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December 29, 2011

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U. S. Department of Energy
200 Grand Avenue, Ste 500
Grand Junction, Colorado 81501

Joseph D. Ritchey
S&K Aerospace
200 Grand Ave., Ste 500
Grand Junction, Colorado 81501

RE: Highway 160 Site - Transmittal of Final Remediation Report

Dear Mr. Metzler and Mr. Ritchey:

Please find enclosed the final Remediation Completion Report for the Highway 160 Project Site near Tuba City, Arizona.

The Report demonstrates that all remediation requirements for this project were fulfilled, in accordance with P.L. 111-8 and the cooperative agreement between the U.S. Department of Energy ("DOE") and the Navajo Nation. The site was clean-closed and fully remediated, all residual radioactive material was transported to the Grand Junction Disposal Site, the requirements of 40 C.F.R. Part 192 were satisfied, and the site meets a cleanup level of 2.0 pCi/g for Ra-226. Moreover, the protocol set forth in the Multi-Agency Radiological Site Survey Investigation Manual was followed in demonstrating compliance. The Navajo Nation Environmental Protection Agency ("NNEPA") completed this project ahead of schedule and well within the budget provided under the cooperative agreement.

It has been a pleasure working with both of you and your teams. NNEPA looks forward to continued cooperation with DOE in the future, including working to remediate homes in the vicinity of the Highway 160 Site with the funds remaining under the Highway 160 cooperative agreement.

Sincerely,

A handwritten signature in cursive script, appearing to read "Cassandra Bloedel".

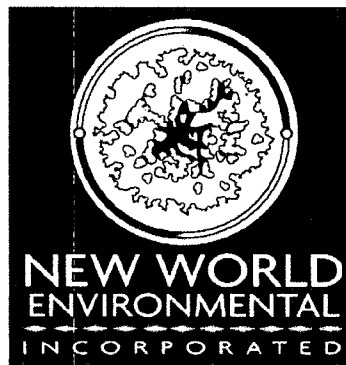
Cassandra Bloedel, Environmental Program Supervisor
Navajo Nation EPA - WRCD / Highway 160 Project

Cc: Stephen B. Etsitty, Executive Director, Navajo EPA
Diane Malone, Environmental Department Manager, Navajo EPA-WRCD

**NAVAJO NATION
ENVIRONMENTAL PROTECTION AGENCY
HIGHWAY 160 PROJECT
REMEDIATION COMPLETION REPORT**

Project Number G 7644

**Revision 0
28 December 2011**



Prepared by:

**New World Environmental, Inc.
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Livermore, CA 94551**

Final Report
Excavation and Disposal of Radioactive Soil and Waste
Highway 160 Project Site
Tuba City, Arizona

Prepared for:

Navajo Nation Environmental Protection Agency (NNEPA)
Window Rock, Arizona 86515

Prepared by:

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December 27 2011

Approved by:



Date:

12/28/2011

Todd Davidson, NWE
Certified Health Physicist

Approved by:

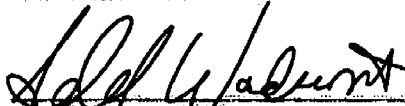


Date:

12/28/2011

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Approved by:



Date:

12/28/2011

Don Wadsworth, NWE
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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 Introduction.....	1
2.0 Background Information.....	2
2.1 Site Location and Characteristics	2
2.2 History	2
2.3 Previous Investigations.....	2
2.4 Site Conditions at the Onset of the Remediation Project	5
2.5 Onsite Radioanalytical Laboratory	5
2.6 Overview of Laboratory Equipment.....	6
3.0 Remediation/Decontamination Activities.....	7
3.1 Pre-Construction Phase.....	7
3.2 Radiological Program	7
3.3 Daily Tailgate Safety Meetings	7
3.4 Remediation/Removal of Contaminated Soil in Land Areas	7
3.5 Waste Packaging and Disposal.....	8
4.0 Final Status Survey/Sampling Objective	11
4.1 Survey/Sampling Objective	11
4.2 Derived Concentration Guideline Limits (DCGL's).....	11
4.3 Design of Survey Units.....	12
5.0 Radiological Survey Methods And Instrumentation	16
5.1 Radiological Survey Methods.....	16
5.1.1 Scanning Of Land Areas.....	16
5.1.2 Exposure Rate Measurements.....	16
5.1.3 Removable Contamination Measurements	16
5.2 Radiological Survey Instrumentation	16
5.2.1 Surface Scans of Land Areas.....	16
5.2.2 Exposure Rate Measurements.....	16
5.2.3 Removable Contamination Measurements	17
5.2.4 Instrument Calibration and Daily Performance Checks	17
6.0 Characterization Surveys.....	18
6.1 Characterization of excavations for RCRA constituents	18
7.0 Final Status Surveys	19
7.1 Objective of Final Status Surveys.....	19
7.2 Area Classifications	19
7.3 Survey Units	20
7.4 Area Grid Maps	21
7.5 Reference (Background) Areas.....	21
8.0 Summary Of Survey Findings and Final Area Actions	22
8.1 Summary of Final Status Survey Results	22
8.2 Field Duplicates.....	22
8.3 Laboratory Comparison Samples	24
8.4 Final Area Reclamation	25
9.0 Conclusions.....	26
10.0 References.....	27

List of Tables

<u>Table</u>	<u>Page</u>
Table 2-1 Gamma Spectroscopy Instrumentation	6
Table 2-2 Instrumentation.....	6
Table 3-1 Highway 160 DOE Estimated Volumes.....	8
Table 3-2 Highway 160 DOE estimated and measured final cut volumes.....	9
Table 3-3 Shipping mode and total volume.....	10
Table 4-1 Statistical Comparisons with DCGL	12
Table 4-2 Design Values for the Survey Results.....	13
Table 5-1 Instrumentation for Radiological Surveys.....	17
Table 7-1 Survey Unit Classification	20
Table 8-1 Summary of the Final Status Survey Results.....	22
Table 8-2 Summary of Field Duplicate Samples.....	23
Table 8-3 Summary of Laboratory Comparison Samples	24

List of Figures

<u>Figure</u>	<u>Page</u>
Figure 2-1 Highway 160 Project Site	4
Figure 4-1 Estimated Volume of Contaminated Material at the Site	11

List of Appendixes and Attachments

Appendix A	Instrument Calibration Documents and Daily Performance Checks
Appendix B	Offsite Laboratory Analysis Results
Appendix C	Land Area Information
Appendix D	Final Status Survey Details for Survey Units
Appendix E	Quality Assurance/Quality Control Data
Appendix F	Shipping Information for the NNEPA Highway 160 Project
Appendix G	NNEPA Final Reclamation Plan

ACRONYMS AND ABBREVIATIONS

AC	activity concentration
cm ²	square centimeters
cpm	counts per minute
CV	critical value
DAC	Derived Air Concentration
DOE	U.S. Department of Energy
DOT	U.S. Department Of Transportation
DQO	data quality objective
eff	efficiency
EPA	U.S. Environmental Protection Agency
FSS	Final Status Survey
g	gram
m	Meters
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
NAD	normalized absolute difference
NIST	National Institute of Standards and Technology
NRC	Nuclear Regulatory Commission
NNEPA	Navajo Nation Environmental Protection Agency
NUREG	Nuclear Regulatory Guide
NWE	New World Environmental, Inc.
pCi	picocurie
QA/QC	quality assurance/quality control
Ra-226	Radium-226
RA	reference area
ret Δ/σ	retrospective relative shift
S/N	Serial Number
SU	survey unit
TCLP	Toxicity Characteristic Leaching Procedure
UMTRCA	Uranium Mill Tailings Radiation Control Act
Unc	uncertainty
μ R/hr	microroentgen per hour

1.0 INTRODUCTION

New World Environmental, Inc. (NWE) was contracted by the Navajo Nation Environmental Protection Agency (NNEPA) to perform remediation, removal, packaging, and transportation of waste, Final Status Survey (FSS) of land areas, and reclamation of impacted areas at the NNEPA Highway 160 Project Site (Site), located near Tuba City, AZ.

Remediation activities included the following tasks:

- Removal action of radioactive and other contaminated soil, soil-like material, and other associated material.
- Packaging of Class 7 (Radioactive) waste for shipment.
- Shipment of Class 7 and non-classified Radioactive waste to the Grand Junction Disposal Cell (GJDC).
- Characterization of the excavation for other waste constituents, such as Resource Conservation and Recovery Act (RCRA) metals.
- FSS of the excavated land areas to ensure compliance with U.S. EPA surface and sub-surface criteria for Uranium Mill Tailings Radiation Control Act (UMTRCA) limits.
- Reclamation actions in accordance with the NNEPA Site Reclamation Plan.

The work was performed by NWE personnel from May through October of 2011.

2.0 BACKGROUND INFORMATION

2.1 SITE LOCATION AND CHARACTERISTICS

The Highway 160 Project Site is located approximately six (6) miles north east of Tuba City, Arizona and near the villages of Moenkopi and Moenave, Arizona. It is located on the north side of U.S. Highway 160 in Coconino County, Arizona, and includes a 7.6 acre fenced site. It is across Highway 160 from the former Rare Metals Uranium Mill (Mill Site), which is an UMTRCA site. El Paso Natural Gas (El Paso) monitors the Highway 160 site monthly to ensure that the fenced area remains undisturbed. A palliative cover had been placed over the soil and waste at the site after the non-intrusive survey in 2008 and again after the DOE characterization sampling in 2010.

The site is located within weathered Aeolian sands and interfaces with Navajo Sandstone, a water-bearing geologic member. Although the non-intrusive site characterization did not include groundwater, nine (9) monitoring wells were drilled in 2010 near the former mill site and two (2) monitoring wells were drilled near the Highway 160 site. The second set of wells indicates groundwater levels at a depth of 90 to 100 feet, and this groundwater is still being sampled to determine whether it has been impacted by the Highway 160 site.

The Moenkopi Wash lies directly south of the Highway 160 Site and is potentially impacted by it, as well as by the Mill Site. Numerous reports from the DOE Office of Legacy Management show that a plume of contamination from the UMTRCA site is moving towards the Moenkopi Wash.

2.2 HISTORY

This site is approximately 16 acres. This area included some non-impacted areas as well as an area of 7.6 acres that is fenced and gated. The project area lies within the customary use of a family that has lived in the area prior to the development of the former Rare Metals Uranium Mill. Family members continue to use the unfenced portion of the site for grazing livestock.

2.3 PREVIOUS INVESTIGATIONS

U.S. Department of Energy (DOE)

DOE contracted to have Tuba City and communities near the Mill Site surveyed aerially for radiation. The survey revealed background radiation levels from 7 to 15 microroentgens per hour ($\mu\text{R/hr}$).

Additionally, three (3) separate non-intrusive site characterization surveys were conducted at the Highway 160 Project Site between 2004 and 2008, as described below. These surveys did not characterize any groundwater at the site.

U.S. Environmental Protection Agency (EPA)

EPA conducted a radiological soil survey and analysis in May 2004, with a final report released in September 2004. The survey revealed significant levels of radiation at the Highway 160 Project Site, including one reading that exceeded one million (1M) counts per minute. The report suggested three (3) possibilities for the contamination at the site: (1) the radiation was windblown; (2) the radiation was naturally occurring; or (3) the radiation was illegally deposited at the Highway 160 Project Site. No particular waste was identified in the report to connect the Site with the Rare Metals Uranium Mill Site.

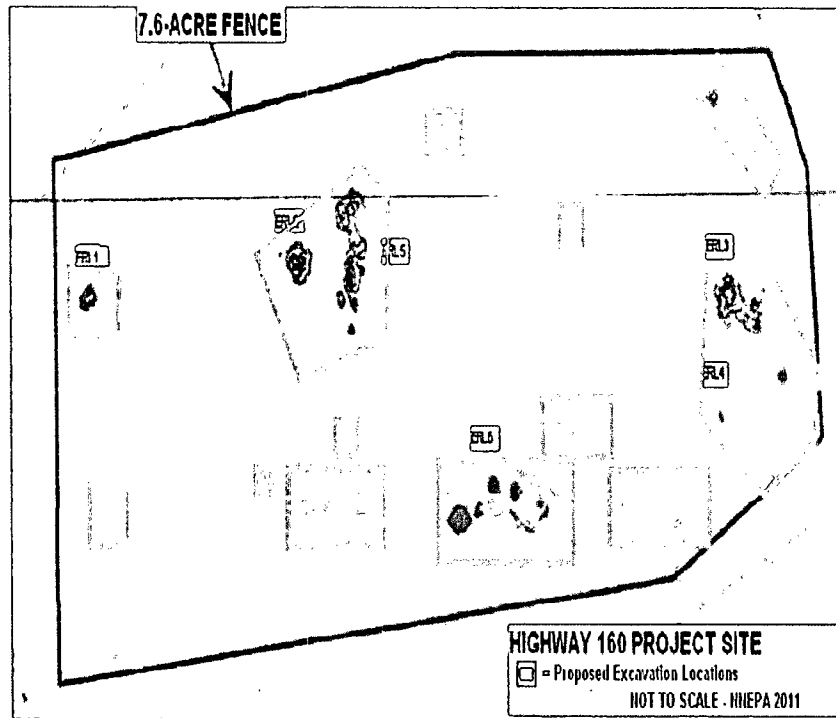
The Navajo Nation Environmental Protection Agency

In 2006 and 2007, NNEPA contracted with Dr. William Walker, of Walker & Associates, Inc. The scope of this work was further site investigation using soil analysis to determine contamination levels and to identify waste or chemicals deposited at the Highway 160 Site. The waste found at the site included ceramic tumblers and Normandy pebbles, which could have been used in the mill processing operations and, therefore, the discovery indicated a possible link between the Highway 160 Site and the Mill Site. Radiological measurable levels around the Project Site at that time ranged from 400 counts per minute to over 10,000 counts per minute (with dose rates of approximately 40 to 1,000 $\mu\text{R/hr}$). Furthermore, soil samples were analyzed with results of 4 to 100 picocuries per gram (pCi/g). Dr. Walker's analysis of forty-seven (47) soil samples identified radionuclides and other chemicals that link the two sites. Dr. Walker released a final report in 2007 identifying radiological pathways that are affecting immediate environment and raising health and safety concerns for humans, animals, and plants.

El Paso Natural Gas Company

In late 2007, El Paso conducted further surveys of the Highway 160 Site including a geophysical survey using magnetic and electromagnetic induction drive to identify geophysical anomalies for the same areas identified by Dr. William Walker. A high-resolution resistivity survey confirms the presence of excavated areas filled with debris at depths to 13 feet below the ground surface. A comparison to aerial photographs also revealed ground disturbances (see Figure 2-1 below).

