.45 µg/L  | 313.45 ppb  | 16:15:57 |
| 2 | Sn 189.927†        | -20.9    | 3.9      | 1.7917 µg/L  | 1.7917 ppb  | 16:16:17 |
| 2 | Ti 334.940†        | 1749.2   | 1809.1   | 9.0489 µg/L  | 9.0489 ppb  | 16:15:57 |
| 2 | Tl 190.801†        | 1.7      | -3.6     | -3.4638 µg/L | -3.4638 ppb | 16:16:17 |
| 2 | U 367.007†         | -256.4   | -116.7   | -68.100 µg/L | -68.100 ppb | 16:15:57 |
| 2 | V 292.402†         | 357.3    | 208.0    | 3.2314 µg/L  | 3.2314 ppb  | 16:15:57 |
| 2 | Zn 213.857†        | 314.5    | 55.6     | 1.7298 µg/L  | 1.7298 ppb  | 16:16:17 |
| 3 | Sc RADIAL          | 4905.1   | 4905.1   | 99.7 %       |             | 16:15:32 |
| 3 | Al 396.153Radial†  | 256.6    | 354.8    | 608.04 µg/L  | 608.04 ppb  | 16:15:12 |
| 3 | Ca 317.933Radial†  | 2009.2   | 1956.1   | 1572.4 µg/L  | 1572.4 ppb  | 16:15:32 |
| 3 | Fe 238.204 Radial† | 381.6    | 346.2    | 815.96 µg/L  | 815.96 ppb  | 16:15:32 |
| 3 | K 766.490 Radial†  | -71.2    | 6.0      | 5.7806 µg/L  | 5.7806 ppb  | 16:15:12 |
| 3 | Mg 279.077 IEC†    | 21.4     | 35.0     | 338.62 µg/L  | 338.62 ppb  | 16:15:32 |
| 3 | Na 589.592 Radial† | 10723.9  | 10002.0  | 3779.1 µg/L  | 3779.1 ppb  | 16:15:12 |
| 3 | Sr 421.552†        | 877.0    | 722.7    | 7.7475 µg/L  | 7.7475 ppb  | 16:15:12 |
| 3 | Sc                 | 412713.2 | 412713.2 | 102.6 %      |             | 16:16:20 |
| 3 | Y 371.029          | 327797.1 | 327797.1 | 102.49 %     |             | 16:16:20 |
| 3 | Sc 357.253         | 263239.3 | 263239.3 | 102.5 %      |             | 16:16:20 |
| 3 | Ag 328.068†        | -432.4   | 67.8     | 0.7500 µg/L  | 0.7500 ppb  | 16:16:20 |
| 3 | As 188.979†        | 10.3     | 5.4      | 11.174 µg/L  | 11.174 ppb  | 16:16:40 |
| 3 | B 249.677†         | 1001.0   | 467.8    | 18.472 µg/L  | 18.472 ppb  | 16:16:20 |
| 3 | Ba 233.527†        | 462.8    | 505.0    | 9.1990 µg/L  | 9.1990 ppb  | 16:16:40 |
| 3 | Be 313.107†        | -2116.8  | 156.7    | 0.1154 µg/L  | 0.1154 ppb  | 16:16:20 |
| 3 | Cd 226.502†        | -185.6   | -1.8     | -0.0725 µg/L | -0.0725 ppb | 16:16:40 |
| 3 | Co 228.616†        | -51.1    | 3.7      | 0.3161 µg/L  | 0.3161 ppb  | 16:16:40 |
| 3 | Cr 267.716†        | 233.7    | 65.3     | 0.9003 µg/L  | 0.9003 ppb  | 16:16:20 |
| 3 | Cu 324.752†        | 2085.2   | -119.9   | -1.1287 µg/L | -1.1287 ppb | 16:16:20 |
| 3 | Mn 257.610†        | 1651.8   | 1755.7   | 6.3912 µg/L  | 6.3912 ppb  | 16:16:40 |
| 3 | Mo 202.031†        | -54.1    | -12.5    | -1.4731 µg/L | -1.4731 ppb | 16:16:40 |
| 3 | Ni 231.604†        | 15.4     | 7.8      | 0.4992 µg/L  | 0.4992 ppb  | 16:16:40 |
| 3 | P 214.914†         | 36.4     | 8.0      | 15.299 µg/L  | 15.299 ppb  | 16:16:40 |
| 3 | Pb 220.353†        | 44.2     | 4.6      | 1.7821 µg/L  | 1.7821 ppb  | 16:16:40 |
| 3 | S 181.975 Axial†   | 94.8     | 42.4     | 136.51 µg/L  | 136.51 ppb  | 16:16:40 |
| 3 | Sb 206.836†        | 3.6      | -0.3     | -0.4875 µg/L | -0.4875 ppb | 16:16:40 |
| 3 | Se 196.026†        | 2.5      | -1.5     | -3.65 µg/L   | -3.65 ppb   | 16:16:40 |
| 3 | SiO2†              | 3193.8   | 2379.9   | 680.27 µg/L  | 680.27 ppb  | 16:16:20 |
| 3 | Si 251.611†        | 4889.6   | 4495.5   | 311.30 µg/L  | 311.30 ppb  | 16:16:20 |
| 3 | Sn 189.927†        | -26.6    | -1.6     | -0.6506 µg/L | -0.6506 ppb | 16:16:40 |
| 3 | Ti 334.940†        | 1879.1   | 1932.6   | 9.6645 µg/L  | 9.6645 ppb  | 16:16:20 |
| 3 | Tl 190.801†        | 7.0      | 1.7      | 1.6012 µg/L  | 1.6012 ppb  | 16:16:40 |
| 3 | U 367.007†         | -82.3    | 53.7     | 24.355 µg/L  | 24.355 ppb  | 16:16:20 |
| 3 | V 292.402†         | 329.9    | 180.7    | 2.8285 µg/L  | 2.8285 ppb  | 16:16:20 |
| 3 | Zn 213.857†        | 320.8    | 61.1     | 1.9072 µg/L  | 1.9072 ppb  | 16:16:40 |

Mean Data: 409254030|1611348|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc                 | 412561.8                 | 102.6 %            | 0.21     |                    |          | 0.21%   |
| Sc RADIAL          | 4909.3                   | 99.8 %             | 0.08     |                    |          | 0.08%   |
| Y 371.029          | 326056.3                 | 101.95 %           | 0.753    |                    |          | 0.74%   |
| Sc 357.253         | 263463.7                 | 102.6 %            | 0.33     |                    |          | 0.32%   |
| Ag 328.068†        | 32.3                     | 0.4156 µg/L        | 0.39616  | 0.4156 ppb         | 0.39616  | 95.32%  |
| Al 396.153Radial†  | 341.4                    | 585.08 µg/L        | 23.049   | 585.08 ppb         | 23.049   | 3.94%   |
| As 188.979†        | 2.9                      | 6.0992 µg/L        | 5.66280  | 6.0992 ppb         | 5.66280  | 92.85%  |
| B 249.677†         | 556.9                    | 22.027 µg/L        | 3.1360   | 22.027 ppb         | 3.1360   | 14.24%  |
| Ba 233.527†        | 512.5                    | 9.3356 µg/L        | 0.16117  | 9.3356 ppb         | 0.16117  | 1.73%   |
| Be 313.107†        | 154.2                    | 0.1135 µg/L        | 0.03466  | 0.1135 ppb         | 0.03466  | 30.53%  |
| Ca 317.933Radial†  | 1967.5                   | 1581.6 µg/L        | 8.88     | 1581.6 ppb         | 8.88     | 0.56%   |
| Cd 226.502†        | -1.1                     | -0.0633 µg/L       | 0.13020  | -0.0633 ppb        | 0.13020  | 205.55% |
| Co 228.616†        | -3.6                     | -0.4345 µg/L       | 0.65456  | -0.4345 ppb        | 0.65456  | 150.64% |
| Cr 267.716†        | 41.7                     | 0.5725 µg/L        | 0.59643  | 0.5725 ppb         | 0.59643  | 104.19% |
| Cu 324.752†        | -62.4                    | -0.5921 µg/L       | 0.46572  | -0.5921 ppb        | 0.46572  | 78.65%  |
| Fe 238.204 Radial† | 344.3                    | 811.47 µg/L        | 3.903    | 811.47 ppb         | 3.903    | 0.48%   |
| K 766.490 Radial†  | 12.4                     | 12.404 µg/L        | 20.8660  | 12.404 ppb         | 20.8660  | 168.22% |

|                    |         |              |         |             |         |         |
|--------------------|---------|--------------|---------|-------------|---------|---------|
| Mg 279.077 IEC†    | 29.4    | 284.17 µg/L  | 54.504  | 284.17 ppb  | 54.504  | 19.18%  |
| Mn 257.610†        | 1765.6  | 6.4289 µg/L  | 0.03457 | 6.4289 ppb  | 0.03457 | 0.54%   |
| Mo 202.031†        | -3.8    | -0.4015 µg/L | 0.92993 | -0.4015 ppb | 0.92993 | 231.59% |
| Na 589.592 Radial† | 10103.9 | 3817.6 µg/L  | 50.14   | 3817.6 ppb  | 50.14   | 1.31%   |
| Ni 231.604†        | 6.8     | 0.4329 µg/L  | 0.05878 | 0.4329 ppb  | 0.05878 | 13.58%  |
| P 214.914†         | 5.3     | 10.080 µg/L  | 6.4037  | 10.080 ppb  | 6.4037  | 63.53%  |
| Pb 220.353†        | 6.2     | 2.4189 µg/L  | 0.63328 | 2.4189 ppb  | 0.63328 | 26.18%  |
| S 181.975 Axial†   | 42.7    | 137.57 µg/L  | 5.452   | 137.57 ppb  | 5.452   | 3.96%   |
| Sb 206.836†        | 2.5     | 4.0124 µg/L  | 4.77972 | 4.0124 ppb  | 4.77972 | 119.12% |
| Se 196.026†        | -1.2    | -2.78 µg/L   | 1.733   | -2.78 ppb   | 1.733   | 62.33%  |
| SiO2†              | 2386.0  | 682.01 µg/L  | 9.973   | 682.01 ppb  | 9.973   | 1.46%   |
| Si 251.611†        | 4557.9  | 315.62 µg/L  | 5.723   | 315.62 ppb  | 5.723   | 1.81%   |
| Sn 189.927†        | 3.1     | 1.4062 µg/L  | 1.89378 | 1.4062 ppb  | 1.89378 | 134.67% |
| Sr 421.552†        | 732.3   | 7.8510 µg/L  | 0.32401 | 7.8510 ppb  | 0.32401 | 4.13%   |
| Ti 334.940†        | 1894.0  | 9.4721 µg/L  | 0.36704 | 9.4721 ppb  | 0.36704 | 3.87%   |
| Tl 190.801†        | -1.9    | -1.8267 µg/L | 2.96961 | -1.8267 ppb | 2.96961 | 162.57% |
| U 367.007†         | -43.0   | -28.118 µg/L | 47.4766 | -28.118 ppb | 47.4766 | 168.85% |
| V 292.402†         | 173.6   | 2.6962 µg/L  | 0.61213 | 2.6962 ppb  | 0.61213 | 22.70%  |
| Zn 213.857†        | 58.1    | 1.8127 µg/L  | 0.08928 | 1.8127 ppb  | 0.08928 | 4.93%   |

Sequence No.: 68

Sample ID: 409254033|1611348|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 341

Date Collected: 11/2/2016 16:16:49

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254033|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4896.7        | 4896.7              | 99.5 %             |                    | 16:17:38      |
| 1     | Al 396.153Radial†  | 6.9           | 104.3               | 178.71 µg/L        | 178.71 ppb         | 16:17:18      |
| 1     | Ca 317.933Radial†  | 1764.5        | 1713.7              | 1377.6 µg/L        | 1377.6 ppb         | 16:17:38      |
| 1     | Fe 238.204 Radial† | 100.9         | 64.8                | 152.83 µg/L        | 152.83 ppb         | 16:17:38      |
| 1     | K 766.490 Radial†  | 71.5          | 149.3               | 155.62 µg/L        | 155.62 ppb         | 16:17:18      |
| 1     | Mg 279.077 IEC†    | 24.1          | 37.8                | 365.75 µg/L        | 365.75 ppb         | 16:17:38      |
| 1     | Na 589.592 Radial† | 8079.7        | 7363.4              | 2782.1 µg/L        | 2782.1 ppb         | 16:17:18      |
| 1     | Sr 421.552†        | 855.9         | 702.9               | 7.5733 µg/L        | 7.5733 ppb         | 16:17:18      |
| 1     | Sc                 | 410486.0      | 410486.0            | 102.1 %            |                    | 16:18:26      |
| 1     | Y 371.029          | 322813.9      | 322813.9            | 100.93 %           |                    | 16:18:26      |
| 1     | Sc 357.253         | 263110.4      | 263110.4            | 102.4 %            |                    | 16:18:26      |
| 1     | Ag 328.068†        | -488.9        | 12.4                | 0.1725 µg/L        | 0.1725 ppb         | 16:18:26      |
| 1     | As 188.979†        | 8.6           | 3.7                 | 7.6828 µg/L        | 7.6828 ppb         | 16:18:46      |
| 1     | B 249.677†         | 826.4         | 297.8               | 11.843 µg/L        | 11.843 ppb         | 16:18:26      |
| 1     | Ba 233.527†        | 121.7         | 172.3               | 3.1400 µg/L        | 3.1400 ppb         | 16:18:46      |
| 1     | Be 313.107†        | -2226.3       | 48.7                | 0.0368 µg/L        | 0.0368 ppb         | 16:18:26      |
| 1     | Cd 226.502†        | -175.3        | 8.1                 | 0.0824 µg/L        | 0.0824 ppb         | 16:18:46      |
| 1     | Co 228.616†        | -60.3         | -5.3                | -0.5501 µg/L       | -0.5501 ppb        | 16:18:46      |
| 1     | Cr 267.716†        | 214.7         | 46.9                | 0.6499 µg/L        | 0.6499 ppb         | 16:18:26      |
| 1     | Cu 324.752†        | 2194.7        | -11.9               | -0.1252 µg/L       | -0.1252 ppb        | 16:18:26      |
| 1     | Mn 257.610†        | 283.3         | 420.3               | 1.5197 µg/L        | 1.5197 ppb         | 16:18:46      |
| 1     | Mo 202.031†        | -35.2         | 6.0                 | 0.7428 µg/L        | 0.7428 ppb         | 16:18:46      |
| 1     | Ni 231.604†        | 7.4           | -0.0                | -0.0052 µg/L       | -0.0052 ppb        | 16:18:46      |
| 1     | P 214.914†         | 29.2          | 1.0                 | 1.8583 µg/L        | 1.8583 ppb         | 16:18:46      |
| 1     | Pb 220.353†        | 44.0          | 4.4                 | 1.7342 µg/L        | 1.7342 ppb         | 16:18:46      |
| 1     | S 181.975 Axial†   | 77.7          | 25.8                | 82.865 µg/L        | 82.865 ppb         | 16:18:46      |
| 1     | Sb 206.836†        | 4.4           | 0.5                 | 0.7490 µg/L        | 0.7490 ppb         | 16:18:46      |
| 1     | Se 196.026†        | 8.8           | 4.6                 | 10.8 µg/L          | 10.8 ppb           | 16:18:46      |
| 1     | SiO2†              | 2243.3        | 1453.5              | 415.45 µg/L        | 415.45 ppb         | 16:18:26      |
| 1     | Si 251.611†        | 3236.9        | 2884.2              | 199.72 µg/L        | 199.72 ppb         | 16:18:26      |
| 1     | Sn 189.927†        | -25.4         | -0.4                | -0.1395 µg/L       | -0.1395 ppb        | 16:18:46      |
| 1     | Ti 334.940†        | 617.9         | 702.2               | 3.5265 µg/L        | 3.5265 ppb         | 16:18:26      |
| 1     | Tl 190.801†        | -2.6          | -7.7                | -7.4332 µg/L       | -7.4332 ppb        | 16:18:46      |
| 1     | U 367.007†         | -178.4        | -40.2               | -22.704 µg/L       | -22.704 ppb        | 16:18:26      |
| 1     | V 292.402†         | 245.9         | 98.8                | 1.5595 µg/L        | 1.5595 ppb         | 16:18:26      |
| 1     | Zn 213.857†        | 271.6         | 13.3                | 0.3990 µg/L        | 0.3990 ppb         | 16:18:46      |
| 2     | Sc RADIAL          | 4858.7        | 4858.7              | 98.7 %             |                    | 16:18:00      |
| 2     | Al 396.153Radial†  | -24.0         | 73.1                | 125.27 µg/L        | 125.27 ppb         | 16:17:40      |
| 2     | Ca 317.933Radial†  | 1751.4        | 1714.3              | 1378.1 µg/L        | 1378.1 ppb         | 16:18:00      |
| 2     | Fe 238.204 Radial† | 105.8         | 70.6                | 166.40 µg/L        | 166.40 ppb         | 16:18:00      |
| 2     | K 766.490 Radial†  | 29.3          | 107.2               | 111.67 µg/L        | 111.67 ppb         | 16:17:40      |
| 2     | Mg 279.077 IEC†    | 15.8          | 29.6                | 286.31 µg/L        | 286.31 ppb         | 16:18:00      |
| 2     | Na 589.592 Radial† | 8068.8        | 7415.9              | 2802.0 µg/L        | 2802.0 ppb         | 16:17:40      |
| 2     | Sr 421.552†        | 788.2         | 641.2               | 6.9051 µg/L        | 6.9051 ppb         | 16:17:40      |
| 2     | Sc                 | 413023.5      | 413023.5            | 102.7 %            |                    | 16:18:48      |
| 2     | Y 371.029          | 327723.0      | 327723.0            | 102.47 %           |                    | 16:18:48      |
| 2     | Sc 357.253         | 263792.3      | 263792.3            | 102.7 %            |                    | 16:18:48      |
| 2     | Ag 328.068†        | -520.0        | -16.7               | -0.1151 µg/L       | -0.1151 ppb        | 16:18:48      |
| 2     | As 188.979†        | 7.6           | 2.7                 | 5.5334 µg/L        | 5.5334 ppb         | 16:19:08      |
| 2     | B 249.677†         | 682.4         | 155.5               | 6.1638 µg/L        | 6.1638 ppb         | 16:18:48      |
| 2     | Ba 233.527†        | 138.0         | 187.8               | 3.4225 µg/L        | 3.4225 ppb         | 16:19:08      |
| 2     | Be 313.107†        | -2176.7       | 102.7               | 0.0703 µg/L        | 0.0703 ppb         | 16:18:48      |
| 2     | Cd 226.502†        | -196.2        | -11.8               | -0.1456 µg/L       | -0.1456 ppb        | 16:19:08      |
| 2     | Co 228.616†        | -66.7         | -11.4               | -1.1785 µg/L       | -1.1785 ppb        | 16:19:08      |
| 2     | Cr 267.716†        | 214.9         | 46.5                | 0.6452 µg/L        | 0.6452 ppb         | 16:18:48      |
| 2     | Cu 324.752†        | 2028.4        | -179.5              | -1.8178 µg/L       | -1.8178 ppb        | 16:18:48      |
| 2     | Mn 257.610†        | 273.5         | 410.0               | 1.4853 µg/L        | 1.4853 ppb         | 16:19:08      |
| 2     | Mo 202.031†        | -34.2         | 6.9                 | 0.8640 µg/L        | 0.8640 ppb         | 16:19:08      |
| 2     | Ni 231.604†        | 14.1          | 6.5                 | 0.4276 µg/L        | 0.4276 ppb         | 16:19:08      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 21.9     | -6.2     | -12.368 µg/L | -12.368 ppb | 16:19:08 |
| 2 | Pb 220.353†        | 33.8     | -5.6     | -2.0915 µg/L | -2.0915 ppb | 16:19:08 |
| 2 | S 181.975 Axial†   | 75.4     | 23.3     | 75.008 µg/L  | 75.008 ppb  | 16:19:08 |
| 2 | Sb 206.836†        | 10.8     | 6.7      | 10.697 µg/L  | 10.697 ppb  | 16:19:08 |
| 2 | Se 196.026†        | 5.2      | 1.1      | 2.64 µg/L    | 2.64 ppb    | 16:19:08 |
| 2 | SiO2†              | 2301.6   | 1504.5   | 430.05 µg/L  | 430.05 ppb  | 16:18:48 |
| 2 | Si 251.611†        | 3300.1   | 2937.6   | 203.42 µg/L  | 203.42 ppb  | 16:18:48 |
| 2 | Sn 189.927†        | -20.9    | 4.0      | 1.8042 µg/L  | 1.8042 ppb  | 16:19:08 |
| 2 | Ti 334.940†        | 562.5    | 646.7    | 3.2500 µg/L  | 3.2500 ppb  | 16:18:48 |
| 2 | Tl 190.801†        | -5.6     | -10.7    | -10.290 µg/L | -10.290 ppb | 16:19:08 |
| 2 | U 367.007†         | -235.9   | -95.8    | -52.968 µg/L | -52.968 ppb | 16:18:48 |
| 2 | V 292.402†         | 252.1    | 104.2    | 1.6323 µg/L  | 1.6323 ppb  | 16:18:48 |
| 2 | Zn 213.857†        | 272.5    | 13.5     | 0.4071 µg/L  | 0.4071 ppb  | 16:19:08 |
| 3 | Sc RADIAL          | 4863.1   | 4863.1   | 98.8 %       |             | 16:18:22 |
| 3 | Al 396.153Radial†  | -17.7    | 79.5     | 136.17 µg/L  | 136.17 ppb  | 16:18:02 |
| 3 | Ca 317.933Radial†  | 1739.6   | 1700.7   | 1367.1 µg/L  | 1367.1 ppb  | 16:18:22 |
| 3 | Fe 238.204 Radial† | 98.3     | 62.9     | 148.33 µg/L  | 148.33 ppb  | 16:18:22 |
| 3 | K 766.490 Radial†  | -15.7    | 61.6     | 64.175 µg/L  | 64.175 ppb  | 16:18:02 |
| 3 | Mg 279.077 IEC†    | 20.7     | 34.5     | 333.92 µg/L  | 333.92 ppb  | 16:18:22 |
| 3 | Na 589.592 Radial† | 8003.7   | 7342.7   | 2774.3 µg/L  | 2774.3 ppb  | 16:18:02 |
| 3 | Sr 421.552†        | 864.6    | 717.7    | 7.7334 µg/L  | 7.7334 ppb  | 16:18:02 |
| 3 | Sc                 | 416364.2 | 416364.2 | 103.6 %      |             | 16:19:10 |
| 3 | Y 371.029          | 331867.7 | 331867.7 | 103.76 %     |             | 16:19:10 |
| 3 | Sc 357.253         | 268750.9 | 268750.9 | 104.6 %      |             | 16:19:10 |
| 3 | Ag 328.068†        | -529.1   | -16.0    | -0.1154 µg/L | -0.1154 ppb | 16:19:10 |
| 3 | As 188.979†        | 7.5      | 2.5      | 5.1286 µg/L  | 5.1286 ppb  | 16:19:30 |
| 3 | B 249.677†         | 757.3    | 214.8    | 8.5321 µg/L  | 8.5321 ppb  | 16:19:10 |
| 3 | Ba 233.527†        | 121.1    | 169.2    | 3.0827 µg/L  | 3.0827 ppb  | 16:19:30 |
| 3 | Be 313.107†        | -2140.3  | 176.6    | 0.1160 µg/L  | 0.1160 ppb  | 16:19:10 |
| 3 | Cd 226.502†        | -177.4   | 9.7      | 0.1010 µg/L  | 0.1010 ppb  | 16:19:30 |
| 3 | Co 228.616†        | -59.5    | -3.3     | -0.3466 µg/L | -0.3466 ppb | 16:19:30 |
| 3 | Cr 267.716†        | 180.1    | 9.4      | 0.1291 µg/L  | 0.1291 ppb  | 16:19:10 |
| 3 | Cu 324.752†        | 2177.1   | -73.7    | -0.7592 µg/L | -0.7592 ppb | 16:19:10 |
| 3 | Mn 257.610†        | 269.3    | 401.1    | 1.4508 µg/L  | 1.4508 ppb  | 16:19:30 |
| 3 | Mo 202.031†        | -21.6    | 19.6     | 2.4174 µg/L  | 2.4174 ppb  | 16:19:30 |
| 3 | Ni 231.604†        | 17.5     | 9.5      | 0.6280 µg/L  | 0.6280 ppb  | 16:19:30 |
| 3 | P 214.914†         | 24.6     | -4.0     | -8.0674 µg/L | -8.0674 ppb | 16:19:30 |
| 3 | Pb 220.353†        | 39.8     | -0.5     | -0.1423 µg/L | -0.1423 ppb | 16:19:30 |
| 3 | S 181.975 Axial†   | 74.1     | 20.7     | 66.543 µg/L  | 66.543 ppb  | 16:19:30 |
| 3 | Sb 206.836†        | 13.9     | 9.5      | 15.071 µg/L  | 15.071 ppb  | 16:19:30 |
| 3 | Se 196.026†        | 3.2      | -0.9     | -2.04 µg/L   | -2.04 ppb   | 16:19:30 |
| 3 | SiO2†              | 2293.9   | 1455.8   | 416.13 µg/L  | 416.13 ppb  | 16:19:10 |
| 3 | Si 251.611†        | 3248.6   | 2829.1   | 195.91 µg/L  | 195.91 ppb  | 16:19:10 |
| 3 | Sn 189.927†        | -23.4    | 2.1      | 0.9397 µg/L  | 0.9397 ppb  | 16:19:30 |
| 3 | Ti 334.940†        | 472.7    | 550.7    | 2.7714 µg/L  | 2.7714 ppb  | 16:19:10 |
| 3 | Tl 190.801†        | -4.7     | -9.7     | -9.3335 µg/L | -9.3335 ppb | 16:19:30 |
| 3 | U 367.007†         | -228.7   | -84.6    | -46.800 µg/L | -46.800 ppb | 16:19:10 |
| 3 | V 292.402†         | 182.0    | 32.6     | 0.5022 µg/L  | 0.5022 ppb  | 16:19:10 |
| 3 | Zn 213.857†        | 274.3    | 10.2     | 0.2954 µg/L  | 0.2954 ppb  | 16:19:30 |

Mean Data: 409254033|1611348|1|

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. % | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD             |
|--------------------|--------------------------|-------------|----------|----------|--------------------|----------|-----------------|
| Sc                 | 413291.2                 | 102.8       | %        | 0.73     |                    |          | 0.71%           |
| Sc RADIAL          | 4872.9                   | 99.0        | %        | 0.42     |                    |          | 0.43%           |
| Y 371.029          | 327468.2                 | 102.39      | %        | 1.417    |                    |          | 1.38%           |
| Sc 357.253         | 265217.9                 | 103.2       | %        | 1.20     |                    |          | 1.16%           |
| Ag 328.068†        | -6.8                     | -0.0193     | µg/L     | 0.16610  | -0.0193            | ppb      | 0.16610 858.77% |
| Al 396.153Radial†  | 85.6                     | 146.71      | µg/L     | 28.238   | 146.71             | ppb      | 28.238 19.25%   |
| As 188.979†        | 2.9                      | 6.1150      | µg/L     | 1.37284  | 6.1150             | ppb      | 1.37284 22.45%  |
| B 249.677†         | 222.7                    | 8.8463      | µg/L     | 2.85265  | 8.8463             | ppb      | 2.85265 32.25%  |
| Ba 233.527†        | 176.4                    | 3.2151      | µg/L     | 0.18192  | 3.2151             | ppb      | 0.18192 5.66%   |
| Be 313.107†        | 109.3                    | 0.0744      | µg/L     | 0.03977  | 0.0744             | ppb      | 0.03977 53.48%  |
| Ca 317.933Radial†  | 1709.6                   | 1374.3      | µg/L     | 6.17     | 1374.3             | ppb      | 6.17 0.45%      |
| Cd 226.502†        | 2.0                      | 0.0126      | µg/L     | 0.13730  | 0.0126             | ppb      | 0.13730 >999.9% |
| Co 228.616†        | -6.7                     | -0.6917     | µg/L     | 0.43363  | -0.6917            | ppb      | 0.43363 62.69%  |
| Cr 267.716†        | 34.3                     | 0.4747      | µg/L     | 0.29932  | 0.4747             | ppb      | 0.29932 63.05%  |
| Cu 324.752†        | -88.4                    | -0.9007     | µg/L     | 0.85512  | -0.9007            | ppb      | 0.85512 94.94%  |
| Fe 238.204 Radial† | 66.1                     | 155.85      | µg/L     | 9.406    | 155.85             | ppb      | 9.406 6.04%     |
| K 766.490 Radial†  | 106.0                    | 110.49      | µg/L     | 45.732   | 110.49             | ppb      | 45.732 41.39%   |



|                    |        |              |         |             |         |         |
|--------------------|--------|--------------|---------|-------------|---------|---------|
| Mg 279.077 IEC†    | 34.0   | 328.66 µg/L  | 39.982  | 328.66 ppb  | 39.982  | 12.17%  |
| Mn 257.610†        | 410.5  | 1.4853 µg/L  | 0.03445 | 1.4853 ppb  | 0.03445 | 2.32%   |
| Mo 202.031†        | 10.9   | 1.3414 µg/L  | 0.93378 | 1.3414 ppb  | 0.93378 | 69.61%  |
| Na 589.592 Radial† | 7374.0 | 2786.1 µg/L  | 14.25   | 2786.1 ppb  | 14.25   | 0.51%   |
| Ni 231.604†        | 5.3    | 0.3501 µg/L  | 0.32364 | 0.3501 ppb  | 0.32364 | 92.44%  |
| P 214.914†         | -3.1   | -6.1924 µg/L | 7.29625 | -6.1924 ppb | 7.29625 | 117.83% |
| Pb 220.353†        | -0.6   | -0.1666 µg/L | 1.91296 | -0.1666 ppb | 1.91296 | >999.9% |
| S 181.975 Axial†   | 23.3   | 74.806 µg/L  | 8.1628  | 74.806 ppb  | 8.1628  | 10.91%  |
| Sb 206.836†        | 5.6    | 8.8392 µg/L  | 7.33972 | 8.8392 ppb  | 7.33972 | 83.04%  |
| Se 196.026†        | 1.6    | 3.80 µg/L    | 6.499   | 3.80 ppb    | 6.499   | 171.10% |
| SiO2†              | 1471.3 | 420.54 µg/L  | 8.243   | 420.54 ppb  | 8.243   | 1.96%   |
| Si 251.611†        | 2883.6 | 199.68 µg/L  | 3.757   | 199.68 ppb  | 3.757   | 1.88%   |
| Sn 189.927†        | 1.9    | 0.8682 µg/L  | 0.97383 | 0.8682 ppb  | 0.97383 | 112.17% |
| Sr 421.552†        | 687.3  | 7.4040 µg/L  | 0.43939 | 7.4040 ppb  | 0.43939 | 5.93%   |
| Ti 334.940†        | 633.2  | 3.1827 µg/L  | 0.38205 | 3.1827 ppb  | 0.38205 | 12.00%  |
| Tl 190.801†        | -9.3   | -9.0189 µg/L | 1.45413 | -9.0189 ppb | 1.45413 | 16.12%  |
| U 367.007†         | -73.5  | -40.824 µg/L | 15.9928 | -40.824 ppb | 15.9928 | 39.18%  |
| V 292.402†         | 78.5   | 1.2313 µg/L  | 0.63253 | 1.2313 ppb  | 0.63253 | 51.37%  |
| Zn 213.857†        | 12.3   | 0.3672 µg/L  | 0.06227 | 0.3672 ppb  | 0.06227 | 16.96%  |

Sequence No.: 69

Sample ID: 409254035|1611348|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 342

Date Collected: 11/2/2016 16:19:39

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254035|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4877.5        | 4877.5              | 99.1 %             |                    | 16:20:28      |
| 1     | Al 396.153Radial†  | 219.0         | 318.3               | 545.49 µg/L        | 545.49 ppb         | 16:20:08      |
| 1     | Ca 317.933Radial†  | 1959.4        | 1917.3              | 1541.2 µg/L        | 1541.2 ppb         | 16:20:28      |
| 1     | Fe 238.204 Radial† | 260.4         | 226.1               | 532.92 µg/L        | 532.92 ppb         | 16:20:28      |
| 1     | K 766.490 Radial†  | 104.9         | 183.3               | 190.86 µg/L        | 190.86 ppb         | 16:20:08      |
| 1     | Mg 279.077 IEC†    | 14.3          | 28.0                | 271.01 µg/L        | 271.01 ppb         | 16:20:28      |
| 1     | Na 589.592 Radial† | 10888.6       | 10228.9             | 3864.8 µg/L        | 3864.8 ppb         | 16:20:08      |
| 1     | Sr 421.552†        | 769.8         | 619.5               | 6.6483 µg/L        | 6.6483 ppb         | 16:20:08      |
| 1     | Sc                 | 413819.8      | 413819.8            | 102.9 %            |                    | 16:21:16      |
| 1     | Y 371.029          | 327445.4      | 327445.4            | 102.38 %           |                    | 16:21:16      |
| 1     | Sc 357.253         | 262769.3      | 262769.3            | 102.3 %            |                    | 16:21:16      |
| 1     | Ag 328.068†        | -453.6        | 46.2                | 0.5578 µg/L        | 0.5578 ppb         | 16:21:16      |
| 1     | As 188.979†        | 6.4           | 1.5                 | 3.1685 µg/L        | 3.1685 ppb         | 16:21:36      |
| 1     | B 249.677†         | 922.1         | 392.3               | 15.528 µg/L        | 15.528 ppb         | 16:21:16      |
| 1     | Ba 233.527†        | 315.8         | 362.1               | 6.5964 µg/L        | 6.5964 ppb         | 16:21:36      |
| 1     | Be 313.107†        | -2296.4       | -22.6               | -0.0012 µg/L       | -0.0012 ppb        | 16:21:16      |
| 1     | Cd 226.502†        | -174.4        | 8.8                 | 0.0659 µg/L        | 0.0659 ppb         | 16:21:36      |
| 1     | Co 228.616†        | -43.8         | 10.7                | 1.0618 µg/L        | 1.0618 ppb         | 16:21:36      |
| 1     | Cr 267.716†        | 193.6         | 26.5                | 0.3639 µg/L        | 0.3639 ppb         | 16:21:16      |
| 1     | Cu 324.752†        | 2131.8        | -70.6               | -0.6895 µg/L       | -0.6895 ppb        | 16:21:16      |
| 1     | Mn 257.610†        | 1004.8        | 1126.0              | 4.0973 µg/L        | 4.0973 ppb         | 16:21:36      |
| 1     | Mo 202.031†        | -45.4         | -4.1                | -0.4602 µg/L       | -0.4602 ppb        | 16:21:36      |
| 1     | Ni 231.604†        | 19.0          | 11.3                | 0.7380 µg/L        | 0.7380 ppb         | 16:21:36      |
| 1     | P 214.914†         | 34.6          | 6.3                 | 12.136 µg/L        | 12.136 ppb         | 16:21:36      |
| 1     | Pb 220.353†        | 48.8          | 9.2                 | 3.5816 µg/L        | 3.5816 ppb         | 16:21:36      |
| 1     | S 181.975 Axial†   | 74.2          | 22.5                | 72.310 µg/L        | 72.310 ppb         | 16:21:36      |
| 1     | Sb 206.836†        | 9.0           | 5.0                 | 7.8999 µg/L        | 7.8999 ppb         | 16:21:36      |
| 1     | Se 196.026†        | 4.6           | 0.5                 | 1.11 µg/L          | 1.11 ppb           | 16:21:36      |
| 1     | SiO2†              | 3106.2        | 2299.9              | 657.38 µg/L        | 657.38 ppb         | 16:21:16      |
| 1     | Si 251.611†        | 4803.5        | 4419.9              | 306.06 µg/L        | 306.06 ppb         | 16:21:16      |
| 1     | Sn 189.927†        | -18.8         | 6.1                 | 2.7255 µg/L        | 2.7255 ppb         | 16:21:36      |
| 1     | Ti 334.940†        | 1436.7        | 1503.5              | 7.5245 µg/L        | 7.5245 ppb         | 16:21:16      |
| 1     | Tl 190.801†        | 2.7           | -2.5                | -2.4394 µg/L       | -2.4394 ppb        | 16:21:36      |
| 1     | U 367.007†         | -178.2        | -40.3               | -24.991 µg/L       | -24.991 ppb        | 16:21:16      |
| 1     | V 292.402†         | 297.1         | 149.1               | 2.3273 µg/L        | 2.3273 ppb         | 16:21:16      |
| 1     | Zn 213.857†        | 322.9         | 63.7                | 2.0381 µg/L        | 2.0381 ppb         | 16:21:36      |
| 2     | Sc RADIAL          | 4852.0        | 4852.0              | 98.6 %             |                    | 16:20:50      |
| 2     | Al 396.153Radial†  | 198.5         | 298.7               | 511.91 µg/L        | 511.91 ppb         | 16:20:30      |
| 2     | Ca 317.933Radial†  | 1963.8        | 1932.2              | 1553.2 µg/L        | 1553.2 ppb         | 16:20:50      |
| 2     | Fe 238.204 Radial† | 257.7         | 224.7               | 529.67 µg/L        | 529.67 ppb         | 16:20:50      |
| 2     | K 766.490 Radial†  | -23.3         | 53.8                | 55.799 µg/L        | 55.799 ppb         | 16:20:30      |
| 2     | Mg 279.077 IEC†    | 19.7          | 33.5                | 324.10 µg/L        | 324.10 ppb         | 16:20:50      |
| 2     | Na 589.592 Radial† | 10599.1       | 9993.2              | 3775.7 µg/L        | 3775.7 ppb         | 16:20:30      |
| 2     | Sr 421.552†        | 736.5         | 589.8               | 6.3276 µg/L        | 6.3276 ppb         | 16:20:30      |
| 2     | Sc                 | 415105.7      | 415105.7            | 103.2 %            |                    | 16:21:38      |
| 2     | Y 371.029          | 331047.8      | 331047.8            | 103.51 %           |                    | 16:21:38      |
| 2     | Sc 357.253         | 267604.5      | 267604.5            | 104.2 %            |                    | 16:21:38      |
| 2     | Ag 328.068†        | -556.3        | -44.4               | -0.4295 µg/L       | -0.4295 ppb        | 16:21:38      |
| 2     | As 188.979†        | 8.1           | 3.1                 | 6.4307 µg/L        | 6.4307 ppb         | 16:21:58      |
| 2     | B 249.677†         | 971.7         | 423.6               | 16.777 µg/L        | 16.777 ppb         | 16:21:38      |
| 2     | Ba 233.527†        | 307.6         | 348.6               | 6.3521 µg/L        | 6.3521 ppb         | 16:21:58      |
| 2     | Be 313.107†        | -2147.9       | 160.5               | 0.1129 µg/L        | 0.1129 ppb         | 16:21:38      |
| 2     | Cd 226.502†        | -171.3        | 14.8                | 0.1360 µg/L        | 0.1360 ppb         | 16:21:58      |
| 2     | Co 228.616†        | -58.9         | -3.0                | -0.3453 µg/L       | -0.3453 ppb        | 16:21:58      |
| 2     | Cr 267.716†        | 149.5         | -19.2               | -0.2690 µg/L       | -0.2690 ppb        | 16:21:38      |
| 2     | Cu 324.752†        | 2183.3        | -58.9               | -0.5778 µg/L       | -0.5778 ppb        | 16:21:38      |
| 2     | Mn 257.610†        | 1023.5        | 1126.2              | 4.0961 µg/L        | 4.0961 ppb         | 16:21:58      |
| 2     | Mo 202.031†        | -26.4         | 15.0                | 1.8732 µg/L        | 1.8732 ppb         | 16:21:58      |
| 2     | Ni 231.604†        | 7.7           | 0.1                 | -0.0054 µg/L       | -0.0054 ppb        | 16:21:58      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 33.6     | 4.8      | 9.1485 µg/L  | 9.1485 ppb  | 16:21:58 |
| 2 | Pb 220.353†        | 45.8     | 5.4      | 2.1349 µg/L  | 2.1349 ppb  | 16:21:58 |
| 2 | S 181.975 Axial†   | 76.6     | 23.5     | 75.560 µg/L  | 75.560 ppb  | 16:21:58 |
| 2 | Sb 206.836†        | 6.7      | 2.7      | 4.2345 µg/L  | 4.2345 ppb  | 16:21:58 |
| 2 | Se 196.026†        | 2.7      | -1.4     | -3.26 µg/L   | -3.26 ppb   | 16:21:58 |
| 2 | SiO2†              | 3119.4   | 2257.7   | 645.32 µg/L  | 645.32 ppb  | 16:21:38 |
| 2 | Si 251.611†        | 4936.3   | 4462.5   | 309.02 µg/L  | 309.02 ppb  | 16:21:38 |
| 2 | Sn 189.927†        | -25.8    | -0.4     | -0.1286 µg/L | -0.1286 ppb | 16:21:58 |
| 2 | Ti 334.940†        | 1306.2   | 1352.8   | 6.7738 µg/L  | 6.7738 ppb  | 16:21:38 |
| 2 | Tl 190.801†        | -0.8     | -6.0     | -5.7696 µg/L | -5.7696 ppb | 16:21:58 |
| 2 | U 367.007†         | -196.6   | -54.7    | -32.822 µg/L | -32.822 ppb | 16:21:38 |
| 2 | V 292.402†         | 340.4    | 185.4    | 2.9161 µg/L  | 2.9161 ppb  | 16:21:38 |
| 2 | Zn 213.857†        | 329.5    | 64.3     | 2.0606 µg/L  | 2.0606 ppb  | 16:21:58 |
| 3 | Sc RADIAL          | 4872.9   | 4872.9   | 99.0 %       |             | 16:21:12 |
| 3 | Al 396.153Radial†  | 167.8    | 266.8    | 457.27 µg/L  | 457.27 ppb  | 16:20:52 |
| 3 | Ca 317.933Radial†  | 1962.9   | 1922.7   | 1545.6 µg/L  | 1545.6 ppb  | 16:21:12 |
| 3 | Fe 238.204 Radial† | 261.6    | 227.6    | 536.35 µg/L  | 536.35 ppb  | 16:21:12 |
| 3 | K 766.490 Radial†  | 64.2     | 142.3    | 148.03 µg/L  | 148.03 ppb  | 16:20:52 |
| 3 | Mg 279.077 IEC†    | 19.8     | 33.6     | 325.02 µg/L  | 325.02 ppb  | 16:21:12 |
| 3 | Na 589.592 Radial† | 10591.4  | 9939.3   | 3755.4 µg/L  | 3755.4 ppb  | 16:20:52 |
| 3 | Sr 421.552†        | 744.1    | 594.3    | 6.3762 µg/L  | 6.3762 ppb  | 16:20:52 |
| 3 | Sc                 | 417026.4 | 417026.4 | 103.7 %      |             | 16:22:00 |
| 3 | Y 371.029          | 332540.5 | 332540.5 | 103.97 %     |             | 16:22:00 |
| 3 | Sc 357.253         | 268021.6 | 268021.6 | 104.3 %      |             | 16:22:00 |
| 3 | Ag 328.068†        | -491.1   | 19.0     | 0.2865 µg/L  | 0.2865 ppb  | 16:22:00 |
| 3 | As 188.979†        | 8.4      | 3.3      | 6.9504 µg/L  | 6.9504 ppb  | 16:22:20 |
| 3 | B 249.677†         | 912.1    | 365.1    | 14.440 µg/L  | 14.440 ppb  | 16:22:00 |
| 3 | Ba 233.527†        | 306.2    | 346.9    | 6.3206 µg/L  | 6.3206 ppb  | 16:22:20 |
| 3 | Be 313.107†        | -2041.9  | 265.3    | 0.1805 µg/L  | 0.1805 ppb  | 16:22:00 |
| 3 | Cd 226.502†        | -172.2   | 14.2     | 0.1286 µg/L  | 0.1286 ppb  | 16:22:20 |
| 3 | Co 228.616†        | -59.3    | -3.2     | -0.3730 µg/L | -0.3730 ppb | 16:22:20 |
| 3 | Cr 267.716†        | 191.7    | 21.0     | 0.2883 µg/L  | 0.2883 ppb  | 16:22:00 |
| 3 | Cu 324.752†        | 2191.6   | -54.2    | -0.5435 µg/L | -0.5435 ppb | 16:22:00 |
| 3 | Mn 257.610†        | 1030.8   | 1131.7   | 4.1163 µg/L  | 4.1163 ppb  | 16:22:20 |
| 3 | Mo 202.031†        | -40.2    | 1.8      | 0.2600 µg/L  | 0.2600 ppb  | 16:22:20 |
| 3 | Ni 231.604†        | 14.7     | 6.8      | 0.4397 µg/L  | 0.4397 ppb  | 16:22:20 |
| 3 | P 214.914†         | 33.0     | 4.1      | 7.8003 µg/L  | 7.8003 ppb  | 16:22:20 |
| 3 | Pb 220.353†        | 31.1     | -8.7     | -3.2760 µg/L | -3.2760 ppb | 16:22:20 |
| 3 | S 181.975 Axial†   | 80.4     | 27.0     | 86.741 µg/L  | 86.741 ppb  | 16:22:20 |
| 3 | Sb 206.836†        | 7.5      | 3.4      | 5.4271 µg/L  | 5.4271 ppb  | 16:22:20 |
| 3 | Se 196.026†        | 3.7      | -0.4     | -0.960 µg/L  | -0.960 ppb  | 16:22:20 |
| 3 | SiO2†              | 3132.5   | 2265.6   | 647.59 µg/L  | 647.59 ppb  | 16:22:00 |
| 3 | Si 251.611†        | 4913.0   | 4432.8   | 306.96 µg/L  | 306.96 ppb  | 16:22:00 |
| 3 | Sn 189.927†        | -17.8    | 7.3      | 3.2897 µg/L  | 3.2897 ppb  | 16:22:20 |
| 3 | Ti 334.940†        | 1501.3   | 1537.8   | 7.6959 µg/L  | 7.6959 ppb  | 16:22:00 |
| 3 | Tl 190.801†        | -3.6     | -8.7     | -8.3719 µg/L | -8.3719 ppb | 16:22:20 |
| 3 | U 367.007†         | -232.0   | -88.4    | -51.127 µg/L | -51.127 ppb | 16:22:00 |
| 3 | V 292.402†         | 354.3    | 198.3    | 3.1034 µg/L  | 3.1034 ppb  | 16:22:00 |
| 3 | Zn 213.857†        | 328.4    | 62.8     | 2.0049 µg/L  | 2.0049 ppb  | 16:22:20 |

Mean Data: 409254035|1611348|1|

| Analyte            | Mean Corrected Intensity | Conc. Units | Calib. % | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|-------------|----------|----------|--------------------|----------|---------|
| Sc                 | 415317.3                 | 103.3       | %        | 0.40     |                    |          | 0.39%   |
| Sc RADIAL          | 4867.5                   | 98.9        | %        | 0.28     |                    |          | 0.28%   |
| Y 371.029          | 330344.6                 | 103.29      | %        | 0.819    |                    |          | 0.79%   |
| Sc 357.253         | 266131.8                 | 103.6       | %        | 1.14     |                    |          | 1.10%   |
| Ag 328.068†        | 7.0                      | 0.1383      | µg/L     | 0.51006  | 0.1383 ppb         | 0.51006  | 368.92% |
| Al 396.153Radial†  | 294.6                    | 504.89      | µg/L     | 44.528   | 504.89 ppb         | 44.528   | 8.82%   |
| As 188.979†        | 2.6                      | 5.5165      | µg/L     | 2.04999  | 5.5165 ppb         | 2.04999  | 37.16%  |
| B 249.677†         | 393.7                    | 15.582      | µg/L     | 1.1697   | 15.582 ppb         | 1.1697   | 7.51%   |
| Ba 233.527†        | 352.5                    | 6.4230      | µg/L     | 0.15096  | 6.4230 ppb         | 0.15096  | 2.35%   |
| Be 313.107†        | 134.4                    | 0.0974      | µg/L     | 0.09186  | 0.0974 ppb         | 0.09186  | 94.34%  |
| Ca 317.933Radial†  | 1924.1                   | 1546.6      | µg/L     | 6.07     | 1546.6 ppb         | 6.07     | 0.39%   |
| Cd 226.502†        | 12.6                     | 0.1102      | µg/L     | 0.03853  | 0.1102 ppb         | 0.03853  | 34.97%  |
| Co 228.616†        | 1.5                      | 0.1145      | µg/L     | 0.82051  | 0.1145 ppb         | 0.82051  | 716.52% |
| Cr 267.716†        | 9.4                      | 0.1277      | µg/L     | 0.34567  | 0.1277 ppb         | 0.34567  | 270.62% |
| Cu 324.752†        | -61.2                    | -0.6036     | µg/L     | 0.07635  | -0.6036 ppb        | 0.07635  | 12.65%  |
| Fe 238.204 Radial† | 226.1                    | 532.98      | µg/L     | 3.342    | 532.98 ppb         | 3.342    | 0.63%   |
| K 766.490 Radial†  | 126.5                    | 131.56      | µg/L     | 69.019   | 131.56 ppb         | 69.019   | 52.46%  |

|                    |         |              |         |             |         |         |
|--------------------|---------|--------------|---------|-------------|---------|---------|
| Mg 279.077 IEC†    | 31.7    | 306.71 µg/L  | 30.918  | 306.71 ppb  | 30.918  | 10.08%  |
| Mn 257.610†        | 1127.9  | 4.1033 µg/L  | 0.01134 | 4.1033 ppb  | 0.01134 | 0.28%   |
| Mo 202.031†        | 4.2     | 0.5577 µg/L  | 1.19482 | 0.5577 ppb  | 1.19482 | 214.25% |
| Na 589.592 Radial† | 10053.8 | 3798.6 µg/L  | 58.20   | 3798.6 ppb  | 58.20   | 1.53%   |
| Ni 231.604†        | 6.1     | 0.3908 µg/L  | 0.37408 | 0.3908 ppb  | 0.37408 | 95.73%  |
| P 214.914†         | 5.0     | 9.6949 µg/L  | 2.21883 | 9.6949 ppb  | 2.21883 | 22.89%  |
| Pb 220.353†        | 2.0     | 0.8135 µg/L  | 3.61469 | 0.8135 ppb  | 3.61469 | 444.34% |
| S 181.975 Axial†   | 24.3    | 78.204 µg/L  | 7.5700  | 78.204 ppb  | 7.5700  | 9.68%   |
| Sb 206.836†        | 3.7     | 5.8538 µg/L  | 1.86956 | 5.8538 ppb  | 1.86956 | 31.94%  |
| Se 196.026†        | -0.4    | -1.04 µg/L   | 2.187   | -1.04 ppb   | 2.187   | 211.28% |
| SiO2†              | 2274.4  | 650.10 µg/L  | 6.407   | 650.10 ppb  | 6.407   | 0.99%   |
| Si 251.611†        | 4438.4  | 307.35 µg/L  | 1.514   | 307.35 ppb  | 1.514   | 0.49%   |
| Sn 189.927†        | 4.3     | 1.9622 µg/L  | 1.83255 | 1.9622 ppb  | 1.83255 | 93.39%  |
| Sr 421.552†        | 601.2   | 6.4507 µg/L  | 0.17285 | 6.4507 ppb  | 0.17285 | 2.68%   |
| Ti 334.940†        | 1464.7  | 7.3314 µg/L  | 0.49045 | 7.3314 ppb  | 0.49045 | 6.69%   |
| Tl 190.801†        | -5.7    | -5.5270 µg/L | 2.97369 | -5.5270 ppb | 2.97369 | 53.80%  |
| U 367.007†         | -61.1   | -36.313 µg/L | 13.4129 | -36.313 ppb | 13.4129 | 36.94%  |
| V 292.402†         | 177.6   | 2.7823 µg/L  | 0.40499 | 2.7823 ppb  | 0.40499 | 14.56%  |
| Zn 213.857†        | 63.6    | 2.0346 µg/L  | 0.02802 | 2.0346 ppb  | 0.02802 | 1.38%   |

Sequence No.: 70

Sample ID: 409254037|1611348|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 343

Date Collected: 11/2/2016 16:22:29

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254037|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4933.3        | 4933.3              | 100 %              |                    | 16:23:18      |
| 1     | Al 396.153Radial†  | 67.6          | 164.8               | 282.44 µg/L        | 282.44 ppb         | 16:22:58      |
| 1     | Ca 317.933Radial†  | 1619.7        | 1556.2              | 1250.9 µg/L        | 1250.9 ppb         | 16:23:18      |
| 1     | Fe 238.204 Radial† | 213.0         | 175.8               | 414.42 µg/L        | 414.42 ppb         | 16:23:18      |
| 1     | K 766.490 Radial†  | -122.9        | -45.1               | -47.282 µg/L       | -47.282 ppb        | 16:22:58      |
| 1     | Mg 279.077 IEC†    | 6.4           | 19.9                | 192.85 µg/L        | 192.85 ppb         | 16:23:18      |
| 1     | Na 589.592 Radial† | 8874.3        | 8095.7              | 3058.8 µg/L        | 3058.8 ppb         | 16:22:58      |
| 1     | Sr 421.552†        | 570.3         | 411.8               | 4.4137 µg/L        | 4.4137 ppb         | 16:22:58      |
| 1     | Sc                 | 416095.5      | 416095.5            | 103.5 %            |                    | 16:24:06      |
| 1     | Y 371.029          | 332389.5      | 332389.5            | 103.93 %           |                    | 16:24:06      |
| 1     | Sc 357.253         | 265187.8      | 265187.8            | 103.2 %            |                    | 16:24:06      |
| 1     | Ag 328.068†        | -453.8        | 50.1                | 0.5854 µg/L        | 0.5854 ppb         | 16:24:06      |
| 1     | As 188.979†        | 4.8           | -0.0                | -0.0705 µg/L       | -0.0705 ppb        | 16:24:26      |
| 1     | B 249.677†         | 829.9         | 294.8               | 11.664 µg/L        | 11.664 ppb         | 16:24:06      |
| 1     | Ba 233.527†        | 234.9         | 280.9               | 5.1178 µg/L        | 5.1178 ppb         | 16:24:26      |
| 1     | Be 313.107†        | -2192.7       | 98.3                | 0.0723 µg/L        | 0.0723 ppb         | 16:24:06      |
| 1     | Cd 226.502†        | -183.6        | 1.4                 | -0.0106 µg/L       | -0.0106 ppb        | 16:24:26      |
| 1     | Co 228.616†        | -53.1         | 2.2                 | 0.1897 µg/L        | 0.1897 ppb         | 16:24:26      |
| 1     | Cr 267.716†        | 258.0         | 87.2                | 1.2062 µg/L        | 1.2062 ppb         | 16:24:06      |
| 1     | Cu 324.752†        | 2067.6        | -151.9              | -1.5009 µg/L       | -1.5009 ppb        | 16:24:06      |
| 1     | Mn 257.610†        | 948.5         | 1062.5              | 3.8668 µg/L        | 3.8668 ppb         | 16:24:26      |
| 1     | Mo 202.031†        | -46.0         | -4.3                | -0.4923 µg/L       | -0.4923 ppb        | 16:24:26      |
| 1     | Ni 231.604†        | 11.4          | 3.8                 | 0.2399 µg/L        | 0.2399 ppb         | 16:24:26      |
| 1     | P 214.914†         | 30.5          | 2.0                 | 3.7128 µg/L        | 3.7128 ppb         | 16:24:26      |
| 1     | Pb 220.353†        | 43.8          | 3.9                 | 1.5374 µg/L        | 1.5374 ppb         | 16:24:26      |
| 1     | S 181.975 Axial†   | 78.7          | 26.1                | 84.012 µg/L        | 84.012 ppb         | 16:24:26      |
| 1     | Sb 206.836†        | 5.7           | 1.7                 | 2.6210 µg/L        | 2.6210 ppb         | 16:24:26      |
| 1     | Se 196.026†        | 5.7           | 1.5                 | 3.54 µg/L          | 3.54 ppb           | 16:24:26      |
| 1     | SiO2†              | 3223.4        | 2385.7              | 681.92 µg/L        | 681.92 ppb         | 16:24:06      |
| 1     | Si 251.611†        | 4953.8        | 4522.6              | 313.18 µg/L        | 313.18 ppb         | 16:24:06      |
| 1     | Sn 189.927†        | -20.2         | 4.9                 | 2.1859 µg/L        | 2.1859 ppb         | 16:24:26      |
| 1     | Ti 334.940†        | 1131.5        | 1195.0              | 5.9809 µg/L        | 5.9809 ppb         | 16:24:06      |
| 1     | Tl 190.801†        | 1.5           | -3.8                | -3.6550 µg/L       | -3.6550 ppb        | 16:24:26      |
| 1     | U 367.007†         | -163.4        | -24.4               | -15.655 µg/L       | -15.655 ppb        | 16:24:06      |
| 1     | V 292.402†         | 266.9         | 117.3               | 1.8333 µg/L        | 1.8333 ppb         | 16:24:06      |
| 1     | Zn 213.857†        | 257.6         | -2.4                | -0.1535 µg/L       | -0.1535 ppb        | 16:24:26      |
| 2     | Sc RADIAL          | 4951.8        | 4951.8              | 101 %              |                    | 16:23:40      |
| 2     | Al 396.153Radial†  | 158.0         | 254.4               | 435.89 µg/L        | 435.89 ppb         | 16:23:20      |
| 2     | Ca 317.933Radial†  | 1640.4        | 1570.7              | 1262.6 µg/L        | 1262.6 ppb         | 16:23:40      |
| 2     | Fe 238.204 Radial† | 219.3         | 181.4               | 427.41 µg/L        | 427.41 ppb         | 16:23:40      |
| 2     | K 766.490 Radial†  | 4.9           | 82.3                | 85.553 µg/L        | 85.553 ppb         | 16:23:20      |
| 2     | Mg 279.077 IEC†    | 10.1          | 23.6                | 228.75 µg/L        | 228.75 ppb         | 16:23:40      |
| 2     | Na 589.592 Radial† | 8755.3        | 7944.4              | 3001.7 µg/L        | 3001.7 ppb         | 16:23:20      |
| 2     | Sr 421.552†        | 650.6         | 489.4               | 5.2513 µg/L        | 5.2513 ppb         | 16:23:20      |
| 2     | Sc                 | 420674.3      | 420674.3            | 104.6 %            |                    | 16:24:28      |
| 2     | Y 371.029          | 336646.0      | 336646.0            | 105.26 %           |                    | 16:24:28      |
| 2     | Sc 357.253         | 270019.1      | 270019.1            | 105.1 %            |                    | 16:24:28      |
| 2     | Ag 328.068†        | -541.0        | -25.0               | -0.2539 µg/L       | -0.2539 ppb        | 16:24:28      |
| 2     | As 188.979†        | 6.9           | 1.8                 | 3.7781 µg/L        | 3.7781 ppb         | 16:24:48      |
| 2     | B 249.677†         | 810.0         | 261.6               | 10.335 µg/L        | 10.335 ppb         | 16:24:28      |
| 2     | Ba 233.527†        | 229.4         | 271.6               | 4.9476 µg/L        | 4.9476 ppb         | 16:24:48      |
| 2     | Be 313.107†        | -2362.4       | -25.1               | -0.0071 µg/L       | -0.0071 ppb        | 16:24:28      |
| 2     | Cd 226.502†        | -185.1        | 3.1                 | 0.0087 µg/L        | 0.0087 ppb         | 16:24:48      |
| 2     | Co 228.616†        | -60.6         | -4.0                | -0.4443 µg/L       | -0.4443 ppb        | 16:24:48      |
| 2     | Cr 267.716†        | 206.2         | 33.4                | 0.4595 µg/L        | 0.4595 ppb         | 16:24:28      |
| 2     | Cu 324.752†        | 2180.4        | -80.3               | -0.7774 µg/L       | -0.7774 ppb        | 16:24:28      |
| 2     | Mn 257.610†        | 956.0         | 1053.2              | 3.8321 µg/L        | 3.8321 ppb         | 16:24:48      |
| 2     | Mo 202.031†        | -44.0         | -1.6                | -0.1607 µg/L       | -0.1607 ppb        | 16:24:48      |
| 2     | Ni 231.604†        | 16.3          | 8.3                 | 0.5399 µg/L        | 0.5399 ppb         | 16:24:48      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 30.1     | 1.1      | 1.9570 µg/L  | 1.9570 ppb  | 16:24:48 |
| 2 | Pb 220.353†        | 41.7     | 1.2      | 0.4826 µg/L  | 0.4826 ppb  | 16:24:48 |
| 2 | S 181.975 Axial†   | 77.0     | 23.2     | 74.596 µg/L  | 74.596 ppb  | 16:24:48 |
| 2 | Sb 206.836†        | 5.5      | 1.4      | 2.2393 µg/L  | 2.2393 ppb  | 16:24:48 |
| 2 | Se 196.026†        | 8.6      | 4.2      | 9.87 µg/L    | 9.87 ppb    | 16:24:48 |
| 2 | SiO2†              | 3254.7   | 2359.7   | 674.47 µg/L  | 674.47 ppb  | 16:24:28 |
| 2 | Si 251.611†        | 5001.2   | 4481.9   | 310.36 µg/L  | 310.36 ppb  | 16:24:28 |
| 2 | Sn 189.927†        | -13.6    | 11.5     | 5.1048 µg/L  | 5.1048 ppb  | 16:24:48 |
| 2 | Ti 334.940†        | 959.8    | 1012.1   | 5.0693 µg/L  | 5.0693 ppb  | 16:24:28 |
| 2 | Tl 190.801†        | 13.0     | 7.2      | 6.9247 µg/L  | 6.9247 ppb  | 16:24:48 |
| 2 | U 367.007†         | -141.6   | -0.7     | -2.9138 µg/L | -2.9138 ppb | 16:24:28 |
| 2 | V 292.402†         | 213.0    | 61.4     | 0.9469 µg/L  | 0.9469 ppb  | 16:24:28 |
| 2 | Zn 213.857†        | 262.0    | -2.7     | -0.1706 µg/L | -0.1706 ppb | 16:24:48 |
| 3 | Sc RADIAL          | 4951.4   | 4951.4   | 101 %        |             | 16:24:02 |
| 3 | Al 396.153Radial†  | 184.4    | 280.6    | 480.89 µg/L  | 480.89 ppb  | 16:23:42 |
| 3 | Ca 317.933Radial†  | 1621.2   | 1551.7   | 1247.4 µg/L  | 1247.4 ppb  | 16:24:02 |
| 3 | Fe 238.204 Radial† | 213.9    | 175.9    | 414.66 µg/L  | 414.66 ppb  | 16:24:02 |
| 3 | K 766.490 Radial†  | -80.1    | -2.1     | -2.4816 µg/L | -2.4816 ppb | 16:23:42 |
| 3 | Mg 279.077 IEC†    | 6.1      | 19.6     | 189.73 µg/L  | 189.73 ppb  | 16:24:02 |
| 3 | Na 589.592 Radial† | 8702.3   | 7892.4   | 2982.0 µg/L  | 2982.0 ppb  | 16:23:42 |
| 3 | Sr 421.552†        | 555.9    | 395.4    | 4.2364 µg/L  | 4.2364 ppb  | 16:23:42 |
| 3 | Sc                 | 415561.8 | 415561.8 | 103.4 %      |             | 16:24:50 |
| 3 | Y 371.029          | 329170.7 | 329170.7 | 102.92 %     |             | 16:24:50 |
| 3 | Sc 357.253         | 264946.6 | 264946.6 | 103.1 %      |             | 16:24:50 |
| 3 | Ag 328.068†        | -496.0   | 8.8      | 0.1832 µg/L  | 0.1832 ppb  | 16:24:50 |
| 3 | As 188.979†        | 8.0      | 3.0      | 6.3428 µg/L  | 6.3428 ppb  | 16:25:10 |
| 3 | B 249.677†         | 712.7    | 181.9    | 7.1627 µg/L  | 7.1627 ppb  | 16:24:50 |
| 3 | Ba 233.527†        | 221.2    | 267.9    | 4.8802 µg/L  | 4.8802 ppb  | 16:25:10 |
| 3 | Be 313.107†        | -2139.7  | 147.8    | 0.1009 µg/L  | 0.1009 ppb  | 16:24:50 |
| 3 | Cd 226.502†        | -184.0   | 0.8      | -0.0170 µg/L | -0.0170 ppb | 16:25:10 |
| 3 | Co 228.616†        | -53.3    | 1.9      | 0.1612 µg/L  | 0.1612 ppb  | 16:25:10 |
| 3 | Cr 267.716†        | 181.1    | 12.8     | 0.1758 µg/L  | 0.1758 ppb  | 16:24:50 |
| 3 | Cu 324.752†        | 2229.3   | 6.7      | 0.0477 µg/L  | 0.0477 ppb  | 16:24:50 |
| 3 | Mn 257.610†        | 972.7    | 1086.8   | 3.9553 µg/L  | 3.9553 ppb  | 16:25:10 |
| 3 | Mo 202.031†        | -25.4    | 15.7     | 1.9523 µg/L  | 1.9523 ppb  | 16:25:10 |
| 3 | Ni 231.604†        | 10.9     | 3.4      | 0.2137 µg/L  | 0.2137 ppb  | 16:25:10 |
| 3 | P 214.914†         | 23.1     | -5.1     | -10.283 µg/L | -10.283 ppb | 16:25:10 |
| 3 | Pb 220.353†        | 35.4     | -4.2     | -1.5230 µg/L | -1.5230 ppb | 16:25:10 |
| 3 | S 181.975 Axial†   | 78.1     | 25.6     | 82.498 µg/L  | 82.498 ppb  | 16:25:10 |
| 3 | Sb 206.836†        | 3.3      | -0.6     | -0.9659 µg/L | -0.9659 ppb | 16:25:10 |
| 3 | Se 196.026†        | 8.8      | 4.5      | 10.6 µg/L    | 10.6 ppb    | 16:25:10 |
| 3 | SiO2†              | 3139.3   | 2307.0   | 659.42 µg/L  | 659.42 ppb  | 16:24:50 |
| 3 | Si 251.611†        | 4862.5   | 4438.5   | 307.35 µg/L  | 307.35 ppb  | 16:24:50 |
| 3 | Sn 189.927†        | -24.7    | 0.5      | 0.2392 µg/L  | 0.2392 ppb  | 16:25:10 |
| 3 | Ti 334.940†        | 829.3    | 903.0    | 4.5253 µg/L  | 4.5253 ppb  | 16:24:50 |
| 3 | Tl 190.801†        | 1.4      | -3.8     | -3.7044 µg/L | -3.7044 ppb | 16:25:10 |
| 3 | U 367.007†         | -256.3   | -114.5   | -64.596 µg/L | -64.596 ppb | 16:24:50 |
| 3 | V 292.402†         | 275.6    | 125.9    | 1.9608 µg/L  | 1.9608 ppb  | 16:24:50 |
| 3 | Zn 213.857†        | 269.2    | 9.0      | 0.2297 µg/L  | 0.2297 ppb  | 16:25:10 |

Mean Data: 409254037|1611348|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc                 | 417443.9                 | 103.8 %            | 0.70     |                    |          | 0.67%   |
| Sc RADIAL          | 4945.5                   | 101 %              | 0.2      |                    |          | 0.21%   |
| Y 371.029          | 332735.4                 | 104.03 %           | 1.172    |                    |          | 1.13%   |
| Sc 357.253         | 266717.9                 | 103.8 %            | 1.11     |                    |          | 1.07%   |
| Ag 328.068†        | 11.3                     | 0.1715 µg/L        | 0.41979  | 0.1715 ppb         | 0.41979  | 244.72% |
| Al 396.153Radial†  | 233.3                    | 399.74 µg/L        | 104.045  | 399.74 ppb         | 104.045  | 26.03%  |
| As 188.979†        | 1.6                      | 3.3501 µg/L        | 3.22799  | 3.3501 ppb         | 3.22799  | 96.35%  |
| B 249.677†         | 246.1                    | 9.7207 µg/L        | 2.31273  | 9.7207 ppb         | 2.31273  | 23.79%  |
| Ba 233.527†        | 273.5                    | 4.9818 µg/L        | 0.12246  | 4.9818 ppb         | 0.12246  | 2.46%   |
| Be 313.107†        | 73.7                     | 0.0554 µg/L        | 0.05595  | 0.0554 ppb         | 0.05595  | 101.00% |
| Ca 317.933Radial†  | 1559.5                   | 1253.6 µg/L        | 7.96     | 1253.6 ppb         | 7.96     | 0.63%   |
| Cd 226.502†        | 1.8                      | -0.0063 µg/L       | 0.01337  | -0.0063 ppb        | 0.01337  | 212.70% |
| Co 228.616†        | 0.0                      | -0.0311 µg/L       | 0.35807  | -0.0311 ppb        | 0.35807  | >999.9% |
| Cr 267.716†        | 44.4                     | 0.6138 µg/L        | 0.53228  | 0.6138 ppb         | 0.53228  | 86.71%  |
| Cu 324.752†        | -75.2                    | -0.7435 µg/L       | 0.77484  | -0.7435 ppb        | 0.77484  | 104.21% |
| Fe 238.204 Radial† | 177.7                    | 418.83 µg/L        | 7.431    | 418.83 ppb         | 7.431    | 1.77%   |
| K 766.490 Radial†  | 11.7                     | 11.930 µg/L        | 67.5803  | 11.930 ppb         | 67.5803  | 566.48% |

|                    |        |              |         |             |         |         |
|--------------------|--------|--------------|---------|-------------|---------|---------|
| Mg 279.077 IEC†    | 21.1   | 203.77 µg/L  | 21.681  | 203.77 ppb  | 21.681  | 10.64%  |
| Mn 257.610†        | 1067.5 | 3.8847 µg/L  | 0.06353 | 3.8847 ppb  | 0.06353 | 1.64%   |
| Mo 202.031†        | 3.3    | 0.4331 µg/L  | 1.32608 | 0.4331 ppb  | 1.32608 | 306.16% |
| Na 589.592 Radial† | 7977.5 | 3014.2 µg/L  | 39.90   | 3014.2 ppb  | 39.90   | 1.32%   |
| Ni 231.604†        | 5.1    | 0.3312 µg/L  | 0.18126 | 0.3312 ppb  | 0.18126 | 54.73%  |
| P 214.914†         | -0.7   | -1.5377 µg/L | 7.62421 | -1.5377 ppb | 7.62421 | 495.83% |
| Pb 220.353†        | 0.3    | 0.1656 µg/L  | 1.55463 | 0.1656 ppb  | 1.55463 | 938.55% |
| S 181.975 Axial†   | 25.0   | 80.369 µg/L  | 5.0563  | 80.369 ppb  | 5.0563  | 6.29%   |
| Sb 206.836†        | 0.8    | 1.2981 µg/L  | 1.96995 | 1.2981 ppb  | 1.96995 | 151.75% |
| Se 196.026†        | 3.4    | 7.99 µg/L    | 3.866   | 7.99 ppb    | 3.866   | 48.41%  |
| SiO2†              | 2350.8 | 671.94 µg/L  | 11.463  | 671.94 ppb  | 11.463  | 1.71%   |
| Si 251.611†        | 4481.0 | 310.30 µg/L  | 2.913   | 310.30 ppb  | 2.913   | 0.94%   |
| Sn 189.927†        | 5.6    | 2.5100 µg/L  | 2.44890 | 2.5100 ppb  | 2.44890 | 97.57%  |
| Sr 421.552†        | 432.2  | 4.6338 µg/L  | 0.54210 | 4.6338 ppb  | 0.54210 | 11.70%  |
| Ti 334.940†        | 1036.7 | 5.1918 µg/L  | 0.73545 | 5.1918 ppb  | 0.73545 | 14.17%  |
| Tl 190.801†        | -0.1   | -0.1449 µg/L | 6.12252 | -0.1449 ppb | 6.12252 | >999.9% |
| U 367.007†         | -46.5  | -27.721 µg/L | 32.5632 | -27.721 ppb | 32.5632 | 117.47% |
| V 292.402†         | 101.5  | 1.5804 µg/L  | 0.55229 | 1.5804 ppb  | 0.55229 | 34.95%  |
| Zn 213.857†        | 1.3    | -0.0315 µg/L | 0.22636 | -0.0315 ppb | 0.22636 | 719.52% |

Sequence No.: 71

Sample ID: 409254039|1611348|1|

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 344

Date Collected: 11/2/2016 16:25:20

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 409254039|1611348|1|

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4962.4        | 4962.4              | 101 %              |                    | 16:26:09      |
| 1     | Al 396.153Radial†  | 100.0         | 196.6               | 336.87 µg/L        | 336.87 ppb         | 16:25:49      |
| 1     | Ca 317.933Radial†  | 1740.9        | 1666.8              | 1339.9 µg/L        | 1339.9 ppb         | 16:26:09      |
| 1     | Fe 238.204 Radial† | 213.3         | 175.0               | 412.33 µg/L        | 412.33 ppb         | 16:26:09      |
| 1     | K 766.490 Radial†  | 42.6          | 119.7               | 124.58 µg/L        | 124.58 ppb         | 16:25:49      |
| 1     | Mg 279.077 IEC†    | 8.2           | 21.7                | 209.74 µg/L        | 209.74 ppb         | 16:26:09      |
| 1     | Na 589.592 Radial† | 8610.1        | 7781.8              | 2940.2 µg/L        | 2940.2 ppb         | 16:25:49      |
| 1     | Sr 421.552†        | 639.8         | 477.3               | 5.1209 µg/L        | 5.1209 ppb         | 16:25:49      |
| 1     | Sc                 | 417967.6      | 417967.6            | 104.0 %            |                    | 16:26:56      |
| 1     | Y 371.029          | 332456.7      | 332456.7            | 103.95 %           |                    | 16:26:56      |
| 1     | Sc 357.253         | 267665.0      | 267665.0            | 104.2 %            |                    | 16:26:56      |
| 1     | Ag 328.068†        | -498.3        | 11.5                | 0.2041 µg/L        | 0.2041 ppb         | 16:26:56      |
| 1     | As 188.979†        | 3.8           | -1.1                | -2.1845 µg/L       | -2.1845 ppb        | 16:27:16      |
| 1     | B 249.677†         | 759.8         | 220.2               | 8.6879 µg/L        | 8.6879 ppb         | 16:26:56      |
| 1     | Ba 233.527†        | 223.7         | 268.1               | 4.8848 µg/L        | 4.8848 ppb         | 16:27:16      |
| 1     | Be 313.107†        | -2174.1       | 135.8               | 0.0960 µg/L        | 0.0960 ppb         | 16:26:56      |
| 1     | Cd 226.502†        | -189.0        | -2.1                | -0.0501 µg/L       | -0.0501 ppb        | 16:27:16      |
| 1     | Co 228.616†        | -50.5         | 5.1                 | 0.4937 µg/L        | 0.4937 ppb         | 16:27:16      |
| 1     | Cr 267.716†        | 257.1         | 84.0                | 1.1626 µg/L        | 1.1626 ppb         | 16:26:56      |
| 1     | Cu 324.752†        | 2202.4        | -41.0               | -0.4223 µg/L       | -0.4223 ppb        | 16:26:56      |
| 1     | Mn 257.610†        | 1188.9        | 1284.8              | 4.6747 µg/L        | 4.6747 ppb         | 16:27:16      |
| 1     | Mo 202.031†        | -38.9         | 3.0                 | 0.3947 µg/L        | 0.3947 ppb         | 16:27:16      |
| 1     | Ni 231.604†        | 9.7           | 2.1                 | 0.1295 µg/L        | 0.1295 ppb         | 16:27:16      |
| 1     | P 214.914†         | 26.6          | -2.0                | -4.0774 µg/L       | -4.0774 ppb        | 16:27:16      |
| 1     | Pb 220.353†        | 41.5          | 1.3                 | 0.5590 µg/L        | 0.5590 ppb         | 16:27:16      |
| 1     | S 181.975 Axial†   | 76.2          | 23.0                | 74.150 µg/L        | 74.150 ppb         | 16:27:16      |
| 1     | Sb 206.836†        | 2.7           | -1.2                | -1.8910 µg/L       | -1.8910 ppb        | 16:27:16      |
| 1     | Se 196.026†        | 4.1           | -0.1                | -0.205 µg/L        | -0.205 ppb         | 16:27:16      |
| 1     | SiO2†              | 2739.6        | 1892.5              | 540.96 µg/L        | 540.96 ppb         | 16:26:56      |
| 1     | Si 251.611†        | 3921.3        | 3487.3              | 241.48 µg/L        | 241.48 ppb         | 16:26:56      |
| 1     | Sn 189.927†        | -22.4         | 2.9                 | 1.3351 µg/L        | 1.3351 ppb         | 16:27:16      |
| 1     | Ti 334.940†        | 1152.7        | 1205.2              | 6.0336 µg/L        | 6.0336 ppb         | 16:26:56      |
| 1     | Tl 190.801†        | 11.6          | 5.9                 | 5.7367 µg/L        | 5.7367 ppb         | 16:27:16      |
| 1     | U 367.007†         | -241.3        | -97.6               | -55.433 µg/L       | -55.433 ppb        | 16:26:56      |
| 1     | V 292.402†         | 324.6         | 170.2               | 2.6640 µg/L        | 2.6640 ppb         | 16:26:56      |
| 1     | Zn 213.857†        | 331.7         | 66.4                | 2.1535 µg/L        | 2.1535 ppb         | 16:27:16      |
| 2     | Sc RADIAL          | 4948.3        | 4948.3              | 101 %              |                    | 16:26:31      |
| 2     | Al 396.153Radial†  | 75.7          | 172.7               | 295.92 µg/L        | 295.92 ppb         | 16:26:11      |
| 2     | Ca 317.933Radial†  | 1716.3        | 1647.3              | 1324.1 µg/L        | 1324.1 ppb         | 16:26:31      |
| 2     | Fe 238.204 Radial† | 204.5         | 166.8               | 393.01 µg/L        | 393.01 ppb         | 16:26:31      |
| 2     | K 766.490 Radial†  | 32.7          | 110.0               | 114.48 µg/L        | 114.48 ppb         | 16:26:11      |
| 2     | Mg 279.077 IEC†    | 7.5           | 21.0                | 203.60 µg/L        | 203.60 ppb         | 16:26:31      |
| 2     | Na 589.592 Radial† | 8695.2        | 7890.8              | 2981.4 µg/L        | 2981.4 ppb         | 16:26:11      |
| 2     | Sr 421.552†        | 688.3         | 527.4               | 5.6635 µg/L        | 5.6635 ppb         | 16:26:11      |
| 2     | Sc                 | 412476.4      | 412476.4            | 102.6 %            |                    | 16:27:18      |
| 2     | Y 371.029          | 327829.2      | 327829.2            | 102.50 %           |                    | 16:27:18      |
| 2     | Sc 357.253         | 262973.5      | 262973.5            | 102.4 %            |                    | 16:27:18      |
| 2     | Ag 328.068†        | -536.0        | -33.9               | -0.3423 µg/L       | -0.3423 ppb        | 16:27:18      |
| 2     | As 188.979†        | 9.1           | 4.2                 | 8.6977 µg/L        | 8.6977 ppb         | 16:27:38      |
| 2     | B 249.677†         | 748.8         | 222.3               | 8.7794 µg/L        | 8.7794 ppb         | 16:27:18      |
| 2     | Ba 233.527†        | 234.9         | 282.9               | 5.1527 µg/L        | 5.1527 ppb         | 16:27:38      |
| 2     | Be 313.107†        | -2261.3       | 13.4                | 0.0180 µg/L        | 0.0180 ppb         | 16:27:18      |
| 2     | Cd 226.502†        | -169.8        | 13.4                | 0.1280 µg/L        | 0.1280 ppb         | 16:27:38      |
| 2     | Co 228.616†        | -49.5         | 5.3                 | 0.5115 µg/L        | 0.5115 ppb         | 16:27:38      |
| 2     | Cr 267.716†        | 179.3         | 12.4                | 0.1694 µg/L        | 0.1694 ppb         | 16:27:18      |
| 2     | Cu 324.752†        | 2072.2        | -130.5              | -1.2870 µg/L       | -1.2870 ppb        | 16:27:18      |
| 2     | Mn 257.610†        | 1176.1        | 1292.5              | 4.7028 µg/L        | 4.7028 ppb         | 16:27:38      |
| 2     | Mo 202.031†        | -33.2         | 7.8                 | 0.9901 µg/L        | 0.9901 ppb         | 16:27:38      |
| 2     | Ni 231.604†        | 11.9          | 4.4                 | 0.2842 µg/L        | 0.2842 ppb         | 16:27:38      |



|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 37.6     | 9.2      | 18.060 µg/L  | 18.060 ppb  | 16:27:38 |
| 2 | Pb 220.353†        | 38.6     | -0.8     | -0.2678 µg/L | -0.2678 ppb | 16:27:38 |
| 2 | S 181.975 Axial†   | 79.3     | 27.4     | 88.054 µg/L  | 88.054 ppb  | 16:27:38 |
| 2 | Sb 206.836†        | 7.9      | 3.9      | 6.2388 µg/L  | 6.2388 ppb  | 16:27:38 |
| 2 | Se 196.026†        | 2.2      | -1.9     | -4.36 µg/L   | -4.36 ppb   | 16:27:38 |
| 2 | SiO2†              | 2574.9   | 1778.6   | 508.38 µg/L  | 508.38 ppb  | 16:27:18 |
| 2 | Si 251.611†        | 3905.2   | 3538.7   | 245.05 µg/L  | 245.05 ppb  | 16:27:18 |
| 2 | Sn 189.927†        | -24.0    | 1.0      | 0.4644 µg/L  | 0.4644 ppb  | 16:27:38 |
| 2 | Ti 334.940†        | 1020.4   | 1095.7   | 5.4876 µg/L  | 5.4876 ppb  | 16:27:18 |
| 2 | Tl 190.801†        | -0.9     | -6.1     | -5.8888 µg/L | -5.8888 ppb | 16:27:38 |
| 2 | U 367.007†         | -156.1   | -18.5    | -12.376 µg/L | -12.376 ppb | 16:27:18 |
| 2 | V 292.402†         | 196.5    | 50.7     | 0.7809 µg/L  | 0.7809 ppb  | 16:27:18 |
| 2 | Zn 213.857†        | 330.9    | 71.3     | 2.3203 µg/L  | 2.3203 ppb  | 16:27:38 |
| 3 | Sc RADIAL          | 4938.2   | 4938.2   | 100 %        |             | 16:26:53 |
| 3 | Al 396.153Radial†  | 89.8     | 186.8    | 320.17 µg/L  | 320.17 ppb  | 16:26:33 |
| 3 | Ca 317.933Radial†  | 1726.2   | 1660.6   | 1334.9 µg/L  | 1334.9 ppb  | 16:26:53 |
| 3 | Fe 238.204 Radial† | 209.4    | 172.1    | 405.59 µg/L  | 405.59 ppb  | 16:26:53 |
| 3 | K 766.490 Radial†  | -6.9     | 70.6     | 73.365 µg/L  | 73.365 ppb  | 16:26:33 |
| 3 | Mg 279.077 IEC†    | 10.6     | 24.1     | 233.31 µg/L  | 233.31 ppb  | 16:26:53 |
| 3 | Na 589.592 Radial† | 8708.4   | 7921.8   | 2993.1 µg/L  | 2993.1 ppb  | 16:26:33 |
| 3 | Sr 421.552†        | 634.4    | 475.1    | 5.0973 µg/L  | 5.0973 ppb  | 16:26:33 |
| 3 | Sc                 | 415391.8 | 415391.8 | 103.3 %      |             | 16:27:40 |
| 3 | Y 371.029          | 325830.8 | 325830.8 | 101.87 %     |             | 16:27:40 |
| 3 | Sc 357.253         | 265140.0 | 265140.0 | 103.2 %      |             | 16:27:40 |
| 3 | Ag 328.068†        | -525.4   | -19.3    | -0.1847 µg/L | -0.1847 ppb | 16:27:40 |
| 3 | As 188.979†        | 4.1      | -0.7     | -1.4860 µg/L | -1.4860 ppb | 16:28:01 |
| 3 | B 249.677†         | 864.3    | 328.3    | 13.004 µg/L  | 13.004 ppb  | 16:27:40 |
| 3 | Ba 233.527†        | 230.9    | 277.1    | 5.0494 µg/L  | 5.0494 ppb  | 16:28:01 |
| 3 | Be 313.107†        | -2221.5  | 70.0     | 0.0533 µg/L  | 0.0533 ppb  | 16:27:40 |
| 3 | Cd 226.502†        | -180.7   | 4.2      | 0.0225 µg/L  | 0.0225 ppb  | 16:28:01 |
| 3 | Co 228.616†        | -48.2    | 6.9      | 0.6761 µg/L  | 0.6761 ppb  | 16:28:01 |
| 3 | Cr 267.716†        | 264.3    | 93.3     | 1.2917 µg/L  | 1.2917 ppb  | 16:27:40 |
| 3 | Cu 324.752†        | 2014.3   | -203.2   | -2.0087 µg/L | -2.0087 ppb | 16:27:40 |
| 3 | Mn 257.610†        | 1187.9   | 1294.6   | 4.7096 µg/L  | 4.7096 ppb  | 16:28:01 |
| 3 | Mo 202.031†        | -28.4    | 12.8     | 1.5970 µg/L  | 1.5970 ppb  | 16:28:01 |
| 3 | Ni 231.604†        | 14.8     | 7.2      | 0.4654 µg/L  | 0.4654 ppb  | 16:28:01 |
| 3 | P 214.914†         | 34.6     | 6.0      | 11.595 µg/L  | 11.595 ppb  | 16:28:01 |
| 3 | Pb 220.353†        | 35.2     | -4.4     | -1.6755 µg/L | -1.6755 ppb | 16:28:01 |
| 3 | S 181.975 Axial†   | 67.5     | 15.3     | 49.245 µg/L  | 49.245 ppb  | 16:28:01 |
| 3 | Sb 206.836†        | 12.8     | 8.5      | 13.556 µg/L  | 13.556 ppb  | 16:28:01 |
| 3 | Se 196.026†        | 6.0      | 1.8      | 4.24 µg/L    | 4.24 ppb    | 16:28:01 |
| 3 | SiO2†              | 2576.6   | 1759.6   | 502.97 µg/L  | 502.97 ppb  | 16:27:40 |
| 3 | Si 251.611†        | 3815.6   | 3420.7   | 236.88 µg/L  | 236.88 ppb  | 16:27:40 |
| 3 | Sn 189.927†        | -21.9    | 3.2      | 1.4446 µg/L  | 1.4446 ppb  | 16:28:01 |
| 3 | Ti 334.940†        | 997.4    | 1065.2   | 5.3355 µg/L  | 5.3355 ppb  | 16:27:40 |
| 3 | Tl 190.801†        | -1.3     | -6.5     | -6.2399 µg/L | -6.2399 ppb | 16:28:01 |
| 3 | U 367.007†         | -150.1   | -11.4    | -8.5922 µg/L | -8.5922 ppb | 16:27:40 |
| 3 | V 292.402†         | 304.5    | 153.8    | 2.4315 µg/L  | 2.4315 ppb  | 16:27:40 |
| 3 | Zn 213.857†        | 326.6    | 64.5     | 2.0886 µg/L  | 2.0886 ppb  | 16:28:01 |

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Mean Data: 409254039|1611348|1|

| Analyte            | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|--------------------|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc                 | 415278.6                 | 103.3 %            | 0.68     |                    |          | 0.66%   |
| Sc RADIAL          | 4949.6                   | 101 %              | 0.2      |                    |          | 0.25%   |
| Y 371.029          | 328705.6                 | 102.77 %           | 1.063    |                    |          | 1.03%   |
| Sc 357.253         | 265259.5                 | 103.3 %            | 0.91     |                    |          | 0.89%   |
| Ag 328.068†        | -13.9                    | -0.1076 µg/L       | 0.28123  | -0.1076 ppb        | 0.28123  | 261.29% |
| Al 396.153Radial†  | 185.4                    | 317.65 µg/L        | 20.593   | 317.65 ppb         | 20.593   | 6.48%   |
| As 188.979†        | 0.8                      | 1.6757 µg/L        | 6.09122  | 1.6757 ppb         | 6.09122  | 363.50% |
| B 249.677†         | 256.9                    | 10.157 µg/L        | 2.4656   | 10.157 ppb         | 2.4656   | 24.28%  |
| Ba 233.527†        | 276.0                    | 5.0290 µg/L        | 0.13509  | 5.0290 ppb         | 0.13509  | 2.69%   |
| Be 313.107†        | 73.1                     | 0.0558 µg/L        | 0.03908  | 0.0558 ppb         | 0.03908  | 70.08%  |
| Ca 317.933Radial†  | 1658.2                   | 1333.0 µg/L        | 8.04     | 1333.0 ppb         | 8.04     | 0.60%   |
| Cd 226.502†        | 5.2                      | 0.0335 µg/L        | 0.08958  | 0.0335 ppb         | 0.08958  | 267.68% |
| Co 228.616†        | 5.8                      | 0.5604 µg/L        | 0.10056  | 0.5604 ppb         | 0.10056  | 17.94%  |
| Cr 267.716†        | 63.2                     | 0.8746 µg/L        | 0.61409  | 0.8746 ppb         | 0.61409  | 70.21%  |
| Cu 324.752†        | -124.9                   | -1.2393 µg/L       | 0.79428  | -1.2393 ppb        | 0.79428  | 64.09%  |
| Fe 238.204 Radial† | 171.3                    | 403.64 µg/L        | 9.805    | 403.64 ppb         | 9.805    | 2.43%   |
| K 766.490 Radial†  | 100.1                    | 104.14 µg/L        | 27.127   | 104.14 ppb         | 27.127   | 26.05%  |

|                    |        |              |          |             |          |         |
|--------------------|--------|--------------|----------|-------------|----------|---------|
| Mg 279.077 IEC†    | 22.3   | 215.55 µg/L  | 15.680   | 215.55 ppb  | 15.680   | 7.27%   |
| Mn 257.610†        | 1290.6 | 4.6957 µg/L  | 0.01852  | 4.6957 ppb  | 0.01852  | 0.39%   |
| Mo 202.031†        | 7.9    | 0.9939 µg/L  | 0.60117  | 0.9939 ppb  | 0.60117  | 60.49%  |
| Na 589.592 Radial† | 7864.8 | 2971.6 µg/L  | 27.77    | 2971.6 ppb  | 27.77    | 0.93%   |
| Ni 231.604†        | 4.6    | 0.2930 µg/L  | 0.16813  | 0.2930 ppb  | 0.16813  | 57.38%  |
| P 214.914†         | 4.4    | 8.5260 µg/L  | 11.38351 | 8.5260 ppb  | 11.38351 | 133.52% |
| Pb 220.353†        | -1.3   | -0.4615 µg/L | 1.12977  | -0.4615 ppb | 1.12977  | 244.82% |
| S 181.975 Axial†   | 21.9   | 70.483 µg/L  | 19.6626  | 70.483 ppb  | 19.6626  | 27.90%  |
| Sb 206.836†        | 3.8    | 5.9681 µg/L  | 7.72726  | 5.9681 ppb  | 7.72726  | 129.48% |
| Se 196.026†        | -0.0   | -0.106 µg/L  | 4.3008   | -0.106 ppb  | 4.3008   | >999.9% |
| SiO2†              | 1810.3 | 517.44 µg/L  | 20.547   | 517.44 ppb  | 20.547   | 3.97%   |
| Si 251.611†        | 3482.2 | 241.14 µg/L  | 4.095    | 241.14 ppb  | 4.095    | 1.70%   |
| Sn 189.927†        | 2.4    | 1.0814 µg/L  | 0.53708  | 1.0814 ppb  | 0.53708  | 49.67%  |
| Sr 421.552†        | 493.3  | 5.2939 µg/L  | 0.32032  | 5.2939 ppb  | 0.32032  | 6.05%   |
| Ti 334.940†        | 1122.1 | 5.6189 µg/L  | 0.36714  | 5.6189 ppb  | 0.36714  | 6.53%   |
| Tl 190.801†        | -2.2   | -2.1307 µg/L | 6.81558  | -2.1307 ppb | 6.81558  | 319.88% |
| U 367.007†         | -42.5  | -25.467 µg/L | 26.0201  | -25.467 ppb | 26.0201  | 102.17% |
| V 292.402†         | 124.9  | 1.9588 µg/L  | 1.02673  | 1.9588 ppb  | 1.02673  | 52.42%  |
| Zn 213.857†        | 67.4   | 2.1875 µg/L  | 0.11956  | 2.1875 ppb  | 0.11956  | 5.47%   |

Sequence No.: 72

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 11/2/2016 16:28:10

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4962.8        | 4962.8              | 101 %              |                    | 16:29:00      |
| 1     | Al 396.153Radial†  | 2797.9        | 2871.3              | 4920.4 µg/L        | 4920.4 ppb         | 16:29:00      |
| 1     | Ca 317.933Radial†  | 6346.6        | 6233.0              | 5010.4 µg/L        | 5010.4 ppb         | 16:29:00      |
| 1     | Fe 238.204 Radial† | 2170.8        | 2115.7              | 4986.3 µg/L        | 4986.3 ppb         | 16:29:00      |
| 1     | K 766.490 Radial†  | 4667.2        | 4704.7              | 4903.4 µg/L        | 4903.4 ppb         | 16:28:40      |
| 1     | Mg 279.077 IEC†    | 506.5         | 515.7               | 4989.3 µg/L        | 4989.3 ppb         | 16:29:00      |
| 1     | Na 589.592 Radial† | 26275.5       | 25295.5             | 9557.4 µg/L        | 9557.4 ppb         | 16:28:40      |
| 1     | Sr 421.552†        | 44607.8       | 44069.1             | 475.86 µg/L        | 475.86 ppb         | 16:28:40      |
| 1     | Sc                 | 425212.9      | 425212.9            | 105.8 %            |                    | 16:29:48      |
| 1     | Y 371.029          | 332355.8      | 332355.8            | 103.91 %           |                    | 16:29:48      |
| 1     | Sc 357.253         | 268820.4      | 268820.4            | 104.6 %            |                    | 16:29:48      |
| 1     | Ag 328.068†        | 43787.3       | 42333.3             | 465.36 µg/L        | 465.36 ppb         | 16:29:48      |
| 1     | As 188.979†        | 230.0         | 215.1               | 451.25 µg/L        | 451.25 ppb         | 16:30:08      |
| 1     | B 249.677†         | 12917.5       | 11835.0             | 470.89 µg/L        | 470.89 ppb         | 16:29:48      |
| 1     | Ba 233.527†        | 27290.8       | 26132.8             | 476.83 µg/L        | 476.83 ppb         | 16:29:48      |
| 1     | Be 313.107†        | 783104.1      | 750565.3            | 473.71 µg/L        | 473.71 ppb         | 16:29:48      |
| 1     | Cd 226.502†        | 43041.0       | 41309.7             | 470.81 µg/L        | 470.81 ppb         | 16:29:48      |
| 1     | Co 228.616†        | 4773.2        | 4614.9              | 473.22 µg/L        | 473.22 ppb         | 16:30:08      |
| 1     | Cr 267.716†        | 35823.4       | 34070.5             | 472.78 µg/L        | 472.78 ppb         | 16:29:48      |
| 1     | Cu 324.752†        | 52270.4       | 47795.4             | 477.68 µg/L        | 477.68 ppb         | 16:29:48      |
| 1     | Mn 257.610†        | 138145.1      | 132156.7            | 480.71 µg/L        | 480.71 ppb         | 16:29:48      |
| 1     | Mo 202.031†        | 3903.0        | 3770.0              | 462.16 µg/L        | 462.16 ppb         | 16:30:08      |
| 1     | Ni 231.604†        | 7176.2        | 6850.4              | 456.61 µg/L        | 456.61 ppb         | 16:30:08      |
| 1     | P 214.914†         | 1257.0        | 1173.7              | 2312.6 µg/L        | 2312.6 ppb         | 16:30:08      |
| 1     | Pb 220.353†        | 1304.0        | 1207.6              | 462.84 µg/L        | 462.84 ppb         | 16:30:08      |
| 1     | S 181.975 Axial†   | 343.9         | 278.6               | 898.35 µg/L        | 898.35 ppb         | 16:30:08      |
| 1     | Sb 206.836†        | 315.2         | 297.4               | 471.14 µg/L        | 471.14 ppb         | 16:30:08      |
| 1     | Se 196.026†        | 211.4         | 198.0               | 462 µg/L           | 462 ppb            | 16:30:08      |
| 1     | SiO2†              | 19412.0       | 17813.6             | 5096.3 µg/L        | 5096.3 ppb         | 16:29:48      |
| 1     | Si 251.611†        | 36267.8       | 34381.8             | 2380.8 µg/L        | 2380.8 ppb         | 16:29:48      |
| 1     | Sn 189.927†        | 1032.2        | 1010.8              | 449.39 µg/L        | 449.39 ppb         | 16:30:08      |
| 1     | Ti 334.940†        | 98413.0       | 94143.5             | 469.27 µg/L        | 469.27 ppb         | 16:29:48      |
| 1     | Tl 190.801†        | 503.0         | 475.5               | 462.52 µg/L        | 462.52 ppb         | 16:30:08      |
| 1     | U 367.007†         | 842.8         | 939.4               | 480.77 µg/L        | 480.77 ppb         | 16:29:48      |
| 1     | V 292.402†         | 31064.8       | 29544.6             | 474.69 µg/L        | 474.69 ppb         | 16:29:48      |
| 1     | Zn 213.857†        | 14336.9       | 13448.6             | 446.92 µg/L        | 446.92 ppb         | 16:30:08      |
| 2     | Sc RADIAL          | 4924.6        | 4924.6              | 100 %              |                    | 16:29:22      |
| 2     | Al 396.153Radial†  | 2806.7        | 2901.7              | 4972.4 µg/L        | 4972.4 ppb         | 16:29:22      |
| 2     | Ca 317.933Radial†  | 6308.0        | 6243.2              | 5018.6 µg/L        | 5018.6 ppb         | 16:29:22      |
| 2     | Fe 238.204 Radial† | 2169.2        | 2130.8              | 5021.8 µg/L        | 5021.8 ppb         | 16:29:22      |
| 2     | K 766.490 Radial†  | 4414.3        | 4488.0              | 4677.3 µg/L        | 4677.3 ppb         | 16:29:02      |
| 2     | Mg 279.077 IEC†    | 502.8         | 515.9               | 4991.4 µg/L        | 4991.4 ppb         | 16:29:22      |
| 2     | Na 589.592 Radial† | 26018.3       | 25240.6             | 9536.7 µg/L        | 9536.7 ppb         | 16:29:02      |
| 2     | Sr 421.552†        | 44415.9       | 44220.5             | 477.50 µg/L        | 477.50 ppb         | 16:29:02      |
| 2     | Sc                 | 419741.1      | 419741.1            | 104.4 %            |                    | 16:30:11      |
| 2     | Y 371.029          | 329249.4      | 329249.4            | 102.94 %           |                    | 16:30:11      |
| 2     | Sc 357.253         | 266506.5      | 266506.5            | 103.7 %            |                    | 16:30:11      |
| 2     | Ag 328.068†        | 43044.8       | 41981.0             | 461.57 µg/L        | 461.57 ppb         | 16:30:11      |
| 2     | As 188.979†        | 232.1         | 219.0               | 459.39 µg/L        | 459.39 ppb         | 16:30:31      |
| 2     | B 249.677†         | 12547.8       | 11585.8             | 460.94 µg/L        | 460.94 ppb         | 16:30:11      |
| 2     | Ba 233.527†        | 26920.8       | 26002.6             | 474.46 µg/L        | 474.46 ppb         | 16:30:11      |
| 2     | Be 313.107†        | 771764.0      | 746131.8            | 470.91 µg/L        | 470.91 ppb         | 16:30:11      |
| 2     | Cd 226.502†        | 42172.6       | 40829.8             | 465.32 µg/L        | 465.32 ppb         | 16:30:11      |
| 2     | Co 228.616†        | 4792.7        | 4673.3              | 479.20 µg/L        | 479.20 ppb         | 16:30:31      |
| 2     | Cr 267.716†        | 35099.7       | 33670.1             | 467.22 µg/L        | 467.22 ppb         | 16:30:11      |
| 2     | Cu 324.752†        | 51274.0       | 47268.6             | 472.37 µg/L        | 472.37 ppb         | 16:30:11      |
| 2     | Mn 257.610†        | 136417.6      | 131637.7            | 478.82 µg/L        | 478.82 ppb         | 16:30:11      |
| 2     | Mo 202.031†        | 3943.8        | 3841.8              | 470.95 µg/L        | 470.95 ppb         | 16:30:31      |
| 2     | Ni 231.604†        | 7270.5        | 7000.8              | 466.64 µg/L        | 466.64 ppb         | 16:30:31      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 1270.3   | 1196.9   | 2358.4 µg/L | 2358.4 ppb | 16:30:31 |
| 2 | Pb 220.353†        | 1334.4   | 1247.8   | 478.30 µg/L | 478.30 ppb | 16:30:31 |
| 2 | S 181.975 Axial†   | 348.4    | 285.7    | 921.33 µg/L | 921.33 ppb | 16:30:31 |
| 2 | Sb 206.836†        | 311.6    | 296.5    | 469.87 µg/L | 469.87 ppb | 16:30:31 |
| 2 | Se 196.026†        | 217.4    | 205.6    | 480 µg/L    | 480 ppb    | 16:30:31 |
| 2 | SiO2†              | 19128.6  | 17701.4  | 5064.2 µg/L | 5064.2 ppb | 16:30:11 |
| 2 | Si 251.611†        | 35778.4  | 34211.0  | 2369.0 µg/L | 2369.0 ppb | 16:30:11 |
| 2 | Sn 189.927†        | 1053.9   | 1040.3   | 462.45 µg/L | 462.45 ppb | 16:30:31 |
| 2 | Ti 334.940†        | 97165.0  | 93757.0  | 467.34 µg/L | 467.34 ppb | 16:30:11 |
| 2 | Tl 190.801†        | 526.8    | 502.6    | 488.70 µg/L | 488.70 ppb | 16:30:31 |
| 2 | U 367.007†         | 684.0    | 793.3    | 401.25 µg/L | 401.25 ppb | 16:30:11 |
| 2 | V 292.402†         | 30486.9  | 29245.3  | 469.92 µg/L | 469.92 ppb | 16:30:11 |
| 2 | Zn 213.857†        | 14530.5  | 13754.1  | 457.10 µg/L | 457.10 ppb | 16:30:31 |
| 3 | Sc RADIAL          | 4938.4   | 4938.4   | 100 %       |            | 16:29:44 |
| 3 | Al 396.153Radial†  | 2803.0   | 2890.2   | 4952.7 µg/L | 4952.7 ppb | 16:29:44 |
| 3 | Ca 317.933Radial†  | 6271.4   | 6189.1   | 4975.1 µg/L | 4975.1 ppb | 16:29:44 |
| 3 | Fe 238.204 Radial† | 2178.2   | 2133.6   | 5028.5 µg/L | 5028.5 ppb | 16:29:44 |
| 3 | K 766.490 Radial†  | 4347.1   | 4408.7   | 4594.6 µg/L | 4594.6 ppb | 16:29:24 |
| 3 | Mg 279.077 IEC†    | 502.8    | 514.5    | 4977.2 µg/L | 4977.2 ppb | 16:29:44 |
| 3 | Na 589.592 Radial† | 26537.7  | 25685.6  | 9704.8 µg/L | 9704.8 ppb | 16:29:24 |
| 3 | Sr 421.552†        | 44988.3  | 44666.8  | 482.32 µg/L | 482.32 ppb | 16:29:24 |
| 3 | Sc                 | 424053.2 | 424053.2 | 105.5 %     |            | 16:30:33 |
| 3 | Y 371.029          | 332331.4 | 332331.4 | 103.91 %    |            | 16:30:33 |
| 3 | Sc 357.253         | 267960.2 | 267960.2 | 104.3 %     |            | 16:30:33 |
| 3 | Ag 328.068†        | 43808.7  | 42488.2  | 467.13 µg/L | 467.13 ppb | 16:30:33 |
| 3 | As 188.979†        | 228.9    | 214.8    | 450.59 µg/L | 450.59 ppb | 16:30:53 |
| 3 | B 249.677†         | 12693.5  | 11659.9  | 463.90 µg/L | 463.90 ppb | 16:30:33 |
| 3 | Ba 233.527†        | 26994.0  | 25932.0  | 473.18 µg/L | 473.18 ppb | 16:30:33 |
| 3 | Be 313.107†        | 780570.9 | 750538.9 | 473.69 µg/L | 473.69 ppb | 16:30:33 |
| 3 | Cd 226.502†        | 42632.3  | 41049.9  | 467.84 µg/L | 467.84 ppb | 16:30:33 |
| 3 | Co 228.616†        | 4780.1   | 4636.2   | 475.39 µg/L | 475.39 ppb | 16:30:53 |
| 3 | Cr 267.716†        | 35681.0  | 34043.9  | 472.41 µg/L | 472.41 ppb | 16:30:33 |
| 3 | Cu 324.752†        | 51829.5  | 47533.1  | 475.02 µg/L | 475.02 ppb | 16:30:33 |
| 3 | Mn 257.610†        | 136797.0 | 131288.1 | 477.55 µg/L | 477.55 ppb | 16:30:33 |
| 3 | Mo 202.031†        | 3888.4   | 3768.0   | 461.92 µg/L | 461.92 ppb | 16:30:53 |
| 3 | Ni 231.604†        | 7141.3   | 6839.0   | 455.85 µg/L | 455.85 ppb | 16:30:53 |
| 3 | P 214.914†         | 1254.6   | 1175.2   | 2315.6 µg/L | 2315.6 ppb | 16:30:53 |
| 3 | Pb 220.353†        | 1293.5   | 1201.5   | 460.57 µg/L | 460.57 ppb | 16:30:53 |
| 3 | S 181.975 Axial†   | 337.7    | 273.6    | 882.46 µg/L | 882.46 ppb | 16:30:53 |
| 3 | Sb 206.836†        | 306.2    | 289.8    | 459.09 µg/L | 459.09 ppb | 16:30:53 |
| 3 | Se 196.026†        | 206.8    | 194.2    | 453 µg/L    | 453 ppb    | 16:30:53 |
| 3 | SiO2†              | 19249.2  | 17717.0  | 5068.7 µg/L | 5068.7 ppb | 16:30:33 |
| 3 | Si 251.611†        | 35981.1  | 34218.2  | 2369.5 µg/L | 2369.5 ppb | 16:30:33 |
| 3 | Sn 189.927†        | 1030.2   | 1012.0   | 449.91 µg/L | 449.91 ppb | 16:30:53 |
| 3 | Ti 334.940†        | 97773.1  | 93831.9  | 467.71 µg/L | 467.71 ppb | 16:30:33 |
| 3 | Tl 190.801†        | 512.7    | 486.3    | 472.95 µg/L | 472.95 ppb | 16:30:53 |
| 3 | U 367.007†         | 721.0    | 825.2    | 418.50 µg/L | 418.50 ppb | 16:30:33 |
| 3 | V 292.402†         | 31434.3  | 29994.1  | 481.83 µg/L | 481.83 ppb | 16:30:33 |
| 3 | Zn 213.857†        | 14271.5  | 13429.8  | 446.29 µg/L | 446.29 ppb | 16:30:53 |

## Mean Data: CCV

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD   |
|---|--------------------------|--------------------|----------|--------------------|----------|-------|
| Sc  | 423002.4                 | 105.2 %            | 0.72     |                    |          | 0.68% |
| Sc RADIAL   | 4941.9                   | 100 %              | 0.4      |                    |          | 0.39% |
| Y 371.029   | 331312.2                 | 103.59 %           | 0.559    |                    |          | 0.54% |
| Sc 357.253  | 267762.4                 | 104.2 %            | 0.46     |                    |          | 0.44% |
| Ag 328.068†   | 42267.5                  | 464.69 µg/L        | 2.843    | 464.69 ppb         | 2.843    | 0.61% |
| QC value within limits for Ag 328.068 Recovery = 92.94%       |                          |                    |          |                    |          |       |
| Al 396.153Radial†   | 2887.7                   | 4948.5 µg/L        | 26.28    | 4948.5 ppb         | 26.28    | 0.53% |
| QC value within limits for Al 396.153Radial Recovery = 98.97% |                          |                    |          |                    |          |       |
| As 188.979†   | 216.3                    | 453.74 µg/L        | 4.899    | 453.74 ppb         | 4.899    | 1.08% |
| QC value within limits for As 188.979 Recovery = 90.75%       |                          |                    |          |                    |          |       |
| B 249.677†  | 11693.6                  | 465.24 µg/L        | 5.109    | 465.24 ppb         | 5.109    | 1.10% |
| QC value within limits for B 249.677 Recovery = 93.05%        |                          |                    |          |                    |          |       |
| Ba 233.527†   | 26022.5                  | 474.82 µg/L        | 1.855    | 474.82 ppb         | 1.855    | 0.39% |
| QC value within limits for Ba 233.527 Recovery = 94.96%       |                          |                    |          |                    |          |       |
| Be 313.107†   | 749078.7                 | 472.77 µg/L        | 1.609    | 472.77 ppb         | 1.609    | 0.34% |
| QC value within limits for Be 313.107 Recovery = 94.55%       |                          |                    |          |                    |          |       |
| Ca 317.933Radial†   | 6221.8                   | 5001.4 µg/L        | 23.10    | 5001.4 ppb         | 23.10    | 0.46% |

|  |          |             |        |            |        |       |  |
|--|----------|-------------|--------|------------|--------|-------|--|
| QC value within limits for Ca 317.933Radial Recovery = 100.03%     |          |             |        |            |        |       |  |
| Cd 226.502†  | 41063.1  | 467.99 µg/L | 2.746  | 467.99 ppb | 2.746  | 0.59% |  |
| QC value within limits for Cd 226.502 Recovery = 93.60%            |          |             |        |            |        |       |  |
| Co 228.616†  | 4641.5   | 475.94 µg/L | 3.027  | 475.94 ppb | 3.027  | 0.64% |  |
| QC value within limits for Co 228.616 Recovery = 95.19%            |          |             |        |            |        |       |  |
| Cr 267.716†  | 33928.2  | 470.80 µg/L | 3.108  | 470.80 ppb | 3.108  | 0.66% |  |
| QC value within limits for Cr 267.716 Recovery = 94.16%            |          |             |        |            |        |       |  |
| Cu 324.752†  | 47532.4  | 475.02 µg/L | 2.655  | 475.02 ppb | 2.655  | 0.56% |  |
| QC value within limits for Cu 324.752 Recovery = 95.00%            |          |             |        |            |        |       |  |
| Fe 238.204 Radial†   | 2126.7   | 5012.2 µg/L | 22.69  | 5012.2 ppb | 22.69  | 0.45% |  |
| QC value within limits for Fe 238.204 Radial Recovery = 100.24%    |          |             |        |            |        |       |  |
| K 766.490 Radial†  | 4533.8   | 4725.1 µg/L | 159.84 | 4725.1 ppb | 159.84 | 3.38% |  |
| QC value within limits for K 766.490 Radial Recovery = 94.50%      |          |             |        |            |        |       |  |
| Mg 279.077 IEC†  | 515.4    | 4986.0 µg/L | 7.64   | 4986.0 ppb | 7.64   | 0.15% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 99.72%        |          |             |        |            |        |       |  |
| Mn 257.610†  | 131694.1 | 479.03 µg/L | 1.589  | 479.03 ppb | 1.589  | 0.33% |  |
| QC value within limits for Mn 257.610 Recovery = 95.81%            |          |             |        |            |        |       |  |
| Mo 202.031†  | 3793.3   | 465.01 µg/L | 5.146  | 465.01 ppb | 5.146  | 1.11% |  |
| QC value within limits for Mo 202.031 Recovery = 93.00%            |          |             |        |            |        |       |  |
| Na 589.592 Radial†   | 25407.2  | 9599.6 µg/L | 91.66  | 9599.6 ppb | 91.66  | 0.95% |  |
| QC value within limits for Na 589.592 Radial Recovery = 96.00%     |          |             |        |            |        |       |  |
| Ni 231.604†  | 6896.8   | 459.70 µg/L | 6.022  | 459.70 ppb | 6.022  | 1.31% |  |
| QC value within limits for Ni 231.604 Recovery = 91.94%            |          |             |        |            |        |       |  |
| P 214.914†   | 1181.9   | 2328.9 µg/L | 25.66  | 2328.9 ppb | 25.66  | 1.10% |  |
| QC value within limits for P 214.914 Recovery = 93.15%             |          |             |        |            |        |       |  |
| Pb 220.353†  | 1219.0   | 467.23 µg/L | 9.649  | 467.23 ppb | 9.649  | 2.07% |  |
| QC value within limits for Pb 220.353 Recovery = 93.45%            |          |             |        |            |        |       |  |
| S 181.975 Axial†   | 279.3    | 900.71 µg/L | 19.543 | 900.71 ppb | 19.543 | 2.17% |  |
| QC value within limits for S 181.975 Axial Recovery = 90.07%       |          |             |        |            |        |       |  |
| Sb 206.836†  | 294.5    | 466.70 µg/L | 6.620  | 466.70 ppb | 6.620  | 1.42% |  |
| QC value within limits for Sb 206.836 Recovery = 93.34%            |          |             |        |            |        |       |  |
| Se 196.026†  | 199.3    | 465 µg/L    | 13.5   | 465 ppb    | 13.5   | 2.91% |  |
| QC value within limits for Se 196.026 Recovery = 93.03%            |          |             |        |            |        |       |  |
| SiO2†  | 17744.0  | 5076.4 µg/L | 17.39  | 5076.4 ppb | 17.39  | 0.34% |  |
| QC value within limits for SiO2 Recovery = 94.93%                  |          |             |        |            |        |       |  |
| Si 251.611†  | 34270.3  | 2373.1 µg/L | 6.69   | 2373.1 ppb | 6.69   | 0.28% |  |
| QC value within limits for Si 251.611 Recovery = 94.93%            |          |             |        |            |        |       |  |
| Sn 189.927†  | 1021.0   | 453.92 µg/L | 7.394  | 453.92 ppb | 7.394  | 1.63% |  |
| QC value within limits for Sn 189.927 Recovery = 90.78%            |          |             |        |            |        |       |  |
| Sr 421.552†  | 44318.8  | 478.56 µg/L | 3.357  | 478.56 ppb | 3.357  | 0.70% |  |
| QC value within limits for Sr 421.552 Recovery = 95.71%            |          |             |        |            |        |       |  |
| Ti 334.940†  | 93910.8  | 468.11 µg/L | 1.021  | 468.11 ppb | 1.021  | 0.22% |  |
| QC value within limits for Ti 334.940 Recovery = 93.62%            |          |             |        |            |        |       |  |
| Tl 190.801†  | 488.1    | 474.72 µg/L | 13.177 | 474.72 ppb | 13.177 | 2.78% |  |
| QC value within limits for Tl 190.801 Recovery = 94.94%            |          |             |        |            |        |       |  |
| U 367.007†   | 852.6    | 433.50 µg/L | 41.829 | 433.50 ppb | 41.829 | 9.65% |  |
| QC value less than the lower limit for U 367.007 Recovery = 86.70% |          |             |        |            |        |       |  |
| V 292.402†   | 29594.7  | 475.48 µg/L | 5.996  | 475.48 ppb | 5.996  | 1.26% |  |
| QC value within limits for V 292.402 Recovery = 95.10%             |          |             |        |            |        |       |  |
| Zn 213.857†  | 13544.2  | 450.10 µg/L | 6.069  | 450.10 ppb | 6.069  | 1.35% |  |
| QC value within limits for Zn 213.857 Recovery = 90.02%            |          |             |        |            |        |       |  |
| QC Failed. Continue with analysis.                                 |          |             |        |            |        |       |  |

Sequence No.: 73

Sample ID: PQL

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 110

Date Collected: 11/2/2016 16:31:02

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: PQL

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 4878.6        | 4878.6              | 99.2 %             |                    | 16:31:53      |
| 1     | Al 396.153Radial†  | 6.9           | 104.4               | 178.83 µg/L        | 178.83 ppb         | 16:31:33      |
| 1     | Ca 317.933Radial†  | 336.2         | 279.8               | 224.90 µg/L        | 224.90 ppb         | 16:31:53      |
| 1     | Fe 238.204 Radial† | 105.1         | 69.4                | 163.55 µg/L        | 163.55 ppb         | 16:31:53      |
| 1     | K 766.490 Radial†  | 25.3          | 103.0               | 107.31 µg/L        | 107.31 ppb         | 16:31:33      |
| 1     | Mg 279.077 IEC†    | 18.9          | 32.6                | 315.30 µg/L        | 315.30 ppb         | 16:31:53      |
| 1     | Na 589.592 Radial† | 1454.8        | 712.1               | 269.04 µg/L        | 269.04 ppb         | 16:31:33      |
| 1     | Sr 421.552†        | 661.3         | 509.9               | 5.4983 µg/L        | 5.4983 ppb         | 16:31:33      |
| 1     | Sc                 | 411454.4      | 411454.4            | 102.3 %            |                    | 16:32:41      |
| 1     | Y 371.029          | 324817.0      | 324817.0            | 101.56 %           |                    | 16:32:41      |
| 1     | Sc 357.253         | 263102.8      | 263102.8            | 102.4 %            |                    | 16:32:41      |
| 1     | Ag 328.068†        | 37.6          | 526.5               | 5.7482 µg/L        | 5.7482 ppb         | 16:32:41      |
| 1     | As 188.979†        | 21.6          | 16.4                | 34.151 µg/L        | 34.151 ppb         | 16:33:01      |
| 1     | B 249.677†         | 1750.0        | 1199.5              | 47.803 µg/L        | 47.803 ppb         | 16:32:41      |
| 1     | Ba 233.527†        | 251.0         | 298.5               | 5.4459 µg/L        | 5.4459 ppb         | 16:33:01      |
| 1     | Be 313.107†        | 5787.7        | 7873.4              | 4.9711 µg/L        | 4.9711 ppb         | 16:32:41      |
| 1     | Cd 226.502†        | 238.8         | 412.5               | 4.6930 µg/L        | 4.6930 ppb         | 16:33:01      |
| 1     | Co 228.616†        | -15.0         | 39.0                | 3.9873 µg/L        | 3.9873 ppb         | 16:33:01      |
| 1     | Cr 267.716†        | 686.6         | 507.6               | 7.0433 µg/L        | 7.0433 ppb         | 16:32:41      |
| 1     | Cu 324.752†        | 3072.9        | 845.6               | 8.4821 µg/L        | 8.4821 ppb         | 16:32:41      |
| 1     | Mn 257.610†        | 2758.3        | 2836.8              | 10.313 µg/L        | 10.313 ppb         | 16:32:41      |
| 1     | Mo 202.031†        | 43.1          | 82.4                | 10.101 µg/L        | 10.101 ppb         | 16:33:01      |
| 1     | Ni 231.604†        | 90.3          | 80.9                | 5.3913 µg/L        | 5.3913 ppb         | 16:33:01      |
| 1     | P 214.914†         | 99.1          | 69.3                | 136.73 µg/L        | 136.73 ppb         | 16:33:01      |
| 1     | Pb 220.353†        | 60.8          | 20.9                | 7.9760 µg/L        | 7.9760 ppb         | 16:33:01      |
| 1     | S 181.975 Axial†   | 76.1          | 24.2                | 77.927 µg/L        | 77.927 ppb         | 16:33:01      |
| 1     | Sb 206.836†        | 13.1          | 9.0                 | 14.292 µg/L        | 14.292 ppb         | 16:33:01      |
| 1     | Se 196.026†        | 18.5          | 14.1                | 33.0 µg/L          | 33.0 ppb           | 16:33:01      |
| 1     | SiO2†              | 1476.7        | 705.1               | 201.60 µg/L        | 201.60 ppb         | 16:32:41      |
| 1     | Si 251.611†        | 1678.1        | 1362.4              | 94.341 µg/L        | 94.341 ppb         | 16:32:41      |
| 1     | Sn 189.927†        | 3.4           | 27.7                | 12.299 µg/L        | 12.299 ppb         | 16:33:01      |
| 1     | Ti 334.940†        | 1142.2        | 1214.1              | 6.0545 µg/L        | 6.0545 ppb         | 16:32:41      |
| 1     | Tl 190.801†        | 27.3          | 21.5                | 20.768 µg/L        | 20.768 ppb         | 16:33:01      |
| 1     | U 367.007†         | -47.2         | 87.9                | 46.782 µg/L        | 46.782 ppb         | 16:32:41      |
| 1     | V 292.402†         | 586.0         | 430.9               | 6.9545 µg/L        | 6.9545 ppb         | 16:32:41      |
| 1     | Zn 213.857†        | 565.5         | 300.3               | 9.9881 µg/L        | 9.9881 ppb         | 16:33:01      |
| 2     | Sc RADIAL          | 4875.4        | 4875.4              | 99.1 %             |                    | 16:32:15      |
| 2     | Al 396.153Radial†  | 59.1          | 157.0               | 269.03 µg/L        | 269.03 ppb         | 16:31:55      |
| 2     | Ca 317.933Radial†  | 326.4         | 270.1               | 217.15 µg/L        | 217.15 ppb         | 16:32:15      |
| 2     | Fe 238.204 Radial† | 99.6          | 63.9                | 150.69 µg/L        | 150.69 ppb         | 16:32:15      |
| 2     | K 766.490 Radial†  | 84.1          | 162.4               | 169.24 µg/L        | 169.24 ppb         | 16:31:55      |
| 2     | Mg 279.077 IEC†    | 22.2          | 35.9                | 347.50 µg/L        | 347.50 ppb         | 16:32:15      |
| 2     | Na 589.592 Radial† | 1436.1        | 694.1               | 262.25 µg/L        | 262.25 ppb         | 16:31:55      |
| 2     | Sr 421.552†        | 596.0         | 444.4               | 4.7916 µg/L        | 4.7916 ppb         | 16:31:55      |
| 2     | Sc                 | 412113.3      | 412113.3            | 102.5 %            |                    | 16:33:03      |
| 2     | Y 371.029          | 328237.9      | 328237.9            | 102.63 %           |                    | 16:33:03      |
| 2     | Sc 357.253         | 263250.6      | 263250.6            | 102.5 %            |                    | 16:33:03      |
| 2     | Ag 328.068†        | 32.3          | 521.3               | 5.7374 µg/L        | 5.7374 ppb         | 16:33:03      |
| 2     | As 188.979†        | 23.0          | 17.8                | 37.038 µg/L        | 37.038 ppb         | 16:33:23      |
| 2     | B 249.677†         | 1794.2        | 1241.7              | 49.489 µg/L        | 49.489 ppb         | 16:33:03      |
| 2     | Ba 233.527†        | 291.0         | 337.3               | 6.1559 µg/L        | 6.1559 ppb         | 16:33:23      |
| 2     | Be 313.107†        | 5702.2        | 7786.8              | 4.9172 µg/L        | 4.9172 ppb         | 16:33:03      |
| 2     | Cd 226.502†        | 254.8         | 427.9               | 4.8704 µg/L        | 4.8704 ppb         | 16:33:23      |
| 2     | Co 228.616†        | -4.9          | 48.8                | 4.9942 µg/L        | 4.9942 ppb         | 16:33:23      |
| 2     | Cr 267.716†        | 571.7         | 395.1               | 5.4834 µg/L        | 5.4834 ppb         | 16:33:03      |
| 2     | Cu 324.752†        | 3151.2        | 920.3               | 9.1972 µg/L        | 9.1972 ppb         | 16:33:03      |
| 2     | Mn 257.610†        | 2755.8        | 2832.8              | 10.297 µg/L        | 10.297 ppb         | 16:33:03      |
| 2     | Mo 202.031†        | 44.1          | 83.4                | 10.224 µg/L        | 10.224 ppb         | 16:33:23      |
| 2     | Ni 231.604†        | 86.0          | 76.7                | 5.1104 µg/L        | 5.1104 ppb         | 16:33:23      |

|   |                    |          |          |             |            |          |
|---|--------------------|----------|----------|-------------|------------|----------|
| 2 | P 214.914†         | 95.5     | 65.7     | 129.70 µg/L | 129.70 ppb | 16:33:23 |
| 2 | Pb 220.353†        | 71.9     | 31.6     | 12.137 µg/L | 12.137 ppb | 16:33:23 |
| 2 | S 181.975 Axial†   | 76.1     | 24.2     | 77.761 µg/L | 77.761 ppb | 16:33:23 |
| 2 | Sb 206.836†        | 10.8     | 6.7      | 10.685 µg/L | 10.685 ppb | 16:33:23 |
| 2 | Se 196.026†        | 17.2     | 12.9     | 30.0 µg/L   | 30.0 ppb   | 16:33:23 |
| 2 | SiO2†              | 1496.7   | 723.8    | 206.94 µg/L | 206.94 ppb | 16:33:03 |
| 2 | Si 251.611†        | 1684.6   | 1367.7   | 94.710 µg/L | 94.710 ppb | 16:33:03 |
| 2 | Sn 189.927†        | 4.6      | 28.9     | 12.816 µg/L | 12.816 ppb | 16:33:23 |
| 2 | Ti 334.940†        | 1224.3   | 1293.7   | 6.4516 µg/L | 6.4516 ppb | 16:33:03 |
| 2 | Tl 190.801†        | 15.2     | 9.6      | 9.2851 µg/L | 9.2851 ppb | 16:33:23 |
| 2 | U 367.007†         | -129.4   | 7.7      | 3.2876 µg/L | 3.2876 ppb | 16:33:03 |
| 2 | V 292.402†         | 640.3    | 483.5    | 7.7736 µg/L | 7.7736 ppb | 16:33:03 |
| 2 | Zn 213.857†        | 573.5    | 307.7    | 10.238 µg/L | 10.238 ppb | 16:33:23 |
| 3 | Sc RADIAL          | 4856.7   | 4856.7   | 98.7 %      |            | 16:32:37 |
| 3 | Al 396.153Radial†  | 42.7     | 140.6    | 240.97 µg/L | 240.97 ppb | 16:32:17 |
| 3 | Ca 317.933Radial†  | 331.8    | 276.8    | 222.51 µg/L | 222.51 ppb | 16:32:37 |
| 3 | Fe 238.204 Radial† | 109.3    | 74.2     | 174.86 µg/L | 174.86 ppb | 16:32:37 |
| 3 | K 766.490 Radial†  | -2.2     | 75.2     | 78.311 µg/L | 78.311 ppb | 16:32:17 |
| 3 | Mg 279.077 IEC†    | 27.0     | 40.9     | 395.46 µg/L | 395.46 ppb | 16:32:37 |
| 3 | Na 589.592 Radial† | 1648.3   | 914.7    | 345.59 µg/L | 345.59 ppb | 16:32:17 |
| 3 | Sr 421.552†        | 609.4    | 460.4    | 4.9624 µg/L | 4.9624 ppb | 16:32:17 |
| 3 | Sc                 | 408817.0 | 408817.0 | 101.7 %     |            | 16:33:25 |
| 3 | Y 371.029          | 325947.6 | 325947.6 | 101.91 %    |            | 16:33:25 |
| 3 | Sc 357.253         | 261228.6 | 261228.6 | 101.7 %     |            | 16:33:25 |
| 3 | Ag 328.068†        | -53.3    | 437.3    | 4.7434 µg/L | 4.7434 ppb | 16:33:25 |
| 3 | As 188.979†        | 18.4     | 13.4     | 27.974 µg/L | 27.974 ppb | 16:33:45 |
| 3 | B 249.677†         | 1756.3   | 1218.1   | 48.540 µg/L | 48.540 ppb | 16:33:25 |
| 3 | Ba 233.527†        | 279.3    | 328.1    | 5.9851 µg/L | 5.9851 ppb | 16:33:45 |
| 3 | Be 313.107†        | 5523.7   | 7654.3   | 4.8327 µg/L | 4.8327 ppb | 16:33:25 |
| 3 | Cd 226.502†        | 223.4    | 399.0    | 4.5386 µg/L | 4.5386 ppb | 16:33:45 |
| 3 | Co 228.616†        | -5.5     | 48.2     | 4.9352 µg/L | 4.9352 ppb | 16:33:45 |
| 3 | Cr 267.716†        | 577.1    | 404.7    | 5.6159 µg/L | 5.6159 ppb | 16:33:25 |
| 3 | Cu 324.752†        | 3095.6   | 889.4    | 8.9364 µg/L | 8.9364 ppb | 16:33:25 |
| 3 | Mn 257.610†        | 2649.5   | 2749.2   | 9.9916 µg/L | 9.9916 ppb | 16:33:25 |
| 3 | Mo 202.031†        | 40.0     | 79.7     | 9.7705 µg/L | 9.7705 ppb | 16:33:45 |
| 3 | Ni 231.604†        | 91.5     | 82.8     | 5.5129 µg/L | 5.5129 ppb | 16:33:45 |
| 3 | P 214.914†         | 93.5     | 64.4     | 127.09 µg/L | 127.09 ppb | 16:33:45 |
| 3 | Pb 220.353†        | 62.9     | 23.3     | 8.8933 µg/L | 8.8933 ppb | 16:33:45 |
| 3 | S 181.975 Axial†   | 74.5     | 23.1     | 74.441 µg/L | 74.441 ppb | 16:33:45 |
| 3 | Sb 206.836†        | 12.7     | 8.7      | 13.791 µg/L | 13.791 ppb | 16:33:45 |
| 3 | Se 196.026†        | 21.6     | 17.3     | 40.3 µg/L   | 40.3 ppb   | 16:33:45 |
| 3 | SiO2†              | 1444.3   | 683.6    | 195.44 µg/L | 195.44 ppb | 16:33:25 |
| 3 | Si 251.611†        | 1663.7   | 1359.9   | 94.170 µg/L | 94.170 ppb | 16:33:25 |
| 3 | Sn 189.927†        | 5.4      | 29.7     | 13.189 µg/L | 13.189 ppb | 16:33:45 |
| 3 | Ti 334.940†        | 1086.1   | 1167.0   | 5.8201 µg/L | 5.8201 ppb | 16:33:25 |
| 3 | Tl 190.801†        | 19.8     | 14.3     | 13.799 µg/L | 13.799 ppb | 16:33:45 |
| 3 | U 367.007†         | -2.7     | 131.3    | 70.264 µg/L | 70.264 ppb | 16:33:25 |
| 3 | V 292.402†         | 551.9    | 401.5    | 6.4919 µg/L | 6.4919 ppb | 16:33:25 |
| 3 | Zn 213.857†        | 564.2    | 302.9    | 10.070 µg/L | 10.070 ppb | 16:33:45 |

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Mean Data: PQL

| Analyte  | Mean Corrected<br>Intensity | Calib.<br>Conc. Units | Std.Dev. | Sample<br>Conc. Units | Std.Dev. | RSD    |
|--|-----------------------------|-----------------------|----------|-----------------------|----------|--------|
| Sc   | 410794.9                    | 102.2 %               | 0.43     |                       |          | 0.42%  |
| Sc RADIAL  | 4870.2                      | 99.0 %                | 0.24     |                       |          | 0.24%  |
| Y 371.029  | 326334.1                    | 102.03 %              | 0.545    |                       |          | 0.53%  |
| Sc 357.253   | 262527.3                    | 102.2 %               | 0.44     |                       |          | 0.43%  |
| Ag 328.068†  | 495.0                       | 5.4097 µg/L           | 0.57701  | 5.4097 ppb            | 0.57701  | 10.67% |
| QC value within limits for Ag 328.068 Recovery = 108.19%       |                             |                       |          |                       |          |        |
| Al 396.153Radial†  | 134.0                       | 229.61 µg/L           | 46.161   | 229.61 ppb            | 46.161   | 20.10% |
| QC value within limits for Al 396.153Radial Recovery = 114.80% |                             |                       |          |                       |          |        |
| As 188.979†  | 15.9                        | 33.054 µg/L           | 4.6301   | 33.054 ppb            | 4.6301   | 14.01% |
| QC value within limits for As 188.979 Recovery = 110.18%       |                             |                       |          |                       |          |        |
| B 249.677†   | 1219.8                      | 48.611 µg/L           | 0.8449   | 48.611 ppb            | 0.8449   | 1.74%  |
| QC value within limits for B 249.677 Recovery = 97.22%         |                             |                       |          |                       |          |        |
| Ba 233.527†  | 321.3                       | 5.8623 µg/L           | 0.37059  | 5.8623 ppb            | 0.37059  | 6.32%  |
| QC value within limits for Ba 233.527 Recovery = 117.25%       |                             |                       |          |                       |          |        |
| Be 313.107†  | 7771.5                      | 4.9070 µg/L           | 0.06980  | 4.9070 ppb            | 0.06980  | 1.42%  |
| QC value within limits for Be 313.107 Recovery = 98.14%        |                             |                       |          |                       |          |        |
| Ca 317.933Radial†  | 275.6                       | 221.52 µg/L           | 3.970    | 221.52 ppb            | 3.970    | 1.79%  |

|  |        |             |         |            |         |        |  |
|--|--------|-------------|---------|------------|---------|--------|--|
| QC value within limits for Ca 317.933 Radial Recovery = 110.76%                |        |             |         |            |         |        |  |
| Cd 226.502†  | 413.1  | 4.7007 µg/L | 0.16603 | 4.7007 ppb | 0.16603 | 3.53%  |  |
| QC value within limits for Cd 226.502 Recovery = 94.01%                        |        |             |         |            |         |        |  |
| Co 228.616†  | 45.3   | 4.6389 µg/L | 0.56506 | 4.6389 ppb | 0.56506 | 12.18% |  |
| QC value within limits for Co 228.616 Recovery = 92.78%                        |        |             |         |            |         |        |  |
| Cr 267.716†  | 435.8  | 6.0475 µg/L | 0.86488 | 6.0475 ppb | 0.86488 | 14.30% |  |
| QC value within limits for Cr 267.716 Recovery = 120.95%                       |        |             |         |            |         |        |  |
| Cu 324.752†  | 885.1  | 8.8719 µg/L | 0.36190 | 8.8719 ppb | 0.36190 | 4.08%  |  |
| QC value within limits for Cu 324.752 Recovery = 88.72%                        |        |             |         |            |         |        |  |
| Fe 238.204 Radial†   | 69.2   | 163.03 µg/L | 12.092  | 163.03 ppb | 12.092  | 7.42%  |  |
| QC value greater than the upper limit for Fe 238.204 Radial Recovery = 163.03% |        |             |         |            |         |        |  |
| K 766.490 Radial†  | 113.5  | 118.29 µg/L | 46.450  | 118.29 ppb | 46.450  | 39.27% |  |
| QC value within limits for K 766.490 Radial Recovery = 78.86%                  |        |             |         |            |         |        |  |
| Mg 279.077 IEC†  | 36.5   | 352.75 µg/L | 40.339  | 352.75 ppb | 40.339  | 11.44% |  |
| QC value within limits for Mg 279.077 IEC Recovery = 117.58%                   |        |             |         |            |         |        |  |
| Mn 257.610†  | 2806.3 | 10.200 µg/L | 0.1811  | 10.200 ppb | 0.1811  | 1.78%  |  |
| QC value within limits for Mn 257.610 Recovery = 102.00%                       |        |             |         |            |         |        |  |
| Mo 202.031†  | 81.8   | 10.032 µg/L | 0.2345  | 10.032 ppb | 0.2345  | 2.34%  |  |
| QC value within limits for Mo 202.031 Recovery = 100.32%                       |        |             |         |            |         |        |  |
| Na 589.592 Radial†   | 773.6  | 292.29 µg/L | 46.281  | 292.29 ppb | 46.281  | 15.83% |  |
| QC value within limits for Na 589.592 Radial Recovery = 97.43%                 |        |             |         |            |         |        |  |
| Ni 231.604†  | 80.1   | 5.3382 µg/L | 0.20642 | 5.3382 ppb | 0.20642 | 3.87%  |  |
| QC value within limits for Ni 231.604 Recovery = 106.76%                       |        |             |         |            |         |        |  |
| P 214.914†   | 66.4   | 131.17 µg/L | 4.983   | 131.17 ppb | 4.983   | 3.80%  |  |
| QC value within limits for P 214.914 Recovery = 87.45%                         |        |             |         |            |         |        |  |
| Pb 220.353†  | 25.3   | 9.6686 µg/L | 2.18594 | 9.6686 ppb | 2.18594 | 22.61% |  |
| QC value within limits for Pb 220.353 Recovery = 96.69%                        |        |             |         |            |         |        |  |
| S 181.975 Axial†   | 23.9   | 76.710 µg/L | 1.9666  | 76.710 ppb | 1.9666  | 2.56%  |  |
| QC value within limits for S 181.975 Axial Recovery = 76.71%                   |        |             |         |            |         |        |  |
| Sb 206.836†  | 8.1    | 12.922 µg/L | 1.9539  | 12.922 ppb | 1.9539  | 15.12% |  |
| QC value within limits for Sb 206.836 Recovery = 129.22%                       |        |             |         |            |         |        |  |
| Se 196.026†  | 14.7   | 34.4 µg/L   | 5.31    | 34.4 ppb   | 5.31    | 15.42% |  |
| QC value within limits for Se 196.026 Recovery = 114.77%                       |        |             |         |            |         |        |  |
| SiO2†  | 704.2  | 201.33 µg/L | 5.753   | 201.33 ppb | 5.753   | 2.86%  |  |
| QC value within limits for SiO2 Recovery = 94.52%                              |        |             |         |            |         |        |  |
| Si 251.611†  | 1363.3 | 94.407 µg/L | 0.2763  | 94.407 ppb | 0.2763  | 0.29%  |  |
| QC value within limits for Si 251.611 Recovery = 94.41%                        |        |             |         |            |         |        |  |
| Sn 189.927†  | 28.8   | 12.768 µg/L | 0.4470  | 12.768 ppb | 0.4470  | 3.50%  |  |
| QC value within limits for Sn 189.927 Recovery = 127.68%                       |        |             |         |            |         |        |  |
| Sr 421.552†  | 471.6  | 5.0841 µg/L | 0.36870 | 5.0841 ppb | 0.36870 | 7.25%  |  |
| QC value within limits for Sr 421.552 Recovery = 101.68%                       |        |             |         |            |         |        |  |
| Ti 334.940†  | 1224.9 | 6.1087 µg/L | 0.31920 | 6.1087 ppb | 0.31920 | 5.23%  |  |
| QC value within limits for Ti 334.940 Recovery = 122.17%                       |        |             |         |            |         |        |  |
| Tl 190.801†  | 15.1   | 14.617 µg/L | 5.7852  | 14.617 ppb | 5.7852  | 39.58% |  |
| QC value within limits for Tl 190.801 Recovery = 73.09%                        |        |             |         |            |         |        |  |
| U 367.007†   | 75.6   | 40.111 µg/L | 33.9826 | 40.111 ppb | 33.9826 | 84.72% |  |
| QC value within limits for U 367.007 Recovery = 80.22%                         |        |             |         |            |         |        |  |
| V 292.402†   | 438.6  | 7.0733 µg/L | 0.64906 | 7.0733 ppb | 0.64906 | 9.18%  |  |
| QC value greater than the upper limit for V 292.402 Recovery = 141.47%         |        |             |         |            |         |        |  |
| Zn 213.857†  | 303.6  | 10.099 µg/L | 0.1271  | 10.099 ppb | 0.1271  | 1.26%  |  |
| QC value within limits for Zn 213.857 Recovery = 100.99%                       |        |             |         |            |         |        |  |
| QC Failed. Continue with analysis.   |        |             |         |            |         |        |  |



Sequence No.: 74

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 11/2/2016 16:33:55

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

| Repl# | Analyte            | Net Intensity | Corrected Intensity | Calib. Conc. Units | Sample Conc. Units | Analysis Time |
|-------|--------------------|---------------|---------------------|--------------------|--------------------|---------------|
| 1     | Sc RADIAL          | 5044.4        | 5044.4              | 103 %              |                    | 16:34:25      |
| 1     | Al 396.153Radial†  | -54.5         | 44.2                | 75.754 µg/L        | 75.754 ppb         | 16:34:25      |
| 1     | Ca 317.933Radial†  | 74.9          | 13.8                | 11.054 µg/L        | 11.054 ppb         | 16:34:45      |
| 1     | Fe 238.204 Radial† | 38.6          | 1.1                 | 2.4850 µg/L        | 2.4850 ppb         | 16:34:45      |
| 1     | K 766.490 Radial†  | -202.3        | -119.9              | -125.04 µg/L       | -125.04 ppb        | 16:34:25      |
| 1     | Mg 279.077 IEC†    | -6.1          | 7.6                 | 73.418 µg/L        | 73.418 ppb         | 16:34:45      |
| 1     | Na 589.592 Radial† | 842.2         | 66.3                | 25.042 µg/L        | 25.042 ppb         | 16:34:25      |
| 1     | Sr 421.552†        | 223.5         | 60.9                | 0.6578 µg/L        | 0.6578 ppb         | 16:34:25      |
| 1     | Sc                 | 414156.5      | 414156.5            | 103.0 %            |                    | 16:35:33      |
| 1     | Y 371.029          | 332213.2      | 332213.2            | 103.87 %           |                    | 16:35:33      |
| 1     | Sc 357.253         | 264444.6      | 264444.6            | 102.9 %            |                    | 16:35:33      |
| 1     | Ag 328.068†        | -420.7        | 81.0                | 0.8720 µg/L        | 0.8720 ppb         | 16:35:33      |
| 1     | As 188.979†        | 4.2           | -0.7                | -1.3715 µg/L       | -1.3715 ppb        | 16:35:53      |
| 1     | B 249.677†         | 503.3         | -20.2               | -0.8054 µg/L       | -0.8054 ppb        | 16:35:33      |
| 1     | Ba 233.527†        | -54.9         | 0.0                 | 0.0031 µg/L        | 0.0031 ppb         | 16:35:53      |
| 1     | Be 313.107†        | -2036.1       | 244.5               | 0.1533 µg/L        | 0.1533 ppb         | 16:35:33      |
| 1     | Cd 226.502†        | -178.5        | 5.8                 | 0.0663 µg/L        | 0.0663 ppb         | 16:35:53      |
| 1     | Co 228.616†        | -54.7         | 0.5                 | 0.0470 µg/L        | 0.0470 ppb         | 16:35:53      |
| 1     | Cr 267.716†        | 194.0         | 25.6                | 0.3575 µg/L        | 0.3575 ppb         | 16:35:33      |
| 1     | Cu 324.752†        | 2045.8        | -167.4              | -1.6567 µg/L       | -1.6567 ppb        | 16:35:33      |
| 1     | Mn 257.610†        | -114.1        | 32.8                | 0.1171 µg/L        | 0.1171 ppb         | 16:35:53      |
| 1     | Mo 202.031†        | -27.8         | 13.3                | 1.6336 µg/L        | 1.6336 ppb         | 16:35:53      |
| 1     | Ni 231.604†        | 13.9          | 6.2                 | 0.4150 µg/L        | 0.4150 ppb         | 16:35:53      |
| 1     | P 214.914†         | 22.0          | -6.2                | -12.240 µg/L       | -12.240 ppb        | 16:35:53      |
| 1     | Pb 220.353†        | 32.9          | -6.6                | -2.5197 µg/L       | -2.5197 ppb        | 16:35:53      |
| 1     | S 181.975 Axial†   | 41.6          | -9.7                | -30.999 µg/L       | -30.999 ppb        | 16:35:53      |
| 1     | Sb 206.836†        | 10.7          | 6.6                 | 10.458 µg/L        | 10.458 ppb         | 16:35:53      |
| 1     | Se 196.026†        | 3.9           | -0.2                | -0.393 µg/L        | -0.393 ppb         | 16:35:53      |
| 1     | SiO2†              | 745.2         | -12.9               | -3.6837 µg/L       | -3.6837 ppb        | 16:35:33      |
| 1     | Si 251.611†        | 279.7         | -4.5                | -0.3092 µg/L       | -0.3092 ppb        | 16:35:53      |
| 1     | Sn 189.927†        | -24.2         | 0.9                 | 0.4153 µg/L        | 0.4153 ppb         | 16:35:53      |
| 1     | Ti 334.940†        | -191.4        | -87.0               | -0.4339 µg/L       | -0.4339 ppb        | 16:35:33      |
| 1     | Tl 190.801†        | -1.5          | -6.7                | -6.4840 µg/L       | -6.4840 ppb        | 16:35:53      |
| 1     | U 367.007†         | -100.8        | 36.0                | 19.544 µg/L        | 19.544 ppb         | 16:35:33      |
| 1     | V 292.402†         | 300.9         | 151.0               | 2.4289 µg/L        | 2.4289 ppb         | 16:35:33      |
| 1     | Zn 213.857†        | 257.3         | -2.0                | -0.0750 µg/L       | -0.0750 ppb        | 16:35:53      |
| 2     | Sc RADIAL          | 5133.8        | 5133.8              | 104 %              |                    | 16:34:47      |
| 2     | Al 396.153Radial†  | -135.0        | -32.0               | -54.858 µg/L       | -54.858 ppb        | 16:34:47      |
| 2     | Ca 317.933Radial†  | 74.4          | 12.0                | 9.6531 µg/L        | 9.6531 ppb         | 16:35:08      |
| 2     | Fe 238.204 Radial† | 38.4          | 0.2                 | 0.5353 µg/L        | 0.5353 ppb         | 16:35:08      |
| 2     | K 766.490 Radial†  | -162.9        | -78.6               | -82.018 µg/L       | -82.018 ppb        | 16:34:47      |
| 2     | Mg 279.077 IEC†    | -18.5         | -4.1                | -40.135 µg/L       | -40.135 ppb        | 16:35:08      |
| 2     | Na 589.592 Radial† | 692.6         | -91.5               | -34.556 µg/L       | -34.556 ppb        | 16:34:47      |
| 2     | Sr 421.552†        | 154.1         | -9.4                | -0.1018 µg/L       | -0.1018 ppb        | 16:34:47      |
| 2     | Sc                 | 410755.1      | 410755.1            | 102.2 %            |                    | 16:35:55      |
| 2     | Y 371.029          | 327972.6      | 327972.6            | 102.54 %           |                    | 16:35:55      |
| 2     | Sc 357.253         | 262296.4      | 262296.4            | 102.1 %            |                    | 16:35:55      |
| 2     | Ag 328.068†        | -409.5        | 88.7                | 0.9735 µg/L        | 0.9735 ppb         | 16:35:55      |
| 2     | As 188.979†        | 9.0           | 4.1                 | 8.4315 µg/L        | 8.4315 ppb         | 16:36:15      |
| 2     | B 249.677†         | 447.0         | -71.3               | -2.8449 µg/L       | -2.8449 ppb        | 16:35:55      |
| 2     | Ba 233.527†        | -54.2         | 0.3                 | 0.0063 µg/L        | 0.0063 ppb         | 16:36:15      |
| 2     | Be 313.107†        | -2229.1       | 39.3                | 0.0239 µg/L        | 0.0239 ppb         | 16:35:55      |
| 2     | Cd 226.502†        | -180.4        | 2.6                 | 0.0294 µg/L        | 0.0294 ppb         | 16:36:15      |
| 2     | Co 228.616†        | -53.0         | 1.7                 | 0.1770 µg/L        | 0.1770 ppb         | 16:36:15      |
| 2     | Cr 267.716†        | 148.6         | -17.2               | -0.2385 µg/L       | -0.2385 ppb        | 16:35:55      |
| 2     | Cu 324.752†        | 2083.4        | -114.3              | -1.1398 µg/L       | -1.1398 ppb        | 16:35:55      |
| 2     | Mn 257.610†        | -128.5        | 17.8                | 0.0662 µg/L        | 0.0662 ppb         | 16:36:15      |
| 2     | Mo 202.031†        | -46.4         | -5.1                | -0.6299 µg/L       | -0.6299 ppb        | 16:36:15      |
| 2     | Ni 231.604†        | 7.2           | -0.2                | -0.0121 µg/L       | -0.0121 ppb        | 16:36:15      |

|   |                    |          |          |              |             |          |
|---|--------------------|----------|----------|--------------|-------------|----------|
| 2 | P 214.914†         | 32.4     | 4.2      | 8.3967 µg/L  | 8.3967 ppb  | 16:36:15 |
| 2 | Pb 220.353†        | 37.4     | -1.9     | -0.7270 µg/L | -0.7270 ppb | 16:36:15 |
| 2 | S 181.975 Axial†   | 38.4     | -12.5    | -40.210 µg/L | -40.210 ppb | 16:36:15 |
| 2 | Sb 206.836†        | 1.8      | -2.1     | -3.3360 µg/L | -3.3360 ppb | 16:36:15 |
| 2 | Se 196.026†        | 2.7      | -1.3     | -3.13 µg/L   | -3.13 ppb   | 16:36:15 |
| 2 | SiO2†              | 737.1    | -14.9    | -4.2600 µg/L | -4.2600 ppb | 16:35:55 |
| 2 | Si 251.611†        | 270.9    | -10.8    | -0.7497 µg/L | -0.7497 ppb | 16:36:15 |
| 2 | Sn 189.927†        | -30.7    | -5.6     | -2.4892 µg/L | -2.4892 ppb | 16:36:15 |
| 2 | Ti 334.940†        | -201.1   | -98.0    | -0.4884 µg/L | -0.4884 ppb | 16:35:55 |
| 2 | Tl 190.801†        | -3.6     | -8.7     | -8.4261 µg/L | -8.4261 ppb | 16:36:15 |
| 2 | U 367.007†         | -133.9   | 2.8      | 1.5252 µg/L  | 1.5252 ppb  | 16:35:55 |
| 2 | V 292.402†         | 157.1    | 12.6     | 0.1972 µg/L  | 0.1972 ppb  | 16:35:55 |
| 2 | Zn 213.857†        | 255.7    | -1.5     | -0.0474 µg/L | -0.0474 ppb | 16:36:15 |
| 3 | Sc RADIAL          | 5067.6   | 5067.6   | 103 %        |             | 16:35:10 |
| 3 | Al 396.153Radial†  | -89.3    | 10.7     | 18.333 µg/L  | 18.333 ppb  | 16:35:10 |
| 3 | Ca 317.933Radial†  | 72.7     | 11.2     | 9.0368 µg/L  | 9.0368 ppb  | 16:35:30 |
| 3 | Fe 238.204 Radial† | 38.4     | 0.7      | 1.6350 µg/L  | 1.6350 ppb  | 16:35:30 |
| 3 | K 766.490 Radial†  | -64.0    | 15.3     | 15.984 µg/L  | 15.984 ppb  | 16:35:10 |
| 3 | Mg 279.077 IEC†    | -7.8     | 5.9      | 57.514 µg/L  | 57.514 ppb  | 16:35:30 |
| 3 | Na 589.592 Radial† | 666.2    | -108.4   | -40.959 µg/L | -40.959 ppb | 16:35:10 |
| 3 | Sr 421.552†        | 165.3    | 3.4      | 0.0370 µg/L  | 0.0370 ppb  | 16:35:10 |
| 3 | Sc                 | 412383.2 | 412383.2 | 102.6 %      |             | 16:36:17 |
| 3 | Y 371.029          | 327241.7 | 327241.7 | 102.32 %     |             | 16:36:17 |
| 3 | Sc 357.253         | 263699.3 | 263699.3 | 102.7 %      |             | 16:36:17 |
| 3 | Ag 328.068†        | -549.6   | -45.6    | -0.4761 µg/L | -0.4761 ppb | 16:36:17 |
| 3 | As 188.979†        | 6.2      | 1.3      | 2.7099 µg/L  | 2.7099 ppb  | 16:36:37 |
| 3 | B 249.677†         | 544.3    | 21.2     | 0.8444 µg/L  | 0.8444 ppb  | 16:36:17 |
| 3 | Ba 233.527†        | -60.7    | -5.8     | -0.1045 µg/L | -0.1045 ppb | 16:36:37 |
| 3 | Be 313.107†        | -2191.2  | 87.8     | 0.0544 µg/L  | 0.0544 ppb  | 16:36:17 |
| 3 | Cd 226.502†        | -195.5   | -11.2    | -0.1277 µg/L | -0.1277 ppb | 16:36:37 |
| 3 | Co 228.616†        | -49.2    | 5.7      | 0.5830 µg/L  | 0.5830 ppb  | 16:36:37 |
| 3 | Cr 267.716†        | 181.1    | 13.6     | 0.1897 µg/L  | 0.1897 ppb  | 16:36:17 |
| 3 | Cu 324.752†        | 2000.1   | -206.3   | -2.0758 µg/L | -2.0758 ppb | 16:36:17 |
| 3 | Mn 257.610†        | -127.2   | 19.8     | 0.0701 µg/L  | 0.0701 ppb  | 16:36:37 |
| 3 | Mo 202.031†        | -44.0    | -2.6     | -0.3175 µg/L | -0.3175 ppb | 16:36:37 |
| 3 | Ni 231.604†        | 7.0      | -0.4     | -0.0272 µg/L | -0.0272 ppb | 16:36:37 |
| 3 | P 214.914†         | 14.4     | -13.5    | -26.674 µg/L | -26.674 ppb | 16:36:37 |
| 3 | Pb 220.353†        | 29.5     | -9.8     | -3.7274 µg/L | -3.7274 ppb | 16:36:37 |
| 3 | S 181.975 Axial†   | 42.3     | -8.9     | -28.511 µg/L | -28.511 ppb | 16:36:37 |
| 3 | Sb 206.836†        | 9.1      | 5.1      | 8.0601 µg/L  | 8.0601 ppb  | 16:36:37 |
| 3 | Se 196.026†        | 1.8      | -2.2     | -5.12 µg/L   | -5.12 ppb   | 16:36:37 |
| 3 | SiO2†              | 709.2    | -45.9    | -13.121 µg/L | -13.121 ppb | 16:36:17 |
| 3 | Si 251.611†        | 273.9    | -9.3     | -0.6446 µg/L | -0.6446 ppb | 16:36:37 |
| 3 | Sn 189.927†        | -24.4    | 0.7      | 0.2873 µg/L  | 0.2873 ppb  | 16:36:37 |
| 3 | Ti 334.940†        | -210.3   | -105.9   | -0.5281 µg/L | -0.5281 ppb | 16:36:17 |
| 3 | Tl 190.801†        | 4.4      | -0.9     | -0.9041 µg/L | -0.9041 ppb | 16:36:37 |
| 3 | U 367.007†         | -182.3   | -43.6    | -23.708 µg/L | -23.708 ppb | 16:36:17 |
| 3 | V 292.402†         | 181.6    | 35.6     | 0.5557 µg/L  | 0.5557 ppb  | 16:36:17 |
| 3 | Zn 213.857†        | 252.0    | -6.5     | -0.2199 µg/L | -0.2199 ppb | 16:36:37 |

## Mean Data: CCB

| Analyte   | Mean Corrected Intensity | Calib. Conc. Units | Std.Dev. | Sample Conc. Units | Std.Dev. | RSD     |
|---|--------------------------|--------------------|----------|--------------------|----------|---------|
| Sc  | 412431.6                 | 102.6 %            | 0.42     |                    |          | 0.41%   |
| Sc RADIAL   | 5082.0                   | 103 %              | 0.9      |                    |          | 0.91%   |
| Y 371.029   | 329142.5                 | 102.91 %           | 0.839    |                    |          | 0.82%   |
| Sc 357.253  | 263480.1                 | 102.6 %            | 0.42     |                    |          | 0.41%   |
| Ag 328.068†   | 41.4                     | 0.4565 µg/L        | 0.80924  | 0.4565 ppb         | 0.80924  | 177.29% |
| QC value within limits for Ag 328.068 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Al 396.153Radial†   | 7.6                      | 13.076 µg/L        | 65.4649  | 13.076 ppb         | 65.4649  | 500.64% |
| QC value within limits for Al 396.153Radial Recovery = Not calculated |                          |                    |          |                    |          |         |
| As 188.979†   | 1.6                      | 3.2566 µg/L        | 4.92432  | 3.2566 ppb         | 4.92432  | 151.21% |
| QC value within limits for As 188.979 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| B 249.677†  | -23.4                    | -0.9353 µg/L       | 1.84804  | -0.9353 ppb        | 1.84804  | 197.59% |
| QC value within limits for B 249.677 Recovery = Not calculated        |                          |                    |          |                    |          |         |
| Ba 233.527†   | -1.8                     | -0.0317 µg/L       | 0.06307  | -0.0317 ppb        | 0.06307  | 198.79% |
| QC value within limits for Ba 233.527 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Be 313.107†   | 123.9                    | 0.0772 µg/L        | 0.06765  | 0.0772 ppb         | 0.06765  | 87.63%  |
| QC value within limits for Be 313.107 Recovery = Not calculated       |                          |                    |          |                    |          |         |
| Ca 317.933Radial†   | 12.3                     | 9.9145 µg/L        | 1.03350  | 9.9145 ppb         | 1.03350  | 10.42%  |

|  |        |              |          |             |          |         |
|--|--------|--------------|----------|-------------|----------|---------|
| QC value within limits for Ca 317.933 Radial Recovery = Not calculated |        |              |          |             |          |         |
| Cd 226.502†  | -0.9   | -0.0107 µg/L | 0.10299  | -0.0107 ppb | 0.10299  | 966.96% |
| QC value within limits for Cd 226.502 Recovery = Not calculated        |        |              |          |             |          |         |
| Co 228.616†  | 2.6    | 0.2690 µg/L  | 0.27957  | 0.2690 ppb  | 0.27957  | 103.93% |
| QC value within limits for Co 228.616 Recovery = Not calculated        |        |              |          |             |          |         |
| Cr 267.716†  | 7.4    | 0.1029 µg/L  | 0.30732  | 0.1029 ppb  | 0.30732  | 298.68% |
| QC value within limits for Cr 267.716 Recovery = Not calculated        |        |              |          |             |          |         |
| Cu 324.752†  | -162.7 | -1.6241 µg/L | 0.46888  | -1.6241 ppb | 0.46888  | 28.87%  |
| QC value within limits for Cu 324.752 Recovery = Not calculated        |        |              |          |             |          |         |
| Fe 238.204 Radial†   | 0.7    | 1.5518 µg/L  | 0.97749  | 1.5518 ppb  | 0.97749  | 62.99%  |
| QC value within limits for Fe 238.204 Radial Recovery = Not calculated |        |              |          |             |          |         |
| K 766.490 Radial†  | -61.1  | -63.692 µg/L | 72.2764  | -63.692 ppb | 72.2764  | 113.48% |
| QC value within limits for K 766.490 Radial Recovery = Not calculated  |        |              |          |             |          |         |
| Mg 279.077 IEC†  | 3.1    | 30.266 µg/L  | 61.4850  | 30.266 ppb  | 61.4850  | 203.15% |
| QC value within limits for Mg 279.077 IEC Recovery = Not calculated    |        |              |          |             |          |         |
| Mn 257.610†  | 23.5   | 0.0845 µg/L  | 0.02831  | 0.0845 ppb  | 0.02831  | 33.52%  |
| QC value within limits for Mn 257.610 Recovery = Not calculated        |        |              |          |             |          |         |
| Mo 202.031†  | 1.9    | 0.2287 µg/L  | 1.22661  | 0.2287 ppb  | 1.22661  | 536.24% |
| QC value within limits for Mo 202.031 Recovery = Not calculated        |        |              |          |             |          |         |
| Na 589.592 Radial†   | -44.5  | -16.824 µg/L | 36.3986  | -16.824 ppb | 36.3986  | 216.34% |
| QC value within limits for Na 589.592 Radial Recovery = Not calculated |        |              |          |             |          |         |
| Ni 231.604†  | 1.9    | 0.1253 µg/L  | 0.25108  | 0.1253 ppb  | 0.25108  | 200.45% |
| QC value within limits for Ni 231.604 Recovery = Not calculated        |        |              |          |             |          |         |
| P 214.914†   | -5.2   | -10.173 µg/L | 17.6267  | -10.173 ppb | 17.6267  | 173.28% |
| QC value within limits for P 214.914 Recovery = Not calculated         |        |              |          |             |          |         |
| Pb 220.353†  | -6.1   | -2.3247 µg/L | 1.50968  | -2.3247 ppb | 1.50968  | 64.94%  |
| QC value within limits for Pb 220.353 Recovery = Not calculated        |        |              |          |             |          |         |
| S 181.975 Axial†   | -10.4  | -33.240 µg/L | 6.1628   | -33.240 ppb | 6.1628   | 18.54%  |
| QC value within limits for S 181.975 Axial Recovery = Not calculated   |        |              |          |             |          |         |
| Sb 206.836†  | 3.2    | 5.0608 µg/L  | 7.37010  | 5.0608 ppb  | 7.37010  | 145.63% |
| QC value within limits for Sb 206.836 Recovery = Not calculated        |        |              |          |             |          |         |
| Se 196.026†  | -1.2   | -2.88 µg/L   | 2.373    | -2.88 ppb   | 2.373    | 82.41%  |
| QC value within limits for Se 196.026 Recovery = Not calculated        |        |              |          |             |          |         |
| SiO2†  | -24.6  | -7.0217 µg/L | 5.29029  | -7.0217 ppb | 5.29029  | 75.34%  |
| QC value within limits for SiO2 Recovery = Not calculated              |        |              |          |             |          |         |
| Si 251.611†  | -8.2   | -0.5678 µg/L | 0.23003  | -0.5678 ppb | 0.23003  | 40.51%  |
| QC value within limits for Si 251.611 Recovery = Not calculated        |        |              |          |             |          |         |
| Sn 189.927†  | -1.3   | -0.5955 µg/L | 1.64120  | -0.5955 ppb | 1.64120  | 275.59% |
| QC value within limits for Sn 189.927 Recovery = Not calculated        |        |              |          |             |          |         |
| Sr 421.552†  | 18.3   | 0.1977 µg/L  | 0.40445  | 0.1977 ppb  | 0.40445  | 204.59% |
| QC value within limits for Sr 421.552 Recovery = Not calculated        |        |              |          |             |          |         |
| Ti 334.940†  | -97.0  | -0.4835 µg/L | 0.04729  | -0.4835 ppb | 0.04729  | 9.78%   |
| QC value within limits for Ti 334.940 Recovery = Not calculated        |        |              |          |             |          |         |
| Tl 190.801†  | -5.5   | -5.2714 µg/L | 3.90485  | -5.2714 ppb | 3.90485  | 74.08%  |
| QC value within limits for Tl 190.801 Recovery = Not calculated        |        |              |          |             |          |         |
| U 367.007†   | -1.6   | -0.8796 µg/L | 21.72623 | -0.8796 ppb | 21.72623 | >999.9% |
| QC value within limits for U 367.007 Recovery = Not calculated         |        |              |          |             |          |         |
| V 292.402†   | 66.4   | 1.0606 µg/L  | 1.19844  | 1.0606 ppb  | 1.19844  | 113.00% |
| QC value within limits for V 292.402 Recovery = Not calculated         |        |              |          |             |          |         |
| Zn 213.857†  | -3.3   | -0.1141 µg/L | 0.09268  | -0.1141 ppb | 0.09268  | 81.22%  |
| QC value within limits for Zn 213.857 Recovery = Not calculated        |        |              |          |             |          |         |
| All analyte(s) passed QC.  |        |              |          |             |          |         |

=====  
Analysis Begun

Logged In Analyst: lab

Technique: AA FIMS-MHS

Spectrometer Model: FIMS-100, S/N B050-9550

Autosampler Model: S10

Sample Information File: C:\data-AA\Administrator\Sample Information\110916.sif

Batch ID:

Results Data Set: 111016S1

Results Library: C:\data-AA\Administrator\Results\Results.mdb

=====  
Method Loaded

Method Name: SOILMTM1

Method Last Saved: 11/9/2016 15:34:58

Method Description: SW-846 7471A ANALYST MTM1

Sequence No.: 1

Autosampler Location: 1

Sample ID: Calib Blank

Date Collected: 11/10/2016 10:37:48

Analyst:

Data Type: Original

-----  
Replicate Data: Calib Blank

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [0.00]       | 0.0017         | 0.0047    | 0.0017      | 10:38:39 | Yes         |
| 2      |                 | [0.00]       | 0.0016         | 0.0045    | 0.0016      | 10:39:09 | Yes         |
| Mean:  |                 | [0.00]       | 0.0016         |           |             |          |             |
| SD:    |                 | 0.00         | 0.0001         |           |             |          |             |
| %RSD:  |                 | 0.00         | 6.33           |           |             |          |             |

Auto-zero performed.