Figure 2-1 Highway 160 Project Site



Highway 160 Project Site, showing the proposed excavation areas as identified by the DOE Sampling and Characterization Report, January 2011

El Paso also commissioned a radiological survey for the 16 acre site plus the surrounding area, bringing the total surveyed area to 54 acres. The survey revealed that the background radiation for the Highway 160 Site and surrounding area is less than 15 microrentgens per hour. Radium, uranium, and arsenic were shown to exceed EPA soil-based risk assessment standards and consideration was also given to Dr. Walker's findings that the mineral carnotite possesses high concentrations of uranium. According to the January 2011 S&K Aerospace, LLC (S&K) Characterization Report, four (4) off-site locations were evaluated from which the average exposure rate was determined to be 9 μ R/h.

El Paso fenced the site and applied a polymer cover to reduce windblown soil contamination released by strong winds or by storm events, either of which could transport contamination to other areas of the site. The 2008 El Paso Report provided a three-dimensional picture of the extent of disturbance at the Highway 160 Site but did not indicate the extent of radiological contamination due to associated waste.

2.4 SITE CONDITIONS AT THE ONSET OF THE REMEDIATION PROJECT

In order to undertake the various field activities at and near the Highway 160 Project Site, NNEPA staff obtained access agreements with all local residents who had either a customary use permit or a grazing permit for the affected area.

2.5 ONSITE RADIOANALYTICAL LABORATORY

In order to meet the Highway 160 Project Data Quality Objectives (DQOs), NWE deployed to the site a mobile laboratory in order to provide both comprehensive and scientifically defensible data that supported meeting the release criteria. The project required collection and analysis of soil and other materials in addition to radiological surveys or scanning. The Project objectives that led to the decision to deploy the on-site laboratory were:

- Excavate “low-level” residual radioactive material mixed with soil at the Highway 160 Project site that exceeded the 2 pCi/g limit as stated in the contract with the Navajo Nation.
- Conduct surveying and sampling activities before, during and after remediation activities to determine that mitigation efforts had been met.
- Ensure that the operations did not spread, or did not facilitate the spread, of contamination.
- Protect the health of any and all personnel at the site, the general public and related property.
- Monitor for airborne radioactive materials.
- Prepare excavated materials for transportation in accordance with U.S. Department of Transportation regulations and the DOE GJDS requirements as set in the contract.

The site had been investigated and the findings reported by several different entities since the site discovery in 2003. As directed in the scope of work from the Navajo Nation, “U.S. DOE TC1004 Highway 160 Site Tuba City, Arizona Characterization Report, January 2011” and U.S. EPA “Standards for Remedial Action at Inactive Uranium Processing Sites”, (40 CFR 192) were used to make decisions with regard to the Table of Organization and Equipment (TO&E) for the mobile laboratory. The DQOs for sampling and analysis objectives would be based on the determination of the Ra-226 content meeting the U.S. EPA surface cleanup standards. Laboratory equipment, operations, DQOs, personnel, calibrations, QA/QC, and other necessary supporting documents are discussed in detail later in this report.

2.6 OVERVIEW OF LABORATORY EQUIPMENT

The two major systems on-site were the High Purity Gamma (HPGe) Spectroscopy systems and the gas proportional counter with automated sample changer for analysis of alpha and beta radiation emissions from wipes and air samples.

A typical gamma-ray spectrometry system consists of a germanium detector with a cryostat liquid nitrogen dewar, a preamplifier in conjunction with a detector bias supply, linear amplifier, analog to digital converter (ADC), detector interface module (DIM) and a multi-channel analyzer. In order to reach the cleanup criteria of 2 pCi/g two lead caves were included in the laboratory equipment. Also present was an in-situ HPGe system and one spare HPGe detector.

Table 2-1 Gamma Spectroscopy Instrumentation

Gamma Spectroscopy Instrumentation				
Detector	Model #	Serial #	Efficiencies	Background
HPGe	GMX45P4-ST	46-TN22168A	45% & 2.2 keV FWHM	392 pCi
HPGe	GMX40P4-ST	46-TN22200A	40% & 1.95 keV FWHM	214 pCi

For the counting of air samples for alpha and beta radiation emissions, two systems were in use in the laboratory. The Protean model WPC9550 and the Ludlum 2929 proportional counters were used to count air samples as well as removable contamination samples.

Table 2-2 Instrumentation

Instrumentation Used					
Model #	Serial #	Efficiencies		Background (cpm)	
		α	$\beta \gamma$	α	$\beta \gamma$
WPC 9550	615068	33.4%	48.0%	0.56	0.89
Ludlum 2929	143876	41.6%	25.6%	0.5	66.7

In addition to the analytical capabilities brought to the site by the mobile lab (192 ft²) it provided QA/QC support for all field instrumentation.

3.0 REMEDIATION/DECONTAMINATION ACTIVITIES

3.1 PRE-CONSTRUCTION PHASE

NWE acquired an Arizona Department of Transportation (ADOT) encroachment permit in to perform improvements on the entryway to the site to accommodate an increase of vehicular traffic.

3.2 RADIOLOGICAL PROGRAM

Once office spaces, instrumentation, and equipment were mobilized and set up, thermoluminescent dosimeters (TLD's) were issued to on site personnel to monitor external whole body radiation exposure.

Airborne radioactive particulate monitoring was conducted while radiological work was performed. The airborne concentration will be used, along with the amount of time spent in the controlled area, to perform an internal dose assessment based upon Derived Air Concentration (DAC) and the hours of exposure.

The dose assessments for internal and external exposure will be summarized in the dosimetry report for each individual who was monitored for the project.

3.3 DAILY TAILGATE SAFETY MEETINGS

Daily tailgate safety meetings were held prior to work each day to discuss the planned activities for that day and address any safety/radiological concerns involved in that work. All NWE personnel attended these meetings. Copies of the safety meetings are archived at the NWE corporate office in Livermore, CA and are available for review upon request.

3.4 REMEDIATION/REMOVAL OF CONTAMINATED SOIL IN LAND AREAS

The removal of impacted soil and debris took place in two stages. The first stage was the removal of soil from each area by excavator, loading material directly into IP-2 bags in accordance with the final NWE work plan. The bags were staged then loaded onto flatbed trucks and shipped in accordance with the work plan and the transportation plan to the GJDC, sometimes referred to as the Cheney Disposal Facility. This procedure was followed until NWE received clearance to ship material via end-dump to GJDS. After receiving approval to use end-dump trailers, the removal of soil and soil-like material took place by excavation, with placement of the material into a staging pile located along the north side of Pit D and then loaded onto trucks for shipment. Radiological assessments of the excavations were accomplished by direct measurements with NaI detectors. The calibration sheets and daily instrument QA/QC check forms are included in Appendix A. Note that the typical instrument activity that was used in the field as a threshold corresponding to sample collection to determine whether to continue excavation was 18,000 cpm. This value was generally found to be less than 1 standard deviation greater than background activity.

During excavation operations, samples were collected for quantitative analysis of the soil and debris for shipping and also to determine when the 2 pCi/g release criterion was met. Analysis of excavation samples was an assessment of the excavation with a NaI probe and analysis of excavation samples with gamma spectroscopy in the NWE on-site laboratory, which utilized two HPGe detectors.

3.5 WASTE PACKAGING AND DISPOSAL

Initially, waste was transferred off site by IP-2 bags with a volume of 3.56 yards each. The bags were loaded in accordance with the site work plan and then staged to a holding area. A composite sample was collected for each bag to characterize the picocurie content of each bag for the shipping manifest. The bags were then transferred onto flatbed trailers for transport to GJDS. The original scope of work called for the use of end dump trailers for transportation of the IP-2 bags. After NWE had mobilized to the site, they were informed by the GJDS that temporary equipment limitations prevented the use of end-dump trailers. NWE conferred with NNEPA and modified the work plans and arranged for transportation utilizing flatbed trailers from the Highway 160 site to GJDS. The original scope of work included the removal of approximately 3,000 yd³ from 12 pits that were designated in the Scope of Work as Pits A, B, C, D, E, F, G, H, I, J, K, and L. Project excavations began in Pit L, as it was determined to be the location of the highest measured contamination. From page 7 of the Highway 160 Site Tuba City, Arizona Characterization Report, dated January 2011, Table 3-1, the estimated cut volume at 2 pCi/g was calculated to be 2,118 yd³ and the estimated excavated volume that allowed for the expansion of the soil was 2,965 yd³. The estimate included allowance for the expansion of soil after excavation and for the additional soil taken in the sloping of the pits to maintain safe conditions.

Table 3-1 Highway 160 DOE Estimated Volumes

Pit	DOE yd ³ /2pCi/g	plus 40%
A	10.8	15.1
B	14.5	20.3
C	425.4	595.6
D	527.3	738.2
E	2.9	4.1
F	5.4	7.6
G	134.5	188.3
H	330.0	462.0
I	245.6	343.8
J	145.3	203.4
K	180.2	252.3
L	112.4	157.4
Total	2,137.3	2,992.2

After excavation of Pits J, K, L and I, NWE had reached more than 50% of the original projected volume of 3,000 yd³. The projected cut volume for all 12 pits was 2,137.3 yd³. A survey of the J, K, L, and I pits by a licensed land surveyor measured a cut volume of 1,132.6 yd³, or 53% of the total predicted. Table 3-2 below, compares the estimated and final cut volumes of soil from the site.

Table 3-2 Highway 160 DOE estimated and measured final cut volumes

Pit	DOE yd ³ /2pCi/g	plus 40%	Measured Cut Volume yd ³	Plus 40%
A	10.8	15.1	24	33.6
B	14.5	20.3	25	35
C	425.4	595.6	686	960.4
D	527.3	738.2	918	1,285.2
E	2.9	4.1	3	3
F	5.4	7.6	21	29.4
G	134.5	188.3	357	499.8
H	330.0	462.0	761	1,065.4
I	245.6	343.8	443	620.2
J	145.3	203.4	178	249.2
K	180.2	252.3	253	354.2
L	112.4	157.4	253	354.2
	2,137.3	2,988	3922	5,490.8

In July, NWE received direction from GJDS that NWE could ship via end-dump trailers and dispense with the IP-2 bags. The waste was characterized on a per package or truck load basis to determine the proper shipping name, in accordance with DOT regulations.

A total of 907 lift bags, with a volume of 3,229 cubic yards were shipped. Of the IP-2 bags, 872 (3,104 yds³) bags were transported by flat bed trailer to GJDS. The remaining 35 bags (125 yd³) were transported by end-dumps. A total of 183 end-dumps with an approximate volume of 2,635 cubic yards were transported to the GJDS. A grand total of 5,665 cubic yards were shipped; all waste was disposed of at the GJDS.

Table 3-3 Shipping mode and total volume

Transportation Mode	Media	Volume (yd³)
Flatbed Trailer	872 bags	3,104
End Dump Trailer	35 bags	125
End Dump Trailer	Soil (approximately 14 yd ³ /load)	2,436
	Total	5,665

Appendix F details and summarizes the shipping for the entire project.

4.0 FINAL STATUS SURVEY/SAMPLING OBJECTIVE

4.1 SURVEY/SAMPLING OBJECTIVE

The purpose of the Final Status Survey and sampling effort was to provide data and documentation to demonstrate that the various impacted areas surveyed met the established release criteria for unrestricted use. The state-of-the-industry practice is to follow the guidelines delineated in the Multi-Agency Radiological Site Survey and Investigation Manual (MARSSIM). MARSSIM guidelines offer a flexible approach for the release of land areas and structural surfaces at decommissioned sites that have a history of radiological operations. The strengths of these guidelines are that they are systematic, straightforward, and can be tailored to the needs of the project and the stakeholders of the project.

As noted in Section 4.3 of this report, MARSSIM suggests use of the Wilcoxon Rank Sum (WRS) test to measure the statistical null hypothesis instead of the Sign Test. The release criteria in the NWE initial Scope of Work from the Navajo Nation required the removal of approximately 3,000 yd³ of impacted soil. This volume of contaminated material is defined in Section 7.0 of the Highway 160 Site Tuba City, Arizona Characterization Report, January 2011, TC1004, from the DOE Office of Environmental Management, prepared by S&K Aerospace, LLC. The report states "If practical, the excavation may be further cleaned up to include soils that exceed surface soil cleanup standards to near background levels. Cleanup of soils to meet the U.S. EPA surface cleanup standards for Ra-226 will likely also clean up the non-radiologic constituents identified." Figure 4-1, below, shows table 2 from the Characterization Report; 2 pCi/g of Ra-226 was the cleanup level negotiated by the Navajo Nation.

Figure 4-1 Estimated Volume of Contaminated Material at the Site

Table 2. Estimated Volume of Contaminated Material at the Site

Excavation Criterion	Criterion Purpose	Volume as Calculated for the Map Enclosed Areas (cubic yards)	Estimated Excavated Volume (cubic yards)
15 pCi/g	Meets EPA standard for subsurface contamination	1,556	2,178*
5 pCi/g	Meets EPA standard for surface contamination	1,802	2,523*
2 pCi/g	Achieves near background activity	2,118	2,965*

*Includes expansion that occurs during excavation and some side slope material to maintain a safe condition.

4.2 DERIVED CONCENTRATION GUIDELINE LIMITS (DCGL'S)

The surface contamination release limits and the soil contamination release limits were selected to comply with U.S. EPA 40 CFR 192 surface and sub-surface limits for radium-226 (5 and 15 pCi/g, respectively). These criteria are based on the activity concentrations averaged over an area of 100 square meters. Again, the negotiated DCGL was an activity concentration of 2 pCi/g of radium-226.

For equipment and tools release, the limits specified in 10 CFR 835, Appendix D were applied.

4.3 DESIGN OF SURVEY UNITS

Because radium-226 is the radionuclide of concern for this project, and it is a naturally occurring material that is found in background concentrations similar to the DCGL for the project, MARSSIM (Chapter 8, Subsection 8.2.3) suggests use of the WRS test to measure the statistical null hypothesis instead of the Sign test.

Demonstration of Compliance

When determining compliance with remediation goals, each survey unit (SU) was examined. The on-site laboratory data for the SU were examined statistically. The three compliance tests are summarized in Table 5 below. They include:

- Compare the largest SU measurement to the DCGL.
- Compare the average SU measurement to the DCGL.
- Use the WRS Test to determine if the site data exceed the DCGL.

Table 4-1 Statistical Comparisons with DCGL

Survey Result	Conclusion
All measurements less than the DCGL _w .	SU meets release criterion.
Average greater than the DCGL _w .	SU does not meet release criterion.
Any measurement greater than DCGL _w and the average less than DCGL _w .	Conduct WRS Test and elevated measurement comparison.

Although the first two statistical tests listed above were performed for all of the SUs, the WRS test was the only one used to determine compliance.

Null Hypothesis

Using the MARSSIM methodology, the null hypothesis is stated as "the residual activity in the SU exceeds the release criteria". Thus, in order for the SU to pass (that is, meet the release criteria for the area), the null hypothesis must be rejected. The WRS test was used on the survey data to test the null hypothesis.

Confidence Levels

The Final Status Survey is designed to limit Type I (α) and Type II (β) errors to 5%. It is important to minimize the chances that area grids exceeding the DCGL will be missed (Type I) and area grids meeting the DCGL will be rejected as too high (Type II). The

probability of either of these occurring was established at a maximum of 5%. The Critical Values for the WRS Test are calculated from these probability values and from the number of samples/measurements taken.

Statistical WRS Test

The WRS test is a two-sample test that compares the distribution of a set of measurements in a SU to that of a set of measurements in a reference area (RA). The test is performed by first adding the value of the DCGL to each measurement in the RA to calculate the adjusted RA measurements, Z_i . The combined set of SU data and adjusted RA data are listed, or ranked, in increasing numerical order. If the ranks of the adjusted RA measurements are significantly higher than the ranks of the SU measurements, the SU demonstrates compliance with the release criterion. The advantage of this nonparametric test is that it does not assume the data are normally or log-normally distributed. The WRS test also allows for “less than” measurements to be present in the RA and the SU.

Required Amount of Samples for the Reference Area and for the Survey Units

For the RA and the SUs, the appropriate number of samples was calculated using the following data.

Table 4-2 Design Values for the Survey Results

Parameter	Value	Notes
DCGL	2 pCi/g	Negotiated with the client.
LBGR	1 pCi/g	Lower Bound of the Gray Region. This value is typically taken to be 50% of the DCGL.
Δ	1	Defined as <i>shift</i> . This value is calculated as the difference between the DCGL and the LBGR.
σ	0.3	This value is the estimated deviation in the samples. In the absence of data, MARSSIM recommends using a value of 0.3.
Δ/σ	3.33	Defined as <i>relative shift</i> . This value is calculated as the quotient of the shift and the deviation.
α	0.05	Established acceptable value for Type I error.
β	0.05	Established acceptable value for Type II error.
$Z_{1-\alpha}$	1.645	Statistical constant for a 5% Type I error.
$Z_{1-\beta}$	1.645	Statistical constant for a 5% Type II error.
P_r	0.983	Probability statistic that is used to calculate the appropriate number of samples for a RA/SU. See MARSSIM section 5.5.2.2 for a definition.
$N/2$	10	Number of samples for a RA/SU taken from MARSSIM Table 5.3.

Calculation of the WRS Test

The m adjusted RA sample measurements, Z_i , from the RA and the n SU sample measurements, Y_i , from the SU are pooled and ranked in order of increasing size from 1 to N , where $N = m+n$. As there are various values of n for the SUs, N is calculated for each SU.

If several measurements are tied (*i.e.*, have the same value), they are all assigned the average rank of that group of tied measurements.

If there are t "less than" values, they are all given the average of the ranks from 1 to t .

Therefore, they are all assigned the rank $t(t+1)/(2t) = (t+1)/2$, which is the average of the first t integers. If there is more than one detection limit, all observations below the largest detection limit should be treated as "less than" values.

The ranks of the adjusted measurements from the background RA are then summed, W_r .

Since the sum of the first N integers is $N(N+1)/2$, one can equivalently sum the ranks of the measurements from the SU, W_s , and compute $W_r = N(N+1)/2 - W_s$.

Compare W_r with the critical value (CV) given in Table I.4 found in Appendix I of MARSSIM for the appropriate values of n , m , and α . The CV can also be calculated with the following formulae.

Formula A

$$CV = \frac{m(n+m+1)}{2} + z \sqrt{\frac{nm}{12} [(n+m+1) - \sum_{j=1}^g \frac{t_j(t_j^2-1)}{(n+m)(n+m-1)}]}$$

where m is the amount of samples in the RA, n is the amount of samples in the SU, z is a statistical constant based upon the amount of Type I errors (in our case $\alpha = 0.05$, $z = 1.645$), g is the amount of tied measurements, and t_j is the amount of tied measurements in the j th group.

Note that in the above formula, the CV value is a maximum when there are zero tied ranks. When the amount of tied ranks in a WRS test is greater than zero, the value of CV becomes smaller. Because a greater value for CV causes the WRS test to become more difficult to pass, the amount of tied ranks in the test were not included in the calculation of the CV. Instead the CV of each case was calculated by the following formula, which is the form to use when there are few or no ties.

Formula B

$$CV = \frac{m(n + m + 1)}{2} + z \sqrt{\frac{nm}{12}} [(n + m + 1)]$$

If W_r is greater than the critical value, the hypothesis that the SU exceeds the release criterion is rejected; the SU passes the WRS test.

5.0 RADIOLOGICAL SURVEY METHODS AND INSTRUMENTATION

5.1 RADIOLOGICAL SURVEY METHODS

5.1.1 Scanning of Land Areas

Land area surfaces were scanned for gamma-emitting radionuclides to identify the presence of elevated direct radiation that might indicate residual gross activity or hot spots. NaI detectors coupled to data loggers were used during this type of survey. The distance between the detector and the surface being measured was less than 4 inches. Scanning rates did not exceed 1 foot per second while moving the detector back and forth in a serpentine pattern. Audible indicators were used to detect changes in instrument count rate. The intensity of the coverage of the scanning survey depended on the classification of the SU.

5.1.2 Exposure Rate Measurements

Exposure rate measurements were obtained as part of the shipping of Class 7 and non-classified radioactive waste. Readings were taken on contact with the packages and at a distance of one meter from the surface of the packages.

5.1.3 Removable Contamination Measurements

Smears were used to obtain measurements of removable contamination of equipment, items, and packages. Smears for removable surface activity were obtained by wiping an area of approximately 100 cm². Loose surface contamination surveys of alpha and beta/gamma emitters were performed using cloth smears.

5.2 RADIOLOGICAL SURVEY INSTRUMENTATION

5.2.1 Surface Scans of Land Areas

Ludlum NaI scintillation detectors coupled to Ludlum Model 2350-1 Data Loggers were used for the surface scan surveys that were performed.

5.2.2 Exposure Rate Measurements

Exposure rate surveys were performed using Ludlum Instruments Model-19 micro-R meters (1" by 1" NaI detector) or equivalent.

5.2.3 Removable Contamination Measurements

Loose surface contamination surveys for alpha and beta/gamma emitters were performed using cloth smears followed by analysis on a Ludlum Model-2929 Dual Channel Scaler with an attached Model 43-10-1 ZnS (Ag) phoswich detector or a Protean low-background gas flow proportional counter.

5.2.4 Instrument Calibration and Daily Performance Checks

All instruments are factory-calibrated a minimum of once every 12 months, using NIST-traceable standards. Performance and background checks were performed and documented at least once per shift on instrument use.

Copies of the instrument calibration documentation and daily performance checks are provided in this report in Appendix A.

Table 5-1 below presents a summary of the instruments that were used during the project.

Table 5-1 Instrumentation for Radiological Surveys

Type of Measurement/Technique	Instrumentation	
	Meter	Detector
Exposure Rates	Nal Scintillation Micro R Meter Ludlum Model-19	(Same as detector)
Gross alpha/beta/gamma on Swipe Samples	Ludlum Model-2929 Dual Channel Scaler	Ludlum Model 43-10-1 ZnS Scintillation Detector
Gross alpha/beta/gamma on Swipe Samples	Protean IPC-9025 Low-background gas flow proportional counter	
Surface Scans Open Land Areas-Gamma	Ludlum Model-2350-1 Data Loggers	Ludlum Scintillation Nal Detectors

6.0 CHARACTERIZATION SURVEYS

6.1 CHARACTERIZATION OF EXCAVATIONS FOR RCRA CONSTITUENTS

After residual radiological contamination in the excavations were demonstrated by sampling to be below the DCGL, NNEPA requested that NWE characterize the areas to ensure that there was no residual chemical contamination greater than the 40 CFR 261.24 Table 1 limits. These limits are sometimes called the Toxicity Characteristic Leaching Procedure (TCLP) limits, because that procedure is referred to in 40 CFR 261.24.

The original analysis consisted of the laboratory analyzing the total solids in the samples. In other words, for the original analysis the laboratory DID NOT perform the TCLP. Because the TCLP was not performed, and because there were metals detected in the sample results, NNEPA requested that the laboratory perform the TCLP and report the results in mg/L so that a direct comparison to the TCLP limits could be performed.

Of the original 12 samples that were collected and analyzed, three were requested to be taken through the TCLP and subsequently analyzed. The results of the analyses for these samples indicated that none of the TCLP limits were exceeded. The results can be found in Appendix B.

7.0 FINAL STATUS SURVEYS

MARSSIM (NUREG-1575) plus NUREG-1505 and NUREG-1507 were used as guidance in designing and conducting the final status surveys.

7.1 OBJECTIVE OF FINAL STATUS SURVEYS

The objective of FFSs is to demonstrate that residual radioactivity levels meet the release criterion. In demonstrating the objective is met, the null hypothesis (H_0) that residual contamination exceeds the release criterion is tested; the alternative hypothesis (H_a) is that residual contamination meets the release criterion.

7.2 AREA CLASSIFICATIONS

For the purposes of establishing the sampling and measurement frequency and pattern, the various site areas were divided into one of the three following classifications:

- *Class 1 Areas:* Areas that have, or had prior to remediation, a potential for radioactive contamination above the DCGL, based upon operational history of the site or from known contamination determined by previous radiation surveys, Examples of Class 1 areas include:
 - 1) site areas previously subjected to remedial actions
 - 2) locations where leaks or spills are known (or suspected) to have occurred
 - 3) former burial or disposal sites
 - 4) material storage areas
 - 5) areas with contaminants in discrete solid pieces of material or high specific activity
- *Class 2 Areas:* Areas that have, or had prior to remediation, a potential for radioactive contamination or known contamination but are not expected to exceed the DCGL. To justify changing the classification from Class 1 to Class 2, there should be measurement data that provides a high degree of confidence that no individual measurement would exceed the DCGL. Other justifications for reclassifying an area as Class 2 may be appropriate, based upon site-specific considerations. Examples of areas that might be classified as Class 2 include:
 - 1) locations where radioactive materials were present in an unsealed form
 - 2) potentially contaminated transport routes
 - 3) areas downwind from the main areas of concern (AOC)
 - 4) areas handling radioactive materials
 - 5) areas on the perimeter of former contamination control areas

- *Class 3 Areas:* Any impacted areas that are not expected to contain any residual radioactivity, or are expected to contain levels of residual radioactivity at a small fraction of the DCGL, based on site operating history and previous radiation surveys. Examples of areas that might be classified as Class 3 include buffer zones around Class 1 or Class 2 areas and areas with very low potential for residual contamination but insufficient information to justify a non-impacted classification.

7.3 SURVEY UNITS

Table 7-1 below presents the classification, number of SUs, and scan survey coverage frequency of the areas where the FSSs were performed during the project. The areas listed include the actual surface area that was excavated as measured by Extreme Measures, Inc. except for Excavations A through D; these results include the footprint of the soil staging pile (which was measured) and estimates for Excavations A and C-1.

Appendix C includes the following items.

- A map of the results of the physical survey.
- A table which summarizes the surface area and excavated volume.

Table 7-1 Survey Unit Classification

Area/Location	MARSSIM Classification	Total Surface Area (Square Meters)	Scan Survey Coverage Frequency
Excavations A through D	Class 1	1814	100%
Excavations F through I	Class 1	981	100%
Excavations JKL	Class 1	723	100%

SUs were limited in size based on classification, exposure pathway modeling assumptions, and site-specific conditions. MARSSIM recommends areas for SUs according to the following:

<u>Classification</u>	<u>Suggested Area</u>
Class 1 Land Areas	up to 2000 m ²
Class 2 Land Areas	2000 to 10,000 m ²
Class 3 Land Areas	no limit

The limitation on SU size for Class 1 areas ensures that each area is assigned an adequate number of data points. Note that MARSSIM recommends a minimum size for a SU for land areas as 100 square meters.

7.4 AREA GRID MAPS

Grid maps were used in naming FSS samples. Scans of the area grid maps with field activity information and sample points can be reviewed in Appendix C. Note that the grid squares were established to be 10 m x 10 m. This ensured that the discrete sample taken from the location of highest field screened activity within the grid square would be a conservatively high estimate of the area activity concentration averaged over 100 square meters.

7.5 REFERENCE (BACKGROUND) AREAS

Background samples were taken by both S&K, as listed in their Characterization Report, and by NWE. A total of 20 background samples represent the RA. Note that in accordance with the sample design, the minimum number of samples for a RA or a SU is 10. The RA samples taken by S&K and NWE were discrete samples taken from the top 15 cm of soil, subsequent to the removal of the top layer of organic vegetation and detritus. Soil samples for SUs were discrete samples taken in an identical way except that the top organic layer was previously removed by remedial action.

8.0 SUMMARY OF SURVEY FINDINGS AND FINAL AREA ACTIONS

8.1 SUMMARY OF FINAL STATUS SURVEY RESULTS

The following table summarizes the FSS results. Note that if the W_r is greater than the CV, then the Null Hypothesis, H_0 , must be rejected; if the H_0 is rejected, the H_a is accepted. Recall that H_0 states that there is residual contamination in a SU greater than the DCGL. If H_0 is rejected, then the SU passes the WRS test.

Table 8-1 Summary of the Final Status Survey Results

Survey Unit	W_r	CV	m	n	ret Δ/σ
Overall	2880	1940.96	20	141	1.30
SU-1	1227	873.00	20	53	1.31
SU-2	1550	897.30	20	55	1.11
SU-3	795	629.65	20	33	1.06
OSL	569	446.27	20	18	1.59

Details of the results for each of the SUs can be found in Appendix D. For each of the SUs, as well as the overall analysis for all SUs together, coupled with the off-site laboratory analysis (listed as "OSL" in the table), the W_r is greater than the CV. This means that in every case, the SU passed the WRS test; all SUs were released in accordance with MARSSIM-based release with a DCGL of 2 pCi/g of radium-226.

Note that a retrospective calculation of the relative shift (listed as "ret Δ/σ " in the table) was performed after the SUs were sampled. Recall that the design value of the relative shift was 3.33. The retrospective value of the relative shift is calculated from the standard deviation of the SU. When compared to the design relative shift, the retrospective relative shift indicates the adequacy of the number of samples. If the retrospective relative shift is smaller than the design relative shift, there is an indication that the samples were not consistent enough, and that not enough samples were taken. Note that for all of the cases, the retrospective relative shift was smaller than the design relative shift. This would be corrected by using truly systematic sampling that covered the entire impacted area (area within the fence), instead of the sampling that was performed within the footprint of the excavations.

8.2 FIELD DUPLICATES

Many samples were split in the field into two samples. In these cases, the samples were both analyzed at the onsite laboratory. The field duplicates were compared with the original samples in the following table. In Table 8-2 *Summary of Field Duplicate Samples*, a parameter known as the normalized absolute difference (NAD) is calculated. The NAD is a measure of similarity between two radiological samples. It is calculated as follows:

$$NAD = \frac{|AC_{smp1} - AC_{smp2}|}{\sqrt{Unc_{smp1}^2 + Unc_{smp2}^2}}$$

Where,

AC_{smp1} is the activity concentration for sample 1.