Sequence No.: 2

Autosampler Location: 2

Sample ID: S0.2

Date Collected: 11/10/2016 10:39:27

Analyst:

Data Type: Original

-----  
Replicate Data: S0.2

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [0.2]        | 0.0023         | 0.0174    | 0.0040      | 10:40:18 | Yes         |
| 2      |                 | [0.2]        | 0.0025         | 0.0166    | 0.0041      | 10:40:48 | Yes         |
| Mean:  |                 | [0.2]        | 0.0024         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0001         |           |             |          |             |
| %RSD:  |                 | 0.0          | 4.72           |           |             |          |             |

Standard number 1 applied. [0.2]

Correlation Coef.: 1.000000 Slope: 0.01200 Intercept: 0.00000

Sequence No.: 3

Autosampler Location: 3

Sample ID: S0.5

Date Collected: 11/10/2016 10:41:07

Analyst:

Data Type: Original

-----  
Replicate Data: S0.5

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [0.5]        | 0.0063         | 0.0375    | 0.0080      | 10:41:58 | Yes         |
| 2      |                 | [0.5]        | 0.0063         | 0.0363    | 0.0079      | 10:42:28 | Yes         |
| Mean:  |                 | [0.5]        | 0.0063         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0000         |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.59           |           |             |          |             |

Standard number 2 applied. [0.5]

Correlation Coef.: 0.999798 Slope: 0.01259 Intercept: -0.00004

Sequence No.: 4

Autosampler Location: 4

Sample ID: S2.0

Date Collected: 11/10/2016 10:42:48

Analyst:

Data Type: Original

-----  
Replicate Data: S2.0

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [2.0]        | 0.0257         | 0.1285    | 0.0273      | 10:43:39 | Yes         |
| 2      |                 | [2.0]        | 0.0255         | 0.1267    | 0.0272      | 10:44:09 | Yes         |
| Mean:  |                 | [2.0]        | 0.0256         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0001         |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.32           |           |             |          |             |

Standard number 3 applied. [2.0]  
Correlation Coef.: 0.999980 Slope: 0.01284 Intercept: -0.00010

Sequence No.: 5

Autosampler Location: 5

Sample ID: S5.0

Date Collected: 11/10/2016 10:44:29

Analyst:

Data Type: Original

-----  
Replicate Data: S5.0

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [5.0]        | 0.0625         | 0.3074    | 0.0642      | 10:45:21 | Yes         |
| 2      |                 | [5.0]        | 0.0632         | 0.3077    | 0.0649      | 10:45:51 | Yes         |
| Mean:  |                 | [5.0]        | 0.0629         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0005         |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.78           |           |             |          |             |

Standard number 4 applied. [5.0]  
Correlation Coef.: 0.999966 Slope: 0.01259 Intercept: 0.00003

Sequence No.: 6

Autosampler Location: 6

Sample ID: S10.0

Date Collected: 11/10/2016 10:46:11

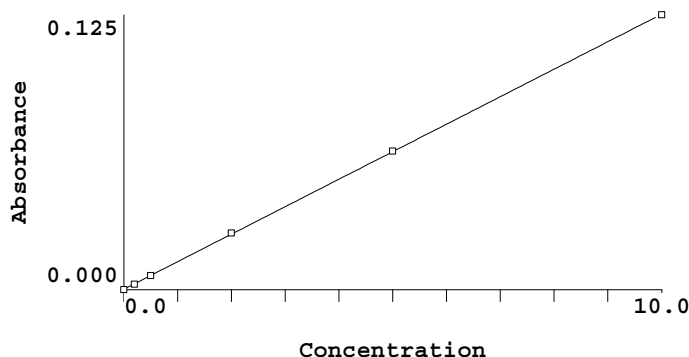
Analyst:

Data Type: Original

-----  
Replicate Data: S10.0

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [10.0]       | 0.1246         | 0.6023    | 0.1262      | 10:47:02 | Yes         |
| 2      |                 | [10.0]       | 0.1249         | 0.6014    | 0.1266      | 10:47:32 | Yes         |
| Mean:  |                 | [10.0]       | 0.1248         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0003         |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.21           |           |             |          |             |

Standard number 5 applied. [10.0]  
Correlation Coef.: 0.999981 Slope: 0.01248 Intercept: 0.00016

-----  
Calibration data for Hg 253.7

Equation: Linear, Calculated Intercept

| ID          | Mean Signal (Abs) | Entered Conc. ug/L | Calculated Conc. ug/L | Standard Deviation | %RSD |
|-------------|-------------------|--------------------|-----------------------|--------------------|------|
| Calib Blank | 0.0000            | 0                  | -0.013                | 0.00               | 6.3  |
| S0.2        | 0.0024            | 0.2                | 0.180                 | 0.00               | 4.7  |
| S0.5        | 0.0063            | 0.5                | 0.490                 | 0.00               | 0.6  |
| S2.0        | 0.0256            | 2.0                | 2.038                 | 0.00               | 0.3  |

|       |        |      |       |      |     |
|-------|--------|------|-------|------|-----|
| S5.0  | 0.0629 | 5.0  | 5.024 | 0.00 | 0.8 |
| S10.0 | 0.1248 | 10.0 | 9.982 | 0.00 | 0.2 |

Correlation Coef.: 0.999981    Slope: 0.01248    Intercept: 0.00016

Sequence No.: 7

Autosampler Location: 9

Sample ID: ICV

Date Collected: 11/10/2016 10:47:51

Analyst:

Data Type: Original

## Replicate Data: ICV

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | 5.028           | 5.028        | 0.0629         | 0.3090    | 0.0646      | 10:48:42 | Yes         |
| 2      | 5.047           | 5.047        | 0.0632         | 0.3061    | 0.0648      | 10:49:12 | Yes         |
| Mean:  | 5.038           | 5.038        | 0.0630         |           |             |          |             |
| SD:    | 0.014           | 0.014        | 0.0002         |           |             |          |             |
| %RSD:  | 0.272           | 0.272        | 0.27           |           |             |          |             |

QC value within limits for Hg 253.7    Recovery = 100.75%  
All analyte(s) passed QC.

Sequence No.: 8

Autosampler Location: 10

Sample ID: ICB

Date Collected: 11/10/2016 10:49:31

Analyst:

Data Type: Original

## Replicate Data: ICB

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | -0.020          | -0.020       | -0.0001        | 0.0071    | 0.0016      | 10:50:23 | Yes         |
| 2      | -0.022          | -0.022       | -0.0001        | 0.0071    | 0.0015      | 10:50:53 | Yes         |
| Mean:  | -0.021          | -0.021       | -0.0001        |           |             |          |             |
| SD:    | 0.001           | 0.001        | 0.0000         |           |             |          |             |
| %RSD:  | 6.731           | 6.731        | 17.75          |           |             |          |             |

QC value within limits for Hg 253.7    Recovery = Not calculated  
All analyte(s) passed QC.

Sequence No.: 9

Autosampler Location: 11

Sample ID: CRDL

Date Collected: 11/10/2016 10:51:13

Analyst:

Data Type: Original

## Replicate Data: CRDL

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | 0.162           | 0.162        | 0.0022         | 0.0179    | 0.0038      | 10:52:04 | Yes         |
| 2      | 0.159           | 0.159        | 0.0021         | 0.0175    | 0.0038      | 10:52:34 | Yes         |
| Mean:  | 0.160           | 0.160        | 0.0022         |           |             |          |             |
| SD:    | 0.002           | 0.002        | 0.0000         |           |             |          |             |
| %RSD:  | 1.431           | 1.431        | 1.33           |           |             |          |             |

QC value within limits for Hg 253.7    Recovery = 80.11%  
All analyte(s) passed QC.

Sequence No.: 10

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/10/2016 10:52:54

Analyst:

Data Type: Original

## Replicate Data: CCV

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | 4.950           | 4.950        | 0.0619         | 0.3039    | 0.0636      | 10:53:44 | Yes         |
| 2      | 4.970           | 4.970        | 0.0622         | 0.3019    | 0.0638      | 10:54:15 | Yes         |
| Mean:  | 4.960           | 4.960        | 0.0621         |           |             |          |             |
| SD:    | 0.014           | 0.014        | 0.0002         |           |             |          |             |
| %RSD:  | 0.281           | 0.281        | 0.28           |           |             |          |             |

QC value within limits for Hg 253.7    Recovery = 99.20%  
All analyte(s) passed QC.

Sequence No.: 11

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 10:54:34

Analyst:

Data Type: Original

## Replicate Data: CCB

| Repl<br># | SampleConc<br>ug/L | StndConc<br>ug/L | BlkCorr<br>Signal | Peak<br>Area | Peak<br>Height | Time     | Peak<br>Stored |
|-----------|--------------------|------------------|-------------------|--------------|----------------|----------|----------------|
| 1         | -0.037             | -0.037           | -0.0003           | 0.0055       | 0.0013         | 10:55:25 | Yes            |
| 2         | -0.041             | -0.041           | -0.0003           | 0.0049       | 0.0013         | 10:55:55 | Yes            |
| Mean:     | -0.039             | -0.039           | -0.0003           |              |                |          |                |
| SD:       | 0.002              | 0.002            | 0.0000            |              |                |          |                |
| %RSD:     | 5.684              | 5.684            | 8.46              |              |                |          |                |

QC value within limits for Hg 253.7 Recovery = Not calculated  
All analyte(s) passed QC.  
User canceled analysis.

-----  
Replicate Data: 409107040|1614660|1

| Repl  | SampleConc | StndConc | BlncCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|----------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L     | Signal   | Area   | Height |          | Stored |
| 1     | 0.825      | 0.825    | 0.0105   | 0.0581 | 0.0121 | 11:16:39 | Yes    |
| 2     | 0.822      | 0.822    | 0.0104   | 0.0576 | 0.0121 | 11:17:09 | Yes    |
| Mean: | 0.824      | 0.824    | 0.0104   |        |        |          |        |
| SD:   | 0.002      | 0.002    | 0.0000   |        |        |          |        |
| %RSD: | 0.197      | 0.197    | 0.19     |        |        |          |        |

=====

|                                |                                     |
|--------------------------------|-------------------------------------|
| Sequence No.: 10               | Autosampler Location: 21            |
| Sample ID: 409825007 1614660 1 | Date Collected: 11/10/2016 11:17:29 |
| Analyst: MTM                   | Data Type: Original                 |

-----  
Replicate Data: 409825007|1614660|1

| Repl  | SampleConc | StndConc | BlncCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|----------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L     | Signal   | Area   | Height |          | Stored |
| 1     | 0.001      | 0.001    | 0.0002   | 0.0086 | 0.0018 | 11:18:20 | Yes    |
| 2     | -0.006     | -0.006   | 0.0001   | 0.0074 | 0.0017 | 11:18:50 | Yes    |
| Mean: | -0.003     | -0.003   | 0.0001   |        |        |          |        |
| SD:   | 0.005      | 0.005    | 0.0001   |        |        |          |        |
| %RSD: | 204.6      | 204.6    | 53.25    |        |        |          |        |

=====

|                  |                                     |
|------------------|-------------------------------------|
| Sequence No.: 11 | Autosampler Location: 7             |
| Sample ID: CCV   | Date Collected: 11/10/2016 11:19:10 |
| Analyst:         | Data Type: Original                 |

-----  
Replicate Data: CCV

| Repl  | SampleConc | StndConc | BlncCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|----------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L     | Signal   | Area   | Height |          | Stored |
| 1     | 5.019      | 5.019    | 0.0628   | 0.3065 | 0.0645 | 11:20:00 | Yes    |
| 2     | 4.915      | 4.915    | 0.0615   | 0.2989 | 0.0632 | 11:20:30 | Yes    |
| Mean: | 4.967      | 4.967    | 0.0622   |        |        |          |        |
| SD:   | 0.074      | 0.074    | 0.0009   |        |        |          |        |
| %RSD: | 1.481      | 1.481    | 1.48     |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = 99.35%  
All analyte(s) passed QC.

=====

|                  |                                     |
|------------------|-------------------------------------|
| Sequence No.: 12 | Autosampler Location: 8             |
| Sample ID: CCB   | Date Collected: 11/10/2016 11:20:49 |
| Analyst:         | Data Type: Original                 |

-----  
Replicate Data: CCB

| Repl  | SampleConc | StndConc | BlncCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|----------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L     | Signal   | Area   | Height |          | Stored |
| 1     | -0.047     | -0.047   | -0.0004  | 0.0046 | 0.0012 | 11:21:40 | Yes    |
| 2     | -0.038     | -0.038   | -0.0003  | 0.0057 | 0.0013 | 11:22:10 | Yes    |
| Mean: | -0.043     | -0.043   | -0.0004  |        |        |          |        |
| SD:   | 0.006      | 0.006    | 0.0001   |        |        |          |        |
| %RSD: | 14.03      | 14.03    | 20.01    |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = Not calculated  
All analyte(s) passed QC.

=====

|                                |                                     |
|--------------------------------|-------------------------------------|
| Sequence No.: 13               | Autosampler Location: 22            |
| Sample ID: 409825008 1614660 1 | Date Collected: 11/10/2016 11:22:29 |
| Analyst: MTM                   | Data Type: Original                 |

-----  
Replicate Data: 409825008|1614660|1

| Repl  | SampleConc | StndConc | BlncCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|----------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L     | Signal   | Area   | Height |          | Stored |
| 1     | -0.020     | -0.020   | -0.0001  | 0.0067 | 0.0016 | 11:23:21 | Yes    |
| 2     | -0.019     | -0.019   | -0.0001  | 0.0067 | 0.0016 | 11:23:51 | Yes    |
| Mean: | -0.019     | -0.019   | -0.0001  |        |        |          |        |



SD: 0.000 0.000 0.0000  
%RSD: 2.372 2.372 6.99

Sequence No.: 14

Autosampler Location: 23

Sample ID: 409825009|1614660|1

Date Collected: 11/10/2016 11:24:11

Analyst: MTM

Data Type: Original

Replicate Data: 409825009|1614660|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.005     | -0.005  | 0.0001  | 0.0075 | 0.0017 | 11:25:02 | Yes    |
| 2     | -0.010     | -0.010  | 0.0000  | 0.0075 | 0.0017 | 11:25:32 | Yes    |
| Mean: | -0.007     | -0.007  | 0.0001  |        |        |          |        |
| SD:   | 0.004      | 0.004   | 0.0000  |        |        |          |        |
| %RSD: | 51.71      | 51.71   | 72.04   |        |        |          |        |

Sequence No.: 15

Autosampler Location: 24

Sample ID: 409825012|1614660|1

Date Collected: 11/10/2016 11:25:52

Analyst: MTM

Data Type: Original

Replicate Data: 409825012|1614660|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.086      | 0.086   | 0.0012  | 0.0129 | 0.0029 | 11:26:44 | Yes    |
| 2     | 0.084      | 0.084   | 0.0012  | 0.0133 | 0.0029 | 11:27:14 | Yes    |
| Mean: | 0.085      | 0.085   | 0.0012  |        |        |          |        |
| SD:   | 0.001      | 0.001   | 0.0000  |        |        |          |        |
| %RSD: | 1.291      | 1.291   | 1.12    |        |        |          |        |

Sequence No.: 16

Autosampler Location: 25

Sample ID: 410106001|1614660|1

Date Collected: 11/10/2016 11:27:34

Analyst: MTM

Data Type: Original

Replicate Data: 410106001|1614660|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.376      | 0.376   | 0.0049  | 0.0304 | 0.0065 | 11:28:26 | Yes    |
| 2     | 0.373      | 0.373   | 0.0048  | 0.0305 | 0.0065 | 11:28:56 | Yes    |
| Mean: | 0.375      | 0.375   | 0.0048  |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000  |        |        |          |        |
| %RSD: | 0.617      | 0.617   | 0.60    |        |        |          |        |

Sequence No.: 17

Autosampler Location: 26

Sample ID: 1203666305|1614669|1

Date Collected: 11/10/2016 11:29:16

Analyst: MTM

Data Type: Original

Replicate Data: 1203666305|1614669|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.054     | -0.054  | -0.0005 | 0.0052 | 0.0011 | 11:30:07 | Yes    |
| 2     | -0.056     | -0.056  | -0.0005 | 0.0050 | 0.0011 | 11:30:37 | Yes    |
| Mean: | -0.055     | -0.055  | -0.0005 |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000  |        |        |          |        |
| %RSD: | 3.249      | 3.249   | 4.23    |        |        |          |        |

Sequence No.: 18

Autosampler Location: 27

Sample ID: 1203666306|1614669|1

Date Collected: 11/10/2016 11:30:56

Analyst: MTM

Data Type: Original

Replicate Data: 1203666306|1614669|1

| Repl | SampleConc | StdConc | BlkCorr | Peak | Peak | Time | Peak |
|------|------------|---------|---------|------|------|------|------|
|------|------------|---------|---------|------|------|------|------|

| #     | ug/L  | ug/L  | Signal | Area   | Height |          | Stored |
|-------|-------|-------|--------|--------|--------|----------|--------|
| 1     | 2.077 | 2.077 | 0.0261 | 0.1325 | 0.0277 | 11:31:47 | Yes    |
| 2     | 2.085 | 2.085 | 0.0262 | 0.1312 | 0.0278 | 11:32:17 | Yes    |
| Mean: | 2.081 | 2.081 | 0.0261 |        |        |          |        |
| SD:   | 0.006 | 0.006 | 0.0001 |        |        |          |        |
| %RSD: | 0.272 | 0.272 | 0.27   |        |        |          |        |

Sequence No.: 19

Sample ID: 409254011|1614669|1

Analyst: MTM

Autosampler Location: 28

Date Collected: 11/10/2016 11:32:36

Data Type: Original

Replicate Data: 409254011|1614669|1

| Repl  | SampleConc | StndConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|----------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L     | Signal  | Area   | Height |          | Stored |
| 1     | 0.188      | 0.188    | 0.0025  | 0.0193 | 0.0042 | 11:33:27 | Yes    |
| 2     | 0.187      | 0.187    | 0.0025  | 0.0195 | 0.0041 | 11:33:57 | Yes    |
| Mean: | 0.188      | 0.188    | 0.0025  |        |        |          |        |
| SD:   | 0.000      | 0.000    | 0.0000  |        |        |          |        |
| %RSD: | 0.193      | 0.193    | 0.18    |        |        |          |        |

Sequence No.: 20

Sample ID: 1203666307|1614669|1

Analyst: MTM

Autosampler Location: 29

Date Collected: 11/10/2016 11:34:16

Data Type: Original

Replicate Data: 1203666307|1614669|1

| Repl  | SampleConc | StndConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|----------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L     | Signal  | Area   | Height |          | Stored |
| 1     | 0.154      | 0.154    | 0.0021  | 0.0177 | 0.0037 | 11:35:07 | Yes    |
| 2     | 0.150      | 0.150    | 0.0020  | 0.0173 | 0.0037 | 11:35:37 | Yes    |
| Mean: | 0.152      | 0.152    | 0.0021  |        |        |          |        |
| SD:   | 0.003      | 0.003    | 0.0000  |        |        |          |        |
| %RSD: | 1.743      | 1.743    | 1.61    |        |        |          |        |

Sequence No.: 21

Sample ID: 1203666308|1614669|1

Analyst: MTM

Autosampler Location: 30

Date Collected: 11/10/2016 11:35:56

Data Type: Original

Replicate Data: 1203666308|1614669|1

| Repl  | SampleConc | StndConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|----------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L     | Signal  | Area   | Height |          | Stored |
| 1     | 2.338      | 2.338    | 0.0293  | 0.1487 | 0.0310 | 11:36:47 | Yes    |
| 2     | 2.298      | 2.298    | 0.0288  | 0.1461 | 0.0305 | 11:37:16 | Yes    |
| Mean: | 2.318      | 2.318    | 0.0291  |        |        |          |        |
| SD:   | 0.028      | 0.028    | 0.0003  |        |        |          |        |
| %RSD: | 1.203      | 1.203    | 1.20    |        |        |          |        |

Sequence No.: 22

Sample ID: 1203666309|1614669|5

Analyst: MTM

Autosampler Location: 31

Date Collected: 11/10/2016 11:37:36

Data Type: Original

Replicate Data: 1203666309|1614669|5

| Repl  | SampleConc | StndConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|----------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L     | Signal  | Area   | Height |          | Stored |
| 1     | -0.014     | -0.014   | -0.0000 | 0.0075 | 0.0016 | 11:38:27 | Yes    |
| 2     | -0.009     | -0.009   | 0.0000  | 0.0070 | 0.0017 | 11:38:57 | Yes    |
| Mean: | -0.011     | -0.011   | 0.0000  |        |        |          |        |
| SD:   | 0.003      | 0.003    | 0.0000  |        |        |          |        |
| %RSD: | 28.80      | 28.80    | 221.13  |        |        |          |        |

Sequence No.: 23

Sample ID: CCV

Analyst:

Autosampler Location: 7

Date Collected: 11/10/2016 11:39:16

Data Type: Original

-----  
Replicate Data: CCV

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 4.899      | 4.899   | 0.0613  | 0.3030 | 0.0630 | 11:40:07 | Yes    |
| 2     | 4.830      | 4.830   | 0.0605  | 0.2953 | 0.0621 | 11:40:37 | Yes    |
| Mean: | 4.864      | 4.864   | 0.0609  |        |        |          |        |
| SD:   | 0.048      | 0.048   | 0.0006  |        |        |          |        |
| %RSD: | 0.997      | 0.997   | 0.99    |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = 97.29%  
All analyte(s) passed QC.

=====

Sequence No.: 24

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 11:40:56

Analyst:

Data Type: Original

-----  
Replicate Data: CCB

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.049     | -0.049  | -0.0004 | 0.0054 | 0.0012 | 11:41:47 | Yes    |
| 2     | -0.049     | -0.049  | -0.0005 | 0.0051 | 0.0012 | 11:42:17 | Yes    |
| Mean: | -0.049     | -0.049  | -0.0005 |        |        |          |        |
| SD:   | 0.000      | 0.000   | 0.0000  |        |        |          |        |
| %RSD: | 0.595      | 0.595   | 0.80    |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = Not calculated  
All analyte(s) passed QC.

=====

Sequence No.: 25

Autosampler Location: 32

Sample ID: 1203666310|1614669|1

Date Collected: 11/10/2016 11:42:37

Analyst: MTM

Data Type: Original

-----  
Replicate Data: 1203666310|1614669|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 2.385      | 2.385   | 0.0299  | 0.1507 | 0.0316 | 11:43:28 | Yes    |
| 2     | 2.387      | 2.387   | 0.0300  | 0.1498 | 0.0316 | 11:43:58 | Yes    |
| Mean: | 2.386      | 2.386   | 0.0299  |        |        |          |        |
| SD:   | 0.001      | 0.001   | 0.0000  |        |        |          |        |
| %RSD: | 0.057      | 0.057   | 0.06    |        |        |          |        |

=====

Sequence No.: 26

Autosampler Location: 33

Sample ID: 409254012|1614669|1

Date Collected: 11/10/2016 11:44:18

Analyst: MTM

Data Type: Original

-----  
Replicate Data: 409254012|1614669|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.437      | 0.437   | 0.0056  | 0.0345 | 0.0073 | 11:45:09 | Yes    |
| 2     | 0.433      | 0.433   | 0.0056  | 0.0341 | 0.0072 | 11:45:39 | Yes    |
| Mean: | 0.435      | 0.435   | 0.0056  |        |        |          |        |
| SD:   | 0.003      | 0.003   | 0.0000  |        |        |          |        |
| %RSD: | 0.708      | 0.708   | 0.69    |        |        |          |        |

=====

Sequence No.: 27

Autosampler Location: 34

Sample ID: 409254013|1614669|1

Date Collected: 11/10/2016 11:45:59

Analyst: MTM

Data Type: Original

-----  
Replicate Data: 409254013|1614669|1

| Repl | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|------|------------|---------|---------|--------|--------|----------|--------|
| #    | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1    | 0.367      | 0.367   | 0.0047  | 0.0304 | 0.0064 | 11:46:50 | Yes    |
| 2    | 0.370      | 0.370   | 0.0048  | 0.0305 | 0.0064 | 11:47:20 | Yes    |

Mean: 0.368 0.368 0.0048  
SD: 0.003 0.003 0.0000  
%RSD: 0.695 0.695 0.67

Sequence No.: 28

Autosampler Location: 35

Sample ID: 409254014|1614669|1

Date Collected: 11/10/2016 11:47:40

Analyst: MTM

Data Type: Original

Replicate Data: 409254014|1614669|1

| Repl # | SampleConc ug/L | StndConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|---------------|----------------|-----------|-------------|----------|-------------|
| 1      | 0.454           | 0.454         | 0.0058         | 0.0357    | 0.0075      | 11:48:32 | Yes         |
| 2      | 0.445           | 0.445         | 0.0057         | 0.0356    | 0.0074      | 11:49:02 | Yes         |
| Mean:  | 0.450           | 0.450         | 0.0058         |           |             |          |             |
| SD:    | 0.006           | 0.006         | 0.0001         |           |             |          |             |
| %RSD:  | 1.427           | 1.427         | 1.39           |           |             |          |             |

Sequence No.: 29

Autosampler Location: 36

Sample ID: 409254015|1614669|1

Date Collected: 11/10/2016 11:49:22

Analyst: MTM

Data Type: Original

Replicate Data: 409254015|1614669|1

| Repl # | SampleConc ug/L | StndConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|---------------|----------------|-----------|-------------|----------|-------------|
| 1      | 0.385           | 0.385         | 0.0050         | 0.0310    | 0.0066      | 11:50:14 | Yes         |
| 2      | 0.374           | 0.374         | 0.0048         | 0.0310    | 0.0065      | 11:50:44 | Yes         |
| Mean:  | 0.379           | 0.379         | 0.0049         |           |             |          |             |
| SD:    | 0.007           | 0.007         | 0.0001         |           |             |          |             |
| %RSD:  | 1.963           | 1.963         | 1.90           |           |             |          |             |

Sequence No.: 30

Autosampler Location: 37

Sample ID: 409254016|1614669|1

Date Collected: 11/10/2016 11:51:04

Analyst: MTM

Data Type: Original

Replicate Data: 409254016|1614669|1

| Repl # | SampleConc ug/L | StndConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|---------------|----------------|-----------|-------------|----------|-------------|
| 1      | 0.441           | 0.441         | 0.0057         | 0.0353    | 0.0073      | 11:51:56 | Yes         |
| 2      | 0.440           | 0.440         | 0.0056         | 0.0349    | 0.0073      | 11:52:26 | Yes         |
| Mean:  | 0.441           | 0.441         | 0.0057         |           |             |          |             |
| SD:    | 0.001           | 0.001         | 0.0000         |           |             |          |             |
| %RSD:  | 0.250           | 0.250         | 0.24           |           |             |          |             |

Sequence No.: 31

Autosampler Location: 38

Sample ID: 409254017|1614669|1

Date Collected: 11/10/2016 11:52:46

Analyst: MTM

Data Type: Original

Replicate Data: 409254017|1614669|1

| Repl # | SampleConc ug/L | StndConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|---------------|----------------|-----------|-------------|----------|-------------|
| 1      | 0.382           | 0.382         | 0.0049         | 0.0315    | 0.0066      | 11:53:37 | Yes         |
| 2      | 0.378           | 0.378         | 0.0049         | 0.0306    | 0.0065      | 11:54:07 | Yes         |
| Mean:  | 0.380           | 0.380         | 0.0049         |           |             |          |             |
| SD:    | 0.003           | 0.003         | 0.0000         |           |             |          |             |
| %RSD:  | 0.794           | 0.794         | 0.77           |           |             |          |             |

Sequence No.: 32

Autosampler Location: 39

Sample ID: 409254018|1614669|1

Date Collected: 11/10/2016 11:54:27

Analyst: MTM

Data Type: Original

Replicate Data: 409254018|1614669|1

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 0.412           | 0.412          | 0.0053          | 0.0331    | 0.0070      | 11:55:18 | Yes         |
| 2      | 0.406           | 0.406          | 0.0052          | 0.0327    | 0.0069      | 11:55:48 | Yes         |
| Mean:  | 0.409           | 0.409          | 0.0053          |           |             |          |             |
| SD:    | 0.005           | 0.005          | 0.0001          |           |             |          |             |
| %RSD:  | 1.133           | 1.133          | 1.10            |           |             |          |             |

Sequence No.: 33

Autosampler Location: 40

Sample ID: 409254019|1614669|1

Date Collected: 11/10/2016 11:56:08

Analyst: MTM

Data Type: Original

Replicate Data: 409254019|1614669|1

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 0.330           | 0.330          | 0.0043          | 0.0278    | 0.0059      | 11:56:59 | Yes         |
| 2      | 0.318           | 0.318          | 0.0041          | 0.0277    | 0.0058      | 11:57:29 | Yes         |
| Mean:  | 0.324           | 0.324          | 0.0042          |           |             |          |             |
| SD:    | 0.008           | 0.008          | 0.0001          |           |             |          |             |
| %RSD:  | 2.450           | 2.450          | 2.36            |           |             |          |             |

Sequence No.: 34

Autosampler Location: 41

Sample ID: 409254020|1614669|1

Date Collected: 11/10/2016 11:57:49

Analyst: MTM

Data Type: Original

Replicate Data: 409254020|1614669|1

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 0.619           | 0.619          | 0.0079          | 0.0455    | 0.0095      | 11:58:40 | Yes         |
| 2      | 0.619           | 0.619          | 0.0079          | 0.0453    | 0.0095      | 11:59:10 | Yes         |
| Mean:  | 0.619           | 0.619          | 0.0079          |           |             |          |             |
| SD:    | 0.000           | 0.000          | 0.0000          |           |             |          |             |
| %RSD:  | 0.010           | 0.010          | 0.01            |           |             |          |             |

Sequence No.: 35

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/10/2016 11:59:29

Analyst:

Data Type: Original

Replicate Data: CCV

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 4.850           | 4.850          | 0.0607          | 0.2989    | 0.0623      | 12:00:20 | Yes         |
| 2      | 4.860           | 4.860          | 0.0608          | 0.2973    | 0.0625      | 12:00:50 | Yes         |
| Mean:  | 4.855           | 4.855          | 0.0608          |           |             |          |             |
| SD:    | 0.008           | 0.008          | 0.0001          |           |             |          |             |
| %RSD:  | 0.155           | 0.155          | 0.15            |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = 97.10%

All analyte(s) passed QC.

Sequence No.: 36

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 12:01:09

Analyst:

Data Type: Original

Replicate Data: CCB

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | -0.046          | -0.046         | -0.0004         | 0.0053    | 0.0012      | 12:01:59 | Yes         |
| 2      | -0.047          | -0.047         | -0.0004         | 0.0055    | 0.0012      | 12:02:29 | Yes         |
| Mean:  | -0.047          | -0.047         | -0.0004         |           |             |          |             |
| SD:    | 0.000           | 0.000          | 0.0000          |           |             |          |             |
| %RSD:  | 0.330           | 0.330          | 0.46            |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = Not calculated

All analyte(s) passed QC.

Sequence No.: 37

Autosampler Location: 42

Sample ID: 409254022|1614669|1

Date Collected: 11/10/2016 12:02:49

Analyst: MTM

Data Type: Original

Replicate Data: 409254022|1614669|1

| Repl  | SampleConc | StdConc | Blncorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.424      | 0.424   | 0.0055  | 0.0340 | 0.0071 | 12:03:40 | Yes    |
| 2     | 0.421      | 0.421   | 0.0054  | 0.0335 | 0.0071 | 12:04:10 | Yes    |
| Mean: | 0.423      | 0.423   | 0.0054  |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000  |        |        |          |        |
| %RSD: | 0.463      | 0.463   | 0.45    |        |        |          |        |

Sequence No.: 38

Autosampler Location: 43

Sample ID: 409254024|1614669|1

Date Collected: 11/10/2016 12:04:29

Analyst: MTM

Data Type: Original

Replicate Data: 409254024|1614669|1

| Repl  | SampleConc | StdConc | Blncorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.370      | 0.370   | 0.0048  | 0.0302 | 0.0064 | 12:05:20 | Yes    |
| 2     | 0.378      | 0.378   | 0.0049  | 0.0306 | 0.0065 | 12:05:50 | Yes    |
| Mean: | 0.374      | 0.374   | 0.0048  |        |        |          |        |
| SD:   | 0.006      | 0.006   | 0.0001  |        |        |          |        |
| %RSD: | 1.480      | 1.480   | 1.43    |        |        |          |        |

Sequence No.: 39

Autosampler Location: 44

Sample ID: 409254029|1614669|1

Date Collected: 11/10/2016 12:06:10

Analyst: MTM

Data Type: Original

Replicate Data: 409254029|1614669|1

| Repl  | SampleConc | StdConc | Blncorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.537      | 0.537   | 0.0069  | 0.0402 | 0.0085 | 12:07:01 | Yes    |
| 2     | 0.536      | 0.536   | 0.0069  | 0.0407 | 0.0085 | 12:07:31 | Yes    |
| Mean: | 0.537      | 0.537   | 0.0069  |        |        |          |        |
| SD:   | 0.000      | 0.000   | 0.0000  |        |        |          |        |
| %RSD: | 0.068      | 0.068   | 0.07    |        |        |          |        |

Sequence No.: 40

Autosampler Location: 45

Sample ID: 409254032|1614669|1

Date Collected: 11/10/2016 12:07:50

Analyst: MTM

Data Type: Original

Replicate Data: 409254032|1614669|1

| Repl  | SampleConc | StdConc | Blncorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.256      | 0.256   | 0.0034  | 0.0238 | 0.0050 | 12:08:41 | Yes    |
| 2     | 0.258      | 0.258   | 0.0034  | 0.0237 | 0.0050 | 12:09:11 | Yes    |
| Mean: | 0.257      | 0.257   | 0.0034  |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000  |        |        |          |        |
| %RSD: | 0.648      | 0.648   | 0.62    |        |        |          |        |

Sequence No.: 41

Autosampler Location: 46

Sample ID: 409254034|1614669|1

Date Collected: 11/10/2016 12:09:31

Analyst: MTM

Data Type: Original

Replicate Data: 409254034|1614669|1

| Repl | SampleConc | StdConc | Blncorr | Peak   | Peak   | Time     | Peak   |
|------|------------|---------|---------|--------|--------|----------|--------|
| #    | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1    | 0.404      | 0.404   | 0.0052  | 0.0323 | 0.0069 | 12:10:22 | Yes    |

|       |       |       |        |        |        |          |     |
|-------|-------|-------|--------|--------|--------|----------|-----|
| 2     | 0.396 | 0.396 | 0.0051 | 0.0317 | 0.0067 | 12:10:53 | Yes |
| Mean: | 0.400 | 0.400 | 0.0052 |        |        |          |     |
| SD:   | 0.006 | 0.006 | 0.0001 |        |        |          |     |
| %RSD: | 1.509 | 1.509 | 1.46   |        |        |          |     |

Sequence No.: 42

Autosampler Location: 47

Sample ID: 409254036|1614669|1

Date Collected: 11/10/2016 12:11:13

Analyst: MTM

Data Type: Original

Replicate Data: 409254036|1614669|1

| Repl  | SampleConc | StdConc | BlncCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal   | Area   | Height |          | Stored |
| 1     | 0.211      | 0.211   | 0.0028   | 0.0209 | 0.0044 | 12:12:04 | Yes    |
| 2     | 0.207      | 0.207   | 0.0027   | 0.0208 | 0.0044 | 12:12:35 | Yes    |
| Mean: | 0.209      | 0.209   | 0.0028   |        |        |          |        |
| SD:   | 0.003      | 0.003   | 0.0000   |        |        |          |        |
| %RSD: | 1.415      | 1.415   | 1.33     |        |        |          |        |

Sequence No.: 43

Autosampler Location: 48

Sample ID: 409254038|1614669|1

Date Collected: 11/10/2016 12:12:55

Analyst: MTM

Data Type: Original

Replicate Data: 409254038|1614669|1

| Repl  | SampleConc | StdConc | BlncCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal   | Area   | Height |          | Stored |
| 1     | 0.011      | 0.011   | 0.0003   | 0.0092 | 0.0019 | 12:13:47 | Yes    |
| 2     | 0.007      | 0.007   | 0.0002   | 0.0088 | 0.0019 | 12:14:17 | Yes    |
| Mean: | 0.009      | 0.009   | 0.0003   |        |        |          |        |
| SD:   | 0.003      | 0.003   | 0.0000   |        |        |          |        |
| %RSD: | 35.25      | 35.25   | 14.67    |        |        |          |        |

Sequence No.: 44

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/10/2016 12:14:37

Analyst:

Data Type: Original

Replicate Data: CCV

| Repl  | SampleConc | StdConc | BlncCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal   | Area   | Height |          | Stored |
| 1     | 4.763      | 4.763   | 0.0596   | 0.2930 | 0.0613 | 12:15:27 | Yes    |
| 2     | 4.813      | 4.813   | 0.0602   | 0.2956 | 0.0619 | 12:15:58 | Yes    |
| Mean: | 4.788      | 4.788   | 0.0599   |        |        |          |        |
| SD:   | 0.035      | 0.035   | 0.0004   |        |        |          |        |
| %RSD: | 0.732      | 0.732   | 0.73     |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = 95.76%  
All analyte(s) passed QC.

Sequence No.: 45

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 12:16:17

Analyst:

Data Type: Original

Replicate Data: CCB

| Repl  | SampleConc | StdConc | BlncCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal   | Area   | Height |          | Stored |
| 1     | -0.052     | -0.052  | -0.0005  | 0.0052 | 0.0012 | 12:17:08 | Yes    |
| 2     | -0.054     | -0.054  | -0.0005  | 0.0052 | 0.0011 | 12:17:38 | Yes    |
| Mean: | -0.053     | -0.053  | -0.0005  |        |        |          |        |
| SD:   | 0.001      | 0.001   | 0.0000   |        |        |          |        |
| %RSD: | 2.167      | 2.167   | 2.86     |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = Not calculated  
All analyte(s) passed QC.

=====  
Analysis Begun

Logged In Analyst: lab

Technique: AA FIMS-MHS

Spectrometer Model: FIMS-100, S/N B050-9550

Autosampler Model: S10

Sample Information File: C:\data-AA\lab\Sample Information\110916.SIF

Batch ID:

Results Data Set: 111016W1

Results Library: C:\data-AA\lab\Results\Results.mdb

=====  
Method Loaded

Method Name: WATERbyv

Method Last Saved: 11/9/2016 16:32:03

Method Description: SW-846 7470A, EPA 245.1 ANALYST MTM

Sequence No.: 1

Autosampler Location: 1

Sample ID: Calib Blank

Date Collected: 11/10/2016 10:39:17

Analyst:

Data Type: Original

-----  
Replicate Data: Calib Blank

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [0.00]       | 0.0007         | 0.0048    | 0.0007      | 10:40:08 | Yes         |
| 2      |                 | [0.00]       | 0.0006         | 0.0040    | 0.0006      | 10:40:38 | Yes         |
| Mean:  |                 | [0.00]       | 0.0007         |           |             |          |             |
| SD:    |                 | 0.00         | 0.0001         |           |             |          |             |
| %RSD:  |                 | 0.00         | 8.91           |           |             |          |             |

Auto-zero performed.

Sequence No.: 2

Autosampler Location: 2

Sample ID: S0.2

Date Collected: 11/10/2016 10:40:57

Analyst:

Data Type: Original

-----  
Replicate Data: S0.2

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [0.2]        | 0.0024         | 0.0173    | 0.0030      | 10:41:48 | Yes         |
| 2      |                 | [0.2]        | 0.0023         | 0.0172    | 0.0030      | 10:42:18 | Yes         |
| Mean:  |                 | [0.2]        | 0.0023         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0000         |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.58           |           |             |          |             |

Standard number 1 applied. [0.2]

Correlation Coef.: 1.000000 Slope: 0.01172 Intercept: 0.00000

Sequence No.: 3

Autosampler Location: 3

Sample ID: S0.5

Date Collected: 11/10/2016 10:42:37

Analyst:

Data Type: Original

-----  
Replicate Data: S0.5

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      |                 | [0.5]        | 0.0057         | 0.0374    | 0.0063      | 10:43:28 | Yes         |
| 2      |                 | [0.5]        | 0.0056         | 0.0369    | 0.0063      | 10:43:58 | Yes         |
| Mean:  |                 | [0.5]        | 0.0056         |           |             |          |             |
| SD:    |                 | 0.0          | 0.0000         |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.81           |           |             |          |             |

Standard number 2 applied. [0.5]

Correlation Coef.: 0.999817 Slope: 0.01122 Intercept: 0.00004

Sequence No.: 4

Autosampler Location: 4

Sample ID: S2.0

Date Collected: 11/10/2016 10:44:18

Analyst:

Data Type: Original



-----  
Replicate Data: S2.0

| Repl # | SampleConc ug/L | StdConc ug/L | BlncCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|-----------------|-----------|-------------|----------|-------------|
| 1      |                 | [2.0]        | 0.0223          | 0.1359    | 0.0230      | 10:45:09 | Yes         |
| 2      |                 | [2.0]        | 0.0221          | 0.1334    | 0.0228      | 10:45:40 | Yes         |
| Mean:  |                 | [2.0]        | 0.0222          |           |             |          |             |
| SD:    |                 | 0.0          | 0.0001          |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.66            |           |             |          |             |

Standard number 3 applied. [2.0]  
Correlation Coef.: 0.999986 Slope: 0.01108 Intercept: 0.00007

Sequence No.: 5

Autosampler Location: 5

Sample ID: S5.0

Date Collected: 11/10/2016 10:46:00

Analyst:

Data Type: Original

-----  
Replicate Data: S5.0

| Repl # | SampleConc ug/L | StdConc ug/L | BlncCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|-----------------|-----------|-------------|----------|-------------|
| 1      |                 | [5.0]        | 0.0537          | 0.3244    | 0.0544      | 10:46:52 | Yes         |
| 2      |                 | [5.0]        | 0.0535          | 0.3214    | 0.0541      | 10:47:22 | Yes         |
| Mean:  |                 | [5.0]        | 0.0536          |           |             |          |             |
| SD:    |                 | 0.0          | 0.0002          |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.34            |           |             |          |             |

Standard number 4 applied. [5.0]  
Correlation Coef.: 0.999897 Slope: 0.01071 Intercept: 0.00027

Sequence No.: 6

Autosampler Location: 6

Sample ID: S10.0

Date Collected: 11/10/2016 10:47:42

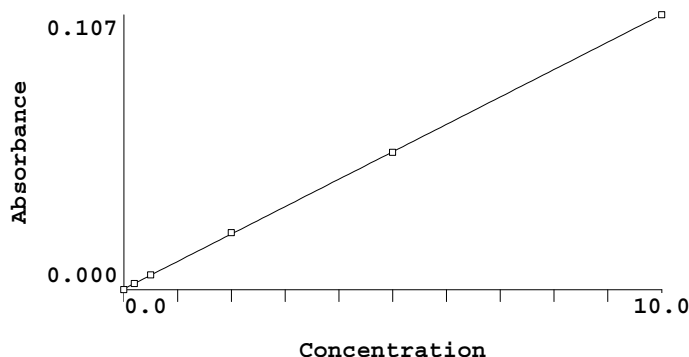
Analyst:

Data Type: Original

-----  
Replicate Data: S10.0

| Repl # | SampleConc ug/L | StdConc ug/L | BlncCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|-----------------|-----------|-------------|----------|-------------|
| 1      |                 | [10.0]       | 0.1076          | 0.6514    | 0.1083      | 10:48:32 | Yes         |
| 2      |                 | [10.0]       | 0.1070          | 0.6413    | 0.1077      | 10:49:03 | Yes         |
| Mean:  |                 | [10.0]       | 0.1073          |           |             |          |             |
| SD:    |                 | 0.0          | 0.0005          |           |             |          |             |
| %RSD:  |                 | 0.0          | 0.44            |           |             |          |             |

Standard number 5 applied. [10.0]  
Correlation Coef.: 0.999977 Slope: 0.01070 Intercept: 0.00027

-----  
Calibration data for Hg 253.7

Equation: Linear, Calculated Intercept

| ID          | Mean Signal (Abs) | Entered Conc. ug/L | Calculated Conc. ug/L | Standard Deviation | %RSD |
|-------------|-------------------|--------------------|-----------------------|--------------------|------|
| Calib Blank | 0.0000            | 0                  | -0.025                | 0.00               | 8.9  |
| S0.2        | 0.0023            | 0.2                | 0.194                 | 0.00               | 0.6  |
| S0.5        | 0.0056            | 0.5                | 0.500                 | 0.00               | 0.8  |
| S2.0        | 0.0222            | 2.0                | 2.051                 | 0.00               | 0.7  |

S5.0 0.0536 5.0 4.981 0.00 0.3  
S10.0 0.1073 10.0 9.999 0.00 0.4  
Correlation Coef.: 0.999977 Slope: 0.01070 Intercept: 0.00027

Sequence No.: 7

Autosampler Location: 9

Sample ID: ICV

Date Collected: 11/10/2016 10:49:22

Analyst:

Data Type: Original

## Replicate Data: ICV

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 5.027           | 5.027          | 0.0541          | 0.3273    | 0.0548      | 10:50:13 | Yes         |
| 2      | 4.909           | 4.909          | 0.0528          | 0.3169    | 0.0535      | 10:50:43 | Yes         |
| Mean:  | 4.968           | 4.968          | 0.0534          |           |             |          |             |
| SD:    | 0.084           | 0.084          | 0.0009          |           |             |          |             |
| %RSD:  | 1.688           | 1.688          | 1.68            |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = 99.36%  
All analyte(s) passed QC.

Sequence No.: 8

Autosampler Location: 10

Sample ID: ICB

Date Collected: 11/10/2016 10:51:03

Analyst:

Data Type: Original

## Replicate Data: ICB

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | -0.031          | -0.031         | -0.0001         | 0.0032    | 0.0006      | 10:51:54 | Yes         |
| 2      | -0.028          | -0.028         | -0.0000         | 0.0034    | 0.0007      | 10:52:24 | Yes         |
| Mean:  | -0.030          | -0.030         | -0.0000         |           |             |          |             |
| SD:    | 0.002           | 0.002          | 0.0000          |           |             |          |             |
| %RSD:  | 6.783           | 6.783          | 45.41           |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = Not calculated  
All analyte(s) passed QC.

Sequence No.: 9

Autosampler Location: 11

Sample ID: CRDL

Date Collected: 11/10/2016 10:52:44

Analyst:

Data Type: Original

## Replicate Data: CRDL

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 0.180           | 0.180          | 0.0022          | 0.0169    | 0.0029      | 10:53:36 | Yes         |
| 2      | 0.184           | 0.184          | 0.0022          | 0.0173    | 0.0029      | 10:54:06 | Yes         |
| Mean:  | 0.182           | 0.182          | 0.0022          |           |             |          |             |
| SD:    | 0.003           | 0.003          | 0.0000          |           |             |          |             |
| %RSD:  | 1.468           | 1.468          | 1.29            |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = 91.00%  
All analyte(s) passed QC.

Sequence No.: 10

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/10/2016 10:54:26

Analyst:

Data Type: Original

## Replicate Data: CCV

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 4.961           | 4.961          | 0.0534          | 0.3260    | 0.0541      | 10:55:17 | Yes         |
| 2      | 4.841           | 4.841          | 0.0521          | 0.3150    | 0.0528      | 10:55:47 | Yes         |
| Mean:  | 4.901           | 4.901          | 0.0527          |           |             |          |             |
| SD:    | 0.085           | 0.085          | 0.0009          |           |             |          |             |
| %RSD:  | 1.735           | 1.735          | 1.73            |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = 98.02%  
All analyte(s) passed QC.

Sequence No.: 11

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 10:56:06

Analyst:

Data Type: Original

## Replicate Data: CCB

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | -0.020          | -0.020       | 0.0001         | 0.0039    | 0.0007      | 10:56:57 | Yes         |
| 2      | -0.024          | -0.024       | 0.0000         | 0.0036    | 0.0007      | 10:57:27 | Yes         |
| Mean:  | -0.022          | -0.022       | 0.0000         |           |             |          |             |
| SD:    | 0.003           | 0.003        | 0.0000         |           |             |          |             |
| %RSD:  | 12.54           | 12.54        | 78.72          |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = Not calculated

All analyte(s) passed QC.

Sequence No.: 12

Autosampler Location: 99

Sample ID: 1203665505|1614345|1

Date Collected: 11/10/2016 10:57:47

Analyst: MTM1

Data Type: Original

## Replicate Data: 1203665505|1614345|1

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | -0.089          | -0.089       | -0.0007        | -0.0002   | 0.0000      | 10:58:39 | Yes         |
| 2      | -0.088          | -0.088       | -0.0007        | -0.0000   | 0.0000      | 10:59:09 | Yes         |
| Mean:  | -0.088          | -0.088       | -0.0007        |           |             |          |             |
| SD:    | 0.001           | 0.001        | 0.0000         |           |             |          |             |
| %RSD:  | 0.692           | 0.692        | 0.97           |           |             |          |             |

Sequence No.: 13

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/10/2016 10:59:29

Analyst:

Data Type: Original

## Replicate Data: CCV

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | 4.921           | 4.921        | 0.0529         | 0.3228    | 0.0536      | 11:00:20 | Yes         |
| 2      | 4.852           | 4.852        | 0.0522         | 0.3164    | 0.0529      | 11:00:49 | Yes         |
| Mean:  | 4.887           | 4.887        | 0.0526         |           |             |          |             |
| SD:    | 0.049           | 0.049        | 0.0005         |           |             |          |             |
| %RSD:  | 1.000           | 1.000        | 0.99           |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = 97.73%

All analyte(s) passed QC.

Sequence No.: 14

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 11:01:08

Analyst:

Data Type: Original

## Replicate Data: CCB

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | -0.027          | -0.027       | -0.0000        | 0.0034    | 0.0007      | 11:01:59 | Yes         |
| 2      | -0.030          | -0.030       | -0.0001        | 0.0032    | 0.0006      | 11:02:29 | Yes         |
| Mean:  | -0.029          | -0.029       | -0.0000        |           |             |          |             |
| SD:    | 0.002           | 0.002        | 0.0000         |           |             |          |             |
| %RSD:  | 8.688           | 8.688        | 71.08          |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = Not calculated

All analyte(s) passed QC.

| #     | ug/L  | ug/L  | Signal | Area   | Height |          | Stored |
|-------|-------|-------|--------|--------|--------|----------|--------|
| 1     | 2.056 | 2.056 | 0.0223 | 0.1363 | 0.0230 | 13:28:52 | Yes    |
| 2     | 2.030 | 2.030 | 0.0220 | 0.1330 | 0.0227 | 13:29:22 | Yes    |
| Mean: | 2.043 | 2.043 | 0.0221 |        |        |          |        |
| SD:   | 0.018 | 0.018 | 0.0002 |        |        |          |        |
| %RSD: | 0.891 | 0.891 | 0.88   |        |        |          |        |

Sequence No.: 19

Sample ID: 1203666298|1614667|1

Analyst: MTM1

Autosampler Location: 76

Date Collected: 11/10/2016 13:29:42

Data Type: Original

Replicate Data: 1203666298|1614667|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.031     | -0.031  | -0.0001 | 0.0037 | 0.0006 | 13:30:34 | Yes    |
| 2     | -0.030     | -0.030  | -0.0001 | 0.0037 | 0.0006 | 13:31:04 | Yes    |
| Mean: | -0.031     | -0.031  | -0.0001 |        |        |          |        |
| SD:   | 0.001      | 0.001   | 0.0000  |        |        |          |        |
| %RSD: | 1.834      | 1.834   | 10.11   |        |        |          |        |

Sequence No.: 20

Sample ID: 1203656346|1614667|1

Analyst: MTM1

Autosampler Location: 77

Date Collected: 11/10/2016 13:31:24

Data Type: Original

Replicate Data: 1203656346|1614667|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.025     | -0.025  | 0.0000  | 0.0044 | 0.0007 | 13:32:15 | Yes    |
| 2     | -0.030     | -0.030  | -0.0001 | 0.0039 | 0.0006 | 13:32:46 | Yes    |
| Mean: | -0.027     | -0.027  | -0.0000 |        |        |          |        |
| SD:   | 0.004      | 0.004   | 0.0000  |        |        |          |        |
| %RSD: | 13.84      | 13.84   | 177.09  |        |        |          |        |

Sequence No.: 21

Sample ID: 1203666299|1614667|1

Analyst: MTM1

Autosampler Location: 78

Date Collected: 11/10/2016 13:33:06

Data Type: Original

Replicate Data: 1203666299|1614667|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 2.069      | 2.069   | 0.0224  | 0.1373 | 0.0231 | 13:33:57 | Yes    |
| 2     | 2.037      | 2.037   | 0.0221  | 0.1338 | 0.0228 | 13:34:27 | Yes    |
| Mean: | 2.053      | 2.053   | 0.0222  |        |        |          |        |
| SD:   | 0.022      | 0.022   | 0.0002  |        |        |          |        |
| %RSD: | 1.082      | 1.082   | 1.07    |        |        |          |        |

Sequence No.: 22

Sample ID: 409105003|1614667|1

Analyst: MTM1

Autosampler Location: 79

Date Collected: 11/10/2016 13:34:47

Data Type: Original

Replicate Data: 409105003|1614667|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.038     | -0.038  | -0.0001 | 0.0030 | 0.0005 | 13:35:39 | Yes    |
| 2     | -0.034     | -0.034  | -0.0001 | 0.0033 | 0.0006 | 13:36:09 | Yes    |
| Mean: | -0.036     | -0.036  | -0.0001 |        |        |          |        |
| SD:   | 0.003      | 0.003   | 0.0000  |        |        |          |        |
| %RSD: | 8.234      | 8.234   | 26.91   |        |        |          |        |

Sequence No.: 23

Sample ID: CCV

Analyst:

Autosampler Location: 7

Date Collected: 11/10/2016 13:36:29

Data Type: Original

-----  
Replicate Data: CCV

| Repl  | SampleConc | StdConc | BlnkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal   | Area   | Height |          | Stored |
| 1     | 5.035      | 5.035   | 0.0542   | 0.3249 | 0.0548 | 13:37:19 | Yes    |
| 2     | 4.954      | 4.954   | 0.0533   | 0.3166 | 0.0540 | 13:37:50 | Yes    |
| Mean: | 4.995      | 4.995   | 0.0537   |        |        |          |        |
| SD:   | 0.057      | 0.057   | 0.0006   |        |        |          |        |
| %RSD: | 1.140      | 1.140   | 1.13     |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = 99.89%  
All analyte(s) passed QC.

=====

Sequence No.: 24

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 13:38:09

Analyst:

Data Type: Original

-----  
Replicate Data: CCB

| Repl  | SampleConc | StdConc | BlnkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal   | Area   | Height |          | Stored |
| 1     | -0.035     | -0.035  | -0.0001  | 0.0032 | 0.0006 | 13:39:00 | Yes    |
| 2     | -0.037     | -0.037  | -0.0001  | 0.0029 | 0.0006 | 13:39:30 | Yes    |
| Mean: | -0.036     | -0.036  | -0.0001  |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000   |        |        |          |        |
| %RSD: | 4.329      | 4.329   | 14.22    |        |        |          |        |

QC value within limits for Hg 253.7 Recovery = Not calculated  
All analyte(s) passed QC.

=====

Sequence No.: 25

Autosampler Location: 80

Sample ID: 1203666300|1614667|1

Date Collected: 11/10/2016 13:39:49

Analyst: MTM1

Data Type: Original

-----  
Replicate Data: 1203666300|1614667|1

| Repl  | SampleConc | StdConc | BlnkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal   | Area   | Height |          | Stored |
| 1     | 2.077      | 2.077   | 0.0225   | 0.1374 | 0.0232 | 13:40:41 | Yes    |
| 2     | 2.056      | 2.056   | 0.0223   | 0.1343 | 0.0230 | 13:41:11 | Yes    |
| Mean: | 2.066      | 2.066   | 0.0224   |        |        |          |        |
| SD:   | 0.015      | 0.015   | 0.0002   |        |        |          |        |
| %RSD: | 0.716      | 0.716   | 0.71     |        |        |          |        |

=====

Sequence No.: 26

Autosampler Location: 81

Sample ID: 1203666301|1614667|1

Date Collected: 11/10/2016 13:41:31

Analyst: MTM1

Data Type: Original

-----  
Replicate Data: 1203666301|1614667|1

| Repl  | SampleConc | StdConc | BlnkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|----------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal   | Area   | Height |          | Stored |
| 1     | 2.101      | 2.101   | 0.0228   | 0.1390 | 0.0234 | 13:42:22 | Yes    |
| 2     | 2.063      | 2.063   | 0.0223   | 0.1348 | 0.0230 | 13:42:53 | Yes    |
| Mean: | 2.082      | 2.082   | 0.0226   |        |        |          |        |
| SD:   | 0.027      | 0.027   | 0.0003   |        |        |          |        |
| %RSD: | 1.307      | 1.307   | 1.29     |        |        |          |        |

=====

Sequence No.: 27

Autosampler Location: 82

Sample ID: 1203666302|1614667|5

Date Collected: 11/10/2016 13:43:13

Analyst: MTM1

Data Type: Original

-----  
Replicate Data: 1203666302|1614667|5

| Repl | SampleConc | StdConc | BlnkCorr | Peak   | Peak   | Time     | Peak   |
|------|------------|---------|----------|--------|--------|----------|--------|
| #    | ug/L       | ug/L    | Signal   | Area   | Height |          | Stored |
| 1    | -0.036     | -0.036  | -0.0001  | 0.0030 | 0.0006 | 13:44:04 | Yes    |
| 2    | -0.033     | -0.033  | -0.0001  | 0.0035 | 0.0006 | 13:44:34 | Yes    |

Mean: -0.034 -0.034 -0.0001  
SD: 0.002 0.002 0.0000  
%RSD: 5.859 5.859 21.83

Sequence No.: 28

Autosampler Location: 83

Sample ID: 1203666304|1614667|1

Date Collected: 11/10/2016 13:44:55

Analyst: MTM1

Data Type: Original

Replicate Data: 1203666304|1614667|1

| Repl # | SampleConc ug/L | StndConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|---------------|----------------|-----------|-------------|----------|-------------|
| 1      | 2.073           | 2.073         | 0.0225         | 0.1378    | 0.0231      | 13:45:46 | Yes         |
| 2      | 2.052           | 2.052         | 0.0222         | 0.1339    | 0.0229      | 13:46:16 | Yes         |
| Mean:  | 2.063           | 2.063         | 0.0223         |           |             |          |             |
| SD:    | 0.015           | 0.015         | 0.0002         |           |             |          |             |
| %RSD:  | 0.711           | 0.711         | 0.70           |           |             |          |             |

Sequence No.: 29

Autosampler Location: 84

Sample ID: 1203666311|1614671|1

Date Collected: 11/10/2016 13:46:36

Analyst: MTM1

Data Type: Original

Replicate Data: 1203666311|1614671|1

| Repl # | SampleConc ug/L | StndConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|---------------|----------------|-----------|-------------|----------|-------------|
| 1      | -0.031          | -0.031        | -0.0001        | 0.0034    | 0.0006      | 13:47:28 | Yes         |
| 2      | -0.027          | -0.027        | -0.0000        | 0.0041    | 0.0007      | 13:47:58 | Yes         |
| Mean:  | -0.029          | -0.029        | -0.0000        |           |             |          |             |
| SD:    | 0.003           | 0.003         | 0.0000         |           |             |          |             |
| %RSD:  | 11.47           | 11.47         | 88.54          |           |             |          |             |

Sequence No.: 30

Autosampler Location: 85

Sample ID: 1203657517|1614671|1

Date Collected: 11/10/2016 13:48:18

Analyst: MTM1

Data Type: Original

Replicate Data: 1203657517|1614671|1

| Repl # | SampleConc ug/L | StndConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|---------------|----------------|-----------|-------------|----------|-------------|
| 1      | -0.030          | -0.030        | -0.0001        | 0.0038    | 0.0006      | 13:49:10 | Yes         |
| 2      | -0.030          | -0.030        | -0.0000        | 0.0037    | 0.0006      | 13:49:40 | Yes         |
| Mean:  | -0.030          | -0.030        | -0.0001        |           |             |          |             |
| SD:    | 0.000           | 0.000         | 0.0000         |           |             |          |             |
| %RSD:  | 0.494           | 0.494         | 3.13           |           |             |          |             |

Sequence No.: 31

Autosampler Location: 86

Sample ID: 1203666312|1614671|1

Date Collected: 11/10/2016 13:50:01

Analyst: MTM1

Data Type: Original

Replicate Data: 1203666312|1614671|1

| Repl # | SampleConc ug/L | StndConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|---------------|----------------|-----------|-------------|----------|-------------|
| 1      | 2.026           | 2.026         | 0.0220         | 0.1341    | 0.0226      | 13:50:52 | Yes         |
| 2      | 2.000           | 2.000         | 0.0217         | 0.1305    | 0.0224      | 13:51:22 | Yes         |
| Mean:  | 2.013           | 2.013         | 0.0218         |           |             |          |             |
| SD:    | 0.019           | 0.019         | 0.0002         |           |             |          |             |
| %RSD:  | 0.931           | 0.931         | 0.92           |           |             |          |             |

Sequence No.: 32

Autosampler Location: 87

Sample ID: 409254021|1614671|1

Date Collected: 11/10/2016 13:51:43

Analyst: MTM1

Data Type: Original

Replicate Data: 409254021|1614671|1

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | -0.027          | -0.027         | -0.0000         | 0.0038    | 0.0007      | 13:52:34 | Yes         |
| 2      | -0.027          | -0.027         | -0.0000         | 0.0037    | 0.0007      | 13:53:05 | Yes         |
| Mean:  | -0.027          | -0.027         | -0.0000         |           |             |          |             |
| SD:    | 0.000           | 0.000          | 0.0000          |           |             |          |             |
| %RSD:  | 0.886           | 0.886          | 12.73           |           |             |          |             |

Sequence No.: 33

Autosampler Location: 88

Sample ID: 1203657516|1614671|1

Date Collected: 11/10/2016 13:53:25

Analyst: MTM1

Data Type: Original

Replicate Data: 1203657516|1614671|1

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 0.990           | 0.990          | 0.0109          | 0.0688    | 0.0115      | 13:54:17 | Yes         |
| 2      | 0.931           | 0.931          | 0.0102          | 0.0640    | 0.0109      | 13:54:47 | Yes         |
| Mean:  | 0.961           | 0.961          | 0.0106          |           |             |          |             |
| SD:    | 0.042           | 0.042          | 0.0004          |           |             |          |             |
| %RSD:  | 4.327           | 4.327          | 4.22            |           |             |          |             |

Sequence No.: 34

Autosampler Location: 89

Sample ID: 1203666313|1614671|1

Date Collected: 11/10/2016 13:55:07

Analyst: MTM1

Data Type: Original

Replicate Data: 1203666313|1614671|1

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | -0.028          | -0.028         | -0.0000         | 0.0039    | 0.0007      | 13:55:59 | Yes         |
| 2      | -0.027          | -0.027         | -0.0000         | 0.0038    | 0.0007      | 13:56:29 | Yes         |
| Mean:  | -0.028          | -0.028         | -0.0000         |           |             |          |             |
| SD:    | 0.001           | 0.001          | 0.0000          |           |             |          |             |
| %RSD:  | 2.240           | 2.240          | 23.87           |           |             |          |             |

Sequence No.: 35

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/10/2016 13:56:49

Analyst:

Data Type: Original

Replicate Data: CCV

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | 5.081           | 5.081          | 0.0547          | 0.3283    | 0.0553      | 13:57:40 | Yes         |
| 2      | 5.071           | 5.071          | 0.0545          | 0.3239    | 0.0552      | 13:58:10 | Yes         |
| Mean:  | 5.076           | 5.076          | 0.0546          |           |             |          |             |
| SD:    | 0.007           | 0.007          | 0.0001          |           |             |          |             |
| %RSD:  | 0.135           | 0.135          | 0.13            |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = 101.52%

All analyte(s) passed QC.

Sequence No.: 36

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 13:58:29

Analyst:

Data Type: Original

Replicate Data: CCB

| Repl # | SampleConc ug/L | StdndConc ug/L | BlndCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|----------------|-----------------|-----------|-------------|----------|-------------|
| 1      | -0.034          | -0.034         | -0.0001         | 0.0031    | 0.0006      | 13:59:20 | Yes         |
| 2      | -0.029          | -0.029         | -0.0000         | 0.0034    | 0.0006      | 13:59:50 | Yes         |
| Mean:  | -0.031          | -0.031         | -0.0001         |           |             |          |             |
| SD:    | 0.003           | 0.003          | 0.0000          |           |             |          |             |
| %RSD:  | 10.95           | 10.95          | 55.77           |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = Not calculated

All analyte(s) passed QC.

2 -0.047 -0.047 -0.0002 0.0023 0.0004 14:15:58 Yes  
Mean: -0.047 -0.047 -0.0002  
SD: 0.000 0.000 0.0000  
%RSD: 0.005 0.005 0.01

Sequence No.: 10

Autosampler Location: 55

Sample ID: 1203666261|1614653|1

Date Collected: 11/10/2016 14:16:18

Analyst: MTM1

Data Type: Original

Replicate Data: 1203666261|1614653|1

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | 2.322           | 2.322        | 0.0251         | 0.1526    | 0.0258      | 14:17:09 | Yes         |
| 2      | 2.310           | 2.310        | 0.0250         | 0.1502    | 0.0257      | 14:17:39 | Yes         |
| Mean:  | 2.316           | 2.316        | 0.0251         |           |             |          |             |
| SD:    | 0.009           | 0.009        | 0.0001         |           |             |          |             |
| %RSD:  | 0.378           | 0.378        | 0.37           |           |             |          |             |

Sequence No.: 11

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/10/2016 14:17:59

Analyst:

Data Type: Original

Replicate Data: CCV

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | 5.098           | 5.098        | 0.0548         | 0.3278    | 0.0555      | 14:18:49 | Yes         |
| 2      | 5.057           | 5.057        | 0.0544         | 0.3230    | 0.0551      | 14:19:20 | Yes         |
| Mean:  | 5.078           | 5.078        | 0.0546         |           |             |          |             |
| SD:    | 0.029           | 0.029        | 0.0003         |           |             |          |             |
| %RSD:  | 0.578           | 0.578        | 0.58           |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = 101.55%

All analyte(s) passed QC.

Sequence No.: 12

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 14:19:39

Analyst:

Data Type: Original

Replicate Data: CCB

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | -0.041          | -0.041       | -0.0002        | 0.0028    | 0.0005      | 14:20:30 | Yes         |
| 2      | -0.040          | -0.040       | -0.0002        | 0.0030    | 0.0005      | 14:21:00 | Yes         |
| Mean:  | -0.041          | -0.041       | -0.0002        |           |             |          |             |
| SD:    | 0.001           | 0.001        | 0.0000         |           |             |          |             |
| %RSD:  | 1.691           | 1.691        | 4.45           |           |             |          |             |

QC value within limits for Hg 253.7 Recovery = Not calculated

All analyte(s) passed QC.

Sequence No.: 13

Autosampler Location: 56

Sample ID: 409700003|1614653|1

Date Collected: 11/10/2016 14:21:19

Analyst: MTM1

Data Type: Original

Replicate Data: 409700003|1614653|1

| Repl # | SampleConc ug/L | StdConc ug/L | BlkCorr Signal | Peak Area | Peak Height | Time     | Peak Stored |
|--------|-----------------|--------------|----------------|-----------|-------------|----------|-------------|
| 1      | -0.011          | -0.011       | 0.0001         | 0.0047    | 0.0008      | 14:22:10 | Yes         |
| 2      | -0.010          | -0.010       | 0.0002         | 0.0047    | 0.0008      | 14:22:40 | Yes         |
| Mean:  | -0.011          | -0.011       | 0.0002         |           |             |          |             |
| SD:    | 0.001           | 0.001        | 0.0000         |           |             |          |             |
| %RSD:  | 9.720           | 9.720        | 7.18           |           |             |          |             |

Sequence No.: 14

Autosampler Location: 57



Sample ID: 409826003|1614653|1  
Analyst: MTM1

Date Collected: 11/10/2016 14:23:00  
Data Type: Original

-----  
Replicate Data: 409826003|1614653|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.003     | -0.003  | 0.0002  | 0.0051 | 0.0009 | 14:23:52 | Yes    |
| 2     | -0.005     | -0.005  | 0.0002  | 0.0050 | 0.0009 | 14:24:22 | Yes    |
| Mean: | -0.004     | -0.004  | 0.0002  |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000  |        |        |          |        |
| %RSD: | 40.81      | 40.81   | 7.24    |        |        |          |        |

=====

Sequence No.: 15  
Sample ID: 409849005|1614653|1  
Analyst: MTM1

Autosampler Location: 58  
Date Collected: 11/10/2016 14:24:41  
Data Type: Original

-----  
Replicate Data: 409849005|1614653|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.037     | -0.037  | -0.0001 | 0.0031 | 0.0006 | 14:25:33 | Yes    |
| 2     | -0.040     | -0.040  | -0.0002 | 0.0028 | 0.0005 | 14:26:03 | Yes    |
| Mean: | -0.039     | -0.039  | -0.0001 |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000  |        |        |          |        |
| %RSD: | 4.355      | 4.355   | 12.51   |        |        |          |        |

=====

Sequence No.: 16  
Sample ID: 409979005|1614653|1  
Analyst: MTM1

Autosampler Location: 59  
Date Collected: 11/10/2016 14:26:23  
Data Type: Original

-----  
Replicate Data: 409979005|1614653|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 0.019      | 0.019   | 0.0005  | 0.0065 | 0.0012 | 14:27:14 | Yes    |
| 2     | 0.020      | 0.020   | 0.0005  | 0.0065 | 0.0012 | 14:27:44 | Yes    |
| Mean: | 0.019      | 0.019   | 0.0005  |        |        |          |        |
| SD:   | 0.001      | 0.001   | 0.0000  |        |        |          |        |
| %RSD: | 2.897      | 2.897   | 1.26    |        |        |          |        |

=====

Sequence No.: 17  
Sample ID: 1203666315|1614671|5  
Analyst: MTM1

Autosampler Location: 90  
Date Collected: 11/10/2016 14:28:04  
Data Type: Original

-----  
Replicate Data: 1203666315|1614671|5

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.049     | -0.049  | -0.0003 | 0.0025 | 0.0004 | 14:28:56 | Yes    |
| 2     | -0.046     | -0.046  | -0.0002 | 0.0027 | 0.0005 | 14:29:26 | Yes    |
| Mean: | -0.047     | -0.047  | -0.0002 |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000  |        |        |          |        |
| %RSD: | 4.593      | 4.593   | 9.86    |        |        |          |        |

=====

Sequence No.: 18  
Sample ID: 1203666317|1614671|1  
Analyst: MTM1

Autosampler Location: 91  
Date Collected: 11/10/2016 14:29:46  
Data Type: Original

-----  
Replicate Data: 1203666317|1614671|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | 2.215      | 2.215   | 0.0240  | 0.1439 | 0.0247 | 14:30:38 | Yes    |
| 2     | 2.187      | 2.187   | 0.0237  | 0.1409 | 0.0244 | 14:31:08 | Yes    |
| Mean: | 2.201      | 2.201   | 0.0238  |        |        |          |        |
| SD:   | 0.020      | 0.020   | 0.0002  |        |        |          |        |

%RSD: 0.899 0.899 0.89

Sequence No.: 19

Sample ID: 409254023|1614671|1

Analyst: MTM1

Autosampler Location: 92

Date Collected: 11/10/2016 14:31:28

Data Type: Original

Replicate Data: 409254023|1614671|1

| Repl<br># | SampleConc<br>ug/L | StndConc<br>ug/L | BlkCorr<br>Signal | Peak<br>Area | Peak<br>Height | Time     | Peak<br>Stored |
|-----------|--------------------|------------------|-------------------|--------------|----------------|----------|----------------|
| 1         | -0.039             | -0.039           | -0.0001           | 0.0027       | 0.0005         | 14:32:20 | Yes            |
| 2         | -0.038             | -0.038           | -0.0001           | 0.0029       | 0.0005         | 14:32:50 | Yes            |
| Mean:     | -0.039             | -0.039           | -0.0001           |              |                |          |                |
| SD:       | 0.001              | 0.001            | 0.0000            |              |                |          |                |
| %RSD:     | 1.438              | 1.438            | 4.12              |              |                |          |                |

Sequence No.: 20

Sample ID: 409254025|1614671|1

Analyst: MTM1

Autosampler Location: 93

Date Collected: 11/10/2016 14:33:10

Data Type: Original

Replicate Data: 409254025|1614671|1

| Repl<br># | SampleConc<br>ug/L | StndConc<br>ug/L | BlkCorr<br>Signal | Peak<br>Area | Peak<br>Height | Time     | Peak<br>Stored |
|-----------|--------------------|------------------|-------------------|--------------|----------------|----------|----------------|
| 1         | -0.036             | -0.036           | -0.0001           | 0.0031       | 0.0006         | 14:34:02 | Yes            |
| 2         | -0.040             | -0.040           | -0.0002           | 0.0028       | 0.0005         | 14:34:32 | Yes            |
| Mean:     | -0.038             | -0.038           | -0.0001           |              |                |          |                |
| SD:       | 0.003              | 0.003            | 0.0000            |              |                |          |                |
| %RSD:     | 7.221              | 7.221            | 20.96             |              |                |          |                |

Sequence No.: 21

Sample ID: 409254030|1614671|1

Analyst: MTM1

Autosampler Location: 94

Date Collected: 11/10/2016 14:34:53

Data Type: Original

Replicate Data: 409254030|1614671|1

| Repl<br># | SampleConc<br>ug/L | StndConc<br>ug/L | BlkCorr<br>Signal | Peak<br>Area | Peak<br>Height | Time     | Peak<br>Stored |
|-----------|--------------------|------------------|-------------------|--------------|----------------|----------|----------------|
| 1         | -0.036             | -0.036           | -0.0001           | 0.0031       | 0.0006         | 14:35:44 | Yes            |
| 2         | -0.032             | -0.032           | -0.0001           | 0.0036       | 0.0006         | 14:36:14 | Yes            |
| Mean:     | -0.034             | -0.034           | -0.0001           |              |                |          |                |
| SD:       | 0.003              | 0.003            | 0.0000            |              |                |          |                |
| %RSD:     | 9.545              | 9.545            | 36.89             |              |                |          |                |

Sequence No.: 22

Sample ID: 409254033|1614671|1

Analyst: MTM1

Autosampler Location: 95

Date Collected: 11/10/2016 14:36:34

Data Type: Original

Replicate Data: 409254033|1614671|1

| Repl<br># | SampleConc<br>ug/L | StndConc<br>ug/L | BlkCorr<br>Signal | Peak<br>Area | Peak<br>Height | Time     | Peak<br>Stored |
|-----------|--------------------|------------------|-------------------|--------------|----------------|----------|----------------|
| 1         | -0.042             | -0.042           | -0.0002           | 0.0028       | 0.0005         | 14:37:26 | Yes            |
| 2         | -0.041             | -0.041           | -0.0002           | 0.0029       | 0.0005         | 14:37:56 | Yes            |
| Mean:     | -0.041             | -0.041           | -0.0002           |              |                |          |                |
| SD:       | 0.001              | 0.001            | 0.0000            |              |                |          |                |
| %RSD:     | 1.561              | 1.561            | 4.01              |              |                |          |                |

Sequence No.: 23

Sample ID: CCV

Analyst:

Autosampler Location: 7

Date Collected: 11/10/2016 14:38:17

Data Type: Original

Replicate Data: CCV

| Repl<br># | SampleConc<br>ug/L | StndConc<br>ug/L | BlkCorr<br>Signal | Peak<br>Area | Peak<br>Height | Time | Peak<br>Stored |
|-----------|--------------------|------------------|-------------------|--------------|----------------|------|----------------|
|-----------|--------------------|------------------|-------------------|--------------|----------------|------|----------------|

|       |       |       |        |        |        |          |     |
|-------|-------|-------|--------|--------|--------|----------|-----|
| 1     | 5.129 | 5.129 | 0.0552 | 0.3285 | 0.0559 | 14:39:07 | Yes |
| 2     | 5.080 | 5.080 | 0.0546 | 0.3234 | 0.0553 | 14:39:38 | Yes |
| Mean: | 5.105 | 5.105 | 0.0549 |        |        |          |     |
| SD:   | 0.035 | 0.035 | 0.0004 |        |        |          |     |
| %RSD: | 0.688 | 0.688 | 0.68   |        |        |          |     |

QC value within limits for Hg 253.7 Recovery = 102.09%  
All analyte(s) passed QC.

Sequence No.: 24

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 14:39:57

Analyst:

Data Type: Original

## Replicate Data: CCB

| Repl  | SampleConc | StdConc | BlkCorr | Peak    | Peak   | Time     | Peak   |
|-------|------------|---------|---------|---------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area    | Height |          | Stored |
| 1     | -0.080     | -0.080  | -0.0006 | 0.0002  | 0.0001 | 14:40:47 | Yes    |
| 2     | -0.089     | -0.089  | -0.0007 | -0.0004 | 0.0000 | 14:41:17 | Yes    |
| Mean: | -0.084     | -0.084  | -0.0006 |         |        |          |        |
| SD:   | 0.006      | 0.006   | 0.0001  |         |        |          |        |
| %RSD: | 7.145      | 7.145   | 10.18   |         |        |          |        |

QC value within limits for Hg 253.7 Recovery = Not calculated  
All analyte(s) passed QC.

Sequence No.: 25

Autosampler Location: 96

Sample ID: 409254035|1614671|1

Date Collected: 11/10/2016 14:41:37

Analyst: MTM1

Data Type: Original

## Replicate Data: 409254035|1614671|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.032     | -0.032  | -0.0001 | 0.0033 | 0.0006 | 14:42:29 | Yes    |
| 2     | -0.034     | -0.034  | -0.0001 | 0.0030 | 0.0006 | 14:42:59 | Yes    |
| Mean: | -0.033     | -0.033  | -0.0001 |        |        |          |        |
| SD:   | 0.001      | 0.001   | 0.0000  |        |        |          |        |
| %RSD: | 3.692      | 3.692   | 15.77   |        |        |          |        |

Sequence No.: 26

Autosampler Location: 97

Sample ID: 409254037|1614671|1

Date Collected: 11/10/2016 14:43:19

Analyst: MTM1

Data Type: Original

## Replicate Data: 409254037|1614671|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.044     | -0.044  | -0.0002 | 0.0029 | 0.0005 | 14:44:11 | Yes    |
| 2     | -0.047     | -0.047  | -0.0002 | 0.0025 | 0.0004 | 14:44:41 | Yes    |
| Mean: | -0.046     | -0.046  | -0.0002 |        |        |          |        |
| SD:   | 0.002      | 0.002   | 0.0000  |        |        |          |        |
| %RSD: | 4.152      | 4.152   | 9.24    |        |        |          |        |

Sequence No.: 27

Autosampler Location: 98

Sample ID: 409254039|1614671|1

Date Collected: 11/10/2016 14:45:01

Analyst: MTM1

Data Type: Original

## Replicate Data: 409254039|1614671|1

| Repl  | SampleConc | StdConc | BlkCorr | Peak   | Peak   | Time     | Peak   |
|-------|------------|---------|---------|--------|--------|----------|--------|
| #     | ug/L       | ug/L    | Signal  | Area   | Height |          | Stored |
| 1     | -0.035     | -0.035  | -0.0001 | 0.0034 | 0.0006 | 14:45:53 | Yes    |
| 2     | -0.036     | -0.036  | -0.0001 | 0.0031 | 0.0006 | 14:46:23 | Yes    |
| Mean: | -0.035     | -0.035  | -0.0001 |        |        |          |        |
| SD:   | 0.001      | 0.001   | 0.0000  |        |        |          |        |
| %RSD: | 2.647      | 2.647   | 9.20    |        |        |          |        |

Sequence No.: 28

Autosampler Location: 7

Sample ID: CCV

Date Collected: 11/10/2016 14:46:44

Analyst:

Data Type: Original

-----  
Replicate Data: CCV

| Repl<br># | SampleConc<br>ug/L | StndConc<br>ug/L | BlkCorr<br>Signal | Peak<br>Area | Peak<br>Height | Time     | Peak<br>Stored |
|-----------|--------------------|------------------|-------------------|--------------|----------------|----------|----------------|
| 1         | 5.129              | 5.129            | 0.0552            | 0.3296       | 0.0558         | 14:47:34 | Yes            |
| 2         | 5.084              | 5.084            | 0.0547            | 0.3232       | 0.0554         | 14:48:04 | Yes            |
| Mean:     | 5.106              | 5.106            | 0.0549            |              |                |          |                |
| SD:       | 0.032              | 0.032            | 0.0003            |              |                |          |                |
| %RSD:     | 0.621              | 0.621            | 0.62              |              |                |          |                |

QC value within limits for Hg 253.7 Recovery = 102.12%  
All analyte(s) passed QC.

=====

Sequence No.: 29

Autosampler Location: 8

Sample ID: CCB

Date Collected: 11/10/2016 14:48:23

Analyst:

Data Type: Original

-----  
Replicate Data: CCB

| Repl<br># | SampleConc<br>ug/L | StndConc<br>ug/L | BlkCorr<br>Signal | Peak<br>Area | Peak<br>Height | Time     | Peak<br>Stored |
|-----------|--------------------|------------------|-------------------|--------------|----------------|----------|----------------|
| 1         | -0.079             | -0.079           | -0.0006           | 0.0001       | 0.0001         | 14:49:14 | Yes            |
| 2         | -0.089             | -0.089           | -0.0007           | -0.0003      | 0.0000         | 14:49:44 | Yes            |
| Mean:     | -0.084             | -0.084           | -0.0006           |              |                |          |                |
| SD:       | 0.007              | 0.007            | 0.0001            |              |                |          |                |
| %RSD:     | 8.169              | 8.169            | 11.67             |              |                |          |                |

QC value within limits for Hg 253.7 Recovery = Not calculated  
All analyte(s) passed QC.

# Miscellaneous

# Prep Logbook

## Acid Digestion of Sediments, Sludges, and Soils

|                  |                     |      |            |                     |               |              |             |
|------------------|---------------------|------|------------|---------------------|---------------|--------------|-------------|
| <b>Batch ID:</b> | <b>1611118</b>      | Type | Sample Id  | Description         | Serial Number | Spike Amount | Spike Units |
| Analyst:         | James Pressley      | LCS  | 1203657601 | Metals Spike Mix I  | UI2464937-01  | .25          | mL          |
| Method:          | SW846 3050B         | LCS  | 1203657601 | Metals Spike Mix II | UI2464937-02  | .25          | mL          |
| Lab SOP:         | GL-MA-E-009 REV# 26 | MS   | 1203657603 | Metals Spike Mix I  | UI2464937-01  | .25          | mL          |
| Instrument:      | BAL-892             | MS   | 1203657603 | Metals Spike Mix II | UI2464937-02  | .25          | mL          |

| Sample ID                    | Prep Date            | Matrix | Initial Weight (g) | Final Volume (mL) | Prep Factor (mL/g) |
|------------------------------|----------------------|--------|--------------------|-------------------|--------------------|
| 1203657600 MB                | 27-OCT-2016 20:50:01 | Soil   | 0.505              | 50                | 99.0099            |
| 1203657601 LCS               | 27-OCT-2016 20:50:01 | Soil   | 0.525              | 50                | 95.2381            |
| 409254022                    | 27-OCT-2016 20:50:01 | Soil   | 0.587              | 50                | 85.17888           |
| 1203657602 DUP (409254022)   | 27-OCT-2016 20:50:01 | Soil   | 0.524              | 50                | 95.41985           |
| 1203657603 MS (409254022)    | 27-OCT-2016 20:50:01 | Soil   | 0.514              | 50                | 97.27626           |
| 1203657604 SDILT (409254022) | 27-OCT-2016 20:50:01 | Soil   | 0.587              | 50                | 85.17888           |
| 409254024                    | 27-OCT-2016 20:50:01 | Soil   | 0.527              | 50                | 94.87666           |
| 409254029                    | 27-OCT-2016 20:50:01 | Soil   | 0.555              | 50                | 90.09009           |
| 409254032                    | 27-OCT-2016 20:50:01 | Soil   | 0.571              | 50                | 87.56567           |
| 409254034                    | 27-OCT-2016 20:50:01 | Soil   | 0.547              | 50                | 91.40768           |
| 409254036                    | 27-OCT-2016 20:50:01 | Soil   | 0.547              | 50                | 91.40768           |
| 409254038                    | 27-OCT-2016 20:50:01 | Soil   | 0.508              | 50                | 98.4252            |

| Reagent/Solvent Lot ID | Description              | Amount  | Comments:   |
|------------------------|--------------------------|---------|---|
| 2451969                | Concentrated Nitric Acid | 1.25 mL | Block Temperature (90-100C): 95 C<br>Temperature within limits (Y/N)?: Y<br>Thermometer ID: 118631<br>Hot Block ID: 2 |
| 2460888                | HYDROCHLORIC ACID        | 10 mL   |   |

# Prep Logbook

## Acid Digestion of Sediments, Sludges, and Soils

| Batch ID:   | 1611116             | Type | Sample Id  | Description         | Serial Number | Spike Amount | Spike Units |
|-------------|---------------------|------|------------|---------------------|---------------|--------------|-------------|
| Analyst:    | James Pressley      | LCS  | 1203657596 | Metals Spike Mix I  | UI2464937-01  | .25          | mL          |
| Method:     | SW846 3050B         | LCS  | 1203657596 | Metals Spike Mix II | UI2464937-02  | .25          | mL          |
| Lab SOP:    | GL-MA-E-009 REV# 26 | MS   | 1203657598 | Metals Spike Mix I  | UI2464937-01  | .25          | mL          |
| Instrument: | BAL-893             | MS   | 1203657598 | Metals Spike Mix II | UI2464937-02  | .25          | mL          |

| Sample ID                    | Prep Date            | Matrix | Initial Weight (g) | Final Volume (mL) | Prep Factor (mL/g) |
|------------------------------|----------------------|--------|--------------------|-------------------|--------------------|
| 1203657595 MB                | 27-OCT-2016 20:43:37 | Soil   | 0.544              | 50                | 91.91176           |
| 1203657596 LCS               | 27-OCT-2016 20:43:37 | Soil   | 0.564              | 50                | 88.65248           |
| 409254001                    | 27-OCT-2016 20:43:37 | Soil   | 0.522              | 50                | 95.78544           |
| 1203657597 DUP (409254001)   | 27-OCT-2016 20:43:37 | Soil   | 0.555              | 50                | 90.09009           |
| 1203657598 MS (409254001)    | 27-OCT-2016 20:43:37 | Soil   | 0.565              | 50                | 88.49558           |
| 1203657599 SDILT (409254001) | 27-OCT-2016 20:43:37 | Soil   | 0.522              | 50                | 95.78544           |
| 409254002                    | 27-OCT-2016 20:43:37 | Soil   | 0.52               | 50                | 96.15385           |
| 409254003                    | 27-OCT-2016 20:43:37 | Soil   | 0.561              | 50                | 89.12656           |
| 409254004                    | 27-OCT-2016 20:43:37 | Soil   | 0.518              | 50                | 96.5251            |
| 409254005                    | 27-OCT-2016 20:43:37 | Soil   | 0.55               | 50                | 90.90909           |
| 409254006                    | 27-OCT-2016 20:43:37 | Soil   | 0.547              | 50                | 91.40768           |
| 409254007                    | 27-OCT-2016 20:43:37 | Soil   | 0.591              | 50                | 84.60237           |
| 409254008                    | 27-OCT-2016 20:43:37 | Soil   | 0.524              | 50                | 95.41985           |
| 409254009                    | 27-OCT-2016 20:43:37 | Soil   | 0.566              | 50                | 88.33922           |
| 409254010                    | 27-OCT-2016 20:43:37 | Soil   | 0.538              | 50                | 92.9368            |
| 409254011                    | 27-OCT-2016 20:43:37 | Soil   | 0.521              | 50                | 95.96929           |
| 409254012                    | 27-OCT-2016 20:43:37 | Soil   | 0.513              | 50                | 97.46589           |
| 409254013                    | 27-OCT-2016 20:43:37 | Soil   | 0.546              | 50                | 91.57509           |
| 409254014                    | 27-OCT-2016 20:43:37 | Soil   | 0.538              | 50                | 92.9368            |
| 409254015                    | 27-OCT-2016 20:43:37 | Soil   | 0.551              | 50                | 90.7441            |
| 409254016                    | 27-OCT-2016 20:43:37 | Soil   | 0.515              | 50                | 97.08738           |
| 409254017                    | 27-OCT-2016 20:43:37 | Soil   | 0.586              | 50                | 85.32423           |
| 409254018                    | 27-OCT-2016 20:43:37 | Soil   | 0.502              | 50                | 99.60159           |
| 409254019                    | 27-OCT-2016 20:43:37 | Soil   | 0.572              | 50                | 87.41259           |
| 409254020                    | 27-OCT-2016 20:43:37 | Soil   | 0.571              | 50                | 87.56567           |

| Reagent/Solvent Lot ID | Description              | Amount  | Comments:   |
|------------------------|--------------------------|---------|---|
| 2451969                | Concentrated Nitric Acid | 1.25 mL | Block Temperature (90-100C): 95 C                   |
| 2460888                | HYDROCHLORIC ACID        | 10 mL   | Temperature within limits (Y/N)? : Y                |
|                        |                          |         | Thermometer ID: 118631                              |
|                        |                          |         | Hot Block ID: 2                                     |
|                        |                          |         | Prep Date: 27-OCT-2016 21:05 BAL-893 James Pressley |

# Prep Logbook

## Acid Digestion of Total Metals in Aqueous Samples and Extracts for Analysis by ICP and ICP-MS

|                  |                          |      |            |                     |               |              |             |
|------------------|--------------------------|------|------------|---------------------|---------------|--------------|-------------|
| <b>Batch ID:</b> | <b>1611344</b>           | Type | Sample Id  | Description         | Serial Number | Spike Amount | Spike Units |
| Analyst:         | Clyde Wright             | LCS  | 1203658087 | Metals Spike Mix I  | UI2464937-01  | .25          | mL          |
| Method:          | SW846 3010A              | LCS  | 1203658087 | Metals Spike Mix II | UI2464937-02  | .25          | mL          |
| Lab SOP:         | GL-MA-E-008 REV# 18      |      |            |                     |               |              |             |
| Instrument:      | Metals Manual Instrument |      |            |                     |               |              |             |

| Sample ID                    | Prep Date            | Matrix | Initial Volume (mL) | Final Volume (mL) | Prep Factor (mL/mL) |
|------------------------------|----------------------|--------|---------------------|-------------------|---------------------|
| 1203658086 MB                | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 1203657517 TB                | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 1203658087 LCS               | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 409254021                    | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 1203657516 MS (409254021)    | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 1203658088 DUP (409254021)   | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 1203658090 SDILT (409254021) | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 409254023                    | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 409254025                    | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 409254030                    | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 409254033                    | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 409254035                    | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 409254037                    | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |
| 409254039                    | 28-OCT-2016 11:51:11 | Soil   | 5                   | 50                | 10                  |

| Reagent/Solvent Lot ID | Description              | Amount | Comments:                           |
|------------------------|--------------------------|--------|-------------------------------------|
| 2451969                | Concentrated Nitric Acid | 3 mL   | Block Temperature (90-95C): 91 C    |
| 2460888                | HYDROCHLORIC ACID        | 2.5 mL | Temperature within limits (Y/N)?: Y |
|                        |                          |        | Thermometer ID: 118631              |
|                        |                          |        | Hot Block ID: 2                     |



# Prep Logbook

## Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer

|                  |                     |      |            |                |               |              |             |
|------------------|---------------------|------|------------|----------------|---------------|--------------|-------------|
| <b>Batch ID:</b> | <b>1614668</b>      | Type | Sample Id  | Description    | Serial Number | Spike Amount | Spike Units |
| Analyst:         | Alan Stanley        | LCS  | 1203666306 | MHGSOILMSSPIKE | WHG161109-14  | .3           | mL          |
| Method:          | SW846 7471B Prep    | MS   | 1203666308 | MHGSOILMSSPIKE | WHG161109-14  | .3           | mL          |
| Lab SOP:         | GL-MA-E-010 REV# 31 |      |            |                |               |              |             |
| Instrument:      | BAL 423             |      |            |                |               |              |             |

| Sample ID                    | Prep Date            | Matrix | Initial Weight (g) | Final Volume (mL) | Prep Factor (mL/g) |
|------------------------------|----------------------|--------|--------------------|-------------------|--------------------|
| 1203666305 MB                | 09-NOV-2016 14:39:22 | Soil   | 0.512              | 30                | 58.59375           |
| 1203666306 LCS               | 09-NOV-2016 14:39:22 | Soil   | 0.534              | 30                | 56.17978           |
| 409254011                    | 09-NOV-2016 14:39:22 | Soil   | 0.511              | 30                | 58.70841           |
| 1203666307 DUP (409254011)   | 09-NOV-2016 14:39:22 | Soil   | 0.5                | 30                | 60                 |
| 1203666308 MS (409254011)    | 09-NOV-2016 14:39:22 | Soil   | 0.501              | 30                | 59.88024           |
| 1203666309 SDILT (409254011) | 09-NOV-2016 14:39:22 | Soil   | 0.511              | 30                | 58.70841           |
| 409254012                    | 09-NOV-2016 14:39:22 | Soil   | 0.516              | 30                | 58.13953           |
| 409254013                    | 09-NOV-2016 14:39:22 | Soil   | 0.509              | 30                | 58.9391            |
| 409254014                    | 09-NOV-2016 14:39:22 | Soil   | 0.576              | 30                | 52.08333           |
| 409254015                    | 09-NOV-2016 14:39:22 | Soil   | 0.514              | 30                | 58.36576           |
| 409254016                    | 09-NOV-2016 14:39:22 | Soil   | 0.572              | 30                | 52.44755           |
| 409254017                    | 09-NOV-2016 14:39:22 | Soil   | 0.52               | 30                | 57.69231           |
| 409254018                    | 09-NOV-2016 14:39:22 | Soil   | 0.521              | 30                | 57.58157           |
| 409254019                    | 09-NOV-2016 14:39:22 | Soil   | 0.594              | 30                | 50.50505           |
| 409254020                    | 09-NOV-2016 14:39:22 | Soil   | 0.549              | 30                | 54.64481           |
| 409254022                    | 09-NOV-2016 14:39:22 | Soil   | 0.564              | 30                | 53.19149           |
| 409254024                    | 09-NOV-2016 14:39:22 | Soil   | 0.544              | 30                | 55.14706           |
| 409254029                    | 09-NOV-2016 14:39:22 | Soil   | 0.502              | 30                | 59.76096           |
| 409254032                    | 09-NOV-2016 14:39:22 | Soil   | 0.551              | 30                | 54.44646           |
| 409254034                    | 09-NOV-2016 14:39:22 | Soil   | 0.512              | 30                | 58.59375           |
| 409254036                    | 09-NOV-2016 14:39:22 | Soil   | 0.539              | 30                | 55.65863           |
| 409254038                    | 09-NOV-2016 14:39:22 | Soil   | 0.521              | 30                | 57.58157           |

| Reagent/Solvent Lot ID | Description                                       | Amount | Comments:                               |
|------------------------|---|--------|---|
| 2464396-C              | 5% KMnO4 solution                                 | 7.5 mL | Digestion Start Date: 09-NOV-2016 14:39 |
| 2467932-C              | Hg reducing agent                                 | 3 mL   | Digestion End Date: 09-NOV-2016 15:19   |
| 2476285-C              | 50% Aqua Regia                                    | 3 mL   | Block Temperature (92-98C): 94 C        |
| IHG161109-01           | Mercury Intermediate 1st Source 200 ug/L          | 250 mL | Temperature within limits (Y/N)?: Y     |
| IHG161109-02           | Mercury Intermediate 2nd Source 200 ug/L          | 250 mL | Thermometer ID: 2126223                 |
| UHG2455249-01          | Mercury Source Standard #1 1,000 mg/L             | 50 uL  | Hot Block ID: 6                         |
| UHG2455256-02          | Mercury Source Standard #2 1,000 mg/L             | 50 uL  |   |
| WHG161109-07           | Mercury Working Standard 1st Source CAL S 0.2/CRA | 30 uL  |   |
| WHG161109-08           | Mercury Working Standard 1st Source CAL S 0.5     | 75 uL  |   |
| WHG161109-09           | Mercury Working 1st Source CAL S 2.0              | 300 uL |   |
| WHG161109-10           | Mercury Working 1st Source CAL S 5.0/CCV          | 750 uL |   |
| WHG161109-11           | Mercury Working 1st Source CAL S 10.0             | 1.5 mL |   |

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# Prep Logbook

| Sample ID | Prep Date | Matrix | Initial Weight (g) | Final Volume (mL) | Prep Factor (mL/g) |
|-----------|-----------|--------|--------------------|-------------------|--------------------|
|-----------|-----------|--------|--------------------|-------------------|--------------------|

| Reagent/Solvent Lot ID | Description | Amount | Comments: |
|------------------------|-------------|--------|-----------|
|------------------------|-------------|--------|-----------|

|              |                                      |        |  |
|--------------|--------------------------------------|--------|--|
| WHG161109-12 | Mercury Working 2nd Source S 5.0/ICV | 750 uL |  |
|--------------|--------------------------------------|--------|--|

# Prep Logbook

## Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer

|                  |                          |      |            |                  |               |              |             |
|------------------|--------------------------|------|------------|------------------|---------------|--------------|-------------|
| <b>Batch ID:</b> | <b>1614670</b>           | Type | Sample Id  | Description      | Serial Number | Spike Amount | Spike Units |
| Analyst:         | Alan Stanley             | LCS  | 1203666312 | MHGLIQLCSMSSPIKE | WHG161109-13  | .2           | mL          |
| Method:          | SW846 7470A Prep         |      |            |                  |               |              |             |
| Lab SOP:         | GL-MA-E-010 REV# 31      |      |            |                  |               |              |             |
| Instrument:      | Metals Manual Instrument |      |            |                  |               |              |             |

| Sample ID                    | Prep Date            | Matrix | Initial Volume (mL) | Final Volume (mL) | Prep Factor (mL/mL) | pH Check |
|------------------------------|----------------------|--------|---------------------|-------------------|---------------------|----------|
| 1203666311 MB                | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 1203657517 TB                | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 1203666312 LCS               | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 409254021                    | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 1203657516 MS (409254021)    | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 1203666313 DUP (409254021)   | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 1203666315 SDILT (409254021) | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 409254023                    | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 409254025                    | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 409254030                    | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 409254033                    | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 409254035                    | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 409254037                    | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |
| 409254039                    | 09-NOV-2016 13:15:58 | Soil   | 2                   | 20                | 10                  | <2       |

| Reagent/Solvent Lot ID | Description                              | Amount | Comments:                               |
|------------------------|--|--------|---|
| 2436218-1              | NITRIC ACID                              | .5 mL  | Digestion Start Date: 09-NOV-2016 13:15 |
| 2460309-C              | 5% Potassium Persulfate                  | 1.5 mL | Digestion End Date: 09-NOV-2016 15:15   |
| 2464396-C              | 5% KMnO4 solution                        | 3 mL   | Block Temperature (90-95C): 94 C        |
| 2467932-C              | Hg reducing agent                        | 1 mL   | Temperature within limits (Y/N)?: Y     |
| 2475119                | Sulfuric Acid, Concentrated              | 1 mL   | Thermometer ID: 118629                  |
| IHG161109-01           | Mercury Intermediate 1st Source 200 ug/L | 250 mL | Hot Block ID: 7                         |
| IHG161109-02           | Mercury Intermediate 2nd Source 200 ug/L | 250 mL |   |
| UHG2455249-01          | Mercury Source Standard #1 1,000 mg/L    | 50 uL  |   |
| UHG2455256-02          | Mercury Source Standard #2 1,000 mg/L    | 50 uL  |   |
| WHG161109-01A          | Mercury Working 1st Source CAL 0.2/CRA   | 20 uL  |   |
| WHG161109-02           | Mercury Working 1st Source CAL 0.5       | 50 uL  |   |
| WHG161109-03           | Mercury Working 1st Source CAL 2.0       | 200 uL |   |
| WHG161109-04           | Mercury Working 1st Source CAL 5.0/CCV   | 500 uL |   |
| WHG161109-05           | Mercury Working 1st Source CAL 10.0      | 1 mL   |   |
| WHG161109-06           | Mercury Working 2nd Source 5.0/ICV       | 500 uL |   |

# Prep Logbook

## Synthetic Precipitation Leaching Preparation

**Batch ID:** 1611084  
**Analyst:** Richard Dollinger  
**Method:** EPA 1312

Verified by: \_\_\_\_\_

**Lab SOP:** GL-LB-E-024 REV# 11  
**Instrument:** TCLP Tumbler # 101

|  |                             |                             |                                  |                             |
|--|-----------------------------|-----------------------------|----------------------------------|-----------------------------|
| <b>Sample ID</b>                         | <b>1203657517 TB</b>        | <b>409254021</b>            | <b>1203657516 MS (409254021)</b> | <b>409254023</b>            |
| <b>Analysis Start Date</b>               | <b>27-OCT-2016 15:59:34</b> | <b>27-OCT-2016 15:59:34</b> | <b>27-OCT-2016 15:59:34</b>      | <b>27-OCT-2016 15:59:34</b> |
| 100% Solid Y/N                           | y                           | y                           | y                                | y                           |
| (I) Sub Sample Aliquot I=G-H (g)         |                             | 100                         | 100                              | 100                         |
| Extraction Start Temperature (celsius)   | 23                          | 23                          | 23                               | 23                          |
| Filtrate pH (su)                         |                             | 9                           | 9                                | 9                           |
| Tumbler Speed                            | 28                          | 28                          | 28                               | 28                          |
| Sample Properties $\varnothing$ /= Water | SPLP2                       | Solid                       | Solid                            | Solid                       |
| (J) 20XC or 20XI (mL)                    |                             | 2000                        | 2000                             | 2000                        |
| Filtrate Volume (mL)                     | 100                         | 100                         | 100                              | 100                         |

| Type      | Sample Id  | Description                        |             | Spike Amt | Units | Comments:                                 |
|-----------|------------|------------------------------------|-------------|-----------|-------|---|
| MS        | 1203657516 | TCLP Spiking Solution A/B          | UI160727    | .25       | mL    | Extraction End Date: 28-OCT-2016 08:00:00 |
| MS        | 1203657516 | TCLP Spiking Solution Hg           | UI2435207   | .25       | mL    | Filtration End Date: 28-OCT-2016 09:15:21 |
| RGNT All  |            | SPLP WESTERN EXTRACTION FLUID 4.97 | 161027      | 2000      | mL    | Bottle Lot Number: 41031600               |
| REGNT All |            | Concentrated Nitric Acid           | 160907-tclp | 2.5       | mL    | Filter Lot Number: 400119-6221            |

# Prep Logbook

## Synthetic Precipitation Leaching Preparation

**Batch ID:** 1611084  
**Analyst:** Richard Dollinger  
**Method:** EPA 1312

Verified by: \_\_\_\_\_

**Lab SOP:** GL-LB-E-024 REV# 11  
**Instrument:** TCLP Tumbler # 101

| Sample ID                                | 409254025            | 409254030            | 409254033            | 409254035            |
|--|----------------------|----------------------|----------------------|----------------------|
| Analysis Start Date                      | 27-OCT-2016 15:59:34 | 27-OCT-2016 15:59:34 | 27-OCT-2016 15:59:34 | 27-OCT-2016 15:59:34 |
| 100% Solid Y/N                           | y                    | y                    | y                    | y                    |
| (I) Sub Sample Aliquot I=G-H (g)         | 100                  | 100                  | 100                  | 100                  |
| Extraction Start Temperature (celsius)   | 23                   | 23                   | 23                   | 23                   |
| Filtrate pH (su)                         | 9                    | 9                    | 9                    | 9                    |
| Tumbler Speed                            | 28                   | 28                   | 28                   | 28                   |
| Sample Properties $\varnothing$ /= Water | Solid                | Solid                | Solid                | Solid                |
| (J) 20XC or 20XI (mL)                    | 2000                 | 2000                 | 2000                 | 2000                 |
| Filtrate Volume (mL)                     | 100                  | 100                  | 100                  | 100                  |

| Type  | Sample Id  | Description                        |             | Spike Amt | Units | Comments:                                 |
|-------|------------|------------------------------------|-------------|-----------|-------|---|
| MS    | 1203657516 | TCLP Spiking Solution A/B          | UI160727    | .25       | mL    | Extraction End Date: 28-OCT-2016 08:00:00 |
| MS    | 1203657516 | TCLP Spiking Solution Hg           | UI2435207   | .25       | mL    | Filtration End Date: 28-OCT-2016 09:15:21 |
| RGNT  | All        | SPLP WESTERN EXTRACTION FLUID 4.97 | 161027      | 2000      | mL    | Bottle Lot Number: 41031600               |
| REGNT | All        | Concentrated Nitric Acid           | 160907-tclp | 2.5       | mL    | Filter Lot Number: 400119-6221            |

# Prep Logbook

## Synthetic Precipitation Leaching Preparation

**Batch ID:** 1611084  
**Analyst:** Richard Dollinger  
**Method:** EPA 1312

Verified by: \_\_\_\_\_

**Lab SOP:** GL-LB-E-024 REV# 11  
**Instrument:** TCLP Tumbler # 101

|  |                             |                             |
|--|-----------------------------|-----------------------------|
| <b>Sample ID</b>                       | <b>409254037</b>            | <b>409254039</b>            |
| <b>Analysis Start Date</b>             | <b>27-OCT-2016 15:59:34</b> | <b>27-OCT-2016 15:59:34</b> |
| 100% Solid Y/N                         | y                           | y                           |
| (I) Sub Sample Aliquot I=G-H (g)       | 100                         | 100                         |
| Extraction Start Temperature (celsius) | 23                          | 23                          |
| Filtrate pH (su)                       | 9                           | 9                           |
| Tumbler Speed                          | 28                          | 28                          |
| Sample Properties $\diamond$ /= Water  | Solid                       | Solid                       |
| (J) 20XC or 20XI (mL)                  | 2000                        | 2000                        |
| Filtrate Volume (mL)                   | 100                         | 100                         |

| Type      | Sample Id  | Description                        | Serial Number | Spike Amt | Units | Comments:                                 |
|-----------|------------|------------------------------------|---------------|-----------|-------|---|
| MS        | 1203657516 | TCLP Spiking Solution A/B          | UI160727      | .25       | mL    | Extraction End Date: 28-OCT-2016 08:00:00 |
| MS        | 1203657516 | TCLP Spiking Solution Hg           | UI2435207     | .25       | mL    | Filtration End Date: 28-OCT-2016 09:15:21 |
| RGNT All  |            | SPLP WESTERN EXTRACTION FLUID 4.97 | 161027        | 2000      | mL    | Bottle Lot Number: 41031600               |
| REGNT All |            | Concentrated Nitric Acid           | 160907-tclp   | 2.5       | mL    | Filter Lot Number: 400119-6221            |

### DATA EXCEPTION REPORT

|   |                                      |   |                             |
|---|--------------------------------------|---|-----------------------------|
| <b>Mo.Day Yr.</b><br>10-NOV-16  | <b>Division:</b><br>Industrial       | <b>Quality Criteria:</b><br>Specifications  | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>MERCURY  | <b>Test / Method:</b><br>SW846 7470A | <b>Matrix Type:</b><br>Solid  | <b>Client Code:</b><br>HAAL |
| <b>Batch ID:</b><br>1614671   | <b>Sample Numbers:</b><br>See Below  |   |                             |
| <b>Potentially affected work order(s)(SDG): 409254</b><br><b>Application Issues:</b><br>Failed Recovery for MS/MSD, or PS/PSD |                                      |   |                             |
| <b>Specification and Requirements</b>   |                                      | <b>DER Disposition:</b>   |                             |
| <b>Exception Description:</b><br><br>1. Failed Recovery for MS/MSD, or PS/PSD:<br><br>QC 1203657516MS                         |                                      | 1. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte. The post spike recovery was within the required control limits. This verifies the absence of a matrix interference in the post-spike digested sample. The recovery may be attributed to possible sample matrix interference and/or non-homogeneity. 1203657516 (DP010216MS) Mercury [48.1* (75%-125%)]. |                             |

**Originator's Name:**

Monifa Basdeo 10-NOV-16

**Data Validator/Group Leader:**

Alan Stanley 11-NOV-16

### DATA EXCEPTION REPORT

|  |  |   |                             |
|--|--|---|-----------------------------|
| <b>Mo.Day Yr.</b><br>11-NOV-16   | <b>Division:</b><br>Industrial             | <b>Quality Criteria:</b><br>Specifications  | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>ICP   | <b>Test / Method:</b><br>SW846 3050B/6010C | <b>Matrix Type:</b><br>Solid  | <b>Client Code:</b><br>HAAL |
| <b>Batch ID:</b><br>1611117  | <b>Sample Numbers:</b><br>See Below        |   |                             |
| <b>Potentially affected work order(s)(SDG): 409254</b><br><b>Application Issues:</b><br>Failed Recovery for MS/MSD, or PS/PSD<br>Failed RPD for DUP<br>Failed difference for SDILT |  |   |                             |
| <b>Specification and Requirements</b>  |  | <b>DER Disposition:</b>   |                             |
| <b>Exception Description:</b>  |  |   |                             |
| 1. Failed RPD for DUP:<br>QC 1203657597DUP<br><br>2. Failed Recovery for MS/MSD, or PS/PSD:<br>QC 1203657598MS<br><br>3. Failed difference for SDILT:<br>QC 1203657599SDILT        |  | 1. Not all the applicable analyte RPD values were within the acceptance criteria.<br>1203657597 (DP110100DUP) Antimony [abs(4030 - 2730)* (+/-1040 ug/kg)], Lead [153* (0%-20%)] and Manganese [20.4* (0%-20%)].<br><br>2. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte. The post spike recovery was within the required control limits. This verifies the absence of a matrix interference in the post-spike digested sample. The recovery may be attributed to possible sample matrix interference and/or non-homogeneity.<br>1203657598 (DP110100MS) Barium [149* (75%-125%)], Potassium [189* (75%-125%)] and Zinc [65.7* (75%-125%)].<br><br>3. Not all the applicable analytes were within the established acceptance criteria. Matrix suppression may be suspected. The data has been qualified.<br>1203657599 (DP110100SDILT) Copper [17.4 *(0%-10%)]. |                             |

**Originator's Name:**

Travis Tola 11-NOV-16

**Data Validator/Group Leader:**

Jerry Wigfall 18-NOV-16



### DATA EXCEPTION REPORT

|   |  |   |                             |
|---|--|---|-----------------------------|
| <b>Mo.Day Yr.</b><br>17-NOV-16  | <b>Division:</b><br>Industrial             | <b>Quality Criteria:</b><br>Specifications  | <b>Type:</b><br>Process     |
| <b>Instrument Type:</b><br>ICP  | <b>Test / Method:</b><br>SW846 3050B/6010C | <b>Matrix Type:</b><br>Solid  | <b>Client Code:</b><br>HAAL |
| <b>Batch ID:</b><br>1611119   | <b>Sample Numbers:</b><br>See Below        |   |                             |
| <b>Potentially affected work order(s)(SDG): 409254</b><br><b>Application Issues:</b><br>Failed Recovery for MS/MSD, or PS/PSD<br>Failed RPD for DUP |  |   |                             |
| <b>Specification and Requirements</b>   |  | <b>DER Disposition:</b>   |                             |
| <b>Exception Description:</b>   |  |   |                             |
| 1. Failed RPD for DUP:<br>QC 1203657602DUP<br><br>2. Failed Recovery for MS/MSD, or PS/PSD:<br>QC 1203657603MS                                      |  | 1. Not all the applicable analyte RPD values were within the acceptance criteria.<br>1203657602 (DP010109DUP) Aluminum [21.8* (0%-20%)], Barium [23.4* (0%-20%)], Copper [24.1* (0%-20%)] and Lead [20.8* (0%-20%)].<br><br>2. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte. The post spike recovery was within the required control limits. This verifies the absence of a matrix interference in the post-spike digested sample. The recovery may be attributed to possible sample matrix interference and/or non-homogeneity.<br>1203657603 (DP010109MS) Antimony [73.2* (75%-125%)] and Potassium [133* (75%-125%)]. |                             |

**Originator's Name:**

Helen Camello 17-NOV-16

**Data Validator/Group Leader:**

Jerry Wigfall 18-NOV-16

# Standard Logbook

**Serial ID:** UHG2455249-01      **Open/Reference Date:** 16-SEP-16      **Amount :** 100 mL  
**Name:** MHGSTOCK1      **Received:** 16-SEP-16      **Catalog Number :** G34-060080-02-01  
**Type:** Source Material      **Expires:** 16-SEP-17      **Lot Number :** 1095529  
**Employee:** Alan Stanley      **Solvent :** 10% HNO3  
**Supplier:** O2SI  
**Description:** Mercury Source Standard #1 1,000 mg/L  
**Comments:** None

| Analyte | Concentration | Analyte | Concentration |
|---------|---------------|---------|---------------|
| Mercury | 1000 mg/L     |         |               |

**Serial ID:** UHG2455256-02      **Open/Reference Date:** 16-SEP-16      **Amount :** 100 mL  
**Name:** MHGSTOCK2      **Received:** 16-SEP-16      **Catalog Number :** 060080-02-01  
**Type:** Source Material      **Expires:** 16-SEP-17      **Lot Number :** 1095530  
**Employee:** Alan Stanley      **Solvent :** 2% HNO3  
**Supplier:** O2Si  
**Description:** Mercury Source Standard #2 1,000 mg/L  
**Comments:** None

| Analyte | Concentration | Analyte | Concentration |
|---------|---------------|---------|---------------|
| Mercury | 999.7 mg/L    |         |               |

**Serial ID:** UI151210-42      **Open/Reference Date:** 14-DEC-15      **Amount :** 250 mL  
**Name:** SILICON      **Received:** 08-DEC-15      **Catalog Number :** HP100050-4F  
**Type:** Source Material      **Expires:** 14-DEC-16      **Lot Number :** 1522506  
**Employee:** Helen Camello      **Solvent :** H2O/tr HF  
**Supplier:** ENVIRONMENTAL EXPRESS  
**Description:** SILICON 1000mg/L H2O/tr HF  
**Comments:** None

| Analyte | Concentration | Analyte | Concentration |
|---------|---------------|---------|---------------|
| Silica  | 2139 mg/L     | Silicon | 1000 mg/L     |

**Serial ID:** UI160310-40      **Open/Reference Date:** 14-MAR-16      **Amount :** 500 mL  
**Name:** SECOND SOURCE STD -1      **Received:** 09-MAR-16      **Catalog Number :** G34-160358-01-03  
**Type:** Source Material      **Expires:** 14-MAR-17      **Lot Number :** 1087630  
**Employee:** Travis Tola      **Solvent :** 5%HNO3  
**Supplier:** O2si  
**Description:** SECOND SOURCE STD #1A 5%HNO3  
**Comments:** None

| Analyte  | Concentration | Analyte | Concentration |
|----------|---------------|---------|---------------|
| Aluminum | 1000 mg/L     | Arsenic | 100 mg/L      |
| Barium   | 100 mg/L      | Boron   | 100 mg/L      |
| Cadmium  | 100 mg/L      | Calcium | 1000 mg/L     |
| Chromium | 100 mg/L      | Cobalt  | 100 mg/L      |

# Standard Logbook

| Analyte   | Concentration | Analyte     | Concentration |
|-----------|---------------|-------------|---------------|
| Copper    | 100 mg/L      | Iron        | 1000 mg/L     |
| Lead      | 100 mg/L      | Phosphorous | 500 mg/L      |
| Potassium | 500 mg/L      | Selenium    | 500 mg/L      |
| Sodium    | 500 mg/L      | Strontium   | 100 mg/L      |

**Serial ID:** UI160310-41      **Open/Reference Date:** 14-MAR-16      **Amount :** 500 mL  
**Name:** SECOND SOURCE STD -1      **Received:** 09-MAR-16      **Catalog Number :** G34-160358-01-03  
**Type:** Source Material      **Expires:** 14-MAR-17      **Lot Number :** 1087630  
**Employee:** Travis Tola      **Solvent :** 5%HNO3,TR.HF  
**Supplier:** 02si  
**Description:** SECOND SOURCE STD #1B  
**Comments:** None

| Analyte    | Concentration | Analyte   | Concentration |
|------------|---------------|-----------|---------------|
| Antimony   | 100 mg/L      | Beryllium | 50 mg/L       |
| Magnesium  | 1000 mg/L     | Manganese | 100 mg/L      |
| Molybdenum | 100 mg/L      | Nickel    | 100 mg/L      |
| Silver     | 50 mg/L       | Sulfur    | 500 mg/L      |
| Thallium   | 100 mg/L      | Tin       | 100 mg/L      |
| Titanium   | 100 mg/L      | Uranium   | 100 mg/L      |
| Vanadium   | 100 mg/L      | Zinc      | 100 mg/L      |

**Serial ID:** UI160411-40      **Open/Reference Date:** 11-APR-16      **Amount :** 500 mL  
**Name:** TRACE ICP Stock PQL St      **Received:** 11-APR-16      **Catalog Number :** 160543-02-03  
**Type:** Source Material      **Expires:** 11-APR-17      **Lot Number :** 1087959  
**Employee:** Travis Tola      **Solvent :** +/-0.5%in2%HNO3+TrHF  
**Supplier:** 02si  
**Description:** TRACE ICP Stock PQL Standard  
**Comments:** None

| Analyte   | Concentration | Analyte     | Concentration |
|-----------|---------------|-------------|---------------|
| Aluminum  | 100 mg/L      | Antimony    | 5 mg/L        |
| Arsenic   | 15 mg/L       | Barium      | 2.5 mg/L      |
| Beryllium | 2.5 mg/L      | Boron       | 25 mg/L       |
| Cadmium   | 2.5 mg/L      | Calcium     | 100 mg/L      |
| Chromium  | 2.5 mg/L      | Cobalt      | 2.5 mg/L      |
| Copper    | 5 mg/L        | Iron        | 50 mg/L       |
| Lead      | 5 mg/L        | Magnesium   | 150 mg/L      |
| Manganese | 5 mg/L        | Molybdenum  | 5 mg/L        |
| Nickel    | 2.5 mg/L      | Phosphorous | 75 mg/L       |
| Potassium | 75 mg/L       | Selenium    | 15 mg/L       |
| Silicon   | 50 mg/L       | Silver      | 2.5 mg/L      |
| Sodium    | 150 mg/L      | Strontium   | 2.5 mg/L      |
| Sulfur    | 50 mg/L       | Thallium    | 10 mg/L       |
| Tin       | 5 mg/L        | Titanium    | 2.5 mg/L      |

# Standard Logbook

| Analyte | Concentration | Analyte  | Concentration |
|---------|---------------|----------|---------------|
| Uranium | 25 mg/L       | Vanadium | 2.5 mg/L      |
| Zinc    | 5 mg/L        |          |               |

**Serial ID:** UI160519-40      **Open/Reference Date:** 23-MAY-16      **Amount :** 500 mL  
**Name:** TRACE ICP ICSA SOLN. A      **Received:** 18-MAY-16      **Catalog Number :** 160005-08-03  
**Type:** Source Material      **Expires:** 23-MAY-17      **Lot Number :** 1090998  
**Employee:** Helen Camello      **Solvent :** 5% HNO3 mg/l  
**Supplier:** O2SI  
**Description:** Trace ICP Interference Check Standard Solution A  
**Comments:** None

| Analyte  | Concentration | Analyte   | Concentration |
|----------|---------------|-----------|---------------|
| Aluminum | 20000 mg/L    | Calcium   | 20000 mg/L    |
| Iron     | 8000 mg/L     | Magnesium | 20000 mg/L    |

**Serial ID:** UI160705-41      **Open/Reference Date:** 15-JUL-16      **Amount :** 500 mL  
**Name:** TRACE ICP Na-1000SOUR      **Received:** 29-JUN-16      **Catalog Number :** 060011-02-03  
**Type:** Source Material      **Expires:** 15-JUL-17      **Lot Number :** 1093046  
**Employee:** Helen Camello      **Solvent :** 1%HNO3  
**Supplier:** O2SI  
**Description:** Sodium 1000 +/- 3 ug/mL in 1% HNO3  
**Comments:** None

| Analyte | Concentration | Analyte | Concentration |
|---------|---------------|---------|---------------|
| Sodium  | 1000 ug/mL    |         |               |

**Serial ID:** UI160712-40      **Open/Reference Date:** 12-JUL-16      **Amount :** 500 mL  
**Name:** ICP HIGH RANGE STD-A      **Received:** 11-JUL-16      **Catalog Number :** 160211-06-03  
**Type:** Source Material      **Expires:** 12-JUL-17      **Lot Number :** 1093571  
**Employee:** Helen Camello      **Solvent :** +/-0.5%in2%HNO3  
**Supplier:** O2SI  
**Description:** ICP HIGH RANGE STD SOLUTION A  
**Comments:** None

| Analyte   | Concentration | Analyte     | Concentration |
|-----------|---------------|-------------|---------------|
| Antimony  | 100 mg/L      | Arsenic     | 100 mg/L      |
| Barium    | 150 mg/L      | Beryllium   | 30 mg/L       |
| Boron     | 50 mg/L       | Cadmium     | 100 mg/L      |
| Chromium  | 250 mg/L      | Cobalt      | 100 mg/L      |
| Copper    | 200 mg/L      | Lead        | 250 mg/L      |
| Manganese | 100 mg/L      | Molybdenum  | 100 mg/L      |
| Nickel    | 100 mg/L      | Phosphorous | 150 mg/L      |
| Selenium  | 100 mg/L      | Silica      | 1070 mg/L     |
| Silicon   | 500 mg/L      | Silver      | 100 mg/L      |

# Standard Logbook

| Analyte   | Concentration | Analyte  | Concentration |
|-----------|---------------|----------|---------------|
| Strontium | 100 mg/L      | Thallium | 100 mg/L      |
| Tin       | 100 mg/L      | Titanium | 100 mg/L      |
| Vanadium  | 100 mg/L      | Zinc     | 150 mg/L      |