AC_{smp2} is the activity concentration for sample 2.

Unc_{smp1} is the uncertainty for sample 1.

Unc_{smp2} is the uncertainty for sample 2.

Note that the acceptable value for the NAD is determined by several factors. Commercial laboratories often state that the NAD should be less than or equal to 3. A NAD value of 1.96 or less indicates that the samples are measured as identical 95% of the time. For a more detailed table of the Field Duplicate data, please review Appendix E.

Table 8-2 Summary of Field Duplicate Samples

Original Sample Sample ID	NAD	Orig Dup Ratio
A_B1_A2	0.012	1.02
B_B1_A2	0.974	2.07
C_S1_B6	0.258	0.86
C_S5_C4	0.353	1.43
C_S10_D2	1.675	0.22
D_B1	0.147	0.90
D_B2	1.006	2.39
I_S10_B5	3.894	0.08
I_S20_C8	0.292	1.35
I_SM_RM2_B7	0.809	1.60
I_SM_RM1_B5	0.469	6.53
JKL S5	0.986	2.15
JKL S10	0.584	0.26
JKL S20	0.798	2.63

Table 8-2 demonstrates that the field duplicates had good agreement for the analytical results in most cases. One set of sample and duplicate I_S10_B5, had a NAD of greater than 3. This may have been caused by poor sampling, but is likely due only to high variability in the soil activity concentration.

8.3 LABORATORY COMPARISON SAMPLES

Several samples were analyzed by the on-site laboratory and subsequently sent to an off-site laboratory (TestAmerica) for confirmatory analysis. Table 8-3 *Summary of Laboratory Comparison Samples* lists the calculated NAD between the samples as well as a ratio between the original sample (on-site results) and the duplicate sample. For a more detailed table of the Laboratory Comparison data, please review Appendix E.

Note that the samples were chosen for off-site confirmatory analysis using the guidelines described in the following bullets.

- Only the “as-left” samples were chosen for the confirmatory analysis. That is, samples with activity greater than the DCGL, which caused additional remedial action to occur, were not used for the confirmatory analysis. One sample that was inadvertently chosen, I_S9_B4, did not conform to this guideline.
- A minimum of 10% of samples that were analyzed at the on-site laboratory were selected for confirmatory analysis.
- A minimum of one sample from each excavation that was sampled was chosen for confirmatory analysis.
- The sample(s) with the greatest activity for each excavation was (were) chosen for confirmatory analysis.

Table 8-3 Summary of Laboratory Comparison Samples

SampleID	NAD	OrigDup Ratio	
A_S4_A1	1.928	2.51	
B_B1_A2	1.498	2.83	
C_S3_B8	0.528	1.26	
C_QC1_6	#N/A	#N/A	Pb-212 only
C_QC3_D2	#N/A	#N/A	Pb-212 only
D_S3_C4	1.193	1.57	
D_S4_C5	1.265	1.49	
F_S1_B1	2.639	5.29	
G_S12_B7	2.466	4.53	
H_S4_A4	1.395	3.03	
H_S12_B4	#N/A	#N/A	Pb-212 only
I_B2_B2	3.383	0.22	
I_S9_B4	#N/A	#N/A	U-238-th only
I_QC_RM2_B7	5.113	0.07	
JKL S4	#N/A	#N/A	Tl-208 only
JKL S9	1.532	1.88	
JKL B1	2.362	0.16	
JKL RM2	2.169	3.03	

Table 8-3 demonstrates that the on-site and off-site laboratory results had good agreement for the analytical results in most cases. The NAD for two sets of samples (I_B2_B2 and I_QC_RM2_B7) was above the typical criterion of 3. Note that when used as an inter-laboratory comparison, the NAD should be used with caution. It is a qualitative measure of inter-laboratory performance rather than a quantitative measure.

It should be noted that the on-site laboratory analysis nearly always overestimated the value of radium-226 in the sample compared to the off-site laboratory analysis. This may be attributed to the fact that the on-site laboratory primarily used the 186 keV peak to quantify radium-226. This peak is close to the primary peak for U-235 (185.7 keV). For this reason, if there was uranium in the sample, the analysis of radium-226 would be biased high. This was assessed on a semi-quantitative basis, and it was found that the on-site analyses were biased greater than twice that for the off-site laboratory analysis. Note that the on-site activity was not always higher than the off-site analysis, but it was the case in 15 out of 18 samples.

Also note that the off-site laboratory results of the three samples which had results that were greater than the on-site laboratory results, only one had an activity greater than the DCGL of 2 pCi/g of radium-226. For this reason, NWE performed the WRS test on the off-site laboratory data.

Despite the high bias of the on-site analyses, the on-site results were used for all of the official WRS tests. This was considered to be a conservative approach.

8.4 FINAL AREA RECLAMATION

In accordance with the Final Reclamation Plan, dated 05 November 2011, NWE performed the following tasks.

- Backfill of excavated areas
- Placement of topsoil on excavated areas
- Seeding of disturbed areas
- Placement of mulch on disturbed areas
- Disking and irrigation of disturbed areas within the fence
- Disking of disturbed areas outside of the fence.

A copy of the Final Reclamation Plan is included in Appendix G

9.0 CONCLUSIONS

Based upon the survey data in this report, the land areas at the Highway 160 Project meet the radiological requirements for unrestricted use as defined in MARSSIM. The land areas have also been demonstrated to be in compliance with requirements listed in 40 CFR 192.

In particular, the following conclusions have been demonstrated:

- Each of the SUs, as well as the collective SU for all surveyed areas, passed the WRS test.
- The Field Duplicate analysis performed by NWE demonstrated that the sampling and analysis of the FSS samples was consistent and reproducible.
- The on-site laboratory, which was used to perform the WRS test for all of the SUs, tended to overestimate the amount of radium-226 in the FSS samples.
- All of the as-left samples, as analyzed by the on-site laboratory, had activity concentrations less than 5 pCi/g of radium-226. The requirement given in 40 CFR 192 is that no sample can have an activity concentration of radium-226 larger than 5 pCi/g greater than the background.
- All of the confirmation samples, as analyzed by the off-site laboratory, had activity concentrations less than 5 pCi/g of radium-226.

Because each of the SUs passed the WRS test, even with high-biased results, the overall conclusion that there is no residual contamination of the land areas at the Highway 160 Project greater than 2 pCi/g of radium-226 is ensured.

10.0 REFERENCES

1. "Multi-Agency Radiation Survey and Site Investigation Manual" (MARSSIM). NUREG-1575/ EPA402-R-97-016, Revision 1, August, 2000.
2. U.S. Nuclear Regulatory Commission, NUREG/CR 5512, *Residual Radioactive Contamination from Decommissioning*.
3. U.S. Code of Federal Regulations, 10 CFR 835.
4. "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Materials (NRC 1993), Office of Nuclear Material Safety and Safeguards (NMSS)."
5. U.S. Nuclear Regulatory Commission, Draft Regulatory Guide DG-4006, August 1998, *Demonstrating Compliance With The Radiological Criteria For License Termination*.
6. Navajo Nation Environmental Protection Agency, 2011, *Highway 160 Remedial Action Plan*.
7. New World Technology, *Field Operations Procedures*.
8. U.S. Code of Federal Regulations, 40 CFR 192

APPENDIX A

INSTRUMENT CALIBRATION DOCUMENTS AND DAILY PERFORMANCE CHECKS



New World Environmental Inc.

Phone: 925-443-7967

Fax: 925-443-0119

Certificate of Calibration

Customer: NWE HWY-160 Project

Order No: _____

Mfg: Ludlum

Model: 2350-1

Serial No: 134735

Mfg: Ludlum

Det. Model: 44-10

Serial No: PR015964

Cal. Date: 5/19/11

Due Date: 5/19/12

Cal. Interval: 1 year

			Operating		Input V1
Det. Bkg:	4000		Voltage:	900	Input V2
Temp.:	72	Hum 35%	Reset:	n/a	Threshold 1
Bat. Check:	ok		Audio:	ok	Threshold 2
Threshold:	10 mV		Bat. Voltage:	4 x D batt	Window 1
HV set:	900	900	Mechanical:	OK	Window 2
HV reading:	900	900	Bkg Subtract:	NA	
Alarm Check:	off				

Check mark applies to applicable instrument and or detector.

Instrument Received: ☒ X

Within Tolerance (+/- 10%) ☒ X

10 to 20% ☐

Out of Tolerance ☐

Requires Repair ☐

Comments: Hard reset performed. Voltage reset @900V. Calibrates OK

Range Multiplier	Reference Point PPM	Instrument Reading CPM	Additional Data	
AUTO	100	100	1	132291
			2	131162
	1000	1000	3	131431
			4	131427
	10,000	10,000	5	130848
			6	130680
	100,000	100,000	7	131489
			8	131712
			9	131060
			10	131402
NWT Procedure: <u>2350-1</u>			CHI^2 = <u>14.247</u>	<u>PASS</u>

Sources & Instruments:

<input checked="" type="checkbox"/> X	Gamma sn: <u>1387-88-5</u>
	Alpha sn: _____
<input checked="" type="checkbox"/> X	Pulser sn: <u>81071</u>

Beta sn: _____

Oscilloscope
sn: _____

Other: _____

Multimeter: _____

Calibrated by: J. Wadsworth

Date: 5/19/11

NWE certifies that the above instrument has been calibrated by instruments and standards traceable to NIST or to the calibration facilities of other International Standards Organization members or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of MIL-STD-45662A and ANSI N323-1978.



New World Environmental Inc.

Phone: 925-443-7967

Fax: 925-443-0119

Certificate of Calibration

Customer: NWE HWY-160

Order No:

Mfg: Ludlum

Model: 2350-1

Serial No: 95353

Mfg: Ludlum

Det. Model: 44-10

Serial No: PR231850

Cal. Date: 5/20/11

Due Date: 5/20/12

Cal. Interval: 1 year

			Operating		Input V1
Det. Bkg:	4000		Voltage:	900	Input V2
Temp.:	72	Hum 35%	Reset:	n/a	Threshold 1
Bat. Check:	ok		Audio:	ok	Threshold 2
Threshold:	10 mV		Bat. Voltage:	4 x D batt	Window 1
HV set:	900	900	Mechanical:	OK	Window 2
HV reading:	900	900	Bkg Subtract:	NA	
Alarm Check:	off				
Autodivide	ok				

Check mark applies to applicable instrument and or detector.

Instrument Received: X

Within Tolerance (+/- 10%) X

10 to 20% ☐

Out of Tolerance ☐

Requires Repair ☐

Comments: Hard reset performed. Voltage reset @900V. Calibrates OK

Range Multiplier	Reference Point PPM	Instrument Reading CPM	Additional Data	
AUTO	100	100	1	71887
			2	71683
	1000	1000	3	71900
			4	72032
	10,000	10,000	5	71714
			6	71049
	100,000	100,000	7	71766
			8	71757
			9	71443
			10	72137
NWT Procedure:		2350-1	CHI^2 =	11.983
				PASS

Sources & Instruments:

X	Gamma sn:	1387-88-5
	Alpha sn:	
X	Pulser sn:	81071

Beta sn: ☐

Other: ☐

Oscilloscope
sn: ☐

Multimeter: ☐

Calibrated by: J. Wadsworth

Date: 5/20/11

NWE certifies that the above instrument has been calibrated by instruments and standards traceable to NIST or to the calibration facilities of other International Standards Organization members or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of MIL-STD-45662A and ANSI N323-1978.



New World Environmental Inc.

Phone: 925-443-7967

Fax: 925-443-0119

Certificate of Calibration

Customer: NWE HWY-160 Project

Order No:

Mfg: Ludlum

Model: 2350-1

Serial No: 95355

Mfg: Ludlum

Det. Model: 44-10

Serial No: PR231849

Cal. Date: 5/19/11

Due Date: 5/19/12

Cal. Interval: 1 year

			Operating	Input V1	
Det. Bkg:	4000		Voltage:	900	Input V2
Temp.:	72	Hum 35%	Reset:	n/a	Threshold 1
Bat. Check:	ok		Audio:	ok	Threshold 2
Threshold:	10 mV		Bat. Voltage:	4 x D batt	Window 1
HV set:	900	900	Mechanical:	OK	Window 2
HV reading:	900	900	Bkg Subtract:	NA	
Alarm Check:	off				
Autodivide	ok				

Check mark applies to applicable instrument and or detector.

Instrument Received: X

Within Tolerance (+/- 10%) ☒

10 to 20% ☐

Out of Tolerance ☐

Requires Repair ☐

Comments: Hard reset performed. Voltage reset @900V. Calibrates OK

Range Multiplier	Reference Point PPM	Instrument Reading CPM	Additional Data		
AUTO	100	100	1	124058	
			2	124609	
	1000	1000	3	123572	
			4	124174	
	10,000	10,000	5	124545	
			6	123334	
	100,000	100,000	7	123527	
			8	124155	
			9	124000	
			10	124154	
NWT Procedure:		2350-1	CHI^2 =	12.887	PASS

Sources & Instruments:

X	Gamma sn:	1387-88-5
	Alpha sn:	
X	Pulser sn:	81071

Beta sn: ☐

Other: ☐

Oscilloscope
sn: ☐

Multimeter: ☐

Calibrated by: J. Wadsworth

Date: 5/19/11

NWE certifies that the above instrument has been calibrated by instruments and standards traceable to NIST or to the calibration facilities of other International Standards Organization members or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of MIL-STD-45662A and ANSI N323-1978.



New World Environmental Inc.

Phone: 925-443-7967

Fax: 925-443-0119

Certificate of Calibration

Customer: NWE HWY-160 Project

Order No:

Mfg: Ludlum

Model: 2350-1

Serial No: 142489

Mfg: Ludlum

Det. Model: 44-10

Serial No: PR230075

Cal. Date: 5/20/11

Due Date: 5/20/12

Cal. Interval: 1 year

			Operating		Input V1
Det. Bkg:	4000		Voltage:	900	Input V2
Temp.:	72	Hum 35%	Reset:	n/a	Threshold 1
Bat. Check:	ok		Audio:	ok	Threshold 2
Threshold:	10 mV		Bat. Voltage:	4 x D batt	Window 1
HV set:	900	900	Mechanical:	OK	Window 2
HV reading:	900	900	Bkg Subtract:	NA	
Alarm Check:	off				
Autodivide	ok				

Check mark applies to applicable instrument and or detector.