**Serial ID:** UI160712-41      **Open/Reference Date:** 12-JUL-16      **Amount :** 500 mL  
**Name:** ICP HIGH RANGE STD B      **Received:** 11-JUL-16      **Catalog Number :** 160211-06-03  
**Type:** Source Material      **Expires:** 12-JUL-17      **Lot Number :** 1093571  
**Employee:** Helen Camello      **Solvent :** +/-0.5%in2%HNO3  
**Supplier:** O2Si  
**Description:** ICP HIGH RANGE STD SOLUTION B  
**Comments:** None

| Analyte   | Concentration | Analyte   | Concentration |
|-----------|---------------|-----------|---------------|
| Aluminum  | 5000 mg/L     | Calcium   | 5000 mg/L     |
| Iron      | 5000 mg/L     | Magnesium | 5000 mg/L     |
| Potassium | 3000 mg/L     | Sodium    | 5000 mg/L     |
| Sulfur    | 500 mg/L      | Uranium   | 150 mg/L      |

**Serial ID:** UI160727      **Open/Reference Date:** 27-JUL-16      **Amount :** 500 mL  
**Name:** TCLP Spike A/B      **Received:** 27-JUL-16      **Catalog Number :** 161472-01-03  
**Type:** Source Material      **Expires:** 27-JUL-17      **Lot Number :** 1093608  
**Employee:** Edmund Frampton      **Solvent :** 5% nitric + trace HF  
**Supplier:** O2Si  
**Description:** TCLP Spiking Solution A/B  
**Comments:** None

| Analyte     | Concentration | Analyte     | Concentration |
|-------------|---------------|-------------|---------------|
| Aluminum    | 4000 mg/L     | Antimony    | 801 mg/L      |
| Arsenic     | 2000 mg/L     | Barium      | 4000 mg/L     |
| Beryllium   | 800 mg/L      | Boron       | 800 mg/L      |
| Cadmium     | 400 mg/L      | Calcium     | 4000 mg/L     |
| Chromium    | 2000 mg/L     | Cobalt      | 800 mg/L      |
| Copper      | 800 mg/L      | Iron        | 4001 mg/L     |
| Lead        | 2000 mg/L     | Lithium     | 200 mg/L      |
| Magnesium   | 4001 mg/L     | Manganese   | 800 mg/L      |
| Molybdenum  | 800 mg/L      | Nickel      | 800 mg/L      |
| Potassium   | 4000 mg/L     | Selenium    | 400 mg/L      |
| Silver      | 201 mg/L      | Sodium      | 4000 mg/L     |
| Strontium   | 800 mg/L      | Thallium    | 800 mg/L      |
| Thorium     | 200 mg/L      | Tin         | 801 mg/L      |
| Uranium     | 400 mg/L      | Uranium-235 | 2.88 mg/L     |
| Uranium-238 | 397.12 mg/L   | Vanadium    | 800 mg/L      |
| Zinc        | 800 mg/L      | Zirconium   | 200 mg/L      |

# Standard Logbook

**Serial ID:** UI160831-40      **Open/Reference Date:** 13-SEP-16      **Amount :** 500 mL  
**Name:** TRACE CALSTD#1A SOUR      **Received:** 25-AUG-16      **Catalog Number :** HP2270-1-500  
**Type:** Source Material      **Expires:** 11-AUG-17      **Lot Number :** 1622136  
**Employee:** Helen Camello      **Solvent :** HNO3  
**Supplier:** Environmental Express  
**Description:** Trace Calibration Std #1A  
**Comments:** None

| Analyte     | Concentration | Analyte     | Concentration |
|-------------|---------------|-------------|---------------|
| Aluminum    | 2000 mg/L     | Arsenic     | 200 mg/L      |
| Barium      | 200 mg/L      | Beryllium   | 200 mg/L      |
| Boron       | 200 mg/L      | Cadmium     | 200 mg/L      |
| Calcium     | 2000 mg/L     | Chromium    | 200 mg/L      |
| Cobalt      | 200 mg/L      | Copper      | 200 mg/L      |
| Iron        | 2000 mg/L     | Lead        | 200 mg/L      |
| Magnesium   | 2000 mg/L     | Manganese   | 200 mg/L      |
| Nickel      | 200 mg/L      | Phosphorous | 1000 mg/L     |
| Potassium   | 2000 mg/L     | Selenium    | 200 mg/L      |
| Sodium      | 2000 mg/L     | Strontium   | 200 mg/L      |
| Thallium    | 200 mg/L      | Uranium     | 200 mg/L      |
| Uranium-235 | 1.44 mg/L     | Uranium-238 | 198.56 mg/L   |
| Vanadium    | 200 mg/L      | Zinc        | 200 mg/L      |

**Serial ID:** UI160831-41      **Open/Reference Date:** 13-SEP-16      **Amount :** 500 mL  
**Name:** TRACE CALSTD#1B SOUR      **Received:** 25-AUG-16      **Catalog Number :** HP2270-2-500  
**Type:** Source Material      **Expires:** 11-AUG-17      **Lot Number :** 1622317  
**Employee:** Helen Camello      **Solvent :** HNO3  
**Supplier:** Environmental Express  
**Description:** Trace Calibration Standard #1B  
**Comments:** None

| Analyte  | Concentration | Analyte    | Concentration |
|----------|---------------|------------|---------------|
| Antimony | 200 mg/L      | Molybdenum | 200 mg/L      |
| Silver   | 200 mg/L      | Sulfur     | 400 mg/L      |
| Tin      | 200 mg/L      | Titanium   | 200 mg/L      |

**Serial ID:** UI160831-42      **Open/Reference Date:** 13-SEP-16      **Amount :** 500 mL  
**Name:** SILICON 1000mg/L      **Received:** 25-AUG-16      **Catalog Number :** 060014-02-03  
**Type:** Source Material      **Expires:** 13-SEP-17      **Lot Number :** 1094895  
**Employee:** Helen Camello      **Solvent :** in H2O(NH4)2SiF6  
**Supplier:** o2si  
**Description:** Silicon 1000mg/L in H2O(NH4)2SiF6  
**Comments:** None

| Analyte | Concentration | Analyte | Concentration |
|---------|---------------|---------|---------------|
| Silica  | 2139 mg/L     | Silicon | 1000 mg/L     |

# Standard Logbook

**Serial ID:** UI160831-43      **Open/Reference Date:** 09-SEP-16      **Amount :** 500 mL  
**Name:** TRACE ICP ICSA SOLN A      **Received:** 30-AUG-16      **Catalog Number :** 160005-01-03  
**Type:** Source Material      **Expires:** 09-SEP-17      **Lot Number :** 1090481  
**Employee:** Helen Camello      **Solvent :** 5%HNO3  
**Supplier:** o2si  
**Description:** TRACE ICP ICSA SOLN A mg/L +/- 0.5% IN 5% HNO3  
**Comments:** None

| Analyte  | Concentration | Analyte   | Concentration |
|----------|---------------|-----------|---------------|
| Aluminum | 5000 mg/L     | Calcium   | 5000 mg/L     |
| Iron     | 2000 mg/L     | Magnesium | 5000 mg/L     |

**Serial ID:** UI160930-40      **Open/Reference Date:** 04-NOV-16      **Amount :** 500 mL  
**Name:** TRACE ICP Na-1000SOUR      **Received:** 27-SEP-16      **Catalog Number :** 060011-02-03  
**Type:** Source Material      **Expires:** 04-NOV-17      **Lot Number :** 1096737  
**Employee:** Helen Camello      **Solvent :** 1%HNO3  
**Supplier:** 02SI  
**Description:** Sodium 1000 +/- 3 ug/mL in 1% HNO3  
**Comments:** None

| Analyte | Concentration | Analyte | Concentration |
|---------|---------------|---------|---------------|
| Sodium  | 1000 ug/mL    |         |               |

**Serial ID:** UI161025-49.12      **Open/Reference Date:** 16-NOV-16      **Amount :** 100 ml  
**Name:** Trace ICP ICSAB      **Received:** 31-OCT-16      **Catalog Number :** 160066-04  
**Type:** Source Material      **Expires:** 17-NOV-16      **Lot Number :** 1098008  
**Employee:** Helen Camello      **Solvent :** 3% HCl + 1% HNO3  
**Supplier:** o2si  
**Description:** Trace ICP Interferent Check Standard AB  
**Comments:** None

| Analyte   | Concentration | Analyte     | Concentration |
|-----------|---------------|-------------|---------------|
| Aluminum  | 500000 ug/L   | Antimony    | 500 ug/L      |
| Arsenic   | 500 ug/L      | Barium      | 500 ug/L      |
| Beryllium | 250 ug/L      | Boron       | 500 ug/L      |
| Cadmium   | 500 ug/L      | Calcium     | 500000 ug/L   |
| Chromium  | 500 ug/L      | Cobalt      | 500 ug/L      |
| Copper    | 500 ug/L      | Iron        | 200000 ug/L   |
| Lead      | 500 ug/L      | Magnesium   | 500000 ug/L   |
| Manganese | 500 ug/L      | Molybdenum  | 500 ug/L      |
| Nickel    | 500 ug/L      | Phosphorous | 2500 ug/L     |
| Potassium | 5000 ug/L     | Selenium    | 2500 ug/L     |
| Silica    | 10696.5 ug/L  | Silicon     | 5000 ug/L     |
| Silver    | 250 ug/L      | Sodium      | 5000 ug/L     |
| Strontium | 500 ug/L      | Sulfur      | 2500 ug/L     |
| Thallium  | 500 ug/L      | Tin         | 500 ug/L      |

# Standard Logbook

| Analyte  | Concentration | Analyte | Concentration |
|----------|---------------|---------|---------------|
| Titanium | 500 ug/L      | Uranium | 500 ug/L      |
| Vanadium | 500 ug/L      | Zinc    | 500 ug/L      |

**Serial ID:** UI161025-49.2      **Open/Reference Date:** 02-NOV-16      **Amount :** 100 ml  
**Name:** Trace ICP ICSAB      **Received:** 31-OCT-16      **Catalog Number :** 160066-04  
**Type:** Source Material      **Expires:** 03-NOV-16      **Lot Number :** 1098008  
**Employee:** Helen Camello      **Solvent :** 3% HCl + 1% HNO3  
**Supplier:** o2si  
**Description:** Trace ICP Inteferent Check Standard AB  
**Comments:** None

| Analyte   | Concentration | Analyte     | Concentration |
|-----------|---------------|-------------|---------------|
| Aluminum  | 500000 ug/L   | Antimony    | 500 ug/L      |
| Arsenic   | 500 ug/L      | Barium      | 500 ug/L      |
| Beryllium | 250 ug/L      | Boron       | 500 ug/L      |
| Cadmium   | 500 ug/L      | Calcium     | 500000 ug/L   |
| Chromium  | 500 ug/L      | Cobalt      | 500 ug/L      |
| Copper    | 500 ug/L      | Iron        | 200000 ug/L   |
| Lead      | 500 ug/L      | Magnesium   | 500000 ug/L   |
| Manganese | 500 ug/L      | Molybdenum  | 500 ug/L      |
| Nickel    | 500 ug/L      | Phosphorous | 2500 ug/L     |
| Potassium | 5000 ug/L     | Selenium    | 2500 ug/L     |
| Silica    | 10696.5 ug/L  | Silicon     | 5000 ug/L     |
| Silver    | 250 ug/L      | Sodium      | 5000 ug/L     |
| Strontium | 500 ug/L      | Sulfur      | 2500 ug/L     |
| Thallium  | 500 ug/L      | Tin         | 500 ug/L      |
| Titanium  | 500 ug/L      | Uranium     | 500 ug/L      |
| Vanadium  | 500 ug/L      | Zinc        | 500 ug/L      |

**Serial ID:** UI161025-49.9      **Open/Reference Date:** 11-NOV-16      **Amount :** 100 ml  
**Name:** Trace ICP ICSAB      **Received:** 31-OCT-16      **Catalog Number :** 160066-04  
**Type:** Source Material      **Expires:** 12-NOV-16      **Lot Number :** 1098008  
**Employee:** Helen Camello      **Solvent :** 3% HCl + 1% HNO3  
**Supplier:** o2si  
**Description:** Trace ICP Inteferent Check Standard AB  
**Comments:** None

| Analyte   | Concentration | Analyte   | Concentration |
|-----------|---------------|-----------|---------------|
| Aluminum  | 500000 ug/L   | Antimony  | 500 ug/L      |
| Arsenic   | 500 ug/L      | Barium    | 500 ug/L      |
| Beryllium | 250 ug/L      | Boron     | 500 ug/L      |
| Cadmium   | 500 ug/L      | Calcium   | 500000 ug/L   |
| Chromium  | 500 ug/L      | Cobalt    | 500 ug/L      |
| Copper    | 500 ug/L      | Iron      | 200000 ug/L   |
| Lead      | 500 ug/L      | Magnesium | 500000 ug/L   |



# Standard Logbook

| Analyte   | Concentration | Analyte     | Concentration |
|-----------|---------------|-------------|---------------|
| Manganese | 500 ug/L      | Molybdenum  | 500 ug/L      |
| Nickel    | 500 ug/L      | Phosphorous | 2500 ug/L     |
| Potassium | 5000 ug/L     | Selenium    | 2500 ug/L     |
| Silica    | 10696.5 ug/L  | Silicon     | 5000 ug/L     |
| Silver    | 250 ug/L      | Sodium      | 5000 ug/L     |
| Strontium | 500 ug/L      | Sulfur      | 2500 ug/L     |
| Thallium  | 500 ug/L      | Tin         | 500 ug/L      |
| Titanium  | 500 ug/L      | Uranium     | 500 ug/L      |
| Vanadium  | 500 ug/L      | Zinc        | 500 ug/L      |

**Serial ID:** UI2435207      **Open/Reference Date:** 27-JUL-16      **Amount :** 500 mL  
**Name:** TCLP Spike Hg      **Received:** 27-JUL-16      **Catalog Number :** 060080-43-03  
**Type:** Source Material      **Expires:** 27-JUL-17      **Lot Number :** 1093090  
**Employee:** Edmund Frampton      **Solvent :** 2% nitric acid  
**Supplier:** O2Si  
**Description:** TCLP Spiking Solution Hg  
**Comments:** None

| Analyte | Concentration | Analyte | Concentration |
|---------|---------------|---------|---------------|
| Mercury | 8 mg/L        |         |               |

**Serial ID:** UI2464937-01      **Open/Reference Date:** 14-OCT-16      **Catalog Number :** 160047-01  
**Name:** METALSPIKE-1      **Received:** 14-OCT-16      **Lot Number :** 1097281  
**Type:** Source Material      **Expires:** 14-OCT-17  
**Employee:** Shanta Mack  
**Supplier:** OS2I  
**Description:** Metals Spike Mix I  
**Comments:** None

| Analyte   | Concentration | Analyte     | Concentration |
|-----------|---------------|-------------|---------------|
| Aluminum  | 1000 ug/mL    | Arsenic     | 100 ug/mL     |
| Barium    | 100 ug/mL     | Beryllium   | 100 ug/mL     |
| Boron     | 100 ug/mL     | Cadmium     | 100 ug/mL     |
| Calcium   | 1000 ug/mL    | Cobalt      | 100 ug/mL     |
| Iron      | 1000 ug/mL    | Lead        | 100 ug/mL     |
| Magnesium | 1000 ug/mL    | Phosphorous | 100 ug/mL     |
| Potassium | 1000 ug/mL    | Silver      | 100 ug/mL     |
| Sodium    | 1000 ug/mL    | Strontium   | 100 ug/mL     |

**Serial ID:** UI2464937-02      **Open/Reference Date:** 14-OCT-16      **Catalog Number :** 160048-01  
**Name:** METALSPIKE-2      **Received:** 14-OCT-16      **Lot Number :** 1097279  
**Type:** Source Material      **Expires:** 14-OCT-17  
**Employee:** Shanta Mack  
**Supplier:** OS2I

# Standard Logbook

**Description:** Metals Spike Mix II

**Comments:** None

| Analyte     | Concentration | Analyte     | Concentration |
|-------------|---------------|-------------|---------------|
| Antimony    | 100 ug/mL     | Chromium    | 100 ug/mL     |
| Copper      | 100 ug/mL     | Manganese   | 100 ug/mL     |
| Molybdenum  | 100 ug/mL     | Nickel      | 100 ug/mL     |
| Selenium    | 100 ug/mL     | Silica      | 2141 ug/mL    |
| Silicon     | 1000 ug/mL    | Sulfur      | 1000 ug/mL    |
| Thallium    | 100 ug/mL     | Tin         | 100 ug/mL     |
| Titanium    | 100 ug/mL     | Uranium     | 100 ug/mL     |
| Uranium-235 | .72 ug/mL     | Uranium-238 | 99.28 ug/mL   |
| Vanadium    | 100 ug/mL     | Zinc        | 100 ug/mL     |

**Serial ID:** IHG161109-01      **Open/Reference Date:** 09-NOV-16      **Instrument Id :** Mercury  
**Name:** MHGINTER1      **Received:** 09-NOV-16      **Pipet Id :** Minou1  
**Type:** Intermediate      **Expires:** 11-NOV-16      **Solvent :** 1mL HNO3 + TypeI H2O  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Intermediate 1st Source 200 ug/L  
**Comments:** Prepare fresh daily

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UHG2455249-01   | Mercury | 1000 mg/L    | .05 mL  | 250 mL     | 200 ug/L    |

**Serial ID:** IHG161109-02      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Minou1  
**Name:** MHGINTER2      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Intermediate      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Intermediate 2nd Source 200 ug/L  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UHG2455256-02   | Mercury | 999.7 mg/L   | .05 mL  | 250 mL     | 200 ug/L    |

**Serial ID:** WHG161109-01A      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL0.2CRA      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 0.2/CRA  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | 20 uL   | 20 mL      | .2 ug/L     |

# Standard Logbook

**Serial ID:** WHG161109-02      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL0.5      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 0.5  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | 50 uL   | 20 mL      | .5 ug/L     |

**Serial ID:** WHG161109-03      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL2.0      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 2.0  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | 200 uL  | 20 mL      | 2 ug/L      |

**Serial ID:** WHG161109-04      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL5.0CCV      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 5.0/CCV  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | .05 uL  | 20 mL      | 5 ug/L      |

**Serial ID:** WHG161109-05      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCAL10.0      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL 10.0  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | 1000 uL | 20 mL      | 10 ug/L     |

# Standard Logbook

**Serial ID:** WHG161109-06      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORK5.0ICV      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working 2nd Source 5.0/ICV  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | 500 uL  | 20 mL      | 5 ug/L      |

**Serial ID:** WHG161109-07      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALSO.2CRA      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working Standard 1st Source CAL S 0.2/CRA  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | 30 uL   | 30 mL      | .2 ug/L     |

**Serial ID:** WHG161109-08      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALSO.5      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working Standard 1st Source CAL S 0.5  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | 75 uL   | 30 mL      | .5 ug/L     |

**Serial ID:** WHG161109-09      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALSO.2.0      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL S 2.0  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | 300 uL  | 30 mL      | 2 ug/L      |

# Standard Logbook

**Serial ID:** WHG161109-10      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALS5.0CCV      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL S 5.0/CCV  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | 750 uL  | 30 mL      | 5 ug/L      |

**Serial ID:** WHG161109-11      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALS10.0      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL S 10.0  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-01    | Mercury | 200 ug/L     | 1500 uL | 30 mL      | 10 ug/L     |

**Serial ID:** WHG161109-12      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGWORKS5.0ICV      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury Working 2nd Source S 5.0/ICV  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| IHG161109-02    | Mercury | 200 ug/L     | 750 uL  | 30 mL      | 5 ug/L      |

**Serial ID:** WHG161109-13      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGLIQLCSMSSPIKE      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury working intermediate standard for LCS/MS  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UHG2455249-01   | Mercury | 1000 mg/L    | .05 mL  | 250 mL     | 200 ug/L    |

# Standard Logbook

**Serial ID:** WHG161109-14      **Open/Reference Date:** 09-NOV-16      **Pipet Id :** Hg1289245  
**Name:** MHGSOILMSSPIKE      **Received:** 09-NOV-16      **Solvent :** 2% HNO3-1734294  
**Type:** Working      **Expires:** 11-NOV-16  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** Mercury soil working intermediate standard for MS  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UHG2455249-01   | Mercury | 1000 mg/L    | .05 mL  | 250 mL     | 200 ug/L    |

**Serial ID:** WI160921-48      **Open/Reference Date:** 21-SEP-16      **Amount :** 25 mL  
**Name:** Trace ICP ICSEA      **Received:** 19-MAY-16      **Catalog Number :** 160005-08-03  
**Type:** Working      **Expires:** 21-DEC-16      **Lot Number :** 1090998  
**Employee:** Helen Camello      **Solvent :** 3% HCl + 1% HNO3  
**Supplier:** o2si  
**Description:** Trace ICP Interferent Check Standard A  
**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI160519-40     | Aluminum  | 20000 mg/L   | 25 mL   | 1000 mL    | 500000 UG/L |
| UI160519-40     | Calcium   | 20000 mg/L   | 25 mL   | 1000 mL    | 500000 UG/L |
| UI160519-40     | Iron      | 8000 mg/L    | 25 mL   | 1000 mL    | 200000 UG/L |
| UI160519-40     | Magnesium | 20000 mg/L   | 25 mL   | 1000 mL    | 500000 UG/L |

**Serial ID:** WI161021-40      **Open/Reference Date:** 21-OCT-16      **Balance Id :** 216  
**Name:** ICP HIGH RANGE STD-A      **Received:** 12-JUL-16      **Lot Number :** 1093571  
**Type:** Working      **Expires:** 21-NOV-16      **Pipet Id :** 1099667  
**Employee:** Helen Camello      **Solvent :** 3%HCL and 1%HNO3  
**Supplier:** 02SI  
**Description:** ICP HIGH RANGE STD SOLUTION A  
**Comments:** None

| Parent Material | Analyte    | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|------------|--------------|---------|------------|-------------|
| UI160712-40     | Antimony   | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Arsenic    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Barium     | 150 mg/L     | 50 mL   | 500 mL     | 15000 ug/L  |
| UI160712-40     | Beryllium  | 30 mg/L      | 50 mL   | 500 mL     | 3000 ug/L   |
| UI160712-40     | Boron      | 50 mg/L      | 50 mL   | 500 mL     | 5000 ug/L   |
| UI160712-40     | Cadmium    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Chromium   | 250 mg/L     | 50 mL   | 500 mL     | 25000 ug/L  |
| UI160712-40     | Cobalt     | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Copper     | 200 mg/L     | 50 mL   | 500 mL     | 20000 ug/L  |
| UI160712-40     | Lead       | 250 mg/L     | 50 mL   | 500 mL     | 25000 ug/L  |
| UI160712-40     | Manganese  | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Molybdenum | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |

# Standard Logbook

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI160712-40     | Nickel      | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Phosphorous | 150 mg/L     | 50 mL   | 500 mL     | 15000 ug/L  |
| UI160712-40     | Selenium    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Silica      | 1070 mg/L    | 50 mL   | 500 mL     | 107000 ug/L |
| UI160712-40     | Silicon     | 500 mg/L     | 50 mL   | 500 mL     | 50000 ug/L  |
| UI160712-40     | Silver      | 100 mg/L     | 50 mL   | 500 mL     | 1000 ug/L   |
| UI160712-40     | Strontium   | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Thallium    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Tin         | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Titanium    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Vanadium    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Zinc        | 150 mg/L     | 50 mL   | 500 mL     | 15000 ug/L  |

**Serial ID:** WI161021-41      **Open/Reference Date:** 21-OCT-16      **Balance Id :** 216  
**Name:** ICP HIGH RANGE STD B      **Received:** 12-JUL-16      **Lot Number :** 1093571  
**Type:** Working      **Expires:** 21-NOV-16      **Pipet Id :** 1099667  
**Employee:** Helen Camello      **Solvent :** 3%HCLand 1%HNO3  
**Supplier:** 02SI  
**Description:** ICP HIGH RANGE STD SOLUTION B  
**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI160712-41     | Aluminum  | 5000 mg/L    | 50 mL   | 500 mL     | 500000 ug/L |
| UI160712-41     | Calcium   | 5000 mg/L    | 50 mL   | 500 mL     | 500000 ug/L |
| UI160712-41     | Iron      | 5000 mg/L    | 50 mL   | 500 mL     | 500000 ug/L |
| UI160712-41     | Magnesium | 5000 mg/L    | 50 mL   | 500 mL     | 500000 ug/L |
| UI160712-41     | Potassium | 3000 mg/L    | 50 mL   | 500 mL     | 300000 ug/L |
| UI160712-41     | Sodium    | 5000 mg/L    | 50 mL   | 500 mL     | 500000 ug/L |
| UI160712-41     | Sulfur    | 500 mg/L     | 50 mL   | 500 mL     | 50000 ug/L  |
| UI160712-41     | Uranium   | 150 mg/L     | 50 mL   | 500 mL     | 15000 ug/L  |

**Serial ID:** WI161021-48      **Open/Reference Date:** 21-OCT-16      **Amount :** 25 mL  
**Name:** Trace ICP ICESA      **Received:** 19-MAY-16      **Catalog Number :** 160005-08-03  
**Type:** Working      **Expires:** 21-JAN-17      **Lot Number :** 1090998  
**Employee:** Helen Camello      **Solvent :** 3% HCl + 1% HNO3  
**Supplier:** o2si  
**Description:** Trace ICP Interferent Check Standard A  
**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI160519-40     | Aluminum  | 20000 mg/L   | 25 mL   | 1000 mL    | 500000 UG/L |
| UI160519-40     | Calcium   | 20000 mg/L   | 25 mL   | 1000 mL    | 500000 UG/L |
| UI160519-40     | Iron      | 8000 mg/L    | 25 mL   | 1000 mL    | 200000 UG/L |
| UI160519-40     | Magnesium | 20000 mg/L   | 25 mL   | 1000 mL    | 500000 UG/L |

# Standard Logbook

**Serial ID:** WI161102-43      **Open/Reference Date:** 02-NOV-16      **Balance Id :** 216  
**Name:** TRACE ICP 0.5/CCV STD.      **Received:** 25-AUG-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 03-NOV-16      **Solvent :** 3%HCL AND 1%HNO3-2471558  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP 0.5/CCV CALIBRATION STD.  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc.  |
|-----------------|-------------|--------------|---------|------------|--------------|
| UI160705-41     | Sodium      | 1000 ug/mL   | 5 mL    | 1000 mL    | 5000 UG/L    |
| UI160831-40     | Aluminum    | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L    |
| UI160831-40     | Arsenic     | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Barium      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Beryllium   | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Boron       | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Cadmium     | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Calcium     | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L    |
| UI160831-40     | Chromium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Cobalt      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Copper      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Iron        | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L    |
| UI160831-40     | Lead        | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Magnesium   | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L    |
| UI160831-40     | Manganese   | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Nickel      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Phosphorous | 1000 mg/L    | 2.5 mL  | 1000 mL    | 2500 UG/L    |
| UI160831-40     | Potassium   | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L    |
| UI160831-40     | Selenium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Sodium      | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L    |
| UI160831-40     | Strontium   | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Thallium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Uranium     | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Vanadium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-40     | Zinc        | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-41     | Antimony    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-41     | Molybdenum  | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-41     | Silver      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-41     | Sulfur      | 400 mg/L     | 2.5 mL  | 1000 mL    | 1000 UG/L    |
| UI160831-41     | Tin         | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-41     | Titanium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-42     | Silica      | 2139 mg/L    | 2.5 mL  | 1000 mL    | 5348.25 UG/L |
| UI160831-42     | Silicon     | 1000 mg/L    | 2.5 mL  | 1000 mL    | 2500 UG/L    |



# Standard Logbook

**Serial ID:** WI161102-44      **Open/Reference Date:** 02-NOV-16      **Balance Id :** 216  
**Name:** TRACE ICP SCAL 1.0      **Received:** 25-AUG-16      **Pipet Id :** 3581809  
**Type:** Working      **Expires:** 03-NOV-16      **Solvent :** 3%HCL&1%HNO3-2471558  
**Employee:** Helen Camello  
**Supplier:** o2si  
**Description:** Trace ICP Calibration Standard 1.0ppm  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI160831-40     | Aluminum    | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Arsenic     | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Barium      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Beryllium   | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Boron       | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Cadmium     | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Calcium     | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Chromium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Cobalt      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Copper      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Iron        | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Lead        | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Magnesium   | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Manganese   | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Nickel      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Phosphorous | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160831-40     | Potassium   | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Selenium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Sodium      | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Strontium   | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Thallium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Uranium     | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Vanadium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Zinc        | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Antimony    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Molybdenum  | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Silver      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Sulfur      | 400 mg/L     | 2.5 mL  | 500 mL     | 2000 ug/L   |
| UI160831-41     | Tin         | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Titanium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-42     | Silica      | 2139 mg/L    | 2.5 mL  | 500 mL     | 10698 ug/L  |
| UI160831-42     | Silicon     | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |

# Standard Logbook

**Serial ID:** WI161102-45      **Open/Reference Date:** 02-NOV-16      **Balance Id :** 216  
**Name:** TRACE ICP S-10 STD      **Received:** 30-AUG-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 03-NOV-16      **Solvent :** 3%HCL and 1%HNO3-2471558  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP S-10 CALIBRATION STD.  
**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI160705-41     | Sodium    | 1000 ug/mL   | 10 mL   | 500 mL     | 20000 UG/L  |
| UI160831-43     | Aluminum  | 5000 mg/L    | 5 mL    | 500 mL     | 50000 UG/L  |
| UI160831-43     | Calcium   | 5000 mg/L    | 5 mL    | 500 mL     | 50000 UG/L  |
| UI160831-43     | Iron      | 2000 mg/L    | 5 mL    | 500 mL     | 20000 UG/L  |
| UI160831-43     | Magnesium | 5000 mg/L    | 5 mL    | 500 mL     | 50000 UG/L  |

**Serial ID:** WI161102-46      **Open/Reference Date:** 02-NOV-16      **Balance Id :** 216  
**Name:** ICP TRACE ICV      **Received:** 10-MAR-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 03-NOV-16      **Solvent :** 3%HCL AND 1%HNO3-2471558  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** Initial Calibration Verification ICP Trace Metals  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI151210-42     | Silica      | 2139 mg/L    | 2.5 mL  | 500 mL     | 10695 ug/L  |
| UI151210-42     | Silicon     | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Aluminum    | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Arsenic     | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Barium      | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Boron       | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Cadmium     | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Calcium     | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Chromium    | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Cobalt      | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Copper      | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Iron        | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Lead        | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Phosphorous | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Potassium   | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Selenium    | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Sodium      | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Strontium   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Antimony    | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Beryllium   | 50 mg/L      | 2.5 mL  | 500 mL     | 250 ug/L    |
| UI160310-41     | Magnesium   | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-41     | Manganese   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Molybdenum  | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |

# Standard Logbook

| Parent Material | Analyte  | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|----------|--------------|---------|------------|-------------|
| UI160310-41     | Nickel   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Silver   | 50 mg/L      | 2.5 mL  | 500 mL     | 250 ug/L    |
| UI160310-41     | Sulfur   | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-41     | Thallium | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Tin      | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Titanium | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Uranium  | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Vanadium | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Zinc     | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |

**Serial ID:** WI161102-47      **Open/Reference Date:** 02-NOV-16      **Balance Id :** 216  
**Name:** PQL Working Standard      **Received:** 11-APR-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 03-NOV-16      **Solvent :** 3%HCL&1%HNO3-2471558  
**Employee:** Helen Camello  
**Supplier:** 02si  
**Description:** PQL Working Standard  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI160411-40     | Aluminum    | 100 mg/L     | 2 mL    | 1000 mL    | 200 ug/L    |
| UI160411-40     | Antimony    | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Arsenic     | 15 mg/L      | 2 mL    | 1000 mL    | 15 ug/L     |
| UI160411-40     | Barium      | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Beryllium   | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Boron       | 25 mg/L      | 2 mL    | 1000 mL    | 50 ug/L     |
| UI160411-40     | Cadmium     | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Calcium     | 100 mg/L     | 2 mL    | 1000 mL    | 100 ug/L    |
| UI160411-40     | Chromium    | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Cobalt      | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Copper      | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Iron        | 50 mg/L      | 2 mL    | 1000 mL    | 100 ug/L    |
| UI160411-40     | Lead        | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Magnesium   | 150 mg/L     | 2 mL    | 1000 mL    | 300 ug/L    |
| UI160411-40     | Manganese   | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Molybdenum  | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Nickel      | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Phosphorous | 75 mg/L      | 2 mL    | 1000 mL    | 150 ug/L    |
| UI160411-40     | Potassium   | 75 mg/L      | 2 mL    | 1000 mL    | 150 ug/L    |
| UI160411-40     | Selenium    | 15 mg/L      | 2 mL    | 1000 mL    | 15 ug/L     |
| UI160411-40     | Silicon     | 50 mg/L      | 2 mL    | 1000 mL    | 100 ug/L    |
| UI160411-40     | Silver      | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Sodium      | 150 mg/L     | 2 mL    | 1000 mL    | 150 ug/L    |
| UI160411-40     | Strontium   | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Sulfur      | 50 mg/L      | 2 mL    | 1000 mL    | 100 ug/L    |
| UI160411-40     | Thallium    | 10 mg/L      | 2 mL    | 1000 mL    | 20 ug/L     |

# Standard Logbook

| Parent Material | Analyte  | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|----------|--------------|---------|------------|-------------|
| UI160411-40     | Tin      | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Titanium | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Uranium  | 25 mg/L      | 2 mL    | 1000 mL    | 50 ug/L     |
| UI160411-40     | Vanadium | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Zinc     | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |

**Serial ID:** WI161104-40      **Open/Reference Date:** 04-NOV-16      **Balance Id :** 216  
**Name:** ICP HIGH RANGE STD-A      **Received:** 12-JUL-16      **Lot Number :** 1093571  
**Type:** Working      **Expires:** 04-DEC-16      **Pipet Id :** 1099667  
**Employee:** Helen Camello      **Solvent :** 3%HCL and 1%HNO3  
**Supplier:** 02SI  
**Description:** ICP HIGH RANGE STD SOLUTION A  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI160712-40     | Antimony    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Arsenic     | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Barium      | 150 mg/L     | 50 mL   | 500 mL     | 15000 ug/L  |
| UI160712-40     | Beryllium   | 30 mg/L      | 50 mL   | 500 mL     | 3000 ug/L   |
| UI160712-40     | Boron       | 50 mg/L      | 50 mL   | 500 mL     | 5000 ug/L   |
| UI160712-40     | Cadmium     | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Chromium    | 250 mg/L     | 50 mL   | 500 mL     | 25000 ug/L  |
| UI160712-40     | Cobalt      | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Copper      | 200 mg/L     | 50 mL   | 500 mL     | 20000 ug/L  |
| UI160712-40     | Lead        | 250 mg/L     | 50 mL   | 500 mL     | 25000 ug/L  |
| UI160712-40     | Manganese   | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Molybdenum  | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Nickel      | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Phosphorous | 150 mg/L     | 50 mL   | 500 mL     | 15000 ug/L  |
| UI160712-40     | Selenium    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Silica      | 1070 mg/L    | 50 mL   | 500 mL     | 107000 ug/L |
| UI160712-40     | Silicon     | 500 mg/L     | 50 mL   | 500 mL     | 50000 ug/L  |
| UI160712-40     | Silver      | 100 mg/L     | 50 mL   | 500 mL     | 1000 ug/L   |
| UI160712-40     | Strontium   | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Thallium    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Tin         | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Titanium    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Vanadium    | 100 mg/L     | 50 mL   | 500 mL     | 10000 ug/L  |
| UI160712-40     | Zinc        | 150 mg/L     | 50 mL   | 500 mL     | 15000 ug/L  |

**Serial ID:** WI161104-41      **Open/Reference Date:** 04-NOV-16      **Balance Id :** 216  
**Name:** ICP HIGH RANGE STD B      **Received:** 12-JUL-16      **Lot Number :** 1093571  
**Type:** Working      **Expires:** 04-DEC-16      **Pipet Id :** 1099667  
**Employee:** Helen Camello      **Solvent :** 3%HCLand 1%HNO3  
**Supplier:** 02SI

# Standard Logbook

**Description:** ICP HIGH RANGE STD SOLUTION B

**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI160712-41     | Aluminum  | 5000 mg/L    | 50 mL   | 500 mL     | 500000 ug/L |
| UI160712-41     | Calcium   | 5000 mg/L    | 50 mL   | 500 mL     | 500000 ug/L |
| UI160712-41     | Iron      | 5000 mg/L    | 50 mL   | 500 mL     | 500000 ug/L |
| UI160712-41     | Magnesium | 5000 mg/L    | 50 mL   | 500 mL     | 500000 ug/L |
| UI160712-41     | Potassium | 3000 mg/L    | 50 mL   | 500 mL     | 300000 ug/L |
| UI160712-41     | Sodium    | 5000 mg/L    | 50 mL   | 500 mL     | 500000 ug/L |
| UI160712-41     | Sulfur    | 500 mg/L     | 50 mL   | 500 mL     | 50000 ug/L  |
| UI160712-41     | Uranium   | 150 mg/L     | 50 mL   | 500 mL     | 15000 ug/L  |

**Serial ID:** WI161111-42

**Open/Reference Date:** 11-NOV-16

**Balance Id :** 216

**Name:** TRACE ICP 0.1 PPM STD.

**Received:** 25-AUG-16

**Pipet Id :** 1099667

**Type:** Working

**Expires:** 12-NOV-16

**Solvent :** 3%HCL AND 1%HNO3-2474796

**Employee:** Helen Camello

**Supplier:** GEL

**Description:** TRACE ICP 0.1 PPM CALIBRATION STD.

**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| WI161111-44     | Aluminum    | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161111-44     | Antimony    | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Arsenic     | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Barium      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Beryllium   | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Boron       | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Cadmium     | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Calcium     | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161111-44     | Chromium    | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Cobalt      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Copper      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Iron        | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161111-44     | Lead        | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Magnesium   | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161111-44     | Manganese   | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Molybdenum  | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Nickel      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Phosphorous | 5000 ug/L    | 10 mL   | 100 mL     | 500 ug/L    |
| WI161111-44     | Potassium   | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161111-44     | Selenium    | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Silica      | 10698 ug/L   | 10 mL   | 100 mL     | 1069 ug/L   |
| WI161111-44     | Silicon     | 5000 ug/L    | 10 mL   | 100 mL     | 500 ug/L    |
| WI161111-44     | Silver      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Sodium      | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161111-44     | Strontium   | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |

# Standard Logbook

| Parent Material | Analyte  | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|----------|--------------|---------|------------|-------------|
| WI161111-44     | Sulfur   | 2000 ug/L    | 10 mL   | 100 mL     | 200 ug/L    |
| WI161111-44     | Thallium | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Tin      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Titanium | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Uranium  | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Vanadium | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161111-44     | Zinc     | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |

**Serial ID:** WI161111-43      **Open/Reference Date:** 11-NOV-16      **Balance Id :** 216  
**Name:** TRACE ICP 0.5/CCV STD.      **Received:** 25-AUG-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 12-NOV-16      **Solvent :** 3%HCL AND 1%HNO3-2474796  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP 0.5/CCV CALIBRATION STD.  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI160831-40     | Aluminum    | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Arsenic     | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Barium      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Beryllium   | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Boron       | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Cadmium     | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Calcium     | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Chromium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Cobalt      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Copper      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Iron        | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Lead        | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Magnesium   | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Manganese   | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Nickel      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Phosphorous | 1000 mg/L    | 2.5 mL  | 1000 mL    | 2500 UG/L   |
| UI160831-40     | Potassium   | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Selenium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Sodium      | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Strontium   | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Thallium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Uranium     | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Vanadium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Zinc        | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-41     | Antimony    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-41     | Molybdenum  | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-41     | Silver      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-41     | Sulfur      | 400 mg/L     | 2.5 mL  | 1000 mL    | 1000 UG/L   |

# Standard Logbook

| Parent Material | Analyte  | Parent Conc. | Aliquot | Final Vol. | Final Conc.  |
|-----------------|----------|--------------|---------|------------|--------------|
| UI160831-41     | Tin      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-41     | Titanium | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-42     | Silica   | 2139 mg/L    | 2.5 mL  | 1000 mL    | 5348.25 UG/L |
| UI160831-42     | Silicon  | 1000 mg/L    | 2.5 mL  | 1000 mL    | 2500 UG/L    |
| UI160930-40     | Sodium   | 1000 ug/mL   | 5 mL    | 1000 mL    | 5000 UG/L    |

**Serial ID:** WI161111-44      **Open/Reference Date:** 11-NOV-16      **Balance Id :** 216  
**Name:** TRACE ICP SCAL 1.0      **Received:** 25-AUG-16      **Pipet Id :** 3581809  
**Type:** Working      **Expires:** 12-NOV-16      **Solvent :** 3%HCL&1%HNO3-2474796  
**Employee:** Helen Camello  
**Supplier:** o2si  
**Description:** Trace ICP Calibration Standard 1.0ppm  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI160831-40     | Aluminum    | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Arsenic     | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Barium      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Beryllium   | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Boron       | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Cadmium     | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Calcium     | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Chromium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Cobalt      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Copper      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Iron        | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Lead        | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Magnesium   | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Manganese   | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Nickel      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Phosphorous | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160831-40     | Potassium   | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Selenium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Sodium      | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Strontium   | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Thallium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Uranium     | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Vanadium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Zinc        | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Antimony    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Molybdenum  | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Silver      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Sulfur      | 400 mg/L     | 2.5 mL  | 500 mL     | 2000 ug/L   |
| UI160831-41     | Tin         | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Titanium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |

# Standard Logbook

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UI160831-42     | Silica  | 2139 mg/L    | 2.5 mL  | 500 mL     | 10698 ug/L  |
| UI160831-42     | Silicon | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |

**Serial ID:** WI161111-45      **Open/Reference Date:** 11-NOV-16      **Balance Id :** 216  
**Name:** TRACE ICP S-10 STD      **Received:** 30-AUG-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 12-NOV-16      **Solvent :** 3%HCL and 1%HNO3-2474796  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP S-10 CALIBRATION STD.  
**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI160831-43     | Aluminum  | 5000 mg/L    | 5 mL    | 500 mL     | 50000 UG/L  |
| UI160831-43     | Calcium   | 5000 mg/L    | 5 mL    | 500 mL     | 50000 UG/L  |
| UI160831-43     | Iron      | 2000 mg/L    | 5 mL    | 500 mL     | 20000 UG/L  |
| UI160831-43     | Magnesium | 5000 mg/L    | 5 mL    | 500 mL     | 50000 UG/L  |
| UI160930-40     | Sodium    | 1000 ug/mL   | 10 mL   | 500 mL     | 20000 UG/L  |

**Serial ID:** WI161111-46      **Open/Reference Date:** 11-NOV-16      **Balance Id :** 216  
**Name:** ICP TRACE ICV      **Received:** 10-MAR-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 12-NOV-16      **Solvent :** 3%HCL AND 1%HNO3-2474796  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** Initial Calibration Verification ICP Trace Metals  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI151210-42     | Silica      | 2139 mg/L    | 2.5 mL  | 500 mL     | 10695 ug/L  |
| UI151210-42     | Silicon     | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Aluminum    | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Arsenic     | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Barium      | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Boron       | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Cadmium     | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Calcium     | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Chromium    | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Cobalt      | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Copper      | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Iron        | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Lead        | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Phosphorous | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Potassium   | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Selenium    | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Sodium      | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Strontium   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |



# Standard Logbook

| Parent Material | Analyte    | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|------------|--------------|---------|------------|-------------|
| UI160310-41     | Antimony   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Beryllium  | 50 mg/L      | 2.5 mL  | 500 mL     | 250 ug/L    |
| UI160310-41     | Magnesium  | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-41     | Manganese  | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Molybdenum | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Nickel     | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Silver     | 50 mg/L      | 2.5 mL  | 500 mL     | 250 ug/L    |
| UI160310-41     | Sulfur     | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-41     | Thallium   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Tin        | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Titanium   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Uranium    | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Vanadium   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Zinc       | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |

**Serial ID:** WI161111-47      **Open/Reference Date:** 11-NOV-16      **Balance Id :** 216  
**Name:** PQL Working Standard      **Received:** 11-APR-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 12-NOV-16      **Solvent :** 3%HCL&1%HNO3-2474796  
**Employee:** Helen Camello  
**Supplier:** 02si  
**Description:** PQL Working Standard  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI160411-40     | Aluminum    | 100 mg/L     | 2 mL    | 1000 mL    | 200 ug/L    |
| UI160411-40     | Antimony    | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Arsenic     | 15 mg/L      | 2 mL    | 1000 mL    | 15 ug/L     |
| UI160411-40     | Barium      | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Beryllium   | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Boron       | 25 mg/L      | 2 mL    | 1000 mL    | 50 ug/L     |
| UI160411-40     | Cadmium     | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Calcium     | 100 mg/L     | 2 mL    | 1000 mL    | 100 ug/L    |
| UI160411-40     | Chromium    | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Cobalt      | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Copper      | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Iron        | 50 mg/L      | 2 mL    | 1000 mL    | 100 ug/L    |
| UI160411-40     | Lead        | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Magnesium   | 150 mg/L     | 2 mL    | 1000 mL    | 300 ug/L    |
| UI160411-40     | Manganese   | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Molybdenum  | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Nickel      | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Phosphorous | 75 mg/L      | 2 mL    | 1000 mL    | 150 ug/L    |
| UI160411-40     | Potassium   | 75 mg/L      | 2 mL    | 1000 mL    | 150 ug/L    |
| UI160411-40     | Selenium    | 15 mg/L      | 2 mL    | 1000 mL    | 15 ug/L     |
| UI160411-40     | Silicon     | 50 mg/L      | 2 mL    | 1000 mL    | 100 ug/L    |

# Standard Logbook

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI160411-40     | Silver    | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Sodium    | 150 mg/L     | 2 mL    | 1000 mL    | 150 ug/L    |
| UI160411-40     | Strontium | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Sulfur    | 50 mg/L      | 2 mL    | 1000 mL    | 100 ug/L    |
| UI160411-40     | Thallium  | 10 mg/L      | 2 mL    | 1000 mL    | 20 ug/L     |
| UI160411-40     | Tin       | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Titanium  | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Uranium   | 25 mg/L      | 2 mL    | 1000 mL    | 50 ug/L     |
| UI160411-40     | Vanadium  | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Zinc      | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |

**Serial ID:** WI161116-42      **Open/Reference Date:** 16-NOV-16      **Balance Id :** 216  
**Name:** TRACE ICP 0.1 PPM STD.      **Received:** 25-AUG-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 17-NOV-16      **Solvent :** 3%HCL AND 1%HNO3-2477714  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP 0.1 PPM CALIBRATION STD.  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| WI161116-44     | Aluminum    | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161116-44     | Antimony    | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Arsenic     | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Barium      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Beryllium   | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Boron       | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Cadmium     | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Calcium     | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161116-44     | Chromium    | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Cobalt      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Copper      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Iron        | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161116-44     | Lead        | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Magnesium   | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161116-44     | Manganese   | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Molybdenum  | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Nickel      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Phosphorous | 5000 ug/L    | 10 mL   | 100 mL     | 500 ug/L    |
| WI161116-44     | Potassium   | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161116-44     | Selenium    | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Silica      | 10698 ug/L   | 10 mL   | 100 mL     | 1069 ug/L   |
| WI161116-44     | Silicon     | 5000 ug/L    | 10 mL   | 100 mL     | 500 ug/L    |
| WI161116-44     | Silver      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Sodium      | 10000 ug/L   | 10 mL   | 100 mL     | 1000 ug/L   |
| WI161116-44     | Strontium   | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |

# Standard Logbook

| Parent Material | Analyte  | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|----------|--------------|---------|------------|-------------|
| WI161116-44     | Sulfur   | 2000 ug/L    | 10 mL   | 100 mL     | 200 ug/L    |
| WI161116-44     | Thallium | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Tin      | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Titanium | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Uranium  | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Vanadium | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |
| WI161116-44     | Zinc     | 1000 ug/L    | 10 mL   | 100 mL     | 100 ug/L    |

**Serial ID:** WI161116-43      **Open/Reference Date:** 16-NOV-16      **Balance Id :** 216  
**Name:** TRACE ICP 0.5/CCV STD.      **Received:** 25-AUG-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 17-NOV-16      **Solvent :** 3%HCL AND 1%HNO3-2477714  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP 0.5/CCV CALIBRATION STD.  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI160831-40     | Aluminum    | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Arsenic     | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Barium      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Beryllium   | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Boron       | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Cadmium     | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Calcium     | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Chromium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Cobalt      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Copper      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Iron        | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Lead        | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Magnesium   | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Manganese   | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Nickel      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Phosphorous | 1000 mg/L    | 2.5 mL  | 1000 mL    | 2500 UG/L   |
| UI160831-40     | Potassium   | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Selenium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Sodium      | 2000 mg/L    | 2.5 mL  | 1000 mL    | 5000 UG/L   |
| UI160831-40     | Strontium   | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Thallium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Uranium     | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Vanadium    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-40     | Zinc        | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-41     | Antimony    | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-41     | Molybdenum  | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-41     | Silver      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L    |
| UI160831-41     | Sulfur      | 400 mg/L     | 2.5 mL  | 1000 mL    | 1000 UG/L   |

# Standard Logbook

| Parent Material | Analyte  | Parent Conc. | Aliquot | Final Vol. | Final Conc.  |
|-----------------|----------|--------------|---------|------------|--------------|
| UI160831-41     | Tin      | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-41     | Titanium | 200 mg/L     | 2.5 mL  | 1000 mL    | 500 UG/L     |
| UI160831-42     | Silica   | 2139 mg/L    | 2.5 mL  | 1000 mL    | 5348.25 UG/L |
| UI160831-42     | Silicon  | 1000 mg/L    | 2.5 mL  | 1000 mL    | 2500 UG/L    |
| UI160930-40     | Sodium   | 1000 ug/mL   | 5 mL    | 1000 mL    | 5000 UG/L    |

**Serial ID:** WI161116-44      **Open/Reference Date:** 16-NOV-16      **Balance Id :** 216  
**Name:** TRACE ICP SCAL 1.0      **Received:** 25-AUG-16      **Pipet Id :** 3581809  
**Type:** Working      **Expires:** 17-NOV-16      **Solvent :** 3%HCL&1%HNO3-2477714  
**Employee:** Helen Camello  
**Supplier:** o2si  
**Description:** Trace ICP Calibration Standard 1.0ppm  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI160831-40     | Aluminum    | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Arsenic     | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Barium      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Beryllium   | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Boron       | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Cadmium     | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Calcium     | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Chromium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Cobalt      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Copper      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Iron        | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Lead        | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Magnesium   | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Manganese   | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Nickel      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Phosphorous | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160831-40     | Potassium   | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Selenium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Sodium      | 2000 mg/L    | 2.5 mL  | 500 mL     | 10000 ug/L  |
| UI160831-40     | Strontium   | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Thallium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Uranium     | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Vanadium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-40     | Zinc        | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Antimony    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Molybdenum  | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Silver      | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Sulfur      | 400 mg/L     | 2.5 mL  | 500 mL     | 2000 ug/L   |
| UI160831-41     | Tin         | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |
| UI160831-41     | Titanium    | 200 mg/L     | 2.5 mL  | 500 mL     | 1000 ug/L   |

# Standard Logbook

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| UI160831-42     | Silica  | 2139 mg/L    | 2.5 mL  | 500 mL     | 10698 ug/L  |
| UI160831-42     | Silicon | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |

**Serial ID:** WI161116-45      **Open/Reference Date:** 16-NOV-16      **Balance Id :** 216  
**Name:** TRACE ICP S-10 STD      **Received:** 30-AUG-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 17-NOV-16      **Solvent :** 3%HCL and 1%HNO3-24777714  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP S-10 CALIBRATION STD.  
**Comments:** None

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI160831-43     | Aluminum  | 5000 mg/L    | 5 mL    | 500 mL     | 50000 UG/L  |
| UI160831-43     | Calcium   | 5000 mg/L    | 5 mL    | 500 mL     | 50000 UG/L  |
| UI160831-43     | Iron      | 2000 mg/L    | 5 mL    | 500 mL     | 20000 UG/L  |
| UI160831-43     | Magnesium | 5000 mg/L    | 5 mL    | 500 mL     | 50000 UG/L  |
| UI160930-40     | Sodium    | 1000 ug/mL   | 10 mL   | 500 mL     | 20000 UG/L  |

**Serial ID:** WI161116-46      **Open/Reference Date:** 16-NOV-16      **Balance Id :** 216  
**Name:** ICP TRACE ICV      **Received:** 10-MAR-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 17-NOV-16      **Solvent :** 3%HCL AND 1%HNO3-24777714  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** Initial Calibration Verification ICP Trace Metals  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI151210-42     | Silica      | 2139 mg/L    | 2.5 mL  | 500 mL     | 10695 ug/L  |
| UI151210-42     | Silicon     | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Aluminum    | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Arsenic     | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Barium      | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Boron       | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Cadmium     | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Calcium     | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Chromium    | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Cobalt      | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Copper      | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Iron        | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-40     | Lead        | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-40     | Phosphorous | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Potassium   | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Selenium    | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Sodium      | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-40     | Strontium   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |

# Standard Logbook

| Parent Material | Analyte    | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|------------|--------------|---------|------------|-------------|
| UI160310-41     | Antimony   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Beryllium  | 50 mg/L      | 2.5 mL  | 500 mL     | 250 ug/L    |
| UI160310-41     | Magnesium  | 1000 mg/L    | 2.5 mL  | 500 mL     | 5000 ug/L   |
| UI160310-41     | Manganese  | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Molybdenum | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Nickel     | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Silver     | 50 mg/L      | 2.5 mL  | 500 mL     | 250 ug/L    |
| UI160310-41     | Sulfur     | 500 mg/L     | 2.5 mL  | 500 mL     | 2500 ug/L   |
| UI160310-41     | Thallium   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Tin        | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Titanium   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Uranium    | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Vanadium   | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |
| UI160310-41     | Zinc       | 100 mg/L     | 2.5 mL  | 500 mL     | 500 ug/L    |

**Serial ID:** WI161116-47      **Open/Reference Date:** 16-NOV-16      **Balance Id :** 216  
**Name:** PQL Working Standard      **Received:** 11-APR-16      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 17-NOV-16      **Solvent :** 3%HCL&1%HNO3-2477714  
**Employee:** Helen Camello  
**Supplier:** 02si  
**Description:** PQL Working Standard  
**Comments:** None

| Parent Material | Analyte     | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------|--------------|---------|------------|-------------|
| UI160411-40     | Aluminum    | 100 mg/L     | 2 mL    | 1000 mL    | 200 ug/L    |
| UI160411-40     | Antimony    | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Arsenic     | 15 mg/L      | 2 mL    | 1000 mL    | 15 ug/L     |
| UI160411-40     | Barium      | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Beryllium   | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Boron       | 25 mg/L      | 2 mL    | 1000 mL    | 50 ug/L     |
| UI160411-40     | Cadmium     | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Calcium     | 100 mg/L     | 2 mL    | 1000 mL    | 100 ug/L    |
| UI160411-40     | Chromium    | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Cobalt      | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Copper      | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Iron        | 50 mg/L      | 2 mL    | 1000 mL    | 100 ug/L    |
| UI160411-40     | Lead        | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Magnesium   | 150 mg/L     | 2 mL    | 1000 mL    | 300 ug/L    |
| UI160411-40     | Manganese   | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Molybdenum  | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Nickel      | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Phosphorous | 75 mg/L      | 2 mL    | 1000 mL    | 150 ug/L    |
| UI160411-40     | Potassium   | 75 mg/L      | 2 mL    | 1000 mL    | 150 ug/L    |
| UI160411-40     | Selenium    | 15 mg/L      | 2 mL    | 1000 mL    | 15 ug/L     |
| UI160411-40     | Silicon     | 50 mg/L      | 2 mL    | 1000 mL    | 100 ug/L    |

# Standard Logbook

| Parent Material | Analyte   | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------|--------------|---------|------------|-------------|
| UI160411-40     | Silver    | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Sodium    | 150 mg/L     | 2 mL    | 1000 mL    | 150 ug/L    |
| UI160411-40     | Strontium | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Sulfur    | 50 mg/L      | 2 mL    | 1000 mL    | 100 ug/L    |
| UI160411-40     | Thallium  | 10 mg/L      | 2 mL    | 1000 mL    | 20 ug/L     |
| UI160411-40     | Tin       | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |
| UI160411-40     | Titanium  | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Uranium   | 25 mg/L      | 2 mL    | 1000 mL    | 50 ug/L     |
| UI160411-40     | Vanadium  | 2.5 mg/L     | 2 mL    | 1000 mL    | 5 ug/L      |
| UI160411-40     | Zinc      | 5 mg/L       | 2 mL    | 1000 mL    | 10 ug/L     |

**Serial ID:** 160119-tclp      **Open/Reference Date:** 19-JAN-16      **Lot Number :** 0000118139  
**Name:** I-HNO3      **Received:** 19-JAN-16  
**Type:** Reagent/Solvent      **Expires:** 19-JAN-17  
**Employee:** John Orgel  
**Supplier:** Macron Chemicals  
**Description:** Concentrated Nitric Acid  
**Comments:** None

**Serial ID:** 160202-BP      **Open/Reference Date:** 02-FEB-16      **Lot Number :** 156039  
**Name:** I-HCL      **Received:** 02-FEB-16      **Preservative\_Id :** 5 none  
**Type:** Reagent/Solvent      **Expires:** 02-FEB-17  
**Employee:** Jeremy Tisdale  
**Supplier:** FISHER Scientific  
**Description:** HYDROCHLORIC ACID for bottle prep  
**Comments:** None

**Serial ID:** 160215      **Open/Reference Date:** 15-FEB-16  
**Name:** SPLP 60/40 Intermediate      **Received:** 15-FEB-16  
**Type:** Reagent/Solvent      **Expires:** 19-JAN-17  
**Employee:** Edmund Frampton  
**Supplier:** GEL  
**Description:** SPLP 60/40 Intermediate  
**Comments:** None

| Parent Material | Analyte     | Parent Conc.    | Aliquot | Final Vol. | Final Conc.      |
|-----------------|-------------|-----------------|---------|------------|------------------|
| 160119-tclp     | I-HNO3      | 68.0-70.0%      | 4 mL    | 500 mL     | 60%H2SO4/40%HNO3 |
| 2349143         | B-H2SO4-MER | 95 - 98 percent | 6 mL    | 500 mL     | 60%H2SO4/40%HNO3 |

# Standard Logbook

**Serial ID:** 160907-tclp      **Open/Reference Date:** 07-SEP-16      **Lot Number :** 0000137493  
**Name:** I-HNO3      **Received:** 07-SEP-16  
**Type:** Reagent/Solvent      **Expires:** 07-SEP-17  
**Employee:** Richard Dollinger  
**Supplier:** Macron Chemicals  
**Description:** Concentrated Nitric Acid  
**Comments:** None

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**Serial ID:** 161027      **Open/Reference Date:** 27-OCT-16      **Balance Id :** BAL-011  
**Name:** SPLP2      **Received:** 27-OCT-16  
**Type:** Reagent/Solvent      **Expires:** 19-JAN-17  
**Employee:** Richard Dollinger  
**Supplier:** GEL  
**Description:** SPLP WESTERN EXTRACTION FLUID 4.97  
**Comments:** None

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| Parent Material | Analyte                 | Parent Conc.               | Aliquot | Final Vol. | Final Conc. |
|-----------------|-------------------------|----------------------------|---------|------------|-------------|
| 160215          | SPLP 60/40 Intermediate | 60%H2SO4/40%<br>60%<br>60% | 7 mL    | 50 L       | SPLP2       |

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**Serial ID:** 2349143      **Open/Reference Date:** 24-DEC-15      **Lot Number :** 0000122133  
**Name:** B-H2SO4-MER      **Received:** 24-DEC-15  
**Type:** Reagent/Solvent      **Expires:** 24-DEC-17  
**Employee:** Alan Stanley  
**Supplier:** MACRON  
**Description:** Sulfuric Acid, Concentrated  
**Comments:** None

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**Serial ID:** 2358607-A      **Open/Reference Date:** 22-JAN-16      **Lot Number :** 3025C513  
**Name:** B-NH2OH.HCl-MER      **Received:** 22-JAN-16  
**Type:** Reagent/Solvent      **Expires:** 22-JAN-17  
**Employee:** Monifa Basdeo  
**Supplier:** EMD  
**Description:** Hydroxylamine Hydrochloride  
**Comments:** None

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**Serial ID:** 2375431-A      **Open/Reference Date:** 07-MAR-16      **Lot Number :** 155044  
**Name:** B-NaCl-MER      **Received:** 07-MAR-16  
**Type:** Reagent/Solvent      **Expires:** 07-MAR-17  
**Employee:** Monifa Basdeo  
**Supplier:** VWR  
**Description:** Sodium Chloride  
**Comments:** None

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# Standard Logbook

**Serial ID:** 2384052      **Open/Reference Date:** 25-MAR-16      **Lot Number :** A0361726  
**Name:** B-K2S2O8S-MER      **Received:** 25-MAR-16  
**Type:** Reagent/Solvent      **Expires:** 25-MAR-18  
**Employee:** Alan Stanley  
**Supplier:** ACROS ORGANICS  
**Description:** Potassium Persulfate Concentrate.  
**Comments:** None

**Serial ID:** 2436218-1      **Open/Reference Date:** 29-JUL-16      **Instrument Id :** MERCURY  
**Name:** B-HNO3-MER      **Received:** 29-JUL-16      **Lot Number :** 0000137493  
**Type:** Reagent/Solvent      **Expires:** 29-JUL-18  
**Employee:** Alan Stanley  
**Supplier:** BDH  
**Description:** NITRIC ACID  
**Comments:** None

**Serial ID:** 2437806-A      **Open/Reference Date:** 02-AUG-16      **Lot Number :** 160888  
**Name:** B-KMnO4(VWR)-MER      **Received:** 02-AUG-16  
**Type:** Reagent/Solvent      **Expires:** 02-AUG-18  
**Employee:** Alan Stanley  
**Supplier:** Fisher  
**Description:** Potassium Permanganate  
**Comments:** None

**Serial ID:** 2451969      **Open/Reference Date:** 07-SEP-16      **Lot Number :** 0000141596  
**Name:** I-HNO3      **Received:** 07-SEP-16  
**Type:** Reagent/Solvent      **Expires:** 07-SEP-17  
**Employee:** Edmund Frampton  
**Supplier:** MACRON  
**Description:** Concentrated Nitric Acid  
**Comments:** None

**Serial ID:** 2460309-C      **Open/Reference Date:** 29-SEP-16      **Balance Id :** BAL-002  
**Name:** B-K2S2O8-MER      **Received:** 29-SEP-16  
**Type:** Reagent/Solvent      **Expires:** 25-MAR-18  
**Employee:** Alan Stanley  
**Supplier:** GEL  
**Description:** 5% Potassium Persulfate  
**Comments:** None

| Parent Material | Analyte       | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------------|--------------|---------|------------|-------------|
| 2384052         | B-K2S2O8S-MER | N/A          | 175 g   | 1000 mL    | 5%          |

# Standard Logbook

**Serial ID:** 2460888      **Open/Reference Date:** 30-SEP-16      **Lot Number :** 163526  
**Name:** I-HCL      **Received:** 30-SEP-16  
**Type:** Reagent/Solvent      **Expires:** 30-SEP-17  
**Employee:** Shanta Mack  
**Supplier:** FISHER SCIENTIFIC  
**Description:** HYDROCHLORIC ACID  
**Comments:** None

**Serial ID:** 2464396-C      **Open/Reference Date:** 13-OCT-16      **Balance Id :** BAL-423  
**Name:** B-KMnO4-MER      **Received:** 13-OCT-16  
**Type:** Reagent/Solvent      **Expires:** 02-AUG-18  
**Employee:** Monifa Basdeo  
**Supplier:** GEL  
**Description:** 5% KMnO4 solution  
**Comments:** None

| Parent Material | Analyte          | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|------------------|--------------|---------|------------|-------------|
| 2437806-A       | B-KMnO4(VWR)-MER | Crystals     | 175 g   | 1000 mL    | 5%          |

**Serial ID:** 2467922      **Open/Reference Date:** 21-OCT-16      **Lot Number :** 2016081971  
**Name:** I-HNO3      **Received:** 21-OCT-16  
**Type:** Reagent/Solvent      **Expires:** 21-OCT-18  
**Employee:** Shanta Mack  
**Supplier:** BDH  
**Description:** Concentrated Nitric Acid  
**Comments:** None

**Serial ID:** 2467932-C      **Open/Reference Date:** 20-OCT-16      **Balance Id :** BAL-002  
**Name:** B-NaCl.NH2OH.HCl-MER      **Received:** 20-OCT-16  
**Type:** Reagent/Solvent      **Expires:** 21-JAN-17  
**Employee:** Monifa Basdeo  
**Supplier:** GEL  
**Description:** Hg reducing agent  
**Comments:** None

| Parent Material | Analyte         | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|-----------------|--------------|---------|------------|-------------|
| 2358607-A       | B-NH2OH.HCl-MER | N/A          | 120 g   | 1000 mL    | 2.2%        |
| 2375431-A       | B-NaCl-MER      | 100          | 120 g   | 1000 mL    | 2.2%        |

**Serial ID:** 2471558      **Open/Reference Date:** 31-OCT-16      **Solvent :** 3%HCL+1%HNO3  
**Name:** B-ICP-RINSE SOLN      **Received:** 31-OCT-16  
**Type:** Reagent/Solvent      **Expires:** 06-NOV-16  
**Employee:** Helen Camello  
**Supplier:** GEL

# Standard Logbook

**Description:** 3%HCL+1%HNO3 RINSE SOLN.

**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| 160202-BP       | I-HCL   | 36.5-38.0    | 240 mL  | 10000 mL   | N/A         |
| 2451969         | I-HNO3  | 68.0-70.0%   | 80 mL   | 10000 mL   | N/A         |

**Serial ID:** 2474090-A      **Open/Reference Date:** 03-NOV-16      **Lot Number :** 163526

**Name:** B-HCI-MER      **Received:** 03-NOV-16

**Type:** Reagent/Solvent      **Expires:** 03-NOV-18

**Employee:** Monifa Basdeo

**Supplier:** Fisher Scientific

**Description:** Hydrochloric Acid Conc.

**Comments:** None

**Serial ID:** 2474796      **Open/Reference Date:** 07-NOV-16      **Solvent :** 3%HCL+1%HNO3

**Name:** B-ICP-RINSE SOLN      **Received:** 21-OCT-16

**Type:** Reagent/Solvent      **Expires:** 13-NOV-16

**Employee:** Helen Camello

**Supplier:** GEL

**Description:** 3%HCL+1%HNO3 RINSE SOLN.

**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| 2460888         | I-HCL   | 36.5-38.0    | 240 mL  | 10000 mL   | N/A         |
| 2467922         | I-HNO3  | 68.0-70.0%   | 80 mL   | 10000 mL   | N/A         |

**Serial ID:** 2475119      **Open/Reference Date:** 07-NOV-16      **Lot Number :** 2016092001

**Name:** B-H2SO4-MER      **Received:** 07-NOV-16

**Type:** Reagent/Solvent      **Expires:** 07-NOV-18

**Employee:** Alan Stanley

**Supplier:** BDH

**Description:** Sulfuric Acid, Concentrated

**Comments:** None

**Serial ID:** 2476285-C      **Open/Reference Date:** 09-NOV-16      **Solvent :** DI H2O

**Name:** B-Aqua Regia-MER      **Received:** 09-NOV-16

**Type:** Reagent/Solvent      **Expires:** 10-NOV-16

**Employee:** Alan Stanley

**Supplier:** GEL

**Description:** 50% Aqua Regia

**Comments:** None

# Standard Logbook

| Parent Material | Analyte    | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|------------|--------------|---------|------------|-------------|
| 2436218-1       | B-HNO3-MER | 68.0-70.0%   | 25 mL   | 200 mL     | 100 ml      |
| 2474090-A       | B-HCl-MER  | 36.5-38%     | 75 mL   | 200 mL     | 100 ml      |

**Serial ID:** 2477714      **Open/Reference Date:** 14-NOV-16      **Solvent :** 3%HCL+1%HNO3  
**Name:** B-ICP-RINSE SOLN      **Received:** 14-NOV-16  
**Type:** Reagent/Solvent      **Expires:** 20-NOV-16  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** 3%HCL+1%HNO3 RINSE SOLN.  
**Comments:** None

| Parent Material | Analyte | Parent Conc. | Aliquot | Final Vol. | Final Conc. |
|-----------------|---------|--------------|---------|------------|-------------|
| 2460888         | I-HCL   | 36.5-38.0    | 240 mL  | 10000 mL   | N/A         |
| 2467922         | I-HNO3  | 68.0-70.0%   | 80 mL   | 10000 mL   | N/A         |

# **General Chem Analysis**

# Case Narrative

**General Chemistry  
Technical Case Narrative  
Haley & Aldrich, Inc. (HAAL)  
SDG #: 409254**

**Product:** Perchlorate

**Analytical Method:** EPA 314.0

**Analytical Procedure:** GL-GC-E-096 REV# 8

**Analytical Batches:** 1611808 and 1611807

The following samples were analyzed using the above methods and analytical procedure(s).

| <b><u>GEL Sample ID#</u></b> | <b><u>Client Sample Identification</u></b> |
|------------------------------|--|
| 409254011                    | SS110100                                   |
| 409254012                    | SS110200                                   |
| 409254013                    | SD140300                                   |
| 409254014                    | SD140200                                   |
| 409254015                    | SD140100                                   |
| 409254016                    | SD140100DUP                                |
| 1203659162                   | Method Blank (MB)                          |
| 1203659163                   | Laboratory Control Sample (LCS)            |
| 1203659164                   | 409254011(SS110100) Sample Duplicate (DUP) |
| 1203659165                   | 409254011(SS110100) Matrix Spike (MS)      |

The samples in this SDG were analyzed on a "dry weight" basis.

**Data Summary:**

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

## **GEL LABORATORIES LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### **Qualifier Definition Report for**

HAAL002 Haley & Aldrich, Inc.

Client SDG: 409254 GEL Work Order: 409254

#### **The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

#### **Review/Validation**

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

**Signature:**



**Name: Kristen Mizzell**

**Date: 22 NOV 2016**

**Title: Analyst I**



# Sample Data Summary

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: November 22, 2016

Company : Haley & Aldrich, Inc.  
Address : 100 Corporate Place, Suite 105

Rocky Hill, Connecticut 06067

Contact: Mr. Miles van Noordennen  
Project: Fort Calhoun Nuclear Station

|                   |                 |            |           |
|-------------------|-----------------|------------|-----------|
| Client Sample ID: | SS110100        | Project:   | HAAL00201 |
| Sample ID:        | 409254011       | Client ID: | HAAL002   |
| Matrix:           | Soil            |            |           |
| Collect Date:     | 24-OCT-16 10:04 |            |           |
| Receive Date:     | 27-OCT-16       |            |           |
| Collector:        | Client          |            |           |
| Moisture:         | 4.21%           |            |           |

| Parameter  | Qualifier | Result | DL   | RL   | Units | PF   | DF | Analyst | Date     | Time | Batch   | Method |
|--|-----------|--------|------|------|-------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography                                 |           |        |      |      |       |      |    |         |          |      |         |        |
| EPA 314.0 Perchlorate by IC "Dry Weight Corrected" |           |        |      |      |       |      |    |         |          |      |         |        |
| Perchlorate  | U         | ND     | 14.0 | 41.1 | ug/kg | 9.85 | 1  | MAR1    | 11/15/16 | 2112 | 1611808 | 1      |

The following Prep Methods were performed:

| Method    | Description                      | Analyst | Date     | Time | Prep Batch |
|-----------|----------------------------------|---------|----------|------|------------|
| EPA 314.0 | EPA 314.0 Prep Perchlorate by IC | MAR1    | 11/15/16 | 1141 | 1611807    |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|-------------|------------------|
| 1      | EPA 314.0   |                  |

### Notes:

Column headers are defined as follows:

|                                       |                                |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor                   | Lc/LC: Critical Level          |
| DL: Detection Limit                   | PF: Prep Factor                |
| MDA: Minimum Detectable Activity      | RL: Reporting Limit            |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

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## Certificate of Analysis

Report Date: November 22, 2016

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Address : 100 Corporate Place, Suite 105

Rocky Hill, Connecticut 06067

Contact: Mr. Miles van Noordennen  
Project: Fort Calhoun Nuclear Station

|                   |                 |            |           |
|-------------------|-----------------|------------|-----------|
| Client Sample ID: | SS110200        | Project:   | HAAL00201 |
| Sample ID:        | 409254012       | Client ID: | HAAL002   |
| Matrix:           | Soil            |            |           |
| Collect Date:     | 24-OCT-16 10:54 |            |           |
| Receive Date:     | 27-OCT-16       |            |           |
| Collector:        | Client          |            |           |
| Moisture:         | 17.4%           |            |           |

| Parameter  | Qualifier | Result | DL   | RL   | Units | PF   | DF | Analyst | Date     | Time | Batch   | Method |
|--|-----------|--------|------|------|-------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography                                 |           |        |      |      |       |      |    |         |          |      |         |        |
| EPA 314.0 Perchlorate by IC "Dry Weight Corrected" |           |        |      |      |       |      |    |         |          |      |         |        |
| Perchlorate  | U         | ND     | 16.1 | 47.5 | ug/kg | 9.80 | 1  | MAR1    | 11/15/16 | 2214 | 1611808 | 1      |

The following Prep Methods were performed:

| Method    | Description                      | Analyst | Date     | Time | Prep Batch |
|-----------|----------------------------------|---------|----------|------|------------|
| EPA 314.0 | EPA 314.0 Prep Perchlorate by IC | MAR1    | 11/15/16 | 1141 | 1611807    |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|-------------|------------------|
| 1      | EPA 314.0   |                  |

### Notes:

Column headers are defined as follows:

|                                       |                                |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor                   | Lc/LC: Critical Level          |
| DL: Detection Limit                   | PF: Prep Factor                |
| MDA: Minimum Detectable Activity      | RL: Reporting Limit            |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

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## Certificate of Analysis

Report Date: November 22, 2016

Company : Haley & Aldrich, Inc.  
Address : 100 Corporate Place, Suite 105

Rocky Hill, Connecticut 06067

Contact: Mr. Miles van Noordennen  
Project: Fort Calhoun Nuclear Station

|                   |                 |            |           |
|-------------------|-----------------|------------|-----------|
| Client Sample ID: | SD140300        | Project:   | HAAL00201 |
| Sample ID:        | 409254013       | Client ID: | HAAL002   |
| Matrix:           | Soil            |            |           |
| Collect Date:     | 24-OCT-16 11:43 |            |           |
| Receive Date:     | 27-OCT-16       |            |           |
| Collector:        | Client          |            |           |
| Moisture:         | 36.6%           |            |           |

| Parameter  | Qualifier | Result | DL   | RL   | Units | PF   | DF | Analyst | Date     | Time | Batch   | Method |
|--|-----------|--------|------|------|-------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography                                 |           |        |      |      |       |      |    |         |          |      |         |        |
| EPA 314.0 Perchlorate by IC "Dry Weight Corrected" |           |        |      |      |       |      |    |         |          |      |         |        |
| Perchlorate  | U         | ND     | 21.3 | 62.6 | ug/kg | 9.93 | 1  | MAR1    | 11/15/16 | 2235 | 1611808 | 1      |

The following Prep Methods were performed:

| Method    | Description                      | Analyst | Date     | Time | Prep Batch |
|-----------|----------------------------------|---------|----------|------|------------|
| EPA 314.0 | EPA 314.0 Prep Perchlorate by IC | MAR1    | 11/15/16 | 1141 | 1611807    |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|-------------|------------------|
| 1      | EPA 314.0   |                  |

### Notes:

Column headers are defined as follows:

|                                       |                                |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor                   | Lc/LC: Critical Level          |
| DL: Detection Limit                   | PF: Prep Factor                |
| MDA: Minimum Detectable Activity      | RL: Reporting Limit            |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

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## Certificate of Analysis

Report Date: November 22, 2016

Company : Haley & Aldrich, Inc.  
Address : 100 Corporate Place, Suite 105

Rocky Hill, Connecticut 06067

Contact: Mr. Miles van Noordennen  
Project: Fort Calhoun Nuclear Station

Client Sample ID: SD140200  
Sample ID: 409254014  
Matrix: Soil  
Collect Date: 24-OCT-16 11:58  
Receive Date: 27-OCT-16  
Collector: Client  
Moisture: 44.5%

Project: HAAL00201  
Client ID: HAAL002

| Parameter  | Qualifier | Result | DL   | RL   | Units | PF   | DF | Analyst | Date     | Time | Batch   | Method |
|--|-----------|--------|------|------|-------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography                                 |           |        |      |      |       |      |    |         |          |      |         |        |
| EPA 314.0 Perchlorate by IC "Dry Weight Corrected" |           |        |      |      |       |      |    |         |          |      |         |        |
| Perchlorate  | U         | ND     | 24.2 | 71.2 | ug/kg | 9.88 | 1  | MAR1    | 11/15/16 | 2256 | 1611808 | 1      |

The following Prep Methods were performed:

| Method    | Description                      | Analyst | Date     | Time | Prep Batch |
|-----------|----------------------------------|---------|----------|------|------------|
| EPA 314.0 | EPA 314.0 Prep Perchlorate by IC | MAR1    | 11/15/16 | 1141 | 1611807    |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|-------------|------------------|
| 1      | EPA 314.0   |                  |

### Notes:

Column headers are defined as follows:

|                                       |                                |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor                   | Lc/LC: Critical Level          |
| DL: Detection Limit                   | PF: Prep Factor                |
| MDA: Minimum Detectable Activity      | RL: Reporting Limit            |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

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## Certificate of Analysis

Report Date: November 22, 2016

Company : Haley & Aldrich, Inc.  
Address : 100 Corporate Place, Suite 105

Rocky Hill, Connecticut 06067

Contact: Mr. Miles van Noordennen  
Project: Fort Calhoun Nuclear Station

|                   |                 |            |           |
|-------------------|-----------------|------------|-----------|
| Client Sample ID: | SD140100        | Project:   | HAAL00201 |
| Sample ID:        | 409254015       | Client ID: | HAAL002   |
| Matrix:           | Soil            |            |           |
| Collect Date:     | 24-OCT-16 12:35 |            |           |
| Receive Date:     | 27-OCT-16       |            |           |
| Collector:        | Client          |            |           |
| Moisture:         | 37.6%           |            |           |

| Parameter  | Qualifier | Result | DL   | RL   | Units | PF   | DF | Analyst | Date     | Time | Batch   | Method |
|--|-----------|--------|------|------|-------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography                                 |           |        |      |      |       |      |    |         |          |      |         |        |
| EPA 314.0 Perchlorate by IC "Dry Weight Corrected" |           |        |      |      |       |      |    |         |          |      |         |        |
| Perchlorate  | U         | ND     | 21.6 | 63.5 | ug/kg | 9.90 | 1  | MAR1    | 11/15/16 | 2317 | 1611808 | 1      |

The following Prep Methods were performed:

| Method    | Description                      | Analyst | Date     | Time | Prep Batch |
|-----------|----------------------------------|---------|----------|------|------------|
| EPA 314.0 | EPA 314.0 Prep Perchlorate by IC | MAR1    | 11/15/16 | 1141 | 1611807    |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|-------------|------------------|
| 1      | EPA 314.0   |                  |

### Notes:

Column headers are defined as follows:

|                                       |                                |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor                   | Lc/LC: Critical Level          |
| DL: Detection Limit                   | PF: Prep Factor                |
| MDA: Minimum Detectable Activity      | RL: Reporting Limit            |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: November 22, 2016

Company : Haley & Aldrich, Inc.  
Address : 100 Corporate Place, Suite 105

Rocky Hill, Connecticut 06067

Contact: Mr. Miles van Noordennen  
Project: Fort Calhoun Nuclear Station

Client Sample ID: SD140100DUP  
Sample ID: 409254016  
Matrix: Soil  
Collect Date: 24-OCT-16 12:35  
Receive Date: 27-OCT-16  
Collector: Client  
Moisture: 36.7%

Project: HAAL00201  
Client ID: HAAL002

| Parameter  | Qualifier | Result | DL   | RL   | Units | PF   | DF | Analyst | Date     | Time | Batch   | Method |
|--|-----------|--------|------|------|-------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography                                 |           |        |      |      |       |      |    |         |          |      |         |        |
| EPA 314.0 Perchlorate by IC "Dry Weight Corrected" |           |        |      |      |       |      |    |         |          |      |         |        |
| Perchlorate  | U         | ND     | 21.1 | 62.1 | ug/kg | 9.83 | 1  | MAR1    | 11/15/16 | 2338 | 1611808 | 1      |

The following Prep Methods were performed:

| Method    | Description                      | Analyst | Date     | Time | Prep Batch |
|-----------|----------------------------------|---------|----------|------|------------|
| EPA 314.0 | EPA 314.0 Prep Perchlorate by IC | MAR1    | 11/15/16 | 1141 | 1611807    |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|-------------|------------------|
| 1      | EPA 314.0   |                  |

### Notes:

Column headers are defined as follows:

|                                       |                                |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor                   | Lc/LC: Critical Level          |
| DL: Detection Limit                   | PF: Prep Factor                |
| MDA: Minimum Detectable Activity      | RL: Reporting Limit            |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

# **Quality Control Summary**



# GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: November 22, 2016

Page 1 of 2

Haley & Aldrich, Inc.

100 Corporate Place, Suite 105

Rocky Hill, Connecticut

Contact: Mr. Miles van Noordennen

Workorder: 409254

| Parmname                  | NOM       | Sample | Qual | QC | Units | RPD%  | REC% | Range      | Anlst | Date     | Time  |
|---------------------------|-----------|--------|------|----|-------|-------|------|------------|-------|----------|-------|
| <b>Ion Chromatography</b> |           |        |      |    |       |       |      |            |       |          |       |
| Batch                     | 1611808   |        |      |    |       |       |      |            |       |          |       |
| QC1203659164              | 409254011 | DUP    |      |    |       |       |      |            |       |          |       |
| Perchlorate               |           | U      | ND   | U  | ND    | ug/kg | N/A  |            | MAR1  | 11/15/16 | 21:33 |
| QC1203659163              | LCS       |        |      |    |       |       |      |            |       |          |       |
| Perchlorate               | 500       |        |      |    | 497   | ug/kg | 99.4 | (90%-110%) |       | 11/15/16 | 20:51 |
| QC1203659162              | MB        |        |      |    |       |       |      |            |       |          |       |
| Perchlorate               |           |        | U    |    | ND    | ug/kg |      |            |       | 11/15/16 | 20:30 |
| QC1203659165              | 409254011 | MS     |      |    |       |       |      |            |       |          |       |
| Perchlorate               | 103       | U      | ND   |    | 106   | ug/kg | 103  | (50%-145%) |       | 11/15/16 | 21:53 |

### Notes:

The Qualifiers in this report are defined as follows:

- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J Value is estimated
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes

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## QC Summary

Workorder: 409254

Page 2 of 2

| Parmname | NOM   | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|----------|---|--------|------|----|-------|------|------|-------|-------|------|------|
| h        | Preparation or preservation holding time was exceeded |        |      |    |       |      |      |       |       |      |      |

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

\* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

# **Instrument QC Data Summary**

# INITIAL AND CONTINUING CALIBRATION VERIFICATION

Report Run On: 22-NOV-2016 08:16

**GEL Laboratories LLC**

**Contract: HAAL00201**

**SDG #: 409254**

Ion Chromatography

Method: EPA 314.0

Instrument: DIONEX Aquion (IC10)

Parmname: Perchlorate

Concentration Units:ug/L

| Sample Type | Run Date                    | Data File     | Result         | Nominal   | Recovery    | Limits            | Within Limits |
|-------------|-----------------------------|---------------|----------------|-----------|-------------|-------------------|---------------|
| <b>ICV</b>  | <b>15-NOV-2016 14:15:00</b> | <b>161115</b> | <b>49.5356</b> | <b>50</b> | <b>99.1</b> | <b>(90%-110%)</b> | <b>Yes</b>    |
| CCV         | 15-NOV-2016 15:38:00        | 161115        | 73.9836        | 75        | 98.6        | (90%-110%)        | Yes           |
| CCV         | 15-NOV-2016 19:48:00        | 161115        | 23.9378        | 25        | 95.8        | (90%-110%)        | Yes           |
| CCV         | 15-NOV-2016 23:59:00        | 161115        | 73.2477        | 75        | 97.7        | (90%-110%)        | Yes           |

| Sample Type | Run Date                    | Data File     | Result   | Limits   | Within Limits |
|-------------|-----------------------------|---------------|----------|----------|---------------|
| <b>ICB</b>  | <b>15-NOV-2016 14:36:00</b> | <b>161115</b> | <b>0</b> | <b>4</b> | <b>Yes</b>    |
| CCB         | 15-NOV-2016 20:09:00        | 161115        | 0        | 4        | Yes           |
| CCB         | 16-NOV-2016 00:19:00        | 161115        | 0        | 4        | Yes           |

# Perchlorate Raw Data

# Prep Logbook

## Perchlorate by Ion Chromatography (IC)

|                  |                         |      |            |               |                 |              |             |
|------------------|-------------------------|------|------------|---------------|-----------------|--------------|-------------|
| <b>Batch ID:</b> | <b>1611807</b>          | Type | Sample Id  | Description   | Serial Number   | Spike Amount | Spike Units |
| Analyst:         | Mary Sherwood           | LCS  | 1203659163 | PER-LCS       | WPC161029-03LCS | 40           | mL          |
| Method:          | EPA 314.0               | MS   | 1203659165 | PER-STD SPIKE | SPC161029-01    | .4           | mL          |
| Lab SOP:         | GL-GC-E-096 REV# 8      |      |            |               |                 |              |             |
| Instrument:      | Sartorius Balance B-001 |      |            |               |                 |              |             |

| Sample ID                  | Prep Date            | Matrix | Initial Weight (g) | Final Volume (mL) | Prep Factor (mL/g) |
|----------------------------|----------------------|--------|--------------------|-------------------|--------------------|
| 1203659162 MB              | 15-NOV-2016 11:41:00 | Soil   | 4.01               | 40                | 9.97506            |
| 1203659163 LCS             | 15-NOV-2016 11:41:00 | Soil   | 4                  | 40                | 10                 |
| 409254011                  | 15-NOV-2016 11:41:00 | Soil   | 4.06               | 40                | 9.85222            |
| 1203659164 DUP (409254011) | 15-NOV-2016 11:41:00 | Soil   | 4.07               | 40                | 9.82801            |
| 1203659165 MS (409254011)  | 15-NOV-2016 11:41:00 | Soil   | 4.06               | 40                | 9.85222            |
| 409254012                  | 15-NOV-2016 11:41:00 | Soil   | 4.08               | 40                | 9.80392            |
| 409254013                  | 15-NOV-2016 11:41:00 | Soil   | 4.03               | 40                | 9.92556            |
| 409254014                  | 15-NOV-2016 11:41:00 | Soil   | 4.05               | 40                | 9.87654            |
| 409254015                  | 15-NOV-2016 11:41:00 | Soil   | 4.04               | 40                | 9.90099            |
| 409254016                  | 15-NOV-2016 11:41:00 | Soil   | 4.07               | 40                | 9.82801            |

| Reagent/Solvent Lot ID | Description | Amount | Comments: |
|------------------------|-------------|--------|-----------|
|------------------------|-------------|--------|-----------|

This is runlog for Sequence 161115.seq for IC10

| Sample ID | Run Time       | Batch | Dilution | Dataset | Analyst |
|-----------|----------------|-------|----------|---------|---------|
| BLK       | 07/28/16 07:39 |       | 1        | 161115  | MAR1    |
| ICAL-06   | 07/28/16 08:00 |       | 1        | 161115  | MAR1    |
| ICAL-05   | 07/28/16 08:21 |       | 1        | 161115  | MAR1    |
| ICAL-04   | 07/28/16 08:42 |       | 1        | 161115  | MAR1    |
| ICAL-03   | 07/28/16 09:02 |       | 1        | 161115  | MAR1    |
| ICAL-02   | 07/28/16 09:23 |       | 1        | 161115  | MAR1    |
| ICAL-01   | 07/28/16 09:44 |       | 1        | 161115  | MAR1    |

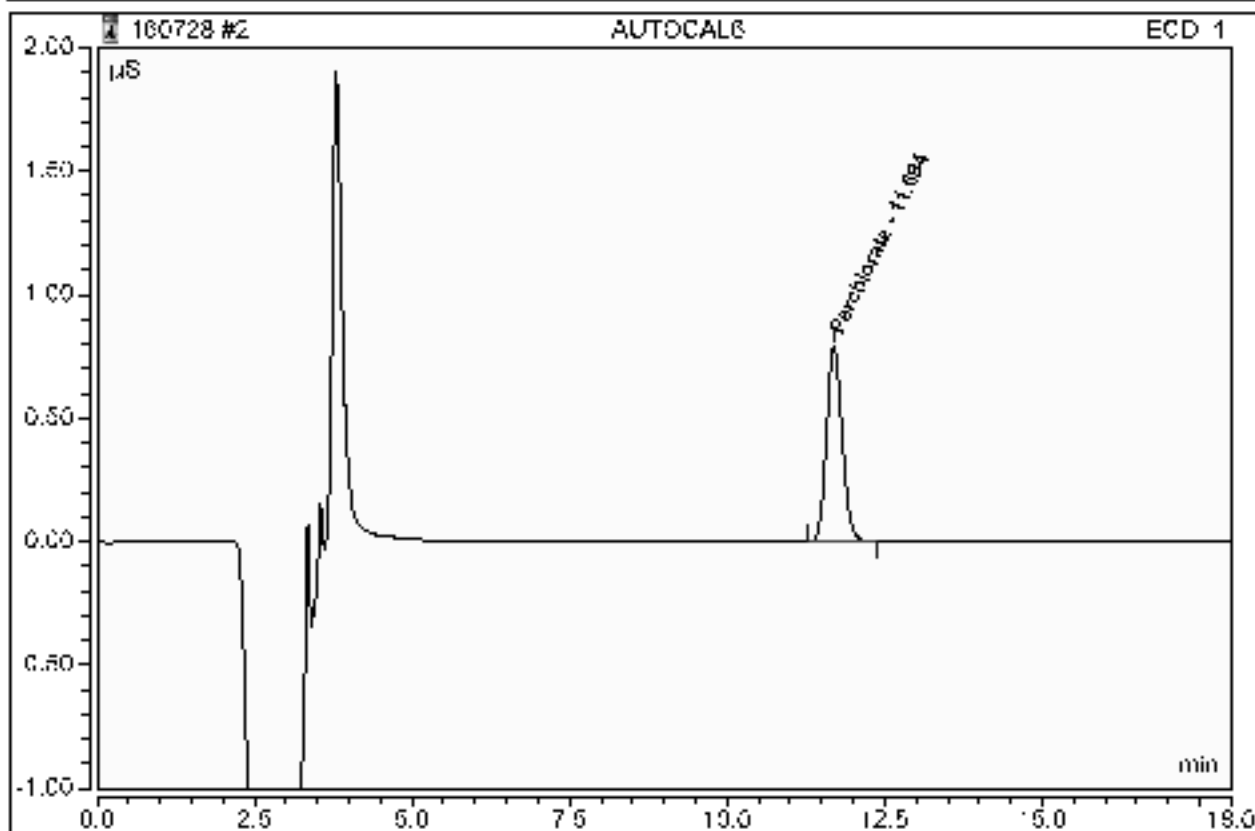
This is runlog for Sequence 160728.seq for IC10

| Sample ID  | Run Time        | Batch   | Dilution | Dataset | Analyst |
|------------|-----------------|---------|----------|---------|---------|
| BLK        | 7/28/2016 07:39 |         | 1        | 160728  | 1-Mar   |
| ICAL-06    | 7/28/2016 08:00 |         | 1        | 160728  | 1-Mar   |
| ICAL-05    | 7/28/2016 08:21 |         | 1        | 160728  | 1-Mar   |
| ICAL-04    | 7/28/2016 08:42 |         | 1        | 160728  | 1-Mar   |
| ICAL-03    | 7/28/2016 09:02 |         | 1        | 160728  | 1-Mar   |
| ICAL-02    | 7/28/2016 09:23 |         | 1        | 160728  | 1-Mar   |
| ICAL-01    | 7/28/2016 09:44 |         | 1        | 160728  | 1-Mar   |
| ICV        | 7/28/2016 10:05 |         | 1        | 160728  | 1-Mar   |
| ICB        | 7/28/2016 10:26 |         | 1        | 160728  | 1-Mar   |
| IPC        | 7/28/2016 10:47 |         | 1        | 160728  | 1-Mar   |
| PQL        | 7/28/2016 11:08 |         | 1        | 160728  | 1-Mar   |
| MRL        | 7/28/2016 11:28 |         | 1        | 160728  | 1-Mar   |
| CVH        | 7/28/2016 11:49 |         | 1        | 160728  | 1-Mar   |
| CCB        | 7/28/2016 12:10 |         | 1        | 160728  | 1-Mar   |
| MRL        | 7/28/2016 12:31 |         | 1        | 160728  | 1-Mar   |
| CVH        | 7/28/2016 12:51 |         | 1        | 160728  | 1-Mar   |
| CCB        | 7/28/2016 13:12 |         | 1        | 160728  | 1-Mar   |
| BLK        | 7/28/2016 13:33 |         | 1        | 160728  | 1-Mar   |
| 1203581553 | 7/28/2016 13:54 | 1580385 | 1        | 160728  | 1-Mar   |
| 1203593494 | 7/28/2016 14:15 | 1580385 | 1        | 160728  | 1-Mar   |
| 1203593495 | 7/28/2016 14:36 | 1580385 | 1        | 160728  | 1-Mar   |
| 1203593496 | 7/28/2016 15:27 | 1580385 | 1        | 160728  | 1-Mar   |
| 1203593497 | 7/28/2016 15:47 | 1580385 | 1        | 160728  | 1-Mar   |
| 401142001  | 7/28/2016 16:08 | 1580385 | 1        | 160728  | 1-Mar   |
| 401142002  | 7/28/2016 16:29 | 1580385 | 1        | 160728  | 1-Mar   |
| 1203581552 | 7/28/2016 16:50 | 1580385 | 1        | 160728  | 1-Mar   |
| CVL        | 7/28/2016 17:11 |         | 1        | 160728  | 1-Mar   |
| CCB        | 7/28/2016 17:31 |         | 1        | 160728  | 1-Mar   |
| 1203581572 | 7/28/2016 17:52 | 1580397 | 1        | 160728  | 1-Mar   |
| 1203581573 | 7/28/2016 18:13 | 1580397 | 1        | 160728  | 1-Mar   |
| 400694001  | 7/28/2016 18:34 | 1580397 | 1        | 160728  | 1-Mar   |
| 400694002  | 7/28/2016 18:55 | 1580397 | 1        | 160728  | 1-Mar   |
| CVH        | 7/28/2016 19:16 |         | 1        | 160728  | 1-Mar   |
| CCB        | 7/28/2016 19:37 |         | 1        | 160728  | 1-Mar   |



**2 AUTOCAL6**

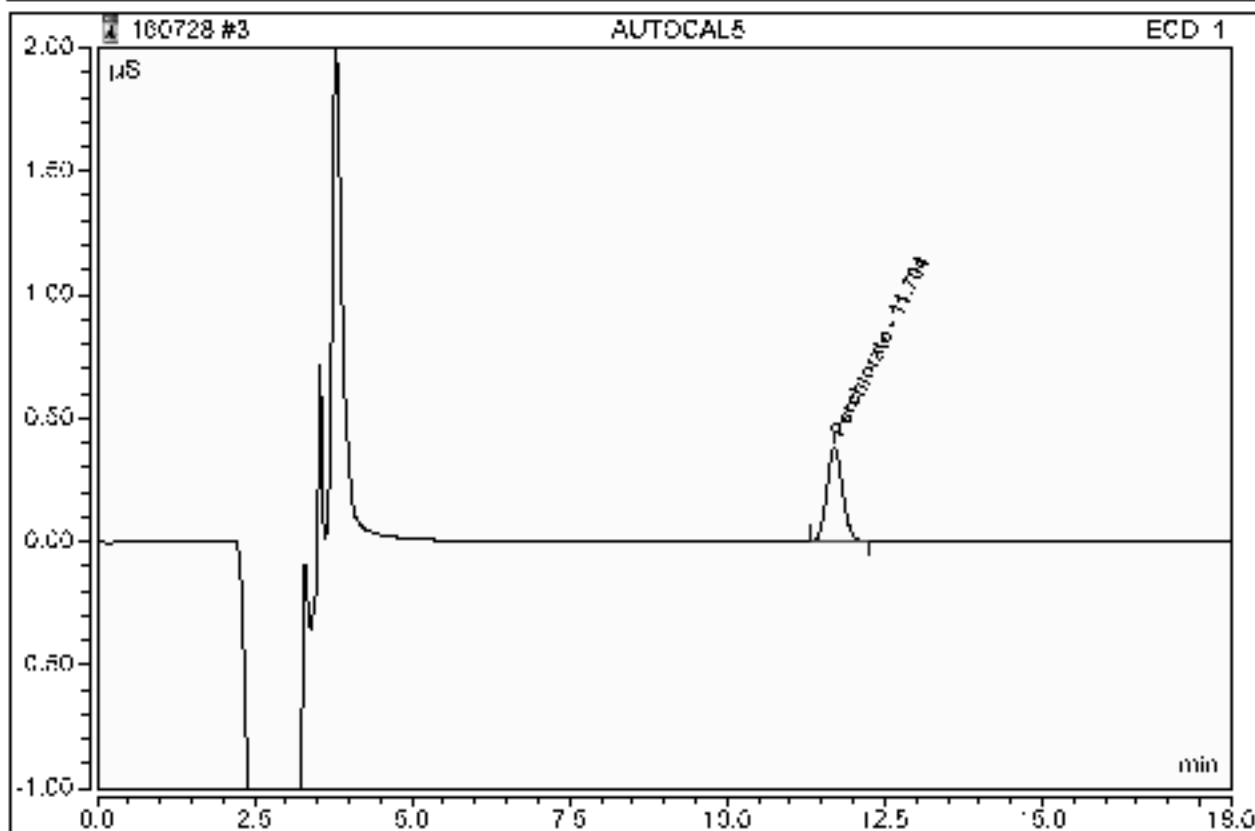
|                  |                      |                   |                                  |
|------------------|----------------------|-------------------|----------------------------------|
| Sample Name:     | AUTOCAL6             | Injection Volume: | 5000.0                           |
| Vial Number:     | 2                    | Channel:          | EGD_1                            |
| Sample Type:     | Calibration Standard | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                 | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4           | Sample Amount:    | 1.0000                           |
| Recording Time:  | 7/28/2016 8:00       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.69            | Perchlorate | 100.0000              | 100.6901       | FALSE     | 0.22608        | 100.00         |
| Total: |                  |             |                       | 100.6901       | 0.000     | 0.226          | 100.00         |

**3 AUTOCAL5**

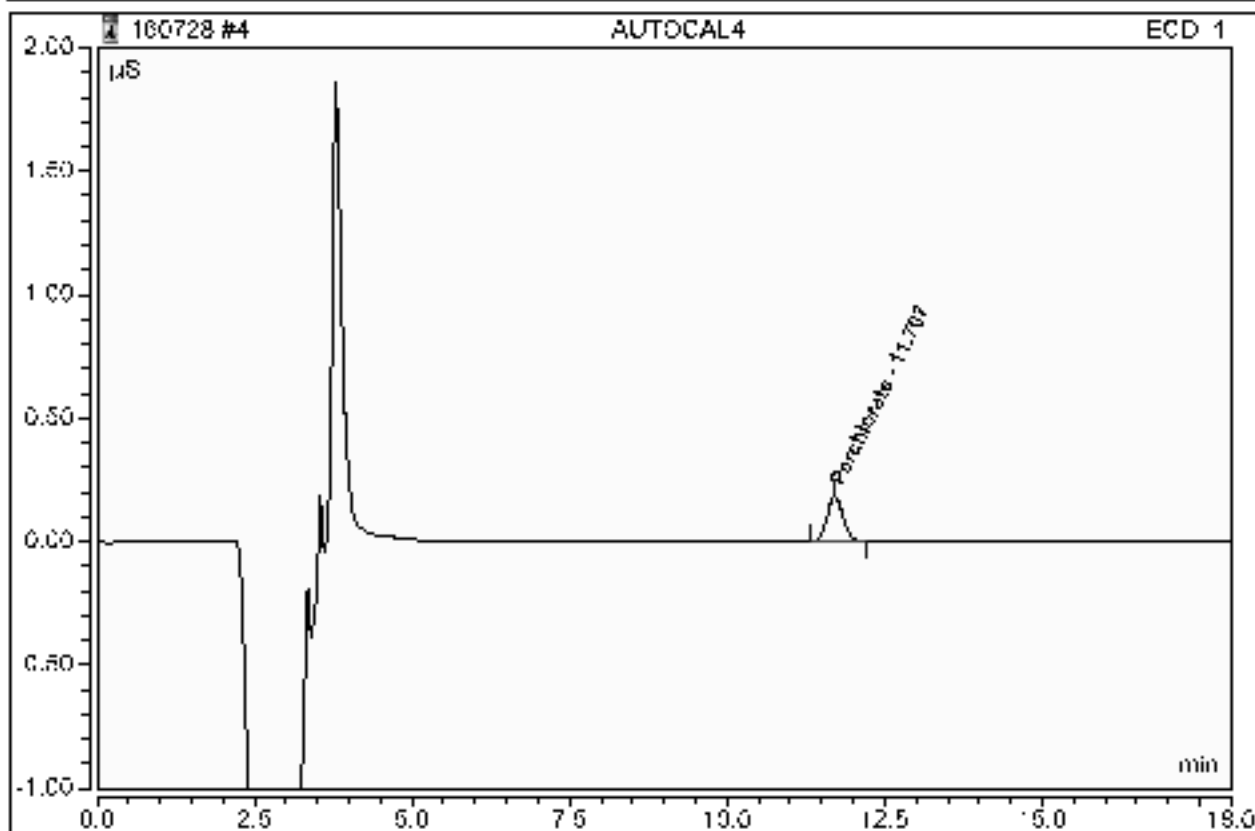
|                  |                      |                   |                                  |
|------------------|----------------------|-------------------|----------------------------------|
| Sample Name:     | AUTOCAL5             | Injection Volume: | 5000.0                           |
| Vial Number:     | 3                    | Channel:          | ECD_1                            |
| Sample Type:     | Calibration Standard | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                 | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4           | Sample Amount:    | 1.0000                           |
| Recording Time:  | 7/28/2016 8:21       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret.Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>μS*min | Rel.Area<br>% |
|--------|-----------------|-------------|-----------------------|----------------|-----------|----------------|---------------|
| 1      | 11.70           | Perchlorate | 50.0000               | 48.8569        | FALSE     | 0.10855        | 100.00        |
| Total: |                 |             |                       | 48.8569        | 0.000     | 0.109          | 100.00        |

**4 AUTOCAL4**

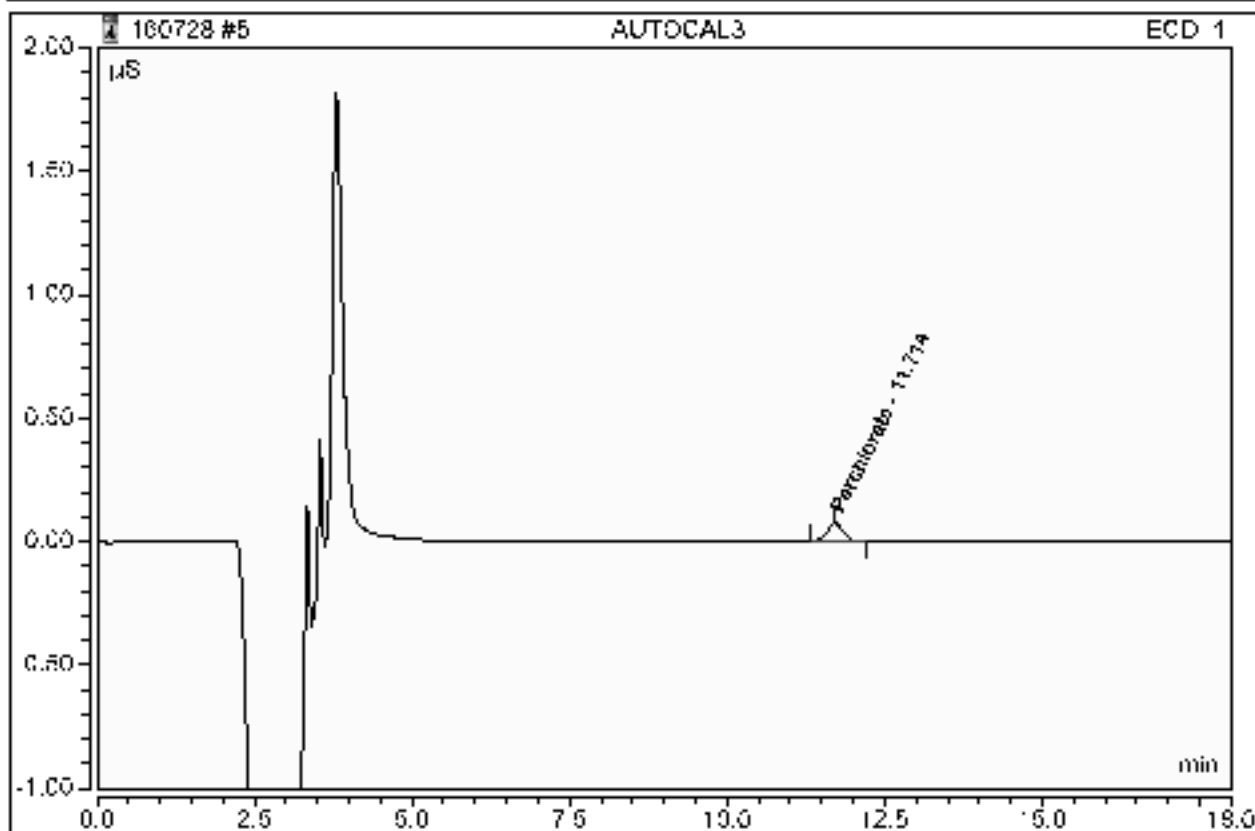
|                  |                      |                   |                                  |
|------------------|----------------------|-------------------|----------------------------------|
| Sample Name:     | AUTOCAL4             | Injection Volume: | 5000.0                           |
| Vial Number:     | 4                    | Channel:          | ECD_1                            |
| Sample Type:     | Calibration Standard | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                 | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4           | Sample Amount:    | 1.0000                           |
| Recording Time:  | 7/28/2016 8:42       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.71            | Perchlorate | 25.0000               | 24.2651        | FALSE     | 0.05280        | 100.00         |
| Total: |                  |             |                       | 24.2651        | 0.000     | 0.053          | 100.00         |

**5 AUTOCAL3**

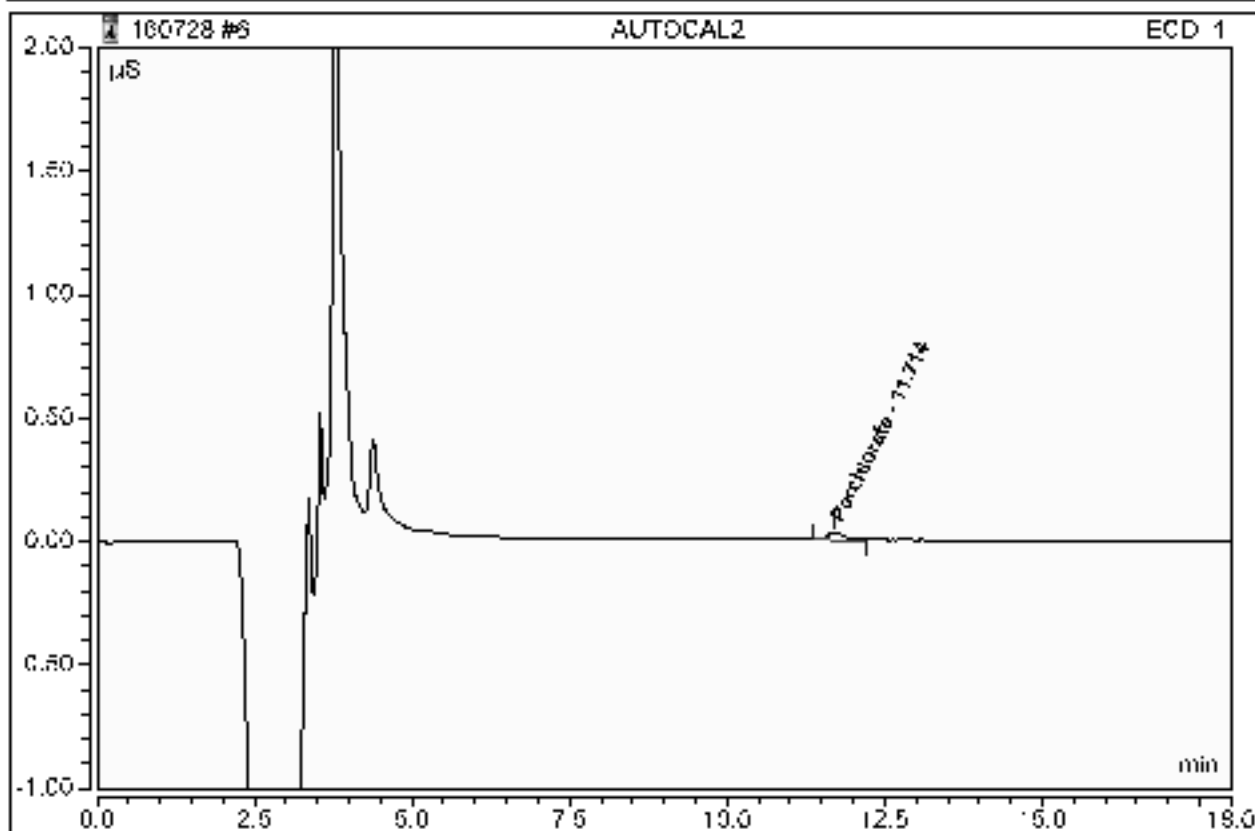
|                  |                      |                   |                                  |
|------------------|----------------------|-------------------|----------------------------------|
| Sample Name:     | AUTOCAL3             | Injection Volume: | 5000.0                           |
| Vial Number:     | 5                    | Channel:          | ECD_1                            |
| Sample Type:     | Calibration Standard | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                 | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4           | Sample Amount:    | 1.0000                           |
| Recording Time:  | 7/28/2016 9:02       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.71            | Perchlorate | 10.0000               | 10.2935        | FALSE     | 0.02112        | 100.00         |
| Total: |                  |             |                       | 10.2935        | 0.000     | 0.021          | 100.00         |

**6 AUTOCAL2**

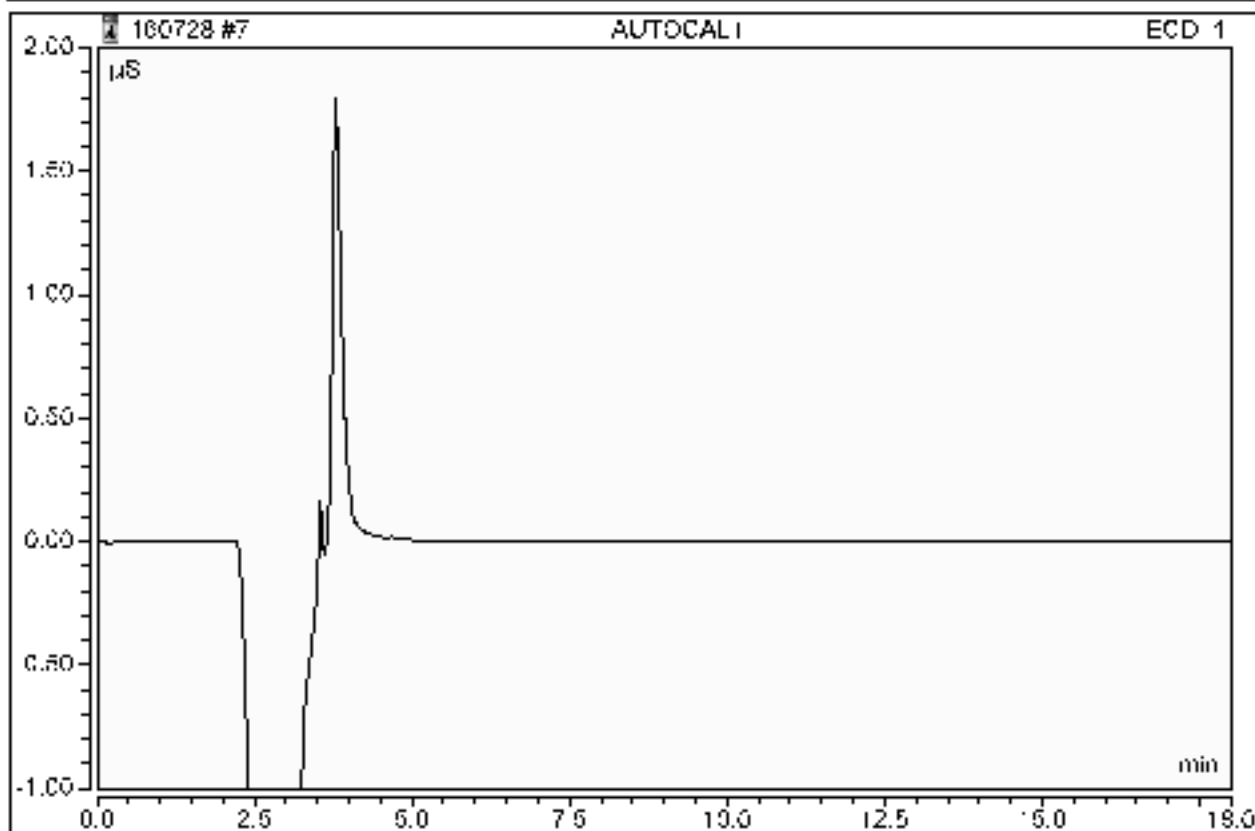
|                  |                      |                   |                                  |
|------------------|----------------------|-------------------|----------------------------------|
| Sample Name:     | AUTOCAL2             | Injection Volume: | 5000.0                           |
| Vial Number:     | 6                    | Channel:          | ECD_1                            |
| Sample Type:     | Calibration Standard | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                 | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4           | Sample Amount:    | 1.0000                           |
| Recording Time:  | 7/28/2016 9:23       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.71            | Perchlorate | 4.0000                | 4.8943         | FALSE     | 0.00888        | 100.00         |
| Total: |                  |             |                       | 4.8943         | 0.000     | 0.009          | 100.00         |

**7 AUTOCAL1**

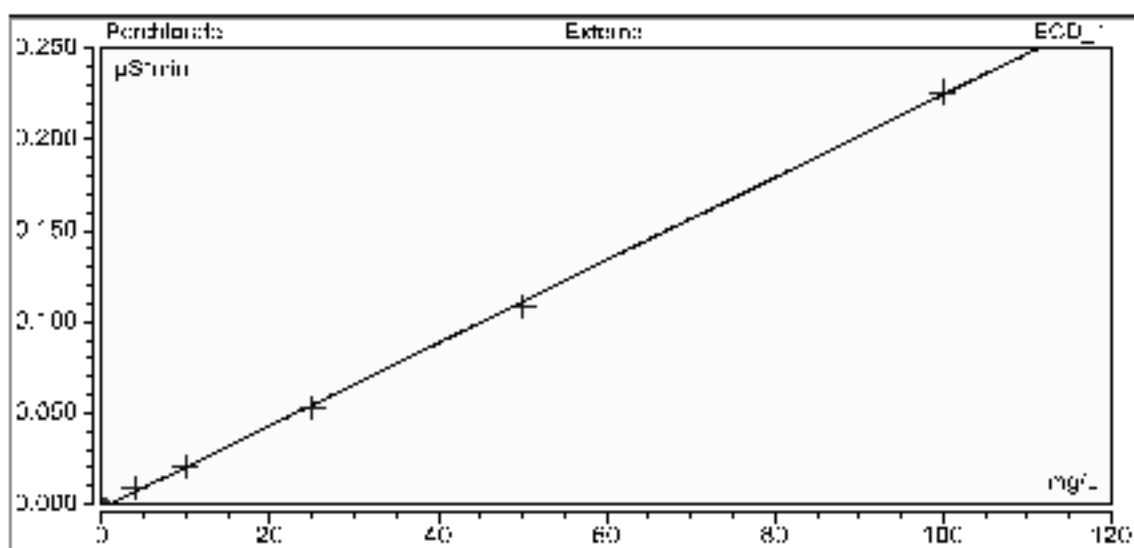
|                  |                      |                   |                                  |
|------------------|----------------------|-------------------|----------------------------------|
| Sample Name:     | AUTOCAL1             | Injection Volume: | 5000.0                           |
| Vial Number:     | 7                    | Channel:          | ECD_1                            |
| Sample Type:     | Calibration Standard | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                 | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4           | Sample Amount:    | 1.0000                           |
| Recording Time:  | 7/28/2016 9:44       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | 0.0000                | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |

**7 AUTOCAL1**

|                  |                      |                   |                           |
|------------------|----------------------|-------------------|---------------------------|
| Sample Name:     | AUTOCAL1             | Injection Volume: | 5000.0                    |
| Vial Number:     | 7                    | Channel:          | EGD_1                     |
| Sample Type:     | Calibration Standard | Dilution Factor:  | 1.0000                    |
| Control Program: | AS16                 | Sample Weight:    | 1.0000                    |
| Quantif. Method: | 160728GLO4           | Sample Amount:    | 1.0000                    |
| Recording Time:  | 7/28/2016 9:44       | Analyst:          | MAR1                      |
| Run Time (min):  | 18.00                | Column:           | AS16.#005998; GL-GC-E-096 |



| Peak Name   | Ret.Time<br>min | Peak Name   | Cal.Type        | Coeff.Det.<br>% | Offset  | Slope  | Curve  |
|-------------|-----------------|-------------|-----------------|-----------------|---------|--------|--------|
| Perchlorate | n.a.            | Perchlorate | Lin, WithOffset | 99.9474         | -0.0022 | 0.0023 | 0.0000 |
| Average:    |                 |             |                 | 99.9474         | -0.0022 | 0.0023 | 0.0000 |

This is runlog for Sequence 161115.seq for IC10

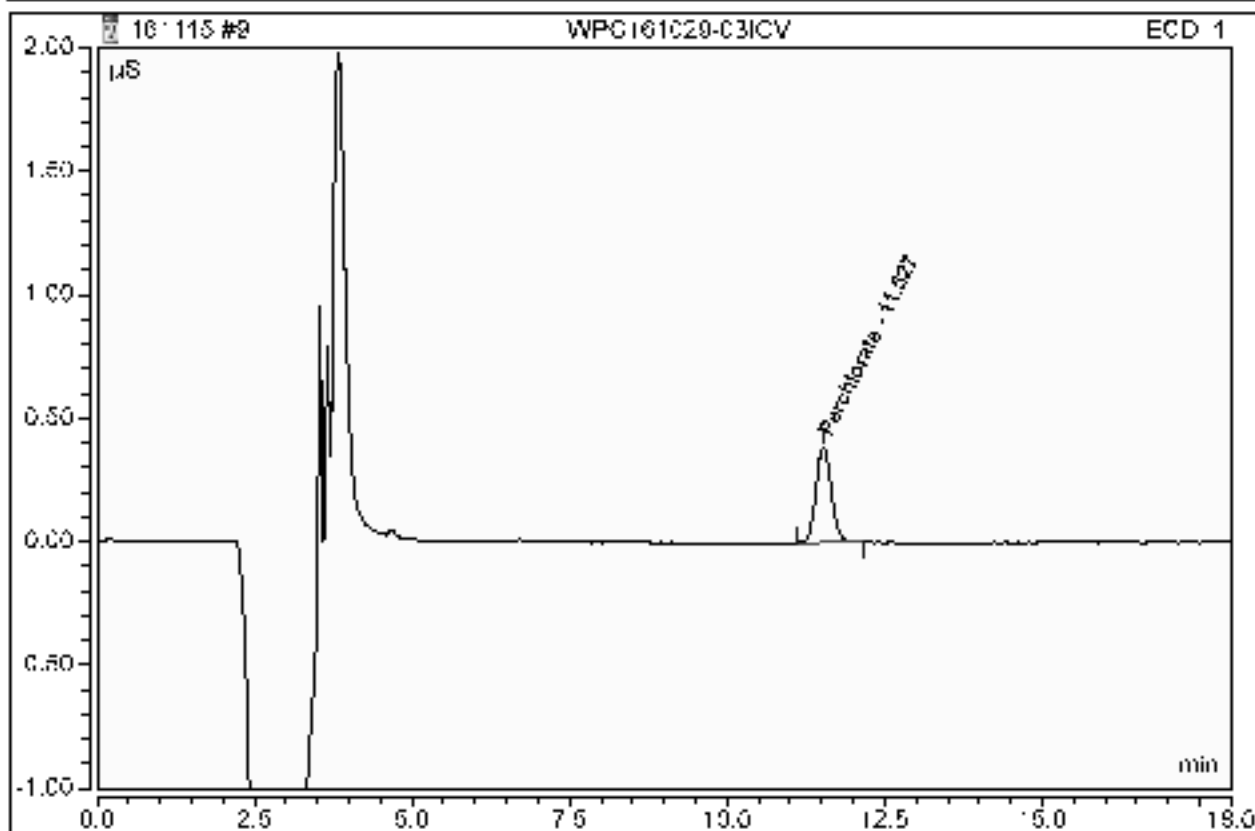
| Sample ID  | Run Time       | Batch   | Dilution | Dataset | Analyst |
|------------|----------------|---------|----------|---------|---------|
| BLK        | 11/15/16 13:55 |         | 1        | 161115  | MAR1    |
| ICV        | 11/15/16 14:15 |         | 1        | 161115  | MAR1    |
| ICB        | 11/15/16 14:36 |         | 1        | 161115  | MAR1    |
| IPC        | 11/15/16 14:57 |         | 1        | 161115  | MAR1    |
| PQL        | 11/15/16 15:17 |         | 1        | 161115  | MAR1    |
| CVH        | 11/15/16 15:38 |         | 1        | 161115  | MAR1    |
| CCB        | 11/15/16 15:59 |         | 1        | 161115  | MAR1    |
| 1203666928 | 11/15/16 16:20 | 1614894 | 1        | 161115  | MAR1    |
| 1203666929 | 11/15/16 16:41 | 1614894 | 1        | 161115  | MAR1    |
| 409633004  | 11/15/16 17:01 | 1614894 | 1        | 161115  | MAR1    |
| 1203666930 | 11/15/16 17:22 | 1614894 | 1        | 161115  | MAR1    |
| 1203666931 | 11/15/16 17:43 | 1614894 | 1        | 161115  | MAR1    |
| 409735001  | 11/15/16 18:04 | 1614894 | 1        | 161115  | MAR1    |
| 409735002  | 11/15/16 18:25 | 1614894 | 1        | 161115  | MAR1    |
| 409947001  | 11/15/16 18:46 | 1614894 | 1        | 161115  | MAR1    |
| 409993001  | 11/15/16 19:07 | 1614894 | 1        | 161115  | MAR1    |
| 409993002  | 11/15/16 19:27 | 1614894 | 1        | 161115  | MAR1    |
| CVL        | 11/15/16 19:48 |         | 1        | 161115  | MAR1    |
| CCB        | 11/15/16 20:09 |         | 1        | 161115  | MAR1    |
| 1203659162 | 11/15/16 20:30 | 1611808 | 1        | 161115  | MAR1    |
| 1203659163 | 11/15/16 20:51 | 1611808 | 1        | 161115  | MAR1    |
| 409254011  | 11/15/16 21:12 | 1611808 | 1        | 161115  | MAR1    |
| 1203659164 | 11/15/16 21:33 | 1611808 | 1        | 161115  | MAR1    |
| 1203659165 | 11/15/16 21:53 | 1611808 | 1        | 161115  | MAR1    |
| 409254012  | 11/15/16 22:14 | 1611808 | 1        | 161115  | MAR1    |
| 409254013  | 11/15/16 22:35 | 1611808 | 1        | 161115  | MAR1    |
| 409254014  | 11/15/16 22:56 | 1611808 | 1        | 161115  | MAR1    |
| 409254015  | 11/15/16 23:17 | 1611808 | 1        | 161115  | MAR1    |



|           |                          |        |      |
|-----------|--------------------------|--------|------|
| 409254016 | 11/15/16 23:38 1611808 1 | 161115 | MAR1 |
| CVH       | 11/15/16 23:59 1         | 161115 | MAR1 |

**9 WPC161029-03ICV**

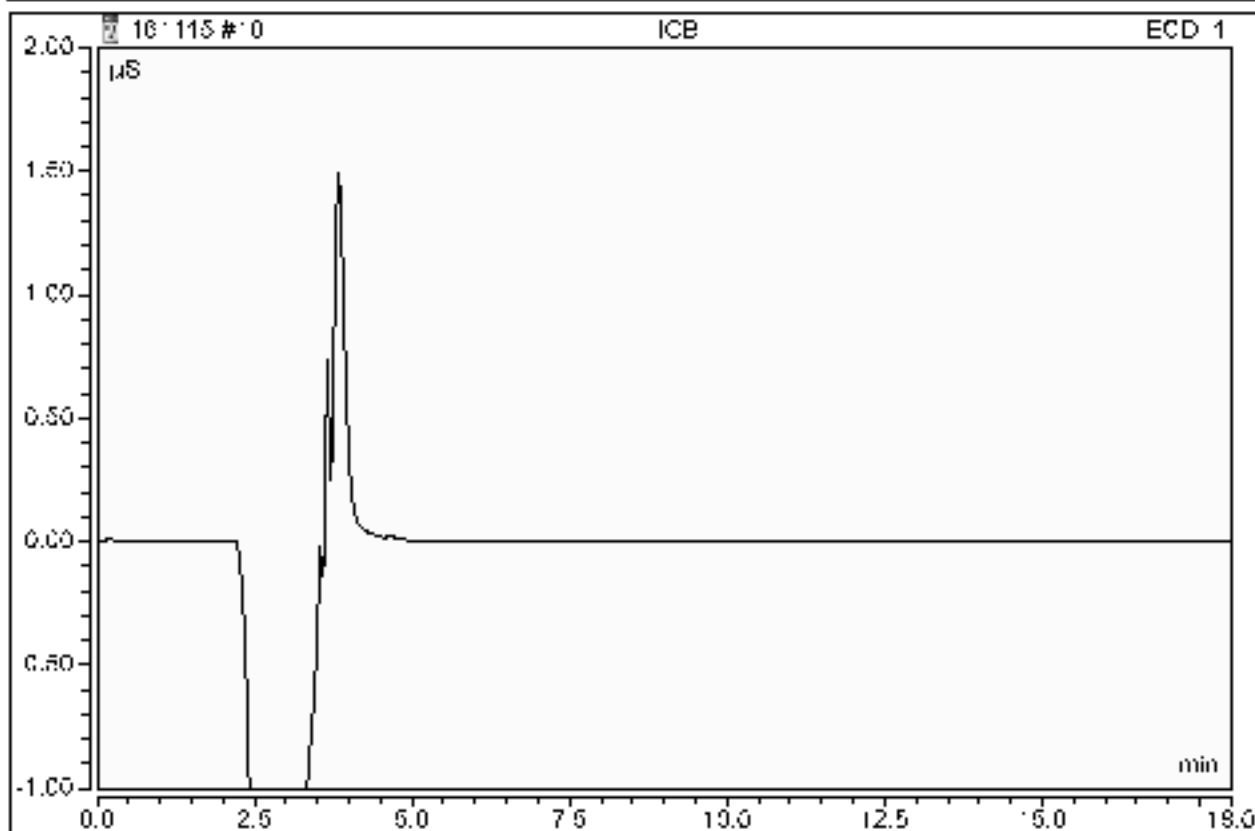
|                  |                  |                   |                                  |
|------------------|------------------|-------------------|----------------------------------|
| Sample Name:     | WPC161029-03ICV  | Injection Volume: | 5000.0                           |
| Vial Number:     | 2                | Channel:          | EGD_1                            |
| Sample Type:     | Unknown          | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16             | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4       | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 14:15 | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00            | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.53            | Perchlorate | n.a.                  | 49.5356        | FALSE     | 0.11009        | 100.00         |
| Total: |                  |             |                       | 49.5356        | 0.000     | 0.110          | 100.00         |

**10 ICB**

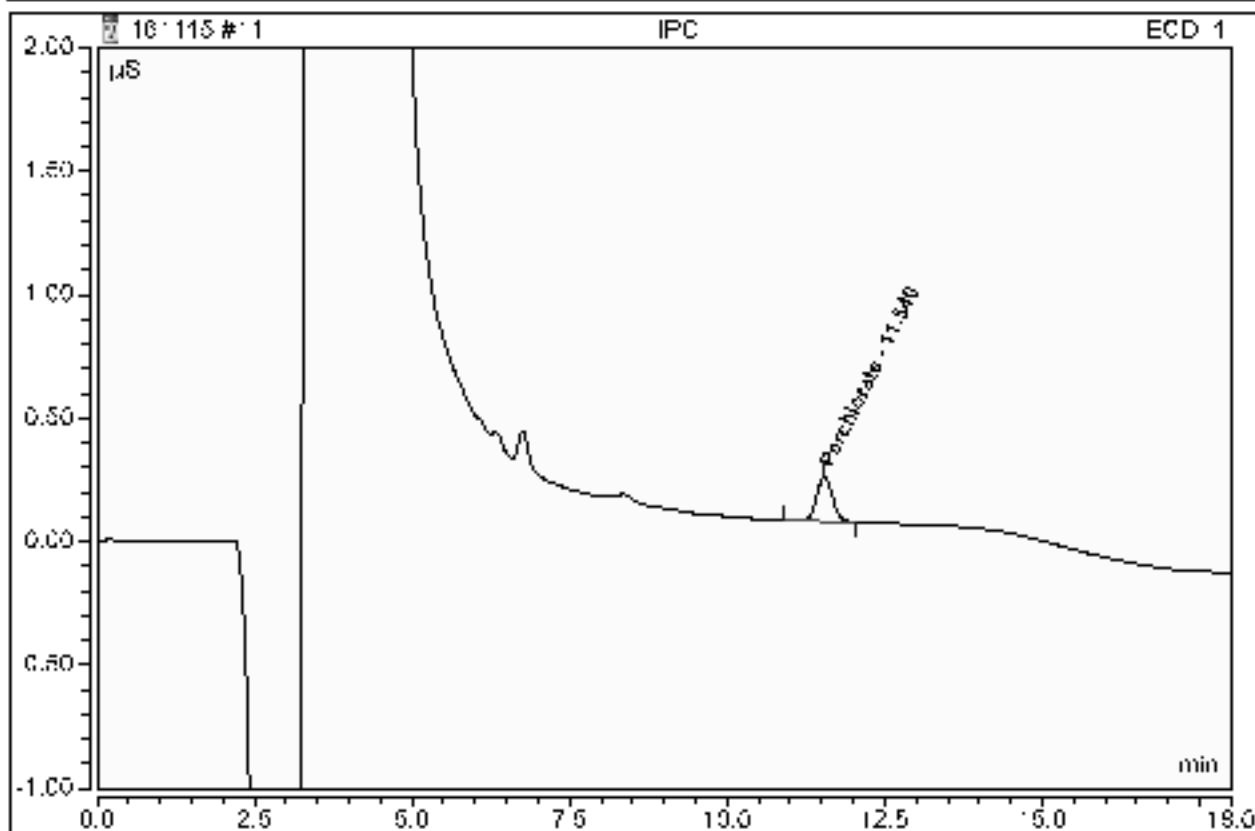
|                  |                  |                   |                                  |
|------------------|------------------|-------------------|----------------------------------|
| Sample Name:     | ICB              | Injection Volume: | 5000.0                           |
| Vial Number:     | 3                | Channel:          | ECD_1                            |
| Sample Type:     | Unknown          | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16             | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4       | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 14:36 | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00            | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>μS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |

**11 IPC**

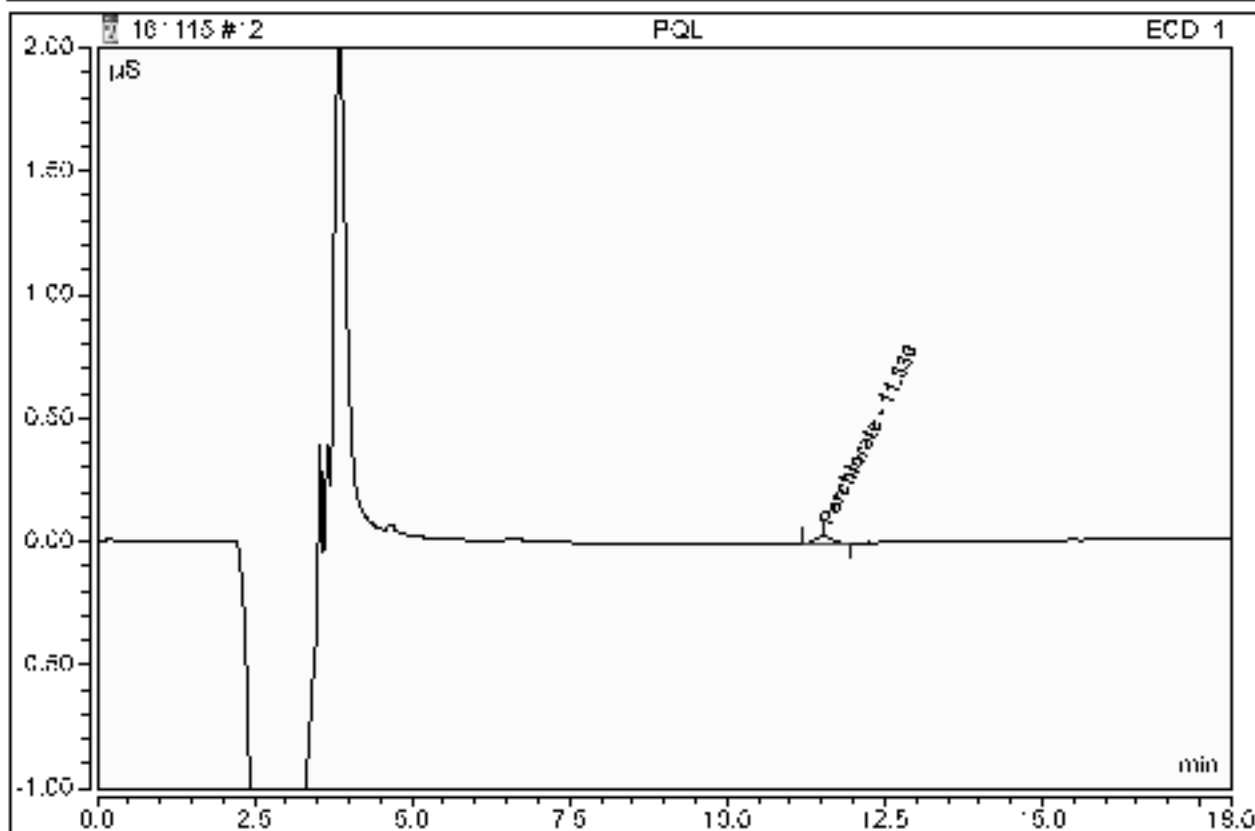
|                  |                  |                   |                                  |
|------------------|------------------|-------------------|----------------------------------|
| Sample Name:     | IPC              | Injection Volume: | 5000.0                           |
| Vial Number:     | 4                | Channel:          | ECD_1                            |
| Sample Type:     | Unknown          | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16             | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4       | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 14:57 | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00            | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.54            | Perchlorate | n.a.                  | 24.3022        | FALSE     | 0.05288        | 100.00         |
| Total: |                  |             |                       | 24.3022        | 0.000     | 0.053          | 100.00         |

**12 PQL**

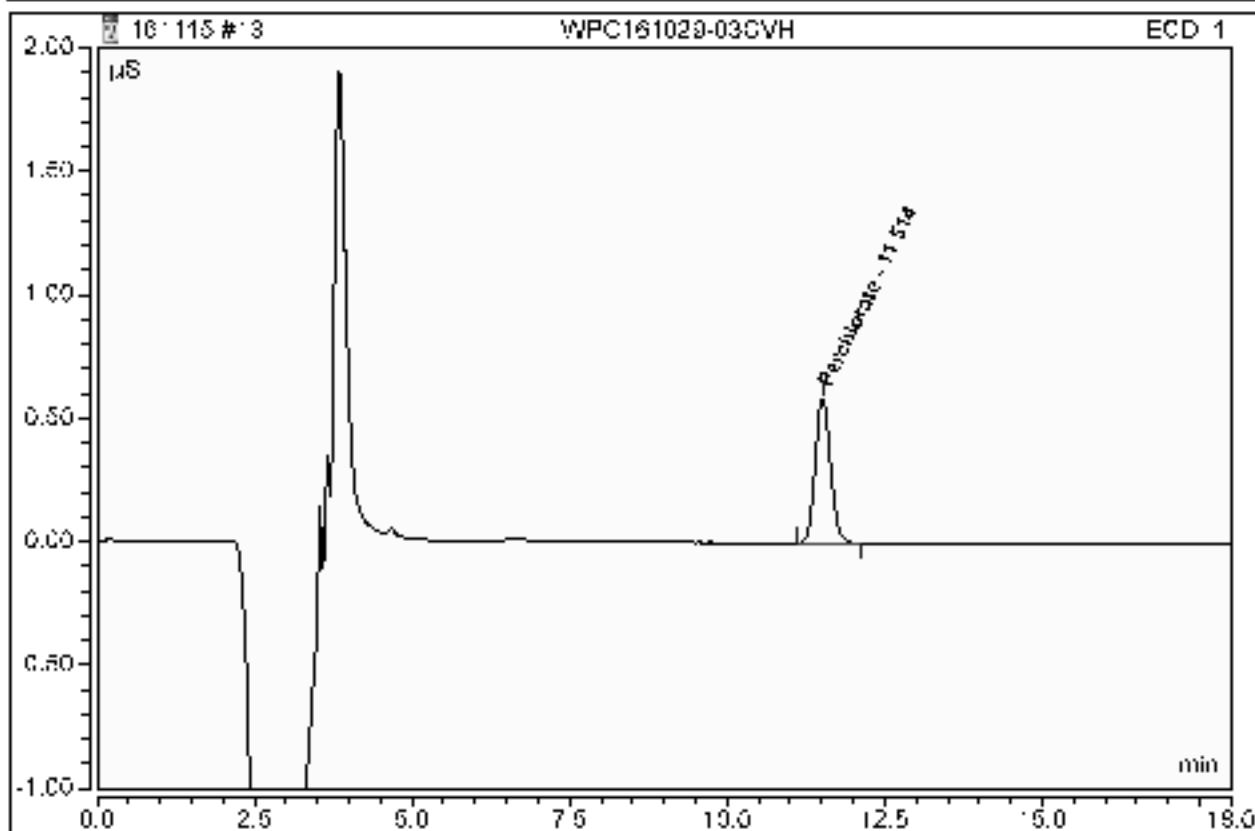
|                  |                  |                   |                                  |
|------------------|------------------|-------------------|----------------------------------|
| Sample Name:     | PQL              | Injection Volume: | 5000.0                           |
| Vial Number:     | 5                | Channel:          | ECD_1                            |
| Sample Type:     | Unknown          | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16             | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4       | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 15:17 | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00            | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.53            | Perchlorate | n.a.                  | 4.5857         | FALSE     | 0.00818        | 100.00         |
| Total: |                  |             |                       | 4.5857         | 0.000     | 0.008          | 100.00         |

**13 WPC161029-03CVH**

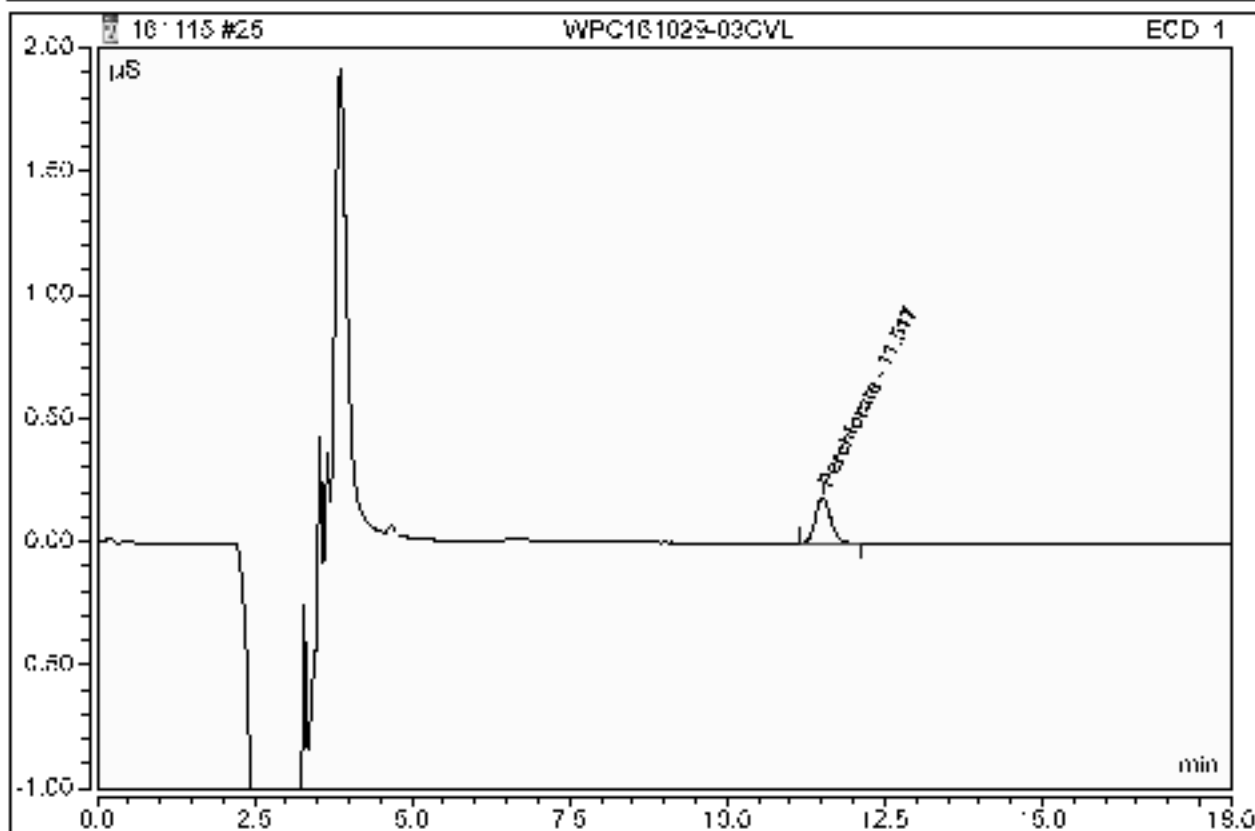
|                  |                  |                   |                                  |
|------------------|------------------|-------------------|----------------------------------|
| Sample Name:     | WPC161029-03CVH  | Injection Volume: | 5000.0                           |
| Vial Number:     | 6                | Channel:          | ECD_1                            |
| Sample Type:     | Unknown          | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16             | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4       | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 15:38 | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00            | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.51            | Perchlorate | n.a.                  | 73.9836        | FALSE     | 0.16553        | 100.00         |
| Total: |                  |             |                       | 73.9836        | 0.000     | 0.166          | 100.00         |

**25 WPC161029-03CVL**

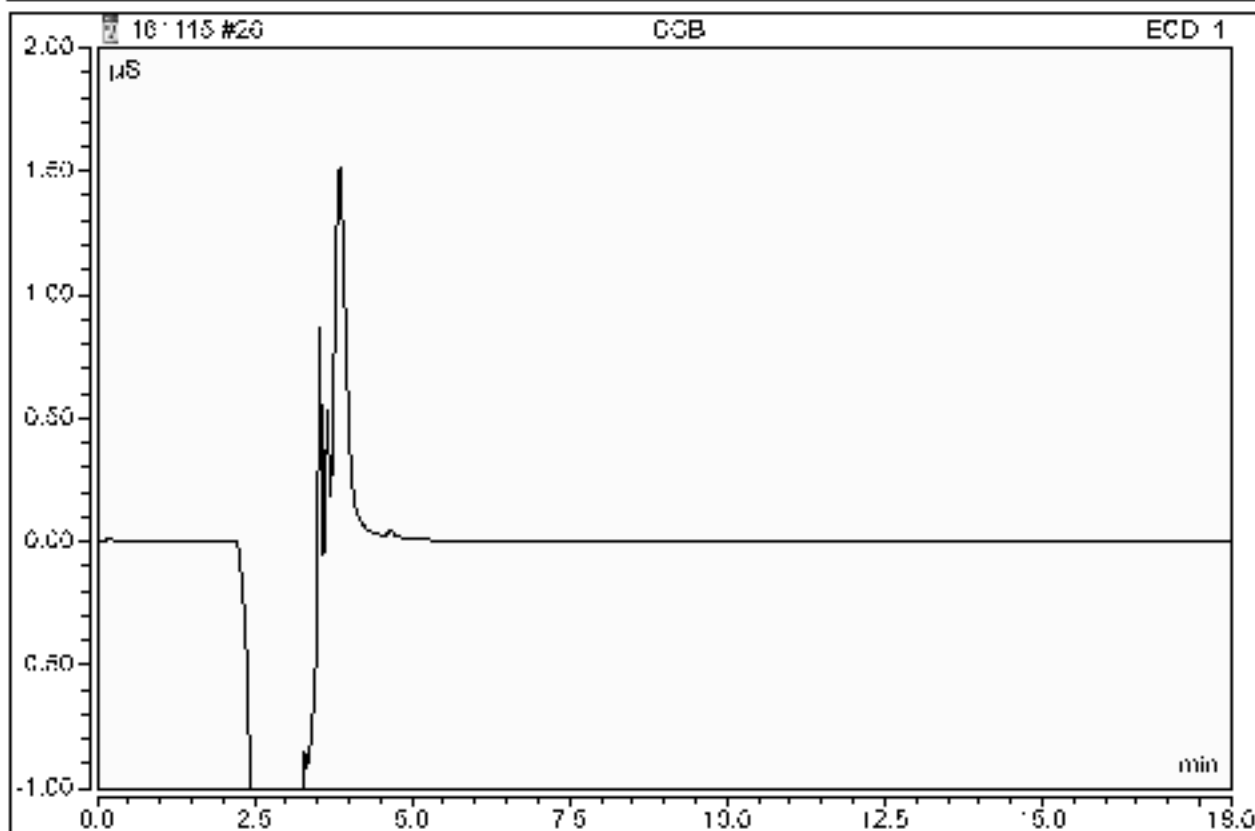
|                  |                  |                   |                                  |
|------------------|------------------|-------------------|----------------------------------|
| Sample Name:     | WPC161029-03CVL  | Injection Volume: | 5000.0                           |
| Vial Number:     | 18               | Channel:          | ECD_1                            |
| Sample Type:     | Unknown          | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16             | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4       | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 19:48 | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00            | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.52            | Perchlorate | n.a.                  | 23.9378        | FALSE     | 0.05205        | 100.00         |
| Total: |                  |             |                       | 23.9378        | 0.000     | 0.052          | 100.00         |

**26 CCB**

|                  |                  |                   |                                  |
|------------------|------------------|-------------------|----------------------------------|
| Sample Name:     | CCB              | Injection Volume: | 5000.0                           |
| Vial Number:     | 19               | Channel:          | ECD_1                            |
| Sample Type:     | Unknown          | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16             | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4       | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 20:09 | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00            | Column:           | AS23-001528; GLGCE086; 300; 9056 |

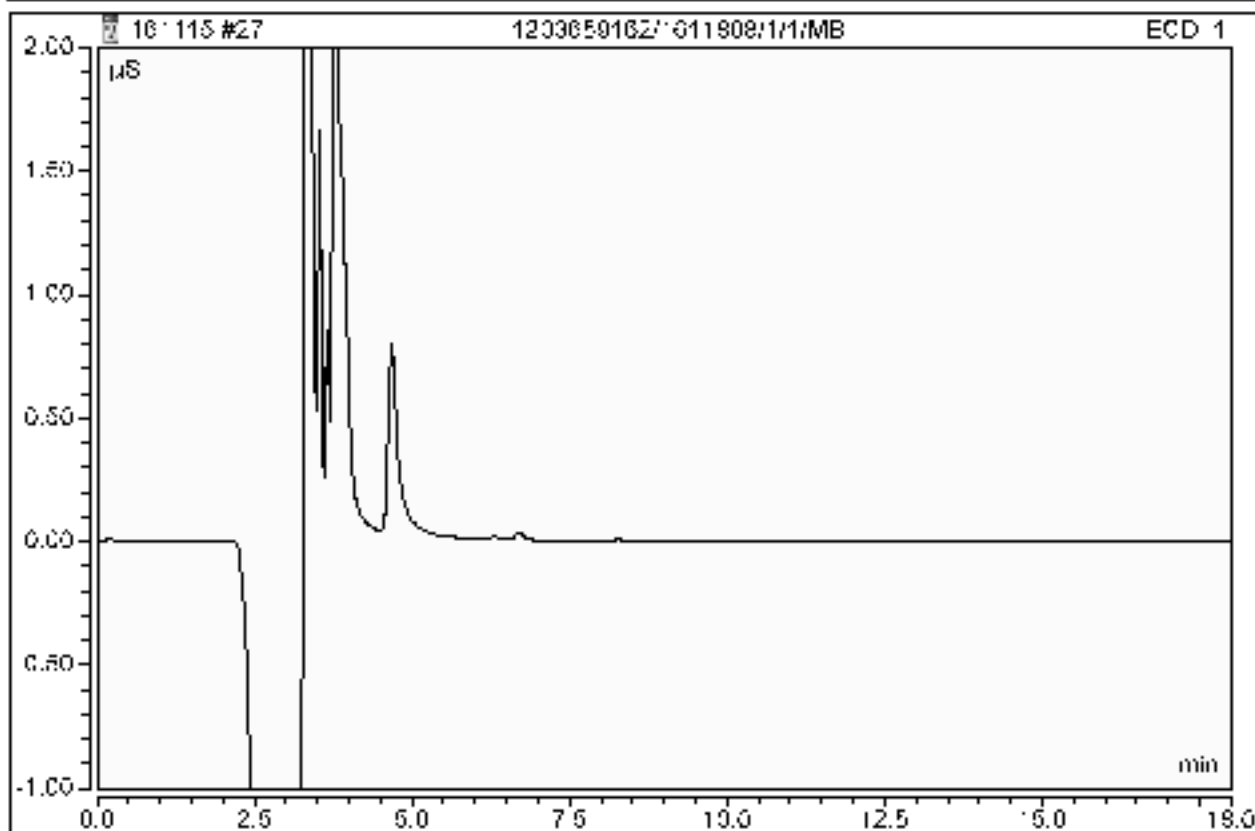


| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>μS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |



**27 1203659162/1611808/1/1/MB**

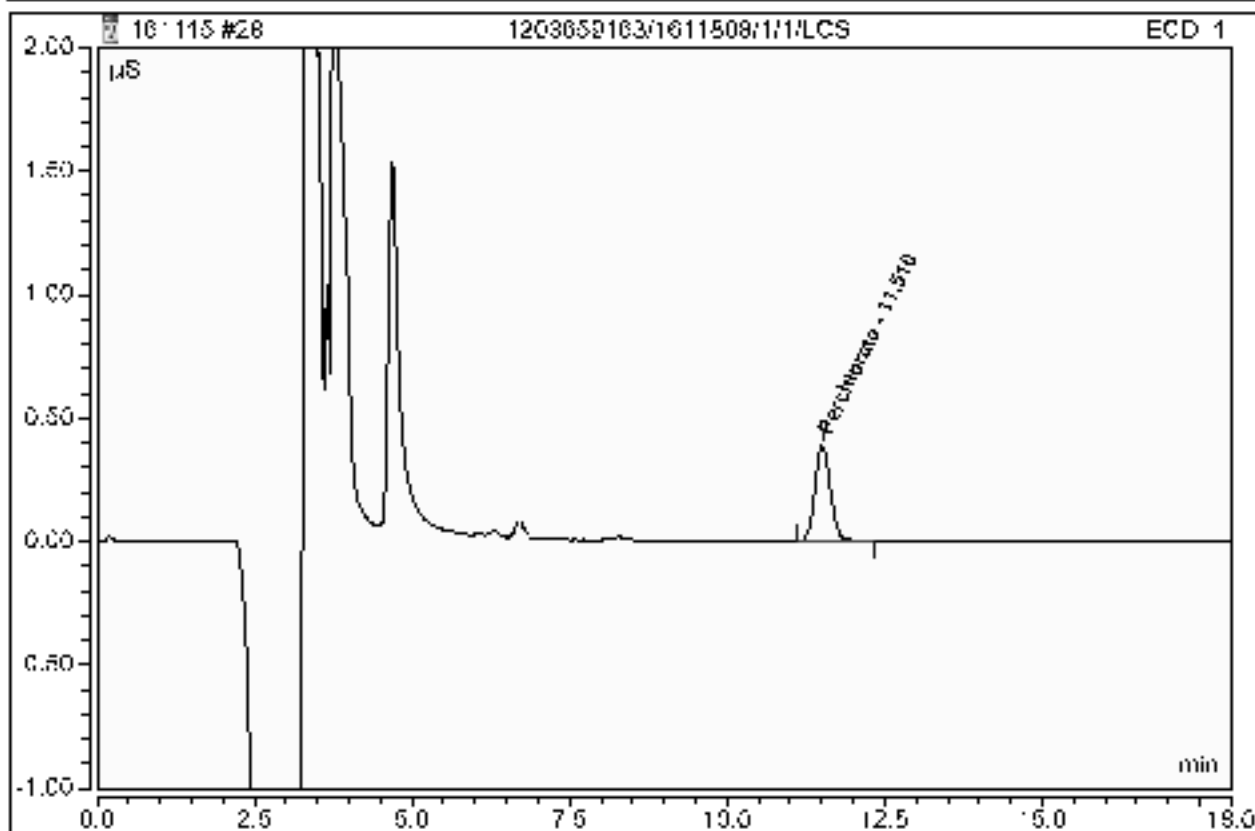
|                  |                           |                   |                                  |
|------------------|---------------------------|-------------------|----------------------------------|
| Sample Name:     | 1203659162/1611808/1/1/MB | Injection Volume: | 5000.0                           |
| Vial Number:     | 20                        | Channel:          | ECD_1                            |
| Sample Type:     | Unknown                   | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                      | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4                | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 20:30          | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                     | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |

**28 1203659163/1611808/1/1/LCS**

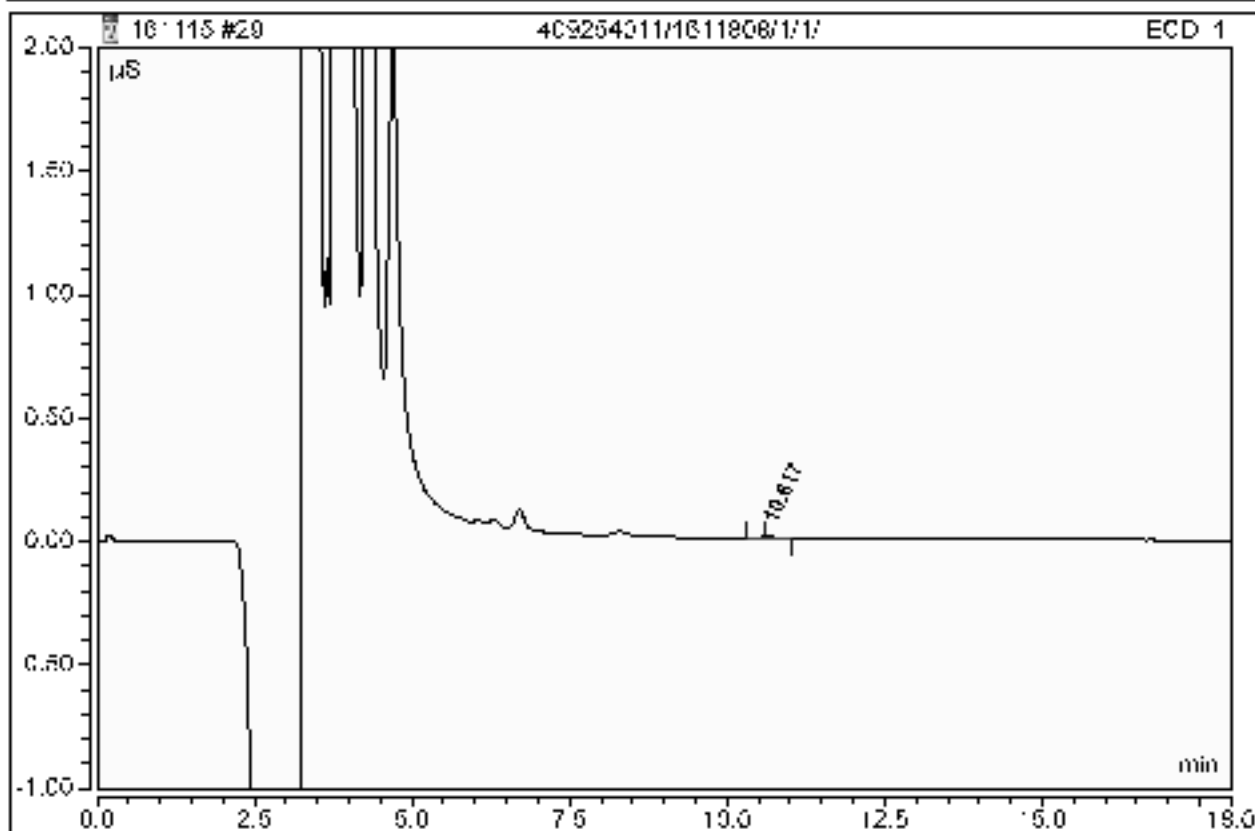
|                  |                            |                   |                                  |
|------------------|----------------------------|-------------------|----------------------------------|
| Sample Name:     | 1203659163/1611808/1/1/LCS | Injection Volume: | 5000.0                           |
| Vial Number:     | 21                         | Channel:          | ECD_1                            |
| Sample Type:     | Unknown                    | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                       | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4                 | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 20:51           | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                      | Column:           | AS23-001528; GLGCE086; 300; 0056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.51            | Perchlorate | n.a.                  | 49.6785        | FALSE     | 0.11042        | 100.00         |
| Total: |                  |             |                       | 49.6785        | 0.000     | 0.110          | 100.00         |

**29 409254011/1611808/1/1/**

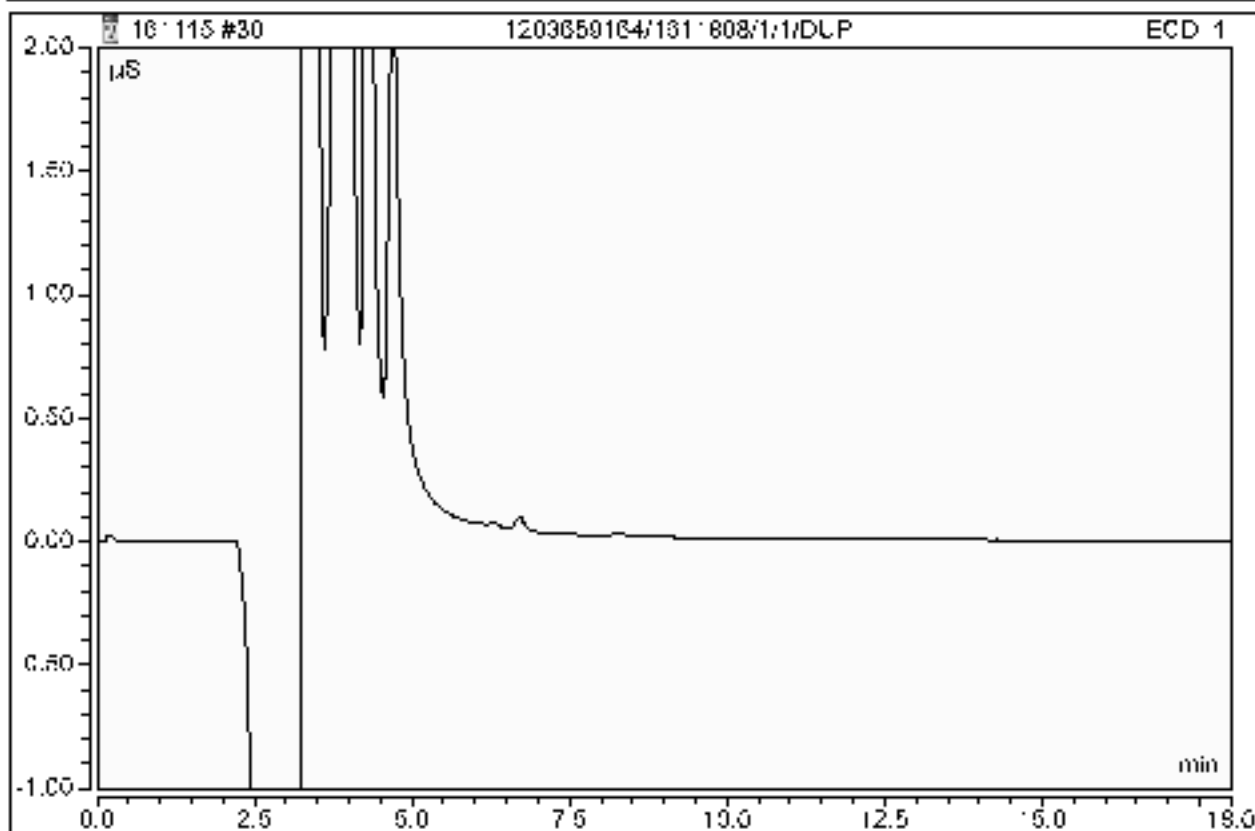
|                  |                        |                   |                                  |
|------------------|------------------------|-------------------|----------------------------------|
| Sample Name:     | 409254011/1611808/1/1/ | Injection Volume: | 5000.0                           |
| Vial Number:     | 22                     | Channel:          | ECD_1                            |
| Sample Type:     | Unknown                | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                   | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4             | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 21:12       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                  | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |

**30 1203659164/1611808/1/1/DUP**

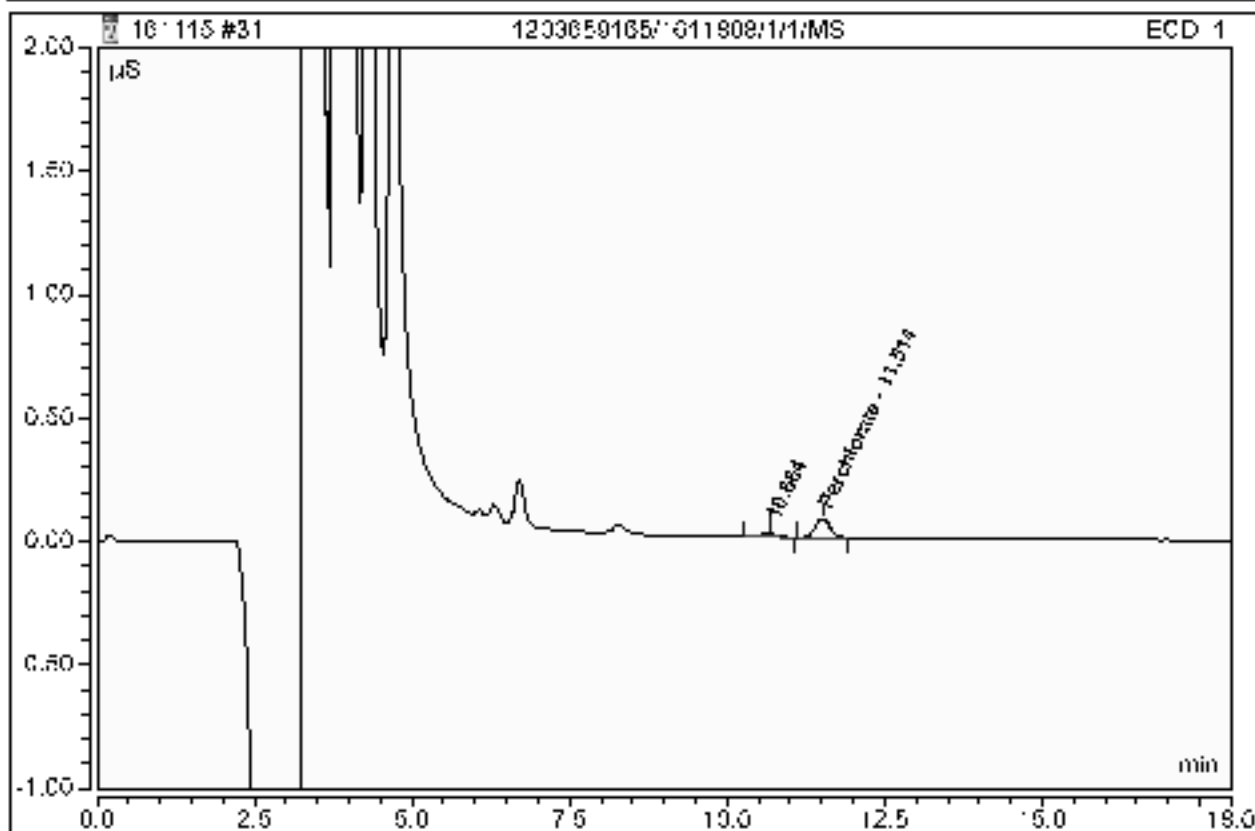
|                  |                            |                   |                                  |
|------------------|----------------------------|-------------------|----------------------------------|
| Sample Name:     | 1203659164/1611808/1/1/DUP | Injection Volume: | 5000.0                           |
| Vial Number:     | 23                         | Channel:          | ECD_1                            |
| Sample Type:     | Unknown                    | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                       | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4                 | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/16/2016 21:33           | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                      | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |

**31 1203659165/1611808/1/1/MS**

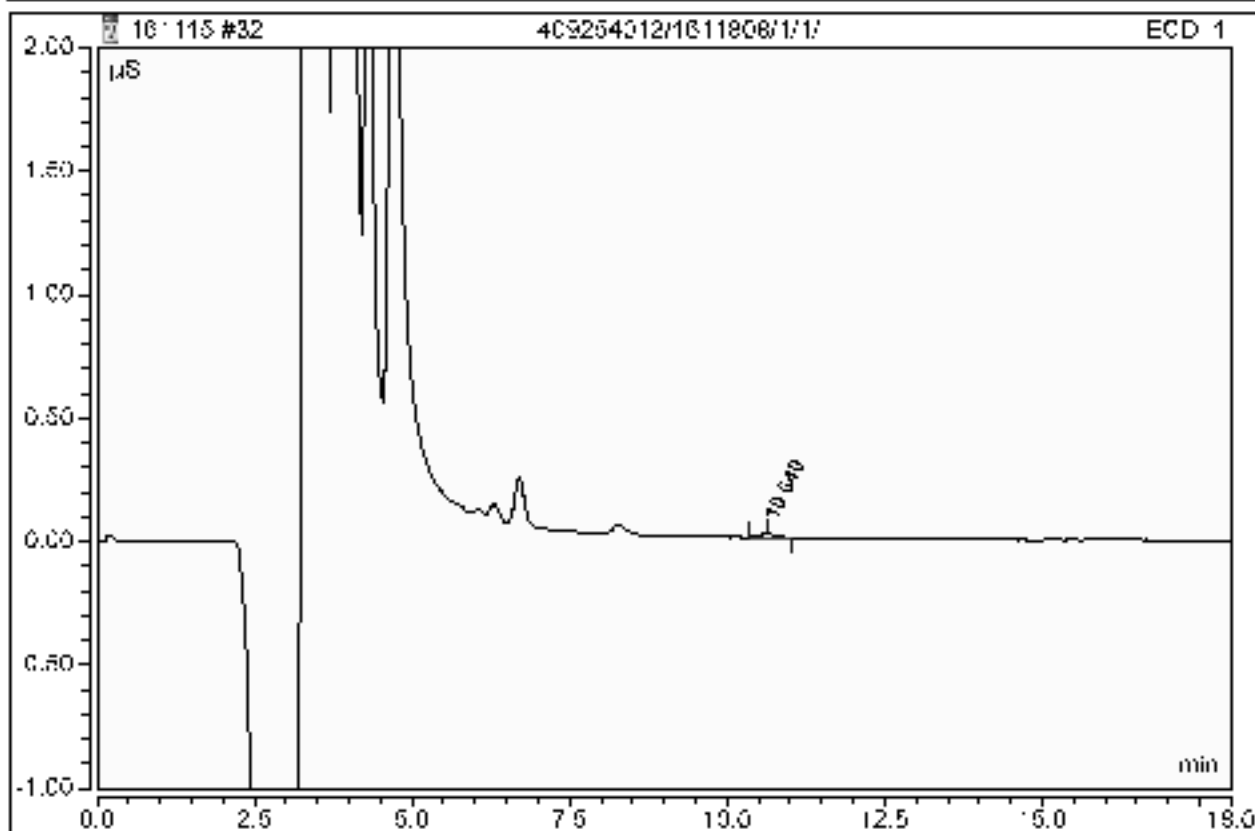
|                  |                           |                   |                                  |
|------------------|---------------------------|-------------------|----------------------------------|
| Sample Name:     | 1203659165/1611808/1/1/MS | Injection Volume: | 5000.0                           |
| Vial Number:     | 24                        | Channel:          | ECD_1                            |
| Sample Type:     | Unknown                   | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                      | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4                | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/16/2016 21:53          | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                     | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>μS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 2      | 11.51            | Perchlorate | n.a.                  | 10.2798        | FALSE     | 0.02109        | 81.00          |
| Total: |                  |             |                       | 10.2798        | 0.000     | 0.021          | 81.00          |

**32 409254012/1611808/1/1/**

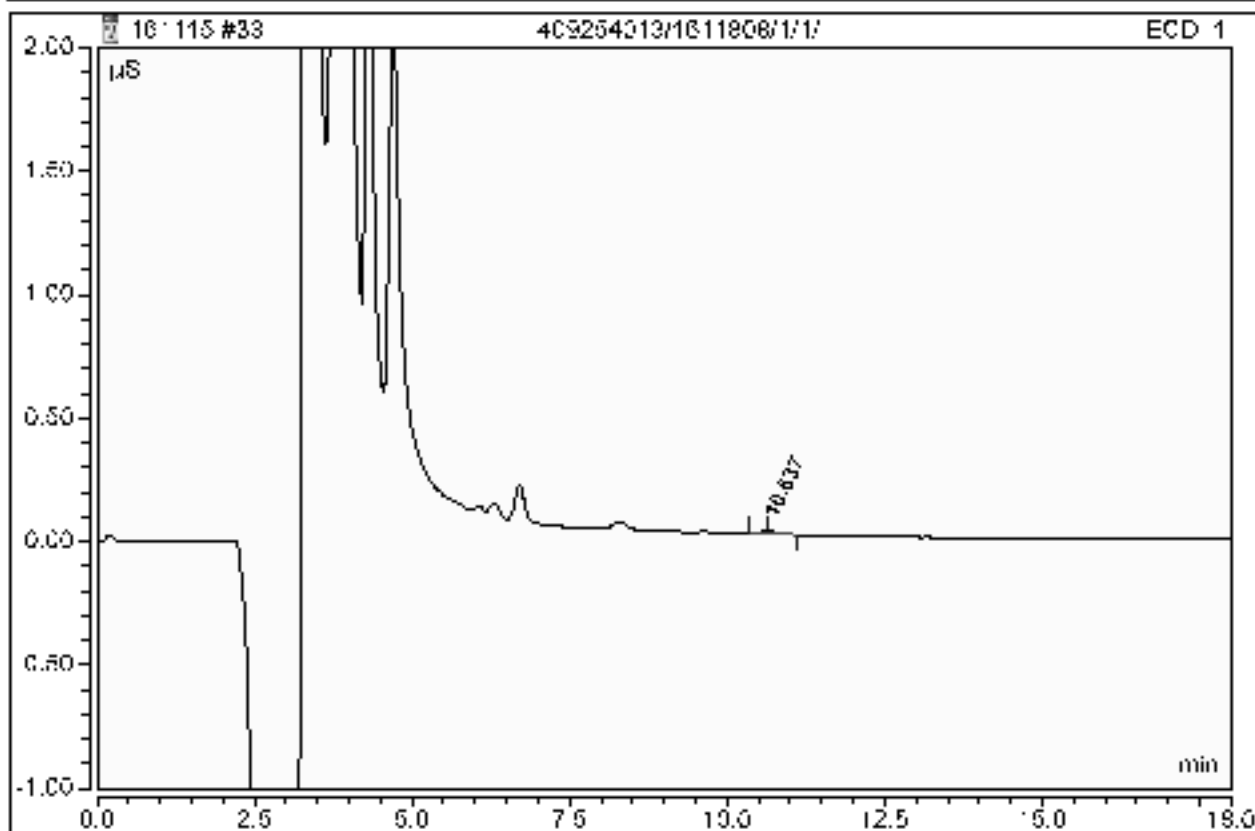
|                  |                        |                   |                                  |
|------------------|------------------------|-------------------|----------------------------------|
| Sample Name:     | 409254012/1611808/1/1/ | Injection Volume: | 5000.0                           |
| Vial Number:     | 25                     | Channel:          | ECD_1                            |
| Sample Type:     | Unknown                | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                   | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4             | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 22:14       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                  | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |

**33 409254013/1611808/1/1/**

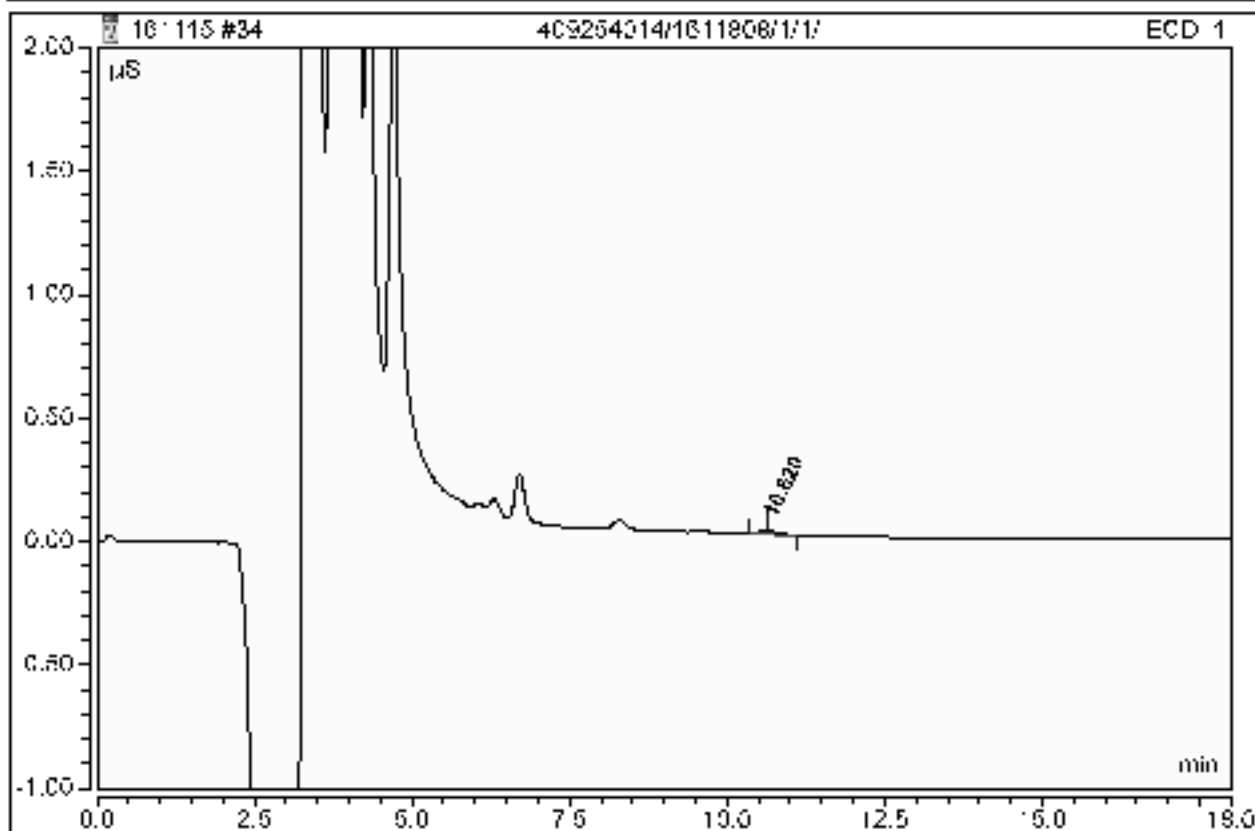
|                  |                        |                   |                                  |
|------------------|------------------------|-------------------|----------------------------------|
| Sample Name:     | 409254013/1611808/1/1/ | Injection Volume: | 5000.0                           |
| Vial Number:     | 26                     | Channel:          | ECD_1                            |
| Sample Type:     | Unknown                | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                   | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4             | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/16/2016 22:35       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                  | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |

**34 409254014/1611808/1/1/**

|                  |                        |                   |                                  |
|------------------|------------------------|-------------------|----------------------------------|
| Sample Name:     | 409254014/1611808/1/1/ | Injection Volume: | 5000.0                           |
| Vial Number:     | 27                     | Channel:          | ECD_1                            |
| Sample Type:     | Unknown                | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                   | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4             | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 22:58       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                  | Column:           | AS23-001528; GLGCE086; 300; 9056 |

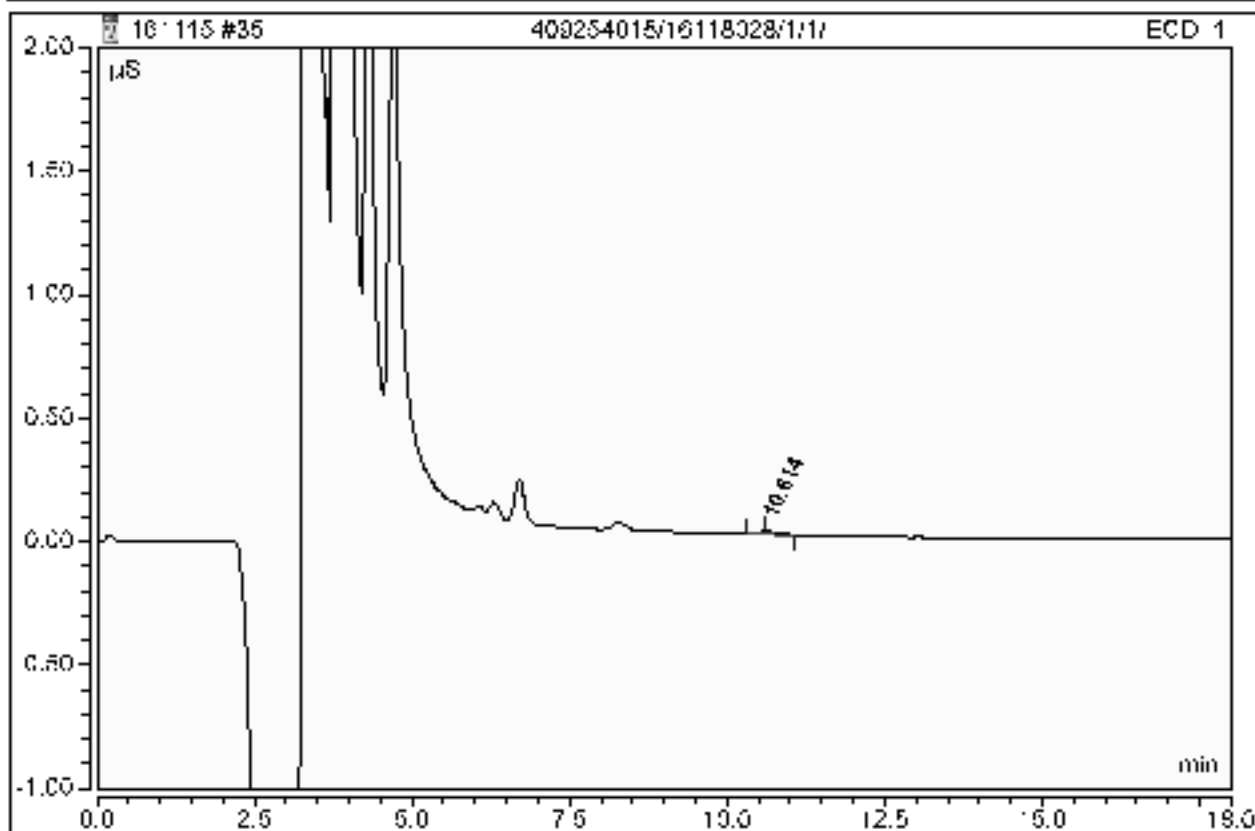


| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |



**35 409254015/16118028/1/1/**

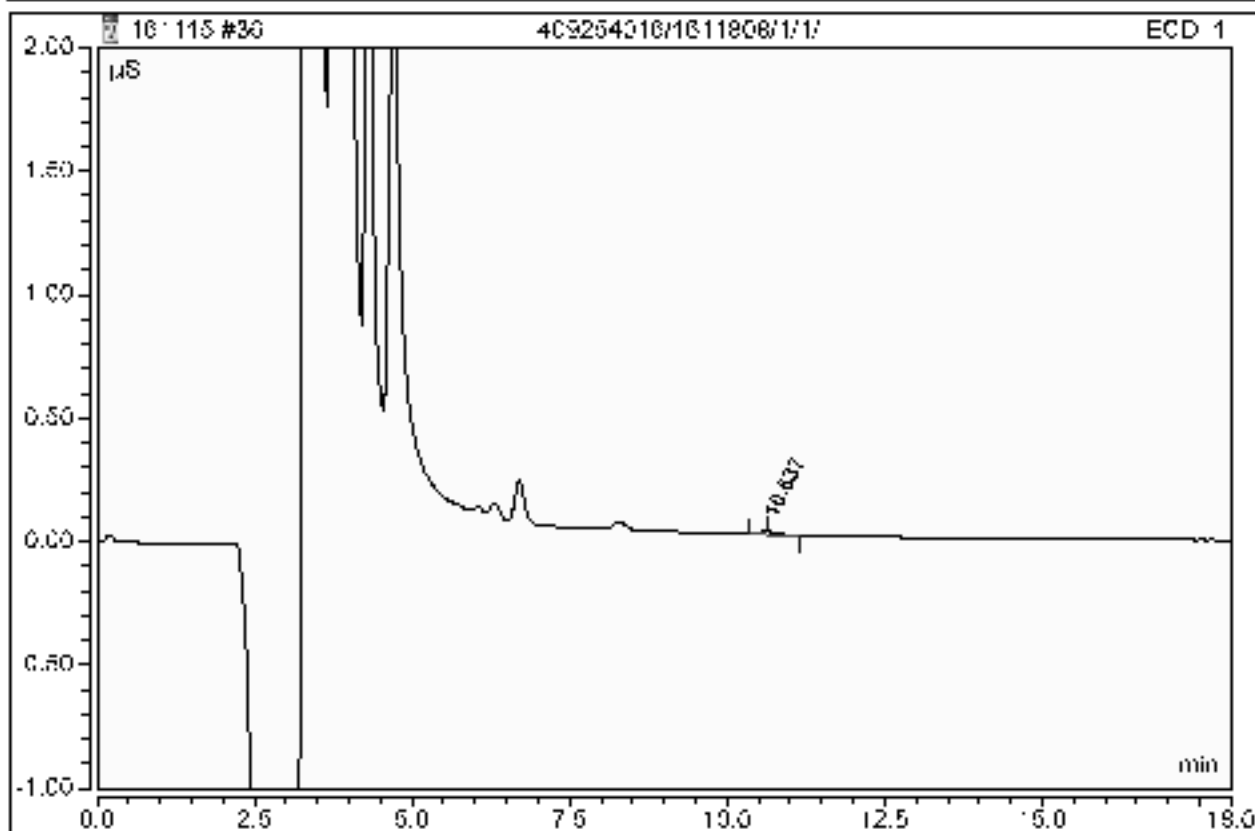
|                  |                         |                   |                                  |
|------------------|-------------------------|-------------------|----------------------------------|
| Sample Name:     | 409254015/16118028/1/1/ | Injection Volume: | 5000.0                           |
| Vial Number:     | 28                      | Channel:          | ECD_1                            |
| Sample Type:     | Unknown                 | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                    | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4              | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 23:17        | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                   | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |

**36 409254016/1611808/1/1/**

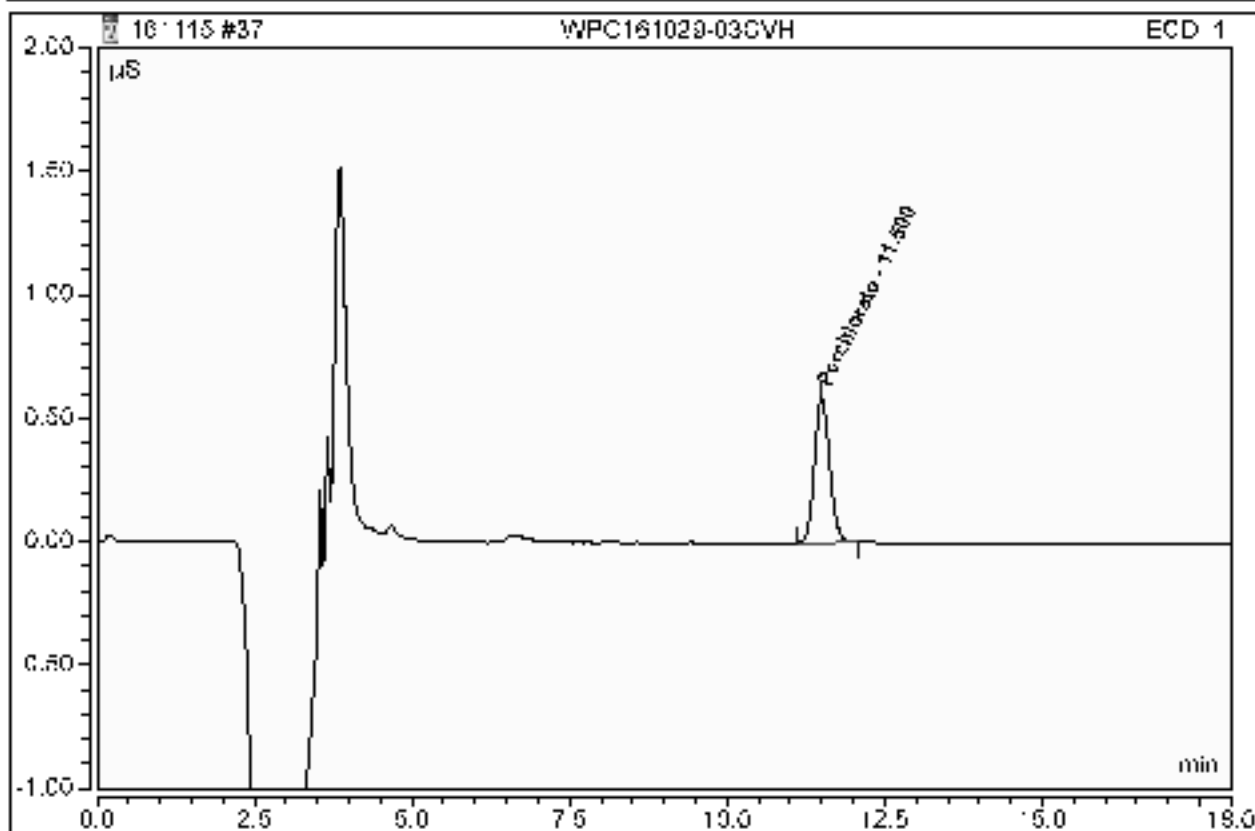
|                  |                        |                   |                                  |
|------------------|------------------------|-------------------|----------------------------------|
| Sample Name:     | 409254016/1611808/1/1/ | Injection Volume: | 5000.0                           |
| Vial Number:     | 29                     | Channel:          | ECD_1                            |
| Sample Type:     | Unknown                | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16                   | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4             | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 23:38       | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00                  | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>µS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |

**37 WPC161029-03CVH**

|                  |                  |                   |                                  |
|------------------|------------------|-------------------|----------------------------------|
| Sample Name:     | WPC161029-03CVH  | Injection Volume: | 5000.0                           |
| Vial Number:     | 30               | Channel:          | ECD_1                            |
| Sample Type:     | Unknown          | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16             | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4       | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/15/2016 23:59 | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00            | Column:           | AS23-001528; GLGCE086; 300; 9056 |



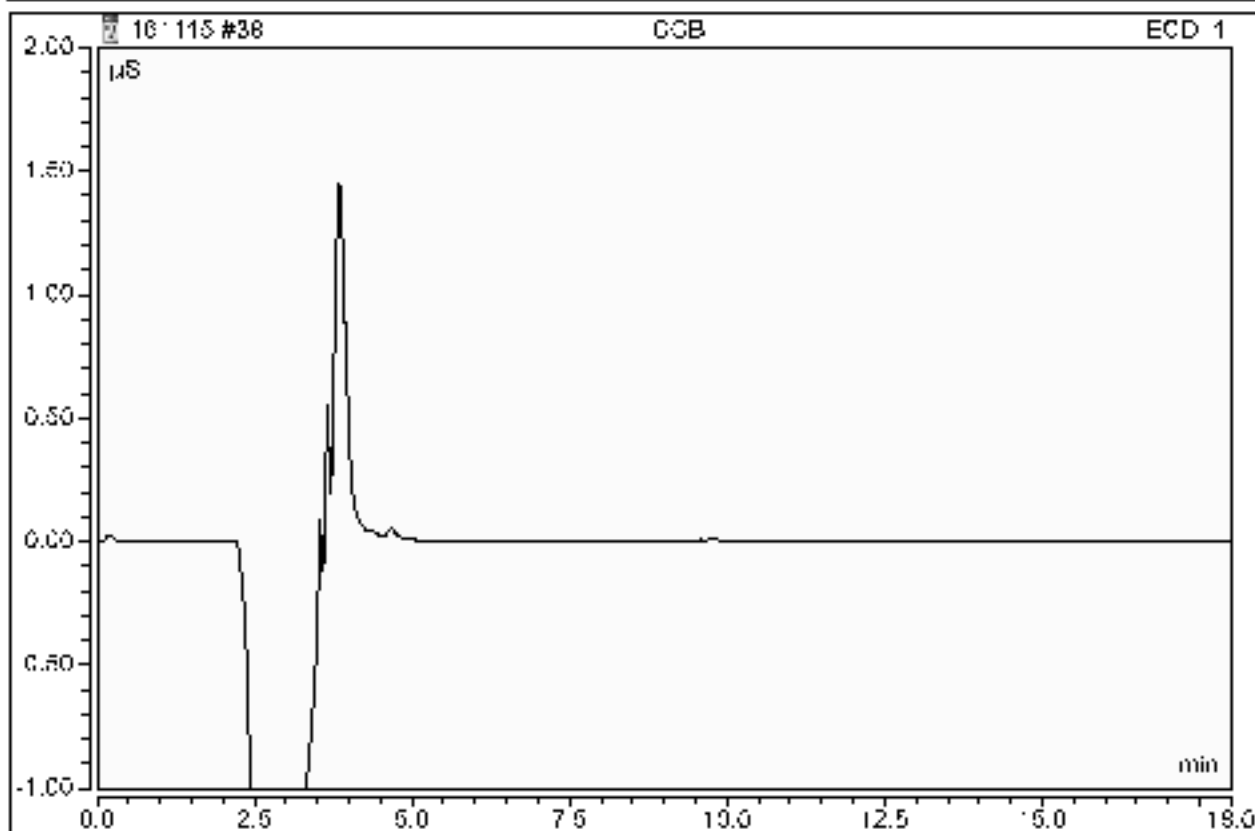
| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>μS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| 1      | 11.50            | Perchlorate | n.a.                  | 73.2477        | FALSE     | 0.16386        | 100.00         |
| Total: |                  |             |                       | 73.2477        | 0.000     | 0.164          | 100.00         |

This is runlog for Sequence 161115.seq for IC10

| Sample ID  | Run Time       | Batch   | Dilution | Dataset | Analyst |
|------------|----------------|---------|----------|---------|---------|
| CCB        | 11/16/16 00:19 |         | 1        | 161115  | MAR1    |
| 1203669019 | 11/16/16 00:40 | 1615758 | 1        | 161115  | MAR1    |
| 1203669020 | 11/16/16 01:01 | 1615758 | 1        | 161115  | MAR1    |
| 410371001  | 11/16/16 01:22 | 1615758 | 1        | 161115  | MAR1    |
| 1203669021 | 11/16/16 01:43 | 1615758 | 1        | 161115  | MAR1    |
| 1203669023 | 11/16/16 02:04 | 1615758 | 1        | 161115  | MAR1    |
| 410371002  | 11/16/16 02:25 | 1615758 | 1        | 161115  | MAR1    |
| 410371003  | 11/16/16 02:45 | 1615758 | 1        | 161115  | MAR1    |
| 410371004  | 11/16/16 03:06 | 1615758 | 1        | 161115  | MAR1    |
| 410371005  | 11/16/16 03:27 | 1615758 | 1        | 161115  | MAR1    |
| 410371006  | 11/16/16 03:48 | 1615758 | 1        | 161115  | MAR1    |
| CVL        | 11/16/16 04:09 |         | 1        | 161115  | MAR1    |
| CCB        | 11/16/16 04:30 |         | 1        | 161115  | MAR1    |
| 410371007  | 11/16/16 04:51 | 1615758 | 1        | 161115  | MAR1    |
| 410371008  | 11/16/16 05:11 | 1615758 | 1        | 161115  | MAR1    |
| 410371009  | 11/16/16 05:32 | 1615758 | 1        | 161115  | MAR1    |
| 410371010  | 11/16/16 05:53 | 1615758 | 1        | 161115  | MAR1    |
| 410371011  | 11/16/16 06:14 | 1615758 | 1        | 161115  | MAR1    |
| 1203669022 | 11/16/16 06:35 | 1615758 | 1        | 161115  | MAR1    |
| 1203669024 | 11/16/16 06:56 | 1615758 | 1        | 161115  | MAR1    |
| 409993001  | 11/16/16 07:16 | 1614894 | 5        | 161115  | MAR1    |
| CVH        | 11/16/16 07:37 |         | 1        | 161115  | MAR1    |
| CCB        | 11/16/16 07:58 |         | 1        | 161115  | MAR1    |

**38 CCB**

|                  |                 |                   |                                  |
|------------------|-----------------|-------------------|----------------------------------|
| Sample Name:     | CCB             | Injection Volume: | 5000.0                           |
| Vial Number:     | 31              | Channel:          | ECD_1                            |
| Sample Type:     | Unknown         | Dilution Factor:  | 1.0000                           |
| Control Program: | AS16            | Sample Weight:    | 1.0000                           |
| Quantif. Method: | 160728CLO4      | Sample Amount:    | 1.0000                           |
| Recording Time:  | 11/16/2016 0:19 | Analyst:          | MAR1                             |
| Run Time (min):  | 18.00           | Column:           | AS23-001528; GLGCE086; 300; 9056 |



| No.    | Ret. Time<br>min | Peak Name   | Concentration<br>ug/L | Amount<br>ug/L | Modified? | Area<br>μS*min | Rel. Area<br>% |
|--------|------------------|-------------|-----------------------|----------------|-----------|----------------|----------------|
| n.a.   | n.a.             | Perchlorate | n.a.                  | n.a.           | n.a.      | n.a.           | n.a.           |
| Total: |                  |             |                       | 0.0000         | 0.000     | 0.000          | 0.00           |

**Fort Calhoun Nuclear Station**  
**Limited Site Radiological Characterization Survey Report**  
January 2017



**Prepared for**  
**Omaha Public Power District**

Presented by



TSSD Services, Incorporated  
79 Aviator Place, Oakland, Maine

Report Prepared by:



97 Libbey Industrial Pkwy  
Weymouth, MA

|  |             |
|--|-------------|
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### ACRONYMS AND ABBREVIATIONS

|       |   |
|-------|---|
| CoC   | Chain of Custody                            |
| DAW   | Dry Active Waste                            |
| DQO   | Data Quality Objective                      |
| FCS   | Fort Calhoun Station                        |
| FSS   | Final Status Survey                         |
| HSA   | Historical Site Assessment                  |
| HTD   | Hard-to-Detect                              |
| ISFSI | Independent Spent Fuel Storage Installation |
| LRCP  | Limited Radiological Characterization Plan  |
| MDC   | Minimum Detectable Concentration            |
| NRC   | (U.S.) Nuclear Regulatory Commission        |
| OLA   | Open Land Area                              |
| OPPD  | Omaha Public Power District                 |
| PA    | Protected Area                              |
| pCi/g | picocurie per gram                          |
| PWR   | Pressurized Water Reactor                   |
| RMA   | Radioactive Material Area                   |
| RP    | Radiation Protection                        |
| ROC   | Radionuclide-of-Concern                     |
| SIRWT | Safety Injection Refueling Water Tank       |
| SFP   | Spent Fuel Pool                             |
| TRU   | Transuranic Radionuclide                    |

### EXECUTIVE SUMMARY

A limited Historical Site Assessment (HSA) [1] was conducted at the Omaha Public Power District (OPPD) Fort Calhoun Station (FCS) between August and October 2016. The HSA effort focused on environmental (open land) areas at the FCS site; assessment of potential radiological impact to FCS site buildings, structures, or systems was not included.

The review of available historical records and interviews with FCS personnel identified several areas where additional data were required in order to assess the current radiological status of environmental areas and/or identify areas that would potentially require special consideration during decommissioning planning.

As a follow-up to the HSA, a Limited Radiological Characterization Plan (LRCP) [3] was developed with the objective of closing the gaps in historical radiological data identified by the HSA. The LRCP incorporated guidance found in NUREG-1575 [2], and established requirements for survey designs and techniques, radiation detection instruments, sample analyses and for ensuring the quality of collected data.

The LRCP was implemented at the FCS site between October 19 through 28, 2016. The limited site characterization surveys included the collection of 52 soil samples (36 surface soil samples and 16 sub-surface soil samples) from potentially radiologically impacted environmental areas. All soil samples were transferred to a contracted laboratory for gamma spectroscopy analyses. Four soil samples collected from the Protected Area (PA) were also submitted for analyses to identify hard-to-detect (HTD) beta-emitting radionuclides. Additionally, several gamma scans were performed within each target environmental area.

The gamma scans did not identify any elevated radiation levels within the targeted environmental areas. Laboratory results identified low concentrations of Cs-137 (i.e., approximately 0.1 pCi/g to 0.4 pCi/g) in 5 of the 36 surface soil samples. However, the Cs-137 concentrations were small percentages (i.e., <4%) of the NRC screening value for Cs-137 (11 pCi/g) published in NUREG 1757 [4], and are well below concentrations that would require remediation or special consideration during decommissioning. Results for all other plant-related radionuclides were below the *a posteriori* minimum detectable concentration (MDC) values.

The following conclusions were reached based on the radiological data collected under the LRCP:

- The radiological data collected during the implementation of the LRCP support closure of data gaps associated with environmental areas at the FCS site, as identified in the HSA.
- The DQOs established in the LRCP to ensure the quality of the collected data were met during implementation of the plan.
- The identified concentrations of Cs-137 in 5 soil samples from the targeted environmental areas at the FCS site are small fractions of the NRC screening level for Cs-137 in soil, which provides evidence that remediation or special consideration will not likely be required for the environmental areas during decommissioning planning. This conclusion is also supported by the reported results for all other plant-related radionuclides (i.e., all were below the *a posteriori* MDC values).
- The collected radiological data are insufficient for use as release basis for the potentially impacted environmental (open land) areas.

**SECTION 1 INTRODUCTION**

A limited Historical Site Assessment (HSA) was conducted at the Omaha Public Power District (OPPD) Fort Calhoun Station (FCS) between August and October 2016. The HSA effort was designed and conducted in accordance with guidance found in NUREG-1575, *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)*. The HSA effort was limited in the sense that it focused on identifying environmental (open land) areas across the FCS site that have been or potentially have been impacted by the historic use of radioactive materials; assessment of potential radiological impact to FCS site buildings, structures, or systems was not included.

Based on reviews of available historical records and information, coupled with anecdotal information obtained during interviews with FCS site personnel, the HSA effort identified nine environmental (open land) areas as potentially impacted due to the historic use and generation of radioactive materials at the FCS site. In addition, the HSA identified gaps found in the available historical information where additional data are required in order to determine the current radiological status of the potentially impacted areas.

A limited radiological characterization plan (LRCP) was developed to guide the collection of additional radiological information that would close the data gaps identified for the nine impacted environmental areas. Development of the LRCP incorporated guidance found in NUREG-1575, including the MARSSIM data quality objective (DQO) process, which was used to establish requirements for survey designs and techniques, radiation detection instruments, sample analyses, and to ensure the quality of collected data.

The radiation surveys and soil sample analyses conducted under the LRCP targeted the potential plant-related radionuclides-of-concern (ROCs) identified for the potentially impacted open land areas. Potential ROCs included plant-related gamma emitting radionuclides (e.g., Co-60, Cs-137) as well as hard-to-detect (HTD) beta emitting radionuclides (e.g., H-3, Sr-90).

The LRCP was implemented at the FCS site in October 2016. This report summarizes the radiological findings collected during the implementation of the plan.

**SECTION 2      OBJECTIVE**

The primary objective of the LRCP was the closure of data gaps identified for each potential radiologically impacted environmental area in the HSA. Closure of data gaps will provide information to support a determination of the current radiological status of each impacted environmental area and may serve to identify radiological issues that would warrant special consideration during decommissioning planning. Accordingly, the radiological surveys for the environmental areas are considered limited characterization surveys (that is, equivalent to scoping surveys described in NUREG-1575), designed only to fill identified data gaps, but may provide useful information for future site characterization planning, additional decommissioning planning, and final status survey (FSS) planning.

**SECTION 3 BACKGROUND****3.1 SITE HISTORY**

FCS Unit 1 was a Combustion Engineering 2-loop Pressurized Water Reactor (PWR) designed to permit generation of a net electrical output of approximately 475 MW. Plant construction began in 1966. The first fuel assembly was loaded into the reactor in May – June 1973. The U.S. NRC issued an operating license on August 9, 1973. The plant officially went online on September 1, 1973 with commercial operation starting 25 days later.

FCS experienced several radiological events over the operating years that may have had a radiological impact on environmental areas at the FCS site. These historical events are described and discussed in the FCS HSA. During the late 1980s and early 1990s, new buildings, including the Radwaste Processing Building, Chemistry & Radiation Protection Facility, Cafeteria, were constructed within the protected area (PA) whereas the Training Building and Administration Building were constructed outside the PA.

In early 2011, FCS received warning of the pending flood from the U.S. Army Corp of Engineers, who had to control water from a record snowmelt via systematic releases through a network of upstream dams on the Missouri River. FCS prepared for the flood by constructing aqua berms and raised walkways to protect the plant components and provide plant access to staff. On June 6, 2011, when the reactor was shut down for scheduled refueling, FCS declared an Unusual Event due to Missouri River flooding. The FCS site remained flooded for approximately 3 months.

In June 2016, OPPD Board of Directors voted to cease operations at FCS and to pursue the SAFSTOR decommissioning method. The FCS site has ceased operations and is currently in the early stages of transition and decommissioning planning. Efforts and activities at the site are focused on preparations required for moving to a SAFSTOR status, limited characterization of the environmental areas, disposition of legacy wastes, and transfer of spent fuel to the ISFSI

**3.2 ENVIRONMENTAL IMPACTED AREAS**

The recent limited HSA identified 9 environmental (open land) areas within the boundaries of the FCS site that have been potentially impacted by historical use and generation of radioactive materials at FCS. The HSA report provides a discussion of the rationale and bases for classifying the 9 environmental areas as potentially impacted.

Table 3.2 identifies the radiologically impacted environmental areas and summarizes the type of missing data for area. Figure 3.2 shows the locations of the potentially impacted areas at the FCS site.

**3.3 RADIONUCLIDES-OF-CONCERN**

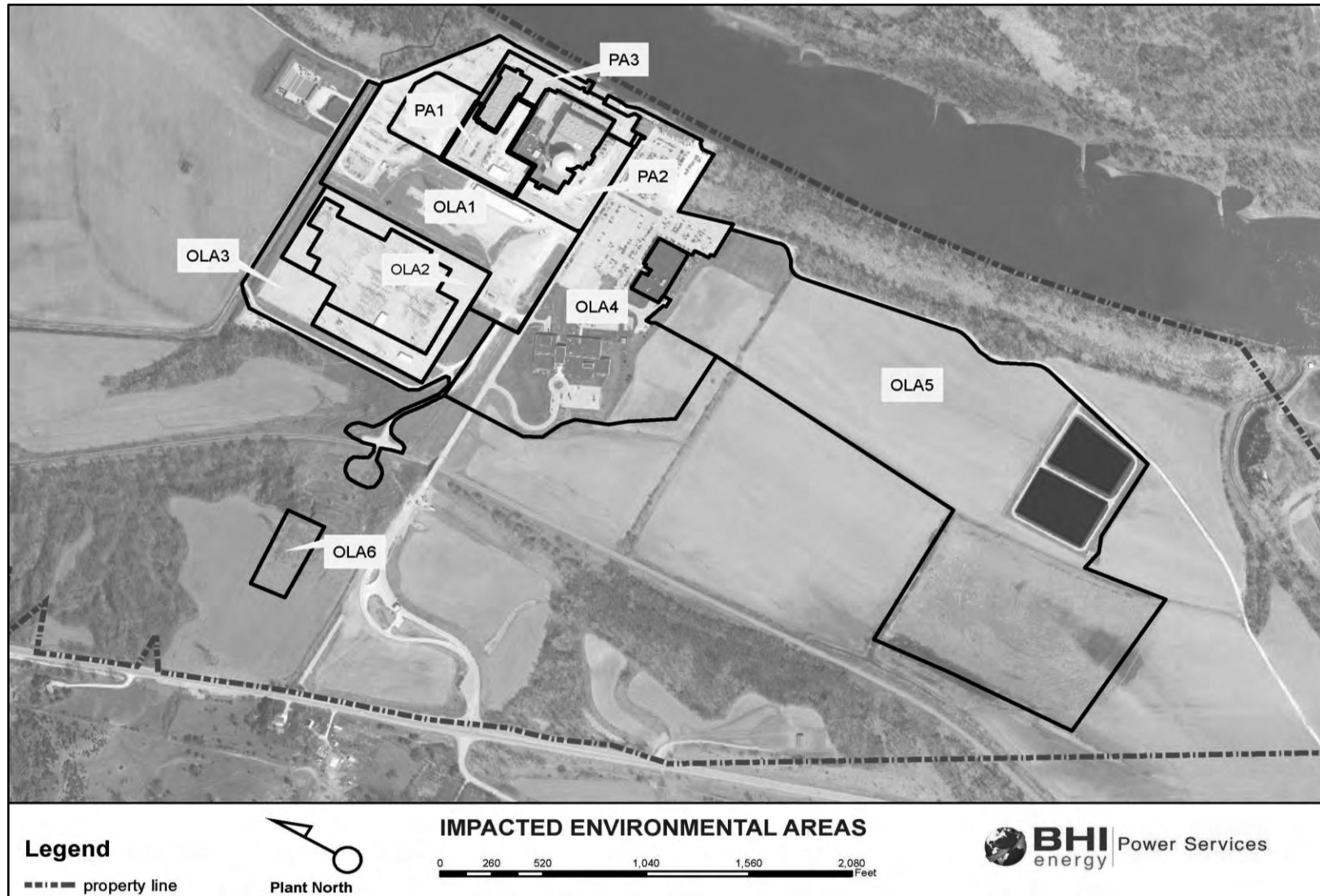
The HSA identified known or potential ROCs that may be present in each impacted area based on available historical information and work practices. Potential ROCs included plant-related gamma-emitting radionuclides and HTD beta-emitting radionuclides. Table 3.3 provides a summary of known or potential ROCs for each impacted area as identified in the HSA.

**Table 3.2 Summary of Potentially Impacted Environmental Areas at the FCS Site**

| Environmental Area  | Area Code | Data Gap                           |
|---|-----------|------------------------------------|
| Northwest section of the Protected Area (PA)  | PA1       | Radiation surveys<br>Soil analyses |
| Southwest section of the PA   | PA2       | Radiation surveys<br>Soil analyses |
| East section of the PA  | PA3       | Radiation surveys<br>Soil analyses |
| Open land area (OLA) located west and north of PA   | OLA1      | Radiation surveys<br>Soil analyses |
| Open area lying between the Switchyard fence and the berm footprint that was underwater during the 2011 flood               | OLA2      | Radiation surveys<br>Soil analyses |
| Northwest corner of the Switchyard area and the open land area west and south of the Switchyard                             | OLA3      | Radiation surveys<br>Soil analyses |
| Open land area south of PA surrounding the Training Building and Administration Building                                    | OLA4      | Radiation surveys<br>Soil analyses |
| Open land area on south site property, including the landfill, sanitary lagoons, and sanitary lagoon water application area | OLA5      | Radiation surveys<br>Soil analyses |
| Open land area on hill area on west side of site property   | OLA 6     | Radiation surveys<br>Soil analyses |

**Table 3.3 Summary of Potential ROCs in Each Impacted Environmental Area**

| Area Code | Potential ROC                                | Area Code | Potential ROC                                | Area Code | Potential ROC |
|-----------|--|-----------|--|-----------|---------------|
| PA1       | Co-60, Cs-134, Cs-137, and HTD beta-emitters | OLA1      | Co-60, Cs-134, Cs-137, and HTD beta-emitters | OLA4      | Cs-137        |
| PA2       | Co-60, Cs-134, Cs-137, and HTD beta-emitters | OLA2      | Cs-137                                       | OLA5      | Cs-137        |
| PA3       | Co-60, Cs-134, Cs-137, and HTD beta emitters | OLA3      | Cs-137                                       | OLA6      | Cs-137        |



**Figure 3.2** Potential Radiologically Impacted Environmental Areas at the FCS Site

**SECTION 4 DATA QUALITY OBJECTIVES**

The Data Quality Objective (DQO) process presented in NUREG-1575 is a 7-step systemized approach for designing surveys to collect data needed for making decisions. When applied to survey designs, the MARSSIM DQO process increases confidence in collected data and ensures that the survey results are of sufficient quality and quantity to support the decision-making process. Some portions of the MARSSIM DQO process, such as determinations of minimum number of samples and limits on decision errors to ensure adequate statistical power of the collected data, were not incorporated in development of the LRCP because the limited nature of the surveys/sampling activities. Data collected under the LRCP are neither sufficient nor intended for use as the bases for release decisions for the potentially impacted areas; however, the data serve to support decommissioning planning and/or future characterization or FSS planning.

The following requirements were established for the project:

*Quality Assurance/Quality Control (QA/QC):*

- Valid calibrations for all field radiation detection instruments
- Documented daily pre- and post-use operability QC checks for all field radiation detection instruments
- Collection of one QA split soil sample

*Survey/sampling performance:*

- Field activities performed in accordance with approved procedures referenced in the survey plan
- Constraints on data collection, personal protective equipment (PPE) requirements, and safety issues identified prior to field activities
- Investigations of all radiation levels observed with audible distinctions greater than background during gamma scans
- Maintenance of sample custody and control during transfers via use of a CoC form

*Laboratory Analyses:*

- Laboratory must have accredited QA program
- Sensitivities of laboratory analytical methods must be capable of detecting radioactivity at environmental levels



**SECTION 5 RADIOLOGICAL SURVEY DESIGNS**

The LRCP discusses the bases for the design of radiation surveys and sampling for the FCS environmental (open land) areas. The major aspects of those designs are summarized in the following sections.

**5.1 MEASUREMENT TECHNIQUES**

The measurement techniques included volumetric sampling and gamma scans performed in accordance with the procedures referenced in the LRCP. Collection of sub-surface soil samples was accomplished by manual digging, use of hand coring equipment, or with the support of soft dig and geo-probe processes.

**5.2 MEASUREMENT LOCATIONS**

All measurement locations are considered biased (or judgmental) measurement locations. Measurement locations were selected based on information in the HSA and professional judgement. The selection process for soil sampling considered (i) potential locations of residual radioactive material as identified in the HSA, (ii) potential collection points for surface run-off, (iii) likely collection locations for radioactive deposition, and (iv) professional judgement.

**5.3 DETECTION LIMITS**

Gamma scans over soil areas utilized a scan speed approximately equal to 0.5 m/s and an audible distinction above background as an action level to initiate an investigation and/or sampling activity. The use of an audible distinction above background was sufficient to identify environmental areas that would require special consideration during decommissioning activities and planning (i.e., areas where residual plant-related gamma-emitting radioactivity in soil exceeds the NRC screening values).

The detection limits for laboratory analyses of all soil samples were established at environmental radioactivity levels. Similar to an audible distinction above background during scans, the laboratory's standard analytical sensitivities for environmental radiation levels provided sufficient confidence for identifying plant-related radionuclide concentrations in soil that would require special consideration during decommissioning planning.

**5.4 FIELD INSTRUMENTATION**

Field instrumentation consisted of gamma scintillator detectors paired with data loggers. Table 5.4 provides a summary of the survey instrumentation used for gamma scans.

**Table 5.4 Survey Instrumentation Summary**

| Instrumentation Pairing  | Serial No.         | Calibration Due Date | Use                               |
|--|--------------------|----------------------|-----------------------------------|
| Ludlum Model 2350-1 Data Logger and<br>Ludlum Model 44-10 NaI Scintillator | 221036<br>PR245275 | 10/10/2017           | Gamma scans in all impacted areas |
| Ludlum Model 2350-1 Data Logger and<br>Ludlum Model 44-10 NaI Scintillator | 203485<br>PR226924 | 10/10/2017           | Gamma scans in all impacted areas |

**5.5 QUALITY ASSURANCE AND QUALITY CONTROL**

Section 2.0 in the LRCP established quality assurance (QA) and quality control (QC) requirements for field instruments and sampling. All field instruments were calibrated before the implementation of the plan and were within a valid calibration period when used to collect survey data. The instrumentation vendor used NIST-traceable sources in the calibrations of survey instruments. The operability of field instruments was verified before and after use. Written procedures governed the field survey and sampling activities. In addition, the integrity of soil samples was ensured by a CoC form, which was used when soil samples were transferred to the contracted laboratory.

Instrument calibration records and documentation for instrument QC checks are provided in Appendix C. Copies of the CoC forms are provided in Appendix D.

## SECTION 6 RADIOLOGICAL FINDINGS

The HSA identified nine potentially impacted environmental (open land) areas based on either known or potential presence of residual radioactive materials. The LRCP required sampling and gamma scans in each potentially impacted area. All field activities associated with the implementation of the LRCP were conducted at the FCS site between October 19 through October 28, 2016. Table 6.0 summarizes the sampling for each environmental area.

Table 6.0 Radiological Sampling Summary

| Area Code          | Approximate Area (m <sup>2</sup> ) | Number Samples (Sample Depth)   |
|--------------------|------------------------------------|---|
| PA1                | 12,200                             | 2 surface soil (0-6 inches)<br>1 surface soil composite (0-6 inches)<br>3 sub-surface soil (1 ft, 3 ft, 5 ft) |
| PA2                | 11,300                             | 2 surface soil (0-6 inches)<br>5 surface soil composites (0-6 inches)<br>2 sub-surface soil (6 ft)            |
| PA3                | 7,700                              | 1 surface soil (0-6 inches)<br>2 surface soil composites (0-6 inches)<br>1 sub-surface soil (6 ft)            |
| OLA1               | 67,600                             | 1 surface soil (0-6 inches)<br>5 surface soil composites (0-6 inches)<br>1 sub-surface soil (6 ft)            |
| OLA2               | 29,300                             | 3 surface soil (0-6 inches)   |
| OLA3               | 38,500                             | 6 surface soil (0-6 inches)<br>4 surface soil composites (0-6 inches)   |
| OLA4               | 109,000                            | 2 surface soil (0-6 inches)<br>1 sub-surface soil (3 ft)  |
| OLA5               | 263,000                            | 3 surface soil (0-6 inches)<br>1 sub-surface soil (3 ft)  |
| OLA6               | 8,100                              | 3 surface soil (0-6 inches)<br>3 sub-surface soil (1.5 ft)  |
| Total soil samples |                                    | 36 surface soil<br>16 sub-surface soil  |

The following sections provide detailed discussions of the survey and sampling activities conducted in environmental area, and present the survey results and conclusions for each environmental area.

Note that the use of “north” as a direction throughout this report refers to “plant” north rather than “true” north. The map illustrations throughout this report are oriented with true north at the top of the page. Area descriptions throughout this report rely on plant north to orient the reader to described relative positions and area boundaries. A plant north vector arrow is provided in the legend of each map illustration.

## 6.1 AREA PA1

Environmental area PA1 consists of the northwest area inside the PA fence and encompasses approximately 12,200 m<sup>2</sup>. Most of this area is covered with gravel and crushed stone; however, there are also small areas covered by concrete. During plant operating years, sealand containers holding radioactive materials were staged in the open area west of the Chemistry & Radiation Protection facility. The HSA did not reveal records documenting either loss of container integrity or leakage from the staged containers. The HSA also did not reveal records for radiation surveys and/or radiological sampling within the container staging area. If residual radioactive soil contamination is present, the potential ROCs would include those associated with radioactive waste streams, such as dry active waste (DAW).

The limited characterization survey for area PA1 included several area gamma scans. The gamma scan paths are shown on the annotated field maps for PA1 provided in Appendix A. The gamma scans conducted in area PA1 did not identify any radiation levels that exceeded ambient background levels.

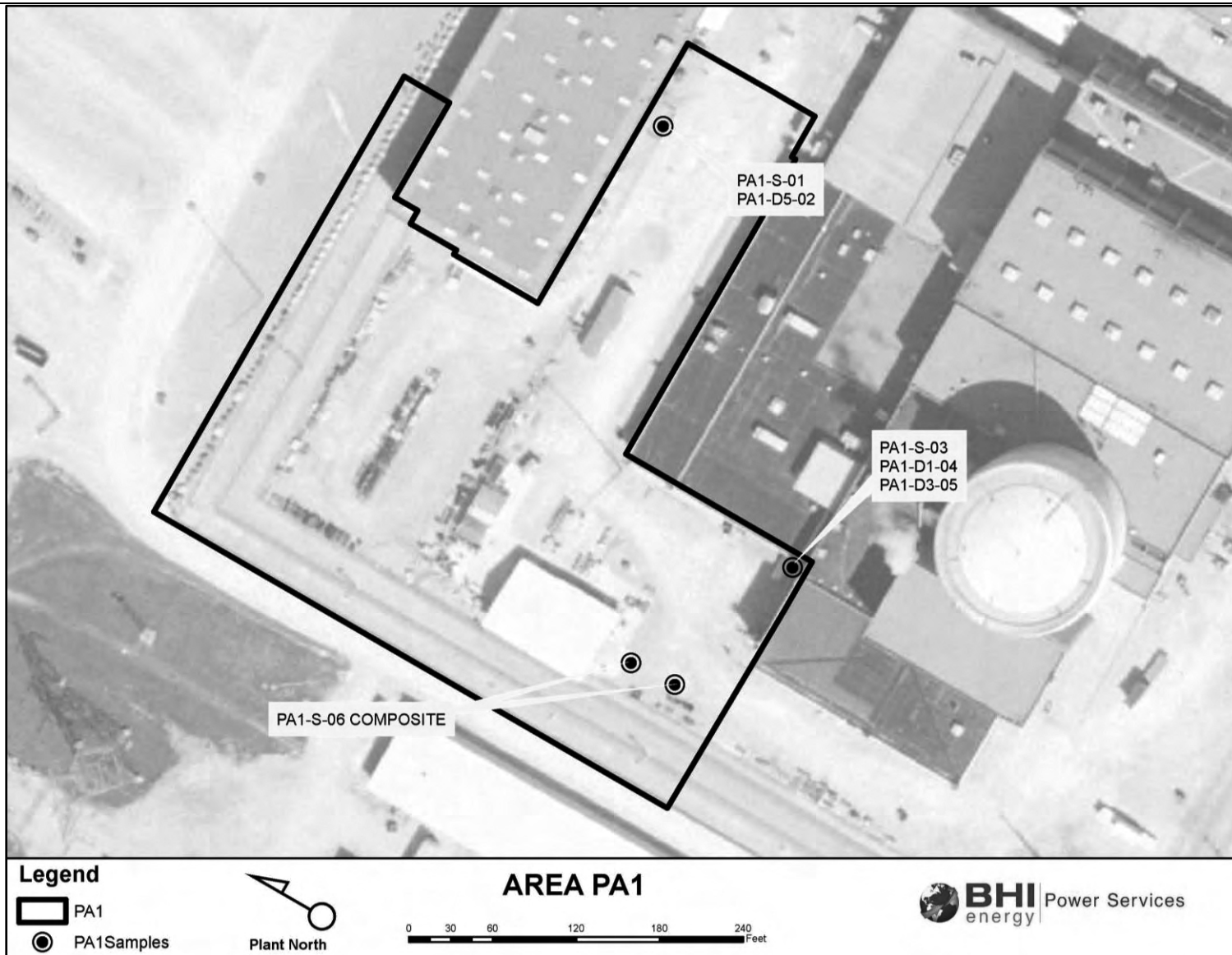
The limited characterization survey also included the collection of soil samples at historical staging locations for sealand containers, at a location where the north wall of the Radioactive Waste Processing Building meets the Auxiliary Building, and along the drain path of water from the New Warehouse. Figure 6.1 shows the sampling locations inside area PA1.

Six soil samples were collected in area PA1: 2 surface soil samples, 1 composite surface soil, and 3 sub-surface soil samples. Prior to transfer a contracted laboratory, FCS Radiation Protection (RP) personnel screened the PA1 soil samples for plant-related gamma-emitting radionuclides; none was identified. Sample integrity during transfer to the contracted laboratory was ensured through use a CoC form. Copies of the CoC forms are provided in Appendix D.

The contracted laboratory performed gamma analysis on each sample. In addition, the sample collected at location PA1-D1-04 was submitted for radio-chemical analyses to assess the potential present of HTD beta-emitting radionuclides and transuranic radionuclides (TRUs).

Laboratory analyses of soil samples from PA1 did not identify concentrations of plant-related ROCs that would require remediation or special consideration during decommissioning. All reported gamma analysis results were below the *a posteriori* minimum detectable concentration (MDC) values achieved in the analyses. The gamma scans conducted in area PA1, which did not identify any area of elevated radioactivity, support the laboratory data. In addition, the reported concentrations for HTD beta-emitting ROCs in the soil from area PA1 were below the *a posteriori* MDC values. Table 6.1-1 provides a summary of the results of gamma analyses for soil samples, and Table 6.1-2 summarizes the results for HTD radionuclides.

**Conclusion:** Results of the limited characterization efforts conducted in area PA1 did not identify any residual radiological conditions that would warrant special consideration during decommissioning planning. Although insufficient for use as the basis for releasing the area, the limited radiological data collected for area PA1 under this project will support the development of a subsequent MARSSIM characterization survey and final status survey.



**Figure 6.1** Soil Sampling Locations within Environmental Area PA1

Table 6.1-1 Summary of Gamma Analysis Results for Soil Samples Collected in Area PA1

| Location Code | Cs-137 <sup>a</sup>     |                           |
|---------------|-------------------------|---------------------------|
|               | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| PA1-S-01      | 1.1 E-02                | 7.0 E-02                  |
| PA1-D5-02     | 5.4 E-02                | 9.6 E-02                  |
| PA1-S-03      | 0.0 E+00                | 8.3 E-02                  |
| PA1-D1-04     | 5.6 E-04                | 8.8 E-02                  |
| PA1-D3-05     | -2.1 E-02               | 6.1 E-02                  |
| PA1-6-06      | 2.6 E-02                | 5.5 E-02                  |

<sup>a</sup> Reported values from gamma analysis and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

Note: Results for Cs-137 are shown as the expected primary ROC. However, it is important to note that no other plant-related gamma emitting radionuclides were identified by gamma spectroscopy analysis.

Table 6.1-2 Summary of Results for HTD Radionuclides in Soil from Area PA1

| HTD Radionuclide | PA1-D1-04 <sup>a</sup>  |                           |
|------------------|-------------------------|---------------------------|
|                  | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| Am-241           | -9.2 E-02               | 2.0 E+00                  |
| Cm-242           | -3.9 E-02               | 1.4 E+00                  |
| I-129            | -8.0 E-01               | 3.4 E+00                  |
| Pu-241           | 2.9 E+01                | 1.5 E+02                  |
| Tc-99            | 2.5 E+01                | 1.2 E+02                  |
| H-3              | 4.5 E+01                | 1.7 E+02                  |
| C-14             | -3.5 E-01               | 2.5 E+01                  |
| Pu-238           | 5.4 E-01                | 1.4 E+00                  |
| Pu-239/240       | 9.7 E-01                | 1.4 E+00                  |
| Np-237           | 8.2 E-02                | 1.2 E+00                  |
| Sr-90            | 1.5 E-01                | 9.1 E-01                  |
| Ni-63            | -5.2 E+02               | 7.1 E+02                  |

<sup>a</sup> Reported values and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

## 6.2 AREA PA2

Environmental area PA2 consists of the southwest area inside the PA fence and encompasses approximately 11,300 m<sup>2</sup>. This area is covered with gravel and crushed stone; however, there are also small areas covered by concrete. During plant operating years, sealand containers were staged along the south fence line, opposite to the south side of the Radwaste Processing Building. In addition, the southwest corner of area PA2 was the site of a decontamination facility erected to support the 2006 steam generator (SG) replacement project. A detailed discussion of historical use of radioactive materials within area PA2 is provided in the HSA. Given that history, if residual radioactive soil contamination is present, the potential ROCs would include those associated with radioactive waste streams, such as DAW.

The limited characterization survey for area PA2 included several area gamma scans. The gamma scan paths are shown on the annotated field map for PA2 provided in Appendix A. The gamma scans conducted in area PA2 did not identify any radiation levels that exceeded ambient background levels in area PA2.

The limited characterization survey also included the collection of soil samples at the following locations:

- historical sealand container staging areas,
- the area surrounding the remaining concrete base for the SG decontamination facility,
- the bottom of the ramp adjacent to the Auxiliary Building and Containment,
- in front of the south rollup door to the Radwaste Processing Building, and
- in the east area of PA2.

Figure 6.2 shows the sampling locations inside area PA2.

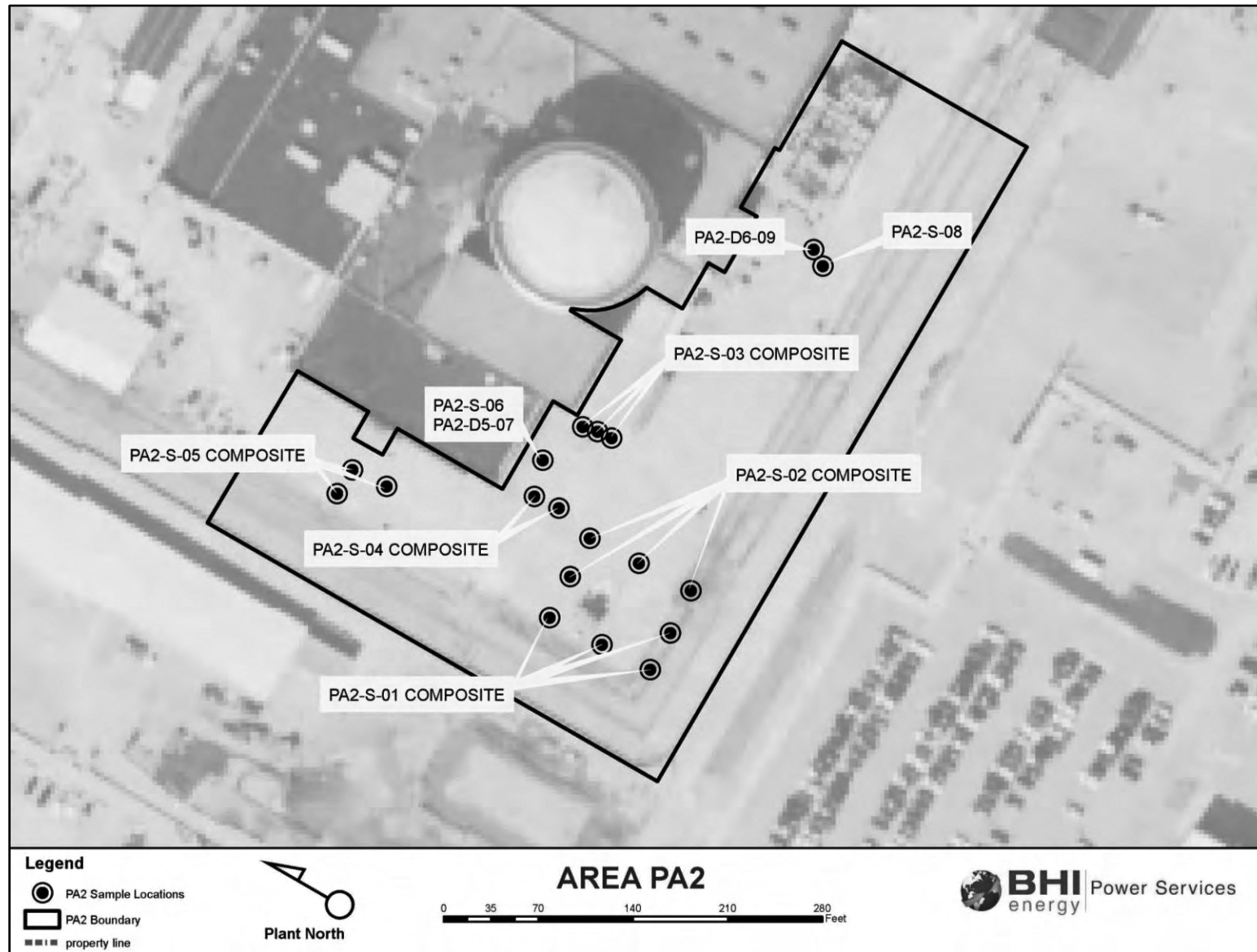
Nine soil samples were collected in area PA2: 2 surface soil samples, 5 composite surface soil samples, and 2 sub-surface soil samples. Prior to transfer a contracted laboratory, FCS RP personnel screened each PA2 soil sample for plant-related gamma-emitting radionuclides; none was identified. Sample integrity during transfer to the contracted laboratory was ensured through use a CoC form. Copies of the CoC forms are provided in Appendix D.

The contracted laboratory performed gamma analysis on each sample. In addition, the sample collected at locations PA2-S-06 and PA2-D5-07 were submitted for analyses to assess the potential present of HTD beta-emitting radionuclides and TRUs.

Laboratory analyses of soil samples from PA2 did not identify concentrations of plant-related ROCs that would require remediation or special consideration during decommissioning. One soil sample showed positive results for plant-related radioactivity. The gamma analysis for sample PA2-S-03 identified Cs-137 at a concentration approximately equal to 0.2 pCi/g, which represents a small percentage (i.e., <2%) of the NRC screening value for Cs-137 (11 pCi/g) published in NUREG 1757, *Consolidated Decommissioning Guidance*, and is well below any concentration that would require remediation or special consideration during decommissioning. The reported results for all other plat-related gamma-emitting ROCs were below the *a posteriori* MDC values achieved in the analyses. The gamma scans conducted in area PA2, which did not identify any area of elevated radioactivity, support the laboratory data. In addition, the reported concentrations of HTD beta-emitting ROCs in the soil from area PA2 were below the *a posteriori* MDC values achieved during analyses. Table 6.2-1 provides a summary of the results of gamma analyses for soil samples, and Table 6.2-2 provides the results for HTD radionuclides.

**Conclusion:** Results of the limited characterization efforts conducted in area PA2 did not identify any radiological issue that would warrant special consideration during decommissioning planning. Although insufficient for use as the release basis for the area, the limited radiological data collected for area PA2 under this project will support the development of a subsequent MARSSIM characterization survey and final status survey.





**Figure 6.2 Soil Sampling Locations within Environmental Area PA2**

Table 6.2-1 Summary of Gamma Analysis Results for Soil Samples Collected in Area PA2

| Location Code | Cs-137 <sup>a</sup>     |                           |
|---------------|-------------------------|---------------------------|
|               | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| PA2-S-01      | 5.4 E-02                | 6.2 E-02                  |
| PA2-S-02      | -2.9 E-03               | 6.5 E-02                  |
| PA2-S-03      | 1.7 E-01                | 6.5 E-02                  |
| PA2-S-04      | 3.1 E-02                | 6.4 E-02                  |
| PA2-S-05      | 4.2 E-02                | 6.3 E-02                  |
| PA2-S-06      | 2.7 E-02                | 6.7 E-02                  |
| PA2-D6-07     | -1.0 E-02               | 6.3 E-02                  |
| PA2-S-08      | -1.1 E-02               | 6.9 E-02                  |
| PA2-D6-09     | 5.7 E-03                | 7.5 E-02                  |

<sup>a</sup> Reported values from gamma analysis and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

Note: Results for Cs-137 are shown as the expected primary ROC. However, it is important to note that no other plant-related gamma emitting radionuclides were identified by gamma spectroscopy analysis.

Table 6.2-2 Summary of Results for HTD Radionuclides in Soil from Area PA2

| HTD<br>Radionuclide | PA2-S-06 <sup>a</sup>      |                           | PA2-D6-07 <sup>a</sup>     |                           |
|---------------------|----------------------------|---------------------------|----------------------------|---------------------------|
|                     | Reported<br>Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g | Reported<br>Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| Am-241              | 2.5 E-01                   | 2.0 E+00                  | 2.2 E-01                   | 1.0 E+00                  |
| Cm-242              | 0.0 E+00                   | 8.7 E-01                  | 2.5 E-01                   | 1.2 E+00                  |
| I-129               | -5.7 E-01                  | 1.1 E+01                  | 0.0 E+00                   | 4.0 E+00                  |
| Pu-241              | -1.3 E+01                  | 1.7 E+02                  | -7.7 E+01                  | 2.2 E+02                  |
| Tc-99               | -1.5 E+01                  | 7.3 E+01                  | 3.1 E+00                   | 2.4 E+01                  |
| H-3                 | -2.0 E+00                  | 2.9 E+02                  | 8.2 E+01                   | 2.4 E+02                  |
| C-14                | 5.4 E+00                   | 2.3 E+01                  | 5.3 E+00                   | 1.9 E+01                  |
| Pu-238              | 9.0 E-01                   | 1.7 E+00                  | -3.5 E-02                  | 1.2 E+00                  |
| Pu-239/240          | 6.9 E-02                   | 1.5 E+00                  | 5.1 E-01                   | 1.4 E+00                  |
| Np-237              | -1.6 E-01                  | 1.3 E+00                  | 8.6 E-03                   | 1.4 E+00                  |
| Sr-90               | 7.0 E-01                   | 8.9 E-01                  | 5.5 E-01                   | 1.2 E+00                  |
| Ni-63               | -9.5 E+01                  | 4.0 E+02                  | -2.6 E+02                  | 6.7 E+02                  |

<sup>a</sup> Reported values and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

### 6.3 AREA PA3

Environmental area PA3 consists of the east area inside the PA fence and encompasses approximately 7,740 m<sup>2</sup>. A large portion of this area is covered with concrete; however, there are small areas of gravel adjacent to the Service Building open as a direct path to the soil. Unlike areas PA1 and PA2, area PA3 was not used for staging containers holding radioactive materials, and no significant radiological event was recorded in area PA3. However, there are underground pipes associated with the Discharge Structure and liquid effluent release path. If residual radioactive soil contamination is present, the potential ROCs would include those associated with liquid effluent.

The limited characterization survey for area PA3 included several area gamma scans. The gamma scan paths are shown on the annotated field maps for PA3 provided in Appendix A. The gamma scans conducted in PA3 did not identify any radiation levels that exceeded ambient background levels in area PA3.

The limited characterization survey also included the collection of soil samples at the following locations:

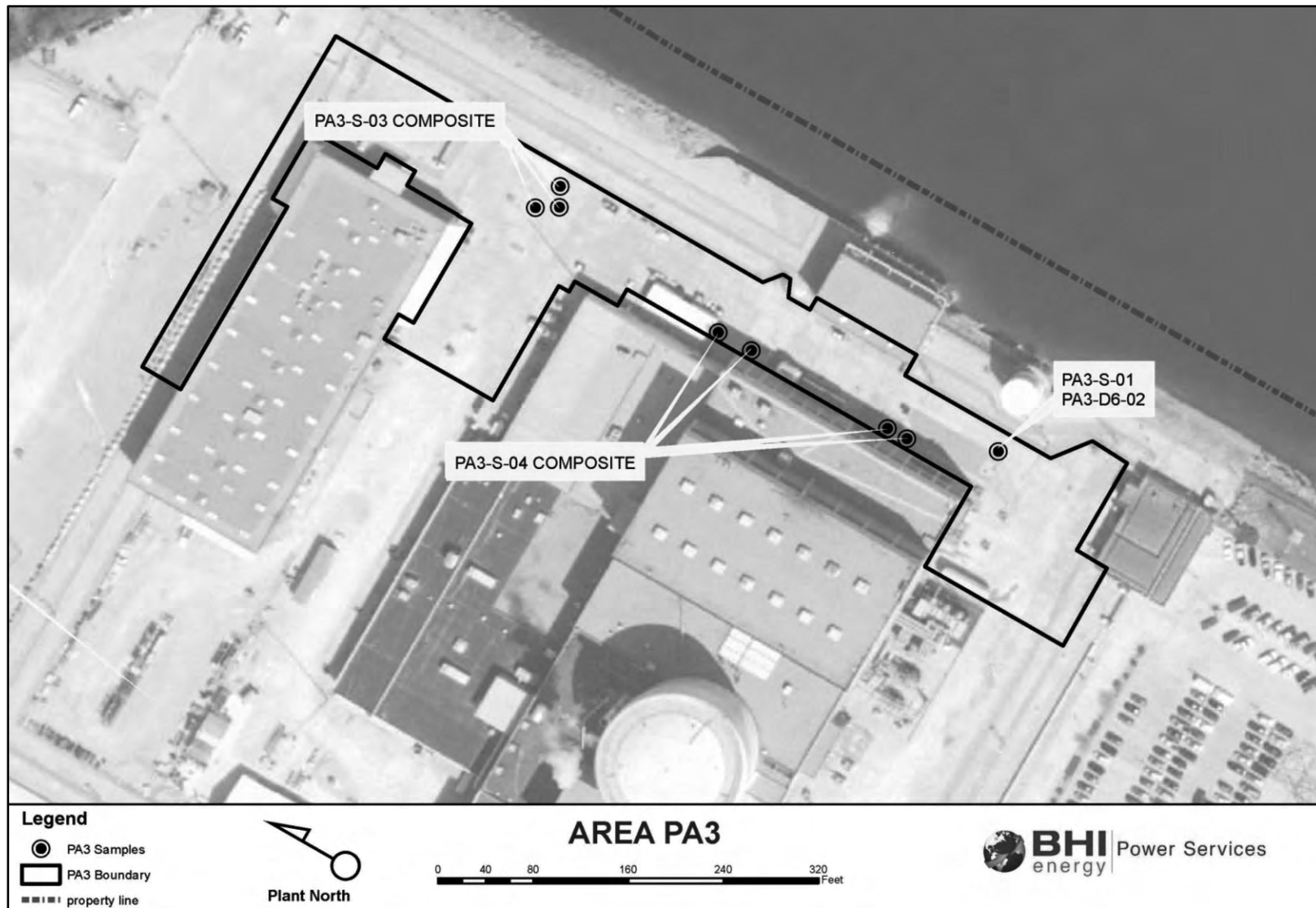
- seams/breaks present in the concrete in the north end of PA3,
- direct paths to soil through the gravel-covered areas adjacent to walkway in front of the Maintenance Building and Service Building, and
- in the vicinity of the excavation and inspection of the Discharge Line near the Intake Structure.

Figure 6.3 shows the sampling locations inside area PA3.

Four soil samples were collected in area PA3: 1 surface soil sample, 2 composite samples of surface soil, and 1 sub-surface soil sample. FCS RP personnel screened the PA3 soil samples for plant-related gamma-emitting radionuclides prior to release for transfer to the contracted laboratory. Sample integrity during transfer to the contracted laboratory was ensured through use of a CoC form. Copies of the CoC forms are provided in Appendix D.

Laboratory analyses of soil samples from PA3 did not identify concentrations of plant-related ROCs that would require remediation or special consideration during decommissioning. One soil sample showed positive results for plant-related radioactivity. The gamma analysis for sample PA3-S-04 identified Cs-137 at a concentration approximately equal to 0.1 pCi/g, which represents a small percentage (i.e., <1%) of the NRC screening value for Cs-137 (11 pCi/g) published in NUREG 1757 and is well below any concentration that would require remediation or special consideration during decommissioning. The reported results for all other plant-related gamma-emitting ROCs were below the *a posteriori* MDC values achieved in the analyses. The gamma scans conducted in area PA3, which did not identify any area of elevated radioactivity, support the laboratory data. In addition, the reported concentrations for HTD beta-emitting ROCs in the soil from area PA3 were below the *a posteriori* MDC values. Table 6.3-1 provides a summary of the results of gamma analyses for soil samples, and Table 6.3-2 provides the results for HTD radionuclides.

**Conclusion:** Results of the limited characterization efforts conducted in area PA3 did not identify any radiological issue that would warrant special consideration during decommissioning planning. Although insufficient for use as the release basis for the area, the limited radiological data collected for area PA3 will support the development of a subsequent MARSSIM characterization survey and final status survey.



**Figure 6.3** Soil Sampling Locations within Environmental Area PA3

**Table 6.3-1 Summary of Gamma Analysis Results for Soil Samples Collected in Area PA3**

| Location Code | Cs-137 <sup>a</sup>     |                           |
|---------------|-------------------------|---------------------------|
|               | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| PA3-S-01      | -1.6 E-02               | 7.6 E-02                  |
| PA3-D6-02     | -3.3 E-04               | 8.1 E-02                  |
| PA3-S-03      | 1.1 E-02                | 6.5 E-02                  |
| PA3-S-04      | 9.8 E-02                | 6.2 E-02                  |

<sup>a</sup> Reported values from gamma analysis and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

Note: Results for Cs-137 are shown as the expected primary ROC. However, it is important to note that no other plant-related gamma emitting radionuclides were identified by gamma spectroscopy analysis.

**Table 6.3-2 Summary of Results for HTD Radionuclides in Soil from Area PA3**

| HTD Radionuclide | PA3-S-04 <sup>a</sup>   |                           |
|------------------|-------------------------|---------------------------|
|                  | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| Am-241           | -2.2 E-02               | 7.7 E-01                  |
| Cm-242           | 0.0 E+00                | 6.2 E-01                  |
| I-129            | -4.5 E-01               | 7.7 E+00                  |
| Pu-241           | -7.3 E+00               | 1.8 E+02                  |
| Tc-99            | 2.2 E+01                | 5.3 E+01                  |
| H-3              | 2.1 E+00                | 2.7 E+02                  |
| C-14             | -2.4 E+00               | 2.8 E+01                  |
| Pu-238           | 5.5 E-01                | 1.4 E+00                  |
| Pu-239/240       | 5.5 E-01                | 1.4 E+00                  |
| Np-237           | -1.7 E-02               | 1.4 E+00                  |
| Sr-90            | 3.4 E-01                | 1.1 E+00                  |
| Ni-63            | -5.1E+02                | 7.3E+02                   |

<sup>a</sup> Reported values and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

#### 6.4 AREA OLA1

Environmental area OLA1 includes the area outside the north and west PA fence and encompasses approximately 67,600 m<sup>2</sup>. Most of this region of the site covered with gravel, crushed stone, and engineering fill material brought in to support heavy-haul route construction. The north end of the area between the PA west fence and the Switchyard was used as a staging area for sealand containers holding radioactive materials, including containers of uranium hexafluoride in the early years. RMAs were established historically inside the Old Warehouse and as of this report, still exist within the building. The Old Warehouse has a history of flooding events during which water from inside the building drained to the outside environs. The south part of OLA1 was also used as a travel path for steam generator components transferred to the mausoleum after decontamination within the PA.

The limited characterization survey for area OLA1 included several area gamma scans, including scans around the perimeter of the Old Warehouse and the haul routes to the ISFSI and the mausoleum. With the exception of observing elevated radiation levels at mid-wall height on the east wall of the Old Warehouse (due to radioactive material stored in an RMA inside the Old Warehouse), the gamma scans conducted in area OLA1 did not identify any radiation levels that exceeded ambient background levels in area OLA1. The gamma scan paths are shown on the annotated field maps for OLA1 provided in Appendix A.

The limited characterization survey also included the collection of soil samples at the following locations:

- Run-off flow path from the roll up door on the west side of the Old Warehouse,
- In front of the door on the east side of the Old Warehouse,
- The drainage ditch receiving storm water from the PA and at the junction of the storm water drainage from the PA and the storm water drainage from the east area of OLA1,
- The west side of the heavy haul route (at top of slope to the drainage ditch), and
- Between two chemical storage sheds located approximately 30 feet west of the Old Warehouse.

Figure 6.4 shows the sampling locations inside area OLA1.

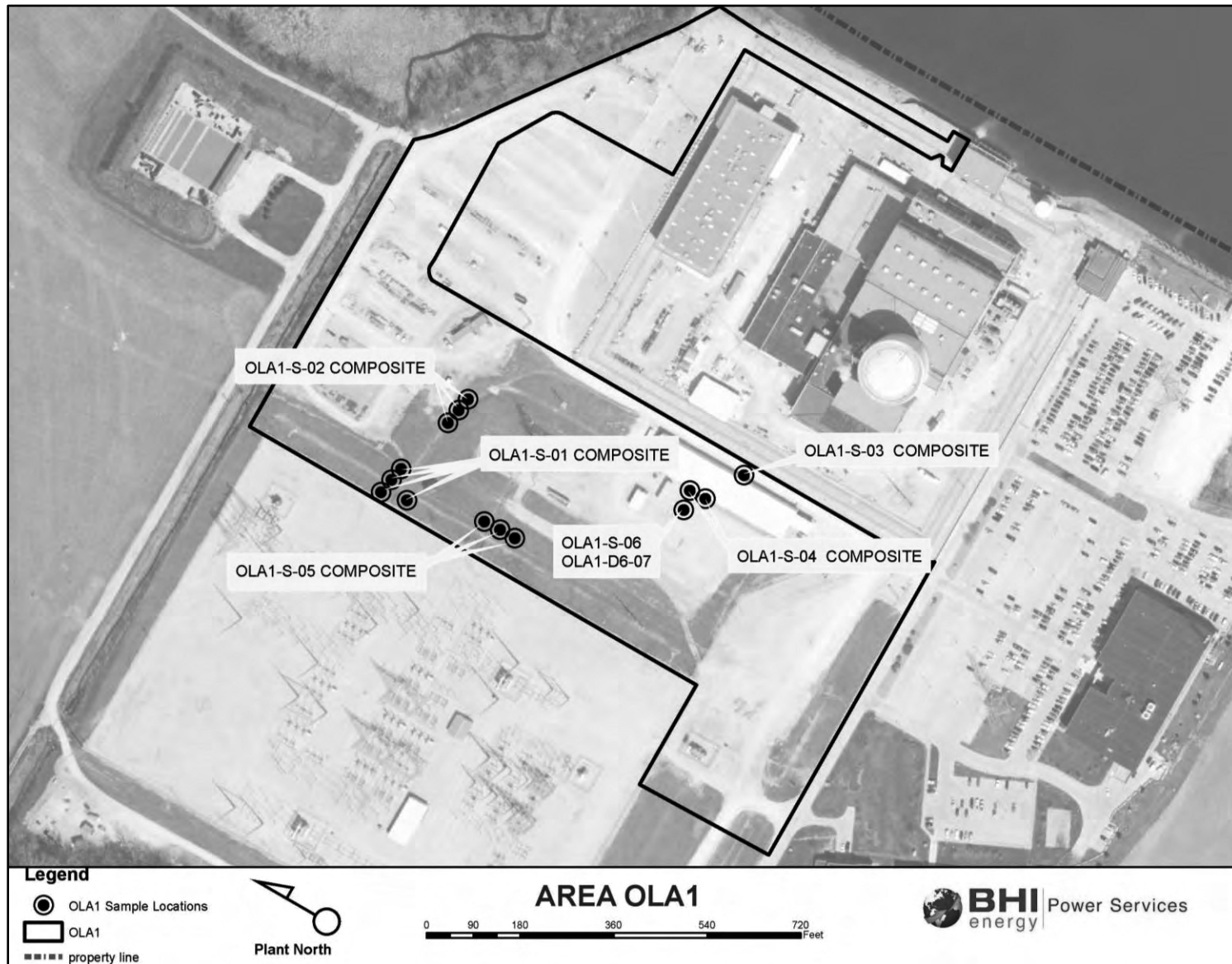
Seven soil samples were collected in area OLA1: 1 surface soil sample, 5 composite samples of surface soil, and 1 sub-surface soil sample. Sample integrity during transfer to the contracted laboratory was ensured through use a CoC form. Copies of the CoC forms are provided in Appendix D.

The contracted laboratory performed gamma analysis on each sample. Laboratory analyses of soil samples from PA3 did not identify concentrations of plant-related ROCs that would require remediation or special consideration during decommissioning. Only one soil sample showed positive results for plant-related radioactivity. Gamma analysis of sample OLA1-S-06 identified Cs-137 at a concentration approximately equal to 0.2 pCi/g, which represents a small percentage (i.e., <2%) of the NRC screening value for Cs-137 (11 pCi/g) published in NUREG 1757, and is well below any concentration that would require remediation or special consideration during decommissioning. All other reported gamma analysis results were below the *a posteriori* MDC values achieved in the analyses. With the gamma scan exception noted above, the gamma scans conducted in area OLA1 support the laboratory data. Table 6.4 provides a summary of the results of gamma analyses for soil samples. Analyses for HTD radionuclides were not performed on samples from this area.

**Conclusion:** Results of the limited characterization efforts conducted in area OLA1 did not identify any radiological concerns that would warrant special consideration during decommissioning planning.

Although insufficient for use as the release basis for area OLA1, the collected data will support development of subsequent characterization surveys and MARSSIM final status surveys.





**Figure 6.4** Soil Sampling Locations within Environmental Area OLA1

Table 6.4-1 Summary of Gamma Analysis Results for Soil Samples Collected in Area OLA1

| Location Code | Cs-137 <sup>a</sup>     |                           |
|---------------|-------------------------|---------------------------|
|               | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| OLA1-S-01     | 3.1 E-02                | 9.1 E-02                  |
| OLA1-S-02     | 2.3 E-02                | 6.1 E-02                  |
| OLA1-S-03     | 5.9 E-03                | 7.7 E-02                  |
| OLA1-S-04     | 2.5 E-02                | 6.4 E-02                  |
| OLA1-S-05     | 1.2 E-02                | 8.2 E-02                  |
| OLA1-S-06     | 2.3 E-01                | 6.0 E-02                  |
| OLA1-D6-07    | 0.0 E+00                | 4.6 E-02                  |

<sup>a</sup> Reported values from gamma analysis and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

Note: Results for Cs-137 are shown as the expected primary ROC. However, it is important to note that no other plant-related gamma emitting radionuclides were identified by gamma spectroscopy analysis.

## 6.5 AREA OLA2

Environmental area OLA2 includes an area within the Switchyard fence that was outside the berm built to protect the Switchyard during the 2011 flood. It encompasses approximately 29,300 m<sup>2</sup>. There is no history of use or storage of radioactive materials in area OLA2. However, area OLA2 is identified as an impacted area solely because of the potential for cross-contamination resulting from the flood and recovery efforts. Any residual contamination, if present in area OLA2, is not expected to exceed a small fraction of 10CFR20.1402 radiological criteria for unrestricted use.

The limited characterization survey for area OLA2 included several area gamma scans that focused on the east side of the OLA2, which is where 2011 flood waters travelling from the PA potentially transported licensed radioactivity to the closest eastern edge of the berm protecting the switchyard. The gamma scans conducted along the length of the east boundary of area OLA2 did not identify any radiation level that exceeded the ambient background level in the area. The gamma scan paths are shown on the annotated field map for OLA2 provided in Appendix A.

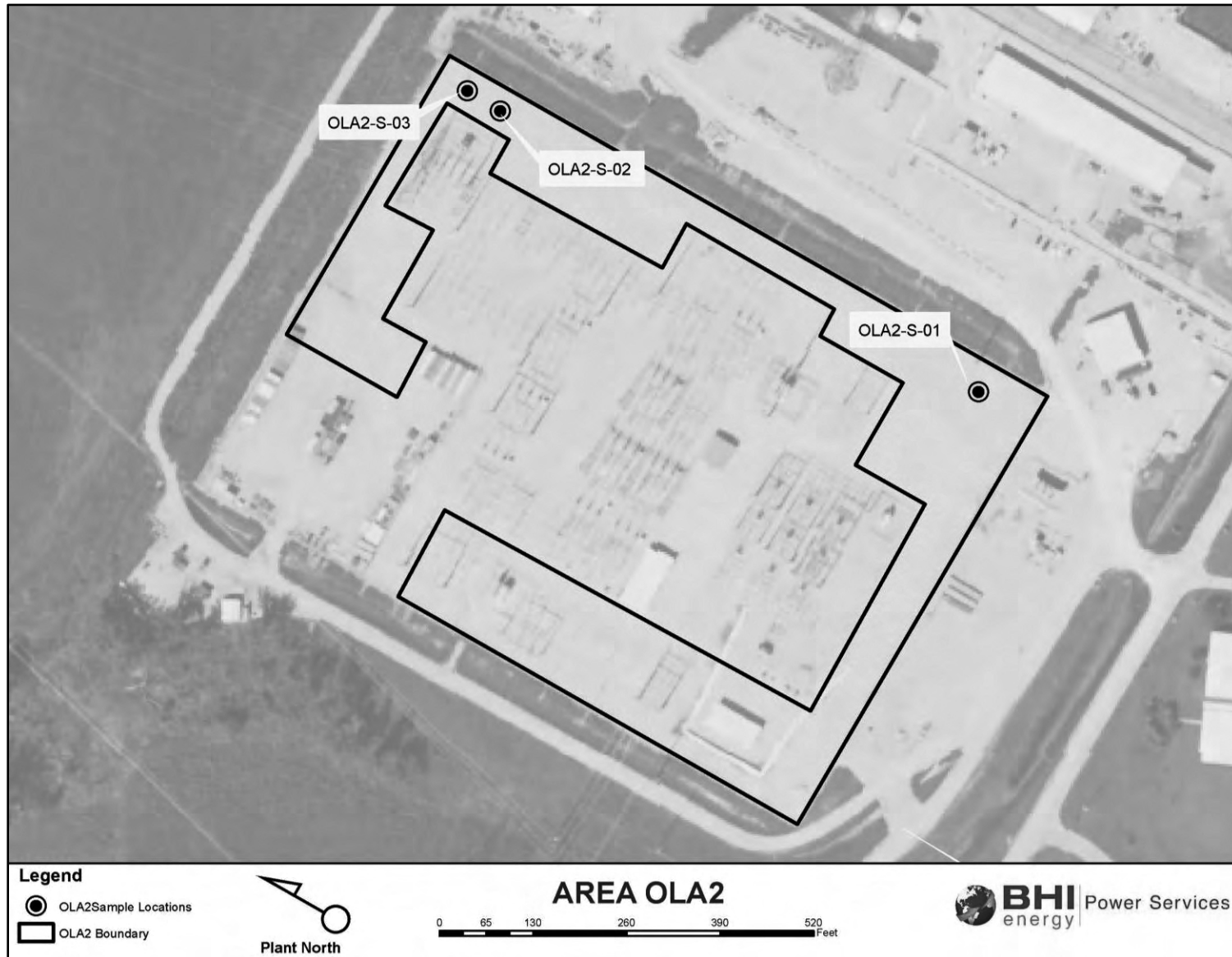
The limited characterization survey also included the collection of 3 soil samples at the following locations:

- Southeast corner of OLA2,
- Northeast corner of OLA2, and
- The storm drain located approximately 20 feet north of OLA2-S-02 sample location in the northeast corner.

Figure 6.5 shows the sampling locations inside area OLA2. Sample integrity during transfer to the contracted laboratory was ensured through use a CoC form. Copies of the CoC forms are provided in Appendix D.

The contracted laboratory performed gamma analysis on each sample. Laboratory analyses of soil samples from OLA2 did not identify concentrations of plant-related ROCs that would require remediation or special consideration during decommissioning. All reported gamma analysis results were below the *a posteriori* MDC values achieved in the analyses. The gamma scans conducted in area OLA2, which did not identify any area of elevated radioactivity, support the laboratory data. Table 6.5 provides a summary of the results of gamma analyses for soil samples.

**Conclusion:** Results of the limited characterization efforts conducted in area OLA2 did not identify any radiological issue that would warrant special consideration during decommissioning planning. Although insufficient for use as the release basis for area OLA2, the collected data will support development of subsequent characterization surveys and MARSSIM final status surveys.



**Figure 6.5 Soil Sampling Locations within Environmental Area OLA2**

Table 6.5 Summary of Gamma Analysis Results for Soil Samples Collected in Area OLA2

| Location Code | Cs-137 <sup>a</sup>     |                           |
|---------------|-------------------------|---------------------------|
|               | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| OLA2-S-01     | 2.8 E-02                | 3.8 E-02                  |
| OLA2-S-02     | 3.6 E-02                | 5.5 E-02                  |
| OLA2-S-03     | 1.4 E-02                | 5.6 E-02                  |

<sup>a</sup> Reported values from gamma analysis and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

Note: Results for Cs-137 are shown as the expected primary ROC. However, it is important to note that no other plant-related gamma emitting radionuclides were identified by gamma spectroscopy analysis.

## 6.6 AREA OLA3

Environmental area OLA3 is approximately 38,500 m<sup>2</sup> in size and includes a portion of Fish Creek, which runs west to east along the northern boundary, discharging to the Missouri River. Gravel and crushed stone covers most of OLA3; however, the road network in the southern portions of OLA3 includes engineering fill material brought in when the heavy-haul routes were constructed. Sealand containers housing outage equipment and materials were staged in the northwest corner of the switchyard area. Area OLA3 also includes the travel path to the mausoleum, which is the structure that houses the old steam generators and related components removed in 2006.

The characterization survey for area OLA3 included gamma scans on the west and south road network, the open area in front of the mausoleum, and banks of Fish Creek. The gamma scans did not identify any radiation level that exceeded the ambient background level in the area. The gamma scan paths are shown on the annotated field maps for OLA3 provided in Appendix A.

The limited characterization survey also included the collection of soil samples at the following locations:

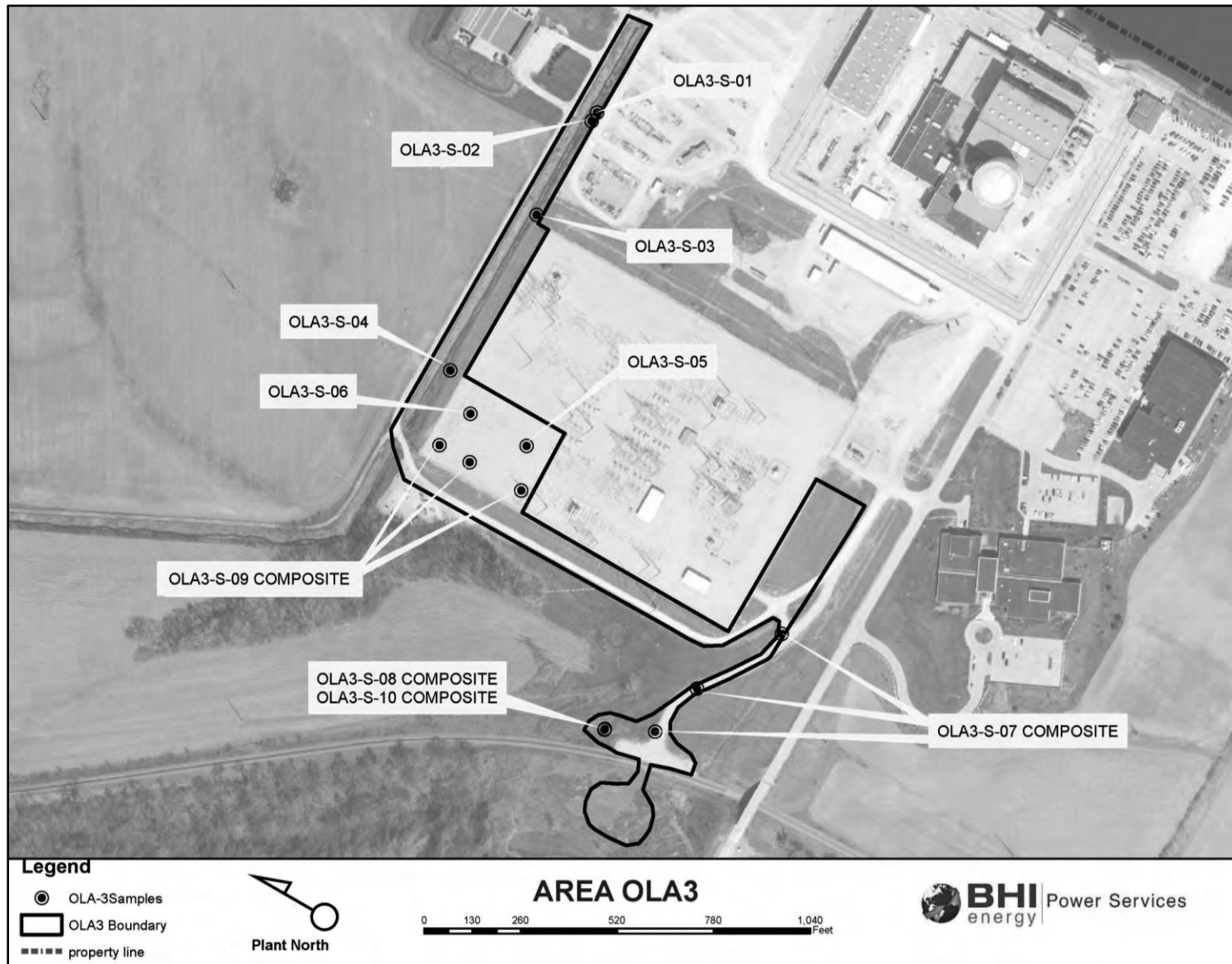
- West end of Fish Creek,
- Mid-point of the portion of Fish Creek within OLA3,
- East end of Fish Creek,
- Storm drain outfall at the east end of Fish Creek
- Container storage area at the northwest corner of the switchyard,
- Route to the mausoleum, and
- Sand piles located near the mausoleum.

Figure 6.6 shows the sampling locations inside area OLA3.

Ten soil samples were collected in area OLA3: 4 surface soil samples from the Fish Creek area, 2 surface soil samples and 1 composite surface sample from the container staging area in the northwest corner of the switchyard, 1 composite surface soil sample from the haul route to the mausoleum, and 2 composite soil samples from the sand piles located near the mausoleum. Sample integrity during transfer to the contracted laboratory was ensured through use of a CoC form. Copies of the CoC forms are provided in Appendix D.

The contracted laboratory performed gamma analysis on each sample. One soil sample showed positive results for plant-related radioactivity. Gamma analysis of sample OLA3-S-04 identified Cs-137 at a concentration approximately equal to 0.1 pCi/g, which represents a small percentage (i.e., <1%) of the NRC screening value for Cs-137 (11 pCi/g) published in NUREG 1757, and is well below any concentration that would require remediation or special consideration during decommissioning. All other reported gamma analysis results were below the *a posteriori* MDC values achieved in the analyses. The gamma scans conducted in area OLA3, which did not identify any area of elevated radioactivity, support the laboratory data. Table 6.6 provides a summary of the results of gamma analyses for soil samples.

**Conclusion:** Results of the limited characterization efforts conducted in area OLA3 did not identify any radiological issue that would warrant special consideration during decommissioning planning. Although insufficient for use as the release basis for area OLA3, the collected data will support development of subsequent characterization surveys and MARSSIM final status surveys.



**Figure 6.6** Soil Sampling Locations within Environmental Area OLA3

Table 6.6 Summary of Gamma Analysis Results for Soil Samples Collected in Area OLA3

| Location Code | Cs-137 <sup>a</sup>     |                           |
|---------------|-------------------------|---------------------------|
|               | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| OLA3-S-01     | 5.8 E-02                | 1.2 E-01                  |
| OLA3-S-02     | -9.4 E-04               | 6.3 E-02                  |
| OLA3-S-03     | 3.4 E-02                | 1.1 E-01                  |
| OLA3-S-04     | 1.2 E-01                | 7.5 E-02                  |
| OLA3-S-05     | 3.5 E-02                | 8.5 E-02                  |
| OLA3-S-06     | 9.5 E-03                | 5.9 E-02                  |
| OLA3-S-07     | 2.6 E-03                | 6.3 E-02                  |
| OLA3-S-08     | -5.4 E-03               | 4.3 E-02                  |
| OLA3-S-09     | 4.8 E-04                | 4.0 E-02                  |
| OLA3-S-10     | -2.0 E-03               | 4.4 E-02                  |

<sup>a</sup> Reported values from gamma analysis and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

Note: Results for Cs-137 are shown as the expected primary ROC. However, it is important to note that no other plant-related gamma emitting radionuclides were identified by gamma spectroscopy analysis.



### 6.7 AREA OLA4

Environmental area OLA4 encompasses approximately 109,000 m<sup>2</sup> and consists of grassy areas and parking lots surrounding the Training Building and the Administration Building, as well as the old west sanitary lagoon. This region of the site is covered with gravel, crushed stone, asphalt pavement, concrete walks, and grass covered soil. The old Chemical Pump House and Chemistry Mix Basin were located at the river's edge in the northeast section of OLA4. These structures were associated with river water processing; no radioactive materials were involved in the processing.

The characterization survey for area OLA4 included gamma scans in the north, east, and southwest sections of OLA4. The gamma scans did not identify any radiation level that exceeded the ambient background level in the area. The gamma scan paths are shown on the annotated field maps for OLA4 provided in Appendix A.

The limited characterization survey also included the collection of 3 soil samples at the following locations:

- Storm drain located east of the Training Building (surface soil), and
- In area of the now closed old west sanitary lagoon (surface and sub-surface soil).

Figure 6.7 shows the sampling locations inside area OLA4. The integrity of the soil samples was ensured during transfer to the contracted laboratory by the use of a CoC form. Copies of the CoC forms are provided in Appendix D.

The contracted laboratory performed gamma analysis on each sample. One soil sample showed positive results for plant-related radioactivity. Gamma analysis of sample OLA4-D3-03, collected from the old west sanitary lagoon area, identified Cs-137 at a concentration approximately equal to 0.07 pCi/g. However, that concentration represents a small percentage (i.e., <0.7%) of the NRC screening value for Cs-137 (11 pCi/g) published in NUREG 1757, and is well below any concentration that would require remediation or special consideration during decommissioning. All other reported gamma analysis results were below the *a posteriori* MDC values achieved in the analyses. The gamma scans conducted in area OLA4, which did not identify any area of elevated radioactivity, support the laboratory data. Table 6.7 provides a summary of the results of gamma analyses for soil samples.

**Conclusion:** Results of the limited characterization efforts conducted in area OLA4 did not identify any radiological issue that would warrant special consideration during decommissioning planning. Although insufficient for use as the release basis for area OLA4, the collected data will support development of subsequent characterization surveys and MARSSIM final status surveys.

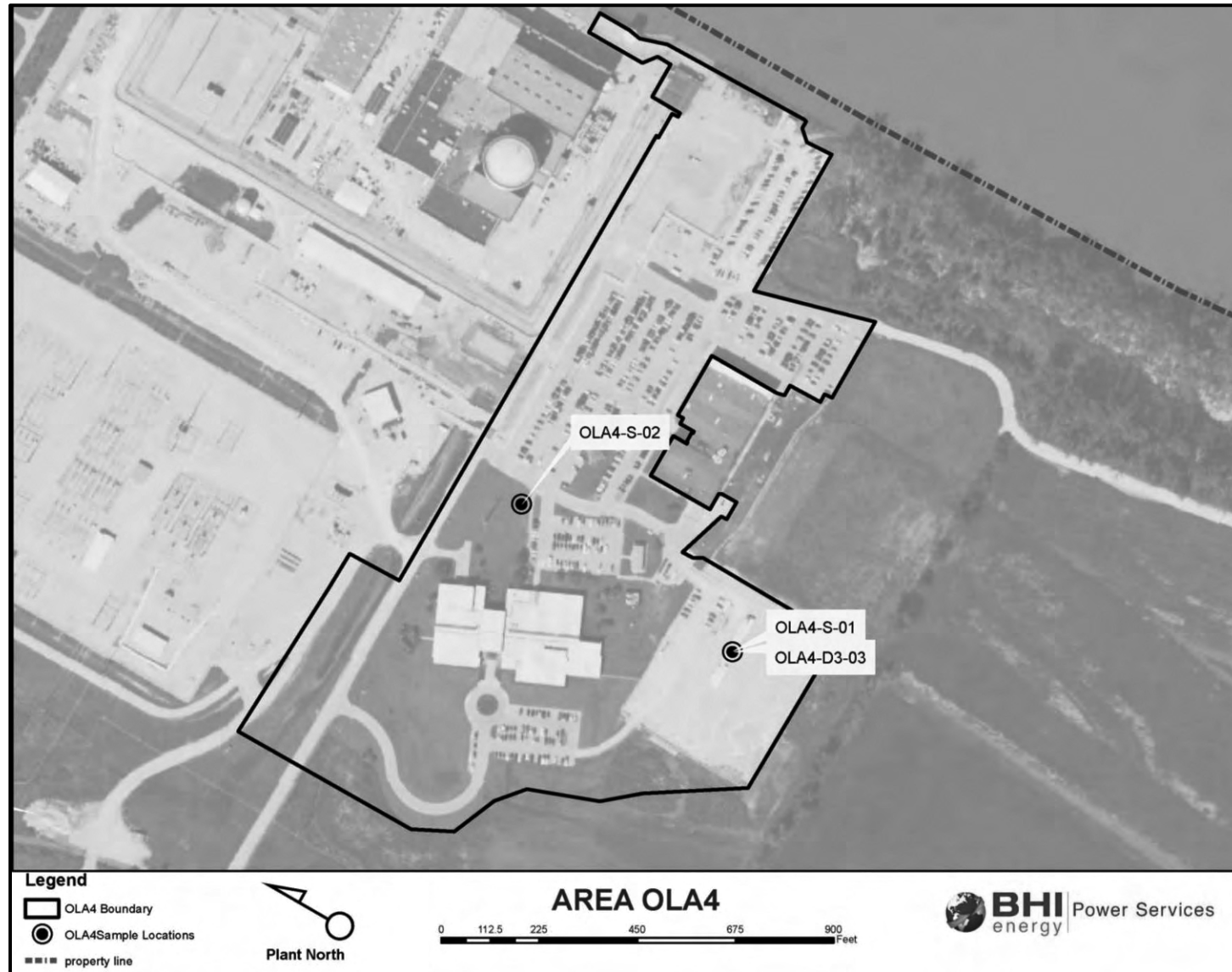


Figure 6.7 Soil Sampling Locations within Environmental Area OLA4

**Table 6.7 Summary of Gamma Analysis Results for Soil Samples Collected in Area OLA4**

| Location Code | Cs-137 <sup>a</sup>     |                           |
|---------------|-------------------------|---------------------------|
|               | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| OLA4-S-01     | 7.5 E-03                | 7.3 E-02                  |
| OLA4-S-02     | 2.6 E-02                | 8.2 E-02                  |
| OLA4-D3-03    | 7.1 E-02                | 5.2 E-02                  |

<sup>a</sup> Reported values from gamma analysis and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

Note: Results for Cs-137 are shown as the expected primary ROC. However, it is important to note that no other plant-related gamma emitting radionuclides were identified by gamma spectroscopy analysis.

## 6.8 AREA OLA5

Environmental Area OLA5 is on the southeast section of the site property and encompasses approximately 263,000 m<sup>2</sup>. Most of this region of the site covered with vegetative growth. OPPD leases a large portion of the area for use as agricultural land. A closed landfill that contains pre-operation construction debris and non-radioactive waste materials (e.g., resin) from the processing of river water is located in the northeast corner. The area within the northern portion of OLA5 is the site of the now closed old east sanitary lagoon. The new sanitary lagoons are located in the southeast section of OLA5. An application area is located to the west of the lagoons for disposal of lagoon water. Although detectable Cs-137 has been found in the sludge from these new lagoons, licensed radioactivity has not been detected in the lagoon water.

The characterization survey for area OLA5 included gamma scans in the local areas surrounding each soil sample location as well as walk-over gamma scan in the application area established for the lagoon water. The gamma scans did not identify any radiation levels that exceeded the observed ambient background levels in the area. The gamma scan paths are shown on the annotated field map for OLA5 provided in Appendix A.

The limited characterization survey also included the collection of soil samples at the following locations:

- Behind the Administration Building where trailers were located during the flood recovery effort,
- At a storm drain behind the Training Building where flood waters would have drained to, and
- Within the area of the now closed old east sanitary lagoon, and
- Within the lagoon water application area encompassing the crops in the southwest portion of OLA5.

Figure 6.8 shows the sampling locations inside area OLA5. Four soil samples were collected: 3 surface soils from the locations identified above and 1 sub-surface at the sample location in the old east sanitary lagoon area. The integrity of the soil samples was ensured during transfer to the contracted laboratory by the use a CoC form. Copies of the CoC forms are provided in Appendix D.

The contracted laboratory performed gamma analysis on each sample. Two soil samples showed positive results for plant-related radioactivity. Gamma analysis of sample OLA5-S-03, collected from the area where the flood recovery trailers were staged, identified Cs-137 at a concentration approximately equal to 0.2 pCi/g, and gamma analysis of sample OLA5-S-01, collected from the lagoon water application area, identified Cs-137 at a concentration approximately equal to 0.4 pCi/g. However, those concentrations represent small percentages (i.e., <2% and <4%, respectively) of the NRC screening value for Cs-137 (11 pCi/g) published in NUREG 1757, and are well below concentrations that would require remediation or special consideration during decommissioning. All other reported gamma analysis results were below the *a posteriori* MDC values achieved in the analyses. The gamma scans conducted in area OLA5, which did not identify any area of elevated radioactivity, support the laboratory data. Table 6.8 provides a summary of the results of gamma analyses for soil samples.

**Conclusion:** Results of the limited characterization efforts conducted in area OLA5 did not identify any radiological issue that would warrant special consideration during decommissioning planning. Although insufficient for use as the release basis for area OLA5, the collected data will support development of subsequent characterization surveys and MARSSIM final status surveys.



**Figure 6.8**

**Soil Sampling Locations within Environmental Area OLA5**

**Table 6.8 Summary of Gamma Analysis Results for Soil Samples Collected in Area OLA5**

| Location Code | Cs-137 <sup>a</sup>     |                           |
|---------------|-------------------------|---------------------------|
|               | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| OLA5-S-01     | 3.8 E-01                | 9.6 E-02                  |
| OLA5-S-02     | 0.0E+00                 | 7.0 E-02                  |
| OLA5-S-03     | 1.9 E-01                | 7.5 E-02                  |
| OLA5-D3-04    | 7.1 E-02                | 7.8 E-02                  |

<sup>a</sup> Reported values from gamma analysis and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

Note: Results for Cs-137 are shown as the expected primary ROC. However, it is important to note that no other plant-related gamma emitting radionuclides were identified by gamma spectroscopy analysis.

## 6.9 AREA OLA6

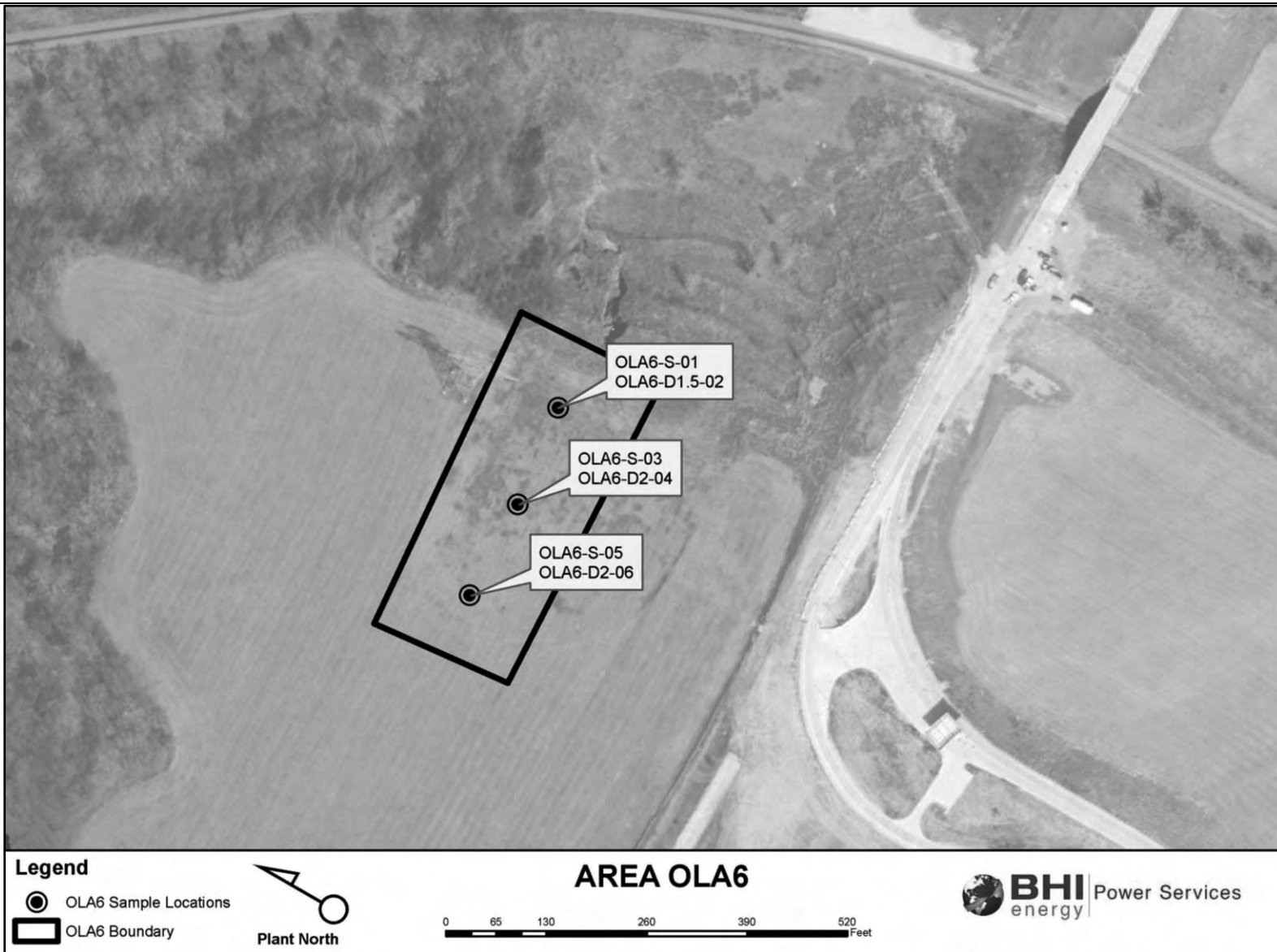
Environmental Area OLA6 is located on the hillside west of the Steam Generator Mausoleum and includes approximately 8,100 m<sup>2</sup>. Soil from OLA6 was excavated and used to build the berm that protected the Switchyard during the 2011 flood. Prior to use, the soil from OLA6 was radiologically clean because there was no historical use or storage of radioactive materials on the west hillside. When the Switchyard berm was removed during the flood recovery project, most of soil was returned to the west hillside from where it originated. Some of the berm soil was used as a base for the flood recovery trailers behind the Administration Building, which was subsequently returned to the west hillside when the flood recovery trailers were removed. In addition, silt and sandbags from parking lots and radiologically released silt and sand from the PA was placed in area OLA6 (post flood recovery).

The characterization survey for area OLA6 included gamma scans in the local areas surrounding each soil sample location. Each scanned area was approximately 100 ft<sup>2</sup>. The gamma scans did not identify any radiation levels that exceeded the observed ambient background levels in the area. The gamma scan paths are shown on the annotated field map for OLA6 provided in Appendix A.

Area OLA6 was visually divided into 3 sections of similar size, and 1 surface soil sample and 1 sub-surface soil sample were collected at the center of each section. Figure 6.9 shows the sampling locations inside area OLA6. The integrity of the soil samples was ensured during transfer to the contracted laboratory by the use a CoC form. Copies of the CoC forms are provided in Appendix D.

The contracted laboratory performed gamma analysis on each sample. Laboratory analyses of soil samples from OLA6 did not identify concentrations of plant-related ROCs that would require remediation or special consideration during decommissioning. All reported gamma analysis results were below the *a posteriori* MDC values achieved in the analyses. The gamma scans conducted around the sample locations did not identify elevated radioactivity, supporting the laboratory results. Table 6.9 provides a summary of the results of gamma analyses for soil samples.

**Conclusion:** Results of the limited characterization efforts conducted in area OLA6 did not identify any radiological issue that would warrant special consideration during decommissioning planning. Although insufficient for use as the release basis for area OLA6, the collected data will support development of subsequent characterization surveys and MARSSIM final status surveys.



**Figure 6.9 Soil Sampling Locations within Environmental Area OLA6**



Table 6.9 Summary of Gamma Analysis Results for Soil Samples Collected in Area OLA6

| Location Code | Cs-137 <sup>a</sup>     |                           |
|---------------|-------------------------|---------------------------|
|               | Reported Value<br>pCi/g | MDC <sup>b</sup><br>pCi/g |
| OLA6-S-01     | 2.4 E-02                | 8.3 E-02                  |
| OLA6-D1.5-02  | 6.7 E-03                | 7.6 E-02                  |
| OLA6-S-03     | 2.2 E-02                | 6.9 E-02                  |
| OLA6-D2-04    | 4.3 E-02                | 1.1 E-01                  |
| OLA6-S-05     | -3.7 E-02               | 8.7 E-02                  |
| OLA6-D2-06    | -2.1 E-02               | 6.3 E-02                  |

<sup>a</sup> Reported values from gamma analysis and the MDC values are rounded to two significant digits.

<sup>b</sup> Analysis *a posteriori* MDC value.

Note: Results for Cs-137 are shown as the expected primary ROC. However, it is important to note that no other plant-related gamma emitting radionuclides were identified by gamma spectroscopy analysis.

### SECTION 7 CONCLUSIONS

The following conclusions were reached based on the radiological data collected under the LRCP:

- The radiological data collected during the limited characterization survey support closure of data gaps associated with environmental (open land) areas at the Fort Calhoun site, as identified in the *Omaha Public Power District Fort Calhoun Station Historical Site Assessment*.
- Implementation of *Limited Radiological Characterization Survey Plan for Decommissioning of the Fort Calhoun Nuclear Power Station* met the DQOs established to ensure the quality of the collected data.
- The concentrations of plant-related gamma-emitting radionuclides in soil samples from the environmental areas of the FCS site were below the *a posteriori* MDC values and/or small fractions of the NRC screening levels published in NUREG 1757, which provides evidence that remediation or special consideration will not likely be required for the environmental areas during decommissioning planning.
- Similarly, measured concentrations of hard-to-detect beta-emitting radionuclides, such as strontium-90, in soil samples from the PA were below the *a posteriori* MDC values.
- The collected radiological data during the FCS limited site radiological surveys are insufficient for use as release basis for the impacted environmental areas.