Instrument Received: X

Within Tolerance (+/- 10%) X

10 to 20% ☐

Out of Tolerance ☐

Requires Repair ☐

Comments: Hard reset performed. Voltage reset @900V. Calibrates OK

Range Multiplier	Reference Point PPM	Instrument Reading CPM	Additional		Data	
				CPM		
AUTO	100	100	1	68799		
			2	69077		
	1000	1000	3	69389		
			4	69056		
	10,000	10,000	5	68809		
			6	68905		
	100,000	100,000	7	68949		
			8	68841		
			9	68973		
			10	69326		
NWT Procedure:		2350-1	CHI^2 =	5.01	PASS	

Sources & Instruments:

X	Gamma sn:	1387-88-5
	Alpha sn:	
X	Pulser sn:	81071

Beta sn: ☐

Other: ☐

Oscilloscope sn: ☐

Multimeter: ☐

Calibrated by: J. Wadsworth

Date: 5/20/11

NWE certifies that the above instrument has been calibrated by instruments and standards traceable to NIST or to the calibration facilities of other International Standards Organization members or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of MIL-STD-45662A and ANSI N323-1978.



New World Environmental Inc.

Phone: 925-443-7967

Fax: 925-443-0119

Certificate of Calibration

Customer: NWE

Order No: _____

Mfg: Ludlum

Model: 3

Serial No: 115290

Mfg: Ludlum

Det. Model: 44-9

Serial No: PR129221

Cal. Date: 5/16/11

Due Date: 5/16/12

Cal. Interval: 1 year

			Operating		Input V1
Det. Bkg:	50		Voltage:	900	Input V2
Temp.:	64	Hum 35%	Reset:	n/a	Threshold 1
Bat. Check:	ok		Audio:	ok	Threshold 2
Threshold:	32 mV		Bat. Voltage:	2 x D batt	Window 1
HV set:	900	900	Mechanical:	OK	Window 2
HV reading:	900	900	Bkg Subtract:	NA	
Alarm Check:	off				

Check mark applies to applicable instrument and or detector.

Instrument Received: ☒ X

Within Tolerance (+/- 10%) ☒ X

10 to 20% ☐

Out of Tolerance ☐

Requires Repair ☐

Comments: Calibrates OK

Range Multiplier	Reference Point PPM	Instrument Reading CPM	Additional CPM	Data
0.1	100	100	1	
	500	500	2	
1	1000	1000	3	
	5000	5000	4	
10	10,000	10,000	5	
	50,000	50,000	6	
100	100,000	100,000	7	
	500,000	500,000	8	
			9	
			10	
NWT Procedure:			CHI^2 =	PASS

Sources & Instruments:

<input type="checkbox"/>	Gamma sn: _____
<input type="checkbox"/>	Alpha sn: _____
X	Pulser sn: <u>81071</u>

☐
☐
☐

Beta sn: _____
Oscilloscope
sn: _____

☐
☐
☐

Other: _____
Multimeter: _____

Calibrated by: J. Wadsworth

Date: 5/16/11

NWE certifies that the above instrument has been calibrated by instruments and standards traceable to NIST or to the calibration facilities of other International Standards Organization members or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of MIL-STD-45662A and ANSI N323-1978.



New World Environmental Inc.

Phone: 925-443-7967

Fax: 925-443-0119

Certificate of Calibration

Customer: NWE

Order No: _____

Mfg: Ludlum

Model: 3

Serial No: 127685

Mfg: Ludlum

Det. Model: 44-9

Serial No: PR138206

Cal. Date: 5/17/11

Due Date 5/17/12

Cal. Interval: 1 year

			Operating		Input V1
Det. Bkg:	<u>50</u>		Voltage:	<u>900</u>	Input V2
Temp.:	<u>64</u>	Hum 35%	Reset:	<u>n/a</u>	Threshold 1
Bat. Check:	<u>ok</u>		Audio:	<u>ok</u>	Threshold 2
Threshold:	<u>38 mV</u>		Bat. Voltage:	<u>2 x D batt</u>	Window 1
HV set:	<u>900</u>	<u>900</u>	Mechanical:	<u>OK</u>	Window 2
HV reading:	<u>900</u>	<u>900</u>	Bkg Subtract:	<u>NA</u>	
Alarm Check:	<u>off</u>				

Check mark applies to applicable instrument and or detector.

Instrument Received: ☒ X

Within Tolerance (+/- 10%) ☒ X

10 to 20% ☐

Out of Tolerance ☐

Requires Repair ☐

Comments:

Calibrates OK

Range Multiplier	Reference Point PPM	Instrument Reading CPM	Additional CPM	Data
0.1	100	100	1	
	400	400	2	
1	1000	1000	3	
	4000	4000	4	
10	10,000	10,000	5	
	40,000	40,000	6	
100	100,000	100,000	7	
	400,000	400,000	8	
			9	
			10	
NWT Procedure:			CHI^2 =	PASS

Sources & Instruments:

<input type="checkbox"/>	Gamma sn: _____
<input type="checkbox"/>	Alpha sn: _____
<input checked="" type="checkbox"/> X	Pulser sn: <u>81071</u>

<input type="checkbox"/>	Beta sn: _____
<input type="checkbox"/>	Oscilloscope sn: _____

<input type="checkbox"/>	Other: _____
<input type="checkbox"/>	Multimeter: _____

Calibrated by: J. Wadsworth

Date: 5/17/11

NWE certifies that the above instrument has been calibrated by instruments and standards traceable to NIST or to the calibration facilities of other International Standards Organization members or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of MIL-STD-45662A and ANSI N323-1978.



New World Environmental Inc.

Phone: 925-443-7967

Fax: 925-443-0119

Certificate of Calibration

Customer: NWE

Order No: _____

Mfg: Ludlum

Model: 3

Serial No: 25909

Mfg: Ludlum

Det. Model: 44-9

Serial No: PR041811

Cal. Date: 5/17/11

Due Date: 5/17/12

Cal. Interval: 1 year

			Operating		Input V1
Det. Bkg:	50		Voltage:	900	Input V2
Temp.:	64	Hum 35%	Reset:	n/a	Threshold 1
Bat. Check:	ok		Audio:	ok	Threshold 2
Threshold:	26 mV		Bat. Voltage:	2 x D batt	Window 1
HV set:	900	900	Mechanical:	OK	Window 2
HV reading:	900	900	Bkg Subtract:	NA	
Alarm Check:	off				

Check mark applies to applicable instrument and or detector.

Instrument Received: ☒ X

Within Tolerance (+/- 10%) ☒ X

10 to 20% ☐

Out of Tolerance ☐

Requires Repair ☐

Comments: Calibrates OK

Range Multiplier	Reference Point PPM	Instrument Reading CPM	Additional Data			
				CPM		
0.1	100	100	1			
	400	400	2			
1	1000	1000	3			
	4000	4000	4			
10	10,000	10,000	5			
	40,000	40,000	6			
100	100,000	100,000	7			
	400,000	400,000	8			
			9			
			10			
NWT Procedure:			CHI^2 =		PASS	

Sources & Instruments:

<input type="checkbox"/>	Gamma sn: _____
<input type="checkbox"/>	Alpha sn: _____
<input checked="" type="checkbox"/>	Pulser sn: <u>81071</u>

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Beta sn: _____

Oscilloscope
sn: _____

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Other: _____

Multimeter: _____

Calibrated by: J. Wadsworth

Date: 5/17/11

NWE certifies that the above instrument has been calibrated by instruments and standards traceable to NIST or to the calibration facilities of other International Standards Organization members or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of MIL-STD-45662A and ANSI N323-1978.



New World Environmental Inc.

Phone: 925-443-7967

Fax: 925-443-0119

Certificate of Calibration

Customer: NWE

Order No: _____

Mfg: Ludlum

Model: 3

Serial No: 64029

Mfg: Ludlum

Det. Model: 44-9

Serial No: PR080802

Cal. Date: 5/17/11

Due Date: 5/17/12

Cal. Interval: 1 year

			Operating	Input V1	
Det. Bkg:	<u>50</u>		Voltage:	<u>900</u>	Input V2
Temp.:	<u>64</u>	Hum 35%	Reset:	<u>n/a</u>	Threshold 1
Bat. Check:	<u>ok</u>		Audio:	<u>ok</u>	Threshold 2
Threshold:	<u>28 mV</u>		Bat. Voltage:	<u>2 x D batt</u>	Window 1
HV set:	<u>900</u>	<u>900</u>	Mechanical:	<u>OK</u>	Window 2
HV reading:	<u>900</u>	<u>900</u>	Bkg Subtract:	<u>NA</u>	
Alarm Check:	<u>off</u>				

Check mark applies to applicable instrument and or detector.

Instrument Received: ☒ X

Within Tolerance (+/- 10%) ☒ X

10 to 20% ☐

Out of Tolerance ☐

Requires Repair ☐

Comments: Calibrates OK

Range Multiplier	Reference	Instrument	Additional		Data
	Point PPM	Reading CPM		CPM	
0.1	100	100	1		
	500	500	2		
1	1000	1000	3		
	5000	5000	4		
10	10,000	10,000	5		
	50,000	50,000	6		
100	100,000	100,000	7		
	500,000	500,000	8		
			9		
			10		
NWT Procedure:			CHI^2 =		PASS

Sources & Instruments:

<input type="checkbox"/>	Gamma sn: _____	<input type="checkbox"/>
<input type="checkbox"/>	Alpha sn: _____	<input type="checkbox"/>
<input checked="" type="checkbox"/> X	Pulser sn: <u>81071</u>	<input type="checkbox"/>

Beta sn: _____

Oscilloscope
sn: _____

Other: _____

Multimeter: _____

Calibrated by: J. Wadsworth

Date: 5/17/11

NWE certifies that the above instrument has been calibrated by instruments and standards traceable to NIST or to the calibration facilities of other International Standards Organization members or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of MIL-STD-45662A and ANSI N323-1978.



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 5/27/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)		Source QC Limit (s)	
2929	143876	N/A	P	No	α	1	β	37	α	42454	β	29445	α 0-2	β 36-98	α 41971 - 42576	β 28822 - 29550
2360	178154	P	P	No	α	6	β	1092	α	16122	β	18861	α 3-18	β 1062-1297	α 14270 - 21406	β 13518 - 20278
2350	95353	P	P	No	8853				144118				7300 - 11000		100000 - 150000	
2350	95355	P	P	No	7903				145818				7300 - 11000		100000 - 150000	
2350	142489	P	P	No	10908				136577				7300 - 11000		100000 - 150000	
2350	134735	P	P	No	-				-				7300 - 11000		100000 - 150000	
3	119250	P	P	No	55				17000				34 - 64		14400 - 21600	
3	64029	P	P	No	60				21000				34 - 64		14400 - 21600	
3	127685	P	P	No	65				18000				34 - 64		14400 - 21600	
3	25909	P	P	No	60				21000				34 - 64		14400 - 21600	

Performed By: Lucas Ray

Reviewed By: _____

Instruments were only checked on the days they were used



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 6/3/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	2	β	92	α	42338	β	28850	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2360	178154	P	P	No	α	8	β	1242	α	15340	β	17801	α 3 - 18 β 1062 - 1297	α 14270 - 21406 β 13518 - 20278								
2350	95353	P	P	No	8331				102254				7300 - 11000	100000 - 150000								
2350	95355	P	P	No	9543				136903				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	9307				141138				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	-				-				7300 - 11000	100000 - 150000								
3	119250	P	P	No	55				17000				34 - 64	14400 - 21600								
3	64029	P	P	No	65				20000				34 - 64	14400 - 21600								
3	127685	P	P	No	55				18000				34 - 64	14400 - 21600								
3	25909	P	P	No	45				16000				34 - 64	14400 - 21600								
Performed By: <u>Lucas Ray</u>																						
Reviewed By: _____																						



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 6/6/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	2	β	76	α	42465	β	29291	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2360	178154	P	P	No	α	18	β	1254	α	16197	β	15415	α 3 - 18 β 1062 - 1297	α 14270 - 21406 β 13518 - 20278								
2350	95353	P	P	No	9642				117018				7300 - 11000	100000 - 150000								
2350	95355	P	P	No	9458				119975				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	8282				118304				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	-				-				7300 - 11000	100000 - 150000								
3	119250	P	P	No	40				21000				34 - 64	14400 - 21600								
3	64029	P	P	No	55				20000				34 - 64	14400 - 21600								
3	127685	P	P	No	65				18000				34 - 64	14400 - 21600								
3	25909	P	P	No	40				18000				34 - 64	14400 - 21600								
Performed By: Lucas Ray																						
Reviewed By: _____																						

11/21/11



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/7/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)		Source QC Limit (s)	
2929	143876	N/A	P	No	α	1	β	55	α	42045	β	29256	α 0 - 2	β 36 - 98	α 41971 - 42576	β 28822 - 29550
2360	178154	P	P	No	α	5	β	1075	α	21328	β	15068	α 3 - 18	β 1062 - 1297	α 14270 - 21406	β 13518 - 20278
2350	95353	P	P	No	9997				134570				7300 - 11000		100000 - 150000	
2350	95355	P	P	No	9362				103310				7300 - 11000		100000 - 150000	
2350	142489	P	P	No	10932				118318				7300 - 11000		100000 - 150000	
2350	134735	P	P	No	-				-				7300 - 11000		100000 - 150000	
3	119250	P	P	No	45				16000				34 - 64		14400 - 21600	
3	64029	P	P	No	40				17000				34 - 64		14400 - 21600	
3	127685	P	P	No	35				21000				34 - 64		14400 - 21600	
3	25909	P	P	No	55				17000				34 - 64		14400 - 21600	

Performed By: Lucas Ray

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 6/8/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	1	β	69	α	42109	β	29319	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2360	178154	P	P	No	α	15	β	1142	α	15195	β	15535	α 3 - 18 β 1062 - 1297	α 14270 - 21406 β 13518 - 20278
2350	95353	P	P	No	10951				118803				7300 - 11000	100000 - 150000
2350	95355	P	P	No	8422				120451				7300 - 11000	100000 - 150000
2350	142489	P	P	No	9144				146720				7300 - 11000	100000 - 150000
2350	134735	P	P	No	-				-				7300 - 11000	100000 - 150000
3	119250	P	P	No	40				19000				34 - 64	14400 - 21600
3	64029	P	P	No	60				20000				34 - 64	14400 - 21600
3	127685	P	P	No	55				17000				34 - 64	14400 - 21600
3	25909	P	P	No	65				19000				34 - 64	14400 - 21600

Performed By: Lucas Ray

Reviewed By: _____



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 6/9/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)		Source QC Limit (s)	
2929	143876	N/A	P	No	α	1	β	96	α	42166	β	29126	α 0-2 β 36-98		α 41971 - 42576 β 28822 - 29550	
2360	178154	P	P	No	α	7	β	1078	α	20703	β	18797	α 3-18 β 1062-1297		α 14270 - 21406 β 13518 - 20278	
2350	95353	P	P	No	10046				126124				7300 - 11000		100000 - 150000	
2350	95355	P	P	No	10733				141878				7300 - 11000		100000 - 150000	
2350	142489	P	P	No	7322				131516				7300 - 11000		100000 - 150000	
2350	134735	P	P	No	-				-				7300 - 11000		100000 - 150000	
3	119250	P	P	No	40				16000				34 - 64		14400 - 21600	
3	64029	P	P	No	50				21000				34 - 64		14400 - 21600	
3	127685	P	P	No	65				18000				34 - 64		14400 - 21600	
3	25909	P	P	No	55				15000				34 - 64		14400 - 21600	