**SECTION 8 RECOMMENDATIONS**

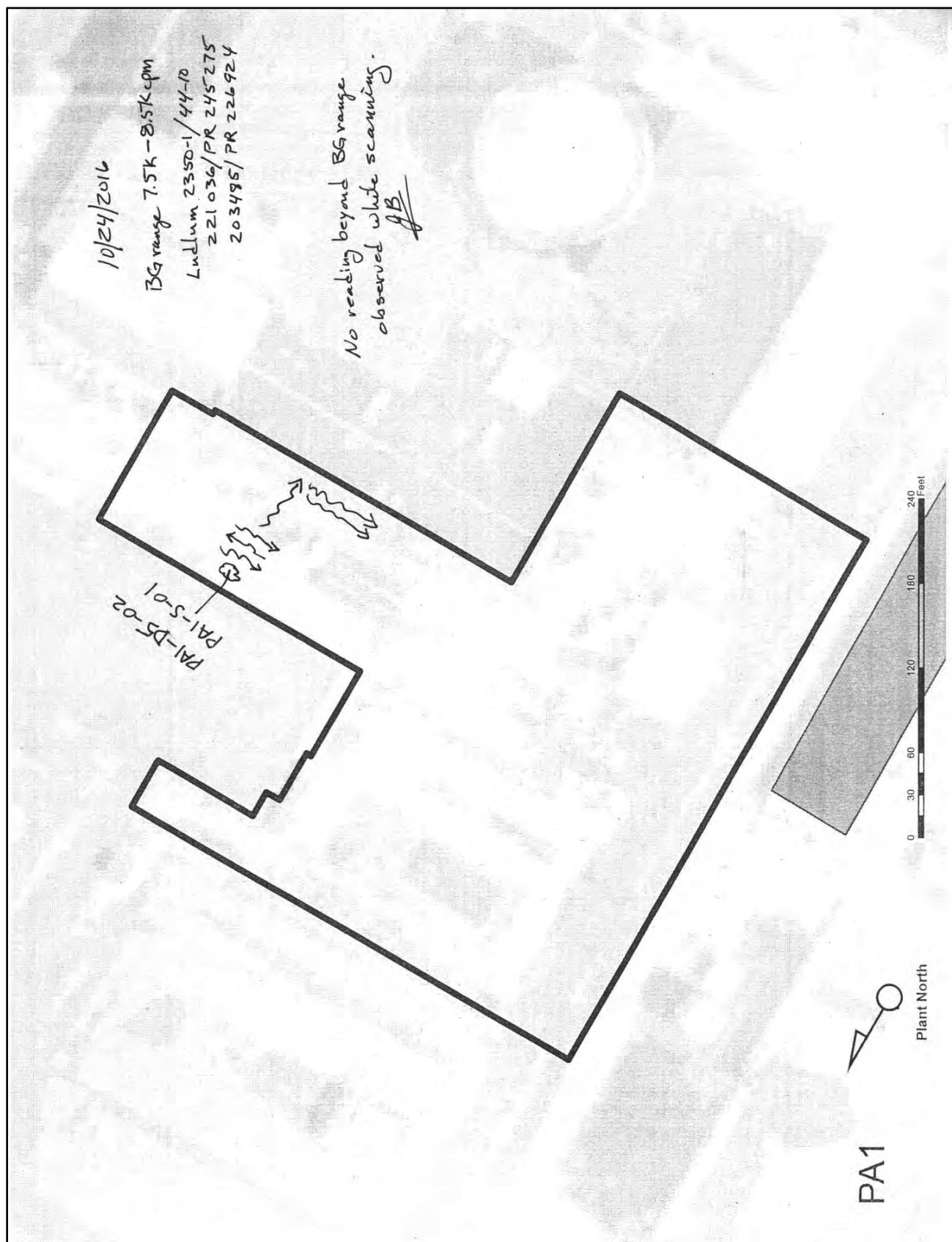
1. The scope of this survey effort focused on closing data gaps identified for each potentially impacted environmental area in the FCS HSA and identifying potential radiological conditions that would require special consideration during decommissioning planning. Given that limited scope, a MARSSIM characterization survey should be developed and implemented to document the current radiological conditions in each impacted environmental area. Implementation of MARSSIM characterization surveys would generate the statistical power necessary for FSS planning and increase confidence in a successful FSS program. Regardless of the decommissioning path selected by OPPD, this action would provide solid support for future FSS activities and license termination.
2. The limited scope of this project did not include the collection of sub-surface soil from under building foundations (e.g., Containment, SFP Building, Auxiliary Building, Radwaste Processing Building) or soil adjacent to underground systems, structures, and components (SSCs) containing radioactive materials (e.g., radioactive waste lines and sumps). Additional sub-surface sampling at, near, or under building foundations and buried SSCs would provide valuable data regarding the radiological status of site sub-surface soil, which, in turn, would further support decommissioning planning, FSS, and license termination.
3. The soil concentrations for ROCs identified by laboratory analyses of the soil sample collected during this project were assessed against the conservative NRC screening values published in NUREG-1757. However, per NUREG-1757, OPPD-FCS will likely fall into a decommissioning group required to perform site-specific dose modeling; therefore, OPPD-FCS will be expected to develop site-specific release criteria (i.e., site-specific derived concentration guideline levels (DCGLs)). Site-specific DCGL values, including a technical basis document to identify a site-specific suite of ROCs, can be developed during the early stages of decommissioning, would reduce much of the conservatism found in the NRC screening values, and support future decommissioning planning, FSS activities, and license termination planning.

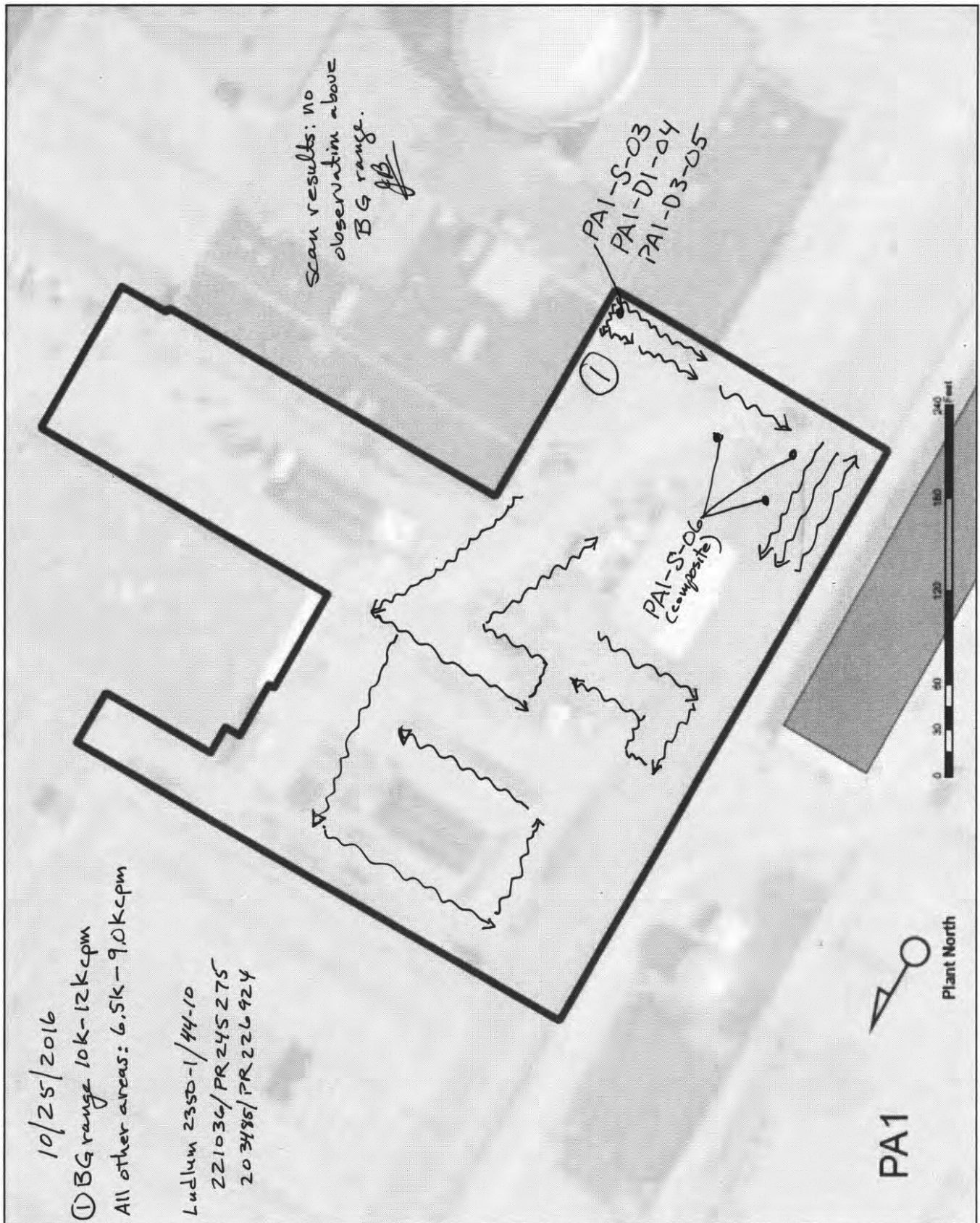
### SECTION 9 REFERENCES

1. *Omaha Public Power District Fort Calhoun Station Historical Site Assessment*, October 2016
2. NUREG-1575, *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)*, Revision 1, August 2000
3. *Limited Radiological Characterization Survey Plan for Decommissioning of the Fort Calhoun Nuclear Power Station*, October 2016
4. NUREG-1757, *Consolidated Decommissioning Guidance*, Vol. 1, Rev 2

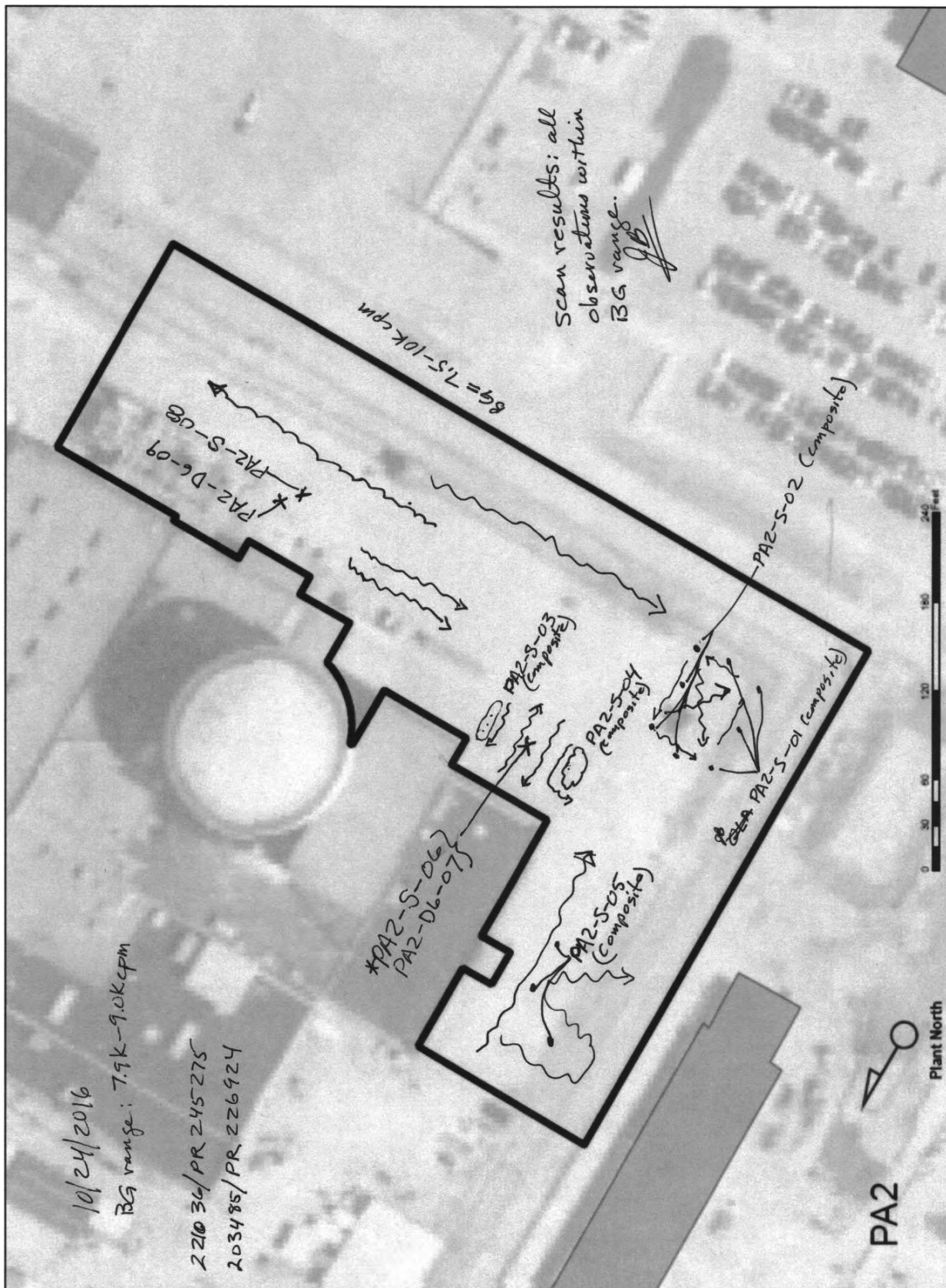
### SECTION 10 APPENDICES

### APPENDIX A      ANNOTATED FIELD MAPS

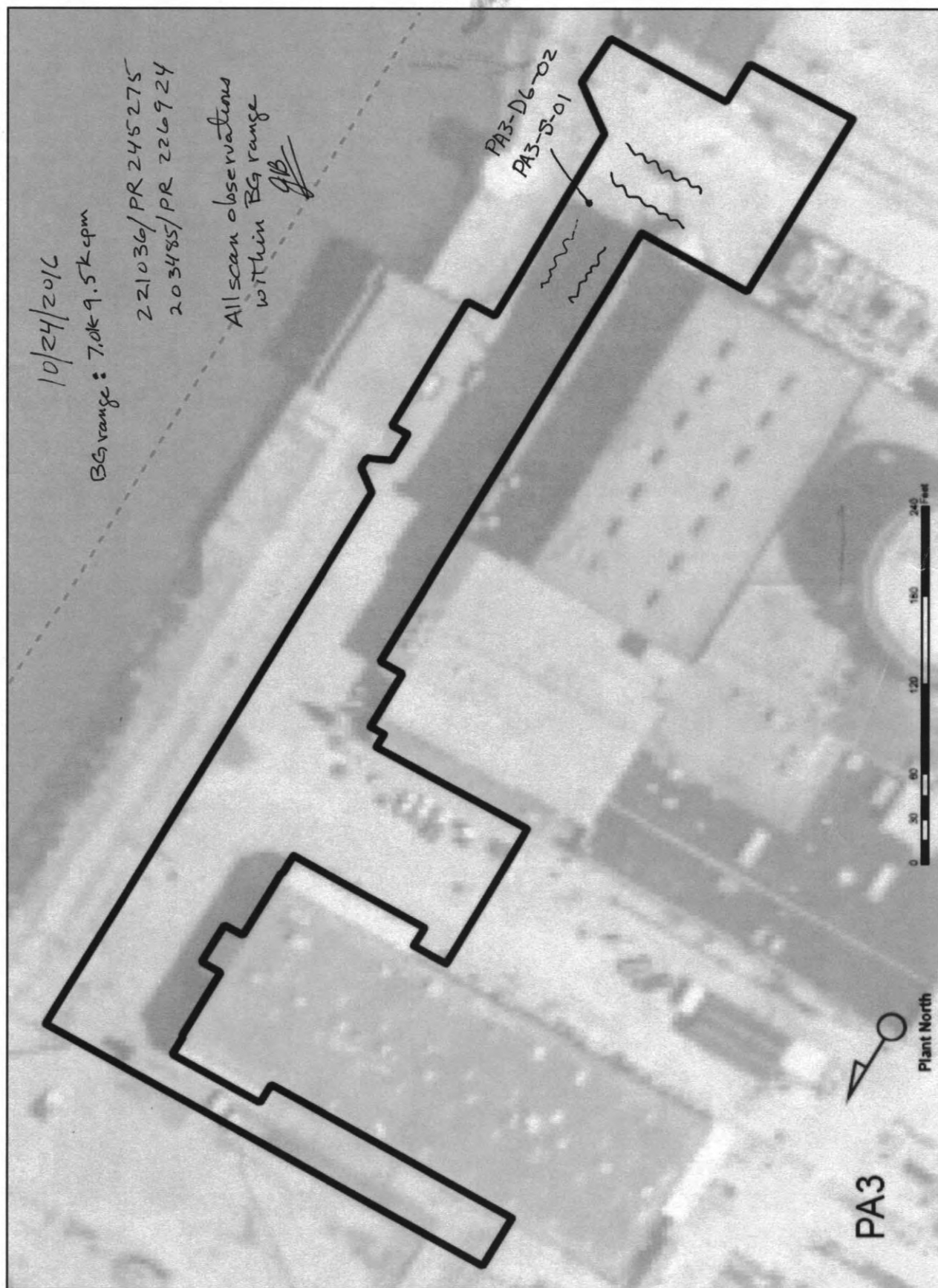


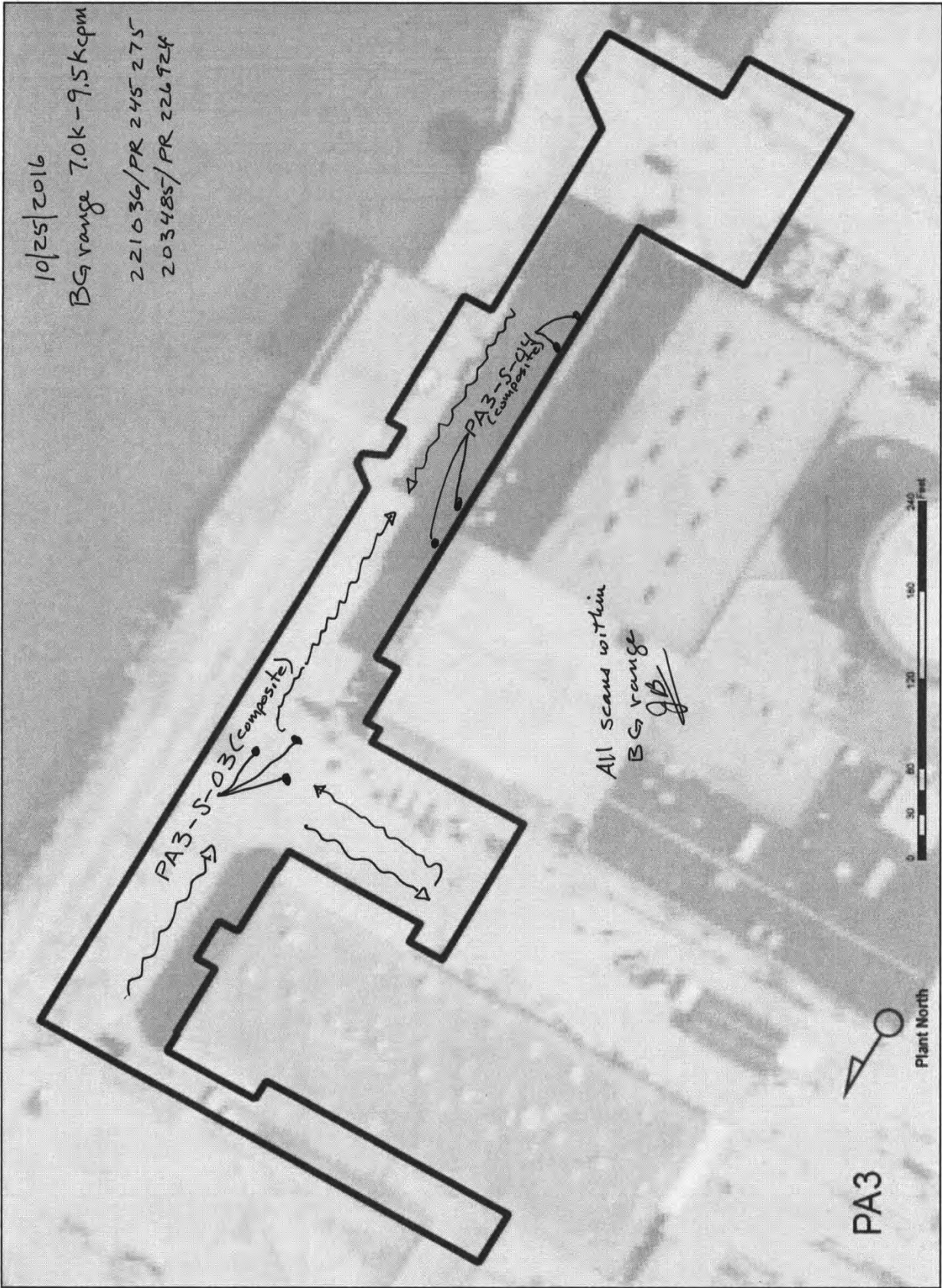




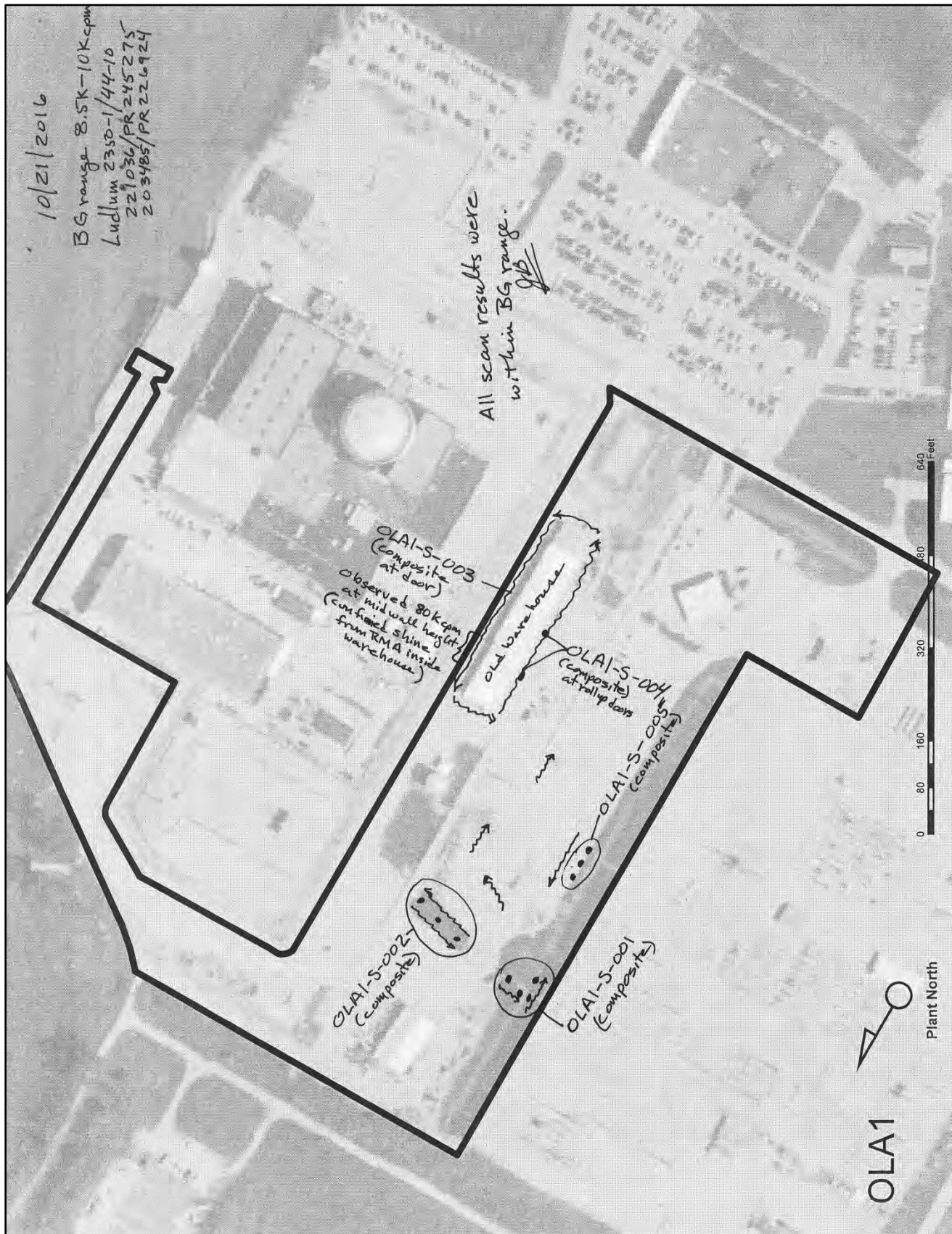


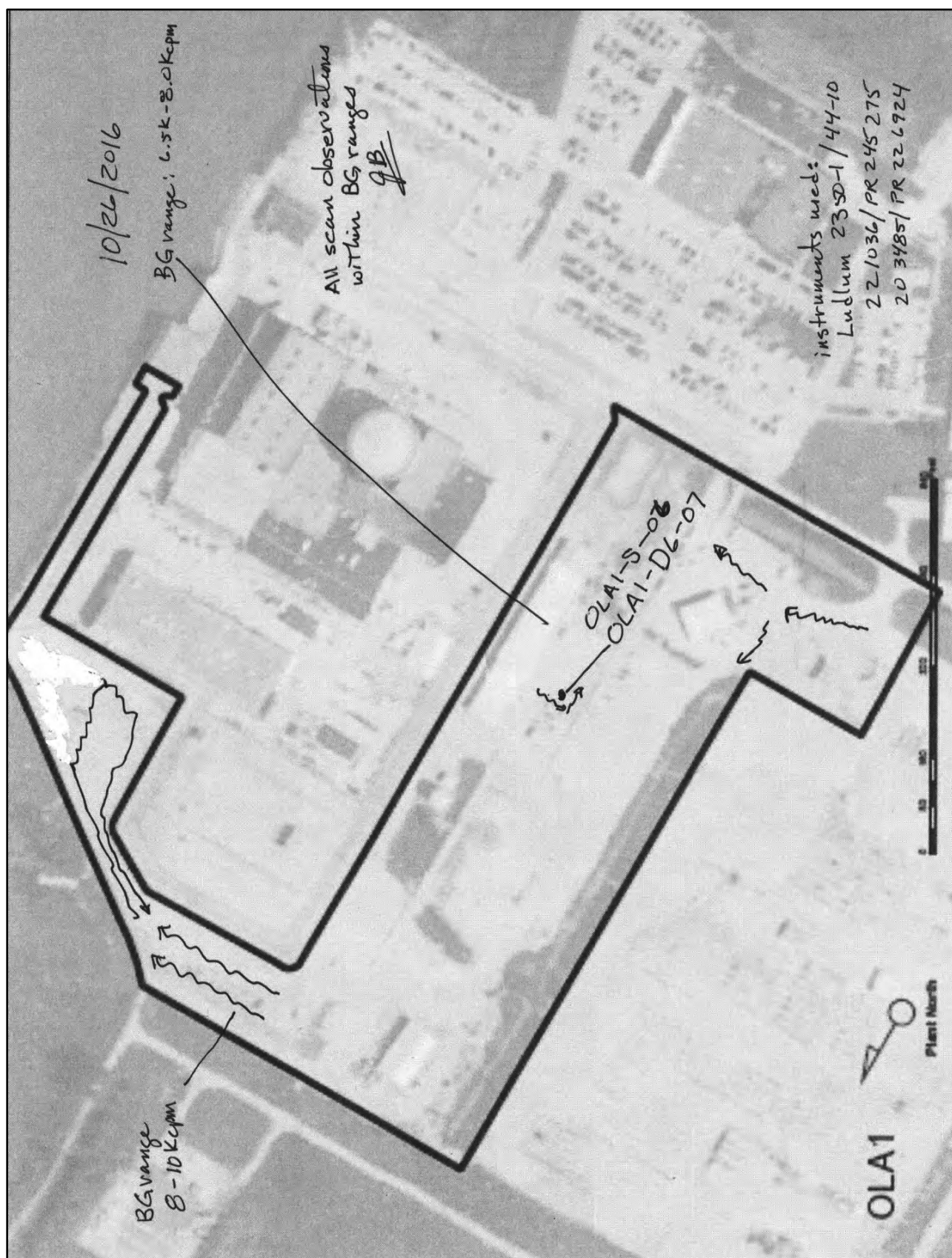
\*Note: PAZ-S-06 = split sample = OPPD-FCS-Q5



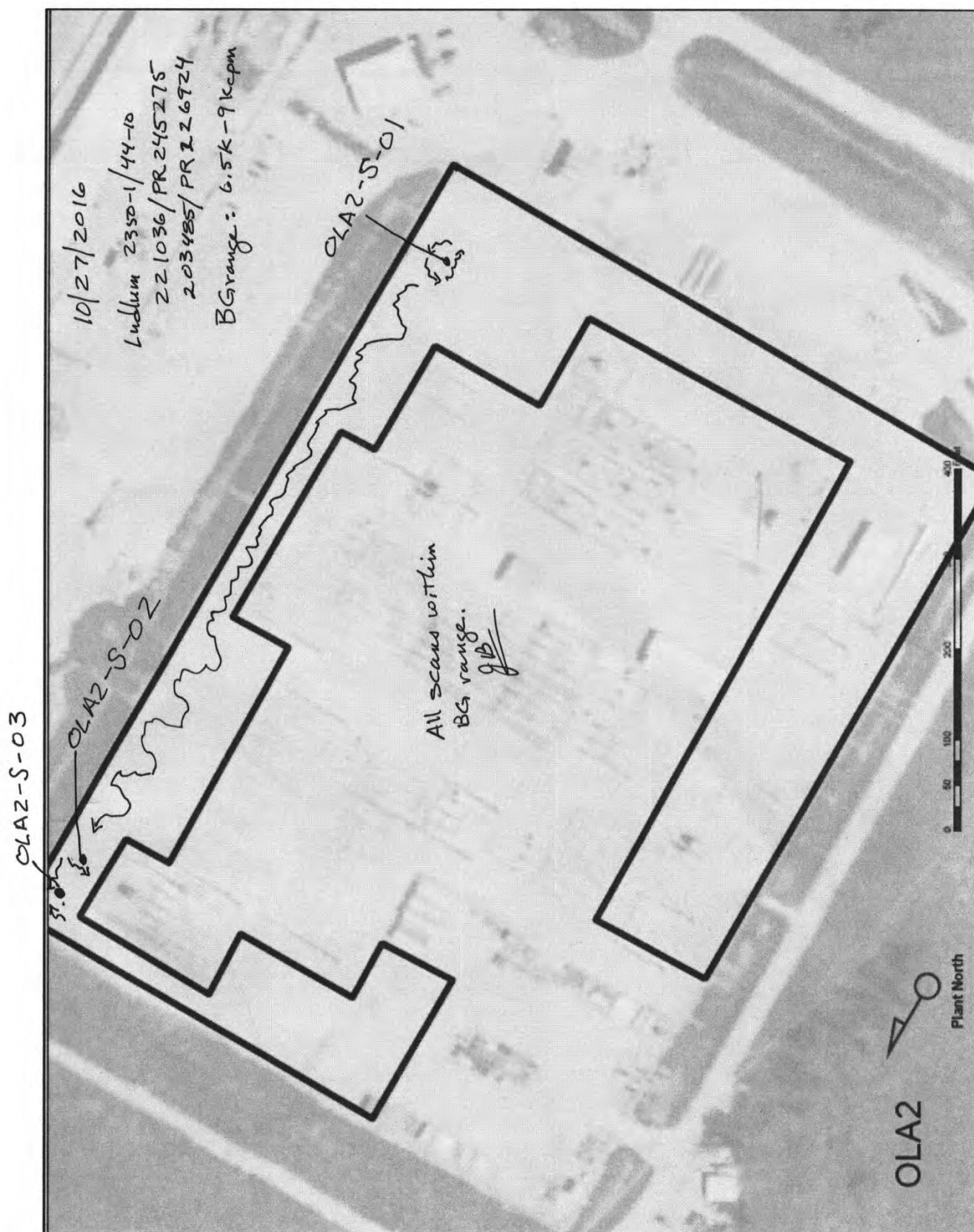


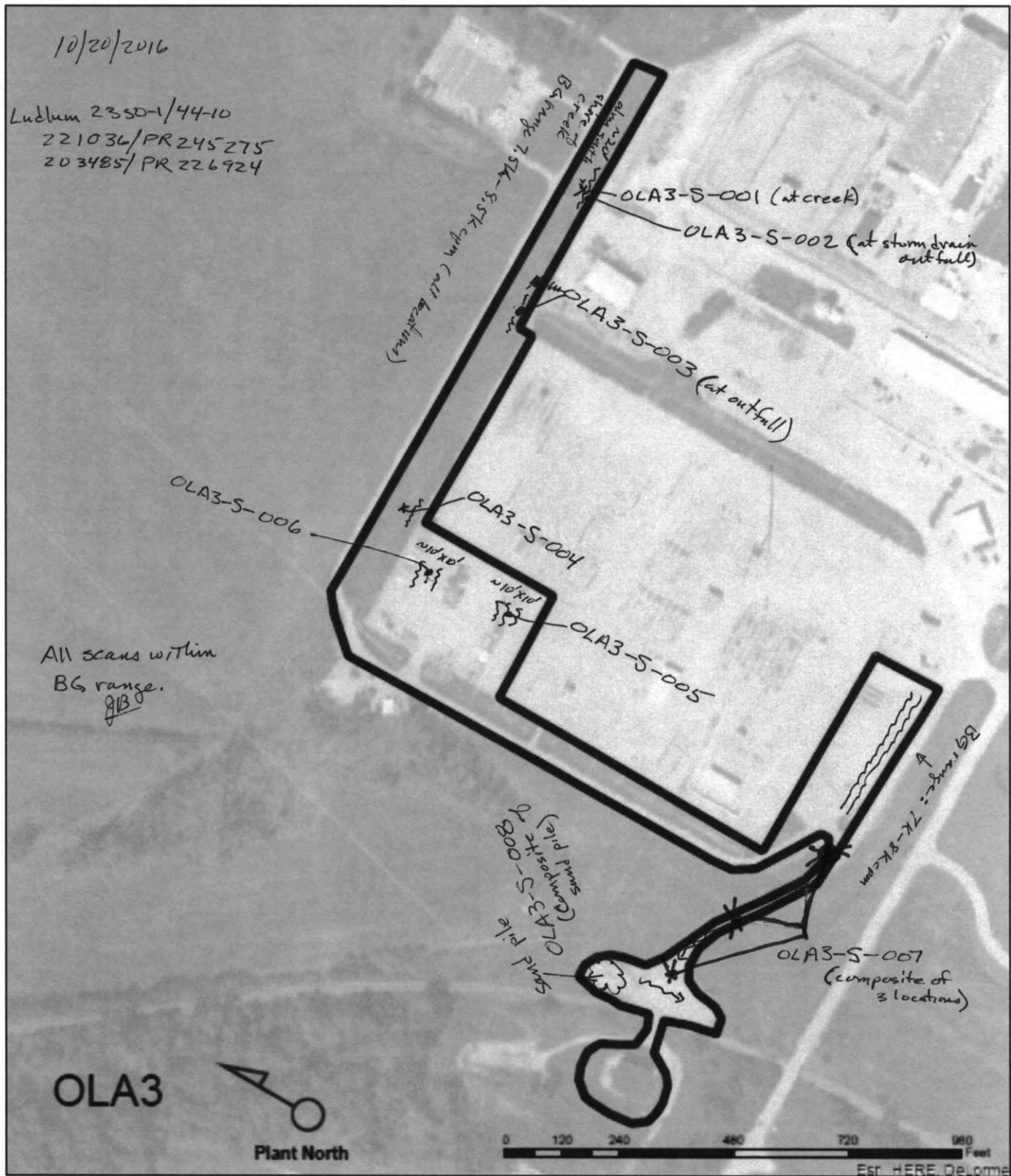


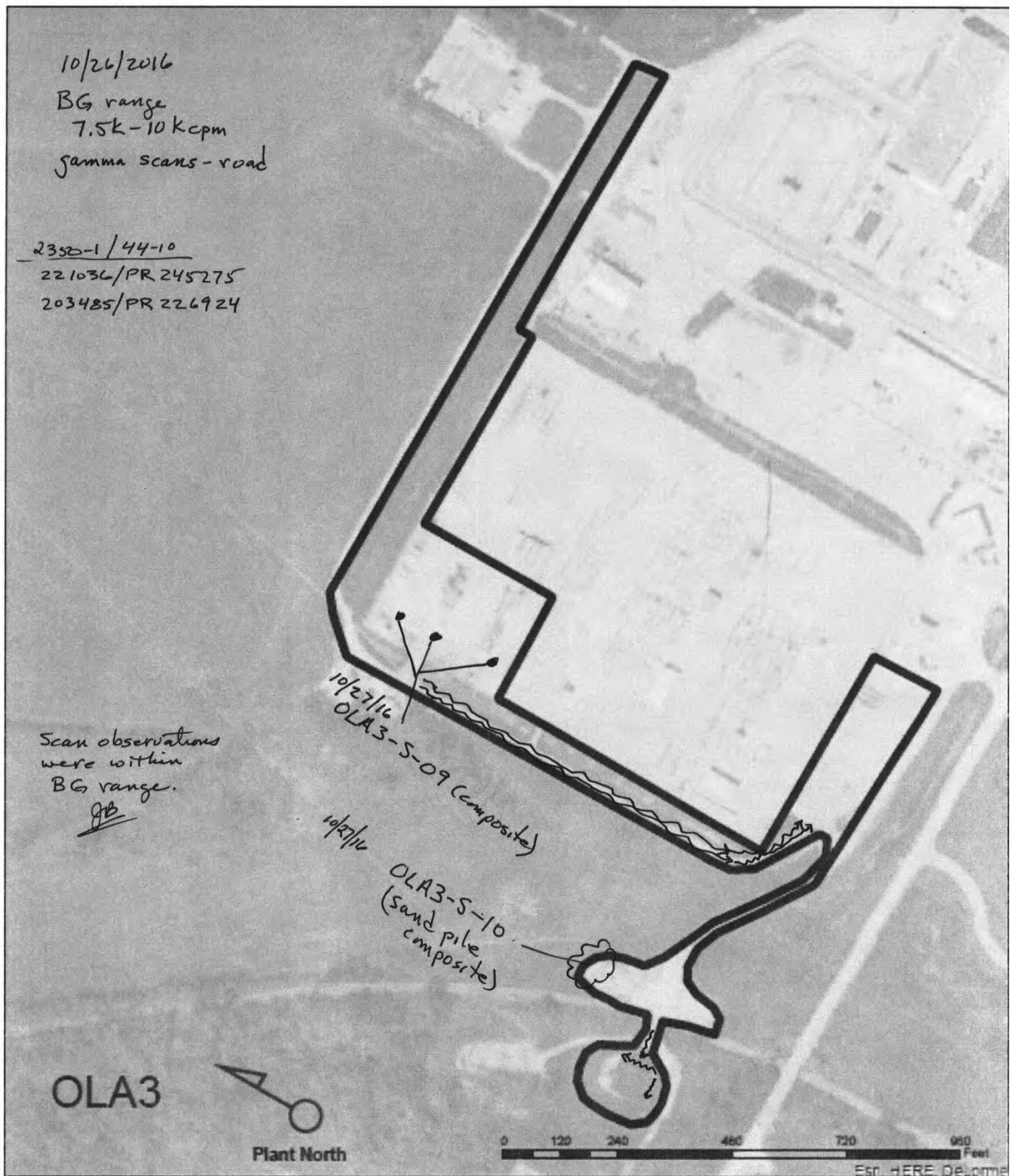




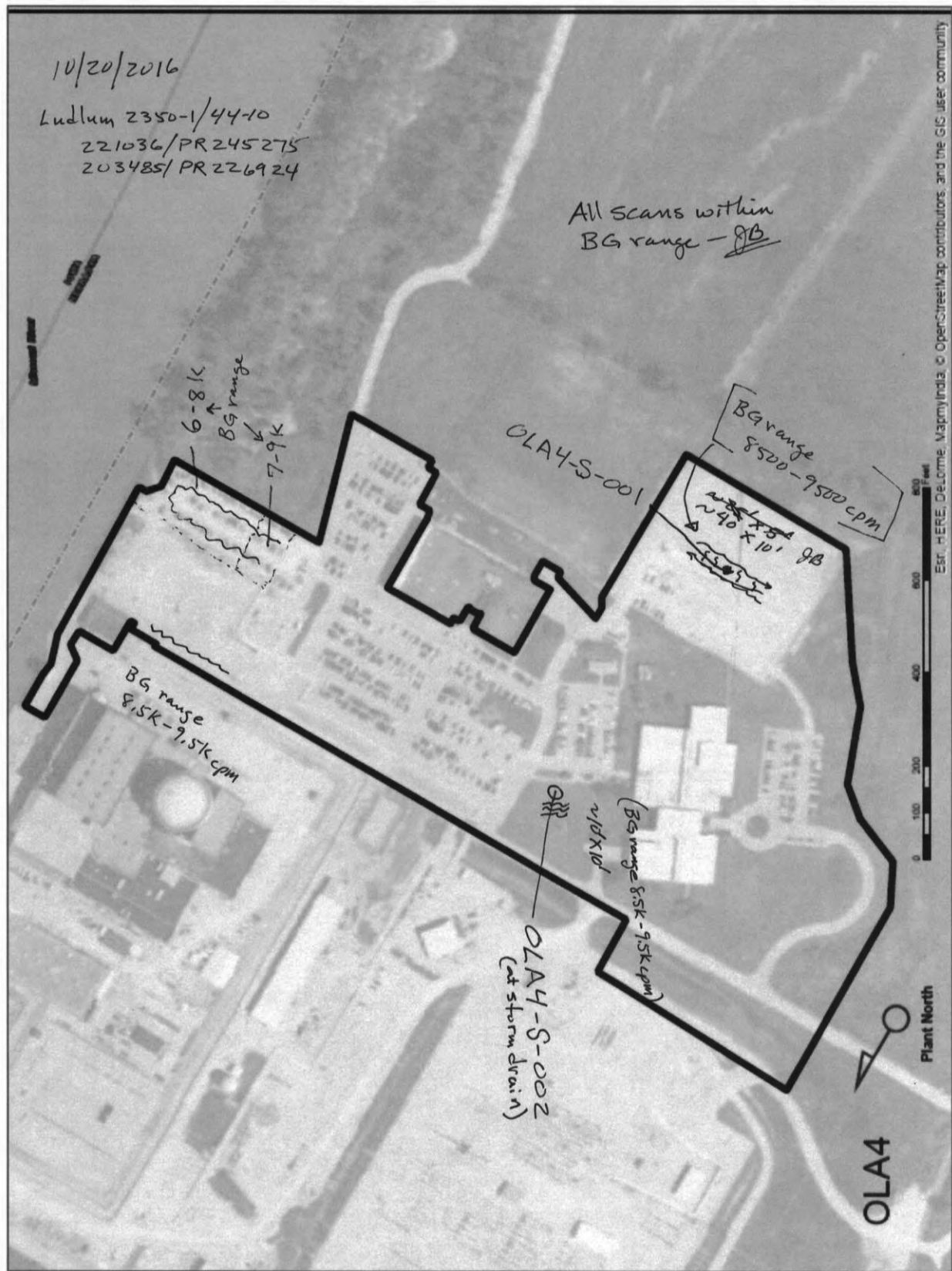


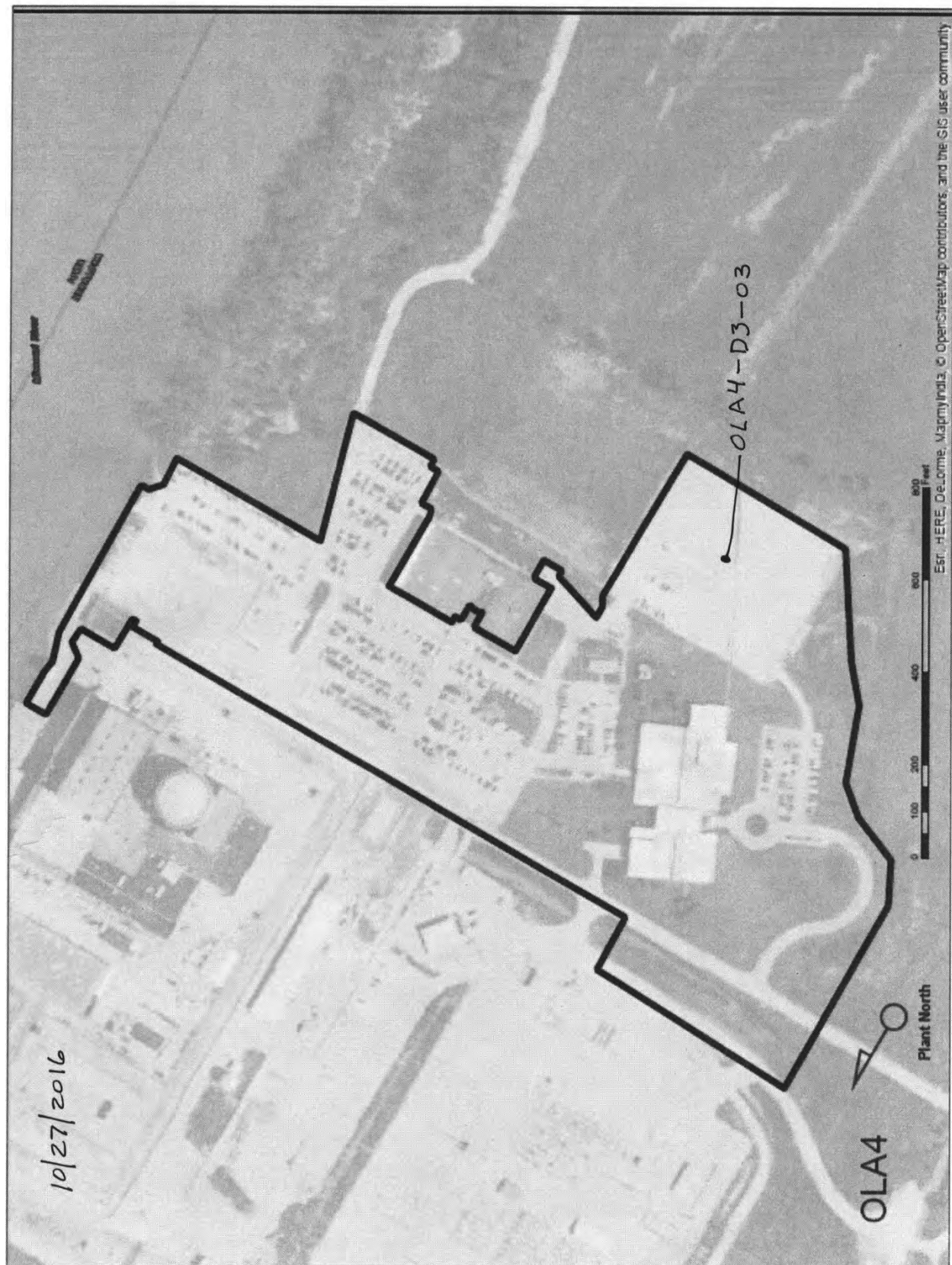


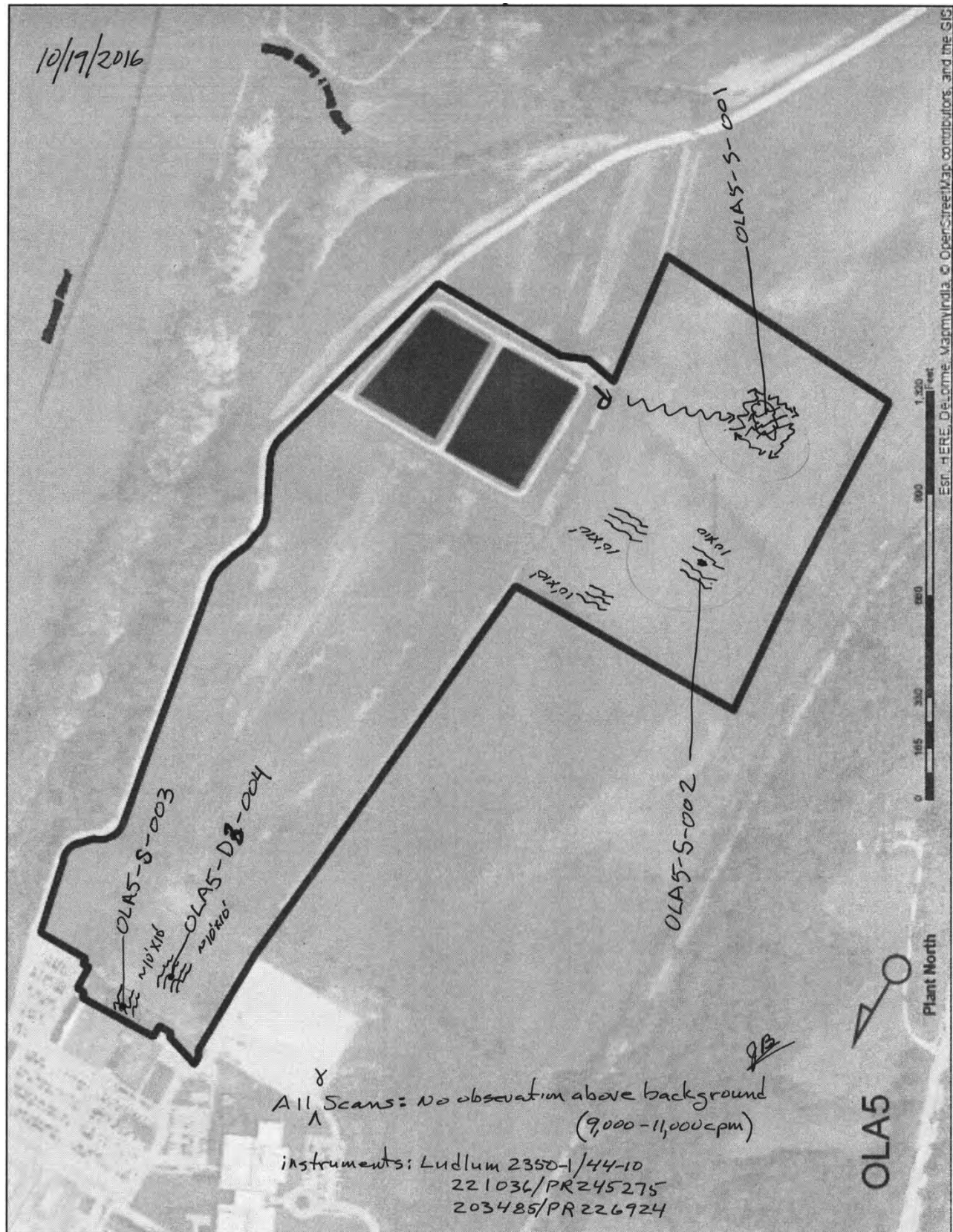




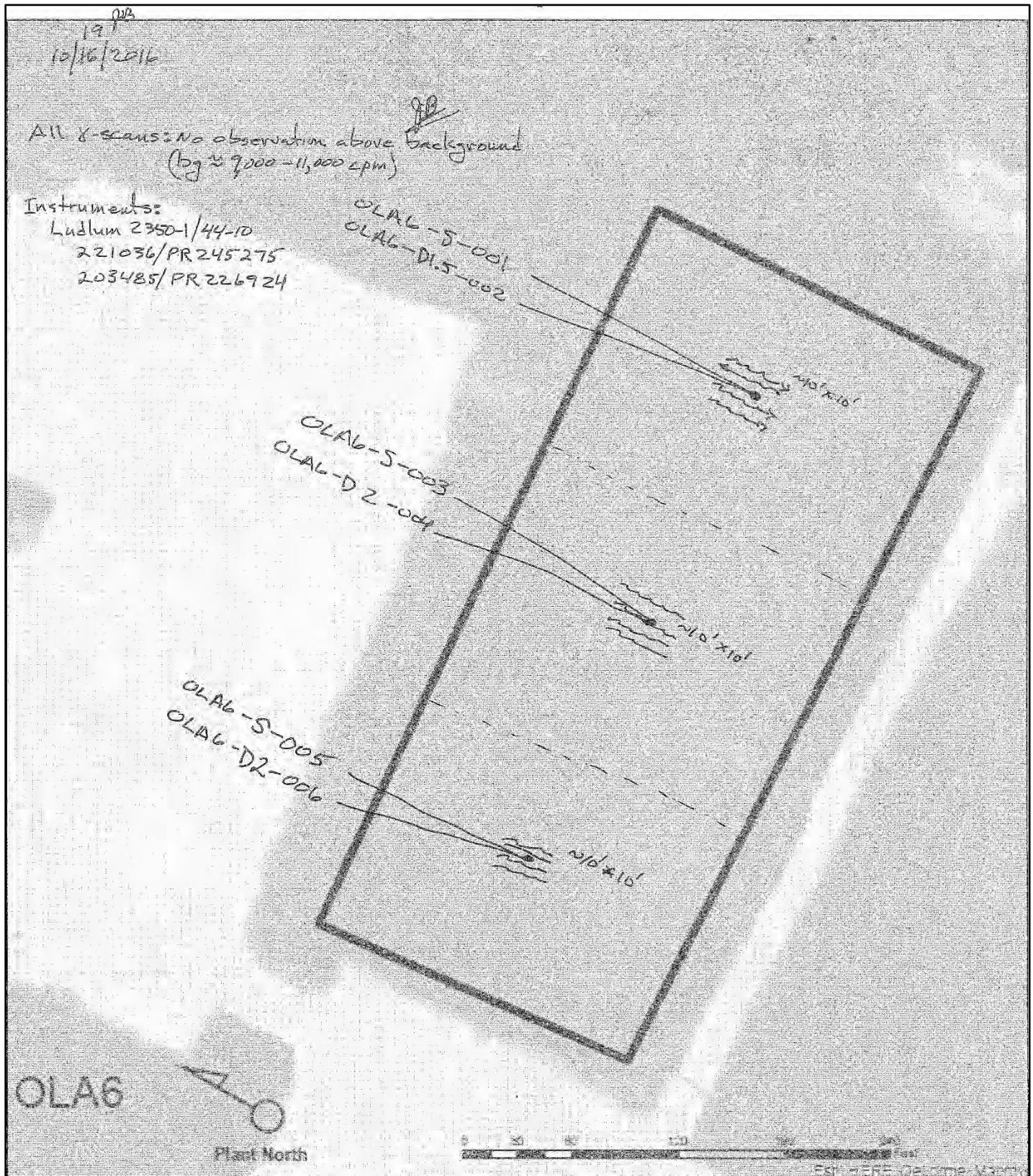












### APPENDIX B      LABORATORY REPORTS

## GEL LABORATORIES LLC

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### Certificate of Analysis Report for

BHIE001 BHI Energy Power Services LLC

Client SDG: 409238 GEL Work Order: 409238

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for but not detected above the Lc
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy—Uncertain identification

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Lindsay Fabra.

Reviewed by

*Chelsea Seagle*

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238001  
Client Sample ID: OLA5-S-001  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 9.73E+01    | 11/12/16 | 7.79E-08              | 4.73E-07            | 9.04E-07         |          | uCi/g | U         |
| Na-22      | 9.73E+01    | 11/12/16 | -4.80E-08             | 6.28E-08            | 1.04E-07         |          | uCi/g | U         |
| K-40       | 9.73E+01    | 11/12/16 | 2.08E-05              | 2.22E-06            | 7.82E-07         |          | uCi/g | 3         |
| Cr-51      | 9.73E+01    | 11/12/16 | -6.41E-08             | 6.44E-07            | 1.19E-06         |          | uCi/g | U         |
| Mn-54      | 9.73E+01    | 11/12/16 | -1.57E-08             | 5.28E-08            | 9.88E-08         |          | uCi/g | U         |
| Fe-59      | 9.73E+01    | 11/12/16 | -1.39E-07             | 1.33E-07            | 2.10E-07         |          | uCi/g | U         |
| Co-56      | 9.73E+01    | 11/12/16 | -9.95E-09             | 5.32E-08            | 1.03E-07         |          | uCi/g | U         |
| Co-57      | 9.73E+01    | 11/12/16 | -8.66E-09             | 3.26E-08            | 5.54E-08         |          | uCi/g | U         |
| Co-58      | 9.73E+01    | 11/12/16 | -1.32E-08             | 5.81E-08            | 1.03E-07         |          | uCi/g | U         |
| Co-60      | 9.73E+01    | 11/12/16 | 2.39E-08              | 5.11E-08            | 1.04E-07         |          | uCi/g | U         |
| Zn-65      | 9.73E+01    | 11/12/16 | 6.26E-09              | 1.20E-07            | 2.11E-07         |          | uCi/g | U         |
| Y-88       | 9.73E+01    | 11/12/16 | 2.19E-08              | 4.67E-08            | 1.19E-07         |          | uCi/g | U         |
| Zr-95      | 9.73E+01    | 11/12/16 | 4.22E-08              | 1.09E-07            | 2.13E-07         |          | uCi/g | U         |
| Nb-94      | 9.73E+01    | 11/12/16 | 4.28E-08              | 4.53E-08            | 9.89E-08         |          | uCi/g | U         |
| Nb-95      | 9.73E+01    | 11/12/16 | 5.68E-08              | 5.60E-08            | 1.16E-07         |          | uCi/g | U         |
| Ru-106     | 9.73E+01    | 11/12/16 | -1.28E-07             | 4.30E-07            | 7.62E-07         |          | uCi/g | U         |
| Ag-110m    | 9.73E+01    | 11/12/16 | -7.66E-08             | 7.86E-08            | 1.32E-07         |          | uCi/g | U         |
| Sn-113     | 9.73E+01    | 11/12/16 | -2.70E-08             | 6.18E-08            | 1.10E-07         |          | uCi/g | U         |
| Sb-124     | 9.73E+01    | 11/12/16 | -7.87E-08             | 1.37E-07            | 2.32E-07         |          | uCi/g | U         |
| Sb-125     | 9.73E+01    | 11/12/16 | -3.54E-08             | 1.22E-07            | 2.19E-07         |          | uCi/g | U         |
| Cs-134     | 9.73E+01    | 11/12/16 | 6.23E-08              | 1.10E-07            | 1.34E-07         |          | uCi/g | U         |
| Cs-136     | 9.73E+01    | 11/12/16 | 5.29E-10              | 2.14E-07            | 3.80E-07         |          | uCi/g | U         |
| Cs-137     | 9.73E+01    | 11/12/16 | 3.81E-07              | 9.80E-08            | 9.60E-08         | 1.00E-07 | uCi/g | 3         |
| Ba-133     | 9.73E+01    | 11/12/16 | -1.32E-08             | 6.12E-08            | 1.06E-07         |          | uCi/g | U         |
| Ba-140     | 9.73E+01    | 11/12/16 | -3.28E-07             | 4.65E-07            | 7.74E-07         |          | uCi/g | U         |
| Ce-139     | 9.73E+01    | 11/12/16 | -1.05E-08             | 3.79E-08            | 6.35E-08         |          | uCi/g | U         |
| Ce-141     | 9.73E+01    | 11/12/16 | -1.27E-08             | 9.93E-08            | 1.69E-07         |          | uCi/g | U         |
| Ce-144     | 9.73E+01    | 11/12/16 | 1.36E-09              | 2.46E-07            | 4.26E-07         |          | uCi/g | U         |
| Nd-147     | 9.73E+01    | 11/12/16 | 4.68E-07              | 1.40E-06            | 2.70E-06         |          | uCi/g | U         |
| Pm-144     | 9.73E+01    | 11/12/16 | -1.11E-08             | 4.73E-08            | 8.39E-08         |          | uCi/g | U         |
| Pm-146     | 9.73E+01    | 11/12/16 | 1.91E-08              | 5.36E-08            | 1.05E-07         |          | uCi/g | U         |
| Eu-152     | 9.73E+01    | 11/12/16 | -1.04E-08             | 1.27E-07            | 2.35E-07         |          | uCi/g | U         |
| Eu-154     | 9.73E+01    | 11/12/16 | -1.32E-07             | 1.78E-07            | 2.97E-07         |          | uCi/g | U         |
| Eu-155     | 9.73E+01    | 11/12/16 | 1.28E-09              | 1.33E-07            | 2.33E-07         |          | uCi/g | U         |
| Ir-192     | 9.73E+01    | 11/12/16 | -6.56E-09             | 4.51E-08            | 8.37E-08         |          | uCi/g | U         |
| Hg-203     | 9.73E+01    | 11/12/16 | -3.51E-09             | 5.60E-08            | 1.04E-07         |          | uCi/g | U         |
| Tl-208     | 9.73E+01    | 11/12/16 | 4.33E-07              | 9.32E-08            | 9.18E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238001  
Client Sample ID: OLA5-S-001  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 9.73E+01       | 11/12/16 | 2.81E-06  | 5.80E-06    | 6.14E-06 |    | uCi/g | U         |
| Pb-212  | 9.73E+01       | 11/12/16 | 1.51E-06  | 1.64E-07    | 1.15E-07 |    | uCi/g | 3         |
| Pb-214  | 9.73E+01       | 11/12/16 | 1.13E-06  | 2.29E-07    | 1.80E-07 |    | uCi/g | 3         |
| Bi-212  | 9.73E+01       | 11/12/16 | 1.71E-06  | 1.18E-06    | 1.26E-06 |    | uCi/g |           |
| Bi-214  | 9.73E+01       | 11/12/16 | 1.27E-06  | 2.50E-07    | 1.70E-07 |    | uCi/g | 3         |
| Ra-228  | 9.73E+01       | 11/12/16 | 1.63E-06  | 3.77E-07    | 3.44E-07 |    | uCi/g | 3         |
| Ac-228  | 9.73E+01       | 11/12/16 | 1.63E-06  | 3.77E-07    | 3.44E-07 |    | uCi/g | 3         |
| Th-234  | 9.73E+01       | 11/12/16 | -6.29E-07 | 1.59E-06    | 2.83E-06 |    | uCi/g | U         |
| U-235   | 9.73E+01       | 11/12/16 | 3.22E-08  | 2.58E-07    | 4.49E-07 |    | uCi/g | U         |
| U-238   | 9.73E+01       | 11/12/16 | -6.29E-07 | 1.59E-06    | 2.83E-06 |    | uCi/g | U         |
| Np-239  | 9.73E+01       | 11/12/16 | -3.27E-08 | 3.43E-07    | 5.92E-07 |    | uCi/g | U         |
| Am-241  | 9.73E+01       | 11/12/16 | -1.46E-08 | 1.69E-07    | 2.99E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification



# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238001

Client: BHI Energy Power Services LLC

Client Sample ID: OLA5-S-001

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte  | Activity | Units | % Abundance |
|--|----------|-------|-------------|
| Gamma Spec   |          |       |             |
| Ac-228   | 1.63E-06 | uCi/g | 005.35      |
| Bi-212   | 1.71E-06 | uCi/g | 005.60      |
| Bi-214   | 1.27E-06 | uCi/g | 004.16      |
| Cs-137   | 3.81E-07 | uCi/g | 001.25      |
| Pb-212   | 1.51E-06 | uCi/g | 004.95      |
| Pb-214   | 1.13E-06 | uCi/g | 003.71      |
| K-40   | 2.08E-05 | uCi/g | 068.21      |
| Ra-228   | 1.63E-06 | uCi/g | 005.35      |
| Tl-208   | 4.33E-07 | uCi/g | 001.42      |
| Total Activity: 3.05E-05 Total % Abundance: 100.00 |          |       |             |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238002  
Client Sample ID: OLA5-S-002  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.12E+02    | 11/12/16 | 7.43E-07              | 5.80E-07            | 7.55E-07         |          | uCi/g | U         |
| Na-22      | 1.12E+02    | 11/12/16 | 1.19E-08              | 4.35E-08            | 8.99E-08         |          | uCi/g | U         |
| K-40       | 1.12E+02    | 11/12/16 | 1.31E-05              | 1.55E-06            | 5.69E-07         |          | uCi/g | 3         |
| Cr-51      | 1.12E+02    | 11/12/16 | 1.73E-07              | 4.78E-07            | 9.24E-07         |          | uCi/g | U         |
| Mn-54      | 1.12E+02    | 11/12/16 | 5.61E-08              | 3.90E-08            | 7.18E-08         |          | uCi/g | U         |
| Fe-59      | 1.12E+02    | 11/12/16 | -3.52E-08             | 1.01E-07            | 1.89E-07         |          | uCi/g | U         |
| Co-56      | 1.12E+02    | 11/12/16 | 9.91E-09              | 4.32E-08            | 8.44E-08         |          | uCi/g | U         |
| Co-57      | 1.12E+02    | 11/12/16 | -7.79E-09             | 2.83E-08            | 4.80E-08         |          | uCi/g | U         |
| Co-58      | 1.12E+02    | 11/12/16 | -1.21E-08             | 4.71E-08            | 8.39E-08         |          | uCi/g | U         |
| Co-60      | 1.12E+02    | 11/12/16 | -1.69E-09             | 4.21E-08            | 8.33E-08         |          | uCi/g | U         |
| Zn-65      | 1.12E+02    | 11/12/16 | -1.21E-08             | 8.88E-08            | 1.52E-07         |          | uCi/g | U         |
| Y-88       | 1.12E+02    | 11/12/16 | -9.70E-09             | 4.47E-08            | 8.79E-08         |          | uCi/g | U         |
| Zr-95      | 1.12E+02    | 11/12/16 | 7.17E-08              | 8.95E-08            | 1.85E-07         |          | uCi/g | U         |
| Nb-94      | 1.12E+02    | 11/12/16 | -1.90E-08             | 4.23E-08            | 7.26E-08         |          | uCi/g | U         |
| Nb-95      | 1.12E+02    | 11/12/16 | -8.42E-10             | 6.52E-08            | 1.05E-07         |          | uCi/g | U         |
| Ru-106     | 1.12E+02    | 11/12/16 | 3.66E-07              | 4.73E-07            | 5.81E-07         |          | uCi/g | U         |
| Ag-110m    | 1.12E+02    | 11/12/16 | 2.38E-08              | 4.86E-08            | 1.00E-07         |          | uCi/g | U         |
| Sn-113     | 1.12E+02    | 11/12/16 | 1.87E-08              | 4.93E-08            | 9.65E-08         |          | uCi/g | U         |
| Sb-124     | 1.12E+02    | 11/12/16 | -1.37E-07             | 1.09E-07            | 1.49E-07         |          | uCi/g | U         |
| Sb-125     | 1.12E+02    | 11/12/16 | -6.46E-08             | 1.01E-07            | 1.75E-07         |          | uCi/g | U         |
| Cs-134     | 1.12E+02    | 11/12/16 | 0.00E+00              | 7.01E-08            | 1.04E-07         |          | uCi/g | UI        |
| Cs-136     | 1.12E+02    | 11/12/16 | 1.20E-07              | 1.73E-07            | 3.78E-07         |          | uCi/g | U         |
| Cs-137     | 1.12E+02    | 11/12/16 | 0.00E+00              | 9.13E-08            | 7.05E-08         | 1.00E-07 | uCi/g | UI        |
| Ba-133     | 1.12E+02    | 11/12/16 | 1.28E-08              | 4.70E-08            | 8.36E-08         |          | uCi/g | U         |
| Ba-140     | 1.12E+02    | 11/12/16 | 1.60E-07              | 4.52E-07            | 8.91E-07         |          | uCi/g | U         |
| Ce-139     | 1.12E+02    | 11/12/16 | -4.72E-09             | 3.48E-08            | 5.89E-08         |          | uCi/g | U         |
| Ce-141     | 1.12E+02    | 11/12/16 | -1.77E-08             | 8.61E-08            | 1.45E-07         |          | uCi/g | U         |
| Ce-144     | 1.12E+02    | 11/12/16 | -8.31E-09             | 2.37E-07            | 3.75E-07         |          | uCi/g | U         |
| Nd-147     | 1.12E+02    | 11/12/16 | -7.70E-07             | 1.00E-06            | 1.68E-06         |          | uCi/g | U         |
| Pm-144     | 1.12E+02    | 11/12/16 | 1.46E-08              | 4.23E-08            | 8.11E-08         |          | uCi/g | U         |
| Pm-146     | 1.12E+02    | 11/12/16 | 3.21E-08              | 4.57E-08            | 9.26E-08         |          | uCi/g | U         |
| Eu-152     | 1.12E+02    | 11/12/16 | 5.54E-11              | 9.36E-08            | 1.77E-07         |          | uCi/g | U         |
| Eu-154     | 1.12E+02    | 11/12/16 | 4.82E-08              | 1.21E-07            | 2.55E-07         |          | uCi/g | U         |
| Eu-155     | 1.12E+02    | 11/12/16 | 1.68E-07              | 1.95E-07            | 2.02E-07         |          | uCi/g | U         |
| Ir-192     | 1.12E+02    | 11/12/16 | -1.64E-09             | 3.50E-08            | 6.62E-08         |          | uCi/g | U         |
| Hg-203     | 1.12E+02    | 11/12/16 | 2.53E-08              | 4.88E-08            | 8.75E-08         |          | uCi/g | U         |
| Tl-208     | 1.12E+02    | 11/12/16 | 4.65E-07              | 1.04E-07            | 6.65E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238002  
Client Sample ID: OLA5-S-002  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|----------|-------------|----------|----|-------|-----------|
|         |                |          |          | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.12E+02       | 11/12/16 | 0.00E+00 | 3.71E-06    | 3.69E-06 |    | uCi/g | UI        |
| Pb-212  | 1.12E+02       | 11/12/16 | 1.48E-06 | 1.52E-07    | 1.07E-07 |    | uCi/g | 3         |
| Pb-214  | 1.12E+02       | 11/12/16 | 1.75E-06 | 2.51E-07    | 4.48E-07 |    | uCi/g | 3         |
| Bi-212  | 1.12E+02       | 11/12/16 | 0.00E+00 | 1.31E-06    | 1.65E-06 |    | uCi/g | UI        |
| Bi-214  | 1.12E+02       | 11/12/16 | 1.42E-06 | 2.26E-07    | 1.26E-07 |    | uCi/g | 3         |
| Ra-228  | 1.12E+02       | 11/12/16 | 1.43E-06 | 3.36E-07    | 3.07E-07 |    | uCi/g | 3         |
| Ac-228  | 1.12E+02       | 11/12/16 | 1.43E-06 | 3.36E-07    | 3.07E-07 |    | uCi/g | 3         |
| Th-234  | 1.12E+02       | 11/12/16 | 0.00E+00 | 2.53E-06    | 1.83E-06 |    | uCi/g | UI        |
| U-235   | 1.12E+02       | 11/12/16 | 6.75E-08 | 2.43E-07    | 4.25E-07 |    | uCi/g | U         |
| U-238   | 1.12E+02       | 11/12/16 | 0.00E+00 | 2.53E-06    | 1.83E-06 |    | uCi/g | UI        |
| Np-239  | 1.12E+02       | 11/12/16 | 2.25E-07 | 2.98E-07    | 5.46E-07 |    | uCi/g | U         |
| Am-241  | 1.12E+02       | 11/12/16 | 9.34E-08 | 1.38E-07    | 2.38E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238002

Client: BHI Energy Power Services LLC

Client Sample ID: OLA5-S-002

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Ac-228          | 1.43E-06 | uCi/g              | 006.78      |
| Bi-214          | 1.42E-06 | uCi/g              | 006.76      |
| Pb-212          | 1.48E-06 | uCi/g              | 007.02      |
| Pb-214          | 1.75E-06 | uCi/g              | 008.33      |
| K-40            | 1.31E-05 | uCi/g              | 062.12      |
| Ra-228          | 1.43E-06 | uCi/g              | 006.78      |
| Tl-208          | 4.65E-07 | uCi/g              | 002.21      |
|                 |          |                    |             |
| Total Activity: | 2.10E-05 | Total % Abundance: | 100.00      |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238003  
Client Sample ID: OLA5-S-003  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.11E+02    | 11/12/16 | 3.26E-08              | 5.24E-07            | 8.98E-07         |          | uCi/g | U         |
| Na-22      | 1.11E+02    | 11/12/16 | 3.61E-08              | 5.15E-08            | 1.17E-07         |          | uCi/g | U         |
| K-40       | 1.11E+02    | 11/12/16 | 1.59E-05              | 1.97E-06            | 8.22E-07         |          | uCi/g | 3         |
| Cr-51      | 1.11E+02    | 11/12/16 | 4.20E-07              | 5.55E-07            | 1.13E-06         |          | uCi/g | U         |
| Mn-54      | 1.11E+02    | 11/12/16 | 2.70E-08              | 4.39E-08            | 9.11E-08         |          | uCi/g | U         |
| Fe-59      | 1.11E+02    | 11/12/16 | 9.61E-08              | 1.20E-07            | 2.67E-07         |          | uCi/g | U         |
| Co-56      | 1.11E+02    | 11/12/16 | 5.65E-08              | 5.60E-08            | 1.19E-07         |          | uCi/g | U         |
| Co-57      | 1.11E+02    | 11/12/16 | 2.66E-08              | 2.94E-08            | 5.97E-08         |          | uCi/g | U         |
| Co-58      | 1.11E+02    | 11/12/16 | 7.99E-09              | 4.99E-08            | 9.57E-08         |          | uCi/g | U         |
| Co-60      | 1.11E+02    | 11/12/16 | -1.23E-08             | 5.21E-08            | 1.02E-07         |          | uCi/g | U         |
| Zn-65      | 1.11E+02    | 11/12/16 | -3.79E-08             | 1.43E-07            | 2.21E-07         |          | uCi/g | U         |
| Y-88       | 1.11E+02    | 11/12/16 | 3.08E-08              | 4.43E-08            | 1.21E-07         |          | uCi/g | U         |
| Zr-95      | 1.11E+02    | 11/12/16 | 1.14E-08              | 9.83E-08            | 1.92E-07         |          | uCi/g | U         |
| Nb-94      | 1.11E+02    | 11/12/16 | 2.77E-08              | 3.99E-08            | 8.45E-08         |          | uCi/g | U         |
| Nb-95      | 1.11E+02    | 11/12/16 | -1.47E-08             | 6.97E-08            | 1.25E-07         |          | uCi/g | U         |
| Ru-106     | 1.11E+02    | 11/12/16 | -7.74E-08             | 4.07E-07            | 7.53E-07         |          | uCi/g | U         |
| Ag-110m    | 1.11E+02    | 11/12/16 | 2.30E-08              | 5.80E-08            | 1.22E-07         |          | uCi/g | U         |
| Sn-113     | 1.11E+02    | 11/12/16 | 1.11E-08              | 6.17E-08            | 1.18E-07         |          | uCi/g | U         |
| Sb-124     | 1.11E+02    | 11/12/16 | 7.22E-08              | 1.28E-07            | 3.11E-07         |          | uCi/g | U         |
| Sb-125     | 1.11E+02    | 11/12/16 | -4.19E-08             | 1.18E-07            | 2.14E-07         |          | uCi/g | U         |
| Cs-134     | 1.11E+02    | 11/12/16 | -3.67E-09             | 5.45E-08            | 1.03E-07         |          | uCi/g | U         |
| Cs-136     | 1.11E+02    | 11/12/16 | -3.12E-07             | 2.46E-07            | 3.40E-07         |          | uCi/g | U         |
| Cs-137     | 1.11E+02    | 11/12/16 | 1.95E-07              | 1.16E-07            | 7.49E-08         | 1.00E-07 | uCi/g | 3         |
| Ba-133     | 1.11E+02    | 11/12/16 | 1.39E-08              | 6.13E-08            | 1.07E-07         |          | uCi/g | U         |
| Ba-140     | 1.11E+02    | 11/12/16 | 3.38E-07              | 5.14E-07            | 1.08E-06         |          | uCi/g | U         |
| Ce-139     | 1.11E+02    | 11/12/16 | 5.38E-09              | 3.73E-08            | 7.11E-08         |          | uCi/g | U         |
| Ce-141     | 1.11E+02    | 11/12/16 | 2.16E-10              | 9.13E-08            | 1.72E-07         |          | uCi/g | U         |
| Ce-144     | 1.11E+02    | 11/12/16 | 6.22E-08              | 2.31E-07            | 4.48E-07         |          | uCi/g | U         |
| Nd-147     | 1.11E+02    | 11/12/16 | 5.01E-07              | 1.19E-06            | 2.41E-06         |          | uCi/g | U         |
| Pm-144     | 1.11E+02    | 11/12/16 | 1.20E-08              | 4.87E-08            | 9.44E-08         |          | uCi/g | U         |
| Pm-146     | 1.11E+02    | 11/12/16 | -2.43E-09             | 5.39E-08            | 1.02E-07         |          | uCi/g | U         |
| Eu-152     | 1.11E+02    | 11/12/16 | 3.65E-08              | 1.26E-07            | 2.44E-07         |          | uCi/g | U         |
| Eu-154     | 1.11E+02    | 11/12/16 | 7.02E-08              | 1.52E-07            | 3.31E-07         |          | uCi/g | U         |
| Eu-155     | 1.11E+02    | 11/12/16 | 6.35E-08              | 1.45E-07            | 2.59E-07         |          | uCi/g | U         |
| Ir-192     | 1.11E+02    | 11/12/16 | -4.62E-08             | 4.70E-08            | 7.93E-08         |          | uCi/g | U         |
| Hg-203     | 1.11E+02    | 11/12/16 | -1.23E-08             | 5.27E-08            | 9.71E-08         |          | uCi/g | U         |
| Tl-208     | 1.11E+02    | 11/12/16 | 3.90E-07              | 1.19E-07            | 8.41E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

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3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

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UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238003  
Client Sample ID: OLA5-S-003  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity | 2 Sigma     |          | MDA | RL | Units | Qualifier |
|---------|----------------|----------|----------|-------------|----------|-----|----|-------|-----------|
|         |                |          |          | Uncertainty |          |     |    |       |           |
| Pb-210  | 1.11E+02       | 11/12/16 | 1.16E-06 | 6.17E-06    | 1.12E-05 |     |    | uCi/g | U         |
| Pb-212  | 1.11E+02       | 11/12/16 | 1.15E-06 | 1.60E-07    | 1.25E-07 |     |    | uCi/g | 3         |
| Pb-214  | 1.11E+02       | 11/12/16 | 1.01E-06 | 2.53E-07    | 1.94E-07 |     |    | uCi/g | 3         |
| Bi-212  | 1.11E+02       | 11/12/16 | 0.00E+00 | 1.18E-06    | 1.69E-06 |     |    | uCi/g | UI        |
| Bi-214  | 1.11E+02       | 11/12/16 | 7.61E-07 | 2.69E-07    | 1.91E-07 |     |    | uCi/g | 3         |
| Ra-228  | 1.11E+02       | 11/12/16 | 1.43E-06 | 3.57E-07    | 3.13E-07 |     |    | uCi/g | 3         |
| Ac-228  | 1.11E+02       | 11/12/16 | 1.43E-06 | 3.57E-07    | 3.13E-07 |     |    | uCi/g | 3         |
| Th-234  | 1.11E+02       | 11/12/16 | 3.07E-06 | 3.60E-06    | 3.23E-06 |     |    | uCi/g | U         |
| U-235   | 1.11E+02       | 11/12/16 | 1.92E-07 | 2.51E-07    | 4.94E-07 |     |    | uCi/g | U         |
| U-238   | 1.11E+02       | 11/12/16 | 3.07E-06 | 3.60E-06    | 3.23E-06 |     |    | uCi/g | U         |
| Np-239  | 1.11E+02       | 11/12/16 | 1.79E-07 | 3.23E-07    | 5.90E-07 |     |    | uCi/g | U         |
| Am-241  | 1.11E+02       | 11/12/16 | 1.37E-07 | 2.59E-07    | 4.42E-07 |     |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238003

Client: BHI Energy Power Services LLC

Client Sample ID: OLA5-S-003

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 1.43E-06 | uCi/g    | 006.40                    |
| Bi-214          | 7.61E-07 | uCi/g    | 003.42                    |
| Cs-137          | 1.95E-07 | uCi/g    | 000.88                    |
| Pb-212          | 1.15E-06 | uCi/g    | 005.15                    |
| Pb-214          | 1.01E-06 | uCi/g    | 004.51                    |
| K-40            | 1.59E-05 | uCi/g    | 071.49                    |
| Ra-228          | 1.43E-06 | uCi/g    | 006.40                    |
| Tl-208          | 3.90E-07 | uCi/g    | 001.75                    |
|                 |          |          |                           |
| Total Activity: |          | 2.23E-05 | Total % Abundance: 100.00 |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238004

Client: BHI Energy Power Services LLC

Client Sample ID: OLA5-D3-004

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

Geometry Received:

Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.25E+02    | 11/12/16 | -1.66E-07             | 3.48E-07            | 6.36E-07         |          | uCi/g | U         |
| Na-22      | 1.25E+02    | 11/12/16 | -4.93E-08             | 4.89E-08            | 7.80E-08         |          | uCi/g | U         |
| K-40       | 1.25E+02    | 11/12/16 | 1.57E-05              | 1.81E-06            | 6.08E-07         |          | uCi/g | 3         |
| Cr-51      | 1.25E+02    | 11/12/16 | 2.07E-07              | 4.87E-07            | 9.59E-07         |          | uCi/g | U         |
| Mn-54      | 1.25E+02    | 11/12/16 | 2.86E-08              | 4.42E-08            | 8.80E-08         |          | uCi/g | U         |
| Fe-59      | 1.25E+02    | 11/12/16 | -3.65E-08             | 1.13E-07            | 2.13E-07         |          | uCi/g | U         |
| Co-56      | 1.25E+02    | 11/12/16 | -2.71E-08             | 4.82E-08            | 8.52E-08         |          | uCi/g | U         |
| Co-57      | 1.25E+02    | 11/12/16 | -9.33E-09             | 2.52E-08            | 4.54E-08         |          | uCi/g | U         |
| Co-58      | 1.25E+02    | 11/12/16 | 5.57E-08              | 4.97E-08            | 6.15E-08         |          | uCi/g | U         |
| Co-60      | 1.25E+02    | 11/12/16 | -1.45E-11             | 4.04E-08            | 8.48E-08         |          | uCi/g | U         |
| Zn-65      | 1.25E+02    | 11/12/16 | 3.10E-08              | 1.23E-07            | 2.23E-07         |          | uCi/g | U         |
| Y-88       | 1.25E+02    | 11/12/16 | 2.55E-08              | 2.88E-08            | 9.10E-08         |          | uCi/g | U         |
| Zr-95      | 1.25E+02    | 11/12/16 | 1.04E-08              | 8.91E-08            | 1.72E-07         |          | uCi/g | U         |
| Nb-94      | 1.25E+02    | 11/12/16 | -9.57E-09             | 3.81E-08            | 6.93E-08         |          | uCi/g | U         |
| Nb-95      | 1.25E+02    | 11/12/16 | 1.02E-09              | 5.00E-08            | 9.49E-08         |          | uCi/g | U         |
| Ru-106     | 1.25E+02    | 11/12/16 | 9.28E-08              | 3.80E-07            | 7.46E-07         |          | uCi/g | U         |
| Ag-110m    | 1.25E+02    | 11/12/16 | -1.52E-08             | 5.39E-08            | 9.72E-08         |          | uCi/g | U         |
| Sn-113     | 1.25E+02    | 11/12/16 | -4.35E-09             | 5.02E-08            | 9.67E-08         |          | uCi/g | U         |
| Sb-124     | 1.25E+02    | 11/12/16 | -4.66E-09             | 9.30E-08            | 2.00E-07         |          | uCi/g | U         |
| Sb-125     | 1.25E+02    | 11/12/16 | 2.31E-08              | 9.15E-08            | 1.85E-07         |          | uCi/g | U         |
| Cs-134     | 1.25E+02    | 11/12/16 | 8.38E-08              | 8.15E-08            | 1.04E-07         |          | uCi/g | U         |
| Cs-136     | 1.25E+02    | 11/12/16 | 2.21E-09              | 1.73E-07            | 3.52E-07         |          | uCi/g | U         |
| Cs-137     | 1.25E+02    | 11/12/16 | 7.11E-08              | 5.24E-08            | 7.77E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.25E+02    | 11/12/16 | 5.46E-10              | 4.31E-08            | 7.69E-08         |          | uCi/g | U         |
| Ba-140     | 1.25E+02    | 11/12/16 | 1.31E-07              | 4.45E-07            | 8.98E-07         |          | uCi/g | U         |
| Ce-139     | 1.25E+02    | 11/12/16 | -6.34E-09             | 3.05E-08            | 5.47E-08         |          | uCi/g | U         |
| Ce-141     | 1.25E+02    | 11/12/16 | -3.82E-09             | 7.72E-08            | 1.41E-07         |          | uCi/g | U         |
| Ce-144     | 1.25E+02    | 11/12/16 | -2.61E-08             | 2.07E-07            | 3.78E-07         |          | uCi/g | U         |
| Nd-147     | 1.25E+02    | 11/12/16 | 5.64E-07              | 1.05E-06            | 2.17E-06         |          | uCi/g | U         |
| Pm-144     | 1.25E+02    | 11/12/16 | 7.11E-09              | 4.00E-08            | 7.10E-08         |          | uCi/g | U         |
| Pm-146     | 1.25E+02    | 11/12/16 | -2.28E-08             | 4.75E-08            | 8.63E-08         |          | uCi/g | U         |
| Eu-152     | 1.25E+02    | 11/12/16 | 1.35E-07              | 1.44E-07            | 2.12E-07         |          | uCi/g | U         |
| Eu-154     | 1.25E+02    | 11/12/16 | -1.36E-07             | 1.39E-07            | 2.23E-07         |          | uCi/g | U         |
| Eu-155     | 1.25E+02    | 11/12/16 | 1.46E-07              | 1.89E-07            | 1.87E-07         |          | uCi/g | U         |
| Ir-192     | 1.25E+02    | 11/12/16 | -9.60E-09             | 3.97E-08            | 7.59E-08         |          | uCi/g | U         |
| Hg-203     | 1.25E+02    | 11/12/16 | -2.95E-08             | 4.97E-08            | 8.18E-08         |          | uCi/g | U         |
| Tl-208     | 1.25E+02    | 11/12/16 | 2.60E-07              | 1.25E-07            | 8.46E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

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3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

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UI Gamma Spectroscopy—Uncertain identification



# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238004  
Client Sample ID: OLA5-D3-004  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.25E+02       | 11/12/16 | 4.05E-06  | 5.08E-06    | 1.04E-05 |    | uCi/g | U         |
| Pb-212  | 1.25E+02       | 11/12/16 | 1.23E-06  | 1.54E-07    | 1.03E-07 |    | uCi/g | 3         |
| Pb-214  | 1.25E+02       | 11/12/16 | 1.25E-06  | 2.28E-07    | 4.04E-07 |    | uCi/g | 3         |
| Bi-212  | 1.25E+02       | 11/12/16 | 0.00E+00  | 1.09E-06    | 1.36E-06 |    | uCi/g | UI        |
| Bi-214  | 1.25E+02       | 11/12/16 | 9.43E-07  | 2.27E-07    | 1.70E-07 |    | uCi/g | 3         |
| Ra-228  | 1.25E+02       | 11/12/16 | 1.24E-06  | 4.01E-07    | 2.27E-07 |    | uCi/g | 3         |
| Ac-228  | 1.25E+02       | 11/12/16 | 1.24E-06  | 4.01E-07    | 2.27E-07 |    | uCi/g | 3         |
| Th-234  | 1.25E+02       | 11/12/16 | 2.46E-06  | 3.03E-06    | 2.52E-06 |    | uCi/g | U         |
| U-235   | 1.25E+02       | 11/12/16 | 1.17E-07  | 2.09E-07    | 4.02E-07 |    | uCi/g | U         |
| U-238   | 1.25E+02       | 11/12/16 | 2.46E-06  | 3.03E-06    | 2.52E-06 |    | uCi/g | U         |
| Np-239  | 1.25E+02       | 11/12/16 | -5.47E-08 | 2.74E-07    | 5.01E-07 |    | uCi/g | U         |
| Am-241  | 1.25E+02       | 11/12/16 | -3.41E-08 | 1.85E-07    | 3.27E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238004

Client: BHI Energy Power Services LLC

Client Sample ID: OLA5-D3-004

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Ac-228          | 1.24E-06 | uCi/g              | 005.67      |
| Bi-214          | 9.43E-07 | uCi/g              | 004.32      |
| Pb-212          | 1.23E-06 | uCi/g              | 005.62      |
| Pb-214          | 1.25E-06 | uCi/g              | 005.74      |
| K-40            | 1.57E-05 | uCi/g              | 071.78      |
| Ra-228          | 1.24E-06 | uCi/g              | 005.67      |
| Tl-208          | 2.60E-07 | uCi/g              | 001.19      |
|                 |          |                    |             |
| Total Activity: | 2.18E-05 | Total % Abundance: | 100.00      |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238005  
Client Sample ID: OLA6-S-001  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.18E+02    | 11/12/16 | 1.48E-07              | 3.99E-07            | 8.04E-07         |          | uCi/g | U         |
| Na-22      | 1.18E+02    | 11/12/16 | -1.10E-08             | 3.63E-08            | 7.10E-08         |          | uCi/g | U         |
| K-40       | 1.18E+02    | 11/12/16 | 1.45E-05              | 1.76E-06            | 6.69E-07         |          | uCi/g | 3         |
| Cr-51      | 1.18E+02    | 11/12/16 | -7.13E-08             | 4.55E-07            | 8.05E-07         |          | uCi/g | U         |
| Mn-54      | 1.18E+02    | 11/12/16 | -9.20E-09             | 3.85E-08            | 7.10E-08         |          | uCi/g | U         |
| Fe-59      | 1.18E+02    | 11/12/16 | -3.09E-09             | 9.77E-08            | 1.87E-07         |          | uCi/g | U         |
| Co-56      | 1.18E+02    | 11/12/16 | 1.78E-09              | 4.47E-08            | 8.68E-08         |          | uCi/g | U         |
| Co-57      | 1.18E+02    | 11/12/16 | 1.48E-08              | 2.49E-08            | 4.93E-08         |          | uCi/g | U         |
| Co-58      | 1.18E+02    | 11/12/16 | -1.79E-08             | 4.36E-08            | 7.83E-08         |          | uCi/g | U         |
| Co-60      | 1.18E+02    | 11/12/16 | -5.58E-09             | 3.20E-08            | 5.81E-08         |          | uCi/g | U         |
| Zn-65      | 1.18E+02    | 11/12/16 | 5.56E-08              | 1.00E-07            | 1.92E-07         |          | uCi/g | U         |
| Y-88       | 1.18E+02    | 11/12/16 | -1.69E-08             | 5.64E-08            | 1.07E-07         |          | uCi/g | U         |
| Zr-95      | 1.18E+02    | 11/12/16 | 1.65E-08              | 8.21E-08            | 1.64E-07         |          | uCi/g | U         |
| Nb-94      | 1.18E+02    | 11/12/16 | -9.26E-09             | 3.02E-08            | 5.63E-08         |          | uCi/g | U         |
| Nb-95      | 1.18E+02    | 11/12/16 | 2.99E-08              | 5.69E-08            | 1.06E-07         |          | uCi/g | U         |
| Ru-106     | 1.18E+02    | 11/12/16 | -2.14E-08             | 3.24E-07            | 6.27E-07         |          | uCi/g | U         |
| Ag-110m    | 1.18E+02    | 11/12/16 | -1.60E-09             | 4.99E-08            | 9.66E-08         |          | uCi/g | U         |
| Sn-113     | 1.18E+02    | 11/12/16 | -8.53E-09             | 4.67E-08            | 9.04E-08         |          | uCi/g | U         |
| Sb-124     | 1.18E+02    | 11/12/16 | 1.23E-08              | 7.49E-08            | 1.81E-07         |          | uCi/g | U         |
| Sb-125     | 1.18E+02    | 11/12/16 | -5.05E-09             | 9.85E-08            | 1.92E-07         |          | uCi/g | U         |
| Cs-134     | 1.18E+02    | 11/12/16 | 6.74E-08              | 8.78E-08            | 9.18E-08         |          | uCi/g | U         |
| Cs-136     | 1.18E+02    | 11/12/16 | 3.83E-08              | 1.86E-07            | 3.66E-07         |          | uCi/g | U         |
| Cs-137     | 1.18E+02    | 11/12/16 | 2.45E-08              | 3.97E-08            | 8.33E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.18E+02    | 11/12/16 | -5.18E-08             | 5.35E-08            | 7.30E-08         |          | uCi/g | U         |
| Ba-140     | 1.18E+02    | 11/12/16 | -1.13E-07             | 4.38E-07            | 8.30E-07         |          | uCi/g | U         |
| Ce-139     | 1.18E+02    | 11/12/16 | -7.38E-09             | 2.95E-08            | 5.33E-08         |          | uCi/g | U         |
| Ce-141     | 1.18E+02    | 11/12/16 | -3.89E-08             | 7.32E-08            | 1.30E-07         |          | uCi/g | U         |
| Ce-144     | 1.18E+02    | 11/12/16 | -3.01E-08             | 1.73E-07            | 3.21E-07         |          | uCi/g | U         |
| Nd-147     | 1.18E+02    | 11/12/16 | 0.00E+00              | 1.33E-06            | 1.50E-06         |          | uCi/g | UI        |
| Pm-144     | 1.18E+02    | 11/12/16 | -8.91E-09             | 4.27E-08            | 7.03E-08         |          | uCi/g | U         |
| Pm-146     | 1.18E+02    | 11/12/16 | -1.26E-08             | 3.86E-08            | 7.35E-08         |          | uCi/g | U         |
| Eu-152     | 1.18E+02    | 11/12/16 | 1.14E-08              | 1.06E-07            | 1.93E-07         |          | uCi/g | U         |
| Eu-154     | 1.18E+02    | 11/12/16 | -1.84E-08             | 9.90E-08            | 2.00E-07         |          | uCi/g | U         |
| Eu-155     | 1.18E+02    | 11/12/16 | -1.36E-08             | 1.05E-07            | 1.97E-07         |          | uCi/g | U         |
| Ir-192     | 1.18E+02    | 11/12/16 | 1.23E-08              | 3.86E-08            | 7.24E-08         |          | uCi/g | U         |
| Hg-203     | 1.18E+02    | 11/12/16 | 1.55E-08              | 4.34E-08            | 8.18E-08         |          | uCi/g | U         |
| Tl-208     | 1.18E+02    | 11/12/16 | 4.04E-07              | 9.51E-08            | 6.91E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238005  
Client Sample ID: OLA6-S-001  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.18E+02       | 11/12/16 | 3.13E-06  | 6.78E-06    | 1.40E-05 |    | uCi/g | U         |
| Pb-212  | 1.18E+02       | 11/12/16 | 1.11E-06  | 1.40E-07    | 1.05E-07 |    | uCi/g | 3         |
| Pb-214  | 1.18E+02       | 11/12/16 | 1.19E-06  | 2.32E-07    | 3.95E-07 |    | uCi/g | 3         |
| Bi-212  | 1.18E+02       | 11/12/16 | 2.09E-06  | 8.21E-07    | 8.70E-07 |    | uCi/g | 3         |
| Bi-214  | 1.18E+02       | 11/12/16 | 1.03E-06  | 2.21E-07    | 1.50E-07 |    | uCi/g | 3         |
| Ra-228  | 1.18E+02       | 11/12/16 | 1.23E-06  | 3.19E-07    | 1.99E-07 |    | uCi/g | 3         |
| Ac-228  | 1.18E+02       | 11/12/16 | 1.23E-06  | 3.19E-07    | 1.99E-07 |    | uCi/g | 3         |
| Th-234  | 1.18E+02       | 11/12/16 | -9.22E-07 | 1.62E-06    | 3.19E-06 |    | uCi/g | U         |
| U-235   | 1.18E+02       | 11/12/16 | 6.60E-08  | 1.95E-07    | 3.76E-07 |    | uCi/g | U         |
| U-238   | 1.18E+02       | 11/12/16 | -9.22E-07 | 1.62E-06    | 3.19E-06 |    | uCi/g | U         |
| Np-239  | 1.18E+02       | 11/12/16 | -6.99E-08 | 2.66E-07    | 4.91E-07 |    | uCi/g | U         |
| Am-241  | 1.18E+02       | 11/12/16 | 1.29E-07  | 1.88E-07    | 3.85E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238005

Client: BHI Energy Power Services LLC

Client Sample ID: OLA6-S-001

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 1.23E-06 | uCi/g    | 005.42                    |
| Bi-212          | 2.09E-06 | uCi/g    | 009.19                    |
| Bi-214          | 1.03E-06 | uCi/g    | 004.54                    |
| Pb-212          | 1.11E-06 | uCi/g    | 004.87                    |
| Pb-214          | 1.19E-06 | uCi/g    | 005.24                    |
| K-40            | 1.45E-05 | uCi/g    | 063.55                    |
| Ra-228          | 1.23E-06 | uCi/g    | 005.42                    |
| Tl-208          | 4.04E-07 | uCi/g    | 001.78                    |
|                 |          |          |                           |
| Total Activity: |          | 2.28E-05 | Total % Abundance: 100.00 |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238006

Client: BHI Energy Power Services LLC

Client Sample ID: OLA6-D1.5-002

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

Geometry Received:

Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.18E+02    | 11/12/16 | -1.31E-07             | 3.08E-07            | 5.62E-07         |          | uCi/g | U         |
| Na-22      | 1.18E+02    | 11/12/16 | -3.21E-08             | 4.65E-08            | 7.74E-08         |          | uCi/g | U         |
| K-40       | 1.18E+02    | 11/12/16 | 1.71E-05              | 1.85E-06            | 6.06E-07         |          | uCi/g | 3         |
| Cr-51      | 1.18E+02    | 11/12/16 | -7.10E-08             | 4.27E-07            | 8.18E-07         |          | uCi/g | U         |
| Mn-54      | 1.18E+02    | 11/12/16 | 3.54E-08              | 4.92E-08            | 9.50E-08         |          | uCi/g | U         |
| Fe-59      | 1.18E+02    | 11/12/16 | -2.27E-08             | 9.75E-08            | 1.85E-07         |          | uCi/g | U         |
| Co-56      | 1.18E+02    | 11/12/16 | 1.30E-08              | 5.15E-08            | 1.04E-07         |          | uCi/g | U         |
| Co-57      | 1.18E+02    | 11/12/16 | 1.57E-08              | 1.86E-08            | 3.74E-08         |          | uCi/g | U         |
| Co-58      | 1.18E+02    | 11/12/16 | -2.16E-08             | 4.81E-08            | 8.90E-08         |          | uCi/g | U         |
| Co-60      | 1.18E+02    | 11/12/16 | 2.53E-08              | 3.47E-08            | 8.27E-08         |          | uCi/g | U         |
| Zn-65      | 1.18E+02    | 11/12/16 | -1.25E-07             | 1.29E-07            | 1.75E-07         |          | uCi/g | U         |
| Y-88       | 1.18E+02    | 11/12/16 | 3.30E-10              | 2.32E-08            | 6.17E-08         |          | uCi/g | U         |
| Zr-95      | 1.18E+02    | 11/12/16 | 4.27E-08              | 8.76E-08            | 1.75E-07         |          | uCi/g | U         |
| Nb-94      | 1.18E+02    | 11/12/16 | -3.81E-09             | 3.96E-08            | 7.19E-08         |          | uCi/g | U         |
| Nb-95      | 1.18E+02    | 11/12/16 | 2.93E-08              | 6.24E-08            | 1.10E-07         |          | uCi/g | U         |
| Ru-106     | 1.18E+02    | 11/12/16 | 2.20E-07              | 3.13E-07            | 6.60E-07         |          | uCi/g | U         |
| Ag-110m    | 1.18E+02    | 11/12/16 | -8.11E-09             | 5.17E-08            | 1.01E-07         |          | uCi/g | U         |
| Sn-113     | 1.18E+02    | 11/12/16 | 4.02E-08              | 7.81E-08            | 8.08E-08         |          | uCi/g | U         |
| Sb-124     | 1.18E+02    | 11/12/16 | -8.98E-09             | 7.98E-08            | 1.77E-07         |          | uCi/g | U         |
| Sb-125     | 1.18E+02    | 11/12/16 | 3.28E-08              | 9.01E-08            | 1.81E-07         |          | uCi/g | U         |
| Cs-134     | 1.18E+02    | 11/12/16 | 8.00E-08              | 8.50E-08            | 1.06E-07         |          | uCi/g | U         |
| Cs-136     | 1.18E+02    | 11/12/16 | 1.11E-07              | 2.20E-07            | 3.53E-07         |          | uCi/g | U         |
| Cs-137     | 1.18E+02    | 11/12/16 | 6.71E-09              | 4.38E-08            | 7.56E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.18E+02    | 11/12/16 | 5.53E-08              | 4.06E-08            | 8.45E-08         |          | uCi/g | U         |
| Ba-140     | 1.18E+02    | 11/12/16 | 3.43E-08              | 3.36E-07            | 6.74E-07         |          | uCi/g | U         |
| Ce-139     | 1.18E+02    | 11/12/16 | -1.11E-08             | 2.62E-08            | 4.62E-08         |          | uCi/g | U         |
| Ce-141     | 1.18E+02    | 11/12/16 | 3.75E-09              | 6.64E-08            | 1.24E-07         |          | uCi/g | U         |
| Ce-144     | 1.18E+02    | 11/12/16 | 1.55E-08              | 1.60E-07            | 3.00E-07         |          | uCi/g | U         |
| Nd-147     | 1.18E+02    | 11/12/16 | 4.94E-07              | 1.00E-06            | 2.04E-06         |          | uCi/g | U         |
| Pm-144     | 1.18E+02    | 11/12/16 | 5.98E-09              | 4.36E-08            | 8.13E-08         |          | uCi/g | U         |
| Pm-146     | 1.18E+02    | 11/12/16 | 1.88E-08              | 4.17E-08            | 8.44E-08         |          | uCi/g | U         |
| Eu-152     | 1.18E+02    | 11/12/16 | -5.58E-08             | 1.00E-07            | 1.82E-07         |          | uCi/g | U         |
| Eu-154     | 1.18E+02    | 11/12/16 | -7.46E-08             | 1.28E-07            | 2.19E-07         |          | uCi/g | U         |
| Eu-155     | 1.18E+02    | 11/12/16 | 0.00E+00              | 1.52E-07            | 1.31E-07         |          | uCi/g | UI        |
| Ir-192     | 1.18E+02    | 11/12/16 | -1.71E-09             | 3.44E-08            | 6.69E-08         |          | uCi/g | U         |
| Hg-203     | 1.18E+02    | 11/12/16 | -1.73E-08             | 4.66E-08            | 7.86E-08         |          | uCi/g | U         |
| Tl-208     | 1.18E+02    | 11/12/16 | 3.57E-07              | 1.06E-07            | 7.94E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238006

Client Sample ID: OLA6-D1.5-002

Matrix: Soil

Geometry Received:

Client: BHI Energy Power Services LLC

Collect Date: October 19, 2016

Receive Date: October 27, 2016

Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.18E+02       | 11/12/16 | 0.00E+00  | 8.96E-07    | 6.64E-07 |    | uCi/g | UI        |
| Pb-212  | 1.18E+02       | 11/12/16 | 1.08E-06  | 1.32E-07    | 1.05E-07 |    | uCi/g | 3         |
| Pb-214  | 1.18E+02       | 11/12/16 | 1.18E-06  | 1.98E-07    | 1.48E-07 |    | uCi/g | 3         |
| Bi-212  | 1.18E+02       | 11/12/16 | 1.15E-06  | 7.51E-07    | 1.59E-06 |    | uCi/g | U         |
| Bi-214  | 1.18E+02       | 11/12/16 | 1.02E-06  | 2.14E-07    | 1.81E-07 |    | uCi/g | 3         |
| Ra-228  | 1.18E+02       | 11/12/16 | 8.56E-07  | 4.33E-07    | 2.87E-07 |    | uCi/g | 3         |
| Ac-228  | 1.18E+02       | 11/12/16 | 8.56E-07  | 4.33E-07    | 2.87E-07 |    | uCi/g | 3         |
| Th-234  | 1.18E+02       | 11/12/16 | 0.00E+00  | 1.18E-06    | 8.79E-07 |    | uCi/g | UI        |
| U-235   | 1.18E+02       | 11/12/16 | -1.02E-07 | 1.74E-07    | 3.08E-07 |    | uCi/g | U         |
| U-238   | 1.18E+02       | 11/12/16 | 0.00E+00  | 1.18E-06    | 8.79E-07 |    | uCi/g | UI        |
| Np-239  | 1.18E+02       | 11/12/16 | -1.64E-07 | 1.86E-07    | 3.25E-07 |    | uCi/g | U         |
| Am-241  | 1.18E+02       | 11/12/16 | 3.48E-09  | 4.85E-08    | 8.89E-08 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238006

Client: BHI Energy Power Services LLC

Client Sample ID: OLA6-D1.5-002

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 8.56E-07 | uCi/g    | 003.82                    |
| Bi-214          | 1.02E-06 | uCi/g    | 004.56                    |
| Pb-212          | 1.08E-06 | uCi/g    | 004.83                    |
| Pb-214          | 1.18E-06 | uCi/g    | 005.26                    |
| K-40            | 1.71E-05 | uCi/g    | 076.11                    |
| Ra-228          | 8.56E-07 | uCi/g    | 003.82                    |
| Tl-208          | 3.57E-07 | uCi/g    | 001.59                    |
|                 |          |          |                           |
| Total Activity: |          | 2.24E-05 | Total % Abundance: 100.00 |



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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238007  
Client Sample ID: OLA6-S-003  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.23E+02    | 11/12/16 | 6.80E-08              | 3.23E-07            | 6.43E-07         |          | uCi/g | U         |
| Na-22      | 1.23E+02    | 11/12/16 | -5.71E-09             | 3.08E-08            | 6.22E-08         |          | uCi/g | U         |
| K-40       | 1.23E+02    | 11/12/16 | 1.53E-05              | 1.58E-06            | 5.99E-07         |          | uCi/g | 3         |
| Cr-51      | 1.23E+02    | 11/12/16 | -1.18E-07             | 3.95E-07            | 7.44E-07         |          | uCi/g | U         |
| Mn-54      | 1.23E+02    | 11/12/16 | 5.42E-08              | 4.93E-08            | 6.12E-08         |          | uCi/g | U         |
| Fe-59      | 1.23E+02    | 11/12/16 | -2.33E-09             | 8.04E-08            | 1.55E-07         |          | uCi/g | U         |
| Co-56      | 1.23E+02    | 11/12/16 | 4.03E-08              | 4.15E-08            | 8.84E-08         |          | uCi/g | U         |
| Co-57      | 1.23E+02    | 11/12/16 | 1.55E-08              | 2.36E-08            | 4.54E-08         |          | uCi/g | U         |
| Co-58      | 1.23E+02    | 11/12/16 | 4.52E-08              | 3.78E-08            | 5.18E-08         |          | uCi/g | U         |
| Co-60      | 1.23E+02    | 11/12/16 | 1.72E-08              | 2.32E-08            | 6.04E-08         |          | uCi/g | U         |
| Zn-65      | 1.23E+02    | 11/12/16 | 6.38E-09              | 9.45E-08            | 1.60E-07         |          | uCi/g | U         |
| Y-88       | 1.23E+02    | 11/12/16 | 6.65E-09              | 2.24E-08            | 6.11E-08         |          | uCi/g | U         |
| Zr-95      | 1.23E+02    | 11/12/16 | 2.78E-08              | 6.99E-08            | 1.43E-07         |          | uCi/g | U         |
| Nb-94      | 1.23E+02    | 11/12/16 | 2.06E-08              | 3.38E-08            | 6.87E-08         |          | uCi/g | U         |
| Nb-95      | 1.23E+02    | 11/12/16 | 6.33E-09              | 4.94E-08            | 9.39E-08         |          | uCi/g | U         |
| Ru-106     | 1.23E+02    | 11/12/16 | 2.95E-07              | 2.94E-07            | 4.02E-07         |          | uCi/g | U         |
| Ag-110m    | 1.23E+02    | 11/12/16 | -5.62E-09             | 4.40E-08            | 8.32E-08         |          | uCi/g | U         |
| Sn-113     | 1.23E+02    | 11/12/16 | 1.05E-08              | 4.18E-08            | 8.37E-08         |          | uCi/g | U         |
| Sb-124     | 1.23E+02    | 11/12/16 | 1.55E-08              | 6.31E-08            | 1.56E-07         |          | uCi/g | U         |
| Sb-125     | 1.23E+02    | 11/12/16 | -2.60E-09             | 7.80E-08            | 1.52E-07         |          | uCi/g | U         |
| Cs-134     | 1.23E+02    | 11/12/16 | 2.70E-08              | 4.01E-08            | 8.33E-08         |          | uCi/g | U         |
| Cs-136     | 1.23E+02    | 11/12/16 | 8.31E-08              | 1.31E-07            | 2.74E-07         |          | uCi/g | U         |
| Cs-137     | 1.23E+02    | 11/12/16 | 2.17E-08              | 3.55E-08            | 6.86E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.23E+02    | 11/12/16 | -3.02E-08             | 4.28E-08            | 6.78E-08         |          | uCi/g | U         |
| Ba-140     | 1.23E+02    | 11/12/16 | -1.77E-07             | 3.53E-07            | 6.43E-07         |          | uCi/g | U         |
| Ce-139     | 1.23E+02    | 11/12/16 | 2.52E-08              | 2.74E-08            | 5.36E-08         |          | uCi/g | U         |
| Ce-141     | 1.23E+02    | 11/12/16 | -5.51E-08             | 7.20E-08            | 1.22E-07         |          | uCi/g | U         |
| Ce-144     | 1.23E+02    | 11/12/16 | 6.85E-08              | 1.92E-07            | 3.58E-07         |          | uCi/g | U         |
| Nd-147     | 1.23E+02    | 11/12/16 | 2.12E-07              | 8.60E-07            | 1.73E-06         |          | uCi/g | U         |
| Pm-144     | 1.23E+02    | 11/12/16 | 9.05E-09              | 3.25E-08            | 6.45E-08         |          | uCi/g | U         |
| Pm-146     | 1.23E+02    | 11/12/16 | 7.10E-08              | 6.85E-08            | 7.98E-08         |          | uCi/g | U         |
| Eu-152     | 1.23E+02    | 11/12/16 | 5.46E-08              | 8.61E-08            | 1.78E-07         |          | uCi/g | U         |
| Eu-154     | 1.23E+02    | 11/12/16 | -1.37E-08             | 8.74E-08            | 1.78E-07         |          | uCi/g | U         |
| Eu-155     | 1.23E+02    | 11/12/16 | 2.21E-08              | 8.96E-08            | 1.69E-07         |          | uCi/g | U         |
| Ir-192     | 1.23E+02    | 11/12/16 | -1.60E-08             | 3.28E-08            | 6.13E-08         |          | uCi/g | U         |
| Hg-203     | 1.23E+02    | 11/12/16 | -4.83E-08             | 4.38E-08            | 6.71E-08         |          | uCi/g | U         |
| Tl-208     | 1.23E+02    | 11/12/16 | 3.38E-07              | 7.30E-08            | 6.12E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238007  
Client Sample ID: OLA6-S-003  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.23E+02       | 11/12/16 | -4.17E-07 | 2.75E-06    | 5.12E-06 |    | uCi/g | U         |
| Pb-212  | 1.23E+02       | 11/12/16 | 1.08E-06  | 1.30E-07    | 9.71E-08 |    | uCi/g | 3         |
| Pb-214  | 1.23E+02       | 11/12/16 | 1.33E-06  | 1.95E-07    | 1.20E-07 |    | uCi/g | 3         |
| Bi-212  | 1.23E+02       | 11/12/16 | 8.52E-07  | 7.25E-07    | 1.26E-06 |    | uCi/g | U         |
| Bi-214  | 1.23E+02       | 11/12/16 | 9.75E-07  | 1.61E-07    | 1.15E-07 |    | uCi/g | 3         |
| Ra-228  | 1.23E+02       | 11/12/16 | 9.57E-07  | 2.82E-07    | 2.44E-07 |    | uCi/g | 3         |
| Ac-228  | 1.23E+02       | 11/12/16 | 9.57E-07  | 2.82E-07    | 2.44E-07 |    | uCi/g | 3         |
| Th-234  | 1.23E+02       | 11/12/16 | 1.40E-06  | 2.09E-06    | 1.96E-06 |    | uCi/g | U         |
| U-235   | 1.23E+02       | 11/12/16 | -9.08E-09 | 1.84E-07    | 3.31E-07 |    | uCi/g | U         |
| U-238   | 1.23E+02       | 11/12/16 | 1.40E-06  | 2.09E-06    | 1.96E-06 |    | uCi/g | U         |
| Np-239  | 1.23E+02       | 11/12/16 | -4.62E-08 | 2.34E-07    | 4.22E-07 |    | uCi/g | U         |
| Am-241  | 1.23E+02       | 11/12/16 | -9.15E-08 | 1.35E-07    | 2.21E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238007

Client: BHI Energy Power Services LLC

Client Sample ID: OLA6-S-003

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Ac-228          | 9.57E-07 | uCi/g              | 004.56      |
| Bi-214          | 9.75E-07 | uCi/g              | 004.65      |
| Pb-212          | 1.08E-06 | uCi/g              | 005.15      |
| Pb-214          | 1.33E-06 | uCi/g              | 006.35      |
| K-40            | 1.53E-05 | uCi/g              | 073.12      |
| Ra-228          | 9.57E-07 | uCi/g              | 004.56      |
| Tl-208          | 3.38E-07 | uCi/g              | 001.61      |
|                 |          |                    |             |
| Total Activity: | 2.10E-05 | Total % Abundance: | 100.00      |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238008

Client: BHI Energy Power Services LLC

Client Sample ID: OLA6-D2-004

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

Geometry Received:

Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.17E+02    | 11/12/16 | -1.10E-08             | 5.18E-07            | 9.64E-07         |          | uCi/g | U         |
| Na-22      | 1.17E+02    | 11/12/16 | 6.20E-08              | 6.29E-08            | 1.02E-07         |          | uCi/g | U         |
| K-40       | 1.17E+02    | 11/12/16 | 1.60E-05              | 2.02E-06            | 1.02E-06         |          | uCi/g | 3         |
| Cr-51      | 1.17E+02    | 11/12/16 | 2.66E-07              | 6.29E-07            | 1.18E-06         |          | uCi/g | U         |
| Mn-54      | 1.17E+02    | 11/12/16 | 1.21E-08              | 4.83E-08            | 9.96E-08         |          | uCi/g | U         |
| Fe-59      | 1.17E+02    | 11/12/16 | 5.15E-09              | 1.54E-07            | 3.01E-07         |          | uCi/g | U         |
| Co-56      | 1.17E+02    | 11/12/16 | 1.65E-08              | 5.25E-08            | 1.11E-07         |          | uCi/g | U         |
| Co-57      | 1.17E+02    | 11/12/16 | 5.25E-09              | 2.90E-08            | 5.14E-08         |          | uCi/g | U         |
| Co-58      | 1.17E+02    | 11/12/16 | 7.74E-09              | 5.70E-08            | 1.16E-07         |          | uCi/g | U         |
| Co-60      | 1.17E+02    | 11/12/16 | 4.67E-08              | 4.71E-08            | 1.16E-07         |          | uCi/g | U         |
| Zn-65      | 1.17E+02    | 11/12/16 | 2.89E-08              | 1.50E-07            | 2.66E-07         |          | uCi/g | U         |
| Y-88       | 1.17E+02    | 11/12/16 | 2.92E-08              | 5.62E-08            | 1.37E-07         |          | uCi/g | U         |
| Zr-95      | 1.17E+02    | 11/12/16 | 1.06E-07              | 1.18E-07            | 2.47E-07         |          | uCi/g | U         |
| Nb-94      | 1.17E+02    | 11/12/16 | 1.54E-08              | 4.94E-08            | 9.52E-08         |          | uCi/g | U         |
| Nb-95      | 1.17E+02    | 11/12/16 | -3.41E-09             | 7.55E-08            | 1.22E-07         |          | uCi/g | U         |
| Ru-106     | 1.17E+02    | 11/12/16 | -1.68E-07             | 4.77E-07            | 8.38E-07         |          | uCi/g | U         |
| Ag-110m    | 1.17E+02    | 11/12/16 | 1.87E-08              | 6.22E-08            | 1.32E-07         |          | uCi/g | U         |
| Sn-113     | 1.17E+02    | 11/12/16 | 5.57E-08              | 1.27E-07            | 1.17E-07         |          | uCi/g | U         |
| Sb-124     | 1.17E+02    | 11/12/16 | -1.49E-07             | 1.35E-07            | 1.66E-07         |          | uCi/g | U         |
| Sb-125     | 1.17E+02    | 11/12/16 | -7.14E-08             | 1.28E-07            | 2.24E-07         |          | uCi/g | U         |
| Cs-134     | 1.17E+02    | 11/12/16 | 8.11E-08              | 6.99E-08            | 1.51E-07         |          | uCi/g | U         |
| Cs-136     | 1.17E+02    | 11/12/16 | -1.94E-08             | 2.02E-07            | 4.00E-07         |          | uCi/g | U         |
| Cs-137     | 1.17E+02    | 11/12/16 | 4.30E-08              | 5.24E-08            | 1.09E-07         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.17E+02    | 11/12/16 | 5.71E-08              | 4.30E-08            | 8.70E-08         |          | uCi/g | U         |
| Ba-140     | 1.17E+02    | 11/12/16 | 6.32E-07              | 5.73E-07            | 1.24E-06         |          | uCi/g | U         |
| Ce-139     | 1.17E+02    | 11/12/16 | 9.02E-09              | 3.30E-08            | 6.44E-08         |          | uCi/g | U         |
| Ce-141     | 1.17E+02    | 11/12/16 | 3.94E-08              | 1.30E-07            | 1.67E-07         |          | uCi/g | U         |
| Ce-144     | 1.17E+02    | 11/12/16 | -1.53E-07             | 2.09E-07            | 3.80E-07         |          | uCi/g | U         |
| Nd-147     | 1.17E+02    | 11/12/16 | -7.34E-07             | 1.39E-06            | 2.40E-06         |          | uCi/g | U         |
| Pm-144     | 1.17E+02    | 11/12/16 | -2.36E-08             | 5.56E-08            | 9.52E-08         |          | uCi/g | U         |
| Pm-146     | 1.17E+02    | 11/12/16 | 3.84E-08              | 6.57E-08            | 1.29E-07         |          | uCi/g | U         |
| Eu-152     | 1.17E+02    | 11/12/16 | 4.51E-10              | 1.18E-07            | 2.23E-07         |          | uCi/g | U         |
| Eu-154     | 1.17E+02    | 11/12/16 | 1.75E-07              | 1.78E-07            | 3.57E-07         |          | uCi/g | U         |
| Eu-155     | 1.17E+02    | 11/12/16 | 0.00E+00              | 2.18E-07            | 2.28E-07         |          | uCi/g | UI        |
| Ir-192     | 1.17E+02    | 11/12/16 | -1.22E-08             | 4.93E-08            | 8.07E-08         |          | uCi/g | U         |
| Hg-203     | 1.17E+02    | 11/12/16 | -7.55E-09             | 6.80E-08            | 1.12E-07         |          | uCi/g | U         |
| Tl-208     | 1.17E+02    | 11/12/16 | 2.99E-07              | 1.18E-07            | 1.07E-07         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238008  
Client Sample ID: OLA6-D2-004  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.17E+02       | 11/12/16 | 9.50E-07  | 1.24E-06    | 1.02E-06 |    | uCi/g | U         |
| Pb-212  | 1.17E+02       | 11/12/16 | 9.90E-07  | 1.63E-07    | 1.31E-07 |    | uCi/g | 3         |
| Pb-214  | 1.17E+02       | 11/12/16 | 1.58E-06  | 2.74E-07    | 4.74E-07 |    | uCi/g | 3         |
| Bi-212  | 1.17E+02       | 11/12/16 | 1.67E-06  | 1.34E-06    | 1.88E-06 |    | uCi/g | U         |
| Bi-214  | 1.17E+02       | 11/12/16 | 1.13E-06  | 2.24E-07    | 1.85E-07 |    | uCi/g | 3         |
| Ra-228  | 1.17E+02       | 11/12/16 | 1.08E-06  | 4.62E-07    | 4.43E-07 |    | uCi/g | 3         |
| Ac-228  | 1.17E+02       | 11/12/16 | 1.08E-06  | 4.62E-07    | 4.43E-07 |    | uCi/g | 3         |
| Th-234  | 1.17E+02       | 11/12/16 | 0.00E+00  | 1.59E-06    | 1.23E-06 |    | uCi/g | UI        |
| U-235   | 1.17E+02       | 11/12/16 | -1.47E-07 | 2.58E-07    | 4.25E-07 |    | uCi/g | U         |
| U-238   | 1.17E+02       | 11/12/16 | 0.00E+00  | 1.59E-06    | 1.23E-06 |    | uCi/g | UI        |
| Np-239  | 1.17E+02       | 11/12/16 | -1.42E-07 | 3.15E-07    | 5.24E-07 |    | uCi/g | U         |
| Am-241  | 1.17E+02       | 11/12/16 | -4.78E-09 | 8.03E-08    | 1.30E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238008

Client: BHI Energy Power Services LLC

Client Sample ID: OLA6-D2-004

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Ac-228          | 1.08E-06 | uCi/g              | 004.88      |
| Bi-214          | 1.13E-06 | uCi/g              | 005.09      |
| Pb-212          | 9.90E-07 | uCi/g              | 004.46      |
| Pb-214          | 1.58E-06 | uCi/g              | 007.14      |
| K-40            | 1.60E-05 | uCi/g              | 072.19      |
| Ra-228          | 1.08E-06 | uCi/g              | 004.88      |
| Tl-208          | 2.99E-07 | uCi/g              | 001.35      |
|                 |          |                    |             |
| Total Activity: | 2.22E-05 | Total % Abundance: | 100.00      |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238009

Client: BHI Energy Power Services LLC

Client Sample ID: OLA6-S-005

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

Geometry Received:

Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.13E+02    | 11/12/16 | -4.48E-08             | 4.11E-07            | 7.60E-07         |          | uCi/g | U         |
| Na-22      | 1.13E+02    | 11/12/16 | 4.59E-09              | 7.42E-08            | 1.27E-07         |          | uCi/g | U         |
| K-40       | 1.13E+02    | 11/12/16 | 1.33E-05              | 2.12E-06            | 1.19E-06         |          | uCi/g | 3         |
| Cr-51      | 1.13E+02    | 11/12/16 | -1.10E-07             | 5.61E-07            | 1.01E-06         |          | uCi/g | U         |
| Mn-54      | 1.13E+02    | 11/12/16 | 2.93E-08              | 5.06E-08            | 1.07E-07         |          | uCi/g | U         |
| Fe-59      | 1.13E+02    | 11/12/16 | -1.10E-07             | 1.38E-07            | 2.30E-07         |          | uCi/g | U         |
| Co-56      | 1.13E+02    | 11/12/16 | -5.05E-09             | 6.69E-08            | 1.14E-07         |          | uCi/g | U         |
| Co-57      | 1.13E+02    | 11/12/16 | 1.76E-08              | 2.83E-08            | 5.56E-08         |          | uCi/g | U         |
| Co-58      | 1.13E+02    | 11/12/16 | 3.59E-09              | 4.91E-08            | 1.00E-07         |          | uCi/g | U         |
| Co-60      | 1.13E+02    | 11/12/16 | -6.91E-09             | 5.48E-08            | 1.06E-07         |          | uCi/g | U         |
| Zn-65      | 1.13E+02    | 11/12/16 | 5.88E-08              | 1.01E-07            | 2.11E-07         |          | uCi/g | U         |
| Y-88       | 1.13E+02    | 11/12/16 | -4.89E-08             | 4.29E-08            | 2.84E-08         |          | uCi/g | U         |
| Zr-95      | 1.13E+02    | 11/12/16 | 1.32E-08              | 8.68E-08            | 1.80E-07         |          | uCi/g | U         |
| Nb-94      | 1.13E+02    | 11/12/16 | -1.84E-08             | 4.63E-08            | 8.56E-08         |          | uCi/g | U         |
| Nb-95      | 1.13E+02    | 11/12/16 | -6.95E-09             | 6.59E-08            | 1.26E-07         |          | uCi/g | U         |
| Ru-106     | 1.13E+02    | 11/12/16 | 0.00E+00              | 5.38E-07            | 5.42E-07         |          | uCi/g | UI        |
| Ag-110m    | 1.13E+02    | 11/12/16 | -1.30E-08             | 6.15E-08            | 1.19E-07         |          | uCi/g | U         |
| Sn-113     | 1.13E+02    | 11/12/16 | -7.91E-09             | 5.81E-08            | 1.06E-07         |          | uCi/g | U         |
| Sb-124     | 1.13E+02    | 11/12/16 | -1.87E-08             | 7.38E-08            | 1.70E-07         |          | uCi/g | U         |
| Sb-125     | 1.13E+02    | 11/12/16 | 8.41E-08              | 1.08E-07            | 2.22E-07         |          | uCi/g | U         |
| Cs-134     | 1.13E+02    | 11/12/16 | 3.87E-08              | 5.07E-08            | 1.12E-07         |          | uCi/g | U         |
| Cs-136     | 1.13E+02    | 11/12/16 | -7.91E-08             | 2.25E-07            | 4.14E-07         |          | uCi/g | U         |
| Cs-137     | 1.13E+02    | 11/12/16 | -3.70E-08             | 4.93E-08            | 8.69E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.13E+02    | 11/12/16 | -5.55E-09             | 6.65E-08            | 1.08E-07         |          | uCi/g | U         |
| Ba-140     | 1.13E+02    | 11/12/16 | -4.24E-07             | 6.25E-07            | 1.03E-06         |          | uCi/g | U         |
| Ce-139     | 1.13E+02    | 11/12/16 | -3.67E-08             | 3.47E-08            | 5.94E-08         |          | uCi/g | U         |
| Ce-141     | 1.13E+02    | 11/12/16 | 3.93E-08              | 8.40E-08            | 1.62E-07         |          | uCi/g | U         |
| Ce-144     | 1.13E+02    | 11/12/16 | -2.25E-08             | 2.18E-07            | 4.08E-07         |          | uCi/g | U         |
| Nd-147     | 1.13E+02    | 11/12/16 | -1.21E-06             | 1.43E-06            | 1.90E-06         |          | uCi/g | U         |
| Pm-144     | 1.13E+02    | 11/12/16 | -2.27E-08             | 4.97E-08            | 9.10E-08         |          | uCi/g | U         |
| Pm-146     | 1.13E+02    | 11/12/16 | 4.48E-09              | 4.66E-08            | 8.11E-08         |          | uCi/g | U         |
| Eu-152     | 1.13E+02    | 11/12/16 | -7.71E-08             | 1.47E-07            | 2.22E-07         |          | uCi/g | U         |
| Eu-154     | 1.13E+02    | 11/12/16 | -1.91E-08             | 2.18E-07            | 3.59E-07         |          | uCi/g | U         |
| Eu-155     | 1.13E+02    | 11/12/16 | 0.00E+00              | 1.85E-07            | 1.71E-07         |          | uCi/g | UI        |
| Ir-192     | 1.13E+02    | 11/12/16 | 1.07E-08              | 4.43E-08            | 8.48E-08         |          | uCi/g | U         |
| Hg-203     | 1.13E+02    | 11/12/16 | 3.05E-08              | 5.80E-08            | 1.12E-07         |          | uCi/g | U         |
| Tl-208     | 1.13E+02    | 11/12/16 | 3.94E-07              | 1.03E-07            | 7.61E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238009  
Client Sample ID: OLA6-S-005  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.13E+02       | 11/12/16 | 7.18E-07  | 9.70E-07    | 1.02E-06 |    | uCi/g | U         |
| Pb-212  | 1.13E+02       | 11/12/16 | 1.11E-06  | 1.43E-07    | 1.11E-07 |    | uCi/g | 3         |
| Pb-214  | 1.13E+02       | 11/12/16 | 1.21E-06  | 2.66E-07    | 1.79E-07 |    | uCi/g | 3         |
| Bi-212  | 1.13E+02       | 11/12/16 | 1.02E-06  | 7.93E-07    | 1.74E-06 |    | uCi/g | U         |
| Bi-214  | 1.13E+02       | 11/12/16 | 1.11E-06  | 2.47E-07    | 1.68E-07 |    | uCi/g | 3         |
| Ra-228  | 1.13E+02       | 11/12/16 | 1.03E-06  | 3.68E-07    | 3.94E-07 |    | uCi/g | 3         |
| Ac-228  | 1.13E+02       | 11/12/16 | 1.03E-06  | 3.68E-07    | 3.94E-07 |    | uCi/g | 3         |
| Th-234  | 1.13E+02       | 11/12/16 | 6.26E-07  | 1.34E-06    | 1.14E-06 |    | uCi/g | U         |
| U-235   | 1.13E+02       | 11/12/16 | 2.70E-08  | 2.36E-07    | 4.42E-07 |    | uCi/g | U         |
| U-238   | 1.13E+02       | 11/12/16 | 6.26E-07  | 1.34E-06    | 1.14E-06 |    | uCi/g | U         |
| Np-239  | 1.13E+02       | 11/12/16 | 4.88E-07  | 3.47E-07    | 4.91E-07 |    | uCi/g | U         |
| Am-241  | 1.13E+02       | 11/12/16 | -3.71E-08 | 7.41E-08    | 1.13E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification



# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238009

Client: BHI Energy Power Services LLC

Client Sample ID: OLA6-S-005

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Ac-228          | 1.03E-06 | uCi/g              | 005.37      |
| Bi-214          | 1.11E-06 | uCi/g              | 005.77      |
| Pb-212          | 1.11E-06 | uCi/g              | 005.81      |
| Pb-214          | 1.21E-06 | uCi/g              | 006.29      |
| K-40            | 1.33E-05 | uCi/g              | 069.33      |
| Ra-228          | 1.03E-06 | uCi/g              | 005.37      |
| Tl-208          | 3.94E-07 | uCi/g              | 002.06      |
|                 |          |                    |             |
| Total Activity: | 1.92E-05 | Total % Abundance: | 100.00      |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238010  
Client Sample ID: OLA6-D2-006  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.17E+02    | 11/12/16 | 7.07E-08              | 4.93E-07            | 8.61E-07         |          | uCi/g | U         |
| Na-22      | 1.17E+02    | 11/12/16 | 5.57E-09              | 4.79E-08            | 9.77E-08         |          | uCi/g | U         |
| K-40       | 1.17E+02    | 11/12/16 | 1.56E-05              | 1.89E-06            | 8.34E-07         |          | uCi/g | 3         |
| Cr-51      | 1.17E+02    | 11/12/16 | 2.51E-07              | 4.51E-07            | 9.33E-07         |          | uCi/g | U         |
| Mn-54      | 1.17E+02    | 11/12/16 | 3.40E-08              | 5.05E-08            | 9.20E-08         |          | uCi/g | U         |
| Fe-59      | 1.17E+02    | 11/12/16 | 1.11E-07              | 1.47E-07            | 2.91E-07         |          | uCi/g | U         |
| Co-56      | 1.17E+02    | 11/12/16 | -1.82E-08             | 5.81E-08            | 1.02E-07         |          | uCi/g | U         |
| Co-57      | 1.17E+02    | 11/12/16 | -1.47E-08             | 2.90E-08            | 5.04E-08         |          | uCi/g | U         |
| Co-58      | 1.17E+02    | 11/12/16 | -3.13E-08             | 5.25E-08            | 8.76E-08         |          | uCi/g | U         |
| Co-60      | 1.17E+02    | 11/12/16 | 2.69E-08              | 4.37E-08            | 9.95E-08         |          | uCi/g | U         |
| Zn-65      | 1.17E+02    | 11/12/16 | -2.64E-08             | 1.29E-07            | 2.12E-07         |          | uCi/g | U         |
| Y-88       | 1.17E+02    | 11/12/16 | -4.60E-09             | 3.81E-08            | 8.63E-08         |          | uCi/g | U         |
| Zr-95      | 1.17E+02    | 11/12/16 | -2.74E-08             | 1.13E-07            | 2.00E-07         |          | uCi/g | U         |
| Nb-94      | 1.17E+02    | 11/12/16 | 1.08E-08              | 5.22E-08            | 9.78E-08         |          | uCi/g | U         |
| Nb-95      | 1.17E+02    | 11/12/16 | 7.85E-08              | 5.57E-08            | 1.13E-07         |          | uCi/g | U         |
| Ru-106     | 1.17E+02    | 11/12/16 | 1.77E-07              | 4.05E-07            | 8.10E-07         |          | uCi/g | U         |
| Ag-110m    | 1.17E+02    | 11/12/16 | 2.19E-08              | 5.94E-08            | 1.26E-07         |          | uCi/g | U         |
| Sn-113     | 1.17E+02    | 11/12/16 | 9.19E-09              | 5.56E-08            | 1.08E-07         |          | uCi/g | U         |
| Sb-124     | 1.17E+02    | 11/12/16 | -6.46E-08             | 1.10E-07            | 1.87E-07         |          | uCi/g | U         |
| Sb-125     | 1.17E+02    | 11/12/16 | 8.48E-08              | 1.18E-07            | 2.41E-07         |          | uCi/g | U         |
| Cs-134     | 1.17E+02    | 11/12/16 | 7.07E-08              | 5.60E-08            | 1.22E-07         |          | uCi/g | U         |
| Cs-136     | 1.17E+02    | 11/12/16 | -3.96E-08             | 2.02E-07            | 3.89E-07         |          | uCi/g | U         |
| Cs-137     | 1.17E+02    | 11/12/16 | -2.06E-08             | 3.65E-08            | 6.30E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.17E+02    | 11/12/16 | 1.82E-08              | 5.00E-08            | 9.14E-08         |          | uCi/g | U         |
| Ba-140     | 1.17E+02    | 11/12/16 | 2.44E-07              | 4.43E-07            | 9.30E-07         |          | uCi/g | U         |
| Ce-139     | 1.17E+02    | 11/12/16 | 1.41E-08              | 3.58E-08            | 6.60E-08         |          | uCi/g | U         |
| Ce-141     | 1.17E+02    | 11/12/16 | 2.12E-08              | 8.59E-08            | 1.58E-07         |          | uCi/g | U         |
| Ce-144     | 1.17E+02    | 11/12/16 | -1.29E-07             | 2.18E-07            | 3.74E-07         |          | uCi/g | U         |
| Nd-147     | 1.17E+02    | 11/12/16 | -6.41E-07             | 1.06E-06            | 1.85E-06         |          | uCi/g | U         |
| Pm-144     | 1.17E+02    | 11/12/16 | -1.09E-08             | 4.31E-08            | 7.77E-08         |          | uCi/g | U         |
| Pm-146     | 1.17E+02    | 11/12/16 | 4.12E-08              | 4.97E-08            | 1.04E-07         |          | uCi/g | U         |
| Eu-152     | 1.17E+02    | 11/12/16 | 1.33E-08              | 1.03E-07            | 2.01E-07         |          | uCi/g | U         |
| Eu-154     | 1.17E+02    | 11/12/16 | 9.32E-09              | 1.34E-07            | 2.71E-07         |          | uCi/g | U         |
| Eu-155     | 1.17E+02    | 11/12/16 | 4.88E-09              | 1.21E-07            | 2.23E-07         |          | uCi/g | U         |
| Ir-192     | 1.17E+02    | 11/12/16 | -3.34E-11             | 3.70E-08            | 7.23E-08         |          | uCi/g | U         |
| Hg-203     | 1.17E+02    | 11/12/16 | -2.10E-08             | 4.64E-08            | 8.62E-08         |          | uCi/g | U         |
| Tl-208     | 1.17E+02    | 11/12/16 | 3.71E-07              | 1.08E-07            | 9.18E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238010  
Client Sample ID: OLA6-D2-006  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 19, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma<br>Uncertainty | MDA      | RL | Units | Qualifier |
|---------|----------------|----------|-----------|------------------------|----------|----|-------|-----------|
| Pb-210  | 1.17E+02       | 11/12/16 | 7.68E-06  | 9.24E-06               | 1.89E-05 |    | uCi/g | U         |
| Pb-212  | 1.17E+02       | 11/12/16 | 1.14E-06  | 1.45E-07               | 1.12E-07 |    | uCi/g | 3         |
| Pb-214  | 1.17E+02       | 11/12/16 | 1.30E-06  | 2.41E-07               | 1.57E-07 |    | uCi/g | 3         |
| Bi-212  | 1.17E+02       | 11/12/16 | 9.42E-07  | 7.51E-07               | 1.59E-06 |    | uCi/g | U         |
| Bi-214  | 1.17E+02       | 11/12/16 | 1.32E-06  | 2.32E-07               | 1.69E-07 |    | uCi/g | 3         |
| Ra-228  | 1.17E+02       | 11/12/16 | 1.34E-06  | 3.63E-07               | 3.03E-07 |    | uCi/g | 3         |
| Ac-228  | 1.17E+02       | 11/12/16 | 1.34E-06  | 3.63E-07               | 3.03E-07 |    | uCi/g | 3         |
| Th-234  | 1.17E+02       | 11/12/16 | 2.32E-06  | 3.44E-06               | 3.28E-06 |    | uCi/g | U         |
| U-235   | 1.17E+02       | 11/12/16 | -1.08E-07 | 2.35E-07               | 4.07E-07 |    | uCi/g | U         |
| U-238   | 1.17E+02       | 11/12/16 | 2.32E-06  | 3.44E-06               | 3.28E-06 |    | uCi/g | U         |
| Np-239  | 1.17E+02       | 11/12/16 | 9.05E-08  | 3.02E-07               | 5.66E-07 |    | uCi/g | U         |
| Am-241  | 1.17E+02       | 11/12/16 | 2.78E-08  | 2.43E-07               | 4.63E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238010

Client: BHI Energy Power Services LLC

Client Sample ID: OLA6-D2-006

Collect Date: October 19, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 1.34E-06 | uCi/g    | 005.96                    |
| Bi-214          | 1.32E-06 | uCi/g    | 005.90                    |
| Pb-212          | 1.14E-06 | uCi/g    | 005.08                    |
| Pb-214          | 1.30E-06 | uCi/g    | 005.78                    |
| K-40            | 1.56E-05 | uCi/g    | 069.66                    |
| Ra-228          | 1.34E-06 | uCi/g    | 005.96                    |
| Tl-208          | 3.71E-07 | uCi/g    | 001.66                    |
|                 |          |          |                           |
| Total Activity: |          | 2.24E-05 | Total % Abundance: 100.00 |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238011  
Client Sample ID: OLA4-S-001  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.16E+02    | 11/12/16 | 1.77E-07              | 3.18E-07            | 6.64E-07         |          | uCi/g | U         |
| Na-22      | 1.16E+02    | 11/12/16 | 2.79E-08              | 3.84E-08            | 8.73E-08         |          | uCi/g | U         |
| K-40       | 1.16E+02    | 11/12/16 | 1.57E-05              | 1.77E-06            | 7.81E-07         |          | uCi/g | 3         |
| Cr-51      | 1.16E+02    | 11/12/16 | -1.41E-08             | 4.02E-07            | 7.16E-07         |          | uCi/g | U         |
| Mn-54      | 1.16E+02    | 11/12/16 | 1.25E-08              | 4.19E-08            | 7.47E-08         |          | uCi/g | U         |
| Fe-59      | 1.16E+02    | 11/12/16 | -3.95E-08             | 1.08E-07            | 1.74E-07         |          | uCi/g | U         |
| Co-56      | 1.16E+02    | 11/12/16 | 2.03E-08              | 4.88E-08            | 9.62E-08         |          | uCi/g | U         |
| Co-57      | 1.16E+02    | 11/12/16 | -9.19E-09             | 1.90E-08            | 3.41E-08         |          | uCi/g | U         |
| Co-58      | 1.16E+02    | 11/12/16 | 3.50E-08              | 4.41E-08            | 9.33E-08         |          | uCi/g | U         |
| Co-60      | 1.16E+02    | 11/12/16 | -6.10E-09             | 3.55E-08            | 6.48E-08         |          | uCi/g | U         |
| Zn-65      | 1.16E+02    | 11/12/16 | -2.89E-08             | 9.26E-08            | 1.51E-07         |          | uCi/g | U         |
| Y-88       | 1.16E+02    | 11/12/16 | 1.49E-08              | 4.52E-08            | 1.02E-07         |          | uCi/g | U         |
| Zr-95      | 1.16E+02    | 11/12/16 | 8.46E-08              | 7.55E-08            | 1.68E-07         |          | uCi/g | U         |
| Nb-94      | 1.16E+02    | 11/12/16 | 1.43E-08              | 4.00E-08            | 7.76E-08         |          | uCi/g | U         |
| Nb-95      | 1.16E+02    | 11/12/16 | -3.69E-08             | 4.80E-08            | 7.88E-08         |          | uCi/g | U         |
| Ru-106     | 1.16E+02    | 11/12/16 | -1.69E-07             | 3.08E-07            | 5.40E-07         |          | uCi/g | U         |
| Ag-110m    | 1.16E+02    | 11/12/16 | 5.65E-09              | 5.14E-08            | 9.89E-08         |          | uCi/g | U         |
| Sn-113     | 1.16E+02    | 11/12/16 | -3.00E-08             | 4.74E-08            | 8.42E-08         |          | uCi/g | U         |
| Sb-124     | 1.16E+02    | 11/12/16 | -1.38E-08             | 9.24E-08            | 1.87E-07         |          | uCi/g | U         |
| Sb-125     | 1.16E+02    | 11/12/16 | -1.99E-09             | 8.17E-08            | 1.59E-07         |          | uCi/g | U         |
| Cs-134     | 1.16E+02    | 11/12/16 | 5.89E-08              | 5.82E-08            | 9.78E-08         |          | uCi/g | U         |
| Cs-136     | 1.16E+02    | 11/12/16 | -5.13E-08             | 2.01E-07            | 3.31E-07         |          | uCi/g | U         |
| Cs-137     | 1.16E+02    | 11/12/16 | 7.55E-09              | 3.70E-08            | 7.27E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.16E+02    | 11/12/16 | 3.68E-08              | 4.17E-08            | 8.20E-08         |          | uCi/g | U         |
| Ba-140     | 1.16E+02    | 11/12/16 | 1.56E-07              | 4.41E-07            | 8.77E-07         |          | uCi/g | U         |
| Ce-139     | 1.16E+02    | 11/12/16 | -1.21E-08             | 2.70E-08            | 4.73E-08         |          | uCi/g | U         |
| Ce-141     | 1.16E+02    | 11/12/16 | -5.36E-08             | 5.97E-08            | 9.94E-08         |          | uCi/g | U         |
| Ce-144     | 1.16E+02    | 11/12/16 | 1.34E-08              | 1.67E-07            | 2.90E-07         |          | uCi/g | U         |
| Nd-147     | 1.16E+02    | 11/12/16 | 2.73E-07              | 9.00E-07            | 1.80E-06         |          | uCi/g | U         |
| Pm-144     | 1.16E+02    | 11/12/16 | -6.41E-11             | 3.37E-08            | 6.41E-08         |          | uCi/g | U         |
| Pm-146     | 1.16E+02    | 11/12/16 | 6.25E-09              | 3.90E-08            | 7.74E-08         |          | uCi/g | U         |
| Eu-152     | 1.16E+02    | 11/12/16 | 3.35E-08              | 8.75E-08            | 1.65E-07         |          | uCi/g | U         |
| Eu-154     | 1.16E+02    | 11/12/16 | 7.87E-08              | 1.08E-07            | 2.47E-07         |          | uCi/g | U         |
| Eu-155     | 1.16E+02    | 11/12/16 | -2.29E-08             | 6.89E-08            | 1.27E-07         |          | uCi/g | U         |
| Ir-192     | 1.16E+02    | 11/12/16 | 2.72E-08              | 3.31E-08            | 6.57E-08         |          | uCi/g | U         |
| Hg-203     | 1.16E+02    | 11/12/16 | -4.01E-08             | 4.55E-08            | 7.25E-08         |          | uCi/g | U         |
| Tl-208     | 1.16E+02    | 11/12/16 | 3.39E-07              | 8.94E-08            | 6.86E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238011  
Client Sample ID: OLA4-S-001  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.16E+02       | 11/12/16 | 1.87E-06  | 8.56E-07    | 6.22E-07 |    | uCi/g | 3         |
| Pb-212  | 1.16E+02       | 11/12/16 | 1.19E-06  | 1.30E-07    | 9.00E-08 |    | uCi/g | 3         |
| Pb-214  | 1.16E+02       | 11/12/16 | 1.31E-06  | 2.03E-07    | 3.73E-07 |    | uCi/g | 3         |
| Bi-212  | 1.16E+02       | 11/12/16 | 1.22E-06  | 8.16E-07    | 1.43E-06 |    | uCi/g | U         |
| Bi-214  | 1.16E+02       | 11/12/16 | 8.07E-07  | 1.72E-07    | 1.44E-07 |    | uCi/g | 3         |
| Ra-228  | 1.16E+02       | 11/12/16 | 9.72E-07  | 2.90E-07    | 2.14E-07 |    | uCi/g | 3         |
| Ac-228  | 1.16E+02       | 11/12/16 | 9.72E-07  | 2.90E-07    | 2.14E-07 |    | uCi/g | 3         |
| Th-234  | 1.16E+02       | 11/12/16 | 0.00E+00  | 1.10E-06    | 8.41E-07 |    | uCi/g | UI        |
| U-235   | 1.16E+02       | 11/12/16 | 5.20E-08  | 1.67E-07    | 3.10E-07 |    | uCi/g | U         |
| U-238   | 1.16E+02       | 11/12/16 | 0.00E+00  | 1.10E-06    | 8.41E-07 |    | uCi/g | UI        |
| Np-239  | 1.16E+02       | 11/12/16 | -3.03E-08 | 1.99E-07    | 3.69E-07 |    | uCi/g | U         |
| Am-241  | 1.16E+02       | 11/12/16 | 1.22E-08  | 4.46E-08    | 7.51E-08 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238011

Client: BHI Energy Power Services LLC

Client Sample ID: OLA4-S-001

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 9.72E-07 | uCi/g    | 004.19                    |
| Bi-214          | 8.07E-07 | uCi/g    | 003.48                    |
| Pb-210          | 1.87E-06 | uCi/g    | 008.07                    |
| Pb-212          | 1.19E-06 | uCi/g    | 005.14                    |
| Pb-214          | 1.31E-06 | uCi/g    | 005.64                    |
| K-40            | 1.57E-05 | uCi/g    | 067.81                    |
| Ra-228          | 9.72E-07 | uCi/g    | 004.19                    |
| Tl-208          | 3.39E-07 | uCi/g    | 001.46                    |
|                 |          |          |                           |
| Total Activity: |          | 2.32E-05 | Total % Abundance: 100.00 |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238012  
Client Sample ID: OLA4-S-002  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.13E+02    | 11/12/16 | 1.39E-07              | 3.76E-07            | 7.51E-07         |          | uCi/g | U         |
| Na-22      | 1.13E+02    | 11/12/16 | -3.08E-08             | 4.41E-08            | 7.09E-08         |          | uCi/g | U         |
| K-40       | 1.13E+02    | 11/12/16 | 1.52E-05              | 1.81E-06            | 6.63E-07         |          | uCi/g | 3         |
| Cr-51      | 1.13E+02    | 11/12/16 | -1.51E-08             | 4.40E-07            | 8.48E-07         |          | uCi/g | U         |
| Mn-54      | 1.13E+02    | 11/12/16 | 0.00E+00              | 3.50E-08            | 8.97E-09         |          | uCi/g | UI        |
| Fe-59      | 1.13E+02    | 11/12/16 | -8.47E-08             | 9.92E-08            | 1.56E-07         |          | uCi/g | U         |
| Co-56      | 1.13E+02    | 11/12/16 | 2.11E-08              | 4.03E-08            | 8.47E-08         |          | uCi/g | U         |
| Co-57      | 1.13E+02    | 11/12/16 | -8.93E-09             | 2.57E-08            | 4.48E-08         |          | uCi/g | U         |
| Co-58      | 1.13E+02    | 11/12/16 | 1.93E-08              | 3.88E-08            | 5.51E-08         |          | uCi/g | U         |
| Co-60      | 1.13E+02    | 11/12/16 | 1.68E-08              | 3.25E-08            | 7.23E-08         |          | uCi/g | U         |
| Zn-65      | 1.13E+02    | 11/12/16 | -4.95E-08             | 8.85E-08            | 1.27E-07         |          | uCi/g | U         |
| Y-88       | 1.13E+02    | 11/12/16 | 2.14E-09              | 2.84E-08            | 6.88E-08         |          | uCi/g | U         |
| Zr-95      | 1.13E+02    | 11/12/16 | -1.88E-08             | 8.05E-08            | 1.48E-07         |          | uCi/g | U         |
| Nb-94      | 1.13E+02    | 11/12/16 | 2.52E-09              | 3.44E-08            | 6.61E-08         |          | uCi/g | U         |
| Nb-95      | 1.13E+02    | 11/12/16 | -6.24E-09             | 5.33E-08            | 8.82E-08         |          | uCi/g | U         |
| Ru-106     | 1.13E+02    | 11/12/16 | -2.07E-07             | 3.09E-07            | 5.39E-07         |          | uCi/g | U         |
| Ag-110m    | 1.13E+02    | 11/12/16 | 3.46E-08              | 4.66E-08            | 1.01E-07         |          | uCi/g | U         |
| Sn-113     | 1.13E+02    | 11/12/16 | 1.63E-08              | 4.51E-08            | 9.05E-08         |          | uCi/g | U         |
| Sb-124     | 1.13E+02    | 11/12/16 | -5.16E-09             | 7.99E-08            | 1.74E-07         |          | uCi/g | U         |
| Sb-125     | 1.13E+02    | 11/12/16 | 6.09E-08              | 9.06E-08            | 1.87E-07         |          | uCi/g | U         |
| Cs-134     | 1.13E+02    | 11/12/16 | 1.84E-08              | 4.57E-08            | 9.11E-08         |          | uCi/g | U         |
| Cs-136     | 1.13E+02    | 11/12/16 | -3.23E-08             | 1.48E-07            | 2.73E-07         |          | uCi/g | U         |
| Cs-137     | 1.13E+02    | 11/12/16 | 2.61E-08              | 4.37E-08            | 8.22E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.13E+02    | 11/12/16 | 7.31E-11              | 4.36E-08            | 7.63E-08         |          | uCi/g | U         |
| Ba-140     | 1.13E+02    | 11/12/16 | -2.07E-07             | 4.01E-07            | 7.22E-07         |          | uCi/g | U         |
| Ce-139     | 1.13E+02    | 11/12/16 | 2.21E-08              | 3.04E-08            | 5.73E-08         |          | uCi/g | U         |
| Ce-141     | 1.13E+02    | 11/12/16 | -4.20E-08             | 7.12E-08            | 1.20E-07         |          | uCi/g | U         |
| Ce-144     | 1.13E+02    | 11/12/16 | 2.43E-08              | 2.07E-07            | 3.73E-07         |          | uCi/g | U         |
| Nd-147     | 1.13E+02    | 11/12/16 | -4.02E-07             | 1.08E-06            | 1.75E-06         |          | uCi/g | U         |
| Pm-144     | 1.13E+02    | 11/12/16 | -2.05E-10             | 3.95E-08            | 7.44E-08         |          | uCi/g | U         |
| Pm-146     | 1.13E+02    | 11/12/16 | -3.76E-09             | 4.25E-08            | 8.01E-08         |          | uCi/g | U         |
| Eu-152     | 1.13E+02    | 11/12/16 | 1.27E-07              | 1.70E-07            | 1.84E-07         |          | uCi/g | U         |
| Eu-154     | 1.13E+02    | 11/12/16 | -8.20E-08             | 1.25E-07            | 2.04E-07         |          | uCi/g | U         |
| Eu-155     | 1.13E+02    | 11/12/16 | 1.31E-07              | 1.08E-07            | 2.11E-07         |          | uCi/g | U         |
| Ir-192     | 1.13E+02    | 11/12/16 | 2.21E-09              | 4.38E-08            | 7.09E-08         |          | uCi/g | U         |
| Hg-203     | 1.13E+02    | 11/12/16 | -3.29E-09             | 4.64E-08            | 8.04E-08         |          | uCi/g | U         |
| Tl-208     | 1.13E+02    | 11/12/16 | 3.52E-07              | 9.42E-08            | 7.05E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

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UI Gamma Spectroscopy—Uncertain identification



# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238012  
Client Sample ID: OLA4-S-002  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.13E+02       | 11/12/16 | 3.37E-06  | 6.20E-06    | 5.99E-06 |    | uCi/g | U         |
| Pb-212  | 1.13E+02       | 11/12/16 | 1.09E-06  | 1.35E-07    | 1.06E-07 |    | uCi/g | 3         |
| Pb-214  | 1.13E+02       | 11/12/16 | 1.12E-06  | 2.12E-07    | 1.39E-07 |    | uCi/g | 3         |
| Bi-212  | 1.13E+02       | 11/12/16 | 1.22E-06  | 8.19E-07    | 1.30E-06 |    | uCi/g | U         |
| Bi-214  | 1.13E+02       | 11/12/16 | 9.02E-07  | 1.72E-07    | 1.29E-07 |    | uCi/g | 3         |
| Ra-228  | 1.13E+02       | 11/12/16 | 8.21E-07  | 3.10E-07    | 2.76E-07 |    | uCi/g | 3         |
| Ac-228  | 1.13E+02       | 11/12/16 | 8.21E-07  | 3.10E-07    | 2.76E-07 |    | uCi/g | 3         |
| Th-234  | 1.13E+02       | 11/12/16 | -6.07E-07 | 1.47E-06    | 2.66E-06 |    | uCi/g | U         |
| U-235   | 1.13E+02       | 11/12/16 | 8.21E-08  | 1.95E-07    | 3.55E-07 |    | uCi/g | U         |
| U-238   | 1.13E+02       | 11/12/16 | -6.07E-07 | 1.47E-06    | 2.66E-06 |    | uCi/g | U         |
| Np-239  | 1.13E+02       | 11/12/16 | 9.01E-08  | 2.49E-07    | 4.63E-07 |    | uCi/g | U         |
| Am-241  | 1.13E+02       | 11/12/16 | -2.59E-08 | 1.65E-07    | 2.98E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238012

Client: BHI Energy Power Services LLC

Client Sample ID: OLA4-S-002

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 8.21E-07 | uCi/g    | 004.04                    |
| Bi-214          | 9.02E-07 | uCi/g    | 004.44                    |
| Pb-212          | 1.09E-06 | uCi/g    | 005.37                    |
| Pb-214          | 1.12E-06 | uCi/g    | 005.52                    |
| K-40            | 1.52E-05 | uCi/g    | 074.85                    |
| Ra-228          | 8.21E-07 | uCi/g    | 004.04                    |
| Tl-208          | 3.52E-07 | uCi/g    | 001.73                    |
|                 |          |          |                           |
| Total Activity: |          | 2.03E-05 | Total % Abundance: 100.00 |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238013  
Client Sample ID: OLA3-S-001  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.03E+02    | 11/12/16 | 3.26E-07              | 5.35E-07            | 1.09E-06         |          | uCi/g | U         |
| Na-22      | 1.03E+02    | 11/12/16 | -4.31E-08             | 4.66E-08            | 7.35E-08         |          | uCi/g | U         |
| K-40       | 1.03E+02    | 11/12/16 | 1.13E-05              | 1.94E-06            | 7.95E-07         |          | uCi/g | 3         |
| Cr-51      | 1.03E+02    | 11/12/16 | -3.97E-07             | 5.89E-07            | 1.04E-06         |          | uCi/g | U         |
| Mn-54      | 1.03E+02    | 11/12/16 | 5.90E-09              | 6.17E-08            | 1.16E-07         |          | uCi/g | U         |
| Fe-59      | 1.03E+02    | 11/12/16 | -3.02E-08             | 1.30E-07            | 2.54E-07         |          | uCi/g | U         |
| Co-56      | 1.03E+02    | 11/12/16 | 2.24E-08              | 5.92E-08            | 1.21E-07         |          | uCi/g | U         |
| Co-57      | 1.03E+02    | 11/12/16 | -1.84E-08             | 3.95E-08            | 6.64E-08         |          | uCi/g | U         |
| Co-58      | 1.03E+02    | 11/12/16 | 1.32E-08              | 5.62E-08            | 1.13E-07         |          | uCi/g | U         |
| Co-60      | 1.03E+02    | 11/12/16 | 3.80E-08              | 5.19E-08            | 1.23E-07         |          | uCi/g | U         |
| Zn-65      | 1.03E+02    | 11/12/16 | 8.80E-08              | 1.10E-07            | 2.42E-07         |          | uCi/g | U         |
| Y-88       | 1.03E+02    | 11/12/16 | 1.94E-08              | 5.52E-08            | 1.34E-07         |          | uCi/g | U         |
| Zr-95      | 1.03E+02    | 11/12/16 | 1.18E-08              | 1.12E-07            | 2.16E-07         |          | uCi/g | U         |
| Nb-94      | 1.03E+02    | 11/12/16 | -5.29E-09             | 4.95E-08            | 9.15E-08         |          | uCi/g | U         |
| Nb-95      | 1.03E+02    | 11/12/16 | 0.00E+00              | 9.86E-08            | 1.19E-07         |          | uCi/g | UI        |
| Ru-106     | 1.03E+02    | 11/12/16 | 4.56E-07              | 4.02E-07            | 9.23E-07         |          | uCi/g | U         |
| Ag-110m    | 1.03E+02    | 11/12/16 | -2.45E-09             | 7.89E-08            | 1.47E-07         |          | uCi/g | U         |
| Sn-113     | 1.03E+02    | 11/12/16 | 3.93E-08              | 6.04E-08            | 1.25E-07         |          | uCi/g | U         |
| Sb-124     | 1.03E+02    | 11/12/16 | -1.79E-09             | 1.22E-07            | 2.66E-07         |          | uCi/g | U         |
| Sb-125     | 1.03E+02    | 11/12/16 | 6.26E-08              | 1.30E-07            | 2.62E-07         |          | uCi/g | U         |
| Cs-134     | 1.03E+02    | 11/12/16 | 6.67E-08              | 1.05E-07            | 1.26E-07         |          | uCi/g | U         |
| Cs-136     | 1.03E+02    | 11/12/16 | 3.68E-08              | 2.34E-07            | 4.80E-07         |          | uCi/g | U         |
| Cs-137     | 1.03E+02    | 11/12/16 | 5.76E-08              | 6.99E-08            | 1.19E-07         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.03E+02    | 11/12/16 | -4.36E-08             | 5.73E-08            | 9.35E-08         |          | uCi/g | U         |
| Ba-140     | 1.03E+02    | 11/12/16 | -4.56E-08             | 6.27E-07            | 1.17E-06         |          | uCi/g | U         |
| Ce-139     | 1.03E+02    | 11/12/16 | -7.84E-10             | 4.33E-08            | 7.52E-08         |          | uCi/g | U         |
| Ce-141     | 1.03E+02    | 11/12/16 | 4.67E-09              | 1.06E-07            | 1.86E-07         |          | uCi/g | U         |
| Ce-144     | 1.03E+02    | 11/12/16 | 2.31E-07              | 2.86E-07            | 5.39E-07         |          | uCi/g | U         |
| Nd-147     | 1.03E+02    | 11/12/16 | 3.41E-07              | 1.41E-06            | 2.75E-06         |          | uCi/g | U         |
| Pm-144     | 1.03E+02    | 11/12/16 | -4.01E-09             | 5.67E-08            | 1.05E-07         |          | uCi/g | U         |
| Pm-146     | 1.03E+02    | 11/12/16 | 1.30E-08              | 6.15E-08            | 1.20E-07         |          | uCi/g | U         |
| Eu-152     | 1.03E+02    | 11/12/16 | -4.43E-08             | 1.43E-07            | 2.62E-07         |          | uCi/g | U         |
| Eu-154     | 1.03E+02    | 11/12/16 | -1.22E-07             | 1.31E-07            | 2.08E-07         |          | uCi/g | U         |
| Eu-155     | 1.03E+02    | 11/12/16 | 1.17E-07              | 1.60E-07            | 3.01E-07         |          | uCi/g | U         |
| Ir-192     | 1.03E+02    | 11/12/16 | 3.47E-08              | 4.93E-08            | 1.01E-07         |          | uCi/g | U         |
| Hg-203     | 1.03E+02    | 11/12/16 | 3.12E-08              | 5.77E-08            | 1.15E-07         |          | uCi/g | U         |
| Tl-208     | 1.03E+02    | 11/12/16 | 3.28E-07              | 1.02E-07            | 1.02E-07         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238013  
Client Sample ID: OLA3-S-001  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |  | MDA      | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|--|----------|----|-------|-----------|
|         |                |          |           | Uncertainty |  |          |    |       |           |
| Pb-210  | 1.03E+02       | 11/12/16 | -1.94E-05 | 1.78E-05    |  | 2.95E-05 |    | uCi/g | U         |
| Pb-212  | 1.03E+02       | 11/12/16 | 8.69E-07  | 1.64E-07    |  | 1.38E-07 |    | uCi/g | 3         |
| Pb-214  | 1.03E+02       | 11/12/16 | 1.16E-06  | 2.59E-07    |  | 1.92E-07 |    | uCi/g | 3         |
| Bi-212  | 1.03E+02       | 11/12/16 | 8.56E-07  | 8.68E-07    |  | 1.82E-06 |    | uCi/g | U         |
| Bi-214  | 1.03E+02       | 11/12/16 | 1.25E-06  | 2.64E-07    |  | 1.47E-07 |    | uCi/g | 3         |
| Ra-228  | 1.03E+02       | 11/12/16 | 1.38E-06  | 4.36E-07    |  | 4.20E-07 |    | uCi/g | 3         |
| Ac-228  | 1.03E+02       | 11/12/16 | 1.38E-06  | 4.36E-07    |  | 4.20E-07 |    | uCi/g | 3         |
| Th-234  | 1.03E+02       | 11/12/16 | 4.77E-07  | 3.04E-06    |  | 5.24E-06 |    | uCi/g | U         |
| U-235   | 1.03E+02       | 11/12/16 | 1.58E-07  | 3.07E-07    |  | 5.53E-07 |    | uCi/g | U         |
| U-238   | 1.03E+02       | 11/12/16 | 4.77E-07  | 3.04E-06    |  | 5.24E-06 |    | uCi/g | U         |
| Np-239  | 1.03E+02       | 11/12/16 | 1.71E-07  | 3.76E-07    |  | 6.95E-07 |    | uCi/g | U         |
| Am-241  | 1.03E+02       | 11/12/16 | 5.34E-07  | 5.85E-07    |  | 5.42E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238013

Client: BHI Energy Power Services LLC

Client Sample ID: OLA3-S-001

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Ac-228          | 1.38E-06 | uCi/g              | 007.79      |
| Bi-214          | 1.25E-06 | uCi/g              | 007.06      |
| Pb-212          | 8.69E-07 | uCi/g              | 004.91      |
| Pb-214          | 1.16E-06 | uCi/g              | 006.56      |
| K-40            | 1.13E-05 | uCi/g              | 064.04      |
| Ra-228          | 1.38E-06 | uCi/g              | 007.79      |
| Tl-208          | 3.28E-07 | uCi/g              | 001.85      |
|                 |          |                    |             |
| Total Activity: | 1.77E-05 | Total % Abundance: | 100.00      |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238014  
Client Sample ID: OLA3-S-002  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.32E+02    | 11/12/16 | 9.59E-07              | 5.52E-07            | 5.78E-07         |          | uCi/g | 3         |
| Na-22      | 1.32E+02    | 11/12/16 | -1.80E-08             | 4.81E-08            | 7.55E-08         |          | uCi/g | U         |
| K-40       | 1.32E+02    | 11/12/16 | 8.87E-06              | 1.20E-06            | 6.13E-07         |          | uCi/g | 3         |
| Cr-51      | 1.32E+02    | 11/12/16 | -1.93E-07             | 3.63E-07            | 6.08E-07         |          | uCi/g | U         |
| Mn-54      | 1.32E+02    | 11/12/16 | -3.16E-09             | 3.19E-08            | 5.97E-08         |          | uCi/g | U         |
| Fe-59      | 1.32E+02    | 11/12/16 | -2.03E-08             | 7.33E-08            | 1.43E-07         |          | uCi/g | U         |
| Co-56      | 1.32E+02    | 11/12/16 | -1.30E-08             | 3.76E-08            | 6.72E-08         |          | uCi/g | U         |
| Co-57      | 1.32E+02    | 11/12/16 | 3.67E-09              | 1.74E-08            | 3.17E-08         |          | uCi/g | U         |
| Co-58      | 1.32E+02    | 11/12/16 | -2.28E-08             | 3.93E-08            | 6.70E-08         |          | uCi/g | U         |
| Co-60      | 1.32E+02    | 11/12/16 | 9.92E-09              | 3.60E-08            | 6.99E-08         |          | uCi/g | U         |
| Zn-65      | 1.32E+02    | 11/12/16 | -5.26E-08             | 8.64E-08            | 1.30E-07         |          | uCi/g | U         |
| Y-88       | 1.32E+02    | 11/12/16 | 2.62E-08              | 3.30E-08            | 8.81E-08         |          | uCi/g | U         |
| Zr-95      | 1.32E+02    | 11/12/16 | 3.54E-08              | 5.90E-08            | 1.27E-07         |          | uCi/g | U         |
| Nb-94      | 1.32E+02    | 11/12/16 | 2.06E-09              | 3.06E-08            | 5.88E-08         |          | uCi/g | U         |
| Nb-95      | 1.32E+02    | 11/12/16 | -5.70E-08             | 4.43E-08            | 6.59E-08         |          | uCi/g | U         |
| Ru-106     | 1.32E+02    | 11/12/16 | 3.49E-09              | 2.55E-07            | 5.01E-07         |          | uCi/g | U         |
| Ag-110m    | 1.32E+02    | 11/12/16 | 2.38E-08              | 4.67E-08            | 9.60E-08         |          | uCi/g | U         |
| Sn-113     | 1.32E+02    | 11/12/16 | -1.68E-08             | 3.64E-08            | 6.70E-08         |          | uCi/g | U         |
| Sb-124     | 1.32E+02    | 11/12/16 | 9.54E-09              | 8.83E-08            | 1.89E-07         |          | uCi/g | U         |
| Sb-125     | 1.32E+02    | 11/12/16 | 1.39E-08              | 6.83E-08            | 1.40E-07         |          | uCi/g | U         |
| Cs-134     | 1.32E+02    | 11/12/16 | 3.53E-08              | 3.68E-08            | 7.00E-08         |          | uCi/g | U         |
| Cs-136     | 1.32E+02    | 11/12/16 | 7.90E-08              | 1.23E-07            | 2.76E-07         |          | uCi/g | U         |
| Cs-137     | 1.32E+02    | 11/12/16 | -9.36E-10             | 3.72E-08            | 6.35E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.32E+02    | 11/12/16 | -2.03E-09             | 3.72E-08            | 6.61E-08         |          | uCi/g | U         |
| Ba-140     | 1.32E+02    | 11/12/16 | -1.55E-07             | 3.60E-07            | 6.61E-07         |          | uCi/g | U         |
| Ce-139     | 1.32E+02    | 11/12/16 | -8.47E-09             | 2.22E-08            | 4.01E-08         |          | uCi/g | U         |
| Ce-141     | 1.32E+02    | 11/12/16 | -2.13E-08             | 6.34E-08            | 1.05E-07         |          | uCi/g | U         |
| Ce-144     | 1.32E+02    | 11/12/16 | 6.04E-08              | 1.32E-07            | 2.47E-07         |          | uCi/g | U         |
| Nd-147     | 1.32E+02    | 11/12/16 | 2.70E-07              | 8.31E-07            | 1.68E-06         |          | uCi/g | U         |
| Pm-144     | 1.32E+02    | 11/12/16 | 4.25E-09              | 3.28E-08            | 5.78E-08         |          | uCi/g | U         |
| Pm-146     | 1.32E+02    | 11/12/16 | -8.55E-10             | 3.02E-08            | 6.03E-08         |          | uCi/g | U         |
| Eu-152     | 1.32E+02    | 11/12/16 | 2.84E-08              | 6.89E-08            | 1.45E-07         |          | uCi/g | U         |
| Eu-154     | 1.32E+02    | 11/12/16 | -4.61E-08             | 1.36E-07            | 2.16E-07         |          | uCi/g | U         |
| Eu-155     | 1.32E+02    | 11/12/16 | -5.05E-09             | 6.20E-08            | 1.19E-07         |          | uCi/g | U         |
| Ir-192     | 1.32E+02    | 11/12/16 | -9.79E-09             | 3.43E-08            | 5.94E-08         |          | uCi/g | U         |
| Hg-203     | 1.32E+02    | 11/12/16 | -1.90E-08             | 3.64E-08            | 6.18E-08         |          | uCi/g | U         |
| Tl-208     | 1.32E+02    | 11/12/16 | 1.30E-07              | 7.70E-08            | 5.69E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

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UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238014

Client Sample ID: OLA3-S-002

Matrix: Soil

Geometry Received:

Client: BHI Energy Power Services LLC

Collect Date: October 20, 2016

Receive Date: October 27, 2016

Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.32E+02       | 11/12/16 | 1.76E-06  | 8.65E-07    | 5.49E-07 |    | uCi/g | 3         |
| Pb-212  | 1.32E+02       | 11/12/16 | 5.34E-07  | 9.84E-08    | 8.61E-08 |    | uCi/g | 3         |
| Pb-214  | 1.32E+02       | 11/12/16 | 1.53E-06  | 2.23E-07    | 3.88E-07 |    | uCi/g | 3         |
| Bi-212  | 1.32E+02       | 11/12/16 | 1.78E-07  | 4.84E-07    | 9.62E-07 |    | uCi/g | U         |
| Bi-214  | 1.32E+02       | 11/12/16 | 1.16E-06  | 2.03E-07    | 1.05E-07 |    | uCi/g | 3         |
| Ra-228  | 1.32E+02       | 11/12/16 | 4.33E-07  | 2.70E-07    | 2.85E-07 |    | uCi/g | 3         |
| Ac-228  | 1.32E+02       | 11/12/16 | 4.33E-07  | 2.70E-07    | 2.85E-07 |    | uCi/g | 3         |
| Th-234  | 1.32E+02       | 11/12/16 | 1.21E-06  | 7.32E-07    | 7.50E-07 |    | uCi/g | 3         |
| U-235   | 1.32E+02       | 11/12/16 | 4.40E-08  | 2.26E-07    | 2.50E-07 |    | uCi/g | U         |
| U-238   | 1.32E+02       | 11/12/16 | 1.21E-06  | 7.32E-07    | 7.50E-07 |    | uCi/g | 3         |
| Np-239  | 1.32E+02       | 11/12/16 | -1.00E-07 | 1.54E-07    | 2.80E-07 |    | uCi/g | U         |
| Am-241  | 1.32E+02       | 11/12/16 | 1.58E-08  | 3.91E-08    | 7.52E-08 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238014

Client: BHI Energy Power Services LLC

Client Sample ID: OLA3-S-002

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 4.33E-07 | uCi/g    | 002.38                    |
| Be-7            | 9.59E-07 | uCi/g    | 005.26                    |
| Bi-214          | 1.16E-06 | uCi/g    | 006.38                    |
| Pb-210          | 1.76E-06 | uCi/g    | 009.66                    |
| Pb-212          | 5.34E-07 | uCi/g    | 002.93                    |
| Pb-214          | 1.53E-06 | uCi/g    | 008.37                    |
| K-40            | 8.87E-06 | uCi/g    | 048.69                    |
| Ra-228          | 4.33E-07 | uCi/g    | 002.38                    |
| Tl-208          | 1.30E-07 | uCi/g    | 000.71                    |
| Th-234          | 1.21E-06 | uCi/g    | 006.62                    |
| U-238           | 1.21E-06 | uCi/g    | 006.62                    |
|                 |          |          |                           |
| Total Activity: |          | 1.82E-05 | Total % Abundance: 100.00 |



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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238015  
Client Sample ID: OLA3-S-003  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.03E+02    | 11/12/16 | -1.26E-07             | 4.61E-07            | 8.36E-07         |          | uCi/g | U         |
| Na-22      | 1.03E+02    | 11/12/16 | -2.48E-08             | 6.36E-08            | 1.16E-07         |          | uCi/g | U         |
| K-40       | 1.03E+02    | 11/12/16 | 1.55E-05              | 1.97E-06            | 4.99E-07         |          | uCi/g | 3         |
| Cr-51      | 1.03E+02    | 11/12/16 | 5.14E-08              | 5.32E-07            | 1.04E-06         |          | uCi/g | U         |
| Mn-54      | 1.03E+02    | 11/12/16 | 2.66E-08              | 5.19E-08            | 1.01E-07         |          | uCi/g | U         |
| Fe-59      | 1.03E+02    | 11/12/16 | -3.36E-09             | 1.16E-07            | 2.34E-07         |          | uCi/g | U         |
| Co-56      | 1.03E+02    | 11/12/16 | -1.28E-08             | 6.34E-08            | 1.17E-07         |          | uCi/g | U         |
| Co-57      | 1.03E+02    | 11/12/16 | 9.49E-09              | 2.66E-08            | 5.02E-08         |          | uCi/g | U         |
| Co-58      | 1.03E+02    | 11/12/16 | -1.60E-08             | 4.75E-08            | 8.50E-08         |          | uCi/g | U         |
| Co-60      | 1.03E+02    | 11/12/16 | 3.88E-08              | 5.91E-08            | 1.19E-07         |          | uCi/g | U         |
| Zn-65      | 1.03E+02    | 11/12/16 | -9.62E-09             | 1.25E-07            | 2.16E-07         |          | uCi/g | U         |
| Y-88       | 1.03E+02    | 11/12/16 | -9.83E-09             | 5.76E-08            | 1.15E-07         |          | uCi/g | U         |
| Zr-95      | 1.03E+02    | 11/12/16 | -4.04E-08             | 9.31E-08            | 1.63E-07         |          | uCi/g | U         |
| Nb-94      | 1.03E+02    | 11/12/16 | 2.01E-08              | 4.31E-08            | 8.66E-08         |          | uCi/g | U         |
| Nb-95      | 1.03E+02    | 11/12/16 | 3.00E-08              | 6.45E-08            | 1.27E-07         |          | uCi/g | U         |
| Ru-106     | 1.03E+02    | 11/12/16 | -1.17E-07             | 3.71E-07            | 6.75E-07         |          | uCi/g | U         |
| Ag-110m    | 1.03E+02    | 11/12/16 | -3.61E-08             | 5.77E-08            | 9.48E-08         |          | uCi/g | U         |
| Sn-113     | 1.03E+02    | 11/12/16 | -1.76E-08             | 5.23E-08            | 9.71E-08         |          | uCi/g | U         |
| Sb-124     | 1.03E+02    | 11/12/16 | 1.11E-07              | 1.18E-07            | 3.14E-07         |          | uCi/g | U         |
| Sb-125     | 1.03E+02    | 11/12/16 | -8.49E-09             | 1.07E-07            | 2.05E-07         |          | uCi/g | U         |
| Cs-134     | 1.03E+02    | 11/12/16 | 0.00E+00              | 6.17E-08            | 1.25E-07         |          | uCi/g | UI        |
| Cs-136     | 1.03E+02    | 11/12/16 | 8.38E-08              | 1.75E-07            | 3.89E-07         |          | uCi/g | U         |
| Cs-137     | 1.03E+02    | 11/12/16 | 3.42E-08              | 5.24E-08            | 1.07E-07         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.03E+02    | 11/12/16 | 1.54E-08              | 4.81E-08            | 8.91E-08         |          | uCi/g | U         |
| Ba-140     | 1.03E+02    | 11/12/16 | 5.20E-08              | 4.97E-07            | 9.67E-07         |          | uCi/g | U         |
| Ce-139     | 1.03E+02    | 11/12/16 | 1.49E-08              | 5.61E-08            | 6.42E-08         |          | uCi/g | U         |
| Ce-141     | 1.03E+02    | 11/12/16 | -5.81E-08             | 8.52E-08            | 1.43E-07         |          | uCi/g | U         |
| Ce-144     | 1.03E+02    | 11/12/16 | -1.97E-08             | 2.53E-07            | 4.49E-07         |          | uCi/g | U         |
| Nd-147     | 1.03E+02    | 11/12/16 | 1.48E-06              | 1.43E-06            | 2.50E-06         |          | uCi/g | U         |
| Pm-144     | 1.03E+02    | 11/12/16 | 1.30E-09              | 4.13E-08            | 7.89E-08         |          | uCi/g | U         |
| Pm-146     | 1.03E+02    | 11/12/16 | 1.31E-08              | 5.25E-08            | 1.03E-07         |          | uCi/g | U         |
| Eu-152     | 1.03E+02    | 11/12/16 | -1.93E-08             | 1.07E-07            | 2.03E-07         |          | uCi/g | U         |
| Eu-154     | 1.03E+02    | 11/12/16 | -6.28E-08             | 1.81E-07            | 3.33E-07         |          | uCi/g | U         |
| Eu-155     | 1.03E+02    | 11/12/16 | 7.62E-08              | 1.09E-07            | 2.12E-07         |          | uCi/g | U         |
| Ir-192     | 1.03E+02    | 11/12/16 | -2.10E-08             | 4.39E-08            | 8.05E-08         |          | uCi/g | U         |
| Hg-203     | 1.03E+02    | 11/12/16 | 1.13E-08              | 7.44E-08            | 8.90E-08         |          | uCi/g | U         |
| Tl-208     | 1.03E+02    | 11/12/16 | 3.63E-07              | 1.02E-07            | 7.42E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238015  
Client Sample ID: OLA3-S-003  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.03E+02       | 11/12/16 | 2.34E-06  | 9.58E-06    | 9.49E-06 |    | uCi/g | U         |
| Pb-212  | 1.03E+02       | 11/12/16 | 1.17E-06  | 1.55E-07    | 1.05E-07 |    | uCi/g | 3         |
| Pb-214  | 1.03E+02       | 11/12/16 | 1.40E-06  | 2.34E-07    | 4.63E-07 |    | uCi/g | 3         |
| Bi-212  | 1.03E+02       | 11/12/16 | 8.00E-07  | 1.33E-06    | 9.94E-07 |    | uCi/g | U         |
| Bi-214  | 1.03E+02       | 11/12/16 | 1.14E-06  | 2.43E-07    | 1.82E-07 |    | uCi/g | 3         |
| Ra-228  | 1.03E+02       | 11/12/16 | 6.40E-07  | 3.48E-07    | 3.64E-07 |    | uCi/g | 3         |
| Ac-228  | 1.03E+02       | 11/12/16 | 6.40E-07  | 3.48E-07    | 3.64E-07 |    | uCi/g | 3         |
| Th-234  | 1.03E+02       | 11/12/16 | 2.62E-06  | 3.30E-06    | 3.12E-06 |    | uCi/g | U         |
| U-235   | 1.03E+02       | 11/12/16 | -9.70E-08 | 2.34E-07    | 4.05E-07 |    | uCi/g | U         |
| U-238   | 1.03E+02       | 11/12/16 | 2.62E-06  | 3.30E-06    | 3.12E-06 |    | uCi/g | U         |
| Np-239  | 1.03E+02       | 11/12/16 | 1.47E-08  | 2.76E-07    | 5.07E-07 |    | uCi/g | U         |
| Am-241  | 1.03E+02       | 11/12/16 | 5.09E-08  | 2.28E-07    | 3.62E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238015

Client: BHI Energy Power Services LLC

Client Sample ID: OLA3-S-003

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Ac-228          | 6.40E-07 | uCi/g              | 003.07      |
| Bi-214          | 1.14E-06 | uCi/g              | 005.47      |
| Pb-212          | 1.17E-06 | uCi/g              | 005.62      |
| Pb-214          | 1.40E-06 | uCi/g              | 006.74      |
| K-40            | 1.55E-05 | uCi/g              | 074.29      |
| Ra-228          | 6.40E-07 | uCi/g              | 003.07      |
| Tl-208          | 3.63E-07 | uCi/g              | 001.74      |
|                 |          |                    |             |
| Total Activity: | 2.08E-05 | Total % Abundance: | 100.00      |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238016  
Client Sample ID: OLA3-S-004  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.12E+02    | 11/12/16 | -3.43E-07             | 4.28E-07            | 7.19E-07         |          | uCi/g | U         |
| Na-22      | 1.12E+02    | 11/12/16 | 7.16E-08              | 3.75E-08            | 8.56E-08         |          | uCi/g | 3,U       |
| K-40       | 1.12E+02    | 11/12/16 | 1.64E-05              | 1.85E-06            | 6.83E-07         |          | uCi/g | 3         |
| Cr-51      | 1.12E+02    | 11/12/16 | -6.55E-08             | 4.49E-07            | 8.47E-07         |          | uCi/g | U         |
| Mn-54      | 1.12E+02    | 11/12/16 | -3.18E-10             | 4.75E-08            | 8.32E-08         |          | uCi/g | U         |
| Fe-59      | 1.12E+02    | 11/12/16 | 4.04E-09              | 9.12E-08            | 1.88E-07         |          | uCi/g | U         |
| Co-56      | 1.12E+02    | 11/12/16 | -1.77E-08             | 4.70E-08            | 8.86E-08         |          | uCi/g | U         |
| Co-57      | 1.12E+02    | 11/12/16 | 3.02E-09              | 2.69E-08            | 4.85E-08         |          | uCi/g | U         |
| Co-58      | 1.12E+02    | 11/12/16 | -1.22E-08             | 3.80E-08            | 6.83E-08         |          | uCi/g | U         |
| Co-60      | 1.12E+02    | 11/12/16 | 1.77E-08              | 4.30E-08            | 9.36E-08         |          | uCi/g | U         |
| Zn-65      | 1.12E+02    | 11/12/16 | -3.25E-08             | 1.04E-07            | 1.67E-07         |          | uCi/g | U         |
| Y-88       | 1.12E+02    | 11/12/16 | -3.81E-09             | 5.35E-08            | 1.13E-07         |          | uCi/g | U         |
| Zr-95      | 1.12E+02    | 11/12/16 | 2.13E-08              | 7.99E-08            | 1.59E-07         |          | uCi/g | U         |
| Nb-94      | 1.12E+02    | 11/12/16 | -8.36E-09             | 4.43E-08            | 7.91E-08         |          | uCi/g | U         |
| Nb-95      | 1.12E+02    | 11/12/16 | 1.58E-08              | 5.80E-08            | 1.11E-07         |          | uCi/g | U         |
| Ru-106     | 1.12E+02    | 11/12/16 | 1.81E-07              | 3.63E-07            | 7.36E-07         |          | uCi/g | U         |
| Ag-110m    | 1.12E+02    | 11/12/16 | 1.69E-08              | 5.48E-08            | 1.15E-07         |          | uCi/g | U         |
| Sn-113     | 1.12E+02    | 11/12/16 | 1.46E-09              | 5.40E-08            | 1.02E-07         |          | uCi/g | U         |
| Sb-124     | 1.12E+02    | 11/12/16 | 1.38E-08              | 8.50E-08            | 1.99E-07         |          | uCi/g | U         |
| Sb-125     | 1.12E+02    | 11/12/16 | 2.83E-08              | 1.04E-07            | 2.03E-07         |          | uCi/g | U         |
| Cs-134     | 1.12E+02    | 11/12/16 | 4.39E-08              | 8.91E-08            | 9.55E-08         |          | uCi/g | U         |
| Cs-136     | 1.12E+02    | 11/12/16 | 6.33E-08              | 1.99E-07            | 4.08E-07         |          | uCi/g | U         |
| Cs-137     | 1.12E+02    | 11/12/16 | 1.18E-07              | 8.27E-08            | 7.50E-08         | 1.00E-07 | uCi/g |           |
| Ba-133     | 1.12E+02    | 11/12/16 | 1.49E-08              | 4.16E-08            | 7.69E-08         |          | uCi/g | U         |
| Ba-140     | 1.12E+02    | 11/12/16 | -1.54E-07             | 4.57E-07            | 8.22E-07         |          | uCi/g | U         |
| Ce-139     | 1.12E+02    | 11/12/16 | 2.21E-09              | 3.14E-08            | 5.56E-08         |          | uCi/g | U         |
| Ce-141     | 1.12E+02    | 11/12/16 | -9.95E-08             | 8.94E-08            | 1.42E-07         |          | uCi/g | U         |
| Ce-144     | 1.12E+02    | 11/12/16 | -1.72E-07             | 2.20E-07            | 3.61E-07         |          | uCi/g | U         |
| Nd-147     | 1.12E+02    | 11/12/16 | 1.87E-07              | 1.08E-06            | 2.09E-06         |          | uCi/g | U         |
| Pm-144     | 1.12E+02    | 11/12/16 | -2.89E-08             | 4.78E-08            | 7.97E-08         |          | uCi/g | U         |
| Pm-146     | 1.12E+02    | 11/12/16 | 0.00E+00              | 8.57E-08            | 8.97E-08         |          | uCi/g | UI        |
| Eu-152     | 1.12E+02    | 11/12/16 | -1.06E-09             | 1.10E-07            | 2.08E-07         |          | uCi/g | U         |
| Eu-154     | 1.12E+02    | 11/12/16 | 2.02E-07              | 1.06E-07            | 3.01E-07         |          | uCi/g | 3,U       |
| Eu-155     | 1.12E+02    | 11/12/16 | 8.25E-08              | 1.14E-07            | 2.16E-07         |          | uCi/g | U         |
| Ir-192     | 1.12E+02    | 11/12/16 | -4.24E-09             | 3.96E-08            | 7.47E-08         |          | uCi/g | U         |
| Hg-203     | 1.12E+02    | 11/12/16 | 4.89E-09              | 4.69E-08            | 8.21E-08         |          | uCi/g | U         |
| Tl-208     | 1.12E+02    | 11/12/16 | 2.96E-07              | 1.02E-07            | 8.24E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

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3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

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UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238016  
Client Sample ID: OLA3-S-004  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.12E+02       | 11/12/16 | -1.46E-06 | 3.37E-06    | 6.11E-06 |    | uCi/g | U         |
| Pb-212  | 1.12E+02       | 11/12/16 | 1.06E-06  | 1.44E-07    | 1.10E-07 |    | uCi/g | 3         |
| Pb-214  | 1.12E+02       | 11/12/16 | 1.26E-06  | 2.38E-07    | 1.37E-07 |    | uCi/g | 3         |
| Bi-212  | 1.12E+02       | 11/12/16 | 1.15E-06  | 8.04E-07    | 1.51E-06 |    | uCi/g | U         |
| Bi-214  | 1.12E+02       | 11/12/16 | 1.13E-06  | 2.24E-07    | 1.50E-07 |    | uCi/g | 3         |
| Ra-228  | 1.12E+02       | 11/12/16 | 1.10E-06  | 3.25E-07    | 2.92E-07 |    | uCi/g | 3         |
| Ac-228  | 1.12E+02       | 11/12/16 | 1.10E-06  | 3.25E-07    | 2.92E-07 |    | uCi/g | 3         |
| Th-234  | 1.12E+02       | 11/12/16 | 1.61E-06  | 2.11E-06    | 2.44E-06 |    | uCi/g | U         |
| U-235   | 1.12E+02       | 11/12/16 | 5.75E-08  | 2.21E-07    | 3.98E-07 |    | uCi/g | U         |
| U-238   | 1.12E+02       | 11/12/16 | 1.61E-06  | 2.11E-06    | 2.44E-06 |    | uCi/g | U         |
| Np-239  | 1.12E+02       | 11/12/16 | 1.57E-08  | 2.92E-07    | 5.23E-07 |    | uCi/g | U         |
| Am-241  | 1.12E+02       | 11/12/16 | -2.49E-08 | 1.64E-07    | 2.74E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

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UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238016

Client: BHI Energy Power Services LLC

Client Sample ID: OLA3-S-004

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 1.10E-06 | uCi/g    | 004.90                    |
| Bi-214          | 1.13E-06 | uCi/g    | 005.01                    |
| Cs-137          | 1.18E-07 | uCi/g    | 000.52                    |
| Pb-212          | 1.06E-06 | uCi/g    | 004.73                    |
| Pb-214          | 1.26E-06 | uCi/g    | 005.62                    |
| K-40            | 1.64E-05 | uCi/g    | 073.00                    |
| Ra-228          | 1.10E-06 | uCi/g    | 004.90                    |
| Tl-208          | 2.96E-07 | uCi/g    | 001.32                    |
|                 |          |          |                           |
| Total Activity: |          | 2.25E-05 | Total % Abundance: 100.00 |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238017

Client: BHI Energy Power Services LLC

Client Sample ID: OLA3-S-005

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

Geometry Received:

Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.31E+02    | 11/12/16 | 0.00E+00              | 8.77E-07            | 7.56E-07         |          | uCi/g | UI        |
| Na-22      | 1.31E+02    | 11/12/16 | -5.48E-09             | 4.59E-08            | 8.84E-08         |          | uCi/g | U         |
| K-40       | 1.31E+02    | 11/12/16 | 1.13E-05              | 1.60E-06            | 7.64E-07         |          | uCi/g | 3         |
| Cr-51      | 1.31E+02    | 11/12/16 | -1.65E-07             | 4.75E-07            | 8.79E-07         |          | uCi/g | U         |
| Mn-54      | 1.31E+02    | 11/12/16 | 1.12E-08              | 4.65E-08            | 9.41E-08         |          | uCi/g | U         |
| Fe-59      | 1.31E+02    | 11/12/16 | 7.08E-08              | 1.15E-07            | 2.49E-07         |          | uCi/g | U         |
| Co-56      | 1.31E+02    | 11/12/16 | -1.34E-08             | 4.73E-08            | 9.02E-08         |          | uCi/g | U         |
| Co-57      | 1.31E+02    | 11/12/16 | 2.74E-08              | 3.11E-08            | 6.01E-08         |          | uCi/g | U         |
| Co-58      | 1.31E+02    | 11/12/16 | -7.81E-09             | 4.74E-08            | 9.23E-08         |          | uCi/g | U         |
| Co-60      | 1.31E+02    | 11/12/16 | -4.78E-09             | 4.20E-08            | 8.21E-08         |          | uCi/g | U         |
| Zn-65      | 1.31E+02    | 11/12/16 | 8.96E-09              | 1.17E-07            | 2.03E-07         |          | uCi/g | U         |
| Y-88       | 1.31E+02    | 11/12/16 | -1.45E-08             | 4.79E-08            | 1.02E-07         |          | uCi/g | U         |
| Zr-95      | 1.31E+02    | 11/12/16 | 1.89E-07              | 1.88E-07            | 2.22E-07         |          | uCi/g | U         |
| Nb-94      | 1.31E+02    | 11/12/16 | -6.53E-09             | 4.20E-08            | 8.11E-08         |          | uCi/g | U         |
| Nb-95      | 1.31E+02    | 11/12/16 | -2.83E-08             | 5.82E-08            | 1.07E-07         |          | uCi/g | U         |
| Ru-106     | 1.31E+02    | 11/12/16 | -2.04E-07             | 3.55E-07            | 6.02E-07         |          | uCi/g | U         |
| Ag-110m    | 1.31E+02    | 11/12/16 | 3.65E-08              | 6.29E-08            | 1.34E-07         |          | uCi/g | U         |
| Sn-113     | 1.31E+02    | 11/12/16 | 4.02E-08              | 5.33E-08            | 1.10E-07         |          | uCi/g | U         |
| Sb-124     | 1.31E+02    | 11/12/16 | 7.52E-08              | 8.79E-08            | 2.42E-07         |          | uCi/g | U         |
| Sb-125     | 1.31E+02    | 11/12/16 | -3.45E-08             | 1.11E-07            | 2.02E-07         |          | uCi/g | U         |
| Cs-134     | 1.31E+02    | 11/12/16 | 4.28E-08              | 5.16E-08            | 1.12E-07         |          | uCi/g | U         |
| Cs-136     | 1.31E+02    | 11/12/16 | 7.59E-08              | 1.90E-07            | 3.96E-07         |          | uCi/g | U         |
| Cs-137     | 1.31E+02    | 11/12/16 | 3.50E-08              | 4.21E-08            | 8.50E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.31E+02    | 11/12/16 | -2.43E-08             | 6.94E-08            | 8.56E-08         |          | uCi/g | U         |
| Ba-140     | 1.31E+02    | 11/12/16 | 5.42E-08              | 5.74E-07            | 1.08E-06         |          | uCi/g | U         |
| Ce-139     | 1.31E+02    | 11/12/16 | 7.24E-09              | 3.45E-08            | 6.24E-08         |          | uCi/g | U         |
| Ce-141     | 1.31E+02    | 11/12/16 | -1.83E-08             | 9.17E-08            | 1.47E-07         |          | uCi/g | U         |
| Ce-144     | 1.31E+02    | 11/12/16 | -6.17E-08             | 2.62E-07            | 4.56E-07         |          | uCi/g | U         |
| Nd-147     | 1.31E+02    | 11/12/16 | -7.69E-07             | 1.17E-06            | 1.99E-06         |          | uCi/g | U         |
| Pm-144     | 1.31E+02    | 11/12/16 | 2.31E-08              | 4.20E-08            | 8.86E-08         |          | uCi/g | U         |
| Pm-146     | 1.31E+02    | 11/12/16 | -1.58E-08             | 5.59E-08            | 1.01E-07         |          | uCi/g | U         |
| Eu-152     | 1.31E+02    | 11/12/16 | 1.99E-08              | 1.13E-07            | 2.19E-07         |          | uCi/g | U         |
| Eu-154     | 1.31E+02    | 11/12/16 | -1.24E-08             | 1.30E-07            | 2.52E-07         |          | uCi/g | U         |
| Eu-155     | 1.31E+02    | 11/12/16 | 1.11E-07              | 1.20E-07            | 2.36E-07         |          | uCi/g | U         |
| Ir-192     | 1.31E+02    | 11/12/16 | 2.14E-08              | 3.95E-08            | 8.04E-08         |          | uCi/g | U         |
| Hg-203     | 1.31E+02    | 11/12/16 | 7.61E-09              | 5.00E-08            | 9.67E-08         |          | uCi/g | U         |
| Tl-208     | 1.31E+02    | 11/12/16 | 2.81E-07              | 1.04E-07            | 7.24E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238017  
Client Sample ID: OLA3-S-005  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |  | MDA      | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|--|----------|----|-------|-----------|
|         |                |          |           | Uncertainty |  |          |    |       |           |
| Pb-210  | 1.31E+02       | 11/12/16 | 5.09E-06  | 7.39E-06    |  | 1.47E-05 |    | uCi/g | U         |
| Pb-212  | 1.31E+02       | 11/12/16 | 7.73E-07  | 1.39E-07    |  | 1.17E-07 |    | uCi/g | 3         |
| Pb-214  | 1.31E+02       | 11/12/16 | 1.80E-06  | 2.91E-07    |  | 4.87E-07 |    | uCi/g | 3         |
| Bi-212  | 1.31E+02       | 11/12/16 | 1.25E-06  | 9.65E-07    |  | 1.11E-06 |    | uCi/g |           |
| Bi-214  | 1.31E+02       | 11/12/16 | 1.49E-06  | 2.42E-07    |  | 1.53E-07 |    | uCi/g | 3         |
| Ra-228  | 1.31E+02       | 11/12/16 | 5.88E-07  | 3.01E-07    |  | 2.94E-07 |    | uCi/g | 3         |
| Ac-228  | 1.31E+02       | 11/12/16 | 5.88E-07  | 3.01E-07    |  | 2.94E-07 |    | uCi/g | 3         |
| Th-234  | 1.31E+02       | 11/12/16 | 1.57E-06  | 4.36E-06    |  | 3.56E-06 |    | uCi/g | U         |
| U-235   | 1.31E+02       | 11/12/16 | 1.76E-07  | 3.30E-07    |  | 3.96E-07 |    | uCi/g | U         |
| U-238   | 1.31E+02       | 11/12/16 | 1.57E-06  | 4.36E-06    |  | 3.56E-06 |    | uCi/g | U         |
| Np-239  | 1.31E+02       | 11/12/16 | -1.50E-07 | 3.19E-07    |  | 5.51E-07 |    | uCi/g | U         |
| Am-241  | 1.31E+02       | 11/12/16 | -2.95E-09 | 2.27E-07    |  | 3.89E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification



# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238017

Client: BHI Energy Power Services LLC

Client Sample ID: OLA3-S-005

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 5.88E-07 | uCi/g    | 003.25                    |
| Bi-212          | 1.25E-06 | uCi/g    | 006.88                    |
| Bi-214          | 1.49E-06 | uCi/g    | 008.25                    |
| Pb-212          | 7.73E-07 | uCi/g    | 004.27                    |
| Pb-214          | 1.80E-06 | uCi/g    | 009.92                    |
| K-40            | 1.13E-05 | uCi/g    | 062.63                    |
| Ra-228          | 5.88E-07 | uCi/g    | 003.25                    |
| Tl-208          | 2.81E-07 | uCi/g    | 001.55                    |
|                 |          |          |                           |
| Total Activity: |          | 1.81E-05 | Total % Abundance: 100.00 |

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238018

Client: BHI Energy Power Services LLC

Client Sample ID: OLA3-S-006

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

Geometry Received:

Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.31E+02    | 11/12/16 | 1.45E-07              | 3.80E-07            | 7.69E-07         |          | uCi/g | U         |
| Na-22      | 1.31E+02    | 11/12/16 | 2.40E-08              | 3.89E-08            | 8.72E-08         |          | uCi/g | U         |
| K-40       | 1.31E+02    | 11/12/16 | 5.99E-06              | 1.08E-06            | 5.53E-07         |          | uCi/g | 3         |
| Cr-51      | 1.31E+02    | 11/12/16 | 2.14E-07              | 4.09E-07            | 7.97E-07         |          | uCi/g | U         |
| Mn-54      | 1.31E+02    | 11/12/16 | -1.42E-10             | 3.24E-08            | 5.74E-08         |          | uCi/g | U         |
| Fe-59      | 1.31E+02    | 11/12/16 | -4.20E-08             | 8.89E-08            | 1.54E-07         |          | uCi/g | U         |
| Co-56      | 1.31E+02    | 11/12/16 | 2.78E-09              | 3.29E-08            | 6.70E-08         |          | uCi/g | U         |
| Co-57      | 1.31E+02    | 11/12/16 | 1.36E-08              | 2.09E-08            | 4.27E-08         |          | uCi/g | U         |
| Co-58      | 1.31E+02    | 11/12/16 | -6.76E-09             | 4.50E-08            | 8.42E-08         |          | uCi/g | U         |
| Co-60      | 1.31E+02    | 11/12/16 | -1.50E-08             | 3.27E-08            | 6.17E-08         |          | uCi/g | U         |
| Zn-65      | 1.31E+02    | 11/12/16 | 9.44E-08              | 6.59E-08            | 1.65E-07         |          | uCi/g | U         |
| Y-88       | 1.31E+02    | 11/12/16 | 6.90E-09              | 2.48E-08            | 6.66E-08         |          | uCi/g | U         |
| Zr-95      | 1.31E+02    | 11/12/16 | 3.45E-08              | 4.94E-08            | 1.17E-07         |          | uCi/g | U         |
| Nb-94      | 1.31E+02    | 11/12/16 | -2.20E-08             | 3.35E-08            | 5.85E-08         |          | uCi/g | U         |
| Nb-95      | 1.31E+02    | 11/12/16 | 1.52E-08              | 3.91E-08            | 7.57E-08         |          | uCi/g | U         |
| Ru-106     | 1.31E+02    | 11/12/16 | -1.37E-07             | 3.21E-07            | 5.88E-07         |          | uCi/g | U         |
| Ag-110m    | 1.31E+02    | 11/12/16 | 2.86E-08              | 4.42E-08            | 9.70E-08         |          | uCi/g | U         |
| Sn-113     | 1.31E+02    | 11/12/16 | 3.53E-08              | 4.06E-08            | 8.77E-08         |          | uCi/g | U         |
| Sb-124     | 1.31E+02    | 11/12/16 | 1.07E-08              | 9.06E-08            | 1.99E-07         |          | uCi/g | U         |
| Sb-125     | 1.31E+02    | 11/12/16 | -7.55E-08             | 7.96E-08            | 1.40E-07         |          | uCi/g | U         |
| Cs-134     | 1.31E+02    | 11/12/16 | 2.54E-08              | 3.71E-08            | 7.60E-08         |          | uCi/g | U         |
| Cs-136     | 1.31E+02    | 11/12/16 | -6.99E-08             | 1.30E-07            | 2.22E-07         |          | uCi/g | U         |
| Cs-137     | 1.31E+02    | 11/12/16 | 9.48E-09              | 3.04E-08            | 5.92E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.31E+02    | 11/12/16 | -1.24E-08             | 4.06E-08            | 6.44E-08         |          | uCi/g | U         |
| Ba-140     | 1.31E+02    | 11/12/16 | -1.32E-07             | 3.40E-07            | 6.42E-07         |          | uCi/g | U         |
| Ce-139     | 1.31E+02    | 11/12/16 | -6.70E-09             | 2.56E-08            | 4.71E-08         |          | uCi/g | U         |
| Ce-141     | 1.31E+02    | 11/12/16 | 9.16E-09              | 6.42E-08            | 1.23E-07         |          | uCi/g | U         |
| Ce-144     | 1.31E+02    | 11/12/16 | 4.16E-08              | 1.78E-07            | 3.44E-07         |          | uCi/g | U         |
| Nd-147     | 1.31E+02    | 11/12/16 | -1.02E-07             | 7.76E-07            | 1.53E-06         |          | uCi/g | U         |
| Pm-144     | 1.31E+02    | 11/12/16 | 4.79E-10              | 3.10E-08            | 6.10E-08         |          | uCi/g | U         |
| Pm-146     | 1.31E+02    | 11/12/16 | -1.16E-08             | 3.78E-08            | 7.26E-08         |          | uCi/g | U         |
| Eu-152     | 1.31E+02    | 11/12/16 | -6.52E-08             | 9.88E-08            | 1.46E-07         |          | uCi/g | U         |
| Eu-154     | 1.31E+02    | 11/12/16 | 4.66E-08              | 1.15E-07            | 2.48E-07         |          | uCi/g | U         |
| Eu-155     | 1.31E+02    | 11/12/16 | -1.17E-08             | 9.36E-08            | 1.79E-07         |          | uCi/g | U         |
| Ir-192     | 1.31E+02    | 11/12/16 | 2.83E-08              | 3.51E-08            | 7.03E-08         |          | uCi/g | U         |
| Hg-203     | 1.31E+02    | 11/12/16 | -8.36E-09             | 3.91E-08            | 6.99E-08         |          | uCi/g | U         |
| Tl-208     | 1.31E+02    | 11/12/16 | 0.00E+00              | 8.64E-08            | 6.57E-08         |          | uCi/g | UI        |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238018  
Client Sample ID: OLA3-S-006  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.31E+02       | 11/12/16 | 9.74E-07  | 6.81E-06    | 1.40E-05 |    | uCi/g | U         |
| Pb-212  | 1.31E+02       | 11/12/16 | 3.81E-07  | 1.00E-07    | 7.89E-08 |    | uCi/g | 3         |
| Pb-214  | 1.31E+02       | 11/12/16 | 2.03E-06  | 2.12E-07    | 4.54E-07 |    | uCi/g | 3         |
| Bi-212  | 1.31E+02       | 11/12/16 | 2.85E-07  | 4.35E-07    | 9.42E-07 |    | uCi/g | U         |
| Bi-214  | 1.31E+02       | 11/12/16 | 2.03E-06  | 2.33E-07    | 1.19E-07 |    | uCi/g | 3         |
| Ra-228  | 1.31E+02       | 11/12/16 | 2.20E-07  | 2.77E-07    | 2.29E-07 |    | uCi/g | U         |
| Ac-228  | 1.31E+02       | 11/12/16 | 2.20E-07  | 2.77E-07    | 2.29E-07 |    | uCi/g | U         |
| Th-234  | 1.31E+02       | 11/12/16 | 3.88E-07  | 2.93E-06    | 2.83E-06 |    | uCi/g | U         |
| U-235   | 1.31E+02       | 11/12/16 | -5.87E-08 | 1.73E-07    | 3.22E-07 |    | uCi/g | U         |
| U-238   | 1.31E+02       | 11/12/16 | 3.88E-07  | 2.93E-06    | 2.83E-06 |    | uCi/g | U         |
| Np-239  | 1.31E+02       | 11/12/16 | -5.55E-08 | 2.20E-07    | 4.16E-07 |    | uCi/g | U         |
| Am-241  | 1.31E+02       | 11/12/16 | -1.59E-07 | 1.60E-07    | 2.91E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238018

Client: BHI Energy Power Services LLC

Client Sample ID: OLA3-S-006

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Bi-214          | 2.03E-06 | uCi/g              | 019.45      |
| Pb-212          | 3.81E-07 | uCi/g              | 003.65      |
| Pb-214          | 2.03E-06 | uCi/g              | 019.42      |
| K-40            | 5.99E-06 | uCi/g              | 057.48      |
|                 |          |                    |             |
| Total Activity: | 1.04E-05 | Total % Abundance: | 100.00      |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238019  
Client Sample ID: OLA3-S-007  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.64E+02    | 11/12/16 | 0.00E+00              | 9.78E-07            | 4.84E-07         |          | uCi/g | UI        |
| Na-22      | 1.64E+02    | 11/12/16 | 1.16E-08              | 3.71E-08            | 7.79E-08         |          | uCi/g | U         |
| K-40       | 1.64E+02    | 11/12/16 | 1.27E-05              | 1.39E-06            | 4.34E-07         |          | uCi/g | 3         |
| Cr-51      | 1.64E+02    | 11/12/16 | 2.56E-07              | 3.48E-07            | 7.36E-07         |          | uCi/g | U         |
| Mn-54      | 1.64E+02    | 11/12/16 | 4.64E-09              | 2.79E-08            | 5.89E-08         |          | uCi/g | U         |
| Fe-59      | 1.64E+02    | 11/12/16 | -3.11E-08             | 7.80E-08            | 1.48E-07         |          | uCi/g | U         |
| Co-56      | 1.64E+02    | 11/12/16 | -1.64E-08             | 3.21E-08            | 6.08E-08         |          | uCi/g | U         |
| Co-57      | 1.64E+02    | 11/12/16 | -5.67E-09             | 2.00E-08            | 3.95E-08         |          | uCi/g | U         |
| Co-58      | 1.64E+02    | 11/12/16 | -1.76E-08             | 3.12E-08            | 5.88E-08         |          | uCi/g | U         |
| Co-60      | 1.64E+02    | 11/12/16 | 7.83E-09              | 2.87E-08            | 6.33E-08         |          | uCi/g | U         |
| Zn-65      | 1.64E+02    | 11/12/16 | 2.14E-08              | 6.58E-08            | 1.30E-07         |          | uCi/g | U         |
| Y-88       | 1.64E+02    | 11/12/16 | 5.70E-09              | 2.12E-08            | 5.70E-08         |          | uCi/g | U         |
| Zr-95      | 1.64E+02    | 11/12/16 | 1.01E-08              | 5.70E-08            | 1.15E-07         |          | uCi/g | U         |
| Nb-94      | 1.64E+02    | 11/12/16 | 7.35E-09              | 2.65E-08            | 5.33E-08         |          | uCi/g | U         |
| Nb-95      | 1.64E+02    | 11/12/16 | -1.01E-08             | 3.73E-08            | 7.31E-08         |          | uCi/g | U         |
| Ru-106     | 1.64E+02    | 11/12/16 | -1.79E-07             | 2.42E-07            | 4.07E-07         |          | uCi/g | U         |
| Ag-110m    | 1.64E+02    | 11/12/16 | -1.02E-08             | 4.05E-08            | 7.98E-08         |          | uCi/g | U         |
| Sn-113     | 1.64E+02    | 11/12/16 | -6.56E-09             | 3.03E-08            | 5.85E-08         |          | uCi/g | U         |
| Sb-124     | 1.64E+02    | 11/12/16 | 2.58E-08              | 5.25E-08            | 1.43E-07         |          | uCi/g | U         |
| Sb-125     | 1.64E+02    | 11/12/16 | -3.29E-08             | 7.78E-08            | 1.42E-07         |          | uCi/g | U         |
| Cs-134     | 1.64E+02    | 11/12/16 | 0.00E+00              | 5.43E-08            | 7.41E-08         |          | uCi/g | UI        |
| Cs-136     | 1.64E+02    | 11/12/16 | 7.11E-08              | 1.12E-07            | 2.57E-07         |          | uCi/g | U         |
| Cs-137     | 1.64E+02    | 11/12/16 | 2.63E-09              | 3.27E-08            | 6.32E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.64E+02    | 11/12/16 | 1.92E-08              | 3.91E-08            | 7.26E-08         |          | uCi/g | U         |
| Ba-140     | 1.64E+02    | 11/12/16 | 2.50E-07              | 2.95E-07            | 6.25E-07         |          | uCi/g | U         |
| Ce-139     | 1.64E+02    | 11/12/16 | 3.62E-09              | 2.37E-08            | 4.76E-08         |          | uCi/g | U         |
| Ce-141     | 1.64E+02    | 11/12/16 | 5.81E-10              | 5.34E-08            | 1.07E-07         |          | uCi/g | U         |
| Ce-144     | 1.64E+02    | 11/12/16 | -1.06E-07             | 1.66E-07            | 3.16E-07         |          | uCi/g | U         |
| Nd-147     | 1.64E+02    | 11/12/16 | 5.41E-07              | 6.97E-07            | 1.53E-06         |          | uCi/g | U         |
| Pm-144     | 1.64E+02    | 11/12/16 | -7.71E-09             | 3.16E-08            | 5.79E-08         |          | uCi/g | U         |
| Pm-146     | 1.64E+02    | 11/12/16 | 3.88E-08              | 3.65E-08            | 7.95E-08         |          | uCi/g | U         |
| Eu-152     | 1.64E+02    | 11/12/16 | 1.04E-08              | 8.02E-08            | 1.58E-07         |          | uCi/g | U         |
| Eu-154     | 1.64E+02    | 11/12/16 | 3.70E-08              | 1.06E-07            | 2.23E-07         |          | uCi/g | U         |
| Eu-155     | 1.64E+02    | 11/12/16 | -2.77E-08             | 8.48E-08            | 1.69E-07         |          | uCi/g | U         |
| Ir-192     | 1.64E+02    | 11/12/16 | -1.90E-08             | 2.75E-08            | 4.97E-08         |          | uCi/g | U         |
| Hg-203     | 1.64E+02    | 11/12/16 | 2.19E-08              | 2.96E-08            | 6.32E-08         |          | uCi/g | U         |
| Tl-208     | 1.64E+02    | 11/12/16 | 1.57E-07              | 7.98E-08            | 5.55E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238019  
Client Sample ID: OLA3-S-007  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |  | MDA      | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|--|----------|----|-------|-----------|
|         |                |          |           | Uncertainty |  |          |    |       |           |
| Pb-210  | 1.64E+02       | 11/12/16 | -5.59E-07 | 6.41E-06    |  | 1.21E-05 |    | uCi/g | U         |
| Pb-212  | 1.64E+02       | 11/12/16 | 6.43E-07  | 1.15E-07    |  | 7.80E-08 |    | uCi/g | 3         |
| Pb-214  | 1.64E+02       | 11/12/16 | 7.94E-07  | 1.68E-07    |  | 1.17E-07 |    | uCi/g | 3         |
| Bi-212  | 1.64E+02       | 11/12/16 | 1.34E-07  | 4.42E-07    |  | 8.79E-07 |    | uCi/g | U         |
| Bi-214  | 1.64E+02       | 11/12/16 | 8.95E-07  | 1.50E-07    |  | 9.83E-08 |    | uCi/g | 3         |
| Ra-228  | 1.64E+02       | 11/12/16 | 4.59E-07  | 2.75E-07    |  | 2.41E-07 |    | uCi/g | 3         |
| Ac-228  | 1.64E+02       | 11/12/16 | 4.59E-07  | 2.75E-07    |  | 2.41E-07 |    | uCi/g | 3         |
| Th-234  | 1.64E+02       | 11/12/16 | 1.02E-06  | 2.88E-06    |  | 2.97E-06 |    | uCi/g | U         |
| U-235   | 1.64E+02       | 11/12/16 | -1.64E-08 | 1.59E-07    |  | 3.14E-07 |    | uCi/g | U         |
| U-238   | 1.64E+02       | 11/12/16 | 1.02E-06  | 2.88E-06    |  | 2.97E-06 |    | uCi/g | U         |
| Np-239  | 1.64E+02       | 11/12/16 | 4.73E-08  | 2.22E-07    |  | 4.38E-07 |    | uCi/g | U         |
| Am-241  | 1.64E+02       | 11/12/16 | 7.53E-08  | 2.10E-07    |  | 4.06E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238019

Client: BHI Energy Power Services LLC

Client Sample ID: OLA3-S-007

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 4.59E-07 | uCi/g    | 002.84                    |
| Bi-214          | 8.95E-07 | uCi/g    | 005.55                    |
| Pb-212          | 6.43E-07 | uCi/g    | 003.98                    |
| Pb-214          | 7.94E-07 | uCi/g    | 004.92                    |
| K-40            | 1.27E-05 | uCi/g    | 078.88                    |
| Ra-228          | 4.59E-07 | uCi/g    | 002.84                    |
| Tl-208          | 1.57E-07 | uCi/g    | 000.97                    |
|                 |          |          |                           |
| Total Activity: |          | 1.61E-05 | Total % Abundance: 100.00 |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238020  
Client Sample ID: OLA3-S-008  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.72E+02    | 11/12/16 | 0.00E+00              | 6.19E-07            | 4.74E-07         |          | uCi/g | UI        |
| Na-22      | 1.72E+02    | 11/12/16 | -1.05E-08             | 2.67E-08            | 5.07E-08         |          | uCi/g | U         |
| K-40       | 1.72E+02    | 11/12/16 | 1.56E-05              | 1.38E-06            | 4.11E-07         |          | uCi/g | 3         |
| Cr-51      | 1.72E+02    | 11/12/16 | 1.36E-07              | 2.68E-07            | 5.64E-07         |          | uCi/g | U         |
| Mn-54      | 1.72E+02    | 11/12/16 | -2.50E-09             | 2.68E-08            | 5.04E-08         |          | uCi/g | U         |
| Fe-59      | 1.72E+02    | 11/12/16 | -1.94E-08             | 6.26E-08            | 1.22E-07         |          | uCi/g | U         |
| Co-56      | 1.72E+02    | 11/12/16 | -2.21E-08             | 2.75E-08            | 3.63E-08         |          | uCi/g | U         |
| Co-57      | 1.72E+02    | 11/12/16 | -9.56E-09             | 1.53E-08            | 2.72E-08         |          | uCi/g | U         |
| Co-58      | 1.72E+02    | 11/12/16 | -1.63E-08             | 2.89E-08            | 5.02E-08         |          | uCi/g | U         |
| Co-60      | 1.72E+02    | 11/12/16 | -3.84E-09             | 2.54E-08            | 5.08E-08         |          | uCi/g | U         |
| Zn-65      | 1.72E+02    | 11/12/16 | -5.37E-09             | 5.41E-08            | 9.67E-08         |          | uCi/g | U         |
| Y-88       | 1.72E+02    | 11/12/16 | 8.19E-09              | 2.68E-08            | 6.24E-08         |          | uCi/g | U         |
| Zr-95      | 1.72E+02    | 11/12/16 | 2.26E-08              | 4.61E-08            | 9.89E-08         |          | uCi/g | U         |
| Nb-94      | 1.72E+02    | 11/12/16 | 1.38E-08              | 2.28E-08            | 4.79E-08         |          | uCi/g | U         |
| Nb-95      | 1.72E+02    | 11/12/16 | -2.77E-08             | 2.99E-08            | 4.84E-08         |          | uCi/g | U         |
| Ru-106     | 1.72E+02    | 11/12/16 | 1.13E-08              | 2.00E-07            | 3.99E-07         |          | uCi/g | U         |
| Ag-110m    | 1.72E+02    | 11/12/16 | -3.56E-09             | 3.40E-08            | 6.45E-08         |          | uCi/g | U         |
| Sn-113     | 1.72E+02    | 11/12/16 | -6.43E-09             | 2.79E-08            | 5.44E-08         |          | uCi/g | U         |
| Sb-124     | 1.72E+02    | 11/12/16 | -5.54E-08             | 4.37E-08            | 2.83E-08         |          | uCi/g | U         |
| Sb-125     | 1.72E+02    | 11/12/16 | 5.42E-10              | 5.58E-08            | 1.12E-07         |          | uCi/g | U         |
| Cs-134     | 1.72E+02    | 11/12/16 | 1.31E-08              | 3.06E-08            | 6.21E-08         |          | uCi/g | U         |
| Cs-136     | 1.72E+02    | 11/12/16 | -1.77E-08             | 1.02E-07            | 2.06E-07         |          | uCi/g | U         |
| Cs-137     | 1.72E+02    | 11/12/16 | -5.41E-09             | 2.26E-08            | 4.29E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.72E+02    | 11/12/16 | 1.88E-08              | 2.76E-08            | 5.56E-08         |          | uCi/g | U         |
| Ba-140     | 1.72E+02    | 11/12/16 | 2.05E-08              | 2.73E-07            | 5.44E-07         |          | uCi/g | U         |
| Ce-139     | 1.72E+02    | 11/12/16 | -8.50E-09             | 2.04E-08            | 3.62E-08         |          | uCi/g | U         |
| Ce-141     | 1.72E+02    | 11/12/16 | -2.02E-08             | 5.10E-08            | 8.36E-08         |          | uCi/g | U         |
| Ce-144     | 1.72E+02    | 11/12/16 | 5.74E-08              | 1.47E-07            | 2.82E-07         |          | uCi/g | U         |
| Nd-147     | 1.72E+02    | 11/12/16 | -2.06E-07             | 6.06E-07            | 1.14E-06         |          | uCi/g | U         |
| Pm-144     | 1.72E+02    | 11/12/16 | -1.40E-08             | 2.47E-08            | 4.36E-08         |          | uCi/g | U         |
| Pm-146     | 1.72E+02    | 11/12/16 | 7.79E-09              | 2.23E-08            | 4.78E-08         |          | uCi/g | U         |
| Eu-152     | 1.72E+02    | 11/12/16 | 1.31E-08              | 6.16E-08            | 1.26E-07         |          | uCi/g | U         |
| Eu-154     | 1.72E+02    | 11/12/16 | -1.04E-08             | 7.27E-08            | 1.46E-07         |          | uCi/g | U         |
| Eu-155     | 1.72E+02    | 11/12/16 | 4.23E-08              | 6.28E-08            | 1.28E-07         |          | uCi/g | U         |
| Ir-192     | 1.72E+02    | 11/12/16 | -6.88E-09             | 2.34E-08            | 4.56E-08         |          | uCi/g | U         |
| Hg-203     | 1.72E+02    | 11/12/16 | 6.10E-09              | 2.55E-08            | 5.26E-08         |          | uCi/g | U         |
| Tl-208     | 1.72E+02    | 11/12/16 | 1.61E-07              | 6.11E-08            | 4.16E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238020  
Client Sample ID: OLA3-S-008  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 20, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.72E+02       | 11/12/16 | 0.00E+00  | 3.29E-06    | 2.32E-06 |    | uCi/g | UI        |
| Pb-212  | 1.72E+02       | 11/12/16 | 5.85E-07  | 1.22E-07    | 8.36E-08 |    | uCi/g | 3         |
| Pb-214  | 1.72E+02       | 11/12/16 | 4.52E-07  | 1.56E-07    | 1.94E-07 |    | uCi/g | 3         |
| Bi-212  | 1.72E+02       | 11/12/16 | 7.79E-07  | 5.27E-07    | 8.88E-07 |    | uCi/g | U         |
| Bi-214  | 1.72E+02       | 11/12/16 | 3.10E-07  | 1.37E-07    | 8.07E-08 |    | uCi/g | 3         |
| Ra-228  | 1.72E+02       | 11/12/16 | 5.26E-07  | 1.99E-07    | 1.53E-07 |    | uCi/g | 3         |
| Ac-228  | 1.72E+02       | 11/12/16 | 5.26E-07  | 1.99E-07    | 1.53E-07 |    | uCi/g | 3         |
| Th-234  | 1.72E+02       | 11/12/16 | 0.00E+00  | 2.05E-06    | 1.17E-06 |    | uCi/g | UI        |
| U-235   | 1.72E+02       | 11/12/16 | 9.82E-08  | 2.84E-07    | 2.54E-07 |    | uCi/g | U         |
| U-238   | 1.72E+02       | 11/12/16 | 0.00E+00  | 2.05E-06    | 1.17E-06 |    | uCi/g | UI        |
| Np-239  | 1.72E+02       | 11/12/16 | -9.38E-08 | 1.60E-07    | 2.87E-07 |    | uCi/g | U         |
| Am-241  | 1.72E+02       | 11/12/16 | 2.45E-08  | 7.62E-08    | 1.42E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238020

Client: BHI Energy Power Services LLC

Client Sample ID: OLA3-S-008

Collect Date: October 20, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Ac-228          | 5.26E-07 | uCi/g    | 002.90                    |
| Bi-214          | 3.10E-07 | uCi/g    | 001.71                    |
| Pb-212          | 5.85E-07 | uCi/g    | 003.22                    |
| Pb-214          | 4.52E-07 | uCi/g    | 002.49                    |
| K-40            | 1.56E-05 | uCi/g    | 085.91                    |
| Ra-228          | 5.26E-07 | uCi/g    | 002.90                    |
| Tl-208          | 1.61E-07 | uCi/g    | 000.89                    |
|                 |          |          |                           |
| Total Activity: |          | 1.82E-05 | Total % Abundance: 100.00 |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238021  
Client Sample ID: OLA1-S-001  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 21, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.24E+02    | 11/12/16 | 5.16E-07              | 4.24E-07            | 9.23E-07         |          | uCi/g | U         |
| Na-22      | 1.24E+02    | 11/12/16 | 2.26E-08              | 4.38E-08            | 9.89E-08         |          | uCi/g | U         |
| K-40       | 1.24E+02    | 11/12/16 | 1.33E-05              | 1.78E-06            | 7.40E-07         |          | uCi/g | 3         |
| Cr-51      | 1.24E+02    | 11/12/16 | 1.58E-07              | 4.64E-07            | 9.23E-07         |          | uCi/g | U         |
| Mn-54      | 1.24E+02    | 11/12/16 | -6.18E-09             | 4.41E-08            | 8.19E-08         |          | uCi/g | U         |
| Fe-59      | 1.24E+02    | 11/12/16 | -3.71E-09             | 1.05E-07            | 2.02E-07         |          | uCi/g | U         |
| Co-56      | 1.24E+02    | 11/12/16 | 6.42E-09              | 4.16E-08            | 8.42E-08         |          | uCi/g | U         |
| Co-57      | 1.24E+02    | 11/12/16 | -1.86E-08             | 2.85E-08            | 5.27E-08         |          | uCi/g | U         |
| Co-58      | 1.24E+02    | 11/12/16 | 2.19E-08              | 3.95E-08            | 8.68E-08         |          | uCi/g | U         |
| Co-60      | 1.24E+02    | 11/12/16 | 4.59E-09              | 4.32E-08            | 9.18E-08         |          | uCi/g | U         |
| Zn-65      | 1.24E+02    | 11/12/16 | -6.92E-08             | 1.14E-07            | 1.58E-07         |          | uCi/g | U         |
| Y-88       | 1.24E+02    | 11/12/16 | 1.83E-08              | 3.51E-08            | 9.66E-08         |          | uCi/g | U         |
| Zr-95      | 1.24E+02    | 11/12/16 | 6.30E-09              | 8.92E-08            | 1.73E-07         |          | uCi/g | U         |
| Nb-94      | 1.24E+02    | 11/12/16 | 1.64E-08              | 4.29E-08            | 8.50E-08         |          | uCi/g | U         |
| Nb-95      | 1.24E+02    | 11/12/16 | 5.92E-08              | 5.56E-08            | 1.15E-07         |          | uCi/g | U         |
| Ru-106     | 1.24E+02    | 11/12/16 | 9.28E-08              | 3.69E-07            | 7.34E-07         |          | uCi/g | U         |
| Ag-110m    | 1.24E+02    | 11/12/16 | 4.94E-08              | 6.55E-08            | 1.39E-07         |          | uCi/g | U         |
| Sn-113     | 1.24E+02    | 11/12/16 | 9.29E-08              | 1.44E-07            | 9.73E-08         |          | uCi/g | U         |
| Sb-124     | 1.24E+02    | 11/12/16 | 3.39E-08              | 1.03E-07            | 2.45E-07         |          | uCi/g | U         |
| Sb-125     | 1.24E+02    | 11/12/16 | 4.78E-08              | 9.51E-08            | 1.96E-07         |          | uCi/g | U         |
| Cs-134     | 1.24E+02    | 11/12/16 | 4.45E-08              | 5.97E-08            | 1.03E-07         |          | uCi/g | U         |
| Cs-136     | 1.24E+02    | 11/12/16 | 1.18E-07              | 1.57E-07            | 3.51E-07         |          | uCi/g | U         |
| Cs-137     | 1.24E+02    | 11/12/16 | 3.09E-08              | 4.71E-08            | 9.12E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.24E+02    | 11/12/16 | 1.04E-08              | 4.60E-08            | 8.29E-08         |          | uCi/g | U         |
| Ba-140     | 1.24E+02    | 11/12/16 | -2.62E-07             | 4.44E-07            | 6.71E-07         |          | uCi/g | U         |
| Ce-139     | 1.24E+02    | 11/12/16 | -1.56E-08             | 2.98E-08            | 5.50E-08         |          | uCi/g | U         |
| Ce-141     | 1.24E+02    | 11/12/16 | 6.86E-08              | 7.99E-08            | 1.62E-07         |          | uCi/g | U         |
| Ce-144     | 1.24E+02    | 11/12/16 | 1.77E-08              | 2.30E-07            | 4.45E-07         |          | uCi/g | U         |
| Nd-147     | 1.24E+02    | 11/12/16 | -5.91E-07             | 1.00E-06            | 1.76E-06         |          | uCi/g | U         |
| Pm-144     | 1.24E+02    | 11/12/16 | -1.24E-08             | 4.10E-08            | 7.44E-08         |          | uCi/g | U         |
| Pm-146     | 1.24E+02    | 11/12/16 | -6.04E-09             | 4.61E-08            | 8.35E-08         |          | uCi/g | U         |
| Eu-152     | 1.24E+02    | 11/12/16 | -9.04E-08             | 9.92E-08            | 1.70E-07         |          | uCi/g | U         |
| Eu-154     | 1.24E+02    | 11/12/16 | 7.63E-08              | 1.20E-07            | 2.78E-07         |          | uCi/g | U         |
| Eu-155     | 1.24E+02    | 11/12/16 | 1.12E-07              | 1.22E-07            | 2.32E-07         |          | uCi/g | U         |
| Ir-192     | 1.24E+02    | 11/12/16 | 7.53E-09              | 4.18E-08            | 7.43E-08         |          | uCi/g | U         |
| Hg-203     | 1.24E+02    | 11/12/16 | 7.37E-08              | 7.21E-08            | 7.57E-08         |          | uCi/g | U         |
| Tl-208     | 1.24E+02    | 11/12/16 | 2.37E-07              | 1.01E-07            | 8.18E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238021  
Client Sample ID: OLA1-S-001  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 21, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.24E+02       | 11/12/16 | -8.17E-07 | 5.43E-06    | 9.81E-06 |    | uCi/g | U         |
| Pb-212  | 1.24E+02       | 11/12/16 | 9.08E-07  | 1.33E-07    | 1.06E-07 |    | uCi/g | 3         |
| Pb-214  | 1.24E+02       | 11/12/16 | 1.42E-06  | 2.19E-07    | 4.22E-07 |    | uCi/g | 3         |
| Bi-212  | 1.24E+02       | 11/12/16 | 1.34E-06  | 7.20E-07    | 1.64E-06 |    | uCi/g | 3,U       |
| Bi-214  | 1.24E+02       | 11/12/16 | 1.18E-06  | 2.34E-07    | 1.44E-07 |    | uCi/g | 3         |
| Ra-228  | 1.24E+02       | 11/12/16 | 1.03E-06  | 3.68E-07    | 3.08E-07 |    | uCi/g | 3         |
| Ac-228  | 1.24E+02       | 11/12/16 | 1.03E-06  | 3.68E-07    | 3.08E-07 |    | uCi/g | 3         |
| Th-234  | 1.24E+02       | 11/12/16 | 2.81E-06  | 3.48E-06    | 3.94E-06 |    | uCi/g | U         |
| U-235   | 1.24E+02       | 11/12/16 | 1.38E-08  | 2.27E-07    | 4.37E-07 |    | uCi/g | U         |
| U-238   | 1.24E+02       | 11/12/16 | 2.81E-06  | 3.48E-06    | 3.94E-06 |    | uCi/g | U         |
| Np-239  | 1.24E+02       | 11/12/16 | -1.43E-07 | 3.20E-07    | 5.36E-07 |    | uCi/g | U         |
| Am-241  | 1.24E+02       | 11/12/16 | 8.13E-08  | 2.35E-07    | 4.01E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238021

Client: BHI Energy Power Services LLC

Client Sample ID: OLA1-S-001

Collect Date: October 21, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Ac-228          | 1.03E-06 | uCi/g              | 005.38      |
| Bi-214          | 1.18E-06 | uCi/g              | 006.20      |
| Pb-212          | 9.08E-07 | uCi/g              | 004.76      |
| Pb-214          | 1.42E-06 | uCi/g              | 007.46      |
| K-40            | 1.33E-05 | uCi/g              | 069.58      |
| Ra-228          | 1.03E-06 | uCi/g              | 005.38      |
| Tl-208          | 2.37E-07 | uCi/g              | 001.24      |
|                 |          |                    |             |
| Total Activity: | 1.91E-05 | Total % Abundance: | 100.00      |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238022

Client: BHI Energy Power Services LLC

Client Sample ID: OLA1-S-002

Collect Date: October 21, 2016

Matrix: Soil

Receive Date: October 27, 2016

Geometry Received:

Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.36E+02    | 11/12/16 | 0.00E+00              | 6.68E-07            | 4.67E-07         |          | uCi/g | UI        |
| Na-22      | 1.36E+02    | 11/12/16 | -5.64E-09             | 2.76E-08            | 5.60E-08         |          | uCi/g | U         |
| K-40       | 1.36E+02    | 11/12/16 | 1.42E-05              | 1.45E-06            | 5.78E-07         |          | uCi/g | 3         |
| Cr-51      | 1.36E+02    | 11/12/16 | -8.99E-08             | 3.51E-07            | 6.71E-07         |          | uCi/g | U         |
| Mn-54      | 1.36E+02    | 11/12/16 | 3.35E-08              | 2.82E-08            | 6.48E-08         |          | uCi/g | U         |
| Fe-59      | 1.36E+02    | 11/12/16 | 1.96E-08              | 7.53E-08            | 1.53E-07         |          | uCi/g | U         |
| Co-56      | 1.36E+02    | 11/12/16 | -1.34E-08             | 3.74E-08            | 6.90E-08         |          | uCi/g | U         |
| Co-57      | 1.36E+02    | 11/12/16 | 1.03E-08              | 1.89E-08            | 3.72E-08         |          | uCi/g | U         |
| Co-58      | 1.36E+02    | 11/12/16 | -1.66E-08             | 2.96E-08            | 5.22E-08         |          | uCi/g | U         |
| Co-60      | 1.36E+02    | 11/12/16 | 1.14E-08              | 2.98E-08            | 6.65E-08         |          | uCi/g | U         |
| Zn-65      | 1.36E+02    | 11/12/16 | 8.46E-08              | 7.03E-08            | 1.56E-07         |          | uCi/g | U         |
| Y-88       | 1.36E+02    | 11/12/16 | -1.76E-08             | 1.99E-08            | 1.60E-08         |          | uCi/g | U         |
| Zr-95      | 1.36E+02    | 11/12/16 | 7.78E-08              | 8.89E-08            | 1.12E-07         |          | uCi/g | U         |
| Nb-94      | 1.36E+02    | 11/12/16 | -7.62E-09             | 2.87E-08            | 5.31E-08         |          | uCi/g | U         |
| Nb-95      | 1.36E+02    | 11/12/16 | -4.16E-08             | 3.73E-08            | 4.63E-08         |          | uCi/g | U         |
| Ru-106     | 1.36E+02    | 11/12/16 | -3.31E-08             | 2.66E-07            | 5.09E-07         |          | uCi/g | U         |
| Ag-110m    | 1.36E+02    | 11/12/16 | 2.73E-08              | 4.07E-08            | 8.76E-08         |          | uCi/g | U         |
| Sn-113     | 1.36E+02    | 11/12/16 | 3.40E-09              | 3.23E-08            | 6.56E-08         |          | uCi/g | U         |
| Sb-124     | 1.36E+02    | 11/12/16 | -9.57E-09             | 7.49E-08            | 1.56E-07         |          | uCi/g | U         |
| Sb-125     | 1.36E+02    | 11/12/16 | -6.22E-08             | 7.34E-08            | 1.30E-07         |          | uCi/g | U         |
| Cs-134     | 1.36E+02    | 11/12/16 | 4.69E-08              | 4.55E-08            | 7.74E-08         |          | uCi/g | U         |
| Cs-136     | 1.36E+02    | 11/12/16 | -6.77E-09             | 1.31E-07            | 2.47E-07         |          | uCi/g | U         |
| Cs-137     | 1.36E+02    | 11/12/16 | 2.30E-08              | 2.78E-08            | 6.11E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.36E+02    | 11/12/16 | -1.65E-08             | 3.03E-08            | 5.00E-08         |          | uCi/g | U         |
| Ba-140     | 1.36E+02    | 11/12/16 | -6.76E-08             | 3.08E-07            | 5.89E-07         |          | uCi/g | U         |
| Ce-139     | 1.36E+02    | 11/12/16 | -1.40E-08             | 2.46E-08            | 4.28E-08         |          | uCi/g | U         |
| Ce-141     | 1.36E+02    | 11/12/16 | -4.32E-08             | 5.71E-08            | 9.84E-08         |          | uCi/g | U         |
| Ce-144     | 1.36E+02    | 11/12/16 | -7.05E-08             | 1.59E-07            | 2.83E-07         |          | uCi/g | U         |
| Nd-147     | 1.36E+02    | 11/12/16 | 3.54E-07              | 7.63E-07            | 1.56E-06         |          | uCi/g | U         |
| Pm-144     | 1.36E+02    | 11/12/16 | 2.87E-09              | 2.60E-08            | 5.18E-08         |          | uCi/g | U         |
| Pm-146     | 1.36E+02    | 11/12/16 | -1.21E-08             | 3.47E-08            | 6.54E-08         |          | uCi/g | U         |
| Eu-152     | 1.36E+02    | 11/12/16 | -5.69E-09             | 7.85E-08            | 1.48E-07         |          | uCi/g | U         |
| Eu-154     | 1.36E+02    | 11/12/16 | -1.16E-08             | 7.92E-08            | 1.62E-07         |          | uCi/g | U         |
| Eu-155     | 1.36E+02    | 11/12/16 | 6.99E-08              | 8.20E-08            | 1.64E-07         |          | uCi/g | U         |
| Ir-192     | 1.36E+02    | 11/12/16 | -6.91E-09             | 2.71E-08            | 5.28E-08         |          | uCi/g | U         |
| Hg-203     | 1.36E+02    | 11/12/16 | 1.01E-08              | 3.22E-08            | 6.08E-08         |          | uCi/g | U         |
| Tl-208     | 1.36E+02    | 11/12/16 | 2.44E-07              | 7.85E-08            | 5.82E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238022  
Client Sample ID: OLA1-S-002  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 21, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.36E+02       | 11/12/16 | -1.73E-06 | 2.09E-06    | 3.76E-06 |    | uCi/g | U         |
| Pb-212  | 1.36E+02       | 11/12/16 | 8.65E-07  | 1.14E-07    | 9.18E-08 |    | uCi/g | 3         |
| Pb-214  | 1.36E+02       | 11/12/16 | 1.23E-06  | 1.88E-07    | 3.33E-07 |    | uCi/g | 3         |
| Bi-212  | 1.36E+02       | 11/12/16 | 4.75E-07  | 4.68E-07    | 1.00E-06 |    | uCi/g | U         |
| Bi-214  | 1.36E+02       | 11/12/16 | 8.71E-07  | 1.59E-07    | 1.17E-07 |    | uCi/g | 3         |
| Ra-228  | 1.36E+02       | 11/12/16 | 9.75E-07  | 2.82E-07    | 1.90E-07 |    | uCi/g | 3         |
| Ac-228  | 1.36E+02       | 11/12/16 | 9.75E-07  | 2.82E-07    | 1.90E-07 |    | uCi/g | 3         |
| Th-234  | 1.36E+02       | 11/12/16 | 1.07E-06  | 1.95E-06    | 1.77E-06 |    | uCi/g | U         |
| U-235   | 1.36E+02       | 11/12/16 | -1.87E-08 | 1.67E-07    | 3.04E-07 |    | uCi/g | U         |
| U-238   | 1.36E+02       | 11/12/16 | 1.07E-06  | 1.95E-06    | 1.77E-06 |    | uCi/g | U         |
| Np-239  | 1.36E+02       | 11/12/16 | -7.54E-08 | 1.96E-07    | 3.55E-07 |    | uCi/g | U         |
| Am-241  | 1.36E+02       | 11/12/16 | -4.37E-08 | 1.11E-07    | 2.06E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238022

Client: BHI Energy Power Services LLC

Client Sample ID: OLA1-S-002

Collect Date: October 21, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Ac-228          | 9.75E-07 | uCi/g              | 005.03      |
| Bi-214          | 8.71E-07 | uCi/g              | 004.49      |
| Pb-212          | 8.65E-07 | uCi/g              | 004.46      |
| Pb-214          | 1.23E-06 | uCi/g              | 006.33      |
| K-40            | 1.42E-05 | uCi/g              | 073.39      |
| Ra-228          | 9.75E-07 | uCi/g              | 005.03      |
| Tl-208          | 2.44E-07 | uCi/g              | 001.26      |
|                 |          |                    |             |
| Total Activity: | 1.94E-05 | Total % Abundance: | 100.00      |



# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238023  
Client Sample ID: OLA1-S-003  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 21, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.53E+02    | 11/12/16 | 0.00E+00              | 9.07E-07            | 7.48E-07         |          | uCi/g | UI        |
| Na-22      | 1.53E+02    | 11/12/16 | -2.60E-08             | 4.56E-08            | 8.12E-08         |          | uCi/g | U         |
| K-40       | 1.53E+02    | 11/12/16 | 7.67E-06              | 1.36E-06            | 6.85E-07         |          | uCi/g | 3         |
| Cr-51      | 1.53E+02    | 11/12/16 | 1.38E-07              | 4.60E-07            | 9.16E-07         |          | uCi/g | U         |
| Mn-54      | 1.53E+02    | 11/12/16 | -2.01E-09             | 3.21E-08            | 6.58E-08         |          | uCi/g | U         |
| Fe-59      | 1.53E+02    | 11/12/16 | -3.31E-08             | 8.16E-08            | 1.56E-07         |          | uCi/g | U         |
| Co-56      | 1.53E+02    | 11/12/16 | 1.59E-08              | 4.14E-08            | 8.92E-08         |          | uCi/g | U         |
| Co-57      | 1.53E+02    | 11/12/16 | -7.43E-09             | 2.26E-08            | 4.00E-08         |          | uCi/g | U         |
| Co-58      | 1.53E+02    | 11/12/16 | 3.65E-09              | 4.22E-08            | 8.71E-08         |          | uCi/g | U         |
| Co-60      | 1.53E+02    | 11/12/16 | 4.03E-08              | 4.22E-08            | 9.96E-08         |          | uCi/g | U         |
| Zn-65      | 1.53E+02    | 11/12/16 | -8.48E-08             | 8.96E-08            | 1.15E-07         |          | uCi/g | U         |
| Y-88       | 1.53E+02    | 11/12/16 | 1.03E-09              | 3.39E-08            | 7.79E-08         |          | uCi/g | U         |
| Zr-95      | 1.53E+02    | 11/12/16 | 3.71E-08              | 8.12E-08            | 1.66E-07         |          | uCi/g | U         |
| Nb-94      | 1.53E+02    | 11/12/16 | 3.25E-09              | 4.16E-08            | 7.83E-08         |          | uCi/g | U         |
| Nb-95      | 1.53E+02    | 11/12/16 | 4.59E-09              | 4.91E-08            | 8.51E-08         |          | uCi/g | U         |
| Ru-106     | 1.53E+02    | 11/12/16 | 1.29E-07              | 2.88E-07            | 6.06E-07         |          | uCi/g | U         |
| Ag-110m    | 1.53E+02    | 11/12/16 | 2.24E-08              | 4.89E-08            | 1.07E-07         |          | uCi/g | U         |
| Sn-113     | 1.53E+02    | 11/12/16 | 3.95E-08              | 4.71E-08            | 9.97E-08         |          | uCi/g | U         |
| Sb-124     | 1.53E+02    | 11/12/16 | -1.96E-08             | 6.06E-08            | 1.25E-07         |          | uCi/g | U         |
| Sb-125     | 1.53E+02    | 11/12/16 | 5.14E-08              | 8.82E-08            | 1.84E-07         |          | uCi/g | U         |
| Cs-134     | 1.53E+02    | 11/12/16 | 8.54E-09              | 4.62E-08            | 9.47E-08         |          | uCi/g | U         |
| Cs-136     | 1.53E+02    | 11/12/16 | -8.93E-08             | 1.54E-07            | 2.80E-07         |          | uCi/g | U         |
| Cs-137     | 1.53E+02    | 11/12/16 | 5.89E-09              | 4.41E-08            | 7.69E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.53E+02    | 11/12/16 | -3.43E-08             | 4.72E-08            | 7.28E-08         |          | uCi/g | U         |
| Ba-140     | 1.53E+02    | 11/12/16 | 5.20E-08              | 3.53E-07            | 7.07E-07         |          | uCi/g | U         |
| Ce-139     | 1.53E+02    | 11/12/16 | -1.56E-09             | 3.02E-08            | 5.95E-08         |          | uCi/g | U         |
| Ce-141     | 1.53E+02    | 11/12/16 | 0.00E+00              | 1.28E-07            | 1.16E-07         |          | uCi/g | UI        |
| Ce-144     | 1.53E+02    | 11/12/16 | -1.43E-07             | 1.72E-07            | 3.25E-07         |          | uCi/g | U         |
| Nd-147     | 1.53E+02    | 11/12/16 | 9.31E-07              | 9.16E-07            | 2.00E-06         |          | uCi/g | U         |
| Pm-144     | 1.53E+02    | 11/12/16 | -4.96E-09             | 3.76E-08            | 6.98E-08         |          | uCi/g | U         |
| Pm-146     | 1.53E+02    | 11/12/16 | 1.83E-08              | 4.17E-08            | 8.56E-08         |          | uCi/g | U         |
| Eu-152     | 1.53E+02    | 11/12/16 | -1.31E-08             | 1.07E-07            | 2.04E-07         |          | uCi/g | U         |
| Eu-154     | 1.53E+02    | 11/12/16 | -7.62E-08             | 1.28E-07            | 2.27E-07         |          | uCi/g | U         |
| Eu-155     | 1.53E+02    | 11/12/16 | -2.31E-08             | 9.00E-08            | 1.61E-07         |          | uCi/g | U         |
| Ir-192     | 1.53E+02    | 11/12/16 | -2.73E-08             | 3.67E-08            | 6.58E-08         |          | uCi/g | U         |
| Hg-203     | 1.53E+02    | 11/12/16 | 2.85E-08              | 4.09E-08            | 8.46E-08         |          | uCi/g | U         |
| Tl-208     | 1.53E+02    | 11/12/16 | 1.68E-07              | 9.36E-08            | 6.93E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238023  
Client Sample ID: OLA1-S-003  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 21, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.53E+02       | 11/12/16 | 1.79E-06  | 1.11E-06    | 8.23E-07 |    | uCi/g | 3         |
| Pb-212  | 1.53E+02       | 11/12/16 | 5.23E-07  | 1.27E-07    | 1.01E-07 |    | uCi/g | 3         |
| Pb-214  | 1.53E+02       | 11/12/16 | 1.35E-06  | 2.58E-07    | 1.45E-07 |    | uCi/g | 3         |
| Bi-212  | 1.53E+02       | 11/12/16 | 6.43E-07  | 6.03E-07    | 1.29E-06 |    | uCi/g | U         |
| Bi-214  | 1.53E+02       | 11/12/16 | 1.32E-06  | 2.39E-07    | 1.46E-07 |    | uCi/g | 3         |
| Ra-228  | 1.53E+02       | 11/12/16 | 1.09E-07  | 2.80E-07    | 2.60E-07 |    | uCi/g | U         |
| Ac-228  | 1.53E+02       | 11/12/16 | 1.09E-07  | 2.80E-07    | 2.60E-07 |    | uCi/g | U         |
| Th-234  | 1.53E+02       | 11/12/16 | 0.00E+00  | 1.36E-06    | 1.08E-06 |    | uCi/g | UI        |
| U-235   | 1.53E+02       | 11/12/16 | 0.00E+00  | 3.39E-07    | 4.05E-07 |    | uCi/g | UI        |
| U-238   | 1.53E+02       | 11/12/16 | 0.00E+00  | 1.36E-06    | 1.08E-06 |    | uCi/g | UI        |
| Np-239  | 1.53E+02       | 11/12/16 | -1.09E-07 | 2.65E-07    | 4.25E-07 |    | uCi/g | U         |
| Am-241  | 1.53E+02       | 11/12/16 | 2.26E-08  | 6.19E-08    | 1.10E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238023

Client: BHI Energy Power Services LLC

Client Sample ID: OLA1-S-003

Collect Date: October 21, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units    | % Abundance               |
|-----------------|----------|----------|---------------------------|
| Gamma Spec      |          |          |                           |
| Bi-214          | 1.32E-06 | uCi/g    | 010.26                    |
| Pb-210          | 1.79E-06 | uCi/g    | 013.98                    |
| Pb-212          | 5.23E-07 | uCi/g    | 004.08                    |
| Pb-214          | 1.35E-06 | uCi/g    | 010.52                    |
| K-40            | 7.67E-06 | uCi/g    | 059.85                    |
| Tl-208          | 1.68E-07 | uCi/g    | 001.31                    |
|                 |          |          |                           |
| Total Activity: |          | 1.28E-05 | Total % Abundance: 100.00 |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238024  
Client Sample ID: OLA1-S-004  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 21, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.69E+02    | 11/12/16 | 2.78E-06              | 6.70E-07            | 5.12E-07         |          | uCi/g | 3         |
| Na-22      | 1.69E+02    | 11/12/16 | 9.97E-09              | 4.34E-08            | 7.71E-08         |          | uCi/g | U         |
| K-40       | 1.69E+02    | 11/12/16 | 9.20E-06              | 1.21E-06            | 5.37E-07         |          | uCi/g | 3         |
| Cr-51      | 1.69E+02    | 11/12/16 | 1.85E-07              | 3.02E-07            | 6.47E-07         |          | uCi/g | U         |
| Mn-54      | 1.69E+02    | 11/12/16 | 1.80E-08              | 2.82E-08            | 6.18E-08         |          | uCi/g | U         |
| Fe-59      | 1.69E+02    | 11/12/16 | -5.04E-08             | 8.55E-08            | 1.52E-07         |          | uCi/g | U         |
| Co-56      | 1.69E+02    | 11/12/16 | 2.04E-08              | 3.31E-08            | 7.22E-08         |          | uCi/g | U         |
| Co-57      | 1.69E+02    | 11/12/16 | 1.17E-08              | 1.32E-08            | 2.84E-08         |          | uCi/g | U         |
| Co-58      | 1.69E+02    | 11/12/16 | 8.05E-09              | 3.01E-08            | 6.42E-08         |          | uCi/g | U         |
| Co-60      | 1.69E+02    | 11/12/16 | 1.90E-09              | 2.88E-08            | 5.88E-08         |          | uCi/g | U         |
| Zn-65      | 1.69E+02    | 11/12/16 | -5.26E-09             | 5.76E-08            | 1.08E-07         |          | uCi/g | U         |
| Y-88       | 1.69E+02    | 11/12/16 | 1.74E-08              | 2.98E-08            | 7.60E-08         |          | uCi/g | U         |
| Zr-95      | 1.69E+02    | 11/12/16 | -3.02E-08             | 4.93E-08            | 8.42E-08         |          | uCi/g | U         |
| Nb-94      | 1.69E+02    | 11/12/16 | -8.61E-09             | 2.45E-08            | 4.45E-08         |          | uCi/g | U         |
| Nb-95      | 1.69E+02    | 11/12/16 | -1.82E-08             | 3.95E-08            | 5.96E-08         |          | uCi/g | U         |
| Ru-106     | 1.69E+02    | 11/12/16 | 1.94E-07              | 2.25E-07            | 4.97E-07         |          | uCi/g | U         |
| Ag-110m    | 1.69E+02    | 11/12/16 | 8.50E-09              | 3.49E-08            | 7.45E-08         |          | uCi/g | U         |
| Sn-113     | 1.69E+02    | 11/12/16 | -5.65E-09             | 3.24E-08            | 6.39E-08         |          | uCi/g | U         |
| Sb-124     | 1.69E+02    | 11/12/16 | -1.18E-08             | 2.31E-08            | 3.36E-08         |          | uCi/g | U         |
| Sb-125     | 1.69E+02    | 11/12/16 | 4.50E-08              | 6.60E-08            | 1.42E-07         |          | uCi/g | U         |
| Cs-134     | 1.69E+02    | 11/12/16 | 1.07E-08              | 3.13E-08            | 6.63E-08         |          | uCi/g | U         |
| Cs-136     | 1.69E+02    | 11/12/16 | 5.50E-08              | 9.69E-08            | 2.19E-07         |          | uCi/g | U         |
| Cs-137     | 1.69E+02    | 11/12/16 | 2.48E-08              | 5.17E-08            | 6.40E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.69E+02    | 11/12/16 | -1.08E-08             | 3.00E-08            | 5.20E-08         |          | uCi/g | U         |
| Ba-140     | 1.69E+02    | 11/12/16 | -5.90E-08             | 2.23E-07            | 4.32E-07         |          | uCi/g | U         |
| Ce-139     | 1.69E+02    | 11/12/16 | -4.17E-09             | 1.85E-08            | 3.52E-08         |          | uCi/g | U         |
| Ce-141     | 1.69E+02    | 11/12/16 | -1.83E-08             | 4.47E-08            | 8.56E-08         |          | uCi/g | U         |
| Ce-144     | 1.69E+02    | 11/12/16 | -8.90E-08             | 1.05E-07            | 1.94E-07         |          | uCi/g | U         |
| Nd-147     | 1.69E+02    | 11/12/16 | 9.70E-08              | 6.81E-07            | 1.36E-06         |          | uCi/g | U         |
| Pm-144     | 1.69E+02    | 11/12/16 | -1.05E-08             | 2.90E-08            | 5.22E-08         |          | uCi/g | U         |
| Pm-146     | 1.69E+02    | 11/12/16 | 3.67E-08              | 6.35E-08            | 5.64E-08         |          | uCi/g | U         |
| Eu-152     | 1.69E+02    | 11/12/16 | -4.05E-08             | 6.04E-08            | 1.15E-07         |          | uCi/g | U         |
| Eu-154     | 1.69E+02    | 11/12/16 | 4.55E-08              | 1.18E-07            | 2.18E-07         |          | uCi/g | U         |
| Eu-155     | 1.69E+02    | 11/12/16 | 3.57E-08              | 5.13E-08            | 1.10E-07         |          | uCi/g | U         |
| Ir-192     | 1.69E+02    | 11/12/16 | 5.81E-09              | 2.45E-08            | 5.11E-08         |          | uCi/g | U         |
| Hg-203     | 1.69E+02    | 11/12/16 | 1.38E-09              | 3.05E-08            | 5.68E-08         |          | uCi/g | U         |
| Tl-208     | 1.69E+02    | 11/12/16 | 1.62E-07              | 5.31E-08            | 4.32E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238024  
Client Sample ID: OLA1-S-004  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 21, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity  | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|-----------|-------------|----------|----|-------|-----------|
|         |                |          |           | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.69E+02       | 11/12/16 | 1.77E-06  | 8.57E-07    | 4.76E-07 |    | uCi/g | 3         |
| Pb-212  | 1.69E+02       | 11/12/16 | 3.98E-07  | 1.15E-07    | 7.34E-08 |    | uCi/g | 3         |
| Pb-214  | 1.69E+02       | 11/12/16 | 1.14E-06  | 1.74E-07    | 9.01E-08 |    | uCi/g | 3         |
| Bi-212  | 1.69E+02       | 11/12/16 | 8.72E-07  | 6.19E-07    | 9.12E-07 |    | uCi/g | U         |
| Bi-214  | 1.69E+02       | 11/12/16 | 9.47E-07  | 1.69E-07    | 9.21E-08 |    | uCi/g | 3         |
| Ra-228  | 1.69E+02       | 11/12/16 | 5.56E-07  | 1.70E-07    | 1.94E-07 |    | uCi/g | 3         |
| Ac-228  | 1.69E+02       | 11/12/16 | 5.56E-07  | 1.70E-07    | 1.94E-07 |    | uCi/g | 3         |
| Th-234  | 1.69E+02       | 11/12/16 | 0.00E+00  | 7.60E-07    | 6.31E-07 |    | uCi/g | UI        |
| U-235   | 1.69E+02       | 11/12/16 | -1.07E-07 | 1.20E-07    | 2.22E-07 |    | uCi/g | U         |
| U-238   | 1.69E+02       | 11/12/16 | 0.00E+00  | 7.60E-07    | 6.31E-07 |    | uCi/g | UI        |
| Np-239  | 1.69E+02       | 11/12/16 | 1.01E-07  | 1.24E-07    | 2.69E-07 |    | uCi/g | U         |
| Am-241  | 1.69E+02       | 11/12/16 | -8.94E-09 | 2.85E-08    | 5.96E-08 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238024

Client: BHI Energy Power Services LLC

Client Sample ID: OLA1-S-004

Collect Date: October 21, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte  | Activity | Units | % Abundance |
|--|----------|-------|-------------|
| Gamma Spec   |          |       |             |
| Ac-228   | 5.56E-07 | uCi/g | 003.18      |
| Be-7   | 2.78E-06 | uCi/g | 015.86      |
| Bi-214   | 9.47E-07 | uCi/g | 005.41      |
| Pb-210   | 1.77E-06 | uCi/g | 010.09      |
| Pb-212   | 3.98E-07 | uCi/g | 002.27      |
| Pb-214   | 1.14E-06 | uCi/g | 006.51      |
| K-40   | 9.20E-06 | uCi/g | 052.58      |
| Ra-228   | 5.56E-07 | uCi/g | 003.18      |
| Tl-208   | 1.62E-07 | uCi/g | 000.92      |
| Total Activity: 1.75E-05 Total % Abundance: 100.00 |          |       |             |

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238025  
Client Sample ID: OLA1-S-005  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 21, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte    | Aliquot (g) | Run Date | Activity <sup>2</sup> | 2 Sigma Uncertainty | MDA <sup>1</sup> | RL       | Units | Qualifier |
|------------|-------------|----------|-----------------------|---------------------|------------------|----------|-------|-----------|
| Gamma Spec |             |          |                       |                     |                  |          |       |           |
| Be-7       | 1.29E+02    | 11/12/16 | 3.69E-07              | 4.25E-07            | 8.79E-07         |          | uCi/g | U         |
| Na-22      | 1.29E+02    | 11/12/16 | -7.97E-09             | 4.58E-08            | 8.88E-08         |          | uCi/g | U         |
| K-40       | 1.29E+02    | 11/12/16 | 5.37E-06              | 1.19E-06            | 1.09E-06         |          | uCi/g | 3         |
| Cr-51      | 1.29E+02    | 11/12/16 | -1.77E-07             | 4.15E-07            | 7.41E-07         |          | uCi/g | U         |
| Mn-54      | 1.29E+02    | 11/12/16 | -4.43E-09             | 3.42E-08            | 6.08E-08         |          | uCi/g | U         |
| Fe-59      | 1.29E+02    | 11/12/16 | 5.60E-08              | 9.44E-08            | 2.16E-07         |          | uCi/g | U         |
| Co-56      | 1.29E+02    | 11/12/16 | 1.37E-08              | 4.82E-08            | 9.21E-08         |          | uCi/g | U         |
| Co-57      | 1.29E+02    | 11/12/16 | 5.37E-09              | 2.36E-08            | 4.64E-08         |          | uCi/g | U         |
| Co-58      | 1.29E+02    | 11/12/16 | 2.95E-08              | 5.62E-08            | 1.09E-07         |          | uCi/g | U         |
| Co-60      | 1.29E+02    | 11/12/16 | -8.89E-09             | 4.06E-08            | 7.91E-08         |          | uCi/g | U         |
| Zn-65      | 1.29E+02    | 11/12/16 | 5.62E-08              | 6.51E-08            | 1.61E-07         |          | uCi/g | U         |
| Y-88       | 1.29E+02    | 11/12/16 | 0.00E+00              | 1.80E-08            | 2.48E-08         |          | uCi/g | U         |
| Zr-95      | 1.29E+02    | 11/12/16 | -1.89E-08             | 8.93E-08            | 1.72E-07         |          | uCi/g | U         |
| Nb-94      | 1.29E+02    | 11/12/16 | 3.25E-09              | 3.41E-08            | 6.97E-08         |          | uCi/g | U         |
| Nb-95      | 1.29E+02    | 11/12/16 | 3.08E-08              | 6.89E-08            | 1.26E-07         |          | uCi/g | U         |
| Ru-106     | 1.29E+02    | 11/12/16 | -3.87E-08             | 3.62E-07            | 6.66E-07         |          | uCi/g | U         |
| Ag-110m    | 1.29E+02    | 11/12/16 | 4.67E-09              | 4.87E-08            | 9.94E-08         |          | uCi/g | U         |
| Sn-113     | 1.29E+02    | 11/12/16 | 4.34E-08              | 6.06E-08            | 8.79E-08         |          | uCi/g | U         |
| Sb-124     | 1.29E+02    | 11/12/16 | -3.42E-08             | 7.28E-08            | 1.47E-07         |          | uCi/g | U         |
| Sb-125     | 1.29E+02    | 11/12/16 | -8.09E-09             | 1.02E-07            | 1.89E-07         |          | uCi/g | U         |
| Cs-134     | 1.29E+02    | 11/12/16 | 6.65E-08              | 8.74E-08            | 1.22E-07         |          | uCi/g | U         |
| Cs-136     | 1.29E+02    | 11/12/16 | 5.98E-08              | 1.88E-07            | 3.90E-07         |          | uCi/g | U         |
| Cs-137     | 1.29E+02    | 11/12/16 | 1.22E-08              | 3.92E-08            | 8.23E-08         | 1.00E-07 | uCi/g | U         |
| Ba-133     | 1.29E+02    | 11/12/16 | 3.16E-08              | 4.13E-08            | 8.04E-08         |          | uCi/g | U         |
| Ba-140     | 1.29E+02    | 11/12/16 | -2.06E-07             | 4.54E-07            | 7.87E-07         |          | uCi/g | U         |
| Ce-139     | 1.29E+02    | 11/12/16 | -2.26E-08             | 3.00E-08            | 5.38E-08         |          | uCi/g | U         |
| Ce-141     | 1.29E+02    | 11/12/16 | -7.03E-09             | 8.27E-08            | 1.42E-07         |          | uCi/g | U         |
| Ce-144     | 1.29E+02    | 11/12/16 | -1.01E-07             | 1.81E-07            | 3.35E-07         |          | uCi/g | U         |
| Nd-147     | 1.29E+02    | 11/12/16 | -3.64E-07             | 1.24E-06            | 1.93E-06         |          | uCi/g | U         |
| Pm-144     | 1.29E+02    | 11/12/16 | 1.24E-08              | 3.48E-08            | 7.40E-08         |          | uCi/g | U         |
| Pm-146     | 1.29E+02    | 11/12/16 | 5.79E-09              | 4.24E-08            | 8.24E-08         |          | uCi/g | U         |
| Eu-152     | 1.29E+02    | 11/12/16 | 8.12E-08              | 9.85E-08            | 2.04E-07         |          | uCi/g | U         |
| Eu-154     | 1.29E+02    | 11/12/16 | -8.03E-09             | 1.24E-07            | 2.48E-07         |          | uCi/g | U         |
| Eu-155     | 1.29E+02    | 11/12/16 | -2.76E-08             | 9.38E-08            | 1.60E-07         |          | uCi/g | U         |
| Ir-192     | 1.29E+02    | 11/12/16 | -6.44E-09             | 3.50E-08            | 6.53E-08         |          | uCi/g | U         |
| Hg-203     | 1.29E+02    | 11/12/16 | 3.84E-08              | 1.39E-07            | 8.70E-08         |          | uCi/g | U         |
| Tl-208     | 1.29E+02    | 11/12/16 | 1.23E-07              | 7.86E-08            | 7.25E-08         |          | uCi/g | 3         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UI Gamma Spectroscopy—Uncertain identification

# GEL LABORATORIES LLC

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## 10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 409238025  
Client Sample ID: OLA1-S-005  
Matrix: Soil  
Geometry Received:

Client: BHI Energy Power Services LLC  
Collect Date: October 21, 2016  
Receive Date: October 27, 2016  
Report Date: November 23, 2016

| Analyte | Aliquot<br>(g) | Run Date | Activity | 2 Sigma     |          | RL | Units | Qualifier |
|---------|----------------|----------|----------|-------------|----------|----|-------|-----------|
|         |                |          |          | Uncertainty | MDA      |    |       |           |
| Pb-210  | 1.29E+02       | 11/12/16 | 2.15E-06 | 9.72E-07    | 8.49E-07 |    | uCi/g | 3         |
| Pb-212  | 1.29E+02       | 11/12/16 | 2.78E-07 | 1.14E-07    | 1.06E-07 |    | uCi/g | 3         |
| Pb-214  | 1.29E+02       | 11/12/16 | 1.90E-06 | 2.39E-07    | 4.83E-07 |    | uCi/g | 3         |
| Bi-212  | 1.29E+02       | 11/12/16 | 0.00E+00 | 8.26E-07    | 1.33E-06 |    | uCi/g | UI        |
| Bi-214  | 1.29E+02       | 11/12/16 | 1.42E-06 | 2.41E-07    | 1.37E-07 |    | uCi/g | 3         |
| Ra-228  | 1.29E+02       | 11/12/16 | 4.22E-07 | 2.17E-07    | 4.50E-07 |    | uCi/g | 3,U       |
| Ac-228  | 1.29E+02       | 11/12/16 | 4.22E-07 | 2.17E-07    | 4.50E-07 |    | uCi/g | 3,U       |
| Th-234  | 1.29E+02       | 11/12/16 | 0.00E+00 | 9.69E-07    | 1.06E-06 |    | uCi/g | UI        |
| U-235   | 1.29E+02       | 11/12/16 | 1.28E-07 | 2.17E-07    | 4.27E-07 |    | uCi/g | U         |
| U-238   | 1.29E+02       | 11/12/16 | 0.00E+00 | 9.69E-07    | 1.06E-06 |    | uCi/g | UI        |
| Np-239  | 1.29E+02       | 11/12/16 | 1.12E-07 | 2.33E-07    | 4.66E-07 |    | uCi/g | U         |
| Am-241  | 1.29E+02       | 11/12/16 | 1.17E-08 | 6.69E-08    | 1.11E-07 |    | uCi/g | U         |

Note(s): 1. Calculated MDAs are a-posteriori values.

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Analyte was analyzed for but not detected above the Lc

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UI Gamma Spectroscopy—Uncertain identification



# GEL LABORATORIES, LLC

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## 10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 409238025

Client: BHI Energy Power Services LLC

Client Sample ID: OLA1-S-005

Collect Date: October 21, 2016

Matrix: Soil

Receive Date: October 27, 2016

| Analyte         | Activity | Units              | % Abundance |
|-----------------|----------|--------------------|-------------|
| Gamma Spec      |          |                    |             |
| Bi-214          | 1.42E-06 | uCi/g              | 012.64      |
| Pb-210          | 2.15E-06 | uCi/g              | 019.15      |
| Pb-212          | 2.78E-07 | uCi/g              | 002.47      |
| Pb-214          | 1.90E-06 | uCi/g              | 016.90      |
| K-40            | 5.37E-06 | uCi/g              | 047.75      |
| Tl-208          | 1.23E-07 | uCi/g              | 001.10      |
|                 |          |                    |             |
| Total Activity: | 1.12E-05 | Total % Abundance: | 100.00      |

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 1 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date |           |       |
|---------------|--------------------|--|--------|-------|--------------------|--------------|-----------|-------|
| 409515001     | PA1-S-01           |  | Solid  |       | 24-OCT-16 13:50:00 | 01-NOV-16    |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured     | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC          | MDC (LLD) |       |
| 08-NOV-16     | Ac-228             | 0.00E+00 +/- 2.98E-07                  | uCi/g  | D     | 2.98E-07           | 2.13E-07     |           | UI    |
| 08-NOV-16     | Am-241             | 6.10E-08 +/- 1.60E-07                  | uCi/g  | D     | 1.62E-07           | 3.00E-07     |           | U     |
| 08-NOV-16     | Sb-124             | 1.53E-08 +/- 7.21E-08                  | uCi/g  | D     | 7.25E-08           | 1.66E-07     |           | U     |
| 08-NOV-16     | Sb-125             | -2.19E-08 +/- 7.38E-08                 | uCi/g  | D     | 7.45E-08           | 1.38E-07     |           | U     |
| 08-NOV-16     | Ba-133             | -1.24E-08 +/- 4.26E-08                 | uCi/g  | D     | 4.30E-08           | 7.13E-08     |           | U     |
| 08-NOV-16     | Ba-140             | -9.45E-08 +/- 2.65E-07                 | uCi/g  | D     | 2.68E-07           | 4.77E-07     |           | U     |
| 08-NOV-16     | Be-7               | 6.19E-07 +/- 4.47E-07                  | uCi/g  | D     | 4.48E-07           | 6.18E-07     |           |       |
| 08-NOV-16     | Bi-212             | 9.24E-07 +/- 6.38E-07                  | uCi/g  | D     | 7.63E-07           | 1.12E-06     |           | U     |
| 08-NOV-16     | Bi-214             | 1.25E-06 +/- 1.97E-07                  | uCi/g  | D     | 2.04E-07           | 1.29E-07     |           |       |
| 08-NOV-16     | Ce-139             | 5.08E-09 +/- 2.34E-08                  | uCi/g  | D     | 2.36E-08           | 4.79E-08     |           | U     |
| 08-NOV-16     | Ce-141             | 8.26E-09 +/- 5.89E-08                  | uCi/g  | D     | 5.90E-08           | 1.01E-07     |           | U     |
| 08-NOV-16     | Ce-144             | 1.12E-08 +/- 1.68E-07                  | uCi/g  | D     | 1.68E-07           | 3.12E-07     |           | U     |
| 08-NOV-16     | Cs-134             | 6.39E-09 +/- 4.42E-08                  | uCi/g  | D     | 4.43E-08           | 8.67E-08     |           | U     |
| 08-NOV-16     | Cs-136             | -3.52E-08 +/- 8.19E-08                 | uCi/g  | D     | 8.35E-08           | 1.52E-07     |           | U     |
| 08-NOV-16     | Cs-137             | 1.12E-08 +/- 3.43E-08                  | uCi/g  | D     | 3.46E-08           | 7.03E-08     | 1.00E-07  | U     |
| 08-NOV-16     | Cr-51              | -5.31E-10 +/- 2.97E-07                 | uCi/g  | D     | 2.97E-07           | 5.84E-07     |           | U     |
| 08-NOV-16     | Co-56              | 2.36E-09 +/- 3.79E-08                  | uCi/g  | D     | 3.79E-08           | 7.58E-08     |           | U     |
| 08-NOV-16     | Co-57              | -6.57E-09 +/- 2.22E-08                 | uCi/g  | D     | 2.24E-08           | 4.02E-08     |           | U     |
| 08-NOV-16     | Co-58              | 1.25E-08 +/- 3.62E-08                  | uCi/g  | D     | 3.67E-08           | 6.94E-08     |           | U     |
| 08-NOV-16     | Co-60              | -2.05E-08 +/- 2.93E-08                 | uCi/g  | D     | 3.07E-08           | 4.86E-08     |           | U     |
| 08-NOV-16     | Eu-152             | -3.62E-08 +/- 8.94E-08                 | uCi/g  | D     | 9.09E-08           | 1.47E-07     |           | U     |
| 08-NOV-16     | Eu-154             | -7.99E-08 +/- 9.23E-08                 | uCi/g  | D     | 9.91E-08           | 1.47E-07     |           | U     |
| 08-NOV-16     | Eu-155             | 3.13E-09 +/- 9.29E-08                  | uCi/g  | D     | 9.29E-08           | 1.75E-07     |           | U     |
| 08-NOV-16     | Ir-192             | 3.26E-09 +/- 2.94E-08                  | uCi/g  | D     | 2.95E-08           | 5.82E-08     |           | U     |
| 08-NOV-16     | Fe-59              | 9.96E-08 +/- 1.23E-07                  | uCi/g  | D     | 1.31E-07           | 1.46E-07     |           | U     |
| 08-NOV-16     | Pb-210             | 1.24E-06 +/- 4.76E-06                  | uCi/g  | D     | 4.79E-06           | 9.51E-06     |           | U     |
| 08-NOV-16     | Pb-212             | 4.55E-07 +/- 1.06E-07                  | uCi/g  | D     | 1.09E-07           | 8.85E-08     |           |       |
| 08-NOV-16     | Pb-214             | 1.30E-06 +/- 2.22E-07                  | uCi/g  | D     | 2.29E-07           | 3.51E-07     |           |       |
| 08-NOV-16     | Mn-54              | -2.02E-08 +/- 3.08E-08                 | uCi/g  | D     | 3.22E-08           | 5.56E-08     |           | U     |
| 08-NOV-16     | Hg-203             | -3.21E-08 +/- 3.32E-08                 | uCi/g  | D     | 3.63E-08           | 5.92E-08     |           | U     |
| 08-NOV-16     | Nd-147             | 3.12E-07 +/- 4.90E-07                  | uCi/g  | D     | 5.10E-07           | 1.03E-06     |           | U     |
| 08-NOV-16     | Np-239             | -8.50E-09 +/- 2.44E-07                 | uCi/g  | D     | 2.44E-07           | 4.53E-07     |           | U     |
| 08-NOV-16     | Nb-94              | -1.72E-09 +/- 2.69E-08                 | uCi/g  | D     | 2.69E-08           | 5.42E-08     |           | U     |
| 08-NOV-16     | Nb-95              | 2.12E-08 +/- 4.18E-08                  | uCi/g  | D     | 4.29E-08           | 8.24E-08     |           | U     |
| 08-NOV-16     | K-40               | 9.28E-06 +/- 1.31E-06                  | uCi/g  | D     | 1.40E-06           | 5.26E-07     |           |       |
| 08-NOV-16     | Pm-144             | -9.33E-09 +/- 2.98E-08                 | uCi/g  | D     | 3.01E-08           | 5.76E-08     |           | U     |
| 08-NOV-16     | Pm-146             | 1.28E-08 +/- 3.75E-08                  | uCi/g  | D     | 3.79E-08           | 7.53E-08     |           | U     |

- Notes:**
1. LLDs are a-priori values.
  2. MDCs are calculated a-posteriori values.
  3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
  4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:** U - Target isotope was analyzed for but not detected above the MDC and LLD.  
UI - Uncertain identification for gamma spectroscopy.  
X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.  
M - Reported result is less than the LLD and greater than the MDC.