Performed By: Lucas Ray

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 6/10/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	2	β	81	α	42126	β	29100	α 0-2 β 36-98	α 41971-42576 β 28822-29550
2360	178154	P	P	No	α	11	β	1105	α	18989	β	16111	α 3-18 β 1062-1297	α 14270-21406 β 13518-20278
2350	95353	P	P	No	10281				110607				7300 - 11000	100000 - 150000
2350	95355	P	P	No	7380				118689				7300 - 11000	100000 - 150000
2350	142489	P	P	No	9056				122034				7300 - 11000	100000 - 150000
2350	134735	P	P	No	-				-				7300 - 11000	100000 - 150000
3	119250	P	P	No	55				17000				34 - 64	14400 - 21600
3	64029	P	P	No	45				17000				34 - 64	14400 - 21600
3	127685	P	P	No	45				16000				34 - 64	14400 - 21600
3	25909	P	P	No	60				16000				34 - 64	14400 - 21600
<p>Performed By: <u>Lucas Ray</u></p> <p>Reviewed By: _____</p>														



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 6/13/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	2	β	69	α	42537	β	29226	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2360	178154	P	P	No	α	18	β	1167	α	16265	β	14851	α 3 - 18 β 1062 - 1297	α 14270 - 21406 β 13518 - 20278
2350	95353	P	P	No	10691				125828				7300 - 11000	100000 - 150000
2350	95355	P	P	No	7550				127182				7300 - 11000	100000 - 150000
2350	142489	P	P	No	10003				120560				7300 - 11000	100000 - 150000
2350	134735	P	P	No	-				-				7300 - 11000	100000 - 150000
3	119250	P	P	No	55				21000				34 - 64	14400 - 21600
3	64029	P	P	No	60				18000				34 - 64	14400 - 21600
3	127685	P	P	No	65				18000				34 - 64	14400 - 21600
3	25909	P	P	No	45				17000				34 - 64	14400 - 21600

Performed By: Lucas Ray

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 6/14/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	0	β	60	α	42338	β	29400	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2360	178154	P	P	No	α	6	β	1220	α	17145	β	18050	α 3 - 18 β 1062 - 1297	α 14270 - 21406 β 13518 - 20278
2350	95353	P	P	No	9110				112290				7300 - 11000	100000 - 150000
2350	95355	P	P	No	10824				122282				7300 - 11000	100000 - 150000
2350	142489	P	P	No	9317				81580				7300 - 11000	100000 - 150000
2350	134735	P	P	No	-				-				7300 - 11000	100000 - 150000
3	119250	P	P	No	40				20000				34 - 64	14400 - 21600
3	64029	P	P	No	50				18000				34 - 64	14400 - 21600
3	127685	P	P	No	50				17500				34 - 64	14400 - 21600
3	25909	P	P	No	60				15000				34 - 64	14400 - 21600

Performed By: Lucas Ray

Reviewed By: _____



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 6/15/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	0	β	75	α	42438	β	29392	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2360	178154	P	P	No	α	17	β	1092	α	17873	β	19059	α 3 - 18 β 1062 - 1297	α 14270 - 21406 β 13518 - 20278								
2350	95353	P	P	No	-				-				7300 - 11000	100000 - 150000								
2350	95355	P	P	No	10928				100140				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	10204				110754				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	-				-				7300 - 11000	100000 - 150000								
3	119250	P	P	No	40				20000				34 - 64	14400 - 21600								
3	64029	P	P	No	40				18000				34 - 64	14400 - 21600								
3	127685	P	P	No	50				18000				34 - 64	14400 - 21600								
3	25909	P	P	No	50				16000				34 - 64	14400 - 21600								
Performed By: <u>Lucas Ray</u>																						
Reviewed By: _____																						



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 6/16/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)		Source QC Limit (s)	
2929	143876	N/A	P	No	α	1	β	56	α	42530	β	29018	α 0-2	β 36-98	α 41971 - 42576	β 28822 - 29550
2360	178154	P	P	No	α	6	β	1081	α	16345	β	19247	α 3-18	β 1062 - 1297	α 14270 - 21406	β 13518 - 20278
2350	95353	P	P	No	-				-				7300 - 11000		100000 - 150000	
2350	95355	P	P	No	8108				112788				7300 - 11000		100000 - 150000	
2350	142489	P	P	No	9132				100750				7300 - 11000		100000 - 150000	
2350	134735	P	P	No	7688				105085				7300 - 11000		100000 - 150000	
3	119250	P	P	No	40				20000				34 - 64		14400 - 21600	
3	64029	P	P	No	40				19000				34 - 64		14400 - 21600	
3	127685	P	P	No	60				18000				34 - 64		14400 - 21600	
3	25909	P	P	No	60				16000				34 - 64		14400 - 21600	
<p>Performed By: <u>Ryan Penney</u></p> <p>Reviewed By: _____</p>																



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 6/17/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	0	β	72	α	42391	β	29525	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2360	178154	P	P	No	α	16	β	1105	α	15673	β	19677	α 3 - 18 β 1062 - 1297	α 14270 - 21406 β 13518 - 20278
2350	95353	P	P	No	-				-				7300 - 11000	100000 - 150000
2350	95355	P	P	No	10140				105868				7300 - 11000	100000 - 150000
2350	142489	P	P	No	8220				100435				7300 - 11000	100000 - 150000
2350	134735	P	P	No	7945				104944				7300 - 11000	100000 - 150000
3	119250	P	P	No	50				19000				34 - 64	14400 - 21600
3	64029	P	P	No	50				18000				34 - 64	14400 - 21600
3	127685	P	P	No	60				16000				34 - 64	14400 - 21600
3	25909	P	P	No	60				16000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 6/20/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	1	β	74	α	42499	β	29538	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95353	P	P	No	-				-				7300 - 11000	100000 - 150000
2350	95355	P	P	No	9838				124545				7300 - 11000	100000 - 150000
2350	142489	P	P	No	9567				101879				7300 - 11000	100000 - 150000
2350	134735	P	P	No	8769				108780				7300 - 11000	100000 - 150000
3	119250	P	P	No	50				20000				34 - 64	14400 - 21600
3	64029	P	P	No	50				19000				34 - 64	14400 - 21600
3	127685	P	P	No	60				18000				34 - 64	14400 - 21600
3	25909	P	P	No	60				16000				34 - 64	14400 - 21600

Performed By: Lucas Ray

Reviewed By: _____



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 6/21/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	0	β	57	α	42283	β	29437	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95353	P	P	No	-				-				7300 - 11000	100000 - 150000
2350	95355	P	P	No	10375				129334				7300 - 11000	100000 - 150000
2350	142489	P	P	No	10452				101681				7300 - 11000	100000 - 150000
2350	134735	P	P	No	8686				106979				7300 - 11000	100000 - 150000
3	119250	P	P	No	45				19000				34 - 64	14400 - 21600
3	64029	F	P	No	-				-				34 - 64	14400 - 21600
3	127685	P	P	No	55				17000				34 - 64	14400 - 21600
3	25909	P	P	No	53				16500				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 6/23/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	0	β	85	α	42467	β	29355	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95353	P	P	No	-				-				7300 - 11000	100000 - 150000								
2350	95355	P	P	No	10984				133784				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	10842				108269				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	8540				122447				7300 - 11000	100000 - 150000								
3	119250	P	P	No	50				20000				34 - 64	14400 - 21600								
3	64029	F	P	No	-				-				34 - 64	14400 - 21600								
3	127685	P	P	No	60				19000				34 - 64	14400 - 21600								
3	25909	P	P	No	60				16000				34 - 64	14400 - 21600								
Performed By: <u>Lucas Ray</u>																						
Reviewed By: _____																						



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 6/24/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)		Source QC Limit (s)	
2929	143876	N/A	P	No	α	0	β	86	α	-	β	-	α 0 - 2	β 36 - 98	α 41971 - 42576	β 28822 - 29550
2350	95353	P	P	No	-				-				7300 - 11000		100000 - 150000	
2350	95355	P	P	No	10985				106622				7300 - 11000		100000 - 150000	
2350	142489	P	P	No	10758				-				7300 - 11000		100000 - 150000	
2350	134735	P	P	No	8223				116970				7300 - 11000		100000 - 150000	
3	119250	P	P	No	40				20000				34 - 64		14400 - 21600	
3	64029	F	P	No	-				-				34 - 64		14400 - 21600	
3	127685	P	P	No	-				-				34 - 64		14400 - 21600	
3	25909	P	P	No	50				16000				34 - 64		14400 - 21600	

Performed By: Lucas Ray

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 6/28/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)		Source Reading (s)		Background QC Limit (s)		Source QC Limit (s)	
2929	143876	N/A	P	No	α	-	β	-	α	0 - 2	β	36 - 98
2350	95353	P	P	No	-		-		7300 - 11000		100000 - 150000	
2350	95355	P	P	No	10782		122000		7300 - 11000		100000 - 150000	
2350	142489	P	P	No	10689		125000		7300 - 11000		100000 - 150000	
2350	134735	P	P	No	8000		126000		7300 - 11000		100000 - 150000	
3	119250	P	P	No	40		19000		34 - 64		14400 - 21600	
3	64029	F	P	No	-		-		34 - 64		14400 - 21600	
3	127685	P	P	No	60		18000		34 - 64		14400 - 21600	
3	25909	P	P	No	40		16000		34 - 64		14400 - 21600	

Performed By: Ryan Penney

Reviewed By: _____



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 6/29/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	2	β	67	α	42205	β	29409	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	7804				117154				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	9405				127303				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	8129				126036				7300 - 11000	100000 - 150000								
3	119250	P	P	No	45				16000				34 - 64	14400 - 21600								
3	64029	P	P	No	60				19000				34 - 64	14400 - 21600								
3	127685	P	P	No	60				19000				34 - 64	14400 - 21600								
3	25909	P	P	No	60				15000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 6/30/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	1	β	47	α	42486	β	29143	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	9278				122058				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	8909				139197				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	9259				106607				7300 - 11000	100000 - 150000								
3	119250	P	P	No	50				18000				34 - 64	14400 - 21600								
3	64029	P	P	No	45				19000				34 - 64	14400 - 21600								
3	127685	P	P	No	65				21000				34 - 64	14400 - 21600								
3	25909	P	P	No	55				17000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/1/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	1	β	39	α	42116	β	29176	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	10213				106224				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	10254				131347				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	7451				103738				7300 - 11000	100000 - 150000								
3	119250	P	P	No	40				21000				34 - 64	14400 - 21600								
3	64029	P	P	No	60				16000				34 - 64	14400 - 21600								
3	127685	P	P	No	40				18000				34 - 64	14400 - 21600								
3	25909	P	P	No	55				21000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 7/5/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	1	β	77	α	42266	β	29316	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	10635				129665				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	8073				110859				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	10668				108099				7300 - 11000	100000 - 150000								
3	119250	P	P	No	55				19000				34 - 64	14400 - 21600								
3	64029	P	P	No	55				18000				34 - 64	14400 - 21600								
3	127685	P	P	No	50				19000				34 - 64	14400 - 21600								
3	25909	P	P	No	65				18000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/6/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	1	β	38	α	42009	β	29053	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	10470				124609				7300 - 11000	100000 - 150000
2350	142489	P	P	No	8986				104901				7300 - 11000	100000 - 150000
2350	134735	P	P	No	9591				132867				7300 - 11000	100000 - 150000
3	119250	P	P	No	65				16000				34 - 64	14400 - 21600
3	64029	P	P	No	45				18000				34 - 64	14400 - 21600
3	127685	P	P	No	45				20000				34 - 64	14400 - 21600
3	25909	P	P	No	65				19000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 7/7/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)		Source Reading (s)		Background QC Limit (s)	Source QC Limit (s)				
2929	143876	N/A	P	No	α 1	β 54	α 42437	β 29144	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550				
2350	95355	P	P	No	10468		135692		7300 - 11000	100000 - 150000				
2350	142489	P	P	No	7395		128098		7300 - 11000	100000 - 150000				
2350	134735	P	P	No	10177		113221		7300 - 11000	100000 - 150000				
3	119250	P	P	No	40		16000		34 - 64	14400 - 21600				
3	64029	P	P	No	65		18000		34 - 64	14400 - 21600				
3	127685	P	P	No	40		17000		34 - 64	14400 - 21600				
3	25909	P	P	No	45		21000		34 - 64	14400 - 21600				
Performed By: <u>Ryan Penney</u>														
Reviewed By: _____														



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/8/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	0	β	43	α	42150	β	29192	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	8933				123174				7300 - 11000	100000 - 150000
2350	142489	P	P	No	8373				133596				7300 - 11000	100000 - 150000
2350	134735	P	P	No	8046				131339				7300 - 11000	100000 - 150000
3	119250	P	P	No	55				17000				34 - 64	14400 - 21600
3	64029	P	P	No	35				16000				34 - 64	14400 - 21600
3	127685	P	P	No	40				21000				34 - 64	14400 - 21600
3	25909	P	P	No	60				18000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 7/11/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	1	β	70	α	42435	β	29360	α 0-2 β 36-98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	7756				104303				7300- 11000	100000 - 150000
2350	142489	P	P	No	10857				139077				7300 - 11000	100000 - 150000
2350	134735	P	P	No	9545				116472				7300 - 11000	100000 - 150000
3	119250	P	P	No	50				17000				34 - 64	14400 - 21600
3	64029	P	P	No	50				19000				34 - 64	14400 - 21600
3	127685	P	P	No	40				18000				34 - 64	14400 - 21600
3	25909	P	P	No	60				18000				34 - 64	14400 - 21600

11/21/11



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/12/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	1	β	68	α	42083	β	29516	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	10180				100417				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	8030				106661				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	9889				113024				7300 - 11000	100000 - 150000								
3	119250	P	P	No	55				18000				34 - 64	14400 - 21600								
3	64029	P	P	No	45				15000				34 - 64	14400 - 21600								
3	127685	P	P	No	65				20000				34 - 64	14400 - 21600								
3	25909	P	P	No	55				17000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						

11/21/11



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 7/13/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	1	β	92	α	42087	β	29015	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	10476				131562				7300 - 11000	100000 - 150000
2350	142489	P	P	No	10566				140277				7300 - 11000	100000 - 150000
2350	134735	P	P	No	10615				138904				7300 - 11000	100000 - 150000
3	119250	P	P	No	50				20000				34 - 64	14400 - 21600
3	64029	P	P	No	40				16000				34 - 64	14400 - 21600
3	127685	P	P	No	40				19000				34 - 64	14400 - 21600
3	25909	P	P	No	65				20000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Performed By (Print): _____