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 2 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515001     | PA1-S-01           |  | Solid  |       | 24-OCT-16 13:50:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Ra-228             | 0.00E+00 +/- 2.98E-07  | uCi/g  | D     | 2.98E-07           | 2.13E-07        |                       | UI    |
| 08-NOV-16     | Ru-106             | 3.45E-08 +/- 2.88E-07  | uCi/g  | D     | 2.88E-07           | 5.56E-07        |                       | U     |
| 08-NOV-16     | Ag-110m            | 1.79E-08 +/- 4.54E-08  | uCi/g  | D     | 4.62E-08           | 9.11E-08        |                       | U     |
| 08-NOV-16     | Na-22              | -2.66E-08 +/- 3.29E-08   | uCi/g  | D     | 3.51E-08           | 5.35E-08        |                       | U     |
| 08-NOV-16     | Tl-208             | 1.36E-07 +/- 6.29E-08  | uCi/g  | D     | 6.32E-08           | 5.60E-08        |                       |       |
| 08-NOV-16     | Th-234             | 1.71E-06 +/- 2.99E-06  | uCi/g  | D     | 3.11E-06           | 3.12E-06        |                       | U     |
| 08-NOV-16     | Sn-113             | -3.26E-08 +/- 4.01E-08   | uCi/g  | D     | 4.27E-08           | 7.00E-08        |                       | U     |
| 08-NOV-16     | U-235              | 1.01E-07 +/- 3.88E-07  | uCi/g  | D     | 3.88E-07           | 3.44E-07        |                       | U     |
| 08-NOV-16     | U-238              | 1.71E-06 +/- 2.99E-06  | uCi/g  | D     | 3.11E-06           | 3.12E-06        |                       | U     |
| 08-NOV-16     | Y-88               | -1.16E-08 +/- 2.32E-08   | uCi/g  | D     | 2.38E-08           | 4.46E-08        |                       | U     |
| 08-NOV-16     | Zn-65              | -4.79E-08 +/- 8.67E-08   | uCi/g  | D     | 8.94E-08           | 1.28E-07        |                       | U     |
| 08-NOV-16     | Zr-95              | -4.98E-08 +/- 5.79E-08   | uCi/g  | D     | 6.21E-08           | 1.02E-07        |                       | U     |
| 409515002     | PA1-D5-02          |  | Solid  |       | 24-OCT-16 13:15:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Ac-228             | 1.00E-06 +/- 4.10E-07  | uCi/g  | D     | 4.14E-07           | 2.98E-07        |                       |       |
| 08-NOV-16     | Am-241             | 1.84E-07 +/- 2.66E-07  | uCi/g  | D     | 2.79E-07           | 5.20E-07        |                       | U     |
| 08-NOV-16     | Sb-124             | -5.37E-08 +/- 9.55E-08   | uCi/g  | D     | 9.85E-08           | 1.69E-07        |                       | U     |
| 08-NOV-16     | Sb-125             | -3.22E-08 +/- 1.00E-07   | uCi/g  | D     | 1.01E-07           | 1.79E-07        |                       | U     |
| 08-NOV-16     | Ba-133             | -2.19E-08 +/- 4.25E-08   | uCi/g  | D     | 4.37E-08           | 7.08E-08        |                       | U     |
| 08-NOV-16     | Ba-140             | -9.74E-08 +/- 2.92E-07   | uCi/g  | D     | 2.95E-07           | 5.52E-07        |                       | U     |
| 08-NOV-16     | Be-7               | -1.21E-07 +/- 4.07E-07   | uCi/g  | D     | 4.11E-07           | 6.32E-07        |                       | U     |
| 08-NOV-16     | Bi-212             | 9.05E-07 +/- 8.76E-07  | uCi/g  | D     | 8.77E-07           | 9.84E-07        |                       | U     |
| 08-NOV-16     | Bi-214             | 9.61E-07 +/- 2.06E-07  | uCi/g  | D     | 2.10E-07           | 1.58E-07        |                       |       |
| 08-NOV-16     | Ce-139             | 2.35E-08 +/- 3.05E-08  | uCi/g  | D     | 3.27E-08           | 6.15E-08        |                       | U     |
| 08-NOV-16     | Ce-141             | 3.72E-08 +/- 6.18E-08  | uCi/g  | D     | 6.41E-08           | 1.15E-07        |                       | U     |
| 08-NOV-16     | Ce-144             | -7.20E-08 +/- 1.87E-07   | uCi/g  | D     | 1.90E-07           | 3.58E-07        |                       | U     |
| 08-NOV-16     | Cs-134             | 1.67E-08 +/- 4.89E-08  | uCi/g  | D     | 4.95E-08           | 9.82E-08        |                       | U     |
| 08-NOV-16     | Cs-136             | 3.26E-08 +/- 9.79E-08  | uCi/g  | D     | 9.91E-08           | 2.06E-07        |                       | U     |
| 08-NOV-16     | Cs-137             | 5.37E-08 +/- 3.88E-08  | uCi/g  | D     | 3.89E-08           | 9.59E-08        | 1.00E-07              | U     |
| 08-NOV-16     | Cr-51              | -8.50E-08 +/- 4.00E-07   | uCi/g  | D     | 4.02E-07           | 7.32E-07        |                       | U     |
| 08-NOV-16     | Co-56              | -6.69E-09 +/- 4.66E-08   | uCi/g  | D     | 4.67E-08           | 8.78E-08        |                       | U     |
| 08-NOV-16     | Co-57              | -7.68E-09 +/- 2.86E-08   | uCi/g  | D     | 2.88E-08           | 4.97E-08        |                       | U     |

**Notes:**

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4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 3 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description | Matrix                                 |       |       |          | Collection Date    | Receipt Date    |
|---------------|--------------------|--|-------|-------|----------|--------------------|-----------------|
| 409515002     | PA1-D5-02          | Solid                                  |       |       |          | 24-OCT-16 13:15:00 | 01-NOV-16       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units | Basis | TPU      | Measured           | Required        |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |       |       |          | MDC                | MDC (LLD) Flags |
| 08-NOV-16     | Co-58              | -8.16E-10 +/- 4.21E-08                 | uCi/g | D     | 4.21E-08 | 8.20E-08           | U               |
| 08-NOV-16     | Co-60              | -2.51E-08 +/- 4.44E-08                 | uCi/g | D     | 4.58E-08 | 8.01E-08           | U               |
| 08-NOV-16     | Eu-152             | 2.33E-08 +/- 9.75E-08                  | uCi/g | D     | 9.81E-08 | 1.88E-07           | U               |
| 08-NOV-16     | Eu-154             | -4.81E-08 +/- 1.58E-07                 | uCi/g | D     | 1.60E-07 | 2.54E-07           | U               |
| 08-NOV-16     | Eu-155             | -2.38E-08 +/- 1.27E-07                 | uCi/g | D     | 1.28E-07 | 2.25E-07           | U               |
| 08-NOV-16     | Ir-192             | -1.14E-08 +/- 3.47E-08                 | uCi/g | D     | 3.51E-08 | 6.31E-08           | U               |
| 08-NOV-16     | Fe-59              | 2.33E-08 +/- 1.17E-07                  | uCi/g | D     | 1.17E-07 | 2.26E-07           | U               |
| 08-NOV-16     | Pb-210             | 5.67E-06 +/- 1.13E-05                  | uCi/g | D     | 1.16E-05 | 2.23E-05           | U               |
| 08-NOV-16     | Pb-212             | 1.10E-06 +/- 1.34E-07                  | uCi/g | D     | 1.47E-07 | 1.05E-07           |                 |
| 08-NOV-16     | Pb-214             | 1.10E-06 +/- 2.03E-07                  | uCi/g | D     | 2.09E-07 | 1.33E-07           |                 |
| 08-NOV-16     | Mn-54              | 1.48E-08 +/- 4.59E-08                  | uCi/g | D     | 4.64E-08 | 9.11E-08           | U               |
| 08-NOV-16     | Hg-203             | -4.46E-08 +/- 3.90E-08                 | uCi/g | D     | 4.40E-08 | 6.53E-08           | U               |
| 08-NOV-16     | Nd-147             | -1.04E-07 +/- 6.15E-07                 | uCi/g | D     | 6.16E-07 | 1.19E-06           | U               |
| 08-NOV-16     | Np-239             | -2.13E-07 +/- 2.82E-07                 | uCi/g | D     | 2.98E-07 | 4.68E-07           | U               |
| 08-NOV-16     | Nb-94              | 4.36E-09 +/- 4.01E-08                  | uCi/g | D     | 4.01E-08 | 7.82E-08           | U               |
| 08-NOV-16     | Nb-95              | 1.04E-08 +/- 4.91E-08                  | uCi/g | D     | 4.94E-08 | 9.68E-08           | U               |
| 08-NOV-16     | K-40               | 1.73E-05 +/- 1.84E-06                  | uCi/g | D     | 2.05E-06 | 5.84E-07           |                 |
| 08-NOV-16     | Pm-144             | -1.67E-08 +/- 4.20E-08                 | uCi/g | D     | 4.27E-08 | 7.69E-08           | U               |
| 08-NOV-16     | Pm-146             | 3.96E-08 +/- 4.72E-08                  | uCi/g | D     | 5.06E-08 | 9.65E-08           | U               |
| 08-NOV-16     | Ra-228             | 1.00E-06 +/- 4.10E-07                  | uCi/g | D     | 4.14E-07 | 2.98E-07           |                 |
| 08-NOV-16     | Ru-106             | 2.90E-07 +/- 3.59E-07                  | uCi/g | D     | 3.83E-07 | 7.28E-07           | U               |
| 08-NOV-16     | Ag-110m            | 3.49E-08 +/- 5.94E-08                  | uCi/g | D     | 6.15E-08 | 1.24E-07           | U               |
| 08-NOV-16     | Na-22              | -1.76E-08 +/- 5.57E-08                 | uCi/g | D     | 5.63E-08 | 8.93E-08           | U               |
| 08-NOV-16     | Tl-208             | 4.18E-07 +/- 1.04E-07                  | uCi/g | D     | 1.06E-07 | 6.88E-08           |                 |
| 08-NOV-16     | Th-234             | 1.56E-06 +/- 2.10E-06                  | uCi/g | D     | 2.24E-06 | 4.10E-06           | U               |
| 08-NOV-16     | Sn-113             | 3.52E-08 +/- 4.28E-08                  | uCi/g | D     | 4.57E-08 | 8.90E-08           | U               |
| 08-NOV-16     | U-235              | 1.20E-07 +/- 4.35E-07                  | uCi/g | D     | 4.35E-07 | 3.78E-07           | U               |
| 08-NOV-16     | U-238              | 1.56E-06 +/- 2.10E-06                  | uCi/g | D     | 2.24E-06 | 4.10E-06           | U               |
| 08-NOV-16     | Y-88               | 1.86E-08 +/- 3.25E-08                  | uCi/g | D     | 3.36E-08 | 8.78E-08           | U               |
| 08-NOV-16     | Zn-65              | 2.28E-09 +/- 1.26E-07                  | uCi/g | D     | 1.26E-07 | 2.06E-07           | U               |
| 08-NOV-16     | Zr-95              | -7.85E-09 +/- 8.91E-08                 | uCi/g | D     | 8.92E-08 | 1.69E-07           | U               |

**Notes:**

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**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 4 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515003     | PA2-S-01           |  | Solid  |       | 24-OCT-16 09:10:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Ac-228             | 9.99E-07 +/- 3.79E-07  | uCi/g  | D     | 3.83E-07           | 2.39E-07        |                       |       |
| 08-NOV-16     | Am-241             | 9.45E-08 +/- 1.94E-07  | uCi/g  | D     | 1.99E-07           | 3.55E-07        |                       | U     |
| 08-NOV-16     | Sb-124             | -2.39E-08 +/- 8.57E-08   | uCi/g  | D     | 8.64E-08           | 1.72E-07        |                       | U     |
| 08-NOV-16     | Sb-125             | 8.10E-08 +/- 9.77E-08  | uCi/g  | D     | 1.04E-07           | 2.01E-07        |                       | U     |
| 08-NOV-16     | Ba-133             | -1.64E-08 +/- 4.71E-08   | uCi/g  | D     | 4.77E-08           | 7.70E-08        |                       | U     |
| 08-NOV-16     | Ba-140             | -9.47E-08 +/- 2.50E-07   | uCi/g  | D     | 2.54E-07           | 4.48E-07        |                       | U     |
| 08-NOV-16     | Be-7               | 1.28E-06 +/- 7.43E-07  | uCi/g  | D     | 7.45E-07           | 6.12E-07        |                       |       |
| 08-NOV-16     | Bi-212             | 3.20E-07 +/- 5.62E-07  | uCi/g  | D     | 5.81E-07           | 1.17E-06        |                       | U     |
| 08-NOV-16     | Bi-214             | 9.46E-07 +/- 2.65E-07  | uCi/g  | D     | 2.68E-07           | 1.50E-07        |                       |       |
| 08-NOV-16     | Ce-139             | -1.34E-08 +/- 2.80E-08   | uCi/g  | D     | 2.88E-08           | 5.32E-08        |                       | U     |
| 08-NOV-16     | Ce-141             | 7.87E-08 +/- 9.68E-08  | uCi/g  | D     | 9.69E-08           | 1.06E-07        |                       | U     |
| 08-NOV-16     | Ce-144             | -1.53E-07 +/- 1.96E-07   | uCi/g  | D     | 2.08E-07           | 3.28E-07        |                       | U     |
| 08-NOV-16     | Cs-134             | -1.50E-08 +/- 3.96E-08   | uCi/g  | D     | 4.02E-08           | 7.24E-08        |                       | U     |
| 08-NOV-16     | Cs-136             | 2.75E-08 +/- 1.12E-07  | uCi/g  | D     | 1.13E-07           | 2.27E-07        |                       | U     |
| 08-NOV-16     | Cs-137             | 5.42E-08 +/- 5.89E-08  | uCi/g  | D     | 5.90E-08           | 6.20E-08        | 1.00E-07              | U     |
| 08-NOV-16     | Cr-51              | 1.48E-07 +/- 3.52E-07  | uCi/g  | D     | 3.58E-07           | 7.05E-07        |                       | U     |
| 08-NOV-16     | Co-56              | -1.87E-08 +/- 3.69E-08   | uCi/g  | D     | 3.79E-08           | 6.77E-08        |                       | U     |
| 08-NOV-16     | Co-57              | -5.81E-09 +/- 2.68E-08   | uCi/g  | D     | 2.69E-08           | 4.76E-08        |                       | U     |
| 08-NOV-16     | Co-58              | -2.71E-08 +/- 4.74E-08   | uCi/g  | D     | 4.89E-08           | 7.26E-08        |                       | U     |
| 08-NOV-16     | Co-60              | 2.56E-08 +/- 3.49E-08  | uCi/g  | D     | 3.67E-08           | 8.10E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | 5.76E-08 +/- 9.73E-08  | uCi/g  | D     | 1.01E-07           | 1.90E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | 1.60E-07 +/- 1.16E-07  | uCi/g  | D     | 1.37E-07           | 2.80E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | -3.47E-09 +/- 1.11E-07   | uCi/g  | D     | 1.11E-07           | 2.02E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | -1.89E-08 +/- 3.30E-08   | uCi/g  | D     | 3.41E-08           | 5.96E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | 2.91E-08 +/- 9.22E-08  | uCi/g  | D     | 9.32E-08           | 1.89E-07        |                       | U     |
| 08-NOV-16     | Pb-210             | 1.20E-06 +/- 6.22E-06  | uCi/g  | D     | 6.24E-06           | 1.19E-05        |                       | U     |
| 08-NOV-16     | Pb-212             | 5.77E-07 +/- 1.23E-07  | uCi/g  | D     | 1.27E-07           | 1.13E-07        |                       |       |
| 08-NOV-16     | Pb-214             | 1.64E-06 +/- 2.19E-07  | uCi/g  | D     | 2.30E-07           | 4.08E-07        |                       |       |
| 08-NOV-16     | Mn-54              | -1.57E-08 +/- 3.73E-08   | uCi/g  | D     | 3.80E-08           | 6.91E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | 9.54E-09 +/- 4.12E-08  | uCi/g  | D     | 4.14E-08           | 7.99E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | 2.36E-07 +/- 5.61E-07  | uCi/g  | D     | 5.71E-07           | 1.13E-06        |                       | U     |
| 08-NOV-16     | Np-239             | -7.43E-10 +/- 2.75E-07   | uCi/g  | D     | 2.75E-07           | 4.99E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | -1.50E-08 +/- 3.15E-08   | uCi/g  | D     | 3.22E-08           | 5.88E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | 1.34E-08 +/- 4.78E-08  | uCi/g  | D     | 4.82E-08           | 8.99E-08        |                       | U     |
| 08-NOV-16     | K-40               | 1.05E-05 +/- 1.39E-06  | uCi/g  | D     | 1.49E-06           | 5.93E-07        |                       |       |
| 08-NOV-16     | Pm-144             | 2.84E-08 +/- 3.68E-08  | uCi/g  | D     | 3.90E-08           | 7.89E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | 2.62E-09 +/- 4.44E-08  | uCi/g  | D     | 4.44E-08           | 8.44E-08        |                       | U     |

**Notes:**

1. LLDs are a-priori values.
2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:** U - Target isotope was analyzed for but not detected above the MDC and LLD.  
UI - Uncertain identification for gamma spectroscopy.  
X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.  
M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 5 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix | Collection Date    | Receipt Date |          |           |       |
|---------------|--------------------|--|--------|--------------------|--------------|----------|-----------|-------|
| 409515003     | PA2-S-01           |  | Solid  | 24-OCT-16 09:10:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              | MDC      | MDC (LLD) |       |
| 08-NOV-16     | Ra-228             | 9.99E-07 +/- 3.79E-07                  | uCi/g  | D                  | 3.83E-07     | 2.39E-07 |           |       |
| 08-NOV-16     | Ru-106             | 2.44E-07 +/- 3.65E-07                  | uCi/g  | D                  | 3.82E-07     | 7.36E-07 |           | U     |
| 08-NOV-16     | Ag-110m            | -8.04E-09 +/- 4.45E-08                 | uCi/g  | D                  | 4.46E-08     | 8.69E-08 |           | U     |
| 08-NOV-16     | Na-22              | 5.56E-08 +/- 4.07E-08                  | uCi/g  | D                  | 4.79E-08     | 9.84E-08 |           | U     |
| 08-NOV-16     | Tl-208             | 1.95E-07 +/- 8.46E-08                  | uCi/g  | D                  | 8.50E-08     | 6.62E-08 |           |       |
| 08-NOV-16     | Th-234             | 1.31E-06 +/- 3.80E-06                  | uCi/g  | D                  | 3.81E-06     | 2.75E-06 |           | U     |
| 08-NOV-16     | Sn-113             | 3.74E-08 +/- 4.30E-08                  | uCi/g  | D                  | 4.62E-08     | 9.02E-08 |           | U     |
| 08-NOV-16     | U-235              | 2.79E-07 +/- 3.21E-07                  | uCi/g  | D                  | 3.21E-07     | 3.38E-07 |           | U     |
| 08-NOV-16     | U-238              | 1.31E-06 +/- 3.80E-06                  | uCi/g  | D                  | 3.81E-06     | 2.75E-06 |           | U     |
| 08-NOV-16     | Y-88               | -1.32E-08 +/- 2.63E-08                 | uCi/g  | D                  | 2.70E-08     | 5.05E-08 |           | U     |
| 08-NOV-16     | Zn-65              | 5.52E-09 +/- 1.13E-07                  | uCi/g  | D                  | 1.13E-07     | 1.91E-07 |           | U     |
| 08-NOV-16     | Zr-95              | 2.70E-08 +/- 6.88E-08                  | uCi/g  | D                  | 6.99E-08     | 1.45E-07 |           | U     |
| 409515004     | PA2-S-02           |  | Solid  | 24-OCT-16 09:20:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              | MDC      | MDC (LLD) |       |
| 08-NOV-16     | Ac-228             | 4.86E-07 +/- 2.25E-07                  | uCi/g  | D                  | 2.26E-07     | 1.71E-07 |           |       |
| 08-NOV-16     | Am-241             | 3.42E-08 +/- 1.68E-07                  | uCi/g  | D                  | 1.68E-07     | 3.23E-07 |           | U     |
| 08-NOV-16     | Sb-124             | 1.40E-08 +/- 7.99E-08                  | uCi/g  | D                  | 8.02E-08     | 1.78E-07 |           | U     |
| 08-NOV-16     | Sb-125             | 5.33E-09 +/- 7.19E-08                  | uCi/g  | D                  | 7.20E-08     | 1.47E-07 |           | U     |
| 08-NOV-16     | Ba-133             | 9.76E-10 +/- 3.73E-08                  | uCi/g  | D                  | 3.73E-08     | 6.36E-08 |           | U     |
| 08-NOV-16     | Ba-140             | -1.48E-07 +/- 2.21E-07                 | uCi/g  | D                  | 2.30E-07     | 3.74E-07 |           | U     |
| 08-NOV-16     | Be-7               | 1.71E-06 +/- 6.74E-07                  | uCi/g  | D                  | 6.77E-07     | 5.05E-07 |           |       |
| 08-NOV-16     | Bi-212             | 0.00E+00 +/- 7.22E-07                  | uCi/g  | D                  | 1.10E-06     | 1.29E-06 |           | UI    |
| 08-NOV-16     | Bi-214             | 1.19E-06 +/- 1.87E-07                  | uCi/g  | D                  | 1.94E-07     | 1.04E-07 |           |       |
| 08-NOV-16     | Ce-139             | 1.18E-08 +/- 2.54E-08                  | uCi/g  | D                  | 2.61E-08     | 5.00E-08 |           | U     |
| 08-NOV-16     | Ce-141             | 2.82E-08 +/- 1.10E-07                  | uCi/g  | D                  | 1.10E-07     | 1.02E-07 |           | U     |
| 08-NOV-16     | Ce-144             | 7.32E-08 +/- 1.58E-07                  | uCi/g  | D                  | 1.61E-07     | 2.98E-07 |           | U     |
| 08-NOV-16     | Cs-134             | 3.05E-08 +/- 5.24E-08                  | uCi/g  | D                  | 5.41E-08     | 7.21E-08 |           | U     |
| 08-NOV-16     | Cs-136             | 6.52E-08 +/- 8.47E-08                  | uCi/g  | D                  | 8.98E-08     | 1.92E-07 |           | U     |
| 08-NOV-16     | Cs-137             | -2.95E-09 +/- 3.36E-08                 | uCi/g  | D                  | 3.36E-08     | 6.51E-08 | 1.00E-07  | U     |
| 08-NOV-16     | Cr-51              | 6.13E-08 +/- 2.88E-07                  | uCi/g  | D                  | 2.89E-07     | 4.68E-07 |           | U     |
| 08-NOV-16     | Co-56              | 3.39E-08 +/- 3.70E-08                  | uCi/g  | D                  | 3.71E-08     | 7.50E-08 |           | U     |
| 08-NOV-16     | Co-57              | -7.44E-09 +/- 2.03E-08                 | uCi/g  | D                  | 2.05E-08     | 3.81E-08 |           | U     |

**Notes:**

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4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 6 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date |                 |
|---------------|--------------------|--|--------|-------|--------------------|--------------|-----------------|
| 409515004     | PA2-S-02           |  | Solid  |       | 24-OCT-16 09:20:00 | 01-NOV-16    |                 |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured     | Required        |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC          | MDC (LLD) Flags |
| 08-NOV-16     | Co-58              | 1.47E-09 +/- 2.81E-08                  | uCi/g  | D     | 2.81E-08           | 5.74E-08     | U               |
| 08-NOV-16     | Co-60              | 1.46E-08 +/- 2.78E-08                  | uCi/g  | D     | 2.86E-08           | 6.64E-08     | U               |
| 08-NOV-16     | Eu-152             | 1.77E-08 +/- 8.40E-08                  | uCi/g  | D     | 8.44E-08           | 1.59E-07     | U               |
| 08-NOV-16     | Eu-154             | 7.06E-08 +/- 9.63E-08                  | uCi/g  | D     | 1.02E-07           | 2.13E-07     | U               |
| 08-NOV-16     | Eu-155             | -2.30E-08 +/- 8.78E-08                 | uCi/g  | D     | 8.85E-08           | 1.68E-07     | U               |
| 08-NOV-16     | Ir-192             | -3.19E-09 +/- 2.90E-08                 | uCi/g  | D     | 2.90E-08           | 4.88E-08     | U               |
| 08-NOV-16     | Fe-59              | -2.97E-08 +/- 7.57E-08                 | uCi/g  | D     | 7.69E-08           | 1.34E-07     | U               |
| 08-NOV-16     | Pb-210             | 7.86E-06 +/- 1.12E-05                  | uCi/g  | D     | 1.13E-05           | 1.16E-05     | U               |
| 08-NOV-16     | Pb-212             | 4.88E-07 +/- 1.05E-07                  | uCi/g  | D     | 1.08E-07           | 8.85E-08     |                 |
| 08-NOV-16     | Pb-214             | 1.36E-06 +/- 2.08E-07                  | uCi/g  | D     | 2.15E-07           | 3.72E-07     |                 |
| 08-NOV-16     | Mn-54              | -1.26E-08 +/- 3.48E-08                 | uCi/g  | D     | 3.52E-08           | 5.53E-08     | U               |
| 08-NOV-16     | Hg-203             | -2.85E-08 +/- 3.32E-08                 | uCi/g  | D     | 3.56E-08           | 5.48E-08     | U               |
| 08-NOV-16     | Nd-147             | 0.00E+00 +/- 8.39E-07                  | uCi/g  | D     | 1.05E-06           | 1.10E-06     | UI              |
| 08-NOV-16     | Np-239             | -1.93E-07 +/- 1.99E-07                 | uCi/g  | D     | 2.18E-07           | 3.55E-07     | U               |
| 08-NOV-16     | Nb-94              | 1.32E-08 +/- 2.86E-08                  | uCi/g  | D     | 2.93E-08           | 6.01E-08     | U               |
| 08-NOV-16     | Nb-95              | 2.40E-08 +/- 3.69E-08                  | uCi/g  | D     | 3.85E-08           | 6.65E-08     | U               |
| 08-NOV-16     | K-40               | 9.59E-06 +/- 1.38E-06                  | uCi/g  | D     | 1.46E-06           | 6.55E-07     |                 |
| 08-NOV-16     | Pm-144             | -1.44E-08 +/- 3.46E-08                 | uCi/g  | D     | 3.53E-08           | 5.53E-08     | U               |
| 08-NOV-16     | Pm-146             | 3.24E-08 +/- 3.51E-08                  | uCi/g  | D     | 3.81E-08           | 7.80E-08     | U               |
| 08-NOV-16     | Ra-228             | 4.86E-07 +/- 2.25E-07                  | uCi/g  | D     | 2.26E-07           | 1.71E-07     |                 |
| 08-NOV-16     | Ru-106             | -6.06E-08 +/- 2.87E-07                 | uCi/g  | D     | 2.88E-07           | 5.49E-07     | U               |
| 08-NOV-16     | Ag-110m            | 7.64E-08 +/- 4.24E-08                  | uCi/g  | D     | 5.47E-08           | 1.06E-07     | U               |
| 08-NOV-16     | Na-22              | 2.31E-08 +/- 3.36E-08                  | uCi/g  | D     | 3.51E-08           | 7.39E-08     | U               |
| 08-NOV-16     | Tl-208             | 2.02E-07 +/- 7.26E-08                  | uCi/g  | D     | 7.31E-08           | 5.66E-08     |                 |
| 08-NOV-16     | Th-234             | 3.64E-07 +/- 3.74E-06                  | uCi/g  | D     | 3.74E-06           | 2.70E-06     | U               |
| 08-NOV-16     | Sn-113             | 1.21E-08 +/- 3.62E-08                  | uCi/g  | D     | 3.66E-08           | 7.56E-08     | U               |
| 08-NOV-16     | U-235              | 2.62E-07 +/- 3.44E-07                  | uCi/g  | D     | 3.44E-07           | 3.51E-07     | U               |
| 08-NOV-16     | U-238              | 3.64E-07 +/- 3.74E-06                  | uCi/g  | D     | 3.74E-06           | 2.70E-06     | U               |
| 08-NOV-16     | Y-88               | -6.29E-09 +/- 3.48E-08                 | uCi/g  | D     | 3.49E-08           | 7.12E-08     | U               |
| 08-NOV-16     | Zn-65              | -7.32E-08 +/- 8.84E-08                 | uCi/g  | D     | 9.44E-08           | 1.13E-07     | U               |
| 08-NOV-16     | Zr-95              | -4.68E-08 +/- 5.69E-08                 | uCi/g  | D     | 6.07E-08           | 9.50E-08     | U               |

**Notes:**

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2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 7 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515005     | PA2-S-03           |  | Solid  |       | 24-OCT-16 09:25:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Ac-228             | 7.92E-07 +/- 3.18E-07  | uCi/g  | D     | 3.21E-07           | 2.80E-07        |                       |       |
| 08-NOV-16     | Am-241             | -7.65E-08 +/- 1.76E-07   | uCi/g  | D     | 1.80E-07           | 2.90E-07        |                       | U     |
| 08-NOV-16     | Sb-124             | 1.48E-08 +/- 9.07E-08  | uCi/g  | D     | 9.09E-08           | 2.00E-07        |                       | U     |
| 08-NOV-16     | Sb-125             | -7.01E-08 +/- 9.68E-08   | uCi/g  | D     | 1.02E-07           | 1.66E-07        |                       | U     |
| 08-NOV-16     | Ba-133             | -1.21E-09 +/- 4.77E-08   | uCi/g  | D     | 4.77E-08           | 8.12E-08        |                       | U     |
| 08-NOV-16     | Ba-140             | 1.19E-07 +/- 2.48E-07  | uCi/g  | D     | 2.54E-07           | 5.14E-07        |                       | U     |
| 08-NOV-16     | Be-7               | 8.92E-06 +/- 1.16E-06  | uCi/g  | D     | 1.21E-06           | 7.15E-07        |                       |       |
| 08-NOV-16     | Bi-212             | 8.57E-07 +/- 7.63E-07  | uCi/g  | D     | 7.64E-07           | 1.11E-06        |                       | U     |
| 08-NOV-16     | Bi-214             | 9.97E-07 +/- 2.34E-07  | uCi/g  | D     | 2.38E-07           | 1.57E-07        |                       |       |
| 08-NOV-16     | Ce-139             | -3.88E-09 +/- 3.11E-08   | uCi/g  | D     | 3.12E-08           | 5.40E-08        |                       | U     |
| 08-NOV-16     | Ce-141             | -1.61E-08 +/- 6.93E-08   | uCi/g  | D     | 6.97E-08           | 1.20E-07        |                       | U     |
| 08-NOV-16     | Ce-144             | -1.05E-08 +/- 2.14E-07   | uCi/g  | D     | 2.14E-07           | 3.77E-07        |                       | U     |
| 08-NOV-16     | Cs-134             | 3.07E-09 +/- 4.74E-08  | uCi/g  | D     | 4.74E-08           | 8.02E-08        |                       | U     |
| 08-NOV-16     | Cs-136             | 3.46E-08 +/- 8.25E-08  | uCi/g  | D     | 8.40E-08           | 1.87E-07        |                       | U     |
| 08-NOV-16     | Cs-137             | 1.66E-07 +/- 9.12E-08  | uCi/g  | D     | 9.15E-08           | 6.55E-08        | 1.00E-07              |       |
| 08-NOV-16     | Cr-51              | -7.50E-08 +/- 3.78E-07   | uCi/g  | D     | 3.80E-07           | 7.06E-07        |                       | U     |
| 08-NOV-16     | Co-56              | -6.57E-09 +/- 3.21E-08   | uCi/g  | D     | 3.22E-08           | 6.40E-08        |                       | U     |
| 08-NOV-16     | Co-57              | -2.38E-08 +/- 2.73E-08   | uCi/g  | D     | 2.94E-08           | 4.49E-08        |                       | U     |
| 08-NOV-16     | Co-58              | 4.44E-10 +/- 4.28E-08  | uCi/g  | D     | 4.28E-08           | 8.53E-08        |                       | U     |
| 08-NOV-16     | Co-60              | -2.99E-09 +/- 3.90E-08   | uCi/g  | D     | 3.91E-08           | 7.76E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | -5.86E-08 +/- 1.30E-07   | uCi/g  | D     | 1.32E-07           | 2.06E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | 3.94E-08 +/- 9.42E-08  | uCi/g  | D     | 9.59E-08           | 2.15E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | 1.85E-08 +/- 1.20E-07  | uCi/g  | D     | 1.20E-07           | 2.17E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | -9.67E-09 +/- 3.64E-08   | uCi/g  | D     | 3.67E-08           | 6.74E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | -2.62E-08 +/- 9.69E-08   | uCi/g  | D     | 9.76E-08           | 1.68E-07        |                       | U     |
| 08-NOV-16     | Pb-210             | 9.51E-07 +/- 5.25E-06  | uCi/g  | D     | 5.27E-06           | 9.91E-06        |                       | U     |
| 08-NOV-16     | Pb-212             | 7.58E-07 +/- 1.27E-07  | uCi/g  | D     | 1.33E-07           | 1.08E-07        |                       |       |
| 08-NOV-16     | Pb-214             | 1.20E-06 +/- 2.46E-07  | uCi/g  | D     | 2.51E-07           | 1.33E-07        |                       |       |
| 08-NOV-16     | Mn-54              | -8.66E-10 +/- 3.53E-08   | uCi/g  | D     | 3.53E-08           | 7.06E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | -2.44E-08 +/- 4.06E-08   | uCi/g  | D     | 4.20E-08           | 7.29E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | -1.70E-07 +/- 5.95E-07   | uCi/g  | D     | 6.00E-07           | 1.08E-06        |                       | U     |
| 08-NOV-16     | Np-239             | -3.36E-07 +/- 3.02E-07   | uCi/g  | D     | 3.39E-07           | 4.85E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | 1.38E-08 +/- 3.92E-08  | uCi/g  | D     | 3.97E-08           | 7.61E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | 1.02E-08 +/- 4.65E-08  | uCi/g  | D     | 4.68E-08           | 8.16E-08        |                       | U     |
| 08-NOV-16     | K-40               | 9.38E-06 +/- 1.51E-06  | uCi/g  | D     | 1.59E-06           | 7.70E-07        |                       |       |
| 08-NOV-16     | Pm-144             | 1.91E-08 +/- 3.85E-08  | uCi/g  | D     | 3.94E-08           | 7.68E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | 8.99E-10 +/- 4.43E-08  | uCi/g  | D     | 4.43E-08           | 8.42E-08        |                       | U     |

**Notes:**

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2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 8 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix | Collection Date    | Receipt Date |          |           |       |
|---------------|--------------------|--|--------|--------------------|--------------|----------|-----------|-------|
| 409515005     | PA2-S-03           |  | Solid  | 24-OCT-16 09:25:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              | MDC      | MDC (LLD) |       |
| 08-NOV-16     | Ra-228             | 7.92E-07 +/- 3.18E-07                  | uCi/g  | D                  | 3.21E-07     | 2.80E-07 |           |       |
| 08-NOV-16     | Ru-106             | -3.89E-08 +/- 2.94E-07                 | uCi/g  | D                  | 2.95E-07     | 5.51E-07 |           | U     |
| 08-NOV-16     | Ag-110m            | 1.70E-08 +/- 6.28E-08                  | uCi/g  | D                  | 6.33E-08     | 1.16E-07 |           | U     |
| 08-NOV-16     | Na-22              | 1.49E-08 +/- 3.36E-08                  | uCi/g  | D                  | 3.42E-08     | 7.66E-08 |           | U     |
| 08-NOV-16     | Tl-208             | 1.08E-07 +/- 1.01E-07                  | uCi/g  | D                  | 1.01E-07     | 6.80E-08 |           |       |
| 08-NOV-16     | Th-234             | 7.76E-07 +/- 2.45E-06                  | uCi/g  | D                  | 2.46E-06     | 2.39E-06 |           | U     |
| 08-NOV-16     | Sn-113             | -9.98E-09 +/- 4.53E-08                 | uCi/g  | D                  | 4.55E-08     | 8.40E-08 |           | U     |
| 08-NOV-16     | U-235              | 1.58E-07 +/- 2.13E-07                  | uCi/g  | D                  | 2.25E-07     | 4.00E-07 |           | U     |
| 08-NOV-16     | U-238              | 7.76E-07 +/- 2.45E-06                  | uCi/g  | D                  | 2.46E-06     | 2.39E-06 |           | U     |
| 08-NOV-16     | Y-88               | -6.02E-09 +/- 3.28E-08                 | uCi/g  | D                  | 3.29E-08     | 7.24E-08 |           | U     |
| 08-NOV-16     | Zn-65              | 7.47E-08 +/- 8.99E-08                  | uCi/g  | D                  | 9.61E-08     | 1.89E-07 |           | U     |
| 08-NOV-16     | Zr-95              | 2.60E-09 +/- 8.38E-08                  | uCi/g  | D                  | 8.38E-08     | 1.56E-07 |           | U     |
| 409515006     | PA2-S-04           |  | Solid  | 24-OCT-16 09:45:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              | MDC      | MDC (LLD) |       |
| 08-NOV-16     | Ac-228             | 3.30E-07 +/- 2.33E-07                  | uCi/g  | D                  | 2.34E-07     | 1.91E-07 |           |       |
| 08-NOV-16     | Am-241             | 6.87E-08 +/- 1.64E-07                  | uCi/g  | D                  | 1.67E-07     | 2.79E-07 |           | U     |
| 08-NOV-16     | Sb-124             | 5.96E-09 +/- 6.69E-08                  | uCi/g  | D                  | 6.69E-08     | 1.37E-07 |           | U     |
| 08-NOV-16     | Sb-125             | 8.57E-09 +/- 7.02E-08                  | uCi/g  | D                  | 7.03E-08     | 1.32E-07 |           | U     |
| 08-NOV-16     | Ba-133             | 7.38E-09 +/- 3.20E-08                  | uCi/g  | D                  | 3.21E-08     | 5.54E-08 |           | U     |
| 08-NOV-16     | Ba-140             | 9.17E-09 +/- 1.74E-07                  | uCi/g  | D                  | 1.74E-07     | 3.44E-07 |           | U     |
| 08-NOV-16     | Be-7               | 5.41E-06 +/- 7.34E-07                  | uCi/g  | D                  | 7.66E-07     | 4.73E-07 |           |       |
| 08-NOV-16     | Bi-212             | 4.88E-07 +/- 7.51E-07                  | uCi/g  | D                  | 7.52E-07     | 6.25E-07 |           | U     |
| 08-NOV-16     | Bi-214             | 1.30E-06 +/- 1.83E-07                  | uCi/g  | D                  | 1.91E-07     | 1.08E-07 |           |       |
| 08-NOV-16     | Ce-139             | -1.11E-08 +/- 2.53E-08                 | uCi/g  | D                  | 2.59E-08     | 4.34E-08 |           | U     |
| 08-NOV-16     | Ce-141             | -7.47E-09 +/- 5.51E-08                 | uCi/g  | D                  | 5.52E-08     | 9.05E-08 |           | U     |
| 08-NOV-16     | Ce-144             | -4.73E-08 +/- 1.78E-07                 | uCi/g  | D                  | 1.79E-07     | 2.92E-07 |           | U     |
| 08-NOV-16     | Cs-134             | 6.49E-09 +/- 2.92E-08                  | uCi/g  | D                  | 2.93E-08     | 5.66E-08 |           | U     |
| 08-NOV-16     | Cs-136             | 6.60E-08 +/- 7.16E-08                  | uCi/g  | D                  | 7.77E-08     | 1.56E-07 |           | U     |
| 08-NOV-16     | Cs-137             | 3.13E-08 +/- 3.11E-08                  | uCi/g  | D                  | 3.41E-08     | 6.44E-08 | 1.00E-07  | U     |
| 08-NOV-16     | Cr-51              | 1.11E-07 +/- 2.68E-07                  | uCi/g  | D                  | 2.72E-07     | 5.24E-07 |           | U     |
| 08-NOV-16     | Co-56              | 1.49E-08 +/- 3.45E-08                  | uCi/g  | D                  | 3.51E-08     | 6.05E-08 |           | U     |
| 08-NOV-16     | Co-57              | -2.23E-09 +/- 1.92E-08                 | uCi/g  | D                  | 1.92E-08     | 3.51E-08 |           | U     |

**Notes:**

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2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 9 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description | Matrix                                 |       | Collection Date    | Receipt Date |          |           |       |
|---------------|--------------------|--|-------|--------------------|--------------|----------|-----------|-------|
| 409515006     | PA2-S-04           | Solid                                  |       | 24-OCT-16 09:45:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |       |                    |              | MDC      | MDC (LLD) |       |
| 08-NOV-16     | Co-58              | -2.30E-10 +/- 3.03E-08                 | uCi/g | D                  | 3.03E-08     | 5.66E-08 |           | U     |
| 08-NOV-16     | Co-60              | 2.31E-08 +/- 4.99E-08                  | uCi/g | D                  | 5.10E-08     | 5.55E-08 |           | U     |
| 08-NOV-16     | Eu-152             | -2.65E-08 +/- 6.90E-08                 | uCi/g | D                  | 7.00E-08     | 1.24E-07 |           | U     |
| 08-NOV-16     | Eu-154             | -3.40E-08 +/- 7.76E-08                 | uCi/g | D                  | 7.91E-08     | 1.39E-07 |           | U     |
| 08-NOV-16     | Eu-155             | 4.12E-08 +/- 8.43E-08                  | uCi/g | D                  | 8.64E-08     | 1.54E-07 |           | U     |
| 08-NOV-16     | Ir-192             | -8.37E-09 +/- 2.61E-08                 | uCi/g | D                  | 2.64E-08     | 4.77E-08 |           | U     |
| 08-NOV-16     | Fe-59              | 7.89E-09 +/- 6.68E-08                  | uCi/g | D                  | 6.69E-08     | 1.30E-07 |           | U     |
| 08-NOV-16     | Pb-210             | 1.07E-06 +/- 4.60E-06                  | uCi/g | D                  | 4.62E-06     | 9.36E-06 |           | U     |
| 08-NOV-16     | Pb-212             | 5.26E-07 +/- 9.35E-08                  | uCi/g | D                  | 9.75E-08     | 8.24E-08 |           |       |
| 08-NOV-16     | Pb-214             | 1.84E-06 +/- 1.78E-07                  | uCi/g | D                  | 1.94E-07     | 3.53E-07 |           |       |
| 08-NOV-16     | Mn-54              | -2.10E-08 +/- 3.32E-08                 | uCi/g | D                  | 3.45E-08     | 5.22E-08 |           | U     |
| 08-NOV-16     | Hg-203             | 2.57E-08 +/- 2.94E-08                  | uCi/g | D                  | 3.16E-08     | 5.92E-08 |           | U     |
| 08-NOV-16     | Nd-147             | 4.09E-07 +/- 4.01E-07                  | uCi/g | D                  | 4.41E-07     | 8.63E-07 |           | U     |
| 08-NOV-16     | Np-239             | -3.92E-09 +/- 2.09E-07                 | uCi/g | D                  | 2.09E-07     | 3.88E-07 |           | U     |
| 08-NOV-16     | Nb-94              | 2.13E-08 +/- 2.52E-08                  | uCi/g | D                  | 2.70E-08     | 5.15E-08 |           | U     |
| 08-NOV-16     | Nb-95              | 2.82E-08 +/- 3.15E-08                  | uCi/g | D                  | 3.40E-08     | 6.05E-08 |           | U     |
| 08-NOV-16     | K-40               | 7.98E-06 +/- 1.08E-06                  | uCi/g | D                  | 1.16E-06     | 5.05E-07 |           |       |
| 08-NOV-16     | Pm-144             | 3.10E-08 +/- 2.68E-08                  | uCi/g | D                  | 3.03E-08     | 5.67E-08 |           | U     |
| 08-NOV-16     | Pm-146             | 2.69E-08 +/- 3.71E-08                  | uCi/g | D                  | 3.91E-08     | 7.21E-08 |           | U     |
| 08-NOV-16     | Ra-228             | 3.30E-07 +/- 2.33E-07                  | uCi/g | D                  | 2.34E-07     | 1.91E-07 |           |       |
| 08-NOV-16     | Ru-106             | 2.24E-07 +/- 2.18E-07                  | uCi/g | D                  | 2.40E-07     | 4.70E-07 |           | U     |
| 08-NOV-16     | Ag-110m            | -2.62E-08 +/- 4.49E-08                 | uCi/g | D                  | 4.64E-08     | 7.00E-08 |           | U     |
| 08-NOV-16     | Na-22              | -1.42E-08 +/- 2.80E-08                 | uCi/g | D                  | 2.87E-08     | 4.93E-08 |           | U     |
| 08-NOV-16     | Tl-208             | 1.35E-07 +/- 7.02E-08                  | uCi/g | D                  | 7.04E-08     | 5.02E-08 |           |       |
| 08-NOV-16     | Th-234             | 3.63E-06 +/- 2.44E-06                  | uCi/g | D                  | 2.57E-06     | 2.15E-06 |           |       |
| 08-NOV-16     | Sn-113             | -2.98E-08 +/- 3.24E-08                 | uCi/g | D                  | 3.51E-08     | 5.37E-08 |           | U     |
| 08-NOV-16     | U-235              | 2.27E-07 +/- 2.27E-07                  | uCi/g | D                  | 2.27E-07     | 2.95E-07 |           | U     |
| 08-NOV-16     | U-238              | 3.63E-06 +/- 2.44E-06                  | uCi/g | D                  | 2.57E-06     | 2.15E-06 |           |       |
| 08-NOV-16     | Y-88               | 7.84E-09 +/- 2.83E-08                  | uCi/g | D                  | 2.86E-08     | 6.11E-08 |           | U     |
| 08-NOV-16     | Zn-65              | 1.33E-08 +/- 6.64E-08                  | uCi/g | D                  | 6.66E-08     | 1.15E-07 |           | U     |
| 08-NOV-16     | Zr-95              | 1.81E-08 +/- 5.28E-08                  | uCi/g | D                  | 5.34E-08     | 9.45E-08 |           | U     |

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- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 10 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515007     | PA2-S-05           |  | Solid  |       | 24-OCT-16 10:05:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Ac-228             | 0.00E+00 +/- 2.56E-07  | uCi/g  | D     | 3.16E-07           | 4.05E-07        |                       | UI    |
| 08-NOV-16     | Am-241             | 7.34E-09 +/- 3.45E-08  | uCi/g  | D     | 3.46E-08           | 7.15E-08        |                       | U     |
| 08-NOV-16     | Sb-124             | -2.01E-08 +/- 8.92E-08   | uCi/g  | D     | 8.97E-08           | 1.78E-07        |                       | U     |
| 08-NOV-16     | Sb-125             | -7.78E-09 +/- 8.36E-08   | uCi/g  | D     | 8.37E-08           | 1.45E-07        |                       | U     |
| 08-NOV-16     | Ba-133             | 1.93E-08 +/- 3.57E-08  | uCi/g  | D     | 3.68E-08           | 6.86E-08        |                       | U     |
| 08-NOV-16     | Ba-140             | -7.54E-08 +/- 2.44E-07   | uCi/g  | D     | 2.46E-07           | 4.50E-07        |                       | U     |
| 08-NOV-16     | Be-7               | 2.27E-06 +/- 7.01E-07  | uCi/g  | D     | 7.07E-07           | 5.77E-07        |                       |       |
| 08-NOV-16     | Bi-212             | 2.86E-07 +/- 4.15E-07  | uCi/g  | D     | 4.35E-07           | 8.79E-07        |                       | U     |
| 08-NOV-16     | Bi-214             | 1.23E-06 +/- 1.85E-07  | uCi/g  | D     | 1.93E-07           | 1.09E-07        |                       |       |
| 08-NOV-16     | Ce-139             | 9.60E-10 +/- 2.03E-08  | uCi/g  | D     | 2.03E-08           | 3.59E-08        |                       | U     |
| 08-NOV-16     | Ce-141             | -4.80E-08 +/- 4.27E-08   | uCi/g  | D     | 4.79E-08           | 7.47E-08        |                       | U     |
| 08-NOV-16     | Ce-144             | 1.18E-08 +/- 1.16E-07  | uCi/g  | D     | 1.16E-07           | 2.27E-07        |                       | U     |
| 08-NOV-16     | Cs-134             | 4.78E-08 +/- 3.00E-08  | uCi/g  | D     | 3.69E-08           | 6.76E-08        |                       | U     |
| 08-NOV-16     | Cs-136             | 1.37E-08 +/- 9.97E-08  | uCi/g  | D     | 9.99E-08           | 2.00E-07        |                       | U     |
| 08-NOV-16     | Cs-137             | 4.18E-08 +/- 5.78E-08  | uCi/g  | D     | 5.78E-08           | 6.33E-08        | 1.00E-07              | U     |
| 08-NOV-16     | Cr-51              | 5.26E-08 +/- 3.07E-07  | uCi/g  | D     | 3.08E-07           | 6.18E-07        |                       | U     |
| 08-NOV-16     | Co-56              | 1.14E-08 +/- 3.66E-08  | uCi/g  | D     | 3.69E-08           | 7.59E-08        |                       | U     |
| 08-NOV-16     | Co-57              | 5.89E-09 +/- 1.59E-08  | uCi/g  | D     | 1.61E-08           | 3.18E-08        |                       | U     |
| 08-NOV-16     | Co-58              | 9.02E-09 +/- 2.89E-08  | uCi/g  | D     | 2.92E-08           | 6.25E-08        |                       | U     |
| 08-NOV-16     | Co-60              | 1.82E-08 +/- 3.52E-08  | uCi/g  | D     | 3.61E-08           | 7.69E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | 2.67E-08 +/- 7.11E-08  | uCi/g  | D     | 7.22E-08           | 1.48E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | -5.07E-08 +/- 1.01E-07   | uCi/g  | D     | 1.04E-07           | 1.79E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | 1.72E-08 +/- 5.74E-08  | uCi/g  | D     | 5.79E-08           | 1.16E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | -9.25E-09 +/- 2.76E-08   | uCi/g  | D     | 2.79E-08           | 5.33E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | 2.31E-08 +/- 8.85E-08  | uCi/g  | D     | 8.91E-08           | 1.63E-07        |                       | U     |
| 08-NOV-16     | Pb-210             | 1.05E-06 +/- 7.76E-07  | uCi/g  | D     | 7.81E-07           | 5.94E-07        |                       |       |
| 08-NOV-16     | Pb-212             | 6.20E-07 +/- 1.03E-07  | uCi/g  | D     | 1.08E-07           | 8.25E-08        |                       |       |
| 08-NOV-16     | Pb-214             | 1.48E-06 +/- 2.09E-07  | uCi/g  | D     | 2.18E-07           | 1.16E-07        |                       |       |
| 08-NOV-16     | Mn-54              | 9.33E-09 +/- 2.36E-08  | uCi/g  | D     | 2.40E-08           | 4.92E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | -1.77E-08 +/- 3.31E-08   | uCi/g  | D     | 3.41E-08           | 5.62E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | 1.84E-07 +/- 5.05E-07  | uCi/g  | D     | 5.12E-07           | 1.02E-06        |                       | U     |
| 08-NOV-16     | Np-239             | 4.41E-08 +/- 1.56E-07  | uCi/g  | D     | 1.57E-07           | 3.11E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | 1.51E-08 +/- 2.61E-08  | uCi/g  | D     | 2.70E-08           | 5.50E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | -1.87E-08 +/- 3.67E-08   | uCi/g  | D     | 3.77E-08           | 5.38E-08        |                       | U     |
| 08-NOV-16     | K-40               | 8.62E-06 +/- 1.33E-06  | uCi/g  | D     | 1.41E-06           | 5.87E-07        |                       |       |
| 08-NOV-16     | Pm-144             | 7.48E-09 +/- 2.64E-08  | uCi/g  | D     | 2.66E-08           | 5.33E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | 5.22E-09 +/- 3.40E-08  | uCi/g  | D     | 3.41E-08           | 6.81E-08        |                       | U     |

**Notes:**

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2. MDCs are calculated a-posteriori values.
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4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 11 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix | Collection Date    | Receipt Date |          |           |       |
|---------------|--------------------|--|--------|--------------------|--------------|----------|-----------|-------|
| 409515007     | PA2-S-05           |  | Solid  | 24-OCT-16 10:05:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              | MDC      | MDC (LLD) |       |
| 08-NOV-16     | Ra-228             | 0.00E+00 +/- 2.56E-07                  | uCi/g  | D                  | 3.16E-07     | 4.05E-07 |           | UI    |
| 08-NOV-16     | Ru-106             | -1.12E-08 +/- 2.07E-07                 | uCi/g  | D                  | 2.08E-07     | 4.09E-07 |           | U     |
| 08-NOV-16     | Ag-110m            | -3.86E-08 +/- 4.87E-08                 | uCi/g  | D                  | 5.18E-08     | 7.01E-08 |           | U     |
| 08-NOV-16     | Na-22              | -2.64E-08 +/- 3.87E-08                 | uCi/g  | D                  | 4.05E-08     | 6.19E-08 |           | U     |
| 08-NOV-16     | Tl-208             | 2.08E-07 +/- 7.89E-08                  | uCi/g  | D                  | 7.94E-08     | 5.30E-08 |           |       |
| 08-NOV-16     | Th-234             | 1.49E-06 +/- 1.05E-06                  | uCi/g  | D                  | 1.10E-06     | 7.04E-07 |           |       |
| 08-NOV-16     | Sn-113             | -1.72E-08 +/- 4.07E-08                 | uCi/g  | D                  | 4.15E-08     | 6.75E-08 |           | U     |
| 08-NOV-16     | U-235              | 3.04E-08 +/- 1.41E-07                  | uCi/g  | D                  | 1.41E-07     | 2.75E-07 |           | U     |
| 08-NOV-16     | U-238              | 1.49E-06 +/- 1.05E-06                  | uCi/g  | D                  | 1.10E-06     | 7.04E-07 |           |       |
| 08-NOV-16     | Y-88               | -6.30E-09 +/- 2.82E-08                 | uCi/g  | D                  | 2.84E-08     | 6.02E-08 |           | U     |
| 08-NOV-16     | Zn-65              | -1.03E-08 +/- 7.78E-08                 | uCi/g  | D                  | 7.80E-08     | 1.38E-07 |           | U     |
| 08-NOV-16     | Zr-95              | 1.77E-08 +/- 6.07E-08                  | uCi/g  | D                  | 6.12E-08     | 1.21E-07 |           | U     |
| 409515008     | PA2-S-06           |  | Solid  | 24-OCT-16 14:45:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              | MDC      | MDC (LLD) |       |
| 08-NOV-16     | Ac-228             | 8.17E-07 +/- 2.52E-07                  | uCi/g  | D                  | 2.55E-07     | 1.95E-07 |           |       |
| 08-NOV-16     | Am-241             | -3.90E-08 +/- 1.29E-07                 | uCi/g  | D                  | 1.30E-07     | 2.26E-07 |           | U     |
| 08-NOV-16     | Sb-124             | 1.39E-09 +/- 4.10E-08                  | uCi/g  | D                  | 4.10E-08     | 1.01E-07 |           | U     |
| 08-NOV-16     | Sb-125             | 4.39E-08 +/- 7.60E-08                  | uCi/g  | D                  | 7.85E-08     | 1.58E-07 |           | U     |
| 08-NOV-16     | Ba-133             | 4.79E-09 +/- 3.71E-08                  | uCi/g  | D                  | 3.71E-08     | 6.74E-08 |           | U     |
| 08-NOV-16     | Ba-140             | 3.79E-09 +/- 1.83E-07                  | uCi/g  | D                  | 1.83E-07     | 3.69E-07 |           | U     |
| 08-NOV-16     | Be-7               | 2.59E-08 +/- 2.67E-07                  | uCi/g  | D                  | 2.67E-07     | 5.30E-07 |           | U     |
| 08-NOV-16     | Bi-212             | 4.53E-07 +/- 5.16E-07                  | uCi/g  | D                  | 5.55E-07     | 1.07E-06 |           | U     |
| 08-NOV-16     | Bi-214             | 9.14E-07 +/- 1.59E-07                  | uCi/g  | D                  | 1.64E-07     | 1.05E-07 |           |       |
| 08-NOV-16     | Ce-139             | -8.06E-09 +/- 2.32E-08                 | uCi/g  | D                  | 2.36E-08     | 4.17E-08 |           | U     |
| 08-NOV-16     | Ce-141             | 1.52E-08 +/- 5.21E-08                  | uCi/g  | D                  | 5.26E-08     | 9.86E-08 |           | U     |
| 08-NOV-16     | Ce-144             | 2.67E-08 +/- 1.74E-07                  | uCi/g  | D                  | 1.74E-07     | 3.03E-07 |           | U     |
| 08-NOV-16     | Cs-134             | 0.00E+00 +/- 5.09E-08                  | uCi/g  | D                  | 6.38E-08     | 8.36E-08 |           | UI    |
| 08-NOV-16     | Cs-136             | 2.44E-08 +/- 6.75E-08                  | uCi/g  | D                  | 6.84E-08     | 1.44E-07 |           | U     |
| 08-NOV-16     | Cs-137             | 2.68E-08 +/- 3.15E-08                  | uCi/g  | D                  | 3.38E-08     | 6.74E-08 | 1.00E-07  | U     |
| 08-NOV-16     | Cr-51              | 1.07E-07 +/- 2.86E-07                  | uCi/g  | D                  | 2.90E-07     | 5.88E-07 |           | U     |
| 08-NOV-16     | Co-56              | -1.85E-08 +/- 3.10E-08                 | uCi/g  | D                  | 3.21E-08     | 4.77E-08 |           | U     |
| 08-NOV-16     | Co-57              | 1.20E-08 +/- 2.03E-08                  | uCi/g  | D                  | 2.10E-08     | 3.98E-08 |           | U     |

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**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 12 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515008     | PA2-S-06           |  | Solid  |       | 24-OCT-16 14:45:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Co-58              | -1.65E-08 +/- 2.79E-08   | uCi/g  | D     | 2.89E-08           | 4.93E-08        |                       | U     |
| 08-NOV-16     | Co-60              | 1.51E-08 +/- 2.97E-08  | uCi/g  | D     | 3.05E-08           | 6.38E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | 1.35E-08 +/- 7.03E-08  | uCi/g  | D     | 7.06E-08           | 1.32E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | -2.74E-08 +/- 8.31E-08   | uCi/g  | D     | 8.41E-08           | 1.50E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | 7.87E-08 +/- 8.01E-08  | uCi/g  | D     | 8.78E-08           | 1.63E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | 3.16E-08 +/- 3.42E-08  | uCi/g  | D     | 3.71E-08           | 5.26E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | -1.65E-08 +/- 7.15E-08   | uCi/g  | D     | 7.19E-08           | 1.31E-07        |                       | U     |
| 08-NOV-16     | Pb-210             | -1.77E-07 +/- 2.81E-06   | uCi/g  | D     | 2.81E-06           | 5.53E-06        |                       | U     |
| 08-NOV-16     | Pb-212             | 8.31E-07 +/- 1.10E-07  | uCi/g  | D     | 1.18E-07           | 7.92E-08        |                       |       |
| 08-NOV-16     | Pb-214             | 9.43E-07 +/- 1.93E-07  | uCi/g  | D     | 1.97E-07           | 1.13E-07        |                       |       |
| 08-NOV-16     | Mn-54              | -1.20E-08 +/- 2.88E-08   | uCi/g  | D     | 2.93E-08           | 5.21E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | 3.25E-09 +/- 3.36E-08  | uCi/g  | D     | 3.37E-08           | 6.12E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | 1.27E-07 +/- 4.05E-07  | uCi/g  | D     | 4.09E-07           | 8.40E-07        |                       | U     |
| 08-NOV-16     | Np-239             | -1.90E-08 +/- 2.02E-07   | uCi/g  | D     | 2.02E-07           | 3.78E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | -2.85E-09 +/- 2.92E-08   | uCi/g  | D     | 2.92E-08           | 5.55E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | -2.13E-08 +/- 3.63E-08   | uCi/g  | D     | 3.76E-08           | 6.40E-08        |                       | U     |
| 08-NOV-16     | K-40               | 1.50E-05 +/- 1.46E-06  | uCi/g  | D     | 1.65E-06           | 5.41E-07        |                       |       |
| 08-NOV-16     | Pm-144             | -7.84E-09 +/- 2.86E-08   | uCi/g  | D     | 2.88E-08           | 5.34E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | -8.03E-09 +/- 3.33E-08   | uCi/g  | D     | 3.35E-08           | 6.33E-08        |                       | U     |
| 08-NOV-16     | Ra-228             | 8.17E-07 +/- 2.52E-07  | uCi/g  | D     | 2.55E-07           | 1.95E-07        |                       |       |
| 08-NOV-16     | Ru-106             | -7.01E-08 +/- 2.22E-07   | uCi/g  | D     | 2.24E-07           | 4.21E-07        |                       | U     |
| 08-NOV-16     | Ag-110m            | 8.35E-09 +/- 3.59E-08  | uCi/g  | D     | 3.61E-08           | 7.33E-08        |                       | U     |
| 08-NOV-16     | Na-22              | -1.17E-08 +/- 2.89E-08   | uCi/g  | D     | 2.94E-08           | 5.12E-08        |                       | U     |
| 08-NOV-16     | Tl-208             | 2.65E-07 +/- 8.36E-08  | uCi/g  | D     | 8.44E-08           | 5.72E-08        |                       |       |
| 08-NOV-16     | Th-234             | 1.41E-06 +/- 2.67E-06  | uCi/g  | D     | 2.69E-06           | 1.92E-06        |                       | U     |
| 08-NOV-16     | Sn-113             | -1.27E-08 +/- 3.20E-08   | uCi/g  | D     | 3.25E-08           | 6.13E-08        |                       | U     |
| 08-NOV-16     | U-235              | 6.16E-08 +/- 1.70E-07  | uCi/g  | D     | 1.70E-07           | 3.20E-07        |                       | U     |
| 08-NOV-16     | U-238              | 1.41E-06 +/- 2.67E-06  | uCi/g  | D     | 2.69E-06           | 1.92E-06        |                       | U     |
| 08-NOV-16     | Y-88               | -2.48E-08 +/- 2.61E-08   | uCi/g  | D     | 2.84E-08           | 3.84E-08        |                       | U     |
| 08-NOV-16     | Zn-65              | -3.31E-08 +/- 7.60E-08   | uCi/g  | D     | 7.75E-08           | 1.15E-07        |                       | U     |
| 08-NOV-16     | Zr-95              | 3.08E-08 +/- 5.23E-08  | uCi/g  | D     | 5.41E-08           | 1.12E-07        |                       | U     |
| 25-NOV-16     | Am-241             | 2.47E-07 +/- 1.04E-06  | uCi/g  | W     | 1.04E-06           | 2.05E-06        | 1.00E-04              | U     |
| 25-NOV-16     | Cm-242             | 0.00E+00 +/- 5.75E-07  | uCi/g  | W     | 5.77E-07           | 8.73E-07        | 2.00E-02              | U     |
| 25-NOV-16     | Cm-243/244         | 2.54E-07 +/- 7.08E-07  | uCi/g  | W     | 7.09E-07           | 7.63E-07        | 1.00E-04              | U     |
| 25-NOV-16     | Cm-245/246         | 1.18E-07 +/- 8.34E-07  | uCi/g  | W     | 8.35E-07           | 1.68E-06        | 1.00E-04              | U     |
| 25-NOV-16     | Ni-59              | 5.07E-04 +/- 6.37E-04  | uCi/g  | W     | 8.17E-04           | 6.36E-04        | 2.20E-01              | U     |
| 29-NOV-16     | I-129              | -5.68E-07 +/- 5.19E-06   | uCi/g  | W     | 5.20E-06           | 1.12E-05        | 8.00E-05              | U     |

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 13 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID    | Client Description | Matrix | Collection Date    | Receipt Date |
|-----------|--------------------|--------|--------------------|--------------|
| 409515008 | PA2-S-06           | Solid  | 24-OCT-16 14:45:00 | 01-NOV-16    |

| Analysis Date | Nuclide    | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units | Basis | TPU<br>1.96 Sigma | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
|---------------|------------|--|-------|-------|-------------------|-----------------|-----------------------|-------|
| 29-NOV-16     | Pu-241     | -1.27E-05 +/- 9.54E-05   | uCi/g | W     | 9.54E-05          | 1.68E-04        | 3.50E-03              | U     |
| 26-NOV-16     | Fe-55      | -7.93E-05 +/- 6.19E-04   | uCi/g | W     | 6.19E-04          | 8.95E-04        | 7.00E-01              | U     |
| 26-NOV-16     | Tc-99      | -1.46E-05 +/- 4.11E-05   | uCi/g | W     | 4.11E-05          | 7.32E-05        | 3.00E-03              | U     |
| 23-NOV-16     | H-3        | -1.98E-06 +/- 1.60E-04   | uCi/g | W     | 1.60E-04          | 2.91E-04        | 4.00E-02              | U     |
| 23-NOV-16     | C-14       | 5.44E-06 +/- 1.31E-05  | uCi/g | W     | 1.31E-05          | 2.26E-05        | 8.00E-03              | U     |
| 23-NOV-16     | Pu-238     | 9.05E-07 +/- 1.20E-06  | uCi/g | W     | 1.21E-06          | 1.72E-06        | 1.00E-04              | U     |
| 23-NOV-16     | Pu-239/240 | 6.88E-08 +/- 6.98E-07  | uCi/g | W     | 7.00E-07          | 1.46E-06        | 1.00E-04              | U     |
| 23-NOV-16     | Pu-242     | 1.32E-06 +/- 1.47E-06  | uCi/g | W     | 1.49E-06          | 2.13E-06        | 1.00E-04              | U     |
| 25-NOV-16     | Np-237     | -1.63E-07 +/- 4.65E-07   | uCi/g | W     | 4.65E-07          | 1.35E-06        | 1.00E-04              | U     |
| 29-NOV-16     | Sr-89      | 2.96E+00 +/- 4.35E+01  | pCi/g | W     | 4.35E+01          | 7.56E+01        | 7.00E-01              | U     |
| 29-NOV-16     | Sr-90      | -5.00E+00 +/- 1.19E+01   | pCi/g | W     | 1.19E+01          | 2.07E+01        | 4.00E-05              | U     |
| 29-NOV-16     | Ni-63      | -9.49E-05 +/- 2.22E-04   | uCi/g | D     | 2.22E-04          | 3.96E-04        | 3.50E-03              | U     |

|           |           |       |                    |           |
|-----------|-----------|-------|--------------------|-----------|
| 409515009 | PA2-D6-07 | Solid | 24-OCT-16 14:00:00 | 01-NOV-16 |
|-----------|-----------|-------|--------------------|-----------|

| Analysis Date | Nuclide | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units | Basis | TPU<br>1.96 Sigma | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
|---------------|---------|--|-------|-------|-------------------|-----------------|-----------------------|-------|
| 08-NOV-16     | Ac-228  | 1.05E-06 +/- 2.60E-07  | uCi/g | D     | 2.98E-07          | 2.40E-07        |                       |       |
| 08-NOV-16     | Am-241  | 9.67E-08 +/- 1.23E-07  | uCi/g | D     | 1.30E-07          | 2.31E-07        |                       | U     |
| 08-NOV-16     | Sb-124  | -1.17E-08 +/- 5.58E-08   | uCi/g | D     | 5.60E-08          | 1.20E-07        |                       | U     |
| 08-NOV-16     | Sb-125  | 6.78E-08 +/- 7.51E-08  | uCi/g | D     | 8.13E-08          | 1.63E-07        |                       | U     |
| 08-NOV-16     | Ba-133  | 9.63E-09 +/- 3.57E-08  | uCi/g | D     | 3.60E-08          | 6.62E-08        |                       | U     |
| 08-NOV-16     | Ba-140  | 2.13E-07 +/- 2.61E-07  | uCi/g | D     | 2.79E-07          | 4.75E-07        |                       | U     |
| 08-NOV-16     | Be-7    | 3.79E-08 +/- 2.91E-07  | uCi/g | D     | 2.91E-07          | 5.25E-07        |                       | U     |
| 08-NOV-16     | Bi-212  | 0.00E+00 +/- 1.30E-06  | uCi/g | D     | 1.70E-06          | 1.09E-06        |                       | UI    |
| 08-NOV-16     | Bi-214  | 9.84E-07 +/- 1.75E-07  | uCi/g | D     | 1.92E-07          | 1.24E-07        |                       |       |
| 08-NOV-16     | Ce-139  | -2.64E-08 +/- 2.56E-08   | uCi/g | D     | 2.88E-08          | 4.17E-08        |                       | U     |
| 08-NOV-16     | Ce-141  | 1.77E-09 +/- 5.67E-08  | uCi/g | D     | 5.67E-08          | 1.03E-07        |                       | U     |
| 08-NOV-16     | Ce-144  | -3.84E-08 +/- 1.75E-07   | uCi/g | D     | 1.76E-07          | 3.13E-07        |                       | U     |
| 08-NOV-16     | Cs-134  | 2.60E-08 +/- 3.57E-08  | uCi/g | D     | 3.76E-08          | 7.60E-08        |                       | U     |
| 08-NOV-16     | Cs-136  | 6.20E-08 +/- 9.86E-08  | uCi/g | D     | 1.03E-07          | 2.07E-07        |                       | U     |
| 08-NOV-16     | Cs-137  | -1.01E-08 +/- 3.44E-08   | uCi/g | D     | 3.47E-08          | 6.34E-08        | 1.00E-07              | U     |
| 08-NOV-16     | Cr-51   | -3.04E-08 +/- 3.24E-07   | uCi/g | D     | 3.24E-07          | 6.22E-07        |                       | U     |
| 08-NOV-16     | Co-56   | -2.50E-08 +/- 3.09E-08   | uCi/g | D     | 3.30E-08          | 5.26E-08        |                       | U     |
| 08-NOV-16     | Co-57   | -1.28E-10 +/- 2.18E-08   | uCi/g | D     | 2.18E-08          | 4.00E-08        |                       | U     |

**Notes:**

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2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 14 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515009     | PA2-D6-07          |  | Solid  |       | 24-OCT-16 14:00:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Co-58              | -1.36E-08 +/- 2.63E-08   | uCi/g  | D     | 2.71E-08           | 4.68E-08        |                       | U     |
| 08-NOV-16     | Co-60              | -5.38E-09 +/- 2.95E-08   | uCi/g  | D     | 2.97E-08           | 6.01E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | 2.16E-08 +/- 8.70E-08  | uCi/g  | D     | 8.76E-08           | 1.74E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | -1.44E-08 +/- 1.11E-07   | uCi/g  | D     | 1.11E-07           | 2.13E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | 4.06E-08 +/- 9.69E-08  | uCi/g  | D     | 9.87E-08           | 1.84E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | 1.47E-08 +/- 2.71E-08  | uCi/g  | D     | 2.79E-08           | 5.65E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | 4.98E-08 +/- 7.18E-08  | uCi/g  | D     | 7.59E-08           | 1.57E-07        |                       | U     |
| 08-NOV-16     | Pb-210             | 2.04E-07 +/- 2.48E-06  | uCi/g  | D     | 2.48E-06           | 4.73E-06        |                       | U     |
| 08-NOV-16     | Pb-212             | 1.01E-06 +/- 1.33E-07  | uCi/g  | D     | 1.57E-07           | 1.02E-07        |                       |       |
| 08-NOV-16     | Pb-214             | 1.13E-06 +/- 1.83E-07  | uCi/g  | D     | 2.05E-07           | 3.39E-07        |                       |       |
| 08-NOV-16     | Mn-54              | 1.71E-08 +/- 3.18E-08  | uCi/g  | D     | 3.27E-08           | 6.20E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | 8.30E-09 +/- 3.60E-08  | uCi/g  | D     | 3.62E-08           | 6.56E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | 9.34E-08 +/- 4.21E-07  | uCi/g  | D     | 4.24E-07           | 8.63E-07        |                       | U     |
| 08-NOV-16     | Np-239             | 7.64E-08 +/- 2.24E-07  | uCi/g  | D     | 2.26E-07           | 4.24E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | -1.41E-09 +/- 3.07E-08   | uCi/g  | D     | 3.07E-08           | 5.84E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | 8.51E-09 +/- 4.16E-08  | uCi/g  | D     | 4.18E-08           | 7.37E-08        |                       | U     |
| 08-NOV-16     | K-40               | 1.65E-05 +/- 1.66E-06  | uCi/g  | D     | 2.21E-06           | 4.51E-07        |                       |       |
| 08-NOV-16     | Pm-144             | -3.03E-08 +/- 2.75E-08   | uCi/g  | D     | 3.08E-08           | 4.33E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | 1.81E-08 +/- 3.53E-08  | uCi/g  | D     | 3.63E-08           | 7.34E-08        |                       | U     |
| 08-NOV-16     | Ra-228             | 1.05E-06 +/- 2.60E-07  | uCi/g  | D     | 2.98E-07           | 2.40E-07        |                       |       |
| 08-NOV-16     | Ru-106             | -1.11E-07 +/- 2.42E-07   | uCi/g  | D     | 2.48E-07           | 4.42E-07        |                       | U     |
| 08-NOV-16     | Ag-110m            | -1.27E-08 +/- 4.62E-08   | uCi/g  | D     | 4.66E-08           | 8.42E-08        |                       | U     |
| 08-NOV-16     | Na-22              | -5.91E-09 +/- 3.90E-08   | uCi/g  | D     | 3.91E-08           | 7.44E-08        |                       | U     |
| 08-NOV-16     | Tl-208             | 3.59E-07 +/- 8.53E-08  | uCi/g  | D     | 9.02E-08           | 6.28E-08        |                       |       |
| 08-NOV-16     | Th-234             | 1.62E-06 +/- 2.18E-06  | uCi/g  | D     | 2.21E-06           | 1.97E-06        |                       | U     |
| 08-NOV-16     | Sn-113             | 1.68E-09 +/- 3.74E-08  | uCi/g  | D     | 3.74E-08           | 7.37E-08        |                       | U     |
| 08-NOV-16     | U-235              | 4.82E-08 +/- 1.79E-07  | uCi/g  | D     | 1.79E-07           | 3.31E-07        |                       | U     |
| 08-NOV-16     | U-238              | 1.62E-06 +/- 2.18E-06  | uCi/g  | D     | 2.21E-06           | 1.97E-06        |                       | U     |
| 08-NOV-16     | Y-88               | 1.01E-09 +/- 2.97E-08  | uCi/g  | D     | 2.97E-08           | 6.70E-08        |                       | U     |
| 08-NOV-16     | Zn-65              | -6.27E-08 +/- 1.01E-07   | uCi/g  | D     | 1.06E-07           | 1.43E-07        |                       | U     |
| 08-NOV-16     | Zr-95              | 1.78E-08 +/- 6.13E-08  | uCi/g  | D     | 6.18E-08           | 1.24E-07        |                       | U     |
| 25-NOV-16     | Am-241             | 2.19E-07 +/- 6.96E-07  | uCi/g  | W     | 6.97E-07           | 1.05E-06        | 1.00E-04              | U     |
| 25-NOV-16     | Cm-242             | 2.48E-07 +/- 7.87E-07  | uCi/g  | W     | 7.89E-07           | 1.19E-06        | 2.00E-02              | U     |
| 25-NOV-16     | Cm-243/244         | -5.92E-08 +/- 4.93E-07   | uCi/g  | W     | 4.95E-07           | 1.16E-06        | 1.00E-04              | U     |
| 25-NOV-16     | Cm-245/246         | -1.03E-07 +/- 5.75E-07   | uCi/g  | W     | 5.77E-07           | 1.45E-06        | 1.00E-04              | U     |
| 25-NOV-16     | Ni-59              | 6.23E-04 +/- 8.29E-04  | uCi/g  | W     | 8.77E-04           | 1.63E-03        | 2.20E-01              | U     |
| 29-NOV-16     | I-129              | 0.00E+00 +/- 2.91E-06  | uCi/g  | W     | 0.00E+00           | 4.02E-06        | 8.00E-05              | U     |

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 15 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID             | Client Description |  | Matrix | Collection Date    | Receipt Date |              |                    |       |
|--------------------|--------------------|--|--------|--------------------|--------------|--------------|--------------------|-------|
| 409515009          | PA2-D6-07          |  | Solid  | 24-OCT-16 14:00:00 | 01-NOV-16    |              |                    |       |
| Analysis Date      | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured MDC | Required MDC (LLD) | Flags |
|                    |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              |              |                    |       |
| 29-NOV-16          | Pu-241             | -7.75E-05 +/- 1.24E-04                 | uCi/g  | W                  | 1.24E-04     | 2.24E-04     | 3.50E-03           | U     |
| 26-NOV-16          | Fe-55              | 2.21E-04 +/- 1.12E-03                  | uCi/g  | W                  | 1.12E-03     | 1.61E-03     | 7.00E-01           | U     |
| 26-NOV-16          | Tc-99              | 3.11E-06 +/- 1.37E-05                  | uCi/g  | W                  | 1.37E-05     | 2.38E-05     | 3.00E-03           | U     |
| 23-NOV-16          | H-3                | 8.25E-05 +/- 1.40E-04                  | uCi/g  | W                  | 1.41E-04     | 2.41E-04     | 4.00E-02           | U     |
| 24-NOV-16          | C-14               | 5.28E-06 +/- 1.10E-05                  | uCi/g  | W                  | 1.10E-05     | 1.89E-05     | 8.00E-03           | U     |
| 23-NOV-16          | Pu-238             | -3.51E-08 +/- 5.82E-07                 | uCi/g  | W                  | 5.85E-07     | 1.23E-06     | 1.00E-04           | U     |
| 23-NOV-16          | Pu-239/240         | 5.15E-07 +/- 1.00E-06                  | uCi/g  | W                  | 1.01E-06     | 1.38E-06     | 1.00E-04           | U     |
| 23-NOV-16          | Pu-242             | -1.05E-07 +/- 5.89E-07                 | uCi/g  | W                  | 5.92E-07     | 1.49E-06     | 1.00E-04           | U     |
| 25-NOV-16          | Np-237             | 8.63E-09 +/- 6.17E-07                  | uCi/g  | W                  | 6.18E-07     | 1.38E-06     | 1.00E-04           | U     |
| 29-NOV-16          | Sr-89              | 2.02E+01 +/- 6.74E+01                  | pCi/g  | W                  | 6.74E+01     | 1.16E+02     | 7.00E-01           | U     |
| 29-NOV-16          | Sr-90              | -8.56E+00 +/- 1.79E+01                 | pCi/g  | W                  | 1.79E+01     | 3.11E+01     | 4.00E-05           | U     |
| 29-NOV-16          | Ni-63              | -2.36E-04 +/- 3.72E-04                 | uCi/g  | D                  | 3.72E-04     | 6.70E-04     | 3.50E-03           | U     |
| 409515010 PA2-S-08 |                    |  | Solid  | 24-OCT-16 15:15:00 | 01-NOV-16    |              |                    |       |
| Analysis Date      | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured MDC | Required MDC (LLD) | Flags |
|                    |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              |              |                    |       |
| 08-NOV-16          | Ac-228             | 3.97E-07 +/- 2.48E-07                  | uCi/g  | D                  | 3.07E-07     | 5.66E-07     |                    | U     |
| 08-NOV-16          | Am-241             | 8.51E-09 +/- 7.02E-08                  | uCi/g  | D                  | 7.03E-08     | 1.34E-07     |                    | U     |
| 08-NOV-16          | Sb-124             | -1.44E-08 +/- 8.73E-08                 | uCi/g  | D                  | 8.76E-08     | 1.82E-07     |                    | U     |
| 08-NOV-16          | Sb-125             | 6.16E-08 +/- 1.02E-07                  | uCi/g  | D                  | 1.06E-07     | 2.20E-07     |                    | U     |
| 08-NOV-16          | Ba-133             | 7.07E-09 +/- 4.89E-08                  | uCi/g  | D                  | 4.90E-08     | 9.16E-08     |                    | U     |
| 08-NOV-16          | Ba-140             | 1.23E-07 +/- 2.93E-07                  | uCi/g  | D                  | 2.98E-07     | 6.23E-07     |                    | U     |
| 08-NOV-16          | Be-7               | 2.67E-06 +/- 9.16E-07                  | uCi/g  | D                  | 9.22E-07     | 7.34E-07     |                    |       |
| 08-NOV-16          | Bi-212             | 1.23E-06 +/- 6.20E-07                  | uCi/g  | D                  | 8.33E-07     | 1.41E-06     |                    | U     |
| 08-NOV-16          | Bi-214             | 1.31E-06 +/- 2.36E-07                  | uCi/g  | D                  | 2.43E-07     | 1.38E-07     |                    |       |
| 08-NOV-16          | Ce-139             | 2.89E-09 +/- 3.08E-08                  | uCi/g  | D                  | 3.08E-08     | 5.96E-08     |                    | U     |
| 08-NOV-16          | Ce-141             | -1.03E-08 +/- 6.05E-08                 | uCi/g  | D                  | 6.07E-08     | 1.16E-07     |                    | U     |
| 08-NOV-16          | Ce-144             | -7.35E-08 +/- 1.85E-07                 | uCi/g  | D                  | 1.88E-07     | 3.50E-07     |                    | U     |
| 08-NOV-16          | Cs-134             | -6.56E-09 +/- 5.17E-08                 | uCi/g  | D                  | 5.18E-08     | 9.74E-08     |                    | U     |
| 08-NOV-16          | Cs-136             | -2.93E-08 +/- 1.12E-07                 | uCi/g  | D                  | 1.13E-07     | 2.21E-07     |                    | U     |
| 08-NOV-16          | Cs-137             | -1.08E-08 +/- 4.13E-08                 | uCi/g  | D                  | 4.16E-08     | 6.93E-08     | 1.00E-07           | U     |
| 08-NOV-16          | Cr-51              | 5.94E-08 +/- 3.58E-07                  | uCi/g  | D                  | 3.59E-07     | 7.52E-07     |                    | U     |
| 08-NOV-16          | Co-56              | -2.36E-08 +/- 4.19E-08                 | uCi/g  | D                  | 4.33E-08     | 7.85E-08     |                    | U     |
| 08-NOV-16          | Co-57              | 1.23E-08 +/- 2.23E-08                  | uCi/g  | D                  | 2.30E-08     | 4.62E-08     |                    | U     |

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**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 16 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date |                 |
|---------------|--------------------|--|--------|-------|--------------------|--------------|-----------------|
| 409515010     | PA2-S-08           |  | Solid  |       | 24-OCT-16 15:15:00 | 01-NOV-16    |                 |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured     | Required        |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC          | MDC (LLD) Flags |
| 08-NOV-16     | Co-58              | 1.57E-08 +/- 3.77E-08                  | uCi/g  | D     | 3.84E-08           | 6.89E-08     | U               |
| 08-NOV-16     | Co-60              | -2.67E-08 +/- 4.52E-08                 | uCi/g  | D     | 4.68E-08           | 8.06E-08     | U               |
| 08-NOV-16     | Eu-152             | 3.91E-08 +/- 9.59E-08                  | uCi/g  | D     | 9.75E-08           | 1.91E-07     | U               |
| 08-NOV-16     | Eu-154             | 1.59E-08 +/- 1.28E-07                  | uCi/g  | D     | 1.29E-07           | 2.70E-07     | U               |
| 08-NOV-16     | Eu-155             | 3.94E-08 +/- 8.77E-08                  | uCi/g  | D     | 8.95E-08           | 1.81E-07     | U               |
| 08-NOV-16     | Ir-192             | 2.04E-08 +/- 3.70E-08                  | uCi/g  | D     | 3.81E-08           | 7.97E-08     | U               |
| 08-NOV-16     | Fe-59              | 1.15E-08 +/- 9.02E-08                  | uCi/g  | D     | 9.04E-08           | 1.92E-07     | U               |
| 08-NOV-16     | Pb-210             | 2.44E-06 +/- 1.54E-06                  | uCi/g  | D     | 1.56E-06           | 1.09E-06     |                 |
| 08-NOV-16     | Pb-212             | 5.37E-07 +/- 1.70E-07                  | uCi/g  | D     | 1.72E-07           | 1.10E-07     |                 |
| 08-NOV-16     | Pb-214             | 1.47E-06 +/- 2.68E-07                  | uCi/g  | D     | 2.75E-07           | 1.73E-07     |                 |
| 08-NOV-16     | Mn-54              | 1.24E-08 +/- 3.80E-08                  | uCi/g  | D     | 3.84E-08           | 7.95E-08     | U               |
| 08-NOV-16     | Hg-203             | 1.55E-08 +/- 4.23E-08                  | uCi/g  | D     | 4.29E-08           | 8.22E-08     | U               |
| 08-NOV-16     | Nd-147             | 5.29E-08 +/- 6.33E-07                  | uCi/g  | D     | 6.34E-07           | 1.28E-06     | U               |
| 08-NOV-16     | Np-239             | -1.67E-08 +/- 2.11E-07                 | uCi/g  | D     | 2.11E-07           | 4.17E-07     | U               |
| 08-NOV-16     | Nb-94              | 1.63E-08 +/- 3.78E-08                  | uCi/g  | D     | 3.85E-08           | 7.67E-08     | U               |
| 08-NOV-16     | Nb-95              | -1.08E-08 +/- 5.50E-08                 | uCi/g  | D     | 5.52E-08           | 9.05E-08     | U               |
| 08-NOV-16     | K-40               | 9.77E-06 +/- 1.56E-06                  | uCi/g  | D     | 1.64E-06           | 7.28E-07     |                 |
| 08-NOV-16     | Pm-144             | 2.26E-08 +/- 3.24E-08                  | uCi/g  | D     | 3.40E-08           | 7.33E-08     | U               |
| 08-NOV-16     | Pm-146             | -1.45E-08 +/- 4.69E-08                 | uCi/g  | D     | 4.73E-08           | 9.07E-08     | U               |
| 08-NOV-16     | Ra-228             | 3.97E-07 +/- 2.48E-07                  | uCi/g  | D     | 3.07E-07           | 5.66E-07     | U               |
| 08-NOV-16     | Ru-106             | 1.47E-07 +/- 3.57E-07                  | uCi/g  | D     | 3.63E-07           | 7.52E-07     | U               |
| 08-NOV-16     | Ag-110m            | -1.24E-08 +/- 5.08E-08                 | uCi/g  | D     | 5.11E-08           | 1.03E-07     | U               |
| 08-NOV-16     | Na-22              | 5.61E-09 +/- 4.53E-08                  | uCi/g  | D     | 4.54E-08           | 9.52E-08     | U               |
| 08-NOV-16     | Tl-208             | 1.90E-07 +/- 7.80E-08                  | uCi/g  | D     | 7.84E-08           | 6.86E-08     |                 |
| 08-NOV-16     | Th-234             | 2.52E-06 +/- 2.13E-06                  | uCi/g  | D     | 2.21E-06           | 1.29E-06     |                 |
| 08-NOV-16     | Sn-113             | -3.69E-08 +/- 4.65E-08                 | uCi/g  | D     | 4.94E-08           | 8.52E-08     | U               |
| 08-NOV-16     | U-235              | 4.10E-08 +/- 2.14E-07                  | uCi/g  | D     | 2.15E-07           | 3.95E-07     | U               |
| 08-NOV-16     | U-238              | 2.52E-06 +/- 2.13E-06                  | uCi/g  | D     | 2.21E-06           | 1.29E-06     |                 |
| 08-NOV-16     | Y-88               | -1.35E-08 +/- 4.53E-08                 | uCi/g  | D     | 4.58E-08           | 9.36E-08     | U               |
| 08-NOV-16     | Zn-65              | -2.23E-09 +/- 1.11E-07                 | uCi/g  | D     | 1.11E-07           | 1.97E-07     | U               |
| 08-NOV-16     | Zr-95              | 1.12E-07 +/- 1.04E-07                  | uCi/g  | D     | 1.16E-07           | 1.71E-07     | U               |

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4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 17 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515011     | PA2-D6-09          |  | Solid  |       | 24-OCT-16 15:30:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Ac-228             | 9.17E-07 +/- 3.20E-07  | uCi/g  | D     | 3.24E-07           | 2.52E-07        |                       |       |
| 08-NOV-16     | Am-241             | -1.18E-07 +/- 2.36E-07   | uCi/g  | D     | 2.42E-07           | 4.20E-07        |                       | U     |
| 08-NOV-16     | Sb-124             | 5.22E-08 +/- 7.37E-08  | uCi/g  | D     | 7.74E-08           | 1.87E-07        |                       | U     |
| 08-NOV-16     | Sb-125             | -1.25E-08 +/- 9.06E-08   | uCi/g  | D     | 9.08E-08           | 1.71E-07        |                       | U     |
| 08-NOV-16     | Ba-133             | -2.14E-09 +/- 4.42E-08   | uCi/g  | D     | 4.42E-08           | 7.58E-08        |                       | U     |
| 08-NOV-16     | Ba-140             | -3.70E-08 +/- 2.72E-07   | uCi/g  | D     | 2.72E-07           | 5.09E-07        |                       | U     |
| 08-NOV-16     | Be-7               | -4.26E-08 +/- 3.05E-07   | uCi/g  | D     | 3.06E-07           | 5.77E-07        |                       | U     |
| 08-NOV-16     | Bi-212             | 0.00E+00 +/- 8.78E-07  | uCi/g  | D     | 1.25E-06           | 1.36E-06        |                       | UI    |
| 08-NOV-16     | Bi-214             | 9.04E-07 +/- 1.84E-07  | uCi/g  | D     | 1.88E-07           | 1.21E-07        |                       |       |
| 08-NOV-16     | Ce-139             | -1.84E-08 +/- 2.62E-08   | uCi/g  | D     | 2.77E-08           | 4.89E-08        |                       | U     |
| 08-NOV-16     | Ce-141             | 2.08E-08 +/- 6.75E-08  | uCi/g  | D     | 6.81E-08           | 1.23E-07        |                       | U     |
| 08-NOV-16     | Ce-144             | -1.55E-07 +/- 2.33E-07   | uCi/g  | D     | 2.43E-07           | 3.91E-07        |                       | U     |
| 08-NOV-16     | Cs-134             | 9.69E-08 +/- 6.36E-08  | uCi/g  | D     | 7.73E-08           | 1.06E-07        |                       | U     |
| 08-NOV-16     | Cs-136             | -2.47E-08 +/- 1.10E-07   | uCi/g  | D     | 1.10E-07           | 1.86E-07        |                       | U     |
| 08-NOV-16     | Cs-137             | 5.69E-09 +/- 3.92E-08  | uCi/g  | D     | 3.93E-08           | 7.55E-08        | 1.00E-07              | U     |
| 08-NOV-16     | Cr-51              | -1.07E-08 +/- 3.28E-07   | uCi/g  | D     | 3.28E-07           | 6.34E-07        |                       | U     |
| 08-NOV-16     | Co-56              | 4.33E-08 +/- 4.24E-08  | uCi/g  | D     | 4.24E-08           | 5.21E-08        |                       | U     |
| 08-NOV-16     | Co-57              | -3.67E-09 +/- 2.96E-08   | uCi/g  | D     | 2.96E-08           | 5.23E-08        |                       | U     |
| 08-NOV-16     | Co-58              | -3.47E-08 +/- 3.39E-08   | uCi/g  | D     | 3.73E-08           | 5.10E-08        |                       | U     |
| 08-NOV-16     | Co-60              | 2.80E-08 +/- 3.99E-08  | uCi/g  | D     | 4.18E-08           | 8.38E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | 1.28E-07 +/- 9.96E-08  | uCi/g  | D     | 1.15E-07           | 1.78E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | -3.72E-08 +/- 1.02E-07   | uCi/g  | D     | 1.03E-07           | 1.93E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | 1.22E-07 +/- 1.38E-07  | uCi/g  | D     | 1.39E-07           | 1.87E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | 1.99E-09 +/- 2.72E-08  | uCi/g  | D     | 2.72E-08           | 5.39E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | 2.60E-08 +/- 8.49E-08  | uCi/g  | D     | 8.58E-08           | 1.77E-07        |                       | U     |
| 08-NOV-16     | Pb-210             | 2.42E-06 +/- 9.24E-06  | uCi/g  | D     | 9.30E-06           | 1.77E-05        |                       | U     |
| 08-NOV-16     | Pb-212             | 1.11E-06 +/- 1.34E-07  | uCi/g  | D     | 1.46E-07           | 1.01E-07        |                       |       |
| 08-NOV-16     | Pb-214             | 1.37E-06 +/- 2.15E-07  | uCi/g  | D     | 2.23E-07           | 1.30E-07        |                       |       |
| 08-NOV-16     | Mn-54              | 1.97E-08 +/- 3.76E-08  | uCi/g  | D     | 3.86E-08           | 7.08E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | 1.10E-08 +/- 3.87E-08  | uCi/g  | D     | 3.90E-08           | 7.60E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | 6.67E-08 +/- 4.90E-07  | uCi/g  | D     | 4.91E-07           | 9.69E-07        |                       | U     |
| 08-NOV-16     | Np-239             | 5.24E-08 +/- 2.82E-07  | uCi/g  | D     | 2.83E-07           | 5.16E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | -5.10E-09 +/- 3.73E-08   | uCi/g  | D     | 3.74E-08           | 6.83E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | -2.53E-08 +/- 4.92E-08   | uCi/g  | D     | 5.05E-08           | 8.45E-08        |                       | U     |
| 08-NOV-16     | K-40               | 1.57E-05 +/- 1.60E-06  | uCi/g  | D     | 1.80E-06           | 6.14E-07        |                       |       |
| 08-NOV-16     | Pm-144             | -2.06E-08 +/- 3.77E-08   | uCi/g  | D     | 3.89E-08           | 6.52E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | 2.91E-09 +/- 3.73E-08  | uCi/g  | D     | 3.73E-08           | 7.31E-08        |                       | U     |

**Notes:**

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4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 18 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    |              | Receipt Date       |       |
|---------------|--------------------|--|--------|-------|--------------------|--------------|--------------------|-------|
| 409515011     | PA2-D6-09          |  | Solid  |       | 24-OCT-16 15:30:00 |              | 01-NOV-16          |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured MDC | Required MDC (LLD) | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    |              |                    |       |
| 08-NOV-16     | Ra-228             | 9.17E-07 +/- 3.20E-07                  | uCi/g  | D     | 3.24E-07           | 2.52E-07     |                    |       |
| 08-NOV-16     | Ru-106             | -7.60E-08 +/- 3.07E-07                 | uCi/g  | D     | 3.09E-07           | 5.65E-07     |                    | U     |
| 08-NOV-16     | Ag-110m            | -3.36E-08 +/- 5.35E-08                 | uCi/g  | D     | 5.56E-08           | 8.91E-08     |                    | U     |
| 08-NOV-16     | Na-22              | -2.35E-08 +/- 3.88E-08                 | uCi/g  | D     | 4.02E-08           | 6.94E-08     |                    | U     |
| 08-NOV-16     | Tl-208             | 3.91E-07 +/- 8.49E-08                  | uCi/g  | D     | 8.66E-08           | 5.74E-08     |                    |       |
| 08-NOV-16     | Th-234             | 2.24E-07 +/- 1.93E-06                  | uCi/g  | D     | 1.94E-06           | 3.60E-06     |                    | U     |
| 08-NOV-16     | Sn-113             | 2.20E-08 +/- 3.95E-08                  | uCi/g  | D     | 4.07E-08           | 8.13E-08     |                    | U     |
| 08-NOV-16     | U-235              | 3.19E-08 +/- 1.95E-07                  | uCi/g  | D     | 1.95E-07           | 3.86E-07     |                    | U     |
| 08-NOV-16     | U-238              | 2.24E-07 +/- 1.93E-06                  | uCi/g  | D     | 1.94E-06           | 3.60E-06     |                    | U     |
| 08-NOV-16     | Y-88               | -4.55E-09 +/- 2.35E-08                 | uCi/g  | D     | 2.36E-08           | 5.18E-08     |                    | U     |
| 08-NOV-16     | Zn-65              | -1.85E-08 +/- 8.29E-08                 | uCi/g  | D     | 8.33E-08           | 1.40E-07     |                    | U     |
| 08-NOV-16     | Zr-95              | 4.74E-08 +/- 6.80E-08                  | uCi/g  | D     | 7.13E-08           | 1.43E-07     |                    | U     |
| 409515012     | PA3-S-01           |  | Solid  |       | 24-OCT-16 16:15:00 |              | 01-NOV-16          |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured MDC | Required MDC (LLD) | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    |              |                    |       |
| 08-NOV-16     | Ac-228             | 9.04E-08 +/- 4.03E-07                  | uCi/g  | D     | 4.05E-07           | 4.36E-07     |                    | U     |
| 08-NOV-16     | Am-241             | 2.05E-08 +/- 6.15E-08                  | uCi/g  | D     | 6.22E-08           | 1.06E-07     |                    | U     |
| 08-NOV-16     | Sb-124             | 2.66E-08 +/- 1.07E-07                  | uCi/g  | D     | 1.08E-07           | 2.43E-07     |                    | U     |
| 08-NOV-16     | Sb-125             | 2.88E-08 +/- 1.12E-07                  | uCi/g  | D     | 1.13E-07           | 2.19E-07     |                    | U     |
| 08-NOV-16     | Ba-133             | 2.91E-09 +/- 4.91E-08                  | uCi/g  | D     | 4.91E-08           | 8.53E-08     |                    | U     |
| 08-NOV-16     | Ba-140             | 7.22E-08 +/- 3.48E-07                  | uCi/g  | D     | 3.50E-07           | 6.73E-07     |                    | U     |
| 08-NOV-16     | Be-7               | -7.92E-08 +/- 3.65E-07                 | uCi/g  | D     | 3.67E-07           | 6.76E-07     |                    | U     |
| 08-NOV-16     | Bi-212             | 1.35E-06 +/- 6.86E-07                  | uCi/g  | D     | 9.21E-07           | 1.48E-06     |                    | U     |
| 08-NOV-16     | Bi-214             | 1.30E-06 +/- 2.61E-07                  | uCi/g  | D     | 2.67E-07           | 1.62E-07     |                    |       |
| 08-NOV-16     | Ce-139             | 8.61E-09 +/- 2.80E-08                  | uCi/g  | D     | 2.83E-08           | 5.55E-08     |                    | U     |
| 08-NOV-16     | Ce-141             | -3.46E-08 +/- 6.03E-08                 | uCi/g  | D     | 6.23E-08           | 1.12E-07     |                    | U     |
| 08-NOV-16     | Ce-144             | 3.89E-08 +/- 1.79E-07                  | uCi/g  | D     | 1.80E-07           | 3.56E-07     |                    | U     |
| 08-NOV-16     | Cs-134             | 8.14E-09 +/- 4.62E-08                  | uCi/g  | D     | 4.63E-08           | 9.58E-08     |                    | U     |
| 08-NOV-16     | Cs-136             | -1.92E-08 +/- 9.80E-08                 | uCi/g  | D     | 9.84E-08           | 1.96E-07     |                    | U     |
| 08-NOV-16     | Cs-137             | -1.57E-08 +/- 4.28E-08                 | uCi/g  | D     | 4.34E-08           | 7.60E-08     | 1.00E-07           | U     |
| 08-NOV-16     | Cr-51              | -1.16E-07 +/- 3.53E-07                 | uCi/g  | D     | 3.57E-07           | 6.56E-07     |                    | U     |
| 08-NOV-16     | Co-56              | 7.96E-09 +/- 5.10E-08                  | uCi/g  | D     | 5.11E-08           | 9.43E-08     |                    | U     |
| 08-NOV-16     | Co-57              | 2.51E-09 +/- 2.32E-08                  | uCi/g  | D     | 2.33E-08           | 4.18E-08     |                    | U     |

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 19 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description | Matrix                                 |       | Collection Date    | Receipt Date |          |           |       |
|---------------|--------------------|--|-------|--------------------|--------------|----------|-----------|-------|
| 409515012     | PA3-S-01           | Solid                                  |       | 24-OCT-16 16:15:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |       |                    |              | MDC      | MDC (LLD) |       |
| 08-NOV-16     | Co-58              | -1.96E-09 +/- 4.47E-08                 | uCi/g | D                  | 4.47E-08     | 8.07E-08 |           | U     |
| 08-NOV-16     | Co-60              | 6.12E-09 +/- 4.39E-08                  | uCi/g | D                  | 4.40E-08     | 9.31E-08 |           | U     |
| 08-NOV-16     | Eu-152             | -3.39E-08 +/- 1.11E-07                 | uCi/g | D                  | 1.12E-07     | 2.04E-07 |           | U     |
| 08-NOV-16     | Eu-154             | -2.43E-08 +/- 9.68E-08                 | uCi/g | D                  | 9.74E-08     | 1.95E-07 |           | U     |
| 08-NOV-16     | Eu-155             | 6.70E-08 +/- 8.88E-08                  | uCi/g | D                  | 9.39E-08     | 1.71E-07 |           | U     |
| 08-NOV-16     | Ir-192             | 5.27E-09 +/- 3.54E-08                  | uCi/g | D                  | 3.55E-08     | 6.94E-08 |           | U     |
| 08-NOV-16     | Fe-59              | -1.99E-08 +/- 9.39E-08                 | uCi/g | D                  | 9.43E-08     | 1.84E-07 |           | U     |
| 08-NOV-16     | Pb-210             | 5.48E-07 +/- 9.88E-07                  | uCi/g | D                  | 9.89E-07     | 9.24E-07 |           | U     |
| 08-NOV-16     | Pb-212             | 1.79E-07 +/- 1.26E-07                  | uCi/g | D                  | 1.26E-07     | 1.16E-07 |           |       |
| 08-NOV-16     | Pb-214             | 1.76E-06 +/- 2.55E-07                  | uCi/g | D                  | 2.65E-07     | 1.50E-07 |           |       |
| 08-NOV-16     | Mn-54              | 1.02E-08 +/- 5.10E-08                  | uCi/g | D                  | 5.12E-08     | 9.34E-08 |           | U     |
| 08-NOV-16     | Hg-203             | 1.79E-08 +/- 4.27E-08                  | uCi/g | D                  | 4.35E-08     | 8.46E-08 |           | U     |
| 08-NOV-16     | Nd-147             | 3.18E-07 +/- 5.99E-07                  | uCi/g | D                  | 6.16E-07     | 1.25E-06 |           | U     |
| 08-NOV-16     | Np-239             | -1.26E-07 +/- 2.32E-07                 | uCi/g | D                  | 2.39E-07     | 3.88E-07 |           | U     |
| 08-NOV-16     | Nb-94              | 1.97E-08 +/- 3.85E-08                  | uCi/g | D                  | 3.95E-08     | 7.92E-08 |           | U     |
| 08-NOV-16     | Nb-95              | -2.43E-08 +/- 5.44E-08                 | uCi/g | D                  | 5.55E-08     | 9.32E-08 |           | U     |
| 08-NOV-16     | K-40               | 2.84E-06 +/- 1.42E-06                  | uCi/g | D                  | 1.43E-06     | 8.96E-07 |           |       |
| 08-NOV-16     | Pm-144             | -2.86E-08 +/- 4.48E-08                 | uCi/g | D                  | 4.66E-08     | 7.45E-08 |           | U     |
| 08-NOV-16     | Pm-146             | 4.22E-09 +/- 5.07E-08                  | uCi/g | D                  | 5.07E-08     | 9.73E-08 |           | U     |
| 08-NOV-16     | Ra-228             | 9.04E-08 +/- 4.03E-07                  | uCi/g | D                  | 4.05E-07     | 4.36E-07 |           | U     |
| 08-NOV-16     | Ru-106             | -6.46E-08 +/- 3.92E-07                 | uCi/g | D                  | 3.93E-07     | 7.21E-07 |           | U     |
| 08-NOV-16     | Ag-110m            | -3.13E-09 +/- 5.24E-08                 | uCi/g | D                  | 5.24E-08     | 1.07E-07 |           | U     |
| 08-NOV-16     | Na-22              | -9.77E-09 +/- 3.38E-08                 | uCi/g | D                  | 3.40E-08     | 6.71E-08 |           | U     |
| 08-NOV-16     | Tl-208             | 1.15E-08 +/- 4.96E-08                  | uCi/g | D                  | 4.99E-08     | 1.02E-07 |           | U     |
| 08-NOV-16     | Th-234             | 1.59E-06 +/- 1.36E-06                  | uCi/g | D                  | 1.40E-06     | 1.08E-06 |           |       |
| 08-NOV-16     | Sn-113             | 6.75E-08 +/- 5.23E-08                  | uCi/g | D                  | 6.06E-08     | 1.14E-07 |           | U     |
| 08-NOV-16     | U-235              | 1.18E-07 +/- 2.02E-07                  | uCi/g | D                  | 2.02E-07     | 4.05E-07 |           | U     |
| 08-NOV-16     | U-238              | 1.59E-06 +/- 1.36E-06                  | uCi/g | D                  | 1.40E-06     | 1.08E-06 |           |       |
| 08-NOV-16     | Y-88               | -2.24E-08 +/- 4.77E-08                 | uCi/g | D                  | 4.88E-08     | 8.59E-08 |           | U     |
| 08-NOV-16     | Zn-65              | 2.48E-08 +/- 9.00E-08                  | uCi/g | D                  | 9.07E-08     | 1.77E-07 |           | U     |
| 08-NOV-16     | Zr-95              | 2.98E-08 +/- 8.66E-08                  | uCi/g | D                  | 8.76E-08     | 1.74E-07 |           | U     |

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- U - Target isotope was analyzed for but not detected above the MDC and LLD.
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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 20 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515013     | PA3-D6-02          |  | Solid  |       | 24-OCT-16 16:45:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Ac-228             | 9.39E-07 +/- 2.75E-07  | uCi/g  | D     | 2.80E-07           | 3.08E-07        |                       |       |
| 08-NOV-16     | Am-241             | 6.67E-09 +/- 2.39E-07  | uCi/g  | D     | 2.39E-07           | 4.54E-07        |                       | U     |
| 08-NOV-16     | Sb-124             | 2.05E-08 +/- 8.08E-08  | uCi/g  | D     | 8.13E-08           | 1.87E-07        |                       | U     |
| 08-NOV-16     | Sb-125             | -1.14E-08 +/- 9.38E-08   | uCi/g  | D     | 9.39E-08           | 1.73E-07        |                       | U     |
| 08-NOV-16     | Ba-133             | 4.73E-09 +/- 4.10E-08  | uCi/g  | D     | 4.10E-08           | 7.11E-08        |                       | U     |
| 08-NOV-16     | Ba-140             | -3.99E-08 +/- 2.41E-07   | uCi/g  | D     | 2.41E-07           | 4.74E-07        |                       | U     |
| 08-NOV-16     | Be-7               | -2.98E-08 +/- 3.58E-07   | uCi/g  | D     | 3.58E-07           | 6.56E-07        |                       | U     |
| 08-NOV-16     | Bi-212             | 0.00E+00 +/- 1.01E-06  | uCi/g  | D     | 1.30E-06           | 1.55E-06        |                       | UI    |
| 08-NOV-16     | Bi-214             | 8.88E-07 +/- 2.23E-07  | uCi/g  | D     | 2.26E-07           | 1.31E-07        |                       |       |
| 08-NOV-16     | Ce-139             | 6.11E-09 +/- 2.60E-08  | uCi/g  | D     | 2.62E-08           | 5.17E-08        |                       | U     |
| 08-NOV-16     | Ce-141             | -3.74E-08 +/- 5.80E-08   | uCi/g  | D     | 6.05E-08           | 1.09E-07        |                       | U     |
| 08-NOV-16     | Ce-144             | -4.23E-09 +/- 1.94E-07   | uCi/g  | D     | 1.94E-07           | 3.67E-07        |                       | U     |
| 08-NOV-16     | Cs-134             | 9.11E-08 +/- 9.17E-08  | uCi/g  | D     | 1.01E-07           | 1.05E-07        |                       | U     |
| 08-NOV-16     | Cs-136             | 1.07E-08 +/- 1.16E-07  | uCi/g  | D     | 1.16E-07           | 2.25E-07        |                       | U     |
| 08-NOV-16     | Cs-137             | -3.33E-10 +/- 4.19E-08   | uCi/g  | D     | 4.19E-08           | 8.15E-08        | 1.00E-07              | U     |
| 08-NOV-16     | Cr-51              | 6.71E-08 +/- 3.40E-07  | uCi/g  | D     | 3.41E-07           | 6.61E-07        |                       | U     |
| 08-NOV-16     | Co-56              | -2.01E-09 +/- 4.27E-08   | uCi/g  | D     | 4.27E-08           | 8.22E-08        |                       | U     |
| 08-NOV-16     | Co-57              | -1.20E-08 +/- 2.93E-08   | uCi/g  | D     | 2.98E-08           | 5.07E-08        |                       | U     |
| 08-NOV-16     | Co-58              | -9.92E-10 +/- 4.03E-08   | uCi/g  | D     | 4.03E-08           | 7.86E-08        |                       | U     |
| 08-NOV-16     | Co-60              | -1.84E-08 +/- 3.56E-08   | uCi/g  | D     | 3.66E-08           | 6.07E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | 5.30E-08 +/- 9.95E-08  | uCi/g  | D     | 1.02E-07           | 1.97E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | 4.20E-08 +/- 1.03E-07  | uCi/g  | D     | 1.05E-07           | 2.29E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | -2.68E-08 +/- 1.17E-07   | uCi/g  | D     | 1.18E-07           | 2.09E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | -9.85E-09 +/- 3.18E-08   | uCi/g  | D     | 3.21E-08           | 5.86E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | 6.87E-08 +/- 9.86E-08  | uCi/g  | D     | 1.03E-07           | 2.09E-07        |                       | U     |
| 08-NOV-16     | Pb-210             | 1.47E-06 +/- 1.01E-05  | uCi/g  | D     | 1.01E-05           | 1.97E-05        |                       | U     |
| 08-NOV-16     | Pb-212             | 1.07E-06 +/- 1.28E-07  | uCi/g  | D     | 1.40E-07           | 9.33E-08        |                       |       |
| 08-NOV-16     | Pb-214             | 1.11E-06 +/- 1.84E-07  | uCi/g  | D     | 1.89E-07           | 3.36E-07        |                       |       |
| 08-NOV-16     | Mn-54              | 1.25E-08 +/- 4.03E-08  | uCi/g  | D     | 4.07E-08           | 8.10E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | -1.56E-08 +/- 3.73E-08   | uCi/g  | D     | 3.79E-08           | 6.81E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | 7.77E-08 +/- 5.30E-07  | uCi/g  | D     | 5.31E-07           | 1.08E-06        |                       | U     |
| 08-NOV-16     | Np-239             | 2.25E-07 +/- 2.71E-07  | uCi/g  | D     | 2.90E-07           | 5.28E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | 3.58E-09 +/- 3.93E-08  | uCi/g  | D     | 3.94E-08           | 7.66E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | 1.89E-08 +/- 7.62E-08  | uCi/g  | D     | 7.67E-08           | 9.95E-08        |                       | U     |
| 08-NOV-16     | K-40               | 1.75E-05 +/- 1.85E-06  | uCi/g  | D     | 2.06E-06           | 6.85E-07        |                       |       |
| 08-NOV-16     | Pm-144             | 1.48E-10 +/- 3.97E-08  | uCi/g  | D     | 3.97E-08           | 7.68E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | -6.91E-09 +/- 4.09E-08   | uCi/g  | D     | 4.10E-08           | 7.50E-08        |                       | U     |

**Notes:**

1. LLDs are a-priori values.
2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 21 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID             | Client Description |  | Matrix |       | Collection Date    |              | Receipt Date       |       |
|--------------------|--------------------|--|--------|-------|--------------------|--------------|--------------------|-------|
| 409515013          | PA3-D6-02          |  | Solid  |       | 24-OCT-16 16:45:00 |              | 01-NOV-16          |       |
| Analysis Date      | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured MDC | Required MDC (LLD) | Flags |
|                    |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    |              |                    |       |
| 08-NOV-16          | Ra-228             | 9.39E-07 +/- 2.75E-07                  | uCi/g  | D     | 2.80E-07           | 3.08E-07     |                    |       |
| 08-NOV-16          | Ru-106             | 1.78E-07 +/- 3.44E-07                  | uCi/g  | D     | 3.53E-07           | 7.19E-07     |                    | U     |
| 08-NOV-16          | Ag-110m            | -1.36E-09 +/- 4.92E-08                 | uCi/g  | D     | 4.92E-08           | 9.60E-08     |                    | U     |
| 08-NOV-16          | Na-22              | 2.24E-09 +/- 3.92E-08                  | uCi/g  | D     | 3.92E-08           | 8.10E-08     |                    | U     |
| 08-NOV-16          | Tl-208             | 3.44E-07 +/- 1.00E-07                  | uCi/g  | D     | 1.01E-07           | 6.84E-08     |                    |       |
| 08-NOV-16          | Th-234             | 1.82E-06 +/- 1.92E-06                  | uCi/g  | D     | 2.12E-06           | 3.86E-06     |                    | U     |
| 08-NOV-16          | Sn-113             | -2.41E-08 +/- 4.90E-08                 | uCi/g  | D     | 5.02E-08           | 8.63E-08     |                    | U     |
| 08-NOV-16          | U-235              | 5.08E-08 +/- 1.94E-07                  | uCi/g  | D     | 1.95E-07           | 3.89E-07     |                    | U     |
| 08-NOV-16          | U-238              | 1.82E-06 +/- 1.92E-06                  | uCi/g  | D     | 2.12E-06           | 3.86E-06     |                    | U     |
| 08-NOV-16          | Y-88               | -3.10E-08 +/- 3.63E-08                 | uCi/g  | D     | 3.90E-08           | 5.29E-08     |                    | U     |
| 08-NOV-16          | Zn-65              | -1.56E-07 +/- 1.33E-07                 | uCi/g  | D     | 1.50E-07           | 2.03E-07     |                    | U     |
| 08-NOV-16          | Zr-95              | 4.57E-08 +/- 7.70E-08                  | uCi/g  | D     | 7.97E-08           | 1.43E-07     |                    | U     |
| 409515014 PA1-S-03 |                    |  | Solid  |       | 25-OCT-16 10:25:00 |              | 01-NOV-16          |       |
| Analysis Date      | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured MDC | Required MDC (LLD) | Flags |
|                    |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    |              |                    |       |
| 08-NOV-16          | Ac-228             | 0.00E+00 +/- 3.01E-07                  | uCi/g  | D     | 4.94E-07           | 5.42E-07     |                    | UI    |
| 08-NOV-16          | Am-241             | 1.53E-07 +/- 2.03E-07                  | uCi/g  | D     | 2.15E-07           | 3.79E-07     |                    | U     |
| 08-NOV-16          | Sb-124             | 3.32E-08 +/- 4.60E-08                  | uCi/g  | D     | 4.84E-08           | 1.54E-07     |                    | U     |
| 08-NOV-16          | Sb-125             | 7.11E-08 +/- 1.01E-07                  | uCi/g  | D     | 1.06E-07           | 2.09E-07     |                    | U     |
| 08-NOV-16          | Ba-133             | -1.39E-08 +/- 4.82E-08                 | uCi/g  | D     | 4.86E-08           | 7.91E-08     |                    | U     |
| 08-NOV-16          | Ba-140             | -1.99E-07 +/- 2.83E-07                 | uCi/g  | D     | 2.97E-07           | 4.75E-07     |                    | U     |
| 08-NOV-16          | Be-7               | 2.80E-07 +/- 3.19E-07                  | uCi/g  | D     | 3.43E-07           | 6.93E-07     |                    | U     |
| 08-NOV-16          | Bi-212             | 1.40E-07 +/- 5.43E-07                  | uCi/g  | D     | 5.47E-07           | 1.10E-06     |                    | U     |
| 08-NOV-16          | Bi-214             | 1.31E-06 +/- 2.20E-07                  | uCi/g  | D     | 2.27E-07           | 1.31E-07     |                    |       |
| 08-NOV-16          | Ce-139             | -1.12E-08 +/- 2.89E-08                 | uCi/g  | D     | 2.94E-08           | 4.94E-08     |                    | U     |
| 08-NOV-16          | Ce-141             | -1.17E-08 +/- 7.02E-08                 | uCi/g  | D     | 7.04E-08           | 1.23E-07     |                    | U     |
| 08-NOV-16          | Ce-144             | -6.39E-08 +/- 2.02E-07                 | uCi/g  | D     | 2.04E-07           | 3.54E-07     |                    | U     |
| 08-NOV-16          | Cs-134             | 1.92E-08 +/- 4.12E-08                  | uCi/g  | D     | 4.21E-08           | 8.92E-08     |                    | U     |
| 08-NOV-16          | Cs-136             | 5.94E-08 +/- 9.60E-08                  | uCi/g  | D     | 9.98E-08           | 2.17E-07     |                    | U     |
| 08-NOV-16          | Cs-137             | 0.00E+00 +/- 9.39E-08                  | uCi/g  | D     | 9.40E-08           | 8.30E-08     | 1.00E-07           | UI    |
| 08-NOV-16          | Cr-51              | 1.10E-07 +/- 3.68E-07                  | uCi/g  | D     | 3.71E-07           | 7.34E-07     |                    | U     |
| 08-NOV-16          | Co-56              | -2.75E-08 +/- 3.41E-08                 | uCi/g  | D     | 3.63E-08           | 4.50E-08     |                    | U     |
| 08-NOV-16          | Co-57              | 1.57E-08 +/- 2.77E-08                  | uCi/g  | D     | 2.86E-08           | 4.97E-08     |                    | U     |

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- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 22 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    |          | Receipt Date |       |
|---------------|--------------------|--|--------|-------|--------------------|----------|--------------|-------|
| 409515014     | PA1-S-03           |  | Solid  |       | 25-OCT-16 10:25:00 |          | 01-NOV-16    |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured | Required     | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC      | MDC (LLD)    |       |
| 08-NOV-16     | Co-58              | 1.72E-08 +/- 4.55E-08                  | uCi/g  | D     | 4.61E-08           | 8.76E-08 |              | U     |
| 08-NOV-16     | Co-60              | 3.29E-09 +/- 3.70E-08                  | uCi/g  | D     | 3.71E-08           | 7.76E-08 |              | U     |
| 08-NOV-16     | Eu-152             | -9.37E-09 +/- 1.17E-07                 | uCi/g  | D     | 1.17E-07           | 1.98E-07 |              | U     |
| 08-NOV-16     | Eu-154             | 4.47E-08 +/- 1.11E-07                  | uCi/g  | D     | 1.12E-07           | 2.44E-07 |              | U     |
| 08-NOV-16     | Eu-155             | 7.35E-08 +/- 1.11E-07                  | uCi/g  | D     | 1.16E-07           | 2.15E-07 |              | U     |
| 08-NOV-16     | Ir-192             | 1.31E-08 +/- 3.41E-08                  | uCi/g  | D     | 3.46E-08           | 6.89E-08 |              | U     |
| 08-NOV-16     | Fe-59              | -5.08E-09 +/- 6.94E-08                 | uCi/g  | D     | 6.95E-08           | 1.42E-07 |              | U     |
| 08-NOV-16     | Pb-210             | 5.18E-06 +/- 6.24E-06                  | uCi/g  | D     | 6.68E-06           | 1.28E-05 |              | U     |
| 08-NOV-16     | Pb-212             | 5.38E-07 +/- 1.33E-07                  | uCi/g  | D     | 1.36E-07           | 1.02E-07 |              |       |
| 08-NOV-16     | Pb-214             | 1.39E-06 +/- 2.18E-07                  | uCi/g  | D     | 2.26E-07           | 4.12E-07 |              |       |
| 08-NOV-16     | Mn-54              | -2.17E-08 +/- 4.08E-08                 | uCi/g  | D     | 4.20E-08           | 7.44E-08 |              | U     |
| 08-NOV-16     | Hg-203             | -3.07E-08 +/- 4.06E-08                 | uCi/g  | D     | 4.29E-08           | 6.82E-08 |              | U     |
| 08-NOV-16     | Nd-147             | -2.60E-07 +/- 5.19E-07                 | uCi/g  | D     | 5.33E-07           | 9.13E-07 |              | U     |
| 08-NOV-16     | Np-239             | 2.39E-07 +/- 2.72E-07                  | uCi/g  | D     | 2.93E-07           | 5.38E-07 |              | U     |
| 08-NOV-16     | Nb-94              | -2.72E-08 +/- 3.56E-08                 | uCi/g  | D     | 3.76E-08           | 6.33E-08 |              | U     |
| 08-NOV-16     | Nb-95              | 3.49E-08 +/- 4.91E-08                  | uCi/g  | D     | 5.16E-08           | 9.82E-08 |              | U     |
| 08-NOV-16     | K-40               | 9.57E-06 +/- 1.50E-06                  | uCi/g  | D     | 1.58E-06           | 7.58E-07 |              |       |
| 08-NOV-16     | Pm-144             | -7.16E-09 +/- 4.25E-08                 | uCi/g  | D     | 4.26E-08           | 8.21E-08 |              | U     |
| 08-NOV-16     | Pm-146             | 4.92E-08 +/- 4.64E-08                  | uCi/g  | D     | 5.16E-08           | 1.01E-07 |              | U     |
| 08-NOV-16     | Ra-228             | 0.00E+00 +/- 3.01E-07                  | uCi/g  | D     | 4.94E-07           | 5.42E-07 |              | UI    |
| 08-NOV-16     | Ru-106             | 1.31E-07 +/- 3.64E-07                  | uCi/g  | D     | 3.69E-07           | 7.24E-07 |              | U     |
| 08-NOV-16     | Ag-110m            | -7.54E-09 +/- 5.05E-08                 | uCi/g  | D     | 5.06E-08           | 9.94E-08 |              | U     |
| 08-NOV-16     | Na-22              | 1.47E-08 +/- 3.87E-08                  | uCi/g  | D     | 3.93E-08           | 8.51E-08 |              | U     |
| 08-NOV-16     | Tl-208             | 1.19E-07 +/- 7.15E-08                  | uCi/g  | D     | 7.16E-08           | 8.02E-08 |              |       |
| 08-NOV-16     | Th-234             | 4.60E-06 +/- 2.62E-06                  | uCi/g  | D     | 2.82E-06           | 2.69E-06 |              |       |
| 08-NOV-16     | Sn-113             | 1.73E-08 +/- 3.77E-08                  | uCi/g  | D     | 3.85E-08           | 7.92E-08 |              | U     |
| 08-NOV-16     | U-235              | 3.74E-08 +/- 2.30E-07                  | uCi/g  | D     | 2.31E-07           | 4.12E-07 |              | U     |
| 08-NOV-16     | U-238              | 4.60E-06 +/- 2.62E-06                  | uCi/g  | D     | 2.82E-06           | 2.69E-06 |              |       |
| 08-NOV-16     | Y-88               | 2.23E-08 +/- 4.68E-08                  | uCi/g  | D     | 4.79E-08           | 1.17E-07 |              | U     |
| 08-NOV-16     | Zn-65              | -1.24E-08 +/- 1.17E-07                 | uCi/g  | D     | 1.17E-07           | 1.93E-07 |              | U     |
| 08-NOV-16     | Zr-95              | 4.57E-08 +/- 7.09E-08                  | uCi/g  | D     | 7.39E-08           | 1.58E-07 |              | U     |

**Notes:**

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2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 23 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515015     | PA1-D1-04          |  | Solid  |       | 25-OCT-16 10:40:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Ac-228             | 1.15E-06 +/- 4.10E-07  | uCi/g  | D     | 4.14E-07           | 2.56E-07        |                       |       |
| 08-NOV-16     | Am-241             | -6.96E-08 +/- 1.64E-07   | uCi/g  | D     | 1.67E-07           | 2.62E-07        |                       | U     |
| 08-NOV-16     | Sb-124             | -1.60E-08 +/- 5.54E-08   | uCi/g  | D     | 5.58E-08           | 1.20E-07        |                       | U     |
| 08-NOV-16     | Sb-125             | -6.58E-08 +/- 1.02E-07   | uCi/g  | D     | 1.06E-07           | 1.74E-07        |                       | U     |
| 08-NOV-16     | Ba-133             | 7.32E-09 +/- 4.89E-08  | uCi/g  | D     | 4.90E-08           | 8.36E-08        |                       | U     |
| 08-NOV-16     | Ba-140             | 1.33E-07 +/- 2.89E-07  | uCi/g  | D     | 2.95E-07           | 5.66E-07        |                       | U     |
| 08-NOV-16     | Be-7               | -1.56E-07 +/- 3.14E-07   | uCi/g  | D     | 3.22E-07           | 5.48E-07        |                       | U     |
| 08-NOV-16     | Bi-212             | 8.70E-07 +/- 6.63E-07  | uCi/g  | D     | 7.71E-07           | 1.43E-06        |                       | U     |
| 08-NOV-16     | Bi-214             | 9.57E-07 +/- 2.19E-07  | uCi/g  | D     | 2.23E-07           | 1.75E-07        |                       |       |
| 08-NOV-16     | Ce-139             | -6.21E-09 +/- 3.04E-08   | uCi/g  | D     | 3.06E-08           | 5.72E-08        |                       | U     |
| 08-NOV-16     | Ce-141             | -1.12E-09 +/- 7.08E-08   | uCi/g  | D     | 7.08E-08           | 1.22E-07        |                       | U     |
| 08-NOV-16     | Ce-144             | 1.31E-09 +/- 2.33E-07  | uCi/g  | D     | 2.33E-07           | 4.03E-07        |                       | U     |
| 08-NOV-16     | Cs-134             | 3.41E-08 +/- 7.74E-08  | uCi/g  | D     | 7.89E-08           | 9.64E-08        |                       | U     |
| 08-NOV-16     | Cs-136             | -6.58E-08 +/- 1.35E-07   | uCi/g  | D     | 1.39E-07           | 2.05E-07        |                       | U     |
| 08-NOV-16     | Cs-137             | 5.62E-10 +/- 4.64E-08  | uCi/g  | D     | 4.64E-08           | 8.76E-08        | 1.00E-07              | U     |
| 08-NOV-16     | Cr-51              | -7.53E-09 +/- 4.10E-07   | uCi/g  | D     | 4.10E-07           | 7.64E-07        |                       | U     |
| 08-NOV-16     | Co-56              | -1.82E-08 +/- 4.16E-08   | uCi/g  | D     | 4.24E-08           | 7.65E-08        |                       | U     |
| 08-NOV-16     | Co-57              | -4.90E-09 +/- 2.65E-08   | uCi/g  | D     | 2.66E-08           | 5.06E-08        |                       | U     |
| 08-NOV-16     | Co-58              | -1.77E-08 +/- 3.82E-08   | uCi/g  | D     | 3.91E-08           | 7.06E-08        |                       | U     |
| 08-NOV-16     | Co-60              | 1.92E-08 +/- 3.78E-08  | uCi/g  | D     | 3.88E-08           | 8.28E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | -4.74E-08 +/- 1.17E-07   | uCi/g  | D     | 1.19E-07           | 1.85E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | -8.42E-08 +/- 1.10E-07   | uCi/g  | D     | 1.16E-07           | 1.81E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | 1.73E-07 +/- 2.05E-07  | uCi/g  | D     | 2.20E-07           | 2.26E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | 2.01E-08 +/- 3.86E-08  | uCi/g  | D     | 3.97E-08           | 7.55E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | 3.62E-08 +/- 9.76E-08  | uCi/g  | D     | 9.90E-08           | 1.99E-07        |                       | U     |
| 08-NOV-16     | Pb-210             | 1.44E-06 +/- 3.93E-06  | uCi/g  | D     | 3.98E-06           | 7.40E-06        |                       | U     |
| 08-NOV-16     | Pb-212             | 9.82E-07 +/- 1.28E-07  | uCi/g  | D     | 1.38E-07           | 1.12E-07        |                       |       |
| 08-NOV-16     | Pb-214             | 1.16E-06 +/- 2.29E-07  | uCi/g  | D     | 2.34E-07           | 1.38E-07        |                       |       |
| 08-NOV-16     | Mn-54              | 2.31E-08 +/- 4.35E-08  | uCi/g  | D     | 4.47E-08           | 8.92E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | -1.02E-08 +/- 3.84E-08   | uCi/g  | D     | 3.87E-08           | 7.05E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | 3.77E-07 +/- 5.61E-07  | uCi/g  | D     | 5.86E-07           | 1.14E-06        |                       | U     |
| 08-NOV-16     | Np-239             | 3.63E-08 +/- 2.80E-07  | uCi/g  | D     | 2.80E-07           | 5.46E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | 2.57E-09 +/- 3.69E-08  | uCi/g  | D     | 3.69E-08           | 7.27E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | 2.99E-08 +/- 3.99E-08  | uCi/g  | D     | 4.21E-08           | 8.10E-08        |                       | U     |
| 08-NOV-16     | K-40               | 1.57E-05 +/- 1.69E-06  | uCi/g  | D     | 1.88E-06           | 6.84E-07        |                       |       |
| 08-NOV-16     | Pm-144             | 1.97E-09 +/- 4.26E-08  | uCi/g  | D     | 4.26E-08           | 7.96E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | 6.75E-08 +/- 5.12E-08  | uCi/g  | D     | 5.98E-08           | 1.07E-07        |                       | U     |

**Notes:**

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2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 24 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date |           |       |
|---------------|--------------------|--|--------|-------|--------------------|--------------|-----------|-------|
| 409515015     | PA1-D1-04          |  | Solid  |       | 25-OCT-16 10:40:00 | 01-NOV-16    |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured     | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC          | MDC (LLD) |       |
| 08-NOV-16     | Ra-228             | 1.15E-06 +/- 4.10E-07                  | uCi/g  | D     | 4.14E-07           | 2.56E-07     |           |       |
| 08-NOV-16     | Ru-106             | -1.90E-07 +/- 3.06E-07                 | uCi/g  | D     | 3.18E-07           | 5.11E-07     |           | U     |
| 08-NOV-16     | Ag-110m            | 3.19E-08 +/- 5.05E-08                  | uCi/g  | D     | 5.25E-08           | 1.09E-07     |           | U     |
| 08-NOV-16     | Na-22              | -3.06E-08 +/- 3.85E-08                 | uCi/g  | D     | 4.09E-08           | 6.28E-08     |           | U     |
| 08-NOV-16     | Tl-208             | 3.49E-07 +/- 1.10E-07                  | uCi/g  | D     | 1.11E-07           | 6.87E-08     |           |       |
| 08-NOV-16     | Th-234             | 2.41E-06 +/- 2.31E-06                  | uCi/g  | D     | 2.37E-06           | 2.25E-06     |           |       |
| 08-NOV-16     | Sn-113             | -4.87E-08 +/- 6.05E-08                 | uCi/g  | D     | 6.44E-08           | 8.84E-08     |           | U     |
| 08-NOV-16     | U-235              | 2.89E-07 +/- 3.82E-07                  | uCi/g  | D     | 3.82E-07           | 3.71E-07     |           | U     |
| 08-NOV-16     | U-238              | 2.41E-06 +/- 2.31E-06                  | uCi/g  | D     | 2.37E-06           | 2.25E-06     |           |       |
| 08-NOV-16     | Y-88               | 2.78E-08 +/- 3.67E-08                  | uCi/g  | D     | 3.88E-08           | 9.46E-08     |           | U     |
| 08-NOV-16     | Zn-65              | -5.66E-08 +/- 1.02E-07                 | uCi/g  | D     | 1.05E-07           | 1.50E-07     |           | U     |
| 08-NOV-16     | Zr-95              | -4.17E-08 +/- 8.90E-08                 | uCi/g  | D     | 9.10E-08           | 1.63E-07     |           | U     |
| 25-NOV-16     | Am-241             | -9.17E-08 +/- 8.28E-07                 | uCi/g  | W     | 8.30E-07           | 2.01E-06     | 1.00E-04  | U     |
| 25-NOV-16     | Cm-242             | -3.87E-08 +/- 6.42E-07                 | uCi/g  | W     | 6.45E-07           | 1.36E-06     | 2.00E-02  | U     |
| 25-NOV-16     | Cm-243/244         | 5.67E-07 +/- 1.40E-06                  | uCi/g  | W     | 1.41E-06           | 2.56E-06     | 1.00E-04  | U     |
| 25-NOV-16     | Cm-245/246         | 2.89E-07 +/- 9.16E-07                  | uCi/g  | W     | 9.18E-07           | 1.38E-06     | 1.00E-04  | U     |
| 25-NOV-16     | Ni-59              | -4.92E-05 +/- 5.24E-04                 | uCi/g  | W     | 5.24E-04           | 1.09E-03     | 2.20E-01  | U     |
| 29-NOV-16     | I-129              | -7.98E-07 +/- 1.89E-06                 | uCi/g  | W     | 1.92E-06           | 3.45E-06     | 8.00E-05  | U     |
| 28-NOV-16     | Pu-241             | 2.90E-05 +/- 8.87E-05                  | uCi/g  | W     | 8.90E-05           | 1.53E-04     | 3.50E-03  | U     |
| 26-NOV-16     | Fe-55              | -1.84E-04 +/- 1.17E-03                 | uCi/g  | W     | 1.17E-03           | 1.69E-03     | 7.00E-01  | U     |
| 26-NOV-16     | Tc-99              | 2.55E-05 +/- 6.74E-05                  | uCi/g  | W     | 6.75E-05           | 1.16E-04     | 3.00E-03  | U     |
| 23-NOV-16     | H-3                | 4.47E-05 +/- 9.61E-05                  | uCi/g  | W     | 9.66E-05           | 1.68E-04     | 4.00E-02  | U     |
| 24-NOV-16     | C-14               | -3.46E-07 +/- 1.43E-05                 | uCi/g  | W     | 1.43E-05           | 2.52E-05     | 8.00E-03  | U     |
| 23-NOV-16     | Pu-238             | 5.43E-07 +/- 9.04E-07                  | uCi/g  | W     | 9.09E-07           | 1.42E-06     | 1.00E-04  | U     |
| 23-NOV-16     | Pu-239/240         | 9.73E-07 +/- 1.06E-06                  | uCi/g  | W     | 1.08E-06           | 1.38E-06     | 1.00E-04  | U     |
| 23-NOV-16     | Pu-242             | 4.05E-08 +/- 7.13E-07                  | uCi/g  | W     | 7.14E-07           | 1.55E-06     | 1.00E-04  | U     |
| 25-NOV-16     | Np-237             | 8.17E-08 +/- 5.78E-07                  | uCi/g  | W     | 5.79E-07           | 1.16E-06     | 1.00E-04  | U     |
| 29-NOV-16     | Sr-89              | -4.13E+00 +/- 7.15E+01                 | pCi/g  | W     | 7.15E+01           | 1.28E+02     | 7.00E-01  | U     |
| 29-NOV-16     | Sr-90              | -2.43E+01 +/- 2.06E+01                 | pCi/g  | W     | 2.06E+01           | 3.65E+01     | 4.00E-05  | U     |
| 29-NOV-16     | Ni-63              | -5.21E-04 +/- 3.82E-04                 | uCi/g  | D     | 3.82E-04           | 7.12E-04     | 3.50E-03  | U     |

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- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 25 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date |           |       |
|---------------|--------------------|--|--------|-------|--------------------|--------------|-----------|-------|
| 409515016     | PA1-D3-05          |  | Solid  |       | 25-OCT-16 11:00:00 | 01-NOV-16    |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured     | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC          | MDC (LLD) |       |
| 08-NOV-16     | Ac-228             | 1.29E-06 +/- 3.08E-07                  | uCi/g  | D     | 3.15E-07           | 1.52E-07     |           |       |
| 08-NOV-16     | Am-241             | 3.18E-08 +/- 9.75E-08                  | uCi/g  | D     | 9.86E-08           | 1.83E-07     |           | U     |
| 08-NOV-16     | Sb-124             | -4.73E-08 +/- 7.99E-08                 | uCi/g  | D     | 8.28E-08           | 1.47E-07     |           | U     |
| 08-NOV-16     | Sb-125             | 6.52E-08 +/- 8.03E-08                  | uCi/g  | D     | 8.55E-08           | 1.58E-07     |           | U     |
| 08-NOV-16     | Ba-133             | -1.01E-08 +/- 4.40E-08                 | uCi/g  | D     | 4.43E-08           | 7.39E-08     |           | U     |
| 08-NOV-16     | Ba-140             | 5.02E-08 +/- 2.34E-07                  | uCi/g  | D     | 2.35E-07           | 4.59E-07     |           | U     |
| 08-NOV-16     | Be-7               | 6.66E-08 +/- 2.92E-07                  | uCi/g  | D     | 2.94E-07           | 5.73E-07     |           | U     |
| 08-NOV-16     | Bi-212             | 0.00E+00 +/- 9.10E-07                  | uCi/g  | D     | 1.35E-06           | 1.46E-06     |           | UI    |
| 08-NOV-16     | Bi-214             | 8.79E-07 +/- 1.76E-07                  | uCi/g  | D     | 1.80E-07           | 1.12E-07     |           |       |
| 08-NOV-16     | Ce-139             | -1.28E-08 +/- 2.70E-08                 | uCi/g  | D     | 2.77E-08           | 4.52E-08     |           | U     |
| 08-NOV-16     | Ce-141             | 1.60E-08 +/- 9.36E-08                  | uCi/g  | D     | 9.36E-08           | 9.15E-08     |           | U     |
| 08-NOV-16     | Ce-144             | -1.10E-08 +/- 2.02E-07                 | uCi/g  | D     | 2.02E-07           | 3.53E-07     |           | U     |
| 08-NOV-16     | Cs-134             | 8.76E-08 +/- 5.99E-08                  | uCi/g  | D     | 7.18E-08           | 9.59E-08     |           | U     |
| 08-NOV-16     | Cs-136             | 4.25E-08 +/- 1.03E-07                  | uCi/g  | D     | 1.05E-07           | 2.15E-07     |           | U     |
| 08-NOV-16     | Cs-137             | -2.07E-08 +/- 3.55E-08                 | uCi/g  | D     | 3.67E-08           | 6.10E-08     | 1.00E-07  | U     |
| 08-NOV-16     | Cr-51              | -2.73E-08 +/- 3.20E-07                 | uCi/g  | D     | 3.20E-07           | 5.48E-07     |           | U     |
| 08-NOV-16     | Co-56              | -2.12E-08 +/- 3.80E-08                 | uCi/g  | D     | 3.92E-08           | 6.43E-08     |           | U     |
| 08-NOV-16     | Co-57              | 3.75E-08 +/- 3.03E-08                  | uCi/g  | D     | 3.04E-08           | 3.79E-08     |           | U     |
| 08-NOV-16     | Co-58              | 3.13E-08 +/- 3.60E-08                  | uCi/g  | D     | 3.87E-08           | 7.33E-08     |           | U     |
| 08-NOV-16     | Co-60              | 8.09E-09 +/- 3.37E-08                  | uCi/g  | D     | 3.39E-08           | 7.15E-08     |           | U     |
| 08-NOV-16     | Eu-152             | 4.19E-08 +/- 8.72E-08                  | uCi/g  | D     | 8.92E-08           | 1.75E-07     |           | U     |
| 08-NOV-16     | Eu-154             | 8.69E-09 +/- 9.84E-08                  | uCi/g  | D     | 9.85E-08           | 2.02E-07     |           | U     |
| 08-NOV-16     | Eu-155             | 6.94E-08 +/- 1.04E-07                  | uCi/g  | D     | 1.09E-07           | 1.94E-07     |           | U     |
| 08-NOV-16     | Ir-192             | 1.98E-08 +/- 2.70E-08                  | uCi/g  | D     | 2.85E-08           | 5.64E-08     |           | U     |
| 08-NOV-16     | Fe-59              | -2.84E-08 +/- 6.99E-08                 | uCi/g  | D     | 7.11E-08           | 1.32E-07     |           | U     |
| 08-NOV-16     | Pb-210             | 1.62E-06 +/- 1.90E-06                  | uCi/g  | D     | 2.04E-06           | 3.74E-06     |           | U     |
| 08-NOV-16     | Pb-212             | 1.32E-06 +/- 1.31E-07                  | uCi/g  | D     | 1.48E-07           | 7.73E-08     |           |       |
| 08-NOV-16     | Pb-214             | 9.12E-07 +/- 2.20E-07                  | uCi/g  | D     | 2.23E-07           | 1.13E-07     |           |       |
| 08-NOV-16     | Mn-54              | 2.09E-08 +/- 3.23E-08                  | uCi/g  | D     | 3.37E-08           | 6.74E-08     |           | U     |
| 08-NOV-16     | Hg-203             | 4.85E-08 +/- 7.10E-08                  | uCi/g  | D     | 7.10E-08           | 5.32E-08     |           | U     |
| 08-NOV-16     | Nd-147             | 1.93E-07 +/- 4.67E-07                  | uCi/g  | D     | 4.75E-07           | 9.44E-07     |           | U     |
| 08-NOV-16     | Np-239             | -5.43E-08 +/- 2.81E-07                 | uCi/g  | D     | 2.82E-07           | 4.50E-07     |           | U     |
| 08-NOV-16     | Nb-94              | -1.05E-09 +/- 3.46E-08                 | uCi/g  | D     | 3.46E-08           | 6.41E-08     |           | U     |
| 08-NOV-16     | Nb-95              | -2.63E-08 +/- 4.30E-08                 | uCi/g  | D     | 4.46E-08           | 6.19E-08     |           | U     |
| 08-NOV-16     | K-40               | 1.57E-05 +/- 1.59E-06                  | uCi/g  | D     | 1.79E-06           | 5.48E-07     |           |       |
| 08-NOV-16     | Pm-144             | -8.87E-09 +/- 2.88E-08                 | uCi/g  | D     | 2.91E-08           | 5.21E-08     |           | U     |
| 08-NOV-16     | Pm-146             | 1.74E-08 +/- 4.21E-08                  | uCi/g  | D     | 4.29E-08           | 8.33E-08     |           | U     |

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 26 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    |          | Receipt Date |       |
|---------------|--------------------|--|--------|-------|--------------------|----------|--------------|-------|
| 409515016     | PA1-D3-05          |  | Solid  |       | 25-OCT-16 11:00:00 |          | 01-NOV-16    |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured | Required     | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC      | MDC (LLD)    |       |
| 08-NOV-16     | Ra-228             | 1.29E-06 +/- 3.08E-07                  | uCi/g  | D     | 3.15E-07           | 1.52E-07 |              |       |
| 08-NOV-16     | Ru-106             | -1.92E-07 +/- 2.91E-07                 | uCi/g  | D     | 3.04E-07           | 4.96E-07 |              | U     |
| 08-NOV-16     | Ag-110m            | 6.85E-09 +/- 3.88E-08                  | uCi/g  | D     | 3.89E-08           | 7.76E-08 |              | U     |
| 08-NOV-16     | Na-22              | 2.12E-09 +/- 3.45E-08                  | uCi/g  | D     | 3.45E-08           | 7.05E-08 |              | U     |
| 08-NOV-16     | Tl-208             | 3.15E-07 +/- 7.93E-08                  | uCi/g  | D     | 8.04E-08           | 6.58E-08 |              |       |
| 08-NOV-16     | Th-234             | 1.58E-06 +/- 1.54E-06                  | uCi/g  | D     | 1.58E-06           | 1.61E-06 |              | U     |
| 08-NOV-16     | Sn-113             | 1.22E-08 +/- 4.16E-08                  | uCi/g  | D     | 4.20E-08           | 8.17E-08 |              | U     |
| 08-NOV-16     | U-235              | 1.38E-07 +/- 2.93E-07                  | uCi/g  | D     | 2.93E-07           | 3.45E-07 |              | U     |
| 08-NOV-16     | U-238              | 1.58E-06 +/- 1.54E-06                  | uCi/g  | D     | 1.58E-06           | 1.61E-06 |              | U     |
| 08-NOV-16     | Y-88               | -6.17E-10 +/- 2.46E-08                 | uCi/g  | D     | 2.46E-08           | 5.65E-08 |              | U     |
| 08-NOV-16     | Zn-65              | -5.22E-08 +/- 9.13E-08                 | uCi/g  | D     | 9.43E-08           | 1.39E-07 |              | U     |
| 08-NOV-16     | Zr-95              | 4.39E-08 +/- 9.54E-08                  | uCi/g  | D     | 9.75E-08           | 1.41E-07 |              | U     |
| 409515017     | PA1-S-06           |  | Solid  |       | 25-OCT-16 13:35:00 |          | 01-NOV-16    |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured | Required     | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC      | MDC (LLD)    |       |
| 08-NOV-16     | Ac-228             | 0.00E+00 +/- 2.12E-07                  | uCi/g  | D     | 2.75E-07           | 3.33E-07 |              | UI    |
| 08-NOV-16     | Am-241             | -3.60E-08 +/- 6.87E-08                 | uCi/g  | D     | 7.07E-08           | 1.30E-07 |              | U     |
| 08-NOV-16     | Sb-124             | 8.26E-09 +/- 5.91E-08                  | uCi/g  | D     | 5.92E-08           | 1.30E-07 |              | U     |
| 08-NOV-16     | Sb-125             | 3.63E-09 +/- 6.64E-08                  | uCi/g  | D     | 6.64E-08           | 1.32E-07 |              | U     |
| 08-NOV-16     | Ba-133             | -1.49E-08 +/- 3.17E-08                 | uCi/g  | D     | 3.24E-08           | 5.32E-08 |              | U     |
| 08-NOV-16     | Ba-140             | -9.72E-09 +/- 1.73E-07                 | uCi/g  | D     | 1.73E-07           | 3.38E-07 |              | U     |
| 08-NOV-16     | Be-7               | 1.14E-06 +/- 7.02E-07                  | uCi/g  | D     | 7.03E-07           | 4.00E-07 |              |       |
| 08-NOV-16     | Bi-212             | 0.00E+00 +/- 4.92E-07                  | uCi/g  | D     | 6.69E-07           | 9.08E-07 |              | UI    |
| 08-NOV-16     | Bi-214             | 1.11E-06 +/- 1.91E-07                  | uCi/g  | D     | 1.96E-07           | 1.02E-07 |              |       |
| 08-NOV-16     | Ce-139             | -7.04E-09 +/- 2.19E-08                 | uCi/g  | D     | 2.22E-08           | 3.92E-08 |              | U     |
| 08-NOV-16     | Ce-141             | 2.00E-08 +/- 1.36E-07                  | uCi/g  | D     | 1.36E-07           | 7.93E-08 |              | U     |
| 08-NOV-16     | Ce-144             | -1.69E-08 +/- 1.31E-07                 | uCi/g  | D     | 1.31E-07           | 2.44E-07 |              | U     |
| 08-NOV-16     | Cs-134             | -5.59E-09 +/- 2.66E-08                 | uCi/g  | D     | 2.67E-08           | 4.97E-08 |              | U     |
| 08-NOV-16     | Cs-136             | 7.74E-08 +/- 6.62E-08                  | uCi/g  | D     | 7.51E-08           | 1.47E-07 |              | U     |
| 08-NOV-16     | Cs-137             | 2.57E-08 +/- 2.60E-08                  | uCi/g  | D     | 2.85E-08           | 5.48E-08 | 1.00E-07     | U     |
| 08-NOV-16     | Cr-51              | -1.05E-07 +/- 2.43E-07                 | uCi/g  | D     | 2.48E-07           | 4.65E-07 |              | U     |
| 08-NOV-16     | Co-56              | 5.71E-10 +/- 2.71E-08                  | uCi/g  | D     | 2.71E-08           | 5.24E-08 |              | U     |
| 08-NOV-16     | Co-57              | 1.48E-08 +/- 1.53E-08                  | uCi/g  | D     | 1.67E-08           | 3.17E-08 |              | U     |

**Notes:**

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2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 27 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date |                 |
|---------------|--------------------|--|--------|-------|--------------------|--------------|-----------------|
| 409515017     | PA1-S-06           |  | Solid  |       | 25-OCT-16 13:35:00 | 01-NOV-16    |                 |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured     | Required        |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC          | MDC (LLD) Flags |
| 08-NOV-16     | Co-58              | 1.32E-08 +/- 2.65E-08                  | uCi/g  | D     | 2.72E-08           | 5.57E-08     | U               |
| 08-NOV-16     | Co-60              | -1.22E-08 +/- 2.49E-08                 | uCi/g  | D     | 2.55E-08           | 4.61E-08     | U               |
| 08-NOV-16     | Eu-152             | 2.27E-08 +/- 6.15E-08                  | uCi/g  | D     | 6.24E-08           | 1.28E-07     | U               |
| 08-NOV-16     | Eu-154             | 2.06E-08 +/- 4.90E-08                  | uCi/g  | D     | 4.99E-08           | 1.11E-07     | U               |
| 08-NOV-16     | Eu-155             | 1.90E-08 +/- 6.77E-08                  | uCi/g  | D     | 6.82E-08           | 1.32E-07     | U               |
| 08-NOV-16     | Ir-192             | -1.14E-08 +/- 2.38E-08                 | uCi/g  | D     | 2.44E-08           | 4.53E-08     | U               |
| 08-NOV-16     | Fe-59              | -4.09E-08 +/- 6.04E-08                 | uCi/g  | D     | 6.32E-08           | 8.98E-08     | U               |
| 08-NOV-16     | Pb-210             | 1.71E-06 +/- 2.61E-06                  | uCi/g  | D     | 2.62E-06           | 1.96E-06     | U               |
| 08-NOV-16     | Pb-212             | 4.02E-07 +/- 8.01E-08                  | uCi/g  | D     | 8.28E-08           | 7.63E-08     |                 |
| 08-NOV-16     | Pb-214             | 1.32E-06 +/- 1.90E-07                  | uCi/g  | D     | 1.98E-07           | 9.99E-08     |                 |
| 08-NOV-16     | Mn-54              | 1.28E-08 +/- 2.73E-08                  | uCi/g  | D     | 2.79E-08           | 5.57E-08     | U               |
| 08-NOV-16     | Hg-203             | 3.47E-09 +/- 2.37E-08                  | uCi/g  | D     | 2.37E-08           | 4.41E-08     | U               |
| 08-NOV-16     | Nd-147             | 1.55E-07 +/- 3.10E-07                  | uCi/g  | D     | 3.18E-07           | 6.70E-07     | U               |
| 08-NOV-16     | Np-239             | 4.94E-08 +/- 1.64E-07                  | uCi/g  | D     | 1.66E-07           | 3.21E-07     | U               |
| 08-NOV-16     | Nb-94              | 1.11E-08 +/- 2.47E-08                  | uCi/g  | D     | 2.52E-08           | 5.04E-08     | U               |
| 08-NOV-16     | Nb-95              | 2.26E-08 +/- 2.72E-08                  | uCi/g  | D     | 2.90E-08           | 5.93E-08     | U               |
| 08-NOV-16     | K-40               | 5.97E-06 +/- 9.88E-07                  | uCi/g  | D     | 1.04E-06           | 4.66E-07     |                 |
| 08-NOV-16     | Pm-144             | -1.08E-08 +/- 2.66E-08                 | uCi/g  | D     | 2.70E-08           | 4.79E-08     | U               |
| 08-NOV-16     | Pm-146             | 1.42E-08 +/- 2.94E-08                  | uCi/g  | D     | 3.01E-08           | 6.13E-08     | U               |
| 08-NOV-16     | Ra-228             | 0.00E+00 +/- 2.12E-07                  | uCi/g  | D     | 2.75E-07           | 3.33E-07     | UI              |
| 08-NOV-16     | Ru-106             | 2.01E-08 +/- 1.94E-07                  | uCi/g  | D     | 1.94E-07           | 3.91E-07     | U               |
| 08-NOV-16     | Ag-110m            | -3.18E-08 +/- 4.24E-08                 | uCi/g  | D     | 4.47E-08           | 6.97E-08     | U               |
| 08-NOV-16     | Na-22              | 7.90E-09 +/- 1.75E-08                  | uCi/g  | D     | 1.79E-08           | 3.98E-08     | U               |
| 08-NOV-16     | Tl-208             | 1.37E-07 +/- 6.10E-08                  | uCi/g  | D     | 6.13E-08           | 4.33E-08     |                 |
| 08-NOV-16     | Th-234             | 1.02E-06 +/- 1.40E-06                  | uCi/g  | D     | 1.42E-06           | 1.24E-06     | U               |
| 08-NOV-16     | Sn-113             | -3.23E-09 +/- 3.15E-08                 | uCi/g  | D     | 3.15E-08           | 6.15E-08     | U               |
| 08-NOV-16     | U-235              | 2.73E-07 +/- 4.37E-07                  | uCi/g  | D     | 4.37E-07           | 3.08E-07     | U               |
| 08-NOV-16     | U-238              | 1.02E-06 +/- 1.40E-06                  | uCi/g  | D     | 1.42E-06           | 1.24E-06     | U               |
| 08-NOV-16     | Y-88               | 3.47E-09 +/- 2.12E-08                  | uCi/g  | D     | 2.13E-08           | 5.06E-08     | U               |
| 08-NOV-16     | Zn-65              | -2.24E-08 +/- 6.75E-08                 | uCi/g  | D     | 6.83E-08           | 1.11E-07     | U               |
| 08-NOV-16     | Zr-95              | 3.69E-08 +/- 5.37E-08                  | uCi/g  | D     | 5.62E-08           | 1.13E-07     | U               |

**Notes:**

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2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 28 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515018     | PA3-S-03           |  | Solid  |       | 25-OCT-16 14:15:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Ac-228             | 4.11E-07 +/- 2.06E-07  | uCi/g  | D     | 2.13E-07           | 2.30E-07        |                       |       |
| 08-NOV-16     | Am-241             | -4.58E-08 +/- 1.34E-07   | uCi/g  | D     | 1.36E-07           | 2.63E-07        |                       | U     |
| 08-NOV-16     | Sb-124             | 2.48E-08 +/- 8.04E-08  | uCi/g  | D     | 8.12E-08           | 1.86E-07        |                       | U     |
| 08-NOV-16     | Sb-125             | 2.18E-09 +/- 6.90E-08  | uCi/g  | D     | 6.90E-08           | 1.40E-07        |                       | U     |
| 08-NOV-16     | Ba-133             | -1.16E-08 +/- 3.25E-08   | uCi/g  | D     | 3.30E-08           | 5.62E-08        |                       | U     |
| 08-NOV-16     | Ba-140             | -5.60E-08 +/- 2.00E-07   | uCi/g  | D     | 2.02E-07           | 3.40E-07        |                       | U     |
| 08-NOV-16     | Be-7               | 4.83E-06 +/- 8.25E-07  | uCi/g  | D     | 9.24E-07           | 6.25E-07        |                       |       |
| 08-NOV-16     | Bi-212             | 1.82E-07 +/- 4.68E-07  | uCi/g  | D     | 4.75E-07           | 9.60E-07        |                       | U     |
| 08-NOV-16     | Bi-214             | 8.17E-07 +/- 2.16E-07  | uCi/g  | D     | 2.27E-07           | 1.11E-07        |                       |       |
| 08-NOV-16     | Ce-139             | -1.12E-08 +/- 2.50E-08   | uCi/g  | D     | 2.56E-08           | 4.50E-08        |                       | U     |
| 08-NOV-16     | Ce-141             | -2.71E-08 +/- 4.85E-08   | uCi/g  | D     | 5.00E-08           | 8.76E-08        |                       | U     |
| 08-NOV-16     | Ce-144             | 9.34E-08 +/- 1.60E-07  | uCi/g  | D     | 1.66E-07           | 3.22E-07        |                       | U     |
| 08-NOV-16     | Cs-134             | 4.26E-08 +/- 3.41E-08  | uCi/g  | D     | 3.93E-08           | 5.41E-08        |                       | U     |
| 08-NOV-16     | Cs-136             | 1.13E-08 +/- 7.86E-08  | uCi/g  | D     | 7.88E-08           | 1.68E-07        |                       | U     |
| 08-NOV-16     | Cs-137             | 1.08E-08 +/- 3.13E-08  | uCi/g  | D     | 3.17E-08           | 6.48E-08        | 1.00E-07              | U     |
| 08-NOV-16     | Cr-51              | 1.76E-07 +/- 2.64E-07  | uCi/g  | D     | 2.77E-07           | 5.79E-07        |                       | U     |
| 08-NOV-16     | Co-56              | -4.05E-09 +/- 2.82E-08   | uCi/g  | D     | 2.82E-08           | 5.38E-08        |                       | U     |
| 08-NOV-16     | Co-57              | 1.67E-09 +/- 1.79E-08  | uCi/g  | D     | 1.79E-08           | 3.51E-08        |                       | U     |
| 08-NOV-16     | Co-58              | -1.57E-08 +/- 3.10E-08   | uCi/g  | D     | 3.19E-08           | 5.46E-08        |                       | U     |
| 08-NOV-16     | Co-60              | 6.37E-09 +/- 3.33E-08  | uCi/g  | D     | 3.34E-08           | 7.35E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | -1.36E-08 +/- 8.34E-08   | uCi/g  | D     | 8.36E-08           | 1.64E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | 5.60E-09 +/- 9.96E-08  | uCi/g  | D     | 9.97E-08           | 2.07E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | -1.38E-08 +/- 7.53E-08   | uCi/g  | D     | 7.56E-08           | 1.45E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | -9.41E-09 +/- 2.54E-08   | uCi/g  | D     | 2.57E-08           | 4.96E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | 1.20E-07 +/- 1.13E-07  | uCi/g  | D     | 1.27E-07           | 1.64E-07        |                       | U     |
| 08-NOV-16     | Pb-210             | 1.59E-06 +/- 3.52E-06  | uCi/g  | D     | 3.60E-06           | 7.48E-06        |                       | U     |
| 08-NOV-16     | Pb-212             | 2.55E-07 +/- 1.02E-07  | uCi/g  | D     | 1.05E-07           | 8.78E-08        |                       |       |
| 08-NOV-16     | Pb-214             | 1.07E-06 +/- 2.06E-07  | uCi/g  | D     | 2.27E-07           | 1.21E-07        |                       |       |
| 08-NOV-16     | Mn-54              | 1.78E-08 +/- 2.84E-08  | uCi/g  | D     | 2.96E-08           | 5.93E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | 9.75E-09 +/- 3.22E-08  | uCi/g  | D     | 3.25E-08           | 6.13E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | 3.84E-08 +/- 3.92E-07  | uCi/g  | D     | 3.92E-07           | 8.03E-07        |                       | U     |
| 08-NOV-16     | Np-239             | 9.77E-08 +/- 1.98E-07  | uCi/g  | D     | 2.03E-07           | 4.01E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | 2.91E-08 +/- 3.07E-08  | uCi/g  | D     | 3.35E-08           | 6.72E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | 0.00E+00 +/- 6.64E-08  | uCi/g  | D     | 6.71E-08           | 7.27E-08        |                       | UI    |
| 08-NOV-16     | K-40               | 7.88E-06 +/- 1.26E-06  | uCi/g  | D     | 1.43E-06           | 5.18E-07        |                       |       |
| 08-NOV-16     | Pm-144             | 1.29E-08 +/- 2.62E-08  | uCi/g  | D     | 2.68E-08           | 5.62E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | 7.22E-09 +/- 3.38E-08  | uCi/g  | D     | 3.40E-08           | 6.95E-08        |                       | U     |

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 29 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix | Collection Date    | Receipt Date |          |           |       |
|---------------|--------------------|--|--------|--------------------|--------------|----------|-----------|-------|
| 409515018     | PA3-S-03           |  | Solid  | 25-OCT-16 14:15:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              | MDC      | MDC (LLD) |       |
| 08-NOV-16     | Ra-228             | 4.11E-07 +/- 2.06E-07                  | uCi/g  | D                  | 2.13E-07     | 2.30E-07 |           |       |
| 08-NOV-16     | Ru-106             | -1.02E-07 +/- 2.70E-07                 | uCi/g  | D                  | 2.74E-07     | 4.98E-07 |           | U     |
| 08-NOV-16     | Ag-110m            | 5.00E-09 +/- 4.33E-08                  | uCi/g  | D                  | 4.34E-08     | 8.60E-08 |           | U     |
| 08-NOV-16     | Na-22              | 2.88E-09 +/- 3.54E-08                  | uCi/g  | D                  | 3.54E-08     | 7.39E-08 |           | U     |
| 08-NOV-16     | Tl-208             | 1.12E-07 +/- 5.43E-08                  | uCi/g  | D                  | 5.52E-08     | 5.17E-08 |           |       |
| 08-NOV-16     | Th-234             | -4.51E-07 +/- 1.23E-06                 | uCi/g  | D                  | 1.25E-06     | 2.38E-06 |           | U     |
| 08-NOV-16     | Sn-113             | -1.03E-08 +/- 3.56E-08                 | uCi/g  | D                  | 3.59E-08     | 6.91E-08 |           | U     |
| 08-NOV-16     | U-235              | 2.73E-08 +/- 1.56E-07                  | uCi/g  | D                  | 1.56E-07     | 3.02E-07 |           | U     |
| 08-NOV-16     | U-238              | -4.51E-07 +/- 1.23E-06                 | uCi/g  | D                  | 1.25E-06     | 2.38E-06 |           | U     |
| 08-NOV-16     | Y-88               | 2.69E-08 +/- 2.64E-08                  | uCi/g  | D                  | 2.91E-08     | 8.09E-08 |           | U     |
| 08-NOV-16     | Zn-65              | -2.74E-08 +/- 9.23E-08                 | uCi/g  | D                  | 9.32E-08     | 1.52E-07 |           | U     |
| 08-NOV-16     | Zr-95              | -3.82E-09 +/- 5.53E-08                 | uCi/g  | D                  | 5.53E-08     | 1.08E-07 |           | U     |
| 409515019     | PA3-S-04           |  | Solid  | 25-OCT-16 14:30:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              | MDC      | MDC (LLD) |       |
| 08-NOV-16     | Ac-228             | 6.33E-07 +/- 3.03E-07                  | uCi/g  | D                  | 3.05E-07     | 2.47E-07 |           |       |
| 08-NOV-16     | Am-241             | -1.34E-08 +/- 1.16E-07                 | uCi/g  | D                  | 1.16E-07     | 2.05E-07 |           | U     |
| 08-NOV-16     | Sb-124             | -3.01E-08 +/- 4.17E-08                 | uCi/g  | D                  | 4.39E-08     | 3.70E-08 |           | U     |
| 08-NOV-16     | Sb-125             | -3.82E-08 +/- 7.80E-08                 | uCi/g  | D                  | 7.99E-08     | 1.42E-07 |           | U     |
| 08-NOV-16     | Ba-133             | -2.63E-09 +/- 3.14E-08                 | uCi/g  | D                  | 3.14E-08     | 5.57E-08 |           | U     |
| 08-NOV-16     | Ba-140             | 4.82E-08 +/- 2.03E-07                  | uCi/g  | D                  | 2.04E-07     | 4.12E-07 |           | U     |
| 08-NOV-16     | Be-7               | 3.03E-06 +/- 7.44E-07                  | uCi/g  | D                  | 7.54E-07     | 5.16E-07 |           |       |
| 08-NOV-16     | Bi-212             | 0.00E+00 +/- 5.60E-07                  | uCi/g  | D                  | 7.55E-07     | 1.10E-06 |           | UI    |
| 08-NOV-16     | Bi-214             | 4.51E-07 +/- 1.59E-07                  | uCi/g  | D                  | 1.60E-07     | 1.32E-07 |           |       |
| 08-NOV-16     | Ce-139             | -3.71E-09 +/- 2.29E-08                 | uCi/g  | D                  | 2.29E-08     | 4.11E-08 |           | U     |
| 08-NOV-16     | Ce-141             | -2.16E-09 +/- 5.35E-08                 | uCi/g  | D                  | 5.35E-08     | 8.98E-08 |           | U     |
| 08-NOV-16     | Ce-144             | -4.21E-08 +/- 1.36E-07                 | uCi/g  | D                  | 1.37E-07     | 2.45E-07 |           | U     |
| 08-NOV-16     | Cs-134             | 1.17E-09 +/- 3.75E-08                  | uCi/g  | D                  | 3.75E-08     | 7.15E-08 |           | U     |
| 08-NOV-16     | Cs-136             | 3.37E-08 +/- 8.40E-08                  | uCi/g  | D                  | 8.54E-08     | 1.82E-07 |           | U     |
| 08-NOV-16     | Cs-137             | 9.80E-08 +/- 6.72E-08                  | uCi/g  | D                  | 6.73E-08     | 6.16E-08 | 1.00E-07  |       |
| 08-NOV-16     | Cr-51              | -8.27E-08 +/- 3.20E-07                 | uCi/g  | D                  | 3.22E-07     | 6.09E-07 |           | U     |
| 08-NOV-16     | Co-56              | -3.57E-09 +/- 2.85E-08                 | uCi/g  | D                  | 2.86E-08     | 5.83E-08 |           | U     |
| 08-NOV-16     | Co-57              | 2.02E-10 +/- 1.91E-08                  | uCi/g  | D                  | 1.91E-08     | 3.57E-08 |           | U     |

**Notes:**

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2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 30 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515019     | PA3-S-04           |  | Solid  |       | 25-OCT-16 14:30:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Co-58              | -1.97E-08 +/- 3.66E-08   | uCi/g  | D     | 3.76E-08           | 6.22E-08        |                       | U     |
| 08-NOV-16     | Co-60              | 1.21E-08 +/- 4.04E-08  | uCi/g  | D     | 4.08E-08           | 8.43E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | 1.26E-07 +/- 1.16E-07  | uCi/g  | D     | 1.30E-07           | 1.61E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | -1.05E-07 +/- 1.01E-07   | uCi/g  | D     | 1.12E-07           | 1.55E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | 1.13E-08 +/- 8.31E-08  | uCi/g  | D     | 8.33E-08           | 1.58E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | 7.96E-09 +/- 2.92E-08  | uCi/g  | D     | 2.94E-08           | 5.88E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | -1.46E-09 +/- 7.75E-08   | uCi/g  | D     | 7.75E-08           | 1.55E-07        |                       | U     |
| 08-NOV-16     | Pb-210             | 2.44E-06 +/- 5.37E-06  | uCi/g  | D     | 5.37E-06           | 3.78E-06        |                       | U     |
| 08-NOV-16     | Pb-212             | 5.07E-07 +/- 1.08E-07  | uCi/g  | D     | 1.11E-07           | 9.55E-08        |                       |       |
| 08-NOV-16     | Pb-214             | 6.97E-07 +/- 1.70E-07  | uCi/g  | D     | 1.73E-07           | 2.78E-07        |                       |       |
| 08-NOV-16     | Mn-54              | 1.51E-09 +/- 2.98E-08  | uCi/g  | D     | 2.98E-08           | 5.79E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | -5.22E-09 +/- 3.19E-08   | uCi/g  | D     | 3.20E-08           | 6.16E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | 2.37E-07 +/- 3.85E-07  | uCi/g  | D     | 4.00E-07           | 8.43E-07        |                       | U     |
| 08-NOV-16     | Np-239             | 1.46E-07 +/- 1.96E-07  | uCi/g  | D     | 2.07E-07           | 3.94E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | -7.00E-09 +/- 3.30E-08   | uCi/g  | D     | 3.31E-08           | 6.00E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | -3.26E-08 +/- 3.67E-08   | uCi/g  | D     | 3.96E-08           | 5.78E-08        |                       | U     |
| 08-NOV-16     | K-40               | 0.00E+00 +/- 1.34E-06  | uCi/g  | D     | 4.57E-06           | 3.27E-06        |                       | UI    |
| 08-NOV-16     | Pm-144             | 2.36E-08 +/- 3.44E-08  | uCi/g  | D     | 3.60E-08           | 6.06E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | -1.81E-09 +/- 3.14E-08   | uCi/g  | D     | 3.14E-08           | 6.18E-08        |                       | U     |
| 08-NOV-16     | Ra-228             | 6.33E-07 +/- 3.03E-07  | uCi/g  | D     | 3.05E-07           | 2.47E-07        |                       |       |
| 08-NOV-16     | Ru-106             | -9.64E-09 +/- 2.82E-07   | uCi/g  | D     | 2.82E-07           | 5.39E-07        |                       | U     |
| 08-NOV-16     | Ag-110m            | -2.30E-08 +/- 4.04E-08   | uCi/g  | D     | 4.17E-08           | 7.48E-08        |                       | U     |
| 08-NOV-16     | Na-22              | -3.63E-08 +/- 3.58E-08   | uCi/g  | D     | 3.94E-08           | 5.57E-08        |                       | U     |
| 08-NOV-16     | Tl-208             | 2.02E-07 +/- 7.61E-08  | uCi/g  | D     | 7.66E-08           | 6.79E-08        |                       |       |
| 08-NOV-16     | Th-234             | 6.70E-07 +/- 2.03E-06  | uCi/g  | D     | 2.04E-06           | 1.72E-06        |                       | U     |
| 08-NOV-16     | Sn-113             | 4.18E-10 +/- 3.55E-08  | uCi/g  | D     | 3.55E-08           | 7.00E-08        |                       | U     |
| 08-NOV-16     | U-235              | 1.16E-07 +/- 2.92E-07  | uCi/g  | D     | 2.92E-07           | 2.83E-07        |                       | U     |
| 08-NOV-16     | U-238              | 6.70E-07 +/- 2.03E-06  | uCi/g  | D     | 2.04E-06           | 1.72E-06        |                       | U     |
| 08-NOV-16     | Y-88               | 1.31E-08 +/- 3.02E-08  | uCi/g  | D     | 3.08E-08           | 7.76E-08        |                       | U     |
| 08-NOV-16     | Zn-65              | -7.79E-08 +/- 9.43E-08   | uCi/g  | D     | 1.01E-07           | 1.30E-07        |                       | U     |
| 08-NOV-16     | Zr-95              | 3.30E-08 +/- 5.91E-08  | uCi/g  | D     | 6.10E-08           | 1.26E-07        |                       | U     |
| 25-NOV-16     | Am-241             | -2.21E-08 +/- 3.66E-07   | uCi/g  | W     | 3.67E-07           | 7.75E-07        | 1.00E-04              | U     |
| 25-NOV-16     | Cm-242             | 0.00E+00 +/- 4.10E-07  | uCi/g  | W     | 4.11E-07           | 6.23E-07        | 2.00E-02              | U     |
| 25-NOV-16     | Cm-243/244         | -2.19E-08 +/- 3.62E-07   | uCi/g  | W     | 3.63E-07           | 7.66E-07        | 1.00E-04              | U     |
| 25-NOV-16     | Cm-245/246         | 4.22E-07 +/- 7.18E-07  | uCi/g  | W     | 7.21E-07           | 6.33E-07        | 1.00E-04              | U     |
| 25-NOV-16     | Ni-59              | -1.78E-04 +/- 7.55E-04   | uCi/g  | W     | 7.59E-04           | 1.27E-03        | 2.20E-01              | U     |
| 29-NOV-16     | I-129              | -4.54E-07 +/- 3.59E-06   | uCi/g  | W     | 3.60E-06           | 7.73E-06        | 8.00E-05              | U     |

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**Qualifiers:** U - Target isotope was analyzed for but not detected above the MDC and LLD.  
UI - Uncertain identification for gamma spectroscopy.  
X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.  
M - Reported result is less than the LLD and greater than the MDC.