Performed By (Sign): _____

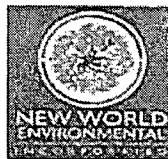
Daily QC Worksheet

Date: 7/14/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)		Source QC Limit (s)	
2929	143876	N/A	P	No	α	0	β	47	α	42200	β	29177	α 0 - 2	β 36 - 98	α 41971 - 42576	β 28822 - 29550
2350	95355	P	P	No	8738				149608				7300 - 11000		100000 - 150000	
2350	142489	P	P	No	7927				107571				7300 - 11000		100000 - 150000	
2350	134735	P	P	No	8039				109878				7300 - 11000		100000 - 150000	
3	119250	P	P	No	50				17000				34 - 64		14400 - 21600	
3	64029	P	P	No	65				18000				34 - 64		14400 - 21600	
3	127685	P	P	No	45				21000				34 - 64		14400 - 21600	
3	25909	P	P	No	40				16000				34 - 64		14400 - 21600	

Performed By: Ryan Penney

Reviewed By: _____



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/15/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)		Source Reading (s)		Background QC Limit (s)		Source QC Limit (s)	
2929	143876	N/A	P	No	α 0	β 58	α 42002	β 28941	α 0-2 β 36-98	α 41971 - 42576 β 28822 - 29550		
2350	95355	P	P	No	8423		119527		7300 - 11000		100000 - 150000	
2350	142489	P	P	No	9190		131759		7300 - 11000		100000 - 150000	
2350	134735	P	P	No	9714		108117		7300 - 11000		100000 - 150000	
3	119250	P	P	No	40		19000		34 - 64		14400 - 21600	
3	64029	P	P	No	50		21000		34 - 64		14400 - 21600	
3	127685	P	P	No	65		19000		34 - 64		14400 - 21600	
3	25909	P	P	No	55		21000		34 - 64		14400 - 21600	

Performed By: Ryan Penney

Reviewed By: _____



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/18/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	1	β	53	α	42134	β	29222	α 0-2 β 36-98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	10102				115572				7300 - 11000	100000 - 150000
2350	142489	P	P	No	10249				115491				7300 - 11000	100000 - 150000
2350	134735	P	P	No	8589				104466				7300 - 11000	100000 - 150000
3	119250	P	P	No	55				15000				34 - 64	14400 - 21600
3	64029	P	P	No	60				15000				34 - 64	14400 - 21600
3	127685	P	P	No	45				21000				34 - 64	14400 - 21600
3	25909	P	P	No	55				20000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 7/19/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	1	β	92	α	42429	β	29268	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	9786				119155				7300 - 11000	100000 - 150000
2350	142489	P	P	No	7707				131293				7300 - 11000	100000 - 150000
2350	134735	P	P	No	7353				111834				7300 - 11000	100000 - 150000
3	119250	P	P	No	60				19000				34 - 64	14400 - 21600
3	64029	P	P	No	50				18000				34 - 64	14400 - 21600
3	127685	P	P	No	65				18000				34 - 64	14400 - 21600
3	25909	P	P	No	40				20000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/20/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	0	β	56	α	42519	β	29483	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	10190				143271				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	8585				105544				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	8418				105581				7300 - 11000	100000 - 150000								
3	119250	P	P	No	60				16000				34 - 64	14400 - 21600								
3	64029	P	P	No	45				16000				34 - 64	14400 - 21600								
3	127685	P	P	No	60				20000				34 - 64	14400 - 21600								
3	25909	P	P	No	40				15000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/21/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	1	β	47	α	42308	β	29425	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	10304				119819				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	7873				113743				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	10398				143164				7300 - 11000	100000 - 150000								
3	119250	P	P	No	40				18000				34 - 64	14400 - 21600								
3	64029	P	P	No	45				21000				34 - 64	14400 - 21600								
3	127685	P	P	No	55				21000				34 - 64	14400 - 21600								
3	25909	P	P	No	65				21000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/22/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	1	β	79	α	42031	β	29267	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	10036				131231				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	10202				103566				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	8422				128611				7300 - 11000	100000 - 150000								
3	119250	P	P	No	65				20000				34 - 64	14400 - 21600								
3	64029	P	P	No	45				19000				34 - 64	14400 - 21600								
3	127685	P	P	No	40				16000				34 - 64	14400 - 21600								
3	25909	P	P	No	50				19000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



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Performed By (Sign) : _____

Daily QC Worksheet

Date: 7/25/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	1	β	97	α	42269	β	29015	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	8215				147507				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	8704				109900				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	9072				106262				7300 - 11000	100000 - 150000								
3	119250	P	P	No	55				15000				34 - 64	14400 - 21600								
3	64029	P	P	No	60				16000				34 - 64	14400 - 21600								
3	127685	P	P	No	40				20000				34 - 64	14400 - 21600								
3	25909	P	P	No	65				18000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/26/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	2	β	83	α	42003	β	28962	α 0-2 β 36-98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	7910				101069				7300- 11000	100000 - 150000
2350	142489	P	P	No	7378				142261				7300 - 11000	100000 - 150000
2350	134735	P	P	No	10338				134212				7300 - 11000	100000 - 150000
3	119250	P	P	No	60				21000				34 - 64	14400 - 21600
3	64029	P	P	No	50				17000				34 - 64	14400 - 21600
3	127685	P	P	No	65				18000				34 - 64	14400 - 21600
3	25909	P	P	No	55				17000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____

11/21/11



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 7/27/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	1	β	36	α	42523	β	29462	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	9116				147494				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	8507				106498				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	8084				145680				7300 - 11000	100000 - 150000								
3	119250	P	P	No	35				20000				34 - 64	14400 - 21600								
3	64029	P	P	No	50				16000				34 - 64	14400 - 21600								
3	127685	P	P	No	40				21000				34 - 64	14400 - 21600								
3	25909	P	P	No	60				20000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 7/28/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	0	β	72	α	42486	β	29157	α 0-2 β 36-98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	7441				110379				7300 - 11000	100000 - 150000								
2350	142489	P	P	No	10441				118975				7300 - 11000	100000 - 150000								
2350	134735	P	P	No	9884				128995				7300 - 11000	100000 - 150000								
3	119250	P	P	No	65				15000				34 - 64	14400 - 21600								
3	64029	P	P	No	60				16000				34 - 64	14400 - 21600								
3	127685	P	P	No	55				21000				34 - 64	14400 - 21600								
3	25909	P	P	No	45				19000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 7/29/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	1	β	55	α	42322	β	29306	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	10067				139729				7300 - 11000	100000 - 150000
2350	142489	P	P	No	7599				110368				7300 - 11000	100000 - 150000
2350	134735	P	P	No	8078				141455				7300 - 11000	100000 - 150000
3	119250	P	P	No	55				18000				34 - 64	14400 - 21600
3	64029	P	P	No	60				18000				34 - 64	14400 - 21600
3	127685	P	P	No	40				19000				34 - 64	14400 - 21600
3	25909	P	P	No	50				17000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Performed By (Print) : _____

Performed By (Sign) : _____

Daily QC Worksheet

Date: 8/11/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)		Source QC Limit (s)													
2929	143876	N/A	P	No	α	1	β	68	α	42057	β	29308	α 0 - 2	β 36 - 98	α 41971 - 42576	β 28822 - 29550												
2350	95355	P	P	No	18969				363871				17000 - 21000		307000 - 375000													
3	119250	P	P	No	50				21000				34 - 64		14400 - 21600													
3	64029	P	P	No	60				16000				34 - 64		14400 - 21600													
3	127685	P	P	No	40				18000				34 - 64		14400 - 21600													
Performed By: <u>Ryan Penney</u>																												
Reviewed By: _____																												

11/21/11



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 8/2/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	2	β	82	α	42394	β	29041	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	18001				324171				17000 - 21000	307000 - 375000								
3	119250	P	P	No	65				19000				34 - 64	14400 - 21600								
3	64029	P	P	No	40				19000				34 - 64	14400 - 21600								
3	127685	P	P	No	55				15000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 8/3/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)		Source QC Limit (s)	
2929	143876	N/A	P	No	α	1	β	73	α	42494	β	29345	α 0 - 2	β 36 - 98	α 41971 - 42576	β 28822 - 29550
2350	95355	P	P	No	18026				315217				17000 - 21000		307000 - 375000	
3	119250	P	P	No	40				21000				34 - 64		14400 - 21600	
3	64029	P	P	No	60				18000				34 - 64		14400 - 21600	
3	127685	P	P	No	55				19000				34 - 64		14400 - 21600	

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 8/4/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	No	α	2	β	77	α	42228	β	28957	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	19282				323827				17000 - 21000	307000 - 375000								
3	119250	P	P	No	50				15000				34 - 64	14400 - 21600								
3	64029	P	P	No	55				20000				34 - 64	14400 - 21600								
3	127685	P	P	No	60				20000				34 - 64	14400 - 21600								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						

11/21/11



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 8/5/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	2	β	92	α	42063	β	29255	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	17141				359970				17000 - 21000	307000 - 375000
3	119250	P	P	No	65				18000				34 - 64	14400 - 21600
3	64029	P	P	No	40				17000				34 - 64	14400 - 21600
3	127685	P	P	No	65				21000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 8/8/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	No	α	1	β	59	α	42084	β	29272	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	20405				347596				17000 - 21000	307000 - 375000
3	119250	P	P	No	55				19000				34 - 64	14400 - 21600
3	64029	P	P	No	55				17000				34 - 64	14400 - 21600
3	127685	P	P	No	60				20000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 8/9/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	YES	α	-	β	-	α	-	β	-	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	19280				371042				17000 - 21000	307000 - 375000
3	119250	P	P	No	50				19000				34 - 64	14400 - 21600
3	64029	P	P	No	45				16000				34 - 64	14400 - 21600
3	127685	P	P	No	45				16000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 8/10/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)	Source Reading (s)	Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	YES	α - β -	α - β -	α 0-2 β 36-98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	20854	360738	17000 - 21000	307000 - 375000
3	119250	P	P	No	40	19000	34 - 64	14400 - 21600
3	64029	P	P	No	65	21000	34 - 64	14400 - 21600
3	127685	P	P	No	50	17000	34 - 64	14400 - 21600
Performed By: <u>Lucas Ray</u>								
Reviewed By: _____								



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 8/11/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)	Source Reading (s)	Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	YES	α - β -	α - β -	α 0-2 β 36-98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	18768	363553	17000 - 21000	307000 - 375000
3	119250	P	P	No	50	21000	34 - 64	14400 - 21600
3	64029	P	P	No	65	18000	34 - 64	14400 - 21600
3	127685	P	P	No	40	19000	34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 8/12/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	YES	α	-	β	-	α	-	β	-	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	18362				318529				17000 - 21000	307000 - 375000
3	119250	P	P	No	50				19000				34 - 64	14400 - 21600
3	64029	P	P	No	40				15000				34 - 64	14400 - 21600
3	127685	P	P	No	35				18000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 8/15/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	YES	α	-	β	-	α	-	β	-	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	20957				341591				17000 - 21000	307000 - 375000
3	119250	P	P	No	45				17000				34 - 64	14400 - 21600
3	64029	P	P	No	50				17000				34 - 64	14400 - 21600
3	127685	P	P	No	50				18000				34 - 64	14400 - 21600

Performed By: Ryan Penney

Reviewed By: _____



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 8/16/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)		Source QC Limit (s)													
2929	143876	N/A	P	YES	α	-	β	-	α	-	β	-	α 0 - 2	β 36 - 98	α 41971 - 42576	β 28822 - 29550												
2350	95355	P	P	No	17213				362729				17000 - 21000		307000 - 375000													
3	119250	P	P	No	50				19000				34 - 64		14400 - 21600													
3	64029	P	P	No	55				15000				34 - 64		14400 - 21600													
3	127685	P	P	No	65				18000				34 - 64		14400 - 21600													
Performed By: <u>Ryan Penney</u>																												
Reviewed By: _____																												



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 8/17/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	YES	α	-	β	-	α	-	β	-	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	95355	P	P	No	18903				340593				17000 - 21000	307000 - 375000
3	119250	P	P	No	50				18000				34 - 64	14400 - 21600
3	64029	P	P	No	50				18000				34 - 64	14400 - 21600
3	127685	P	P	No	40				19000				34 - 64	14400 - 21600
<div>Performed By: <u>Ryan Penney</u></div> <div>Reviewed By: _____</div>														

11/21/11

Performed By (Print): _____

Performed By (Sign): _____



Daily QC Worksheet

Date: 8/18/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	YES	α	-	β	-	α	-	β	-	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	95355	P	P	No	16744				358774				17000 - 21000	307000 - 375000								
3	119250	P	P	No	60				18000				34 - 64	14400 - 21600								
3	64029	P	P	No	45				18000				34 - 64	14400 - 21600								
3	127685	P	P	No	60				19000				34 - 64	14400 - 21600								
19	101733	P	P	No	10				260				7 - 14	250 - 300								
Performed By: <u>Ryan Penney</u>																						
Reviewed By: _____																						

11/21/11



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 8/19/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)		Source Reading (s)		Background QC Limit (s)	Source QC Limit (s)				
2929	143876	N/A	P	YES	α -	β -	α -	β -	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550				
2350	95355	P	P	No	250 C/S		5.8 kC/s		17000 - 21000	307000 - 375000				
3	119250	P	P	No	50		18000		34 - 64	14400 - 21600				
3	64029	P	P	No	50		18000		34 - 64	14400 - 21600				
3	127685	P	P	No	45		19000		34 - 64	14400 - 21600				
19	101733	P	P	No	10		260		7 - 14	250 - 300				
Performed By: <u>Lucas Ray</u>														
Reviewed By: _____														



Daily QC Worksheet

Performed By (Print): _____

Performed By (Sign): _____

Date: 8/22/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)				Source Reading (s)				Background QC Limit (s)	Source QC Limit (s)								
2929	143876	N/A	P	YES	α	-	β	-	α	-	β	-	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550								
2350	134743	6.2	P	No	N/A				N/A				N/A									
2350	134735	6	P	No	N/A				N/A				N/A									
2350	142489	6.4	P	No	N/A				N/A				N/A									
2350	95355	5.1	P	No	19728				353307				17000 - 21000	307000 - 375000								
3	119250	P	P	No	50				18500				34 - 64	14400 - 21600								
3	64029	P	P	No	50				18000				34 - 64	14400 - 21600								
3	127685	P	P	No	60				20000				34 - 64	14400 - 21600								
19	101733	P	P	No	10				250				7 - 14	250 - 300								
Performed By: <u>Lucas Ray</u>																						
Reviewed By: _____																						



Performed By (Print): _____

Performed By (Sign): _____

Daily QC Worksheet

Date: 8/23/11 Time: _____

Instrument Model #	Instrument Serial #	Battery Check	Calibration Check	Physical Damage	Background Reading (s)	Source Reading (s)	Background QC Limit (s)	Source QC Limit (s)
2929	143876	N/A	P	YES	α - β -	α - β -	α 0 - 2 β 36 - 98	α 41971 - 42576 β 28822 - 29550
2350	134743	5.9	P	No	8220	69700	5951 - 8927	55504 - 83256
2350	134735	5.8	P	No	7658	66349	5739 - 8609	51056 - 76584
2350	142489	6.2	P	No	7918	70304	5527 - 8290	55182 - 82772
2350	95355	5.1	P	No	17928	340155	17000 - 21000	307000 - 375000
3	119250	P	P	No	50	20000	34 - 64	14400 - 21600
3	64029	P	P	No	50	20000	34 - 64	14400 - 21600
3	127685	P	P	No	60	18000	34 - 64	14400 - 21600
19	101733	P	P	No			7 - 14	250 - 300
Performed By: <u>Lucas Ray</u>								
Reviewed By: _____								

APPENDIX B

OFFSITE LABORATORY ANALYSIS RESULTS

LABORATORY REPORT

Prepared For: New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project: Tuba City Remediation
Highway 160 Project

Sampled: 06/18/11-08/24/11
Received: 08/26/11
Issued: 09/16/11 14:44

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 4 pages, are included and are an integral part of this report.