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 31 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID              | Client Description |  | Matrix | Collection Date    | Receipt Date |              |                    |       |
|---------------------|--------------------|--|--------|--------------------|--------------|--------------|--------------------|-------|
| 409515019           | PA3-S-04           |  | Solid  | 25-OCT-16 14:30:00 | 01-NOV-16    |              |                    |       |
| Analysis Date       | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured MDC | Required MDC (LLD) | Flags |
|                     |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              |              |                    |       |
| 28-NOV-16           | Pu-241             | -7.32E-06 +/- 1.01E-04                 | uCi/g  | W                  | 1.01E-04     | 1.77E-04     | 3.50E-03           | U     |
| 26-NOV-16           | Fe-55              | -6.94E-05 +/- 1.05E-03                 | uCi/g  | W                  | 1.05E-03     | 1.51E-03     | 7.00E-01           | U     |
| 26-NOV-16           | Tc-99              | 2.17E-05 +/- 3.15E-05                  | uCi/g  | W                  | 3.16E-05     | 5.34E-05     | 3.00E-03           | U     |
| 23-NOV-16           | H-3                | 2.10E-06 +/- 1.50E-04                  | uCi/g  | W                  | 1.50E-04     | 2.73E-04     | 4.00E-02           | U     |
| 24-NOV-16           | C-14               | -2.44E-06 +/- 1.57E-05                 | uCi/g  | W                  | 1.57E-05     | 2.79E-05     | 8.00E-03           | U     |
| 23-NOV-16           | Pu-238             | 5.54E-07 +/- 9.64E-07                  | uCi/g  | W                  | 9.69E-07     | 1.45E-06     | 1.00E-04           | U     |
| 23-NOV-16           | Pu-239/240         | 5.53E-07 +/- 9.63E-07                  | uCi/g  | W                  | 9.69E-07     | 1.44E-06     | 1.00E-04           | U     |
| 23-NOV-16           | Pu-242             | 3.39E-07 +/- 8.35E-07                  | uCi/g  | W                  | 8.37E-07     | 1.38E-06     | 1.00E-04           | U     |
| 25-NOV-16           | Np-237             | -1.69E-08 +/- 6.05E-07                 | uCi/g  | W                  | 6.05E-07     | 1.39E-06     | 1.00E-04           | U     |
| 29-NOV-16           | Sr-89              | -3.67E+01 +/- 6.82E+01                 | pCi/g  | W                  | 6.82E+01     | 1.25E+02     | 7.00E-01           | U     |
| 29-NOV-16           | Sr-90              | -2.12E+01 +/- 2.02E+01                 | pCi/g  | W                  | 2.02E+01     | 3.57E+01     | 4.00E-05           | U     |
| 30-NOV-16           | Ni-63              | -5.13E-04 +/- 3.97E-04                 | uCi/g  | D                  | 3.97E-04     | 7.31E-04     | 3.50E-03           | U     |
| 409515020 OLA1-S-06 |                    |  | Solid  | 26-OCT-16 09:20:00 | 01-NOV-16    |              |                    |       |
| Analysis Date       | Nuclide            | Activity Concentration                 | Units  | Basis              | TPU          | Measured MDC | Required MDC (LLD) | Flags |
|                     |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |                    |              |              |                    |       |
| 08-NOV-16           | Ac-228             | 2.81E-07 +/- 2.42E-07                  | uCi/g  | D                  | 2.42E-07     | 2.59E-07     |                    |       |
| 08-NOV-16           | Am-241             | -1.02E-09 +/- 1.57E-07                 | uCi/g  | D                  | 1.57E-07     | 3.17E-07     |                    | U     |
| 08-NOV-16           | Sb-124             | 3.55E-08 +/- 7.65E-08                  | uCi/g  | D                  | 7.82E-08     | 1.82E-07     |                    | U     |
| 08-NOV-16           | Sb-125             | 1.96E-08 +/- 6.79E-08                  | uCi/g  | D                  | 6.84E-08     | 1.43E-07     |                    | U     |
| 08-NOV-16           | Ba-133             | 1.50E-08 +/- 3.21E-08                  | uCi/g  | D                  | 3.28E-08     | 6.05E-08     |                    | U     |
| 08-NOV-16           | Ba-140             | 1.04E-07 +/- 1.82E-07                  | uCi/g  | D                  | 1.88E-07     | 4.00E-07     |                    | U     |
| 08-NOV-16           | Be-7               | 2.83E-07 +/- 2.66E-07                  | uCi/g  | D                  | 2.95E-07     | 5.95E-07     |                    | U     |
| 08-NOV-16           | Bi-212             | 2.62E-07 +/- 4.39E-07                  | uCi/g  | D                  | 4.55E-07     | 9.36E-07     |                    | U     |
| 08-NOV-16           | Bi-214             | 1.10E-06 +/- 1.82E-07                  | uCi/g  | D                  | 1.88E-07     | 9.36E-08     |                    |       |
| 08-NOV-16           | Ce-139             | -4.97E-09 +/- 2.24E-08                 | uCi/g  | D                  | 2.26E-08     | 4.19E-08     |                    | U     |
| 08-NOV-16           | Ce-141             | -3.40E-08 +/- 5.06E-08                 | uCi/g  | D                  | 5.29E-08     | 9.11E-08     |                    | U     |
| 08-NOV-16           | Ce-144             | -1.88E-08 +/- 1.42E-07                 | uCi/g  | D                  | 1.42E-07     | 2.73E-07     |                    | U     |
| 08-NOV-16           | Cs-134             | 1.79E-08 +/- 3.36E-08                  | uCi/g  | D                  | 3.46E-08     | 6.78E-08     |                    | U     |
| 08-NOV-16           | Cs-136             | -1.76E-08 +/- 6.86E-08                 | uCi/g  | D                  | 6.90E-08     | 1.29E-07     |                    | U     |
| 08-NOV-16           | Cs-137             | 2.31E-07 +/- 6.91E-08                  | uCi/g  | D                  | 6.98E-08     | 5.98E-08     | 1.00E-07           |       |
| 08-NOV-16           | Cr-51              | -3.22E-08 +/- 2.92E-07                 | uCi/g  | D                  | 2.92E-07     | 5.32E-07     |                    | U     |
| 08-NOV-16           | Co-56              | -6.27E-09 +/- 3.73E-08                 | uCi/g  | D                  | 3.74E-08     | 6.26E-08     |                    | U     |
| 08-NOV-16           | Co-57              | 1.14E-08 +/- 1.80E-08                  | uCi/g  | D                  | 1.87E-08     | 3.73E-08     |                    | U     |

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**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
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- M - Reported result is less than the LLD and greater than the MDC.



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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 32 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date    |                       |       |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|
| 409515020     | OLA1-S-06          |  | Solid  |       | 26-OCT-16 09:20:00 | 01-NOV-16       |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 08-NOV-16     | Co-58              | 1.85E-08 +/- 2.82E-08  | uCi/g  | D     | 2.94E-08           | 6.37E-08        |                       | U     |
| 08-NOV-16     | Co-60              | 5.05E-08 +/- 3.13E-08  | uCi/g  | D     | 3.88E-08           | 8.42E-08        |                       | U     |
| 08-NOV-16     | Eu-152             | -1.36E-08 +/- 7.14E-08   | uCi/g  | D     | 7.17E-08           | 1.29E-07        |                       | U     |
| 08-NOV-16     | Eu-154             | 9.46E-09 +/- 7.98E-08  | uCi/g  | D     | 7.99E-08           | 1.71E-07        |                       | U     |
| 08-NOV-16     | Eu-155             | -2.51E-08 +/- 7.67E-08   | uCi/g  | D     | 7.75E-08           | 1.46E-07        |                       | U     |
| 08-NOV-16     | Ir-192             | 2.17E-08 +/- 3.14E-08  | uCi/g  | D     | 3.14E-08           | 4.84E-08        |                       | U     |
| 08-NOV-16     | Fe-59              | -1.86E-08 +/- 5.06E-08   | uCi/g  | D     | 5.13E-08           | 9.32E-08        |                       | U     |
| 08-NOV-16     | Pb-210             | 2.24E-06 +/- 5.23E-06  | uCi/g  | D     | 5.33E-06           | 1.13E-05        |                       | U     |
| 08-NOV-16     | Pb-212             | 2.98E-07 +/- 8.18E-08  | uCi/g  | D     | 8.33E-08           | 6.46E-08        |                       |       |
| 08-NOV-16     | Pb-214             | 1.39E-06 +/- 1.73E-07  | uCi/g  | D     | 1.82E-07           | 1.14E-07        |                       |       |
| 08-NOV-16     | Mn-54              | -3.42E-09 +/- 2.44E-08   | uCi/g  | D     | 2.44E-08           | 4.80E-08        |                       | U     |
| 08-NOV-16     | Hg-203             | -6.15E-09 +/- 2.89E-08   | uCi/g  | D     | 2.90E-08           | 5.24E-08        |                       | U     |
| 08-NOV-16     | Nd-147             | 1.92E-07 +/- 4.61E-07  | uCi/g  | D     | 4.69E-07           | 9.60E-07        |                       | U     |
| 08-NOV-16     | Np-239             | -9.03E-08 +/- 1.82E-07   | uCi/g  | D     | 1.87E-07           | 3.42E-07        |                       | U     |
| 08-NOV-16     | Nb-94              | -1.56E-08 +/- 2.72E-08   | uCi/g  | D     | 2.81E-08           | 4.86E-08        |                       | U     |
| 08-NOV-16     | Nb-95              | 0.00E+00 +/- 4.87E-08  | uCi/g  | D     | 4.89E-08           | 5.29E-08        |                       | UI    |
| 08-NOV-16     | K-40               | 4.40E-06 +/- 1.12E-06  | uCi/g  | D     | 1.14E-06           | 7.90E-07        |                       |       |
| 08-NOV-16     | Pm-144             | 6.38E-09 +/- 2.69E-08  | uCi/g  | D     | 2.71E-08           | 5.56E-08        |                       | U     |
| 08-NOV-16     | Pm-146             | -3.71E-10 +/- 2.95E-08   | uCi/g  | D     | 2.95E-08           | 6.05E-08        |                       | U     |
| 08-NOV-16     | Ra-228             | 2.81E-07 +/- 2.42E-07  | uCi/g  | D     | 2.42E-07           | 2.59E-07        |                       |       |
| 08-NOV-16     | Ru-106             | -9.32E-09 +/- 1.96E-07   | uCi/g  | D     | 1.96E-07           | 4.04E-07        |                       | U     |
| 08-NOV-16     | Ag-110m            | -4.12E-10 +/- 3.20E-08   | uCi/g  | D     | 3.20E-08           | 6.55E-08        |                       | U     |
| 08-NOV-16     | Na-22              | -3.49E-10 +/- 3.04E-08   | uCi/g  | D     | 3.04E-08           | 6.02E-08        |                       | U     |
| 08-NOV-16     | Tl-208             | 1.16E-07 +/- 6.14E-08  | uCi/g  | D     | 6.16E-08           | 5.96E-08        |                       |       |
| 08-NOV-16     | Th-234             | 1.42E-06 +/- 2.46E-06  | uCi/g  | D     | 2.48E-06           | 2.26E-06        |                       | U     |
| 08-NOV-16     | Sn-113             | -3.11E-08 +/- 3.43E-08   | uCi/g  | D     | 3.71E-08           | 6.19E-08        |                       | U     |
| 08-NOV-16     | U-235              | 7.23E-08 +/- 1.75E-07  | uCi/g  | D     | 1.78E-07           | 3.46E-07        |                       | U     |
| 08-NOV-16     | U-238              | 1.42E-06 +/- 2.46E-06  | uCi/g  | D     | 2.48E-06           | 2.26E-06        |                       | U     |
| 08-NOV-16     | Y-88               | -2.71E-08 +/- 3.65E-08   | uCi/g  | D     | 3.85E-08           | 5.92E-08        |                       | U     |
| 08-NOV-16     | Zn-65              | 3.30E-08 +/- 7.33E-08  | uCi/g  | D     | 7.48E-08           | 1.43E-07        |                       | U     |
| 08-NOV-16     | Zr-95              | -2.66E-08 +/- 5.46E-08   | uCi/g  | D     | 5.59E-08           | 9.89E-08        |                       | U     |

**Notes:**

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2. MDCs are calculated a-posteriori values.
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4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

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- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 33 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date |                 |
|---------------|--------------------|--|--------|-------|--------------------|--------------|-----------------|
| 409515021     | OLA1-D6-07         |  | Solid  |       | 26-OCT-16 09:40:00 | 01-NOV-16    |                 |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured     | Required        |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC          | MDC (LLD) Flags |
|               |                    |  |        |       | 1.96 Sigma         |              |                 |
| 12-NOV-16     | Ac-228             | 6.67E-07 +/- 2.37E-07                  | uCi/g  | D     | 2.40E-07           | 1.96E-07     |                 |
| 12-NOV-16     | Am-241             | -2.41E-08 +/- 1.09E-07                 | uCi/g  | D     | 1.10E-07           | 2.06E-07     | U               |
| 12-NOV-16     | Sb-124             | 1.33E-08 +/- 4.70E-08                  | uCi/g  | D     | 4.73E-08           | 1.06E-07     | U               |
| 12-NOV-16     | Sb-125             | -3.30E-08 +/- 6.66E-08                 | uCi/g  | D     | 6.83E-08           | 1.20E-07     | U               |
| 12-NOV-16     | Ba-133             | 1.77E-08 +/- 3.35E-08                  | uCi/g  | D     | 3.44E-08           | 6.01E-08     | U               |
| 12-NOV-16     | Ba-140             | 3.66E-09 +/- 2.07E-07                  | uCi/g  | D     | 2.07E-07           | 3.89E-07     | U               |
| 12-NOV-16     | Be-7               | -2.19E-07 +/- 2.41E-07                 | uCi/g  | D     | 2.60E-07           | 4.09E-07     | U               |
| 12-NOV-16     | Bi-212             | 0.00E+00 +/- 8.07E-07                  | uCi/g  | D     | 8.08E-07           | 7.03E-07     | UI              |
| 12-NOV-16     | Bi-214             | 7.50E-07 +/- 1.29E-07                  | uCi/g  | D     | 1.32E-07           | 9.18E-08     |                 |
| 12-NOV-16     | Ce-139             | -9.59E-09 +/- 2.09E-08                 | uCi/g  | D     | 2.15E-08           | 3.62E-08     | U               |
| 12-NOV-16     | Ce-141             | -1.94E-08 +/- 4.86E-08                 | uCi/g  | D     | 4.94E-08           | 7.80E-08     | U               |
| 12-NOV-16     | Ce-144             | 7.41E-08 +/- 1.36E-07                  | uCi/g  | D     | 1.40E-07           | 2.56E-07     | U               |
| 12-NOV-16     | Cs-134             | 4.13E-08 +/- 3.31E-08                  | uCi/g  | D     | 3.80E-08           | 6.82E-08     | U               |
| 12-NOV-16     | Cs-136             | 3.40E-08 +/- 8.45E-08                  | uCi/g  | D     | 8.59E-08           | 1.71E-07     | U               |
| 12-NOV-16     | Cs-137             | 0.00E+00 +/- 3.36E-08                  | uCi/g  | D     | 3.37E-08           | 4.65E-08     | 1.00E-07 UI     |
| 12-NOV-16     | Cr-51              | 8.77E-08 +/- 2.83E-07                  | uCi/g  | D     | 2.85E-07           | 5.50E-07     | U               |
| 12-NOV-16     | Co-56              | -7.35E-09 +/- 2.67E-08                 | uCi/g  | D     | 2.69E-08           | 5.07E-08     | U               |
| 12-NOV-16     | Co-57              | 1.17E-08 +/- 1.67E-08                  | uCi/g  | D     | 1.75E-08           | 3.21E-08     | U               |
| 12-NOV-16     | Co-58              | -6.01E-09 +/- 2.81E-08                 | uCi/g  | D     | 2.83E-08           | 5.38E-08     | U               |
| 12-NOV-16     | Co-60              | 2.65E-09 +/- 2.00E-08                  | uCi/g  | D     | 2.00E-08           | 4.15E-08     | U               |
| 12-NOV-16     | Eu-152             | 4.21E-08 +/- 6.84E-08                  | uCi/g  | D     | 7.10E-08           | 1.26E-07     | U               |
| 12-NOV-16     | Eu-154             | -6.46E-08 +/- 1.08E-07                 | uCi/g  | D     | 1.12E-07           | 1.86E-07     | U               |
| 12-NOV-16     | Eu-155             | 2.94E-08 +/- 1.47E-07                  | uCi/g  | D     | 1.47E-07           | 1.34E-07     | U               |
| 12-NOV-16     | Ir-192             | -2.30E-08 +/- 2.39E-08                 | uCi/g  | D     | 2.61E-08           | 4.22E-08     | U               |
| 12-NOV-16     | Fe-59              | -2.92E-09 +/- 7.30E-08                 | uCi/g  | D     | 7.30E-08           | 1.22E-07     | U               |
| 12-NOV-16     | Pb-210             | -3.54E-06 +/- 3.40E-06                 | uCi/g  | D     | 3.77E-06           | 5.53E-06     | U               |
| 12-NOV-16     | Pb-212             | 7.23E-07 +/- 9.16E-08                  | uCi/g  | D     | 9.94E-08           | 7.21E-08     |                 |
| 12-NOV-16     | Pb-214             | 8.65E-07 +/- 1.41E-07                  | uCi/g  | D     | 1.46E-07           | 9.48E-08     |                 |
| 12-NOV-16     | Mn-54              | 0.00E+00 +/- 3.51E-08                  | uCi/g  | D     | 3.52E-08           | 4.04E-08     | UI              |
| 12-NOV-16     | Hg-203             | 1.74E-08 +/- 2.75E-08                  | uCi/g  | D     | 2.86E-08           | 5.49E-08     | U               |
| 12-NOV-16     | Nd-147             | 3.78E-07 +/- 4.48E-07                  | uCi/g  | D     | 4.80E-07           | 8.57E-07     | U               |
| 12-NOV-16     | Np-239             | -9.38E-08 +/- 1.87E-07                 | uCi/g  | D     | 1.92E-07           | 3.31E-07     | U               |
| 12-NOV-16     | Nb-94              | 2.60E-08 +/- 2.54E-08                  | uCi/g  | D     | 2.80E-08           | 5.16E-08     | U               |
| 12-NOV-16     | Nb-95              | -2.34E-08 +/- 3.70E-08                 | uCi/g  | D     | 3.85E-08           | 5.31E-08     | U               |
| 12-NOV-16     | K-40               | 2.24E-05 +/- 1.55E-06                  | uCi/g  | D     | 1.94E-06           | 4.24E-07     |                 |
| 12-NOV-16     | Pm-144             | 2.17E-08 +/- 3.04E-08                  | uCi/g  | D     | 3.19E-08           | 5.86E-08     | U               |
| 12-NOV-16     | Pm-146             | -1.30E-08 +/- 2.81E-08                 | uCi/g  | D     | 2.88E-08           | 5.07E-08     | U               |

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 34 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    |          | Receipt Date |       |
|---------------|--------------------|--|--------|-------|--------------------|----------|--------------|-------|
| 409515021     | OLA1-D6-07         |  | Solid  |       | 26-OCT-16 09:40:00 |          | 01-NOV-16    |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured | Required     | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC      | MDC (LLD)    |       |
| 12-NOV-16     | Ra-228             | 6.67E-07 +/- 2.37E-07                  | uCi/g  | D     | 2.40E-07           | 1.96E-07 |              |       |
| 12-NOV-16     | Ru-106             | 8.80E-08 +/- 2.21E-07                  | uCi/g  | D     | 2.25E-07           | 3.97E-07 |              | U     |
| 12-NOV-16     | Ag-110m            | -5.61E-09 +/- 3.38E-08                 | uCi/g  | D     | 3.39E-08           | 6.48E-08 |              | U     |
| 12-NOV-16     | Na-22              | -2.28E-08 +/- 3.80E-08                 | uCi/g  | D     | 3.94E-08           | 6.56E-08 |              | U     |
| 12-NOV-16     | Tl-208             | 2.33E-07 +/- 5.85E-08                  | uCi/g  | D     | 5.94E-08           | 5.25E-08 |              |       |
| 12-NOV-16     | Th-234             | -2.12E-07 +/- 1.10E-06                 | uCi/g  | D     | 1.10E-06           | 2.02E-06 |              | U     |
| 12-NOV-16     | Sn-113             | -2.25E-08 +/- 2.98E-08                 | uCi/g  | D     | 3.15E-08           | 5.26E-08 |              | U     |
| 12-NOV-16     | U-235              | 0.00E+00 +/- 2.39E-07                  | uCi/g  | D     | 2.39E-07           | 2.36E-07 |              | UI    |
| 12-NOV-16     | U-238              | -2.12E-07 +/- 1.10E-06                 | uCi/g  | D     | 1.10E-06           | 2.02E-06 |              | U     |
| 12-NOV-16     | Y-88               | -1.01E-08 +/- 1.89E-08                 | uCi/g  | D     | 1.94E-08           | 3.57E-08 |              | U     |
| 12-NOV-16     | Zn-65              | -1.35E-08 +/- 7.85E-08                 | uCi/g  | D     | 7.87E-08           | 1.26E-07 |              | U     |
| 12-NOV-16     | Zr-95              | 4.60E-08 +/- 5.31E-08                  | uCi/g  | D     | 5.71E-08           | 1.08E-07 |              | U     |
| 409515022     | OLA2-S-01          |  | Solid  |       | 27-OCT-16 09:15:00 |          | 01-NOV-16    |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured | Required     | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC      | MDC (LLD)    |       |
| 12-NOV-16     | Ac-228             | 5.81E-07 +/- 1.83E-07                  | uCi/g  | D     | 1.85E-07           | 1.43E-07 |              |       |
| 12-NOV-16     | Am-241             | 1.47E-08 +/- 1.13E-07                  | uCi/g  | D     | 1.13E-07           | 2.01E-07 |              | U     |
| 12-NOV-16     | Sb-124             | 3.53E-08 +/- 6.00E-08                  | uCi/g  | D     | 6.21E-08           | 1.10E-07 |              | U     |
| 12-NOV-16     | Sb-125             | -2.10E-08 +/- 6.15E-08                 | uCi/g  | D     | 6.22E-08           | 1.05E-07 |              | U     |
| 12-NOV-16     | Ba-133             | -1.36E-11 +/- 2.50E-08                 | uCi/g  | D     | 2.50E-08           | 4.49E-08 |              | U     |
| 12-NOV-16     | Ba-140             | 2.94E-07 +/- 2.24E-07                  | uCi/g  | D     | 2.60E-07           | 3.12E-07 |              | U     |
| 12-NOV-16     | Be-7               | 4.95E-07 +/- 3.42E-07                  | uCi/g  | D     | 3.43E-07           | 3.24E-07 |              |       |
| 12-NOV-16     | Bi-212             | 7.01E-07 +/- 3.59E-07                  | uCi/g  | D     | 4.80E-07           | 7.28E-07 |              | U     |
| 12-NOV-16     | Bi-214             | 1.69E-06 +/- 1.42E-07                  | uCi/g  | D     | 1.59E-07           | 8.05E-08 |              |       |
| 12-NOV-16     | Ce-139             | 6.68E-09 +/- 1.88E-08                  | uCi/g  | D     | 1.91E-08           | 3.31E-08 |              | U     |
| 12-NOV-16     | Ce-141             | 2.31E-08 +/- 3.97E-08                  | uCi/g  | D     | 4.11E-08           | 7.18E-08 |              | U     |
| 12-NOV-16     | Ce-144             | 4.49E-08 +/- 1.29E-07                  | uCi/g  | D     | 1.31E-07           | 2.32E-07 |              | U     |
| 12-NOV-16     | Cs-134             | 6.98E-09 +/- 2.47E-08                  | uCi/g  | D     | 2.49E-08           | 4.55E-08 |              | U     |
| 12-NOV-16     | Cs-136             | -2.70E-08 +/- 6.64E-08                 | uCi/g  | D     | 6.75E-08           | 1.18E-07 |              | U     |
| 12-NOV-16     | Cs-137             | 2.79E-08 +/- 2.27E-08                  | uCi/g  | D     | 2.28E-08           | 3.84E-08 | 1.00E-07     | U     |
| 12-NOV-16     | Cr-51              | -9.10E-08 +/- 2.32E-07                 | uCi/g  | D     | 2.36E-07           | 4.10E-07 |              | U     |
| 12-NOV-16     | Co-56              | 5.29E-10 +/- 2.26E-08                  | uCi/g  | D     | 2.26E-08           | 4.07E-08 |              | U     |
| 12-NOV-16     | Co-57              | -1.91E-10 +/- 1.56E-08                 | uCi/g  | D     | 1.56E-08           | 2.79E-08 |              | U     |

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 35 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description | Matrix                                 |       | Collection Date    | Receipt Date |          |           |       |
|---------------|--------------------|--|-------|--------------------|--------------|----------|-----------|-------|
| 409515022     | OLA2-S-01          | Solid                                  |       | 27-OCT-16 09:15:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |       |                    |              | MDC      | MDC (LLD) |       |
| 12-NOV-16     | Co-58              | 1.33E-09 +/- 2.67E-08                  | uCi/g | D                  | 2.67E-08     | 4.23E-08 |           | U     |
| 12-NOV-16     | Co-60              | 2.46E-09 +/- 2.35E-08                  | uCi/g | D                  | 2.36E-08     | 4.34E-08 |           | U     |
| 12-NOV-16     | Eu-152             | 1.16E-08 +/- 6.08E-08                  | uCi/g | D                  | 6.10E-08     | 1.11E-07 |           | U     |
| 12-NOV-16     | Eu-154             | 1.73E-08 +/- 7.26E-08                  | uCi/g | D                  | 7.31E-08     | 1.35E-07 |           | U     |
| 12-NOV-16     | Eu-155             | 4.19E-08 +/- 6.59E-08                  | uCi/g | D                  | 6.86E-08     | 1.23E-07 |           | U     |
| 12-NOV-16     | Ir-192             | 2.25E-09 +/- 2.14E-08                  | uCi/g | D                  | 2.15E-08     | 3.91E-08 |           | U     |
| 12-NOV-16     | Fe-59              | -1.15E-08 +/- 5.17E-08                 | uCi/g | D                  | 5.20E-08     | 9.34E-08 |           | U     |
| 12-NOV-16     | Pb-210             | 3.52E-06 +/- 7.72E-06                  | uCi/g | D                  | 7.73E-06     | 6.98E-06 |           | U     |
| 12-NOV-16     | Pb-212             | 6.84E-07 +/- 7.60E-08                  | uCi/g | D                  | 8.41E-08     | 5.45E-08 |           |       |
| 12-NOV-16     | Pb-214             | 2.18E-06 +/- 1.35E-07                  | uCi/g | D                  | 1.63E-07     | 2.86E-07 |           |       |
| 12-NOV-16     | Mn-54              | -1.31E-08 +/- 2.57E-08                 | uCi/g | D                  | 2.64E-08     | 4.33E-08 |           | U     |
| 12-NOV-16     | Hg-203             | 2.20E-09 +/- 2.21E-08                  | uCi/g | D                  | 2.21E-08     | 4.08E-08 |           | U     |
| 12-NOV-16     | Nd-147             | -1.67E-07 +/- 4.24E-07                 | uCi/g | D                  | 4.31E-07     | 6.69E-07 |           | U     |
| 12-NOV-16     | Np-239             | -9.28E-08 +/- 1.67E-07                 | uCi/g | D                  | 1.73E-07     | 2.90E-07 |           | U     |
| 12-NOV-16     | Nb-94              | -1.02E-08 +/- 2.16E-08                 | uCi/g | D                  | 2.21E-08     | 3.61E-08 |           | U     |
| 12-NOV-16     | Nb-95              | 3.33E-08 +/- 3.24E-08                  | uCi/g | D                  | 3.57E-08     | 5.59E-08 |           | U     |
| 12-NOV-16     | K-40               | 9.70E-06 +/- 7.99E-07                  | uCi/g | D                  | 9.46E-07     | 3.92E-07 |           |       |
| 12-NOV-16     | Pm-144             | 2.02E-08 +/- 2.04E-08                  | uCi/g | D                  | 2.24E-08     | 4.01E-08 |           | U     |
| 12-NOV-16     | Pm-146             | 3.30E-08 +/- 2.58E-08                  | uCi/g | D                  | 2.99E-08     | 5.00E-08 |           | U     |
| 12-NOV-16     | Ra-228             | 5.81E-07 +/- 1.83E-07                  | uCi/g | D                  | 1.85E-07     | 1.43E-07 |           |       |
| 12-NOV-16     | Ru-106             | 1.06E-07 +/- 1.86E-07                  | uCi/g | D                  | 1.92E-07     | 3.58E-07 |           | U     |
| 12-NOV-16     | Ag-110m            | -1.98E-08 +/- 3.74E-08                 | uCi/g | D                  | 3.84E-08     | 5.19E-08 |           | U     |
| 12-NOV-16     | Na-22              | 1.16E-08 +/- 2.53E-08                  | uCi/g | D                  | 2.58E-08     | 4.81E-08 |           | U     |
| 12-NOV-16     | Tl-208             | 2.00E-07 +/- 5.51E-08                  | uCi/g | D                  | 5.58E-08     | 3.93E-08 |           |       |
| 12-NOV-16     | Th-234             | 0.00E+00 +/- 1.85E-06                  | uCi/g | D                  | 1.90E-06     | 1.63E-06 |           | UI    |
| 12-NOV-16     | Sn-113             | -8.41E-09 +/- 3.23E-08                 | uCi/g | D                  | 3.26E-08     | 5.00E-08 |           | U     |
| 12-NOV-16     | U-235              | 0.00E+00 +/- 2.19E-07                  | uCi/g | D                  | 2.19E-07     | 2.10E-07 |           | UI    |
| 12-NOV-16     | U-238              | 0.00E+00 +/- 1.85E-06                  | uCi/g | D                  | 1.90E-06     | 1.63E-06 |           | UI    |
| 12-NOV-16     | Y-88               | -1.05E-08 +/- 1.98E-08                 | uCi/g | D                  | 2.04E-08     | 3.50E-08 |           | U     |
| 12-NOV-16     | Zn-65              | 8.82E-08 +/- 5.49E-08                  | uCi/g | D                  | 6.79E-08     | 1.05E-07 |           | U     |
| 12-NOV-16     | Zr-95              | 5.18E-08 +/- 4.45E-08                  | uCi/g | D                  | 5.03E-08     | 8.82E-08 |           | U     |

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## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 36 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID    | Client Description | Matrix | Collection Date    | Receipt Date |
|-----------|--------------------|--------|--------------------|--------------|
| 409515023 | OLA2-S-02          | Solid  | 27-OCT-16 09:40:00 | 01-NOV-16    |

| Analysis Date | Nuclide | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units | Basis | TPU<br>1.96 Sigma | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
|---------------|---------|--|-------|-------|-------------------|-----------------|-----------------------|-------|
| 12-NOV-16     | Ac-228  | 1.12E-06 +/- 2.61E-07  | uCi/g | D     | 2.67E-07          | 1.73E-07        |                       |       |
| 12-NOV-16     | Am-241  | -2.48E-08 +/- 7.20E-08   | uCi/g | D     | 7.29E-08          | 1.18E-07        |                       | U     |
| 12-NOV-16     | Sb-124  | -3.42E-08 +/- 5.59E-08   | uCi/g | D     | 5.81E-08          | 9.59E-08        |                       | U     |
| 12-NOV-16     | Sb-125  | 2.80E-09 +/- 5.88E-08  | uCi/g | D     | 5.88E-08          | 1.10E-07        |                       | U     |
| 12-NOV-16     | Ba-133  | 1.06E-09 +/- 3.02E-08  | uCi/g | D     | 3.02E-08          | 5.03E-08        |                       | U     |
| 12-NOV-16     | Ba-140  | -8.69E-08 +/- 1.81E-07   | uCi/g | D     | 1.85E-07          | 3.17E-07        |                       | U     |
| 12-NOV-16     | Be-7    | 2.58E-07 +/- 4.01E-07  | uCi/g | D     | 4.01E-07          | 3.92E-07        |                       | U     |
| 12-NOV-16     | Bi-212  | 0.00E+00 +/- 1.16E-06  | uCi/g | D     | 1.16E-06          | 5.93E-07        |                       | UI    |
| 12-NOV-16     | Bi-214  | 9.99E-07 +/- 1.61E-07  | uCi/g | D     | 1.66E-07          | 9.24E-08        |                       |       |
| 12-NOV-16     | Ce-139  | -5.43E-09 +/- 2.33E-08   | uCi/g | D     | 2.34E-08          | 3.63E-08        |                       | U     |
| 12-NOV-16     | Ce-141  | 8.42E-09 +/- 4.33E-08  | uCi/g | D     | 4.34E-08          | 7.60E-08        |                       | U     |
| 12-NOV-16     | Ce-144  | 2.39E-08 +/- 1.47E-07  | uCi/g | D     | 1.48E-07          | 2.40E-07        |                       | U     |
| 12-NOV-16     | Cs-134  | 2.80E-08 +/- 4.10E-08  | uCi/g | D     | 4.29E-08          | 6.58E-08        |                       | U     |
| 12-NOV-16     | Cs-136  | -2.41E-08 +/- 5.96E-08   | uCi/g | D     | 6.06E-08          | 1.10E-07        |                       | U     |
| 12-NOV-16     | Cs-137  | 3.57E-08 +/- 2.73E-08  | uCi/g | D     | 3.17E-08          | 5.54E-08        | 1.00E-07              | U     |
| 12-NOV-16     | Cr-51   | -1.87E-07 +/- 2.39E-07   | uCi/g | D     | 2.54E-07          | 4.23E-07        |                       | U     |
| 12-NOV-16     | Co-56   | 1.44E-08 +/- 2.89E-08  | uCi/g | D     | 2.97E-08          | 5.49E-08        |                       | U     |
| 12-NOV-16     | Co-57   | 1.19E-09 +/- 1.59E-08  | uCi/g | D     | 1.59E-08          | 2.81E-08        |                       | U     |
| 12-NOV-16     | Co-58   | 2.80E-09 +/- 2.67E-08  | uCi/g | D     | 2.67E-08          | 4.43E-08        |                       | U     |
| 12-NOV-16     | Co-60   | 3.45E-09 +/- 2.71E-08  | uCi/g | D     | 2.72E-08          | 5.25E-08        |                       | U     |
| 12-NOV-16     | Eu-152  | -3.85E-08 +/- 6.16E-08   | uCi/g | D     | 6.40E-08          | 1.10E-07        |                       | U     |
| 12-NOV-16     | Eu-154  | 9.35E-10 +/- 6.89E-08  | uCi/g | D     | 6.89E-08          | 1.33E-07        |                       | U     |
| 12-NOV-16     | Eu-155  | 2.66E-08 +/- 6.40E-08  | uCi/g | D     | 6.52E-08          | 1.16E-07        |                       | U     |
| 12-NOV-16     | Ir-192  | -3.77E-09 +/- 2.27E-08   | uCi/g | D     | 2.28E-08          | 4.21E-08        |                       | U     |
| 12-NOV-16     | Fe-59   | 1.17E-08 +/- 6.69E-08  | uCi/g | D     | 6.71E-08          | 1.16E-07        |                       | U     |
| 12-NOV-16     | Pb-210  | 8.74E-07 +/- 1.66E-06  | uCi/g | D     | 1.66E-06          | 1.78E-06        |                       | U     |
| 12-NOV-16     | Pb-212  | 1.04E-06 +/- 8.74E-08  | uCi/g | D     | 1.03E-07          | 6.90E-08        |                       |       |
| 12-NOV-16     | Pb-214  | 1.21E-06 +/- 1.48E-07  | uCi/g | D     | 1.56E-07          | 9.34E-08        |                       |       |
| 12-NOV-16     | Mn-54   | 1.81E-08 +/- 2.31E-08  | uCi/g | D     | 2.45E-08          | 4.60E-08        |                       | U     |
| 12-NOV-16     | Hg-203  | -3.53E-09 +/- 2.67E-08   | uCi/g | D     | 2.68E-08          | 4.95E-08        |                       | U     |
| 12-NOV-16     | Nd-147  | 1.40E-07 +/- 3.75E-07  | uCi/g | D     | 3.80E-07          | 7.22E-07        |                       | U     |
| 12-NOV-16     | Np-239  | -4.24E-08 +/- 1.69E-07   | uCi/g | D     | 1.70E-07          | 2.94E-07        |                       | U     |
| 12-NOV-16     | Nb-94   | 2.04E-08 +/- 2.34E-08  | uCi/g | D     | 2.51E-08          | 4.59E-08        |                       | U     |
| 12-NOV-16     | Nb-95   | -9.29E-10 +/- 3.43E-08   | uCi/g | D     | 3.43E-08          | 5.46E-08        |                       | U     |
| 12-NOV-16     | K-40    | 1.61E-05 +/- 1.15E-06  | uCi/g | D     | 1.43E-06          | 3.75E-07        |                       |       |
| 12-NOV-16     | Pm-144  | 1.10E-08 +/- 2.45E-08  | uCi/g | D     | 2.50E-08          | 4.62E-08        |                       | U     |
| 12-NOV-16     | Pm-146  | 2.09E-08 +/- 2.76E-08  | uCi/g | D     | 2.92E-08          | 5.45E-08        |                       | U     |

**Notes:**

1. LLDs are a-priori values.
2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:** U - Target isotope was analyzed for but not detected above the MDC and LLD.  
UI - Uncertain identification for gamma spectroscopy.  
X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.  
M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 37 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    |              | Receipt Date       |       |
|---------------|--------------------|--|--------|-------|--------------------|--------------|--------------------|-------|
| 409515023     | OLA2-S-02          |  | Solid  |       | 27-OCT-16 09:40:00 |              | 01-NOV-16          |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured MDC | Required MDC (LLD) | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    |              |                    |       |
| 12-NOV-16     | Ra-228             | 1.12E-06 +/- 2.61E-07                  | uCi/g  | D     | 2.67E-07           | 1.73E-07     |                    |       |
| 12-NOV-16     | Ru-106             | 3.59E-08 +/- 2.23E-07                  | uCi/g  | D     | 2.24E-07           | 3.75E-07     |                    | U     |
| 12-NOV-16     | Ag-110m            | 1.38E-08 +/- 3.50E-08                  | uCi/g  | D     | 3.56E-08           | 6.60E-08     |                    | U     |
| 12-NOV-16     | Na-22              | -1.34E-09 +/- 2.41E-08                 | uCi/g  | D     | 2.41E-08           | 4.61E-08     |                    | U     |
| 12-NOV-16     | Tl-208             | 3.50E-07 +/- 7.11E-08                  | uCi/g  | D     | 7.26E-08           | 4.41E-08     |                    |       |
| 12-NOV-16     | Th-234             | 8.77E-07 +/- 1.29E-06                  | uCi/g  | D     | 1.30E-06           | 1.07E-06     |                    | U     |
| 12-NOV-16     | Sn-113             | 0.00E+00 +/- 5.56E-08                  | uCi/g  | D     | 5.58E-08           | 5.24E-08     |                    | UI    |
| 12-NOV-16     | U-235              | 1.08E-09 +/- 1.44E-07                  | uCi/g  | D     | 1.44E-07           | 2.43E-07     |                    | U     |
| 12-NOV-16     | U-238              | 8.77E-07 +/- 1.29E-06                  | uCi/g  | D     | 1.30E-06           | 1.07E-06     |                    | U     |
| 12-NOV-16     | Y-88               | -1.96E-08 +/- 2.50E-08                 | uCi/g  | D     | 2.66E-08           | 4.02E-08     |                    | U     |
| 12-NOV-16     | Zn-65              | -2.95E-08 +/- 6.18E-08                 | uCi/g  | D     | 6.32E-08           | 9.57E-08     |                    | U     |
| 12-NOV-16     | Zr-95              | -5.22E-09 +/- 4.81E-08                 | uCi/g  | D     | 4.82E-08           | 8.63E-08     |                    | U     |
| 409515024     | OLA2-S-03          |  | Solid  |       | 27-OCT-16 09:50:00 |              | 01-NOV-16          |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured MDC | Required MDC (LLD) | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    |              |                    |       |
| 12-NOV-16     | Ac-228             | 1.60E-06 +/- 2.85E-07                  | uCi/g  | D     | 2.97E-07           | 2.14E-07     |                    |       |
| 12-NOV-16     | Am-241             | -3.99E-08 +/- 8.29E-08                 | uCi/g  | D     | 8.49E-08           | 1.31E-07     |                    | U     |
| 12-NOV-16     | Sb-124             | -1.62E-08 +/- 6.27E-08                 | uCi/g  | D     | 6.31E-08           | 9.87E-08     |                    | U     |
| 12-NOV-16     | Sb-125             | -5.95E-08 +/- 7.38E-08                 | uCi/g  | D     | 7.86E-08           | 1.24E-07     |                    | U     |
| 12-NOV-16     | Ba-133             | 3.18E-08 +/- 3.77E-08                  | uCi/g  | D     | 4.03E-08           | 6.69E-08     |                    | U     |
| 12-NOV-16     | Ba-140             | -5.55E-08 +/- 2.17E-07                 | uCi/g  | D     | 2.18E-07           | 3.80E-07     |                    | U     |
| 12-NOV-16     | Be-7               | 5.11E-08 +/- 2.95E-07                  | uCi/g  | D     | 2.96E-07           | 5.35E-07     |                    | U     |
| 12-NOV-16     | Bi-212             | 0.00E+00 +/- 6.28E-07                  | uCi/g  | D     | 8.52E-07           | 1.04E-06     |                    | UI    |
| 12-NOV-16     | Bi-214             | 1.11E-06 +/- 1.56E-07                  | uCi/g  | D     | 1.63E-07           | 1.11E-07     |                    |       |
| 12-NOV-16     | Ce-139             | -8.68E-09 +/- 2.35E-08                 | uCi/g  | D     | 2.39E-08           | 3.87E-08     |                    | U     |
| 12-NOV-16     | Ce-141             | -2.52E-08 +/- 4.93E-08                 | uCi/g  | D     | 5.06E-08           | 8.10E-08     |                    | U     |
| 12-NOV-16     | Ce-144             | 1.00E-07 +/- 1.70E-07                  | uCi/g  | D     | 1.76E-07           | 2.77E-07     |                    | U     |
| 12-NOV-16     | Cs-134             | 6.85E-08 +/- 5.22E-08                  | uCi/g  | D     | 6.07E-08           | 6.85E-08     |                    | U     |
| 12-NOV-16     | Cs-136             | 3.84E-08 +/- 8.32E-08                  | uCi/g  | D     | 8.50E-08           | 1.50E-07     |                    | U     |
| 12-NOV-16     | Cs-137             | 1.44E-08 +/- 3.02E-08                  | uCi/g  | D     | 3.09E-08           | 5.63E-08     | 1.00E-07           | U     |
| 12-NOV-16     | Cr-51              | 2.72E-07 +/- 4.31E-07                  | uCi/g  | D     | 4.31E-07           | 4.94E-07     |                    | U     |
| 12-NOV-16     | Co-56              | 2.27E-08 +/- 2.98E-08                  | uCi/g  | D     | 3.15E-08           | 6.05E-08     |                    | U     |
| 12-NOV-16     | Co-57              | 4.27E-09 +/- 1.80E-08                  | uCi/g  | D     | 1.81E-08           | 3.13E-08     |                    | U     |

**Notes:**

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**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
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Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    |          | Receipt Date |       |
|---------------|--------------------|--|--------|-------|--------------------|----------|--------------|-------|
| 409515024     | OLA2-S-03          |  | Solid  |       | 27-OCT-16 09:50:00 |          | 01-NOV-16    |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured | Required     | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC      | MDC (LLD)    |       |
| 12-NOV-16     | Co-58              | -1.64E-08 +/- 3.06E-08                 | uCi/g  | D     | 3.15E-08           | 5.28E-08 |              | U     |
| 12-NOV-16     | Co-60              | 1.94E-09 +/- 3.33E-08                  | uCi/g  | D     | 3.33E-08           | 5.53E-08 |              | U     |
| 12-NOV-16     | Eu-152             | 1.89E-08 +/- 8.36E-08                  | uCi/g  | D     | 8.41E-08           | 1.40E-07 |              | U     |
| 12-NOV-16     | Eu-154             | 5.02E-08 +/- 1.00E-07                  | uCi/g  | D     | 1.03E-07           | 1.95E-07 |              | U     |
| 12-NOV-16     | Eu-155             | 1.02E-07 +/- 8.04E-08                  | uCi/g  | D     | 8.08E-08           | 1.22E-07 |              | U     |
| 12-NOV-16     | Ir-192             | -3.36E-09 +/- 2.94E-08                 | uCi/g  | D     | 2.94E-08           | 4.78E-08 |              | U     |
| 12-NOV-16     | Fe-59              | -8.70E-10 +/- 6.95E-08                 | uCi/g  | D     | 6.95E-08           | 1.29E-07 |              | U     |
| 12-NOV-16     | Pb-210             | 6.79E-07 +/- 2.42E-06                  | uCi/g  | D     | 2.42E-06           | 2.01E-06 |              | U     |
| 12-NOV-16     | Pb-212             | 1.26E-06 +/- 1.01E-07                  | uCi/g  | D     | 1.22E-07           | 7.44E-08 |              |       |
| 12-NOV-16     | Pb-214             | 1.37E-06 +/- 1.43E-07                  | uCi/g  | D     | 1.54E-07           | 1.03E-07 |              |       |
| 12-NOV-16     | Mn-54              | 5.38E-09 +/- 3.07E-08                  | uCi/g  | D     | 3.08E-08           | 5.82E-08 |              | U     |
| 12-NOV-16     | Hg-203             | 1.05E-08 +/- 5.50E-08                  | uCi/g  | D     | 5.51E-08           | 5.35E-08 |              | U     |
| 12-NOV-16     | Nd-147             | -7.53E-08 +/- 4.86E-07                 | uCi/g  | D     | 4.87E-07           | 8.59E-07 |              | U     |
| 12-NOV-16     | Np-239             | 1.14E-07 +/- 1.78E-07                  | uCi/g  | D     | 1.85E-07           | 3.19E-07 |              | U     |
| 12-NOV-16     | Nb-94              | 1.04E-08 +/- 2.84E-08                  | uCi/g  | D     | 2.88E-08           | 5.19E-08 |              | U     |
| 12-NOV-16     | Nb-95              | -2.42E-08 +/- 4.30E-08                 | uCi/g  | D     | 4.44E-08           | 6.12E-08 |              | U     |
| 12-NOV-16     | K-40               | 1.83E-05 +/- 1.44E-06                  | uCi/g  | D     | 1.73E-06           | 4.35E-07 |              |       |
| 12-NOV-16     | Pm-144             | -1.59E-08 +/- 2.83E-08                 | uCi/g  | D     | 2.92E-08           | 4.69E-08 |              | U     |
| 12-NOV-16     | Pm-146             | 4.20E-08 +/- 3.36E-08                  | uCi/g  | D     | 3.87E-08           | 6.68E-08 |              | U     |
| 12-NOV-16     | Ra-228             | 1.60E-06 +/- 2.85E-07                  | uCi/g  | D     | 2.97E-07           | 2.14E-07 |              |       |
| 12-NOV-16     | Ru-106             | 1.09E-07 +/- 2.60E-07                  | uCi/g  | D     | 2.65E-07           | 4.82E-07 |              | U     |
| 12-NOV-16     | Ag-110m            | 2.35E-08 +/- 4.49E-08                  | uCi/g  | D     | 4.62E-08           | 7.98E-08 |              | U     |
| 12-NOV-16     | Na-22              | 8.98E-09 +/- 3.67E-08                  | uCi/g  | D     | 3.69E-08           | 6.91E-08 |              | U     |
| 12-NOV-16     | Tl-208             | 3.78E-07 +/- 7.98E-08                  | uCi/g  | D     | 8.14E-08           | 5.20E-08 |              |       |
| 12-NOV-16     | Th-234             | 8.48E-07 +/- 1.39E-06                  | uCi/g  | D     | 1.40E-06           | 1.28E-06 |              | U     |
| 12-NOV-16     | Sn-113             | -2.24E-09 +/- 3.53E-08                 | uCi/g  | D     | 3.53E-08           | 6.36E-08 |              | U     |
| 12-NOV-16     | U-235              | -9.48E-08 +/- 1.63E-07                 | uCi/g  | D     | 1.63E-07           | 2.65E-07 |              | U     |
| 12-NOV-16     | U-238              | 8.48E-07 +/- 1.39E-06                  | uCi/g  | D     | 1.40E-06           | 1.28E-06 |              | U     |
| 12-NOV-16     | Y-88               | 9.08E-09 +/- 2.58E-08                  | uCi/g  | D     | 2.61E-08           | 5.72E-08 |              | U     |
| 12-NOV-16     | Zn-65              | -6.69E-09 +/- 7.28E-08                 | uCi/g  | D     | 7.29E-08           | 1.17E-07 |              | U     |
| 12-NOV-16     | Zr-95              | -2.43E-08 +/- 6.86E-08                 | uCi/g  | D     | 6.95E-08           | 1.15E-07 |              | U     |

**Notes:**

1. LLDs are a-priori values.
2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 39 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date |           |       |
|---------------|--------------------|--|--------|-------|--------------------|--------------|-----------|-------|
| 409515025     | OLA4-D3-03         |  | Solid  |       | 27-OCT-16 14:10:00 | 01-NOV-16    |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured     | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC          | MDC (LLD) |       |
| 12-NOV-16     | Ac-228             | 9.68E-07 +/- 1.93E-07                  | uCi/g  | D     | 2.00E-07           | 1.96E-07     |           |       |
| 12-NOV-16     | Am-241             | -9.86E-08 +/- 1.16E-07                 | uCi/g  | D     | 1.24E-07           | 1.82E-07     |           | U     |
| 12-NOV-16     | Sb-124             | -3.94E-09 +/- 4.87E-08                 | uCi/g  | D     | 4.88E-08           | 1.00E-07     |           | U     |
| 12-NOV-16     | Sb-125             | 8.07E-09 +/- 6.37E-08                  | uCi/g  | D     | 6.38E-08           | 1.21E-07     |           | U     |
| 12-NOV-16     | Ba-133             | -1.68E-08 +/- 3.15E-08                 | uCi/g  | D     | 3.24E-08           | 5.08E-08     |           | U     |
| 12-NOV-16     | Ba-140             | 9.77E-08 +/- 1.90E-07                  | uCi/g  | D     | 1.95E-07           | 3.73E-07     |           | U     |
| 12-NOV-16     | Be-7               | 5.15E-08 +/- 2.01E-07                  | uCi/g  | D     | 2.03E-07           | 3.90E-07     |           | U     |
| 12-NOV-16     | Bi-212             | 1.09E-06 +/- 9.14E-07                  | uCi/g  | D     | 9.15E-07           | 7.29E-07     |           |       |
| 12-NOV-16     | Bi-214             | 1.04E-06 +/- 1.34E-07                  | uCi/g  | D     | 1.42E-07           | 9.86E-08     |           |       |
| 12-NOV-16     | Ce-139             | 2.77E-09 +/- 2.17E-08                  | uCi/g  | D     | 2.18E-08           | 3.80E-08     |           | U     |
| 12-NOV-16     | Ce-141             | 1.77E-08 +/- 5.00E-08                  | uCi/g  | D     | 5.07E-08           | 8.25E-08     |           | U     |
| 12-NOV-16     | Ce-144             | 5.79E-08 +/- 1.41E-07                  | uCi/g  | D     | 1.43E-07           | 2.53E-07     |           | U     |
| 12-NOV-16     | Cs-134             | 3.95E-08 +/- 3.47E-08                  | uCi/g  | D     | 3.91E-08           | 6.87E-08     |           | U     |
| 12-NOV-16     | Cs-136             | -5.02E-09 +/- 7.50E-08                 | uCi/g  | D     | 7.50E-08           | 1.36E-07     |           | U     |
| 12-NOV-16     | Cs-137             | 7.13E-08 +/- 5.17E-08                  | uCi/g  | D     | 5.18E-08           | 5.20E-08     | 1.00E-07  |       |
| 12-NOV-16     | Cr-51              | -8.61E-08 +/- 2.53E-07                 | uCi/g  | D     | 2.56E-07           | 4.67E-07     |           | U     |
| 12-NOV-16     | Co-56              | -3.10E-08 +/- 2.73E-08                 | uCi/g  | D     | 3.07E-08           | 4.21E-08     |           | U     |
| 12-NOV-16     | Co-57              | 1.23E-08 +/- 1.81E-08                  | uCi/g  | D     | 1.89E-08           | 3.30E-08     |           | U     |
| 12-NOV-16     | Co-58              | -6.16E-09 +/- 2.62E-08                 | uCi/g  | D     | 2.64E-08           | 4.21E-08     |           | U     |
| 12-NOV-16     | Co-60              | -3.45E-09 +/- 3.16E-08                 | uCi/g  | D     | 3.16E-08           | 5.47E-08     |           | U     |
| 12-NOV-16     | Eu-152             | -2.26E-08 +/- 6.39E-08                 | uCi/g  | D     | 6.48E-08           | 1.18E-07     |           | U     |
| 12-NOV-16     | Eu-154             | 1.91E-08 +/- 7.56E-08                  | uCi/g  | D     | 7.61E-08           | 1.44E-07     |           | U     |
| 12-NOV-16     | Eu-155             | 3.30E-08 +/- 7.46E-08                  | uCi/g  | D     | 7.62E-08           | 1.35E-07     |           | U     |
| 12-NOV-16     | Ir-192             | -5.97E-09 +/- 2.76E-08                 | uCi/g  | D     | 2.78E-08           | 4.61E-08     |           | U     |
| 12-NOV-16     | Fe-59              | -4.34E-08 +/- 5.87E-08                 | uCi/g  | D     | 6.20E-08           | 9.57E-08     |           | U     |
| 12-NOV-16     | Pb-210             | 3.53E-06 +/- 5.33E-06                  | uCi/g  | D     | 5.34E-06           | 4.26E-06     |           | U     |
| 12-NOV-16     | Pb-212             | 9.92E-07 +/- 8.92E-08                  | uCi/g  | D     | 1.04E-07           | 7.23E-08     |           |       |
| 12-NOV-16     | Pb-214             | 1.21E-06 +/- 1.63E-07                  | uCi/g  | D     | 1.71E-07           | 2.71E-07     |           |       |
| 12-NOV-16     | Mn-54              | 3.89E-10 +/- 2.44E-08                  | uCi/g  | D     | 2.44E-08           | 4.52E-08     |           | U     |
| 12-NOV-16     | Hg-203             | -7.57E-09 +/- 2.98E-08                 | uCi/g  | D     | 3.00E-08           | 4.57E-08     |           | U     |
| 12-NOV-16     | Nd-147             | 2.14E-07 +/- 3.99E-07                  | uCi/g  | D     | 4.11E-07           | 7.86E-07     |           | U     |
| 12-NOV-16     | Np-239             | -4.75E-08 +/- 1.88E-07                 | uCi/g  | D     | 1.89E-07           | 3.27E-07     |           | U     |
| 12-NOV-16     | Nb-94              | 4.29E-08 +/- 4.08E-08                  | uCi/g  | D     | 4.51E-08           | 5.12E-08     |           | U     |
| 12-NOV-16     | Nb-95              | -3.72E-09 +/- 3.17E-08                 | uCi/g  | D     | 3.18E-08           | 5.14E-08     |           | U     |
| 12-NOV-16     | K-40               | 1.53E-05 +/- 1.29E-06                  | uCi/g  | D     | 1.52E-06           | 4.42E-07     |           |       |
| 12-NOV-16     | Pm-144             | 3.28E-09 +/- 2.99E-08                  | uCi/g  | D     | 3.00E-08           | 4.97E-08     |           | U     |
| 12-NOV-16     | Pm-146             | -4.84E-09 +/- 3.19E-08                 | uCi/g  | D     | 3.20E-08           | 5.65E-08     |           | U     |

**Notes:**

1. LLDs are a-priori values.
2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

Company : Bartlett Nuclear, Inc  
Address : 60 Industrial Park Road

Report Date: November 30, 2016  
Page 40 of 44

Plymouth, Massachusetts 02360

Contact: Mr. Dave Montt

Project: OPPD HSA

SDG: 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    |              | Receipt Date       |       |
|---------------|--------------------|--|--------|-------|--------------------|--------------|--------------------|-------|
| 409515025     | OLA4-D3-03         |  | Solid  |       | 27-OCT-16 14:10:00 |              | 01-NOV-16          |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured MDC | Required MDC (LLD) | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    |              |                    |       |
| 12-NOV-16     | Ra-228             | 9.68E-07 +/- 1.93E-07                  | uCi/g  | D     | 2.00E-07           | 1.96E-07     |                    |       |
| 12-NOV-16     | Ru-106             | 6.76E-08 +/- 2.16E-07                  | uCi/g  | D     | 2.18E-07           | 4.14E-07     |                    | U     |
| 12-NOV-16     | Ag-110m            | -6.54E-09 +/- 3.29E-08                 | uCi/g  | D     | 3.30E-08           | 5.94E-08     |                    | U     |
| 12-NOV-16     | Na-22              | 7.64E-09 +/- 2.68E-08                  | uCi/g  | D     | 2.71E-08           | 5.15E-08     |                    | U     |
| 12-NOV-16     | Tl-208             | 3.07E-07 +/- 7.11E-08                  | uCi/g  | D     | 7.23E-08           | 5.04E-08     |                    |       |
| 12-NOV-16     | Th-234             | 8.04E-07 +/- 1.82E-06                  | uCi/g  | D     | 1.83E-06           | 1.61E-06     |                    | U     |
| 12-NOV-16     | Sn-113             | 1.45E-08 +/- 3.34E-08                  | uCi/g  | D     | 3.41E-08           | 6.44E-08     |                    | U     |
| 12-NOV-16     | U-235              | 9.08E-08 +/- 1.86E-07                  | uCi/g  | D     | 1.86E-07           | 2.53E-07     |                    | U     |
| 12-NOV-16     | U-238              | 8.04E-07 +/- 1.82E-06                  | uCi/g  | D     | 1.83E-06           | 1.61E-06     |                    | U     |
| 12-NOV-16     | Y-88               | 1.14E-08 +/- 2.40E-08                  | uCi/g  | D     | 2.45E-08           | 5.44E-08     |                    | U     |
| 12-NOV-16     | Zn-65              | 2.30E-08 +/- 6.34E-08                  | uCi/g  | D     | 6.42E-08           | 1.10E-07     |                    | U     |
| 12-NOV-16     | Zr-95              | 3.83E-08 +/- 5.09E-08                  | uCi/g  | D     | 5.38E-08           | 1.02E-07     |                    | U     |
| 409515026     | OLA3-S-09          |  | Solid  |       | 27-OCT-16 13:45:00 |              | 01-NOV-16          |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured MDC | Required MDC (LLD) | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    |              |                    |       |
| 12-NOV-16     | Ac-228             | 2.75E-07 +/- 1.99E-07                  | uCi/g  | D     | 1.99E-07           | 1.53E-07     |                    |       |
| 12-NOV-16     | Am-241             | 3.60E-08 +/- 1.13E-07                  | uCi/g  | D     | 1.14E-07           | 2.06E-07     |                    | U     |
| 12-NOV-16     | Sb-124             | 1.32E-08 +/- 4.76E-08                  | uCi/g  | D     | 4.79E-08           | 1.03E-07     |                    | U     |
| 12-NOV-16     | Sb-125             | 1.04E-08 +/- 5.68E-08                  | uCi/g  | D     | 5.70E-08           | 1.01E-07     |                    | U     |
| 12-NOV-16     | Ba-133             | -2.70E-09 +/- 2.30E-08                 | uCi/g  | D     | 2.31E-08           | 4.25E-08     |                    | U     |
| 12-NOV-16     | Ba-140             | 1.26E-07 +/- 1.45E-07                  | uCi/g  | D     | 1.56E-07           | 3.07E-07     |                    | U     |
| 12-NOV-16     | Be-7               | 0.00E+00 +/- 4.61E-07                  | uCi/g  | D     | 4.62E-07           | 3.41E-07     |                    | UI    |
| 12-NOV-16     | Bi-212             | 1.96E-07 +/- 5.58E-07                  | uCi/g  | D     | 5.58E-07           | 5.43E-07     |                    | U     |
| 12-NOV-16     | Bi-214             | 1.37E-06 +/- 1.48E-07                  | uCi/g  | D     | 1.59E-07           | 6.94E-08     |                    |       |
| 12-NOV-16     | Ce-139             | 1.11E-08 +/- 1.66E-08                  | uCi/g  | D     | 1.75E-08           | 3.17E-08     |                    | U     |
| 12-NOV-16     | Ce-141             | -2.14E-08 +/- 3.99E-08                 | uCi/g  | D     | 4.10E-08           | 6.44E-08     |                    | U     |
| 12-NOV-16     | Ce-144             | -1.58E-08 +/- 1.11E-07                 | uCi/g  | D     | 1.11E-07           | 2.02E-07     |                    | U     |
| 12-NOV-16     | Cs-134             | -2.05E-09 +/- 2.33E-08                 | uCi/g  | D     | 2.33E-08           | 4.31E-08     |                    | U     |
| 12-NOV-16     | Cs-136             | 2.89E-08 +/- 5.52E-08                  | uCi/g  | D     | 5.68E-08           | 1.18E-07     |                    | U     |
| 12-NOV-16     | Cs-137             | 4.79E-10 +/- 2.11E-08                  | uCi/g  | D     | 2.11E-08           | 4.01E-08     | 1.00E-07           | U     |
| 12-NOV-16     | Cr-51              | 1.04E-07 +/- 2.05E-07                  | uCi/g  | D     | 2.10E-07           | 4.16E-07     |                    | U     |
| 12-NOV-16     | Co-56              | -1.39E-08 +/- 2.19E-08                 | uCi/g  | D     | 2.28E-08           | 3.73E-08     |                    | U     |
| 12-NOV-16     | Co-57              | -6.13E-10 +/- 1.46E-08                 | uCi/g  | D     | 1.46E-08           | 2.70E-08     |                    | U     |

Notes: 1. LLDs are a-priori values.  
2. MDCs are calculated a-posteriori values.  
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.  
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

Qualifiers: U - Target isotope was analyzed for but not detected above the MDC and LLD.  
UI - Uncertain identification for gamma spectroscopy.  
X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.  
M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 41 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description | Matrix                                 |       | Collection Date    | Receipt Date |          |           |       |
|---------------|--------------------|--|-------|--------------------|--------------|----------|-----------|-------|
| 409515026     | OLA3-S-09          | Solid                                  |       | 27-OCT-16 13:45:00 | 01-NOV-16    |          |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units | Basis              | TPU          | Measured | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |       |                    |              | MDC      | MDC (LLD) |       |
| 12-NOV-16     | Co-58              | -1.54E-08 +/- 2.29E-08                 | uCi/g | D                  | 2.40E-08     | 3.32E-08 |           | U     |
| 12-NOV-16     | Co-60              | -1.40E-08 +/- 2.15E-08                 | uCi/g | D                  | 2.25E-08     | 3.82E-08 |           | U     |
| 12-NOV-16     | Eu-152             | -1.18E-08 +/- 5.77E-08                 | uCi/g | D                  | 5.79E-08     | 1.10E-07 |           | U     |
| 12-NOV-16     | Eu-154             | -4.16E-09 +/- 5.81E-08                 | uCi/g | D                  | 5.81E-08     | 1.07E-07 |           | U     |
| 12-NOV-16     | Eu-155             | 1.46E-08 +/- 6.04E-08                  | uCi/g | D                  | 6.07E-08     | 1.15E-07 |           | U     |
| 12-NOV-16     | Ir-192             | 1.10E-09 +/- 1.88E-08                  | uCi/g | D                  | 1.88E-08     | 3.69E-08 |           | U     |
| 12-NOV-16     | Fe-59              | -9.76E-09 +/- 4.28E-08                 | uCi/g | D                  | 4.30E-08     | 8.31E-08 |           | U     |
| 12-NOV-16     | Pb-210             | 6.78E-07 +/- 3.49E-06                  | uCi/g | D                  | 3.51E-06     | 6.94E-06 |           | U     |
| 12-NOV-16     | Pb-212             | 2.95E-07 +/- 6.65E-08                  | uCi/g | D                  | 6.83E-08     | 6.27E-08 |           |       |
| 12-NOV-16     | Pb-214             | 1.74E-06 +/- 1.46E-07                  | uCi/g | D                  | 1.63E-07     | 2.82E-07 |           |       |
| 12-NOV-16     | Mn-54              | 5.23E-09 +/- 2.04E-08                  | uCi/g | D                  | 2.06E-08     | 3.96E-08 |           | U     |
| 12-NOV-16     | Hg-203             | -2.34E-08 +/- 2.15E-08                 | uCi/g | D                  | 2.40E-08     | 3.89E-08 |           | U     |
| 12-NOV-16     | Nd-147             | -9.96E-08 +/- 3.66E-07                 | uCi/g | D                  | 3.68E-07     | 6.78E-07 |           | U     |
| 12-NOV-16     | Np-239             | -6.58E-08 +/- 1.56E-07                 | uCi/g | D                  | 1.58E-07     | 2.81E-07 |           | U     |
| 12-NOV-16     | Nb-94              | 9.30E-09 +/- 2.17E-08                  | uCi/g | D                  | 2.21E-08     | 4.22E-08 |           | U     |
| 12-NOV-16     | Nb-95              | 1.72E-08 +/- 3.20E-08                  | uCi/g | D                  | 3.30E-08     | 5.46E-08 |           | U     |
| 12-NOV-16     | K-40               | 4.32E-06 +/- 6.34E-07                  | uCi/g | D                  | 6.72E-07     | 2.72E-07 |           |       |
| 12-NOV-16     | Pm-144             | -1.04E-08 +/- 1.66E-08                 | uCi/g | D                  | 1.72E-08     | 2.89E-08 |           | U     |
| 12-NOV-16     | Pm-146             | 1.24E-08 +/- 2.28E-08                  | uCi/g | D                  | 2.35E-08     | 4.65E-08 |           | U     |
| 12-NOV-16     | Ra-228             | 2.75E-07 +/- 1.99E-07                  | uCi/g | D                  | 1.99E-07     | 1.53E-07 |           |       |
| 12-NOV-16     | Ru-106             | 1.16E-07 +/- 1.74E-07                  | uCi/g | D                  | 1.82E-07     | 3.58E-07 |           | U     |
| 12-NOV-16     | Ag-110m            | 1.06E-08 +/- 2.59E-08                  | uCi/g | D                  | 2.64E-08     | 5.21E-08 |           | U     |
| 12-NOV-16     | Na-22              | -1.06E-09 +/- 2.06E-08                 | uCi/g | D                  | 2.06E-08     | 3.81E-08 |           | U     |
| 12-NOV-16     | Tl-208             | 1.16E-07 +/- 4.30E-08                  | uCi/g | D                  | 4.33E-08     | 4.15E-08 |           |       |
| 12-NOV-16     | Th-234             | 0.00E+00 +/- 2.21E-06                  | uCi/g | D                  | 2.25E-06     | 1.61E-06 |           | UI    |
| 12-NOV-16     | Sn-113             | 1.46E-08 +/- 4.33E-08                  | uCi/g | D                  | 4.34E-08     | 5.23E-08 |           | U     |
| 12-NOV-16     | U-235              | 2.96E-08 +/- 2.04E-07                  | uCi/g | D                  | 2.04E-07     | 2.09E-07 |           | U     |
| 12-NOV-16     | U-238              | 0.00E+00 +/- 2.21E-06                  | uCi/g | D                  | 2.25E-06     | 1.61E-06 |           | UI    |
| 12-NOV-16     | Y-88               | -9.05E-09 +/- 2.07E-08                 | uCi/g | D                  | 2.11E-08     | 3.79E-08 |           | U     |
| 12-NOV-16     | Zn-65              | -3.19E-09 +/- 4.22E-08                 | uCi/g | D                  | 4.22E-08     | 7.40E-08 |           | U     |
| 12-NOV-16     | Zr-95              | -3.33E-08 +/- 3.75E-08                 | uCi/g | D                  | 4.04E-08     | 6.18E-08 |           | U     |

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4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 42 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    | Receipt Date |           |       |
|---------------|--------------------|--|--------|-------|--------------------|--------------|-----------|-------|
| 409515027     | OLA3-S-10          |  | Solid  |       | 27-OCT-16 14:00:00 | 01-NOV-16    |           |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured     | Required  | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    | MDC          | MDC (LLD) |       |
| 12-NOV-16     | Ac-228             | 4.24E-07 +/- 1.57E-07                  | uCi/g  | D     | 1.58E-07           | 1.60E-07     |           |       |
| 12-NOV-16     | Am-241             | 1.72E-08 +/- 6.35E-08                  | uCi/g  | D     | 6.40E-08           | 1.30E-07     |           | U     |
| 12-NOV-16     | Sb-124             | -7.85E-10 +/- 5.12E-08                 | uCi/g  | D     | 5.12E-08           | 1.11E-07     |           | U     |
| 12-NOV-16     | Sb-125             | 2.80E-08 +/- 5.03E-08                  | uCi/g  | D     | 5.19E-08           | 1.09E-07     |           | U     |
| 12-NOV-16     | Ba-133             | 3.03E-08 +/- 3.71E-08                  | uCi/g  | D     | 3.71E-08           | 3.65E-08     |           | U     |
| 12-NOV-16     | Ba-140             | 2.49E-08 +/- 1.42E-07                  | uCi/g  | D     | 1.43E-07           | 3.00E-07     |           | U     |
| 12-NOV-16     | Be-7               | 9.55E-07 +/- 3.61E-07                  | uCi/g  | D     | 3.63E-07           | 3.76E-07     |           |       |
| 12-NOV-16     | Bi-212             | 7.34E-07 +/- 5.36E-07                  | uCi/g  | D     | 6.31E-07           | 7.93E-07     |           | U     |
| 12-NOV-16     | Bi-214             | 3.82E-07 +/- 1.14E-07                  | uCi/g  | D     | 1.16E-07           | 8.24E-08     |           |       |
| 12-NOV-16     | Ce-139             | 5.16E-09 +/- 1.39E-08                  | uCi/g  | D     | 1.41E-08           | 2.82E-08     |           | U     |
| 12-NOV-16     | Ce-141             | -1.48E-08 +/- 3.17E-08                 | uCi/g  | D     | 3.24E-08           | 5.90E-08     |           | U     |
| 12-NOV-16     | Ce-144             | -3.97E-08 +/- 9.28E-08                 | uCi/g  | D     | 9.45E-08           | 1.80E-07     |           | U     |
| 12-NOV-16     | Cs-134             | 3.68E-08 +/- 3.56E-08                  | uCi/g  | D     | 3.93E-08           | 6.00E-08     |           | U     |
| 12-NOV-16     | Cs-136             | 5.18E-08 +/- 6.89E-08                  | uCi/g  | D     | 7.29E-08           | 1.51E-07     |           | U     |
| 12-NOV-16     | Cs-137             | -2.01E-09 +/- 2.23E-08                 | uCi/g  | D     | 2.24E-08           | 4.40E-08     | 1.00E-07  | U     |
| 12-NOV-16     | Cr-51              | 4.97E-08 +/- 2.14E-07                  | uCi/g  | D     | 2.15E-07           | 4.15E-07     |           | U     |
| 12-NOV-16     | Co-56              | 5.23E-09 +/- 2.23E-08                  | uCi/g  | D     | 2.24E-08           | 4.62E-08     |           | U     |
| 12-NOV-16     | Co-57              | -5.60E-09 +/- 1.16E-08                 | uCi/g  | D     | 1.19E-08           | 2.26E-08     |           | U     |
| 12-NOV-16     | Co-58              | 1.05E-08 +/- 2.45E-08                  | uCi/g  | D     | 2.49E-08           | 4.78E-08     |           | U     |
| 12-NOV-16     | Co-60              | 5.35E-09 +/- 2.28E-08                  | uCi/g  | D     | 2.30E-08           | 4.98E-08     |           | U     |
| 12-NOV-16     | Eu-152             | 3.61E-08 +/- 5.35E-08                  | uCi/g  | D     | 5.59E-08           | 1.09E-07     |           | U     |
| 12-NOV-16     | Eu-154             | 2.91E-08 +/- 6.19E-08                  | uCi/g  | D     | 6.33E-08           | 1.41E-07     |           | U     |
| 12-NOV-16     | Eu-155             | 1.36E-08 +/- 4.94E-08                  | uCi/g  | D     | 4.98E-08           | 1.03E-07     |           | U     |
| 12-NOV-16     | Ir-192             | 9.52E-09 +/- 1.87E-08                  | uCi/g  | D     | 1.92E-08           | 3.76E-08     |           | U     |
| 12-NOV-16     | Fe-59              | 1.10E-08 +/- 5.85E-08                  | uCi/g  | D     | 5.88E-08           | 1.23E-07     |           | U     |
| 12-NOV-16     | Pb-210             | -1.47E-06 +/- 1.35E-06                 | uCi/g  | D     | 1.50E-06           | 2.58E-06     |           | U     |
| 12-NOV-16     | Pb-212             | 6.30E-07 +/- 8.17E-08                  | uCi/g  | D     | 8.82E-08           | 5.49E-08     |           |       |
| 12-NOV-16     | Pb-214             | 3.50E-07 +/- 9.28E-08                  | uCi/g  | D     | 9.39E-08           | 7.31E-08     |           |       |
| 12-NOV-16     | Mn-54              | 1.10E-08 +/- 2.38E-08                  | uCi/g  | D     | 2.43E-08           | 4.60E-08     |           | U     |
| 12-NOV-16     | Hg-203             | -1.38E-09 +/- 2.18E-08                 | uCi/g  | D     | 2.18E-08           | 3.80E-08     |           | U     |
| 12-NOV-16     | Nd-147             | -1.74E-07 +/- 3.02E-07                 | uCi/g  | D     | 3.12E-07           | 5.72E-07     |           | U     |
| 12-NOV-16     | Np-239             | 4.32E-08 +/- 2.71E-07                  | uCi/g  | D     | 2.71E-07           | 2.31E-07     |           | U     |
| 12-NOV-16     | Nb-94              | -1.64E-08 +/- 2.02E-08                 | uCi/g  | D     | 2.15E-08           | 3.52E-08     |           | U     |
| 12-NOV-16     | Nb-95              | 3.72E-09 +/- 2.83E-08                  | uCi/g  | D     | 2.83E-08           | 5.59E-08     |           | U     |
| 12-NOV-16     | K-40               | 1.40E-05 +/- 1.33E-06                  | uCi/g  | D     | 1.52E-06           | 4.66E-07     |           |       |
| 12-NOV-16     | Pm-144             | -9.68E-09 +/- 2.31E-08                 | uCi/g  | D     | 2.35E-08           | 4.29E-08     |           | U     |
| 12-NOV-16     | Pm-146             | -6.95E-09 +/- 2.25E-08                 | uCi/g  | D     | 2.27E-08           | 4.46E-08     |           | U     |

**Notes:**

1. LLDs are a-priori values.
2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

**Qualifiers:**

- U - Target isotope was analyzed for but not detected above the MDC and LLD.
- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 43 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description |  | Matrix |       | Collection Date    |              | Receipt Date       |       |
|---------------|--------------------|--|--------|-------|--------------------|--------------|--------------------|-------|
| 409515027     | OLA3-S-10          |  | Solid  |       | 27-OCT-16 14:00:00 |              | 01-NOV-16          |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured MDC | Required MDC (LLD) | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    |              |                    |       |
| 12-NOV-16     | Ra-228             | 4.24E-07 +/- 1.57E-07                  | uCi/g  | D     | 1.58E-07           | 1.60E-07     |                    |       |
| 12-NOV-16     | Ru-106             | 7.22E-08 +/- 1.93E-07                  | uCi/g  | D     | 1.96E-07           | 4.04E-07     |                    | U     |
| 12-NOV-16     | Ag-110m            | -1.66E-08 +/- 3.08E-08                 | uCi/g  | D     | 3.17E-08           | 5.47E-08     |                    | U     |
| 12-NOV-16     | Na-22              | 1.25E-08 +/- 2.24E-08                  | uCi/g  | D     | 2.31E-08           | 5.15E-08     |                    | U     |
| 12-NOV-16     | Tl-208             | 1.70E-07 +/- 6.28E-08                  | uCi/g  | D     | 6.32E-08           | 3.98E-08     |                    |       |
| 12-NOV-16     | Th-234             | 0.00E+00 +/- 2.51E-06                  | uCi/g  | D     | 2.56E-06           | 1.16E-06     |                    | UI    |
| 12-NOV-16     | Sn-113             | -1.06E-10 +/- 2.40E-08                 | uCi/g  | D     | 2.40E-08           | 4.94E-08     |                    | U     |
| 12-NOV-16     | U-235              | 4.08E-08 +/- 1.02E-07                  | uCi/g  | D     | 1.04E-07           | 2.03E-07     |                    | U     |
| 12-NOV-16     | U-238              | 0.00E+00 +/- 2.51E-06                  | uCi/g  | D     | 2.56E-06           | 1.16E-06     |                    | UI    |
| 12-NOV-16     | Y-88               | 1.02E-08 +/- 2.22E-08                  | uCi/g  | D     | 2.27E-08           | 5.54E-08     |                    | U     |
| 12-NOV-16     | Zn-65              | -2.23E-08 +/- 7.19E-08                 | uCi/g  | D     | 7.26E-08           | 1.20E-07     |                    | U     |
| 12-NOV-16     | Zr-95              | 1.79E-08 +/- 4.45E-08                  | uCi/g  | D     | 4.52E-08           | 9.31E-08     |                    | U     |
| 409515028     | OPPD-FCS-QS        |  | Solid  |       | 24-OCT-16 14:45:00 |              | 01-NOV-16          |       |
| Analysis Date | Nuclide            | Activity Concentration                 | Units  | Basis | TPU                | Measured MDC | Required MDC (LLD) | Flags |
|               |                    | +/- Counting Uncertainty<br>1.96 Sigma |        |       |                    |              |                    |       |
| 12-NOV-16     | Ac-228             | 8.22E-07 +/- 2.46E-07                  | uCi/g  | D     | 2.49E-07           | 1.94E-07     |                    |       |
| 12-NOV-16     | Am-241             | -2.07E-07 +/- 1.68E-07                 | uCi/g  | D     | 1.93E-07           | 2.91E-07     |                    | U     |
| 12-NOV-16     | Sb-124             | -2.11E-08 +/- 5.91E-08                 | uCi/g  | D     | 5.98E-08           | 1.10E-07     |                    | U     |
| 12-NOV-16     | Sb-125             | 1.97E-09 +/- 6.02E-08                  | uCi/g  | D     | 6.02E-08           | 1.11E-07     |                    | U     |
| 12-NOV-16     | Ba-133             | 1.31E-08 +/- 3.09E-08                  | uCi/g  | D     | 3.14E-08           | 5.33E-08     |                    | U     |
| 12-NOV-16     | Ba-140             | -1.61E-07 +/- 2.16E-07                 | uCi/g  | D     | 2.28E-07           | 3.90E-07     |                    | U     |
| 12-NOV-16     | Be-7               | 8.12E-08 +/- 2.57E-07                  | uCi/g  | D     | 2.60E-07           | 4.78E-07     |                    | U     |
| 12-NOV-16     | Bi-212             | 1.11E-06 +/- 7.15E-07                  | uCi/g  | D     | 7.17E-07           | 6.70E-07     |                    |       |
| 12-NOV-16     | Bi-214             | 8.53E-07 +/- 1.69E-07                  | uCi/g  | D     | 1.73E-07           | 9.26E-08     |                    |       |
| 12-NOV-16     | Ce-139             | 1.05E-09 +/- 1.97E-08                  | uCi/g  | D     | 1.98E-08           | 3.76E-08     |                    | U     |
| 12-NOV-16     | Ce-141             | -2.00E-08 +/- 4.84E-08                 | uCi/g  | D     | 4.92E-08           | 8.26E-08     |                    | U     |
| 12-NOV-16     | Ce-144             | 8.01E-09 +/- 1.39E-07                  | uCi/g  | D     | 1.39E-07           | 2.47E-07     |                    | U     |
| 12-NOV-16     | Cs-134             | -1.34E-10 +/- 3.05E-08                 | uCi/g  | D     | 3.05E-08           | 5.73E-08     |                    | U     |
| 12-NOV-16     | Cs-136             | -5.03E-08 +/- 1.04E-07                 | uCi/g  | D     | 1.06E-07           | 1.52E-07     |                    | U     |
| 12-NOV-16     | Cs-137             | -1.56E-08 +/- 2.67E-08                 | uCi/g  | D     | 2.76E-08           | 4.79E-08     | 1.00E-07           | U     |
| 12-NOV-16     | Cr-51              | -6.12E-08 +/- 2.82E-07                 | uCi/g  | D     | 2.83E-07           | 5.14E-07     |                    | U     |
| 12-NOV-16     | Co-56              | -7.59E-09 +/- 2.81E-08                 | uCi/g  | D     | 2.83E-08           | 5.13E-08     |                    | U     |
| 12-NOV-16     | Co-57              | -6.42E-09 +/- 1.90E-08                 | uCi/g  | D     | 1.92E-08           | 3.30E-08     |                    | U     |

**Notes:**

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- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** November 30, 2016  
Page 44 of 44

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 409515

| GEL ID        | Client Description | Matrix   | Collection Date    | Receipt Date |                   |                 |                       |       |
|---------------|--------------------|--|--------------------|--------------|-------------------|-----------------|-----------------------|-------|
| 409515028     | OPPD-FCS-QS        | Solid  | 24-OCT-16 14:45:00 | 01-NOV-16    |                   |                 |                       |       |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units              | Basis        | TPU<br>1.96 Sigma | Measured<br>MDC | Required<br>MDC (LLD) | Flags |
| 12-NOV-16     | Co-58              | 2.02E-08 +/- 3.15E-08  | uCi/g              | D            | 3.28E-08          | 5.50E-08        |                       | U     |
| 12-NOV-16     | Co-60              | -1.67E-08 +/- 2.91E-08   | uCi/g              | D            | 3.00E-08          | 5.18E-08        |                       | U     |
| 12-NOV-16     | Eu-152             | 1.51E-08 +/- 6.32E-08  | uCi/g              | D            | 6.35E-08          | 1.19E-07        |                       | U     |
| 12-NOV-16     | Eu-154             | 1.12E-09 +/- 9.33E-08  | uCi/g              | D            | 9.33E-08          | 1.78E-07        |                       | U     |
| 12-NOV-16     | Eu-155             | 1.40E-08 +/- 7.93E-08  | uCi/g              | D            | 7.95E-08          | 1.44E-07        |                       | U     |
| 12-NOV-16     | Ir-192             | -7.22E-10 +/- 2.58E-08   | uCi/g              | D            | 2.58E-08          | 4.77E-08        |                       | U     |
| 12-NOV-16     | Fe-59              | 2.18E-08 +/- 6.22E-08  | uCi/g              | D            | 6.30E-08          | 1.21E-07        |                       | U     |
| 12-NOV-16     | Pb-210             | -7.44E-06 +/- 7.28E-06   | uCi/g              | D            | 8.05E-06          | 1.28E-05        |                       | U     |
| 12-NOV-16     | Pb-212             | 9.74E-07 +/- 8.63E-08  | uCi/g              | D            | 1.01E-07          | 6.55E-08        |                       |       |
| 12-NOV-16     | Pb-214             | 1.11E-06 +/- 1.46E-07  | uCi/g              | D            | 1.53E-07          | 9.18E-08        |                       |       |
| 12-NOV-16     | Mn-54              | 1.76E-08 +/- 2.53E-08  | uCi/g              | D            | 2.65E-08          | 5.12E-08        |                       | U     |
| 12-NOV-16     | Hg-203             | 1.35E-08 +/- 2.91E-08  | uCi/g              | D            | 2.97E-08          | 5.07E-08        |                       | U     |
| 12-NOV-16     | Nd-147             | -1.71E-07 +/- 4.54E-07   | uCi/g              | D            | 4.60E-07          | 8.54E-07        |                       | U     |
| 12-NOV-16     | Np-239             | -4.05E-10 +/- 1.84E-07   | uCi/g              | D            | 1.84E-07          | 3.30E-07        |                       | U     |
| 12-NOV-16     | Nb-94              | 7.34E-09 +/- 2.57E-08  | uCi/g              | D            | 2.59E-08          | 4.96E-08        |                       | U     |
| 12-NOV-16     | Nb-95              | 3.37E-08 +/- 3.88E-08  | uCi/g              | D            | 4.17E-08          | 7.02E-08        |                       | U     |
| 12-NOV-16     | K-40               | 1.46E-05 +/- 1.19E-06  | uCi/g              | D            | 1.41E-06          | 3.78E-07        |                       |       |
| 12-NOV-16     | Pm-144             | -2.54E-08 +/- 2.35E-08   | uCi/g              | D            | 2.62E-08          | 3.97E-08        |                       | U     |
| 12-NOV-16     | Pm-146             | 0.00E+00 +/- 6.92E-08  | uCi/g              | D            | 7.42E-08          | 5.11E-08        |                       | UI    |
| 12-NOV-16     | Ra-228             | 8.22E-07 +/- 2.46E-07  | uCi/g              | D            | 2.49E-07          | 1.94E-07        |                       |       |
| 12-NOV-16     | Ru-106             | -3.97E-08 +/- 2.41E-07   | uCi/g              | D            | 2.41E-07          | 4.49E-07        |                       | U     |
| 12-NOV-16     | Ag-110m            | 5.43E-08 +/- 4.98E-08  | uCi/g              | D            | 5.56E-08          | 7.01E-08        |                       | U     |
| 12-NOV-16     | Na-22              | -5.82E-09 +/- 3.38E-08   | uCi/g              | D            | 3.39E-08          | 6.31E-08        |                       | U     |
| 12-NOV-16     | Tl-208             | 3.01E-07 +/- 6.64E-08  | uCi/g              | D            | 6.76E-08          | 4.09E-08        |                       |       |
| 12-NOV-16     | Th-234             | -9.43E-07 +/- 1.40E-06   | uCi/g              | D            | 1.48E-06          | 2.45E-06        |                       | U     |
| 12-NOV-16     | Sn-113             | 1.39E-08 +/- 3.25E-08  | uCi/g              | D            | 3.31E-08          | 6.16E-08        |                       | U     |
| 12-NOV-16     | U-235              | 9.10E-08 +/- 2.33E-07  | uCi/g              | D            | 2.33E-07          | 2.29E-07        |                       | U     |
| 12-NOV-16     | U-238              | -9.43E-07 +/- 1.40E-06   | uCi/g              | D            | 1.48E-06          | 2.45E-06        |                       | U     |
| 12-NOV-16     | Y-88               | -3.75E-09 +/- 2.43E-08   | uCi/g              | D            | 2.43E-08          | 4.79E-08        |                       | U     |
| 12-NOV-16     | Zn-65              | 4.83E-08 +/- 6.57E-08  | uCi/g              | D            | 6.93E-08          | 1.20E-07        |                       | U     |
| 12-NOV-16     | Zr-95              | 4.26E-09 +/- 5.40E-08  | uCi/g              | D            | 5.40E-08          | 1.03E-07        |                       | U     |

**Notes:**

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# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Environmental Laboratory Analysis Report

**Company :** Bartlett Nuclear, Inc  
**Address :** 60 Industrial Park Road

**Report Date:** December 14, 2016  
Page 1 of 1

Plymouth, Massachusetts 02360

**Contact:** Mr. Dave Montt

**Project:** OPPD HSA

**SDG:** 412065

| GEL ID        | Client Description |  | Matrix |       | Collection Date    |                 | Receipt Date          |       |  |
|---------------|--------------------|--|--------|-------|--------------------|-----------------|-----------------------|-------|--|
| 412065001     | PA2-S-06           |  | Solid  |       | 24-OCT-16 14:45:00 |                 | 01-NOV-16             |       |  |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |  |
| 13-DEC-16     | Sr-90              | 7.02E-01 +/- 5.69E-01  | pCi/g  | D     | 5.83E-01           | 8.92E-01        | 1.20E+00              | U     |  |
| 412065002     | PA2-D6-07          |  | Solid  |       | 24-OCT-16 14:00:00 |                 | 01-NOV-16             |       |  |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |  |
| 13-DEC-16     | Sr-90              | 5.48E-01 +/- 6.86E-01  | pCi/g  | D     | 6.94E-01           | 1.16E+00        | 1.20E+00              | U     |  |
| 412065003     | PA1-D1-04          |  | Solid  |       | 25-OCT-16 10:40:00 |                 | 01-NOV-16             |       |  |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |  |
| 13-DEC-16     | Sr-90              | 1.48E-01 +/- 4.95E-01  | pCi/g  | D     | 4.96E-01           | 9.11E-01        | 1.20E+00              | U     |  |
| 412065004     | PA3-S-04           |  | Solid  |       | 25-OCT-16 14:30:00 |                 | 01-NOV-16             |       |  |
| Analysis Date | Nuclide            | Activity Concentration<br>+/- Counting Uncertainty<br>1.96 Sigma | Units  | Basis | TPU<br>1.96 Sigma  | Measured<br>MDC | Required<br>MDC (LLD) | Flags |  |
| 13-DEC-16     | Sr-90              | 3.39E-01 +/- 6.38E-01  | pCi/g  | D     | 6.41E-01           | 1.11E+00        | 1.20E+00              | U     |  |

**Notes:**

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- UI - Uncertain identification for gamma spectroscopy.
- X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- M - Reported result is less than the LLD and greater than the MDC.

**APPENDIX C      INSTRUMENTATION CHECKS AND CALIBRATIONS**



**Safety and Ecology Corporation**  
2800 Solway Road, Knoxville, TN 37931

SEC PROCEDURE # SEC-IS-424 Rev 2

Page 1 of 1

### Calibration Certificate

10/10/2016

Calibration Certificate for 2350-1, Serial # 203485, Bar Code # ,Property # SEC-5846

Date: 10/10/16

Date Last Cal. Expires: 08/17/17

Technician: Thomas Thompson

Location: 999999,

Reason For Calibration: Short Cycled

#### EQUIPMENT USED DURING CALIBRATION

MODEL: 500-2

SERIAL #: 268940

CAL. DUE: 05/02/17

MODEL:

SERIAL #:

CAL DUE:

#### AS FOUND DATA

AS FOUND Instrument Condition: SAT

AS LEFT Instrument Condition: SAT

☐ New Batteries?

Battery Check: SAT

| <u>High Voltage</u><br>(+/- 10% tolerance) | AS FOUND<br>High Voltage | AS LEFT<br>High Voltage | AS FOUND HV Setting: 1100 V | AS LEFT HV Setting: 1100 V |
|--|--------------------------|-------------------------|-----------------------------|----------------------------|
| 500 V:                                     | 500                      | 503                     | AS FOUND THRESHOLD: 8.2 mV  | AS LEFT THRESHOLD: 10 mV   |
| 1000 V:                                    | 995                      | 1000                    |                             |                            |
| 1500 V:                                    | 1485                     | 1492                    |                             |                            |

#### REPRODUCIBILITY

|                      |       |       |       |
|----------------------|-------|-------|-------|
| x.1 or x1 Scale:     | 250   | 250   | 250   |
| x1 or x10 Scale:     | 2500  | 2500  | 2500  |
| x10 or x100 Scale:   | 25 K  | 25 K  | 25 K  |
| x100 or x1000 Scale: | 250 K | 250 K | 250 K |

☒ Are the Individual Counts Within 10% of the Average?

☒ Fast / Slow Response Switch Functions Properly?

Audio Response: SAT

#### DIGITAL SCALER

|                               |                            |
|-------------------------------|----------------------------|
| AF 250: 250 % ERR: 0.00%      | AL 250: AF % ERR: 0.00%    |
| AF 2500: 2498 % ERR: 0.08%    | AL 2500: AF % ERR: 0.08%   |
| AF 25K: 24.98 K % ERR: 0.08%  | AL 25K: AF K % ERR: 0.08%  |
| AF 250K: 249.8 K % ERR: 0.08% | AL 250K: AF K % ERR: 0.08% |

☒ Is the As Found Data Within 20% of the Set Point?

Push Buttons: SAT

Lamp: SAT

Audio/Divide: SAT

Comments: Married as a set with:

Model: 44-10

Serial #: PR226924

Bar Code #:

☒ Does Instrument Meet Final Acceptance Criteria?

☒ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 10/10/17

Performed by:

Reviewed by:

Date: 10/12/16

Printed Name: Thomas Thompson







**Safety and Ecology Corporation** SEC PROCEDURE # SEC-IS-415 Rev 3  
 2800 Solway Road, Knoxville, TN 37931  
**Calibration Certificate**

Page 1 of 1  
 10/10/2016

Calibration Certificate for 44-10, Serial # PR226924, Bar Code # , Property # PFL-116

Date: 10/10/16 Date Last Cal. Expires: 08/17/17 Technician: Thomas Thompson  
 Location: 999999 Reason For Calibration: Due for Calibration

**EQUIPMENT USED DURING CALIBRATION**

MODEL: 2350-1 SERIAL #: 203485 CAL DUE: 10/10/17  
 MODEL: SERIAL #: CAL DUE:

**NIST TRACEABLE SOURCES USED**

| SOURCE       | ISOTOPE | ACTIVITY   | 2 $\pi$ | ASSAY DATE |
|--------------|---------|------------|---------|------------|
| 99CS250-0288 | Cs-137  | 6.2083 uCi |         | 1/1/2016   |

Efficiency from Last Calibration: 0.68 % HV From Last Calibration: 1100 V Calibration Threshold: 10 mV

**AS FOUND DATA**

AS FOUND Instrument Condition: SAT  
 HV: 1100 V  
 Center: 93831  
 Background: 4119  
 4  $\pi$  Probe Efficiency: Cs-137 0.65%

**1 MINUTE COUNTS (CPM)**

**AS LEFT DATA after repair of HV adjust**

AS LEFT Instrument Condition: SAT  
 HV: 1100 V  
 Center: 94318  
 Background: 4098  
 4  $\pi$  Probe Efficiency: Cs-137 0.65%

"AF" in the AL Efficiency fields means to refer to the AF Efficiencies in the AS FOUND DATA Section

☒ Is the As Found Efficiency Within 20% of the efficiency from the last cal.?

Reproducibility: Isotope: Cs-137 95950 96787 96252 Average: 96330 ☒ Are the individual counts within 10% of the average?

\* If As Found Efficiency (even after repair) is within 10% of the last calibration and uniformity is <10%, the technician may N/A the Plateau Data and proceed to Comments. Geometry = Nal probes are 4 1/2" from source. All other probes are in contact with surface unless otherwise specified.

**PLATEAU AND SET POINT DATA (CPM)**

| High Voltage | Source Response | Background | HV | CENTER | Background | 4 $\pi$ Efficiency |
|--------------|-----------------|------------|----|--------|------------|--------------------|
| N/A          |                 |            | V  |        |            | Cs-137             |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |

Comments: Married as a set with: Model: 2350-1 Serial #: 203485 Bar Code #:

☒ Does Instrument Meet Final Acceptance Criteria?

☒ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 10/10/17

Performed by: Printed Name: Thomas Thompson

Reviewed by: Date: 10/12/16





**Safety and Ecology Corporation**  
2800 Solway Road, Knoxville, TN 37931

SEC PROCEDURE # SEC-IS-424 Rev 2

Page 1 of 1

### Calibration Certificate

10/10/2016

Calibration Certificate for 2350-1, Serial # 221036, Bar Code #, Property # SEC-6323

Date: 10/10/16

Date Last Cal. Expires: 01/14/17

Technician: Thomas Thompson

Location: 999999,

Reason For Calibration: Short Cycled

#### EQUIPMENT USED DURING CALIBRATION

MODEL: 500-2

SERIAL #: 268940

CAL. DUE: 05/02/17

MODEL:

SERIAL #:

CAL DUE:

#### AS FOUND DATA

AS FOUND Instrument Condition: SAT

AS LEFT Instrument Condition: SAT

☐ New Batteries?

Battery Check: SAT

| High Voltage<br>(+/- 10% tolerance) | AS FOUND<br>High Voltage | AS LEFT<br>High Voltage |
|-------------------------------------|--------------------------|-------------------------|
| 500 V:                              | 502                      | AF                      |
| 1000 V:                             | 999                      | AF                      |
| 1500 V:                             | 1490                     | AF                      |

AS FOUND HV Setting: 1100 V

AS LEFT HV Setting: 1100 V

AS FOUND THRESHOLD: 10 mV

AS LEFT THRESHOLD: 10 mV

#### REPRODUCIBILITY

|                      |       |       |       |
|----------------------|-------|-------|-------|
| x.1 or x1 Scale:     | 250   | 250   | 250   |
| x1 or x10 Scale:     | 2500  | 2500  | 2500  |
| x10 or x100 Scale:   | 25 K  | 25 K  | 25 K  |
| x100 or x1000 Scale: | 250 K | 250 K | 250 K |

☒ Are the Individual Counts Within 10% of the Average?

☒ Fast / Slow Response Switch Functions Properly?

Audio Response: SAT

#### DIGITAL SCALER

|                  |              |               |              |
|------------------|--------------|---------------|--------------|
| AF 250: 250      | % ERR: 0.00% | AL 250: AF    | % ERR: 0.00% |
| AF 2500: 2499    | % ERR: 0.04% | AL 2500: AF   | % ERR: 0.04% |
| AF 25K: 24.99 K  | % ERR: 0.04% | AL 25K: AF K  | % ERR: 0.04% |
| AF 250K: 249.9 K | % ERR: 0.04% | AL 250K: AF K | % ERR: 0.04% |

☒ Is the As Found Data Within 20% of the Set Point?

Push Buttons: SAT

Lamp: SAT

Audio/Divide: SAT

Comments: Married as a set with:

Model: 44-10

Serial #: PR245275

Bar Code #:

☒ Does Instrument Meet Final Acceptance Criteria?

☒ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 10/10/17

Performed by:

Printed Name: Thomas Thompson

Reviewed by:

Date: 10/12/16





**Safety and Ecology Corporation** SEC PROCEDURE # SEC-IS-415 Rev 3  
 2800 Solway Road, Knoxville, TN 37931  
**Calibration Certificate**

Page 1 of 1  
 10/10/2016

Calibration Certificate for 44-10, Serial # PR245275, Bar Code # ,Property # PFL-059

Date: 10/10/16 Date Last Cal. Expires: 01/14/17 Technician: Thomas Thompson  
 Location: 999999, Reason For Calibration: Short Cycled

**EQUIPMENT USED DURING CALIBRATION**

MODEL: 2350-1 SERIAL #: 221036 CAL DUE: 10/10/17  
 MODEL: SERIAL #: CAL DUE:

**NIST TRACEABLE SOURCES USED**

| SOURCE       | ISOTOPE | ACTIVITY   | 2 $\pi$ | ASSAY DATE |
|--------------|---------|------------|---------|------------|
| 99CS250-0288 | Cs-137  | 6.2083 uCi |         | 1/1/2016   |

Efficiency from Last Calibration: 0.65 % HV From Last Calibration: 1100 V Calibration Threshold: 10 mV

**AS FOUND DATA**

AS FOUND Instrument Condition: SAT

HV: 1100 V

Center: 93765

Background: 4118

4  $\pi$  Probe Efficiency: Cs-137 0.65%

**1 MINUTE COUNTS (CPM)**

**AS LEFT DATA after repair of HV adjust**

AS LEFT Instrument Condition: SAT

HV: 1100 V

Center: 94921

Background: 4108

4  $\pi$  Probe Efficiency: Cs-137 0.66%

"AF" in the AL Efficiency fields means to refer to the AF Efficiencies in the AS FOUND DATA Section

☒ Is the As Found Efficiency Within 20% of the efficiency from the last cal.?

Reproducibility: Isotope:Cs-137 92425 95618 94449 Average: 94164 ☒ Are the individual counts within 10% of the average?

\* If As Found Efficiency (even after repair) is within 10% of the last calibration and uniformity is <10%, the technician may N/A the Plateau Data and proceed to Comments. Geometry = Nal probes are 4 1/2" from source. All other probes are in contact with surface unless otherwise specified.

**PLATEAU AND SET POINT DATA (CPM)**

| High Voltage | Source Response | Background | HV | CENTER | Background | 4 $\pi$ Efficiency |
|--------------|-----------------|------------|----|--------|------------|--------------------|
| N/A          |                 |            | V  |        |            | Cs-137             |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |
|              |                 |            |    |        |            |                    |

Comments: Married as a set with: Model: 2350-1 Serial #: 221036 Bar Code #:

☒ Does Instrument Meet Final Acceptance Criteria?

☒ Calibration Sticker Attached?

Performed by: Thomas Thompson Date Instrument is Due For Next Calibration: 10/10/17  
 Printed Name: Thomas Thompson Reviewed by: Thomas Thompson Date: 10/12/16



# SECTION TEN

## Appendices

Detector Model: Ludlum 44-10 Detector Serial No.: PR245275 Cal Date: 10/10/16 Cal Due Date: 10/10/17

Instrument Model: Ludlum 2350-1 Instrument Serial No.: 221036 Cal Date: 10/10/16 Cal Due Date: 10/10/17

Background / Source Check Location: CNO/DM Conference Admin Bldg

Source Isotope: Cs137 Source Serial No.: 60 Current Source Activity: 5 uCi (1/2004)

### MEAN DETERMINATION

| #                    | Background (cpm) | Source (cpm) |
|----------------------|------------------|--------------|
| 1                    | 6371             | 815,863      |
| 2                    | 6437             | 816,318      |
| 3                    | 6560             | 812,826      |
| 4                    | 6593             | 815,001      |
| 5                    | 6564             | 814,331      |
| 6                    | 6500             | 815,610      |
| 7                    | 6621             | 815,538      |
| 8                    | 6545             | 815,283      |
| 9                    | 6512             | 813,655      |
| 10                   | 6455             | 815,927      |
| Sum ( $\Sigma$ )     | 65,158           | 8,150,352    |
| Mean ( $\Sigma/10$ ) | 6516             | 815,035      |

| Mean Net cpm<br>(Mean Source – Mean Background) | +20% value<br>(Mean Net * 1.2) | -20% value<br>(Mean Net * 0.8) |
|---|--------------------------------|--------------------------------|
| 808,519   | 970,223                        | 646,815                        |

Technician: Dave Montt  Date: 10-18-2016

## Survey Instrument Source Check Form

Instrument/Detector: Ludlum 2350-1/44-10Instrument/Detector ID No.: 221036/PR 245 275Instrument/Detector Cal. Due Date: 10/10/2017Source Type & ID No.: C0137 60 Position: centerAcceptable Range (ncpm): 970,223 to 646,815

| Date     | Time  | Pre or Post Check | Gross Counts (cpm) | Background Counts (cpm) | Net Counts (cpm) | Initials |
|----------|-------|-------------------|--------------------|-------------------------|------------------|----------|
| 10/19/16 | 09:20 | Pre               | 857,498            | 6664                    | 850,834          | DM       |
| 10/19/16 | 15:30 | Post              | 860,274            | 6318                    | 853,956          | DM       |
| 10/20/16 | 09:00 | Pre               | 861,017            | 6,729                   | 854,288          | DM       |
| 10/20/16 | 1530  | Post              | 862,193            | 6592                    | 855,601          | JS       |
| 10/21/16 | 08:08 | Pre               | 859,827            | 6713                    | 853,114          | JS       |
| 10/21/16 | 1215  | Post              | 858,293            | 6445                    | 851,848          | JS       |
| 10/24/16 | 07:55 | Pre               | 862,163            | 6491                    | 855,672          | DM       |
| 10/24/16 | 1730  | Post              | 840,619            | 6328                    | 834,291          | JS       |
| 10/25/16 | 0810  | Pre               | 863,065            | 6571                    | 856,494          | JS       |
| 10/25/16 | 0830  | Post              | 858,352            | 6493                    | 851,859          | JS       |
| 10/26/16 | 0755  | PRE               | 851,856            | 6526                    | 845,330          | JS       |
| 10/26/16 | 1456  | Post              | 845,816            | 6408                    | 839,408          | JS       |
| 10/27/16 | 0750  | Pre               | 896,575            | 6500                    | 890,075          | JS       |
| 10/27/16 | 1440  | Post              | 852,607            | 6614                    | 845,993          | JS       |

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Review By: [Signature]Date: 10/27/2016

Detector Model: Ludlum 44-10 Detector Serial No.: PR226924 Cal Date: 10/10/16 Cal Due Date: 10/10/17

Instrument Model: Ludlum 2350-1 Instrument Serial No.: 203485 Cal Date: 10/10/16 Cal Due Date: 10/10/17

Background / Source Check Location: CNO/DM Conference Admin Bldg

Source Isotope: Cs137 Source Serial No.: 60 Current Source Activity: 5 uCi (1/2004)

#### MEAN DETERMINATION

| #                    | Background (cpm) | Source (cpm) |
|----------------------|------------------|--------------|
| 1                    | 6756             | 843914       |
| 2                    | 6824             | 844786       |
| 3                    | 6891             | 841225       |
| 4                    | 6532             | 843911       |
| 5                    | 6797             | 840200       |
| 6                    | 6748             | 841799       |
| 7                    | 6805             | 843357       |
| 8                    | 6905             | 843098       |
| 9                    | 6834             | 841720       |
| 10                   | 6704             | 842394       |
| Sum ( $\Sigma$ )     | 67,796           | 8,426,404    |
| Mean ( $\Sigma/10$ ) | 6780             | 842,640      |

| Mean Net cpm<br>(Mean Source - Mean Background) | +20% value<br>(Mean Net * 1.2) | -20% value<br>(Mean Net * 0.8) |
|---|--------------------------------|--------------------------------|
| 837,860   | 1,003,032                      | 668,688                        |

Technician: Dave Montt  Date: 10-18-2016

## Survey Instrument Source Check Form

Instrument/Detector: Lydium 2350-1 / 44-10Instrument/Detector ID No.: 203485 / PR 226924Instrument/Detector Cal. Due Date: 10/10/2017Source Type & ID No.: Cs137 60 Position: centerAcceptable Range (ncpm): 1,003,032 to 668,688

| Date     | Time  | Pre or Post Check | Gross Counts (cpm) | Background Counts (cpm) | Net Counts (cpm) | Initials |
|----------|-------|-------------------|--------------------|-------------------------|------------------|----------|
| 10/19/16 | 09:05 | Pre               | 896,330            | 6741                    | 889,589          | DM       |
| 10/19/16 | 15:20 | Post              | 899,277            | 6329                    | 892,948          | DM       |
| 10/20/16 | 0900  | Pre               | 902,073            | 6817                    | 895,256          | DM       |
| 10/20/16 | 1530  | Post              | 902,577            | 6596                    | 895,981          | JS       |
| 10/21/16 | 08:08 | Pre               | 902,602            | 6496                    | 896,106          | JS       |
| 10/21/16 | 1220  | Post              | 901,754            | 6479                    | 895,275          | JS       |
| 10/24/16 | 07:55 | Pre               | 901,748            | 6470                    | 895,278          | DM       |
| 10/24/16 | 0735  | Post              | 889,249            | 6188                    | 883,061          | JS       |
| 10/25/16 | 0810  | Pre               | 901,280            | 6336                    | 894,944          | JS       |
| 10/25/16 | 1530  | Post              | 895,264            | 6443                    | 888,821          | JS       |
| 10/26/16 | 0755  | Pre               | 901,932            | 6545                    | 895,387          | JS       |
| 10/26/16 | 1455  | Post              | 892,274            | 6247                    | 886,027          | JS       |
| 10/27/16 | 0750  | Pre               | 851,810            | 6590                    | 845,220          | JS       |
| 10/27/16 | 1440  | Post              | 880,751            | 6618                    | 874,133          | JS       |

Page 1 of 1

Review By: [Signature]Date: 10/27/2016

**APPENDIX D      CHAIN OF CUSTODY FORMS**



|  |                           |   |   |   |                                 |   |  |
|--|---------------------------|---|---|---|---------------------------------|---|--|
| Page <u>1</u> of <u>3</u><br>Project #: BHH00103<br>GEL Queue #: GELP16-0736<br>COC Number <sup>(1)</sup> :<br>PO Number:  |                           | <b>GEL Chain of Custody and Analytical Request</b><br>**See www.gel.com for GEL's Sample Acceptance SOP**<br><b>GEL Work Order Number: 409238</b>   |   |   |                                 | GEL Laboratories, LLC<br>2040 Savage Road<br>Charleston, SC 29407<br>Phone: (843) 556-8171<br>Fax: (843) 766-1178 |  |
| Client Name: Fort Calhoun Nuclear Station / <u>BHI</u><br>Project/Site Name: OPRD HAS<br>Address: 9610 Power Lane Blair, NE 68008  |                           | Phone #: <u>Montt 508 360 2877</u><br><u>Bisson 774 454 0726</u><br>Fax #:  |   | Sample Analysis Requested <sup>(2)</sup> (Fill in the number of containers for each test) |                                 |   |  |
| Collected by: <u>Montt/Bisson</u><br>Send Results: <u>dave.montt@bhienrgy.com</u><br><u>joeph.bisson@bhienrgy.com</u>  |                           | Should this sample be considered:<br>TSC-A Regulated: <input type="checkbox"/><br>TSC-B: <input type="checkbox"/><br>TSC-C: <input type="checkbox"/><br>TSC-D: <input type="checkbox"/><br>TSC-E: <input type="checkbox"/><br>TSC-F: <input type="checkbox"/><br>TSC-G: <input type="checkbox"/><br>TSC-H: <input type="checkbox"/><br>TSC-I: <input type="checkbox"/><br>TSC-J: <input type="checkbox"/><br>TSC-K: <input type="checkbox"/><br>TSC-L: <input type="checkbox"/><br>TSC-M: <input type="checkbox"/><br>TSC-N: <input type="checkbox"/><br>TSC-O: <input type="checkbox"/><br>TSC-P: <input type="checkbox"/><br>TSC-Q: <input type="checkbox"/><br>TSC-R: <input type="checkbox"/><br>TSC-S: <input type="checkbox"/><br>TSC-T: <input type="checkbox"/><br>TSC-U: <input type="checkbox"/><br>TSC-V: <input type="checkbox"/><br>TSC-W: <input type="checkbox"/><br>TSC-X: <input type="checkbox"/><br>TSC-Y: <input type="checkbox"/><br>TSC-Z: <input type="checkbox"/> |   | Comments:<br>Note: extra sample is required for sample specific QC                        |                                 |   |  |
| Sample ID<br>*For computers - indicate unit and copy drawing*  | Date Collected (mm-dd-yy) | Time Collected (Military) (hh:mm)   | QC Code <sup>(3)</sup>                      | Field Filtered <sup>(3)</sup>   | Sample Matrix <sup>(4)</sup>    | Total number of containers  | Preservative Type <sup>(6)</sup>   |
| OLA-5-S-001  | 10/19/16                  | on bag  |   |   | 50                              |   |  |
| OLA5-S-002   |                           |   |   |   |                                 |   |  |
| OLA5-S-003   |                           |   |   |   |                                 |   |  |
| OLA5-D3 004  |                           |   |   |   |                                 |   |  |
| OLA6-S-001   |                           |   |   |   |                                 |   |  |
| OLA6-D1.5-002  |                           |   |   |   |                                 |   |  |
| OLA6-S-003   |                           |   |   |   |                                 |   |  |
| OLA6-D2-004  |                           |   |   |   |                                 |   |  |
| OLA6-S-005   |                           |   |   |   |                                 |   |  |
| OLA6-D2-006  | ✓                         | ✓   |   |   | ✓                               |   |  |
| TAT Requested: Normal: <input checked="" type="checkbox"/> Rush: <input type="checkbox"/> Specific: <input type="checkbox"/> (Subject to Surrogate)  |                           | Fax Results: Yes <input type="checkbox"/> / No <input checked="" type="checkbox"/>  |   | Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4           |                                 |   |  |
| Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards.<br><u>No hazards known. Standard environmental sensitivity is requested.</u>   |                           |   |   |   |                                 |   | Sample Collection Time Zone:<br>Eastern <input type="checkbox"/> Pacific <input type="checkbox"/><br>Central <input checked="" type="checkbox"/> Other <input type="checkbox"/><br>Mountain <input type="checkbox"/> |
| Chain of Custody Signatures  |                           |   |   | Sample Shipping and Delivery Details  |                                 |   |  |
| Relinquished By (Signed):<br><u>[Signature]</u>  | Date:<br><u>11/22/16</u>  | Time:<br><u>1300</u>  | Received by (Signed):<br><u>X J. Bourne</u> | Date:<br><u>10/22/16</u>  | Time:<br><u>1500</u>            | GEL PM: Lindsay Fahra 843-556-8171  |  |
| 2<br><u>[Signature]</u>  | 2<br><u>[Signature]</u>   | 10/22/16 1600   | Method of Shipment: <u>FedEx</u>            |   | Date Shipped: <u>10/22/2016</u> |   |  |
| 3<br><u>[Signature]</u>  | 3<br><u>[Signature]</u>   | 10/22/16 0920   | Airbill #:                                  |   | Airbill #:                      |   |  |
| 1.) Chain of Custody Number = Client Determined  |                           |   |   | For Lab Receiving Use Only  |                                 |   |  |
| 2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, LB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite                                       |                           |   |   | Canopy Seal Intact? YES NO  |                                 |   |  |
| 3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered  |                           |   |   | Cooler Temp: C  |                                 |   |  |
| 4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Wastewater, W = Water, ML = Misc Liquid, SD = Sediment, SL = Sludge, SS = Solid Waste, OIL = Fuel Oil, P = Wipe, H = Hume, F = Fuel, N = |                           |   |   |   |                                 |   |  |
| 5.) Sample Analysis Request: Analytical method requested (ie: 8260B, 8610B/7C0A) and number of containers provided for each (ie: 8260B - 3, 8610B/7C0A - 1)  |                           |   |   |   |                                 |   |  |
| 6.) Preservative Type: HA = Hydrochloric Acid, NA = Nitric Acid, NH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Acetic Acid, HX = Hexane, ST = Sodium Thiosulfate. If no preservative is added = leave field blank        |                           |   |   |   |                                 |   |  |
| WHITE = LABORATORY   |                           |   |   | YELLOW = FILE   |                                 |   |  |
|  |                           |   |   | PINK = CLIENT   |                                 |   |  |

|  |          |   |  |                      |                    |   |                                   |                                    |                  |   |   |
|--|----------|---|--|----------------------|--------------------|---|-----------------------------------|------------------------------------|------------------|---|---|
| Page <u>3</u> of <u>3</u><br>Project #: BHH00103<br>GEL Quote #: GELP16-0736<br>COC Number (1):<br>PO Number:  |          | <b>GEL Chain of Custody and Analytical Request</b><br>**See www.gel.com for GEL's Sample Acceptance SOP**<br><b>GEL Work Order Number: 409238</b> |  |                      |                    | GEL Laboratories, LLC<br>2040 Savage Road<br>Charleston, SC 29407<br>Phone: (843) 556-8171<br>Fax: (843) 766-1178 |                                   |                                    |                  |   |   |
| Client Name: Fort Calhoun Nuclear Station/BHI<br>Phone #: <u>Montt 508 360 2877</u><br><u>Bisson 774 454 0726</u><br>Project/Site Name: OPPD HAS<br>Address: 9610 Power Lane Blair, NE 68008<br>Collected by: <u>Montt/Bisson</u><br>Send Results: <u>joseph-bisson@bhienergy.com</u><br><u>dave.montt@bhienergy.com</u>   |          | Sample Analysis Requested (5) (Fill in the number of containers for each test)  |  |                      |                    |   |                                   |                                    |                  |   |   |
| Sample ID<br><small>*For Composites - indicate start and stop date/time</small>  |          | *Date Collected<br><small>(mm-dd-yy)</small>  | *Time Collected<br><small>(Military) (hh:mm)</small> | QC Code (3)          | Field Filtered (2) | Sample Matrix (3)   | Should this sample be considered? | Total number of containers         | Gamma<br>TOC/TOI | Preservative Type (6)   | Comments<br>Note: extra sample is required for sample specific QC |
| OLA1-S-001   | 10/21/16 | on bag  |  |                      |                    | 50  |                                   |                                    | X                |   |   |
| OLA1-S-002   |          |   |  |                      |                    |   |                                   |                                    | X                |   |   |
| OLA1-S-003   |          |   |  |                      |                    |   |                                   |                                    | X                |   |   |
| OLA1-S-004   |          |   |  |                      |                    |   |                                   |                                    | X                |   |   |
| OLA1-S-005   |          |   |  |                      |                    |   |                                   |                                    | X                |   |   |
|  |          |   |  |                      |                    |   |                                   |                                    |                  |   | Return Shipping Container Address:                                |
| TAT Requested: Normal: <input checked="" type="checkbox"/> Rush: <input type="checkbox"/> Specific: <input type="checkbox"/> (Subject to Surcharges) Fax Results: Yes <input type="checkbox"/> / No <input checked="" type="checkbox"/> Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4  |          |   |  |                      |                    |   |                                   |                                    |                  |   |   |
| Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards.<br><u>No known hazard. Standard environmental sensitivity is requested.</u>  |          |   |  |                      |                    |   |                                   |                                    |                  | Sample Collection Time Zone:<br>Eastern <input type="checkbox"/> Pacific <input type="checkbox"/><br>Central <input checked="" type="checkbox"/> Other <input type="checkbox"/> |   |
| Chain of Custody Signatures  |          |   |  |                      |                    | Sample Shipping and Delivery Details  |                                   |                                    |                  |   |   |
| Relinquished By (Signed)   |          | Date  | Time   | Received by (signed) |                    | Date  | Time                              | GEL PM: Lindsay Fahra 843-556-8171 |                  |   |   |
|  |          | 10/22/16  | 13:00  |                      |                    | 10/22/16  | 13:00                             | Method of Shipment: <u>FedEx</u>   |                  | Date Shipped: <u>10/22/2016</u>   |   |
|  |          |   |  |                      |                    | 10/27/16  | 09:20                             | Airbill #:                         |                  |   |   |
|  |          |   |  |                      |                    |   |                                   | Airbill #:                         |                  |   |   |
| 1.) Chain of Custody Number = Client Determined<br>2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate, Sample, G = Grab, C = Composite<br>3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered<br>4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Wastewater, W = Water, ML = Mine Liquid, SO = Soil, SI = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, B = Blood, N =<br>5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6910B, 7470A) and number of containers provided for each (i.e. 8260B - 3, 6910B/7470A - 1)<br>6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexamine, ST = Sodium Thiosulfate. If no preservative is added = leave field blank |          |   |  |                      |                    |   |                                   |                                    |                  |   |   |
| WHITE = LABORATORY   |          |   |  | YELLOW = FILE        |                    |   |                                   | PINK = CLIENT                      |                  |   |   |
|  |          |   |  |                      |                    |   |                                   |                                    |                  | For Lab Receiving Use Only<br>Canopy Seal Intact?<br>YES <input type="checkbox"/> NO <input type="checkbox"/><br>Cooler Temp:<br>_____ C  |   |

|  |   |   |   |   |                                     |
|--|---|---|---|---|-------------------------------------|
| Page <u>2</u> of <u>3</u><br>Project #: BHH00103<br>GEL Quote #: GELP16-0736<br>COC Number:<br>PO Number:  |   | <b>GEL Chain of Custody and Analytical Request</b><br>**See www.gel.com for GEL's Sample Acceptance SOP**<br>GEL Work Order Number: <b>409238</b> |   | GEL Laboratories, LLC<br>2040 Savage Road<br>Charleston, SC 29407<br>Phone: (843) 556-8171<br>Fax: (843) 766-1178 |                                     |
| Client Name: Fort Calhoun Nuclear Station / <u>BHT</u><br>Project/Site Name: OFFD HAS<br>Address: 9610 Power Lane Blair, NE 68008  |   | Phone #: <u>Murth 508 360 2877</u><br><u>Bisson 774 434 0726</u><br>Fax #:  |   | Sample Analysis Requested <sup>(5)</sup> (Fill in the number of containers for each test)                         |                                     |
| Collected by: <u>Murth/Bisson</u><br>Send Results: <u>Joseph.Bisson@bhtenergy.com</u><br><u>dave.murth@bhtenergy.com</u>   |   | Should this sample be considered? <input type="checkbox"/> Yes <input type="checkbox"/> No<br>Method & Date:                                      |   | Total number of containers:   |                                     |
| Sample ID<br><small>*For composite - indicate part and size/quantity</small>   | Date Collected<br><small>(mm-dd-yy)</small> | Time Collected<br><small>(Military)</small>   | QC Code<br><small>(*)</small>             | Field Filtered<br><small>(*)</small>  | Sample Matrix<br><small>(*)</small> |
| OLA4-S-001   | 10/20/16                                    | on bag  |   |   | SD                                  |
| OLA4-S-002   | 10/20/16                                    |   |   |   |                                     |
| OLA3-S-001   |   |   |   |   |                                     |
| OLA3-S-002   |   |   |   |   |                                     |
| OLA3-S-003   |   |   |   |   |                                     |
| OLA3-S-004   |   |   |   |   |                                     |
| OLA3-S-005   |   |   |   |   |                                     |
| OLA3-S-006   |   |   |   |   |                                     |
| OLA3-S-007   |   |   |   |   |                                     |
| OLA3-S-008   | ✓   | ✓   |   |   | ✓                                   |
| TAT Requested: Normal: <input checked="" type="checkbox"/> Rush: <input type="checkbox"/> Specify: (Subject to Signature)  |   | Fax Results: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |   | Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4                                   |                                     |
| Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards.<br><u>No known hazards. Standard environmental sensitivity is requested.</u>   |   |   |   |   |                                     |
| Sample Collection Time Zone:<br>Eastern <input type="checkbox"/> Pacific <input type="checkbox"/><br>Central <input checked="" type="checkbox"/> Other:  |   |   |   |   |                                     |
| Chain of Custody Signatures  |   |   | Sample Shipping and Delivery Details      |   |                                     |
| Released By (Signed):<br><u>[Signature]</u>  | Date:<br><u>10/22/16</u>                    | Time:<br><u>12:00</u>   | Received By (Signed):<br><u>J. Bourne</u> | Date:<br><u>10/22/16</u>  | Time:<br><u>12:00</u>               |
| Relinquished By (Signed):<br><u>[Signature]</u>  |   |   | GEL PM: Lindsay Fabra 843-556-8171        |   |                                     |
| Date:<br><u>10/27/16</u>   |   |   | Method of Shipment: <u>FedEx</u>          |   |                                     |
| Time:<br><u>19:20</u>  |   |   | Date Shipped: <u>10/22/2016</u>           |   |                                     |
| Article #:   |   |   | Article #:                                |   |                                     |
| Article #:   |   |   | Article #:                                |   |                                     |
| 1.) Chain of Custody Number = Client Determined<br>2.) QC Codes: N= Normal Sample, TB= Trip Blank, FD= Field Duplicate, EB= Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite<br>3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered<br>4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SD=Soil, ST=Sludge, SL=Solid Waste, GL=Oil, FL=Fuel, P=Wipe, U=Urine, F=Faecal, N=Not<br>5.) Sample Analysis Requested: Analytical method requested (i.e. 8200B, 8010B, 7400A) and number of containers provided for each (i.e. 8200B - 1, 8010B/7400A - 1)<br>6.) Preservation Type: RA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Acetic Acid, BX = Hexane, ST = Sodium Tetraborate. If no preservation is added = leave field blank<br>WHITE = LABORATORY      YELLOW = FILE      PINK = CLIENT |   |   |   |   |                                     |
| For Lab Receiving Use Only:<br>Custody Seal Intact? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/><br>Cooler Temp: <u>C</u>   |   |   |   |   |                                     |

TSSD Services, Inc. | Fort Calhoun Station Limited Radiological Characterization Survey Report 10-152



For Lab Receiver Use Only

*Cum gratia* Serial Invocant

YES NO

LONG TENG

2

|  |  |   |  |                        |  |                               |  |                              |  |  |  |   |  |                     |  |                   |  |   |  |
|--|--|---|--|------------------------|--|-------------------------------|--|------------------------------|--|--|--|---|--|---------------------|--|-------------------|--|---|--|
| Page <u>3</u> of <u>3</u><br>Project #: <u>DH000103</u><br>GEL Quote #: <u>GELP16-0736</u><br>COC Number: _____<br>PO Number: _____  |  | <b>GEL Chain of Custody and Analytical Request</b><br>**See www.gel.com for GEL's Sample Acceptance SOP**<br><b>GEL Work Order Number: 409515</b> |  |                        |  |                               |  |                              |  |  |  | GEL Laboratories, LLC<br>2040 Savage Road<br>Charleston, SC 29407<br>Phone: (843) 556-8171<br>Fax: (843) 766-1178 |  |                     |  |                   |  |   |  |
| Client Name: <u>Fort Calhoun Nuclear Station / BHI Energy</u> (Phone # _____)  |  |   |  |                        |  |                               |  |                              |  | Sample Analysis Requested <sup>(b)</sup> (Fill in the number of containers for each test.) |  |   |  |                     |  |                   |  |   |  |
| Project Site Name: <u>OPPD HAS</u> (Fax # _____)   |  |   |  |                        |  |                               |  |                              |  | Should this sample be analyzed? <input type="checkbox"/> Yes <input type="checkbox"/> No   |  | Total number of containers  |  | Gamma<br>Total Beta |  | Preserve Type (s) |  | Comments<br>Note: extra sample is required for sample specific QC |  |
| Address: <u>9610 Power Lane Blain, NE 68008</u>  |  |   |  |                        |  |                               |  |                              |  |  |  |   |  |                     |  |                   |  |   |  |
| Collected by: <u>Montt/Bisson</u> Send Results: <u>Joseph.Bisson@bhienergy.com</u><br>(Email: <u>dave.montt@bhienergy.com</u> )  |  |   |  |                        |  |                               |  |                              |  | Radioactive? <input type="checkbox"/> Yes <input type="checkbox"/> No                      |  | Total number of containers  |  | Gamma<br>Total Beta |  | Preserve Type (s) |  | Comments<br>Note: extra sample is required for sample specific QC |  |
| Sample ID<br>*For composite, indicate test and stop date/river   |  |   |  |                        |  |                               |  |                              |  |  |  |   |  |                     |  |                   |  |   |  |
| *Date Collected (month/day/yr)   |  | *Time Collected (Military) (hh:mm)  |  | QC Code <sup>(a)</sup> |  | Field Filtered <sup>(a)</sup> |  | Sample Matrix <sup>(a)</sup> |  | Radioactive? <input type="checkbox"/> Yes <input type="checkbox"/> No                      |  | Total number of containers  |  | Gamma<br>Total Beta |  | Preserve Type (s) |  | Comments<br>Note: extra sample is required for sample specific QC |  |
| ✓ OLA1-D6-07   |  | 10/26/16  |  | on bag                 |  |                               |  | SO                           |  |  |  |   |  | X                   |  |                   |  |   |  |
| ✓ OLA2-S-01  |  | 10/27/16  |  | on bag                 |  |                               |  |                              |  |  |  |   |  | X                   |  |                   |  |   |  |
| ✓ OLA2-S-02  |  |   |  |                        |  |                               |  |                              |  |  |  |   |  | X                   |  |                   |  |   |  |
| ✓ OLA2-S-03  |  |   |  |                        |  |                               |  |                              |  |  |  |   |  | X                   |  |                   |  |   |  |
| ✓ OLA4-D3-03   |  |   |  |                        |  |                               |  |                              |  |  |  |   |  | X                   |  |                   |  |   |  |
| ✓ OLA3-S-09  |  |   |  |                        |  |                               |  |                              |  |  |  |   |  | X                   |  |                   |  |   |  |
| ✓ OLA3-S-10  |  |   |  |                        |  |                               |  |                              |  |  |  |   |  | X                   |  |                   |  |   |  |
| ✓ OPPD-FCS-QS  |  | 10/24/16  |  | on bag                 |  |                               |  | SO                           |  |  |  |   |  | X                   |  |                   |  |   |  |
|  |  |   |  |                        |  |                               |  |                              |  |  |  |   |  |                     |  |                   |  |   |  |
|  |  |   |  |                        |  |                               |  |                              |  |  |  |   |  |                     |  |                   |  |   |  |
| TAT Requested: Normal <input checked="" type="checkbox"/> Rush _____ Specify: _____ (Subject to Service)   |  |   |  |                        |  |                               |  |                              |  | Fast Results: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>          |  |   |  |                     |  |                   |  |   |  |
| Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards.<br><u>Standard environmental sensitivity requested.</u>  |  |   |  |                        |  |                               |  |                              |  | Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4            |  |   |  |                     |  |                   |  |   |  |
| Chain of Custody Signatures  |  |   |  |                        |  |                               |  |                              |  | Sample Shipping and Delivery Details   |  |   |  |                     |  |                   |  |   |  |
| Released by (Signed): <u>J. Bisson</u> Date: <u>10/28/2016</u> Time: <u>~2 PM CT</u>   |  |   |  |                        | Received by (Signed): <u>Cheryl Geagle</u> Date: <u>11/01/16</u> Time: <u>0945</u> |                               |  |                              |  | GEL PM: Lindsay Fabra 843.556.8171   |  |   |  |                     |  |                   |  |   |  |
| 1. _____   |  |   |  |                        | 2. _____   |                               |  |                              |  | Method of Shipment: _____ Date Shipped: _____  |  |   |  |                     |  |                   |  |   |  |
| 3. _____   |  |   |  |                        | 3. _____   |                               |  |                              |  | Airbill #: _____   |  |   |  |                     |  |                   |  |   |  |
| 4. _____   |  |   |  |                        | 4. _____   |                               |  |                              |  | Airbill #: _____   |  |   |  |                     |  |                   |  |   |  |
| 1. Chain of Custody Number: Client Determined  |  |   |  |                        |  |                               |  |                              |  | For Lab Receiving Use Only   |  |   |  |                     |  |                   |  |   |  |
| 2. QC Codes: N: Normal Sample, TR: Trip Blank, FD: Field Duplicate, ER: Equipment Blank, MS: Matrix Spike Sample, MSD: Matrix Spike Duplicate, Sample, G: Grab, C: Composite   |  |   |  |                        |  |                               |  |                              |  | Custody Seal Intact? YES NO  |  |   |  |                     |  |                   |  |   |  |
| 3. Field Filtered: For liquid matrices, indicate with a -Y- for yes or sample was field filtered or -N- for sample was not field filtered  |  |   |  |                        |  |                               |  |                              |  | Cooler Temp: _____ C   |  |   |  |                     |  |                   |  |   |  |
| 4. Matrix Codes: DW: Drinking Water, GW: Groundwater, SW: Surface Water, WW: Wastewater, MW: Mine Water, ML: Mine Liquid, SO: Soil, SD: Sediment, SL: Sludge, SS: Solid Waste, OL: Oil, PL: Polymer, P-W: Polymer, In: Inert, N: Non-hazardous |  |   |  |                        |  |                               |  |                              |  |  |  |   |  |                     |  |                   |  |   |  |
| 5. Sample Analysis Requested: Analytical method requested (ie: E208B, 90100, 700A) and number of preservatives provided for each (ie: 10000L: 1, 10000L: 1)  |  |   |  |                        |  |                               |  |                              |  |  |  |   |  |                     |  |                   |  |   |  |
| 6. Preservative Type: HA: Hydrochloric Acid, NI: Nitric Acid, SI: Sodium Hydroxide, SA: Sulfuric Acid, AA: Acetic Acid, IR: Iodine, ST: Sodium Thiosulfate. If no preservative is added, a note must be made                                   |  |   |  |                        |  |                               |  |                              |  |  |  |   |  |                     |  |                   |  |   |  |
| WHITE = LABORATORY   |  |   |  |                        |  |                               |  |                              |  | YELLOW = FILE  |  |   |  |                     |  |                   |  |   |  |
| PINK = CLIENT  |  |   |  |                        |  |                               |  |                              |  |  |  |   |  |                     |  |                   |  |   |  |