This entire report was reviewed and approved for release.

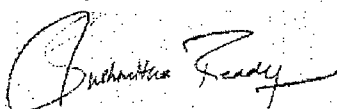
SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: The report is reissued with TCLP data

LABORATORY ID	CLIENT ID	MATRIX
IUH2741-01	SO-201108-01	Soil
IUH2741-02	SO-201108-02	Soil
IUH2741-03	SO-201108-03	Soil
IUH2741-04	SO-201108-04	Soil
IUH2741-05	SO-201108-05	Soil
IUH2741-06	SO-201108-06	Soil
IUH2741-07	SO-201108-07	Soil
IUH2741-08	SO-201108-08	Soil
IUH2741-09	SO-201108-09	Soil
IUH2741-10	SO-201108-10	Soil
IUH2741-11	SO-201108-11	Soil
IUH2741-12	MH-01-2011	Soil

Reviewed By:



TestAmerica Irvine

Sushmitha Reddy
Project Manager

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-04 (SO-201108-04 - Soil)			Sampled: 08/24/11					
Reporting Units: ug/kg								
Acetone	EPA 8260B	11H3702	9.9	ND	0.986	8/27/2011	8/27/2011	C, L
Benzene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Bromobenzene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
Bromochloromethane	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
Bromodichloromethane	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Bromoform	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
Bromomethane	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
2-Butanone (MEK)	EPA 8260B	11H3702	9.9	ND	0.986	8/27/2011	8/27/2011	C, L
n-Butylbenzene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
sec-Butylbenzene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
tert-Butylbenzene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
Carbon tetrachloride	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
Chlorobenzene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Chloroethane	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
Chloroform	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Chloromethane	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
2-Chlorotoluene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
4-Chlorotoluene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
1,2-Dibromo-3-chloropropane	EPA 8260B	11H3702	9.9	ND	0.986	8/27/2011	8/27/2011	
Dibromochloromethane	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,2-Dibromoethane (EDB)	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Dibromomethane	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,2-Dichlorobenzene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,3-Dichlorobenzene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,4-Dichlorobenzene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Dichlorodifluoromethane	EPA 8260B	11H3702	4.9	ND	0.986	8/27/2011	8/27/2011	
1,1-Dichloroethane	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,2-Dichloroethane	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,1-Dichloroethene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
cis-1,2-Dichloroethene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
trans-1,2-Dichloroethene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,2-Dichloropropane	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,3-Dichloropropane	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
2,2-Dichloropropane	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
cis-1,3-Dichloropropene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
trans-1,3-Dichloropropene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
cis,trans-1,2-Dichloroethene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
1,1-Dichloropropene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Ethylbenzene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Hexachlorobutadiene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
2-Hexanone	EPA 8260B	11H3702	9.9	ND	0.986	8/27/2011	8/27/2011	

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Sushmitha Reddy
Project Manager

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IUH2741 <Page 2 of 67>

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-04 (SO-201108-04 - Soil) - cont.				Sampled: 08/24/11				
Reporting Units: ug/kg								
Isopropylbenzene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
p-Isopropyltoluene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	11H3702	4.9	ND	0.986	8/27/2011	8/27/2011	
Methylene chloride	EPA 8260B	11H3702	9.9	ND	0.986	8/27/2011	8/27/2011	
Naphthalene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
n-Propylbenzene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Styrene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,1,1,2-Tetrachloroethane	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
1,1,2,2-Tetrachloroethane	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
Tetrachloroethene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Toluene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,2,3-Trichlorobenzene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
1,2,4-Trichlorobenzene	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
1,1,1-Trichloroethane	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,1,2-Trichloroethane	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Trichloroethene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Trichlorofluoromethane	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
1,2,3-Trichloropropane	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
1,2,4-Trimethylbenzene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
1,3,5-Trimethylbenzene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Vinyl chloride	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
m,p-Xylenes	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
o-Xylene	EPA 8260B	11H3702	0.99	ND	0.986	8/27/2011	8/27/2011	
Di-isopropyl Ether (DIPE)	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	11H3702	2.0	ND	0.986	8/27/2011	8/27/2011	
tert-Butanol (TBA)	EPA 8260B	11H3702	25	ND	0.986	8/27/2011	8/27/2011	
Surrogate: 4-Bromofluorobenzene (80-120%)				101 %				
Surrogate: Dibromofluoromethane (80-125%)				98 %				
Surrogate: Toluene-d8 (80-120%)				100 %				

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Sushmitha Reddy
Project Manager

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IUH2741 <Page 3 of 67>

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-06 (SO-201108-06 - Soil)			Sampled: 08/24/11					
Reporting Units: ug/kg								
Acetone	EPA 8260B	11H3702	9.9	ND	0.992	8/27/2011	8/27/2011	C, L
Benzene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Bromobenzene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
Bromochloromethane	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
Bromodichloromethane	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Bromoform	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
Bromomethane	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
2-Butanone (MEK)	EPA 8260B	11H3702	9.9	ND	0.992	8/27/2011	8/27/2011	C, L
n-Butylbenzene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
sec-Butylbenzene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
tert-Butylbenzene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
Carbon tetrachloride	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
Chlorobenzene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Chloroethane	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
Chloroform	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Chloromethane	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
2-Chlorotoluene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
4-Chlorotoluene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
1,2-Dibromo-3-chloropropane	EPA 8260B	11H3702	9.9	ND	0.992	8/27/2011	8/27/2011	
Dibromochloromethane	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,2-Dibromoethane (EDB)	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Dibromomethane	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,2-Dichlorobenzene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,3-Dichlorobenzene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,4-Dichlorobenzene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Dichlorodifluoromethane	EPA 8260B	11H3702	5.0	ND	0.992	8/27/2011	8/27/2011	
1,1-Dichloroethane	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,2-Dichloroethane	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,1-Dichloroethene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
cis-1,2-Dichloroethene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
trans-1,2-Dichloroethene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,2-Dichloropropane	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,3-Dichloropropane	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
2,2-Dichloropropane	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
cis-1,3-Dichloropropene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
trans-1,3-Dichloropropene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
cis,trans-1,2-Dichloroethene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
1,1-Dichloropropene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Ethylbenzene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Hexachlorobutadiene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
2-Hexanone	EPA 8260B	11H3702	9.9	ND	0.992	8/27/2011	8/27/2011	

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Sushmitha Reddy
Project Manager

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IUH2741 <Page 4 of 67>

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-06 (SO-201108-06 - Soil) - cont.				Sampled: 08/24/11				
Reporting Units: ug/kg								
Isopropylbenzene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
p-Isopropyltoluene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	11H3702	5.0	ND	0.992	8/27/2011	8/27/2011	
Methylene chloride	EPA 8260B	11H3702	9.9	ND	0.992	8/27/2011	8/27/2011	
Naphthalene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
n-Propylbenzene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Styrene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,1,1,2-Tetrachloroethane	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
1,1,2,2-Tetrachloroethane	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
Tetrachloroethene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Toluene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,2,3-Trichlorobenzene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
1,2,4-Trichlorobenzene	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
1,1,1-Trichloroethane	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,1,2-Trichloroethane	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Trichloroethene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Trichlorofluoromethane	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
1,2,3-Trichloropropane	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
1,2,4-Trimethylbenzene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
1,3,5-Trimethylbenzene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Vinyl chloride	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
m,p-Xylenes	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
o-Xylene	EPA 8260B	11H3702	0.99	ND	0.992	8/27/2011	8/27/2011	
Di-isopropyl Ether (DIPE)	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	11H3702	2.0	ND	0.992	8/27/2011	8/27/2011	
tert-Butanol (TBA)	EPA 8260B	11H3702	25	ND	0.992	8/27/2011	8/27/2011	
Surrogate: 4-Bromofluorobenzene (80-120%)				98 %				
Surrogate: Dibromofluoromethane (80-125%)				102 %				
Surrogate: Toluene-d8 (80-120%)				99 %				

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IUH2741 <Page 5 of 67>

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-07 (SO-201108-07 - Soil)			Sampled: 08/24/11					
Reporting Units: ug/kg								
Acetone	EPA 8260B	11H3702	10	ND	1.05	8/27/2011	8/27/2011	C, L
Benzene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Bromobenzene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
Bromochloromethane	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
Bromodichloromethane	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Bromoform	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
Bromomethane	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
2-Butanone (MEK)	EPA 8260B	11H3702	10	ND	1.05	8/27/2011	8/27/2011	C, L
n-Butylbenzene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
sec-Butylbenzene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
tert-Butylbenzene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
Carbon tetrachloride	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
Chlorobenzene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Chloroethane	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
Chloroform	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Chloromethane	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
2-Chlorotoluene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
4-Chlorotoluene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
1,2-Dibromo-3-chloropropane	EPA 8260B	11H3702	10	ND	1.05	8/27/2011	8/27/2011	
Dibromochloromethane	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,2-Dibromoethane (EDB)	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Dibromomethane	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,2-Dichlorobenzene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,3-Dichlorobenzene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,4-Dichlorobenzene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Dichlorodifluoromethane	EPA 8260B	11H3702	5.2	ND	1.05	8/27/2011	8/27/2011	
1,1-Dichloroethane	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,2-Dichloroethane	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,1-Dichloroethene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
cis-1,2-Dichloroethene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
trans-1,2-Dichloroethene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,2-Dichloropropane	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,3-Dichloropropane	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
2,2-Dichloropropane	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
cis-1,3-Dichloropropene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
trans-1,3-Dichloropropene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
cis,trans-1,2-Dichloroethene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
1,1-Dichloropropene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Ethylbenzene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Hexachlorobutadiene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
2-Hexanone	EPA 8260B	11H3702	10	ND	1.05	8/27/2011	8/27/2011	

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IUH2741 <Page 6 of 67>

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New World Technology
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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-07 (SO-201108-07 - Soil) - cont.				Sampled: 08/24/11				
Reporting Units: ug/kg								
Isopropylbenzene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
p-Isopropyltoluene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	11H3702	5.2	ND	1.05	8/27/2011	8/27/2011	
Methylene chloride	EPA 8260B	11H3702	10	ND	1.05	8/27/2011	8/27/2011	
Naphthalene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
n-Propylbenzene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Styrene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,1,1,2-Tetrachloroethane	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
1,1,2,2-Tetrachloroethane	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
Tetrachloroethene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Toluene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,2,3-Trichlorobenzene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
1,2,4-Trichlorobenzene	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
1,1,1-Trichloroethane	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,1,2-Trichloroethane	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Trichloroethene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Trichlorofluoromethane	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
1,2,3-Trichloropropane	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
1,2,4-Trimethylbenzene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
1,3,5-Trimethylbenzene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Vinyl chloride	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
m,p-Xylenes	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
o-Xylene	EPA 8260B	11H3702	1.0	ND	1.05	8/27/2011	8/27/2011	
Di-isopropyl Ether (DIPE)	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	11H3702	2.1	ND	1.05	8/27/2011	8/27/2011	
tert-Butanol (TBA)	EPA 8260B	11H3702	26	ND	1.05	8/27/2011	8/27/2011	
Surrogate: 4-Bromofluorobenzene (80-120%)								102 %
Surrogate: Dibromofluoromethane (80-125%)								97 %
Surrogate: Toluene-d8 (80-120%)								101 %

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Project Manager

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IUH2741 <Page 7 of 67>



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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-12 (MH-01-2011 - Soil)				Sampled: 06/18/11				H-1
Reporting Units: ug/kg								
Benzene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Bromobenzene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
Bromochloromethane	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
Bromodichloromethane	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Bromoform	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
Bromomethane	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
2-Butanone (MEK)	EPA 8260B	11H3792	10	ND	0.996	8/29/2011	8/29/2011	
n-Butylbenzene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
sec-Butylbenzene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
tert-Butylbenzene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
Carbon tetrachloride	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
Chlorobenzene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Chloroethane	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
Chloroform	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Chloromethane	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
2-Chlorotoluene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
4-Chlorotoluene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
1,2-Dibromo-3-chloropropane	EPA 8260B	11H3792	10	ND	0.996	8/29/2011	8/29/2011	
Dibromochloromethane	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
1,2-Dibromoethane (EDB)	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Dibromomethane	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
1,2-Dichlorobenzene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
1,3-Dichlorobenzene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
1,4-Dichlorobenzene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Dichlorodifluoromethane	EPA 8260B	11H3792	5.0	ND	0.996	8/29/2011	8/29/2011	
1,1-Dichloroethane	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
1,2-Dichloroethane	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
1,1-Dichloroethene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
cis-1,2-Dichloroethene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
trans-1,2-Dichloroethene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
1,2-Dichloropropane	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
1,3-Dichloropropane	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
2,2-Dichloropropane	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
cis-1,3-Dichloropropene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
trans-1,3-Dichloropropene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
cis,trans-1,2-Dichloroethene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
1,1-Dichloropropene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Ethylbenzene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Hexachlorobutadiene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
2-Hexanone	EPA 8260B	11H3792	10	ND	0.996	8/29/2011	8/29/2011	
Isopropylbenzene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	

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IUH2741 <Page 8 of 67>

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Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-12 (MH-01-2011 - Soil) - cont.						Sampled: 06/18/11		H-1
Reporting Units: ug/kg								
p-Isopropyltoluene	EPA 8260B	11H3792	1.0	1.1	0.996	8/29/2011	8/29/2011	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	11H3792	5.0	ND	0.996	8/29/2011	8/29/2011	
Methylene chloride	EPA 8260B	11H3792	10	ND	0.996	8/29/2011	8/29/2011	
Naphthalene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
n-Propylbenzene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Styrene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
1,1,1,2-Tetrachloroethane	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
1,1,2,2-Tetrachloroethane	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
Tetrachloroethene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Toluene	EPA 8260B	11H3792	1.0	3.5	0.996	8/29/2011	8/29/2011	
1,2,3-Trichlorobenzene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
1,2,4-Trichlorobenzene	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
1,1,1-Trichloroethane	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
1,1,2-Trichloroethane	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Trichloroethene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Trichlorofluoromethane	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
1,2,3-Trichloropropane	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
1,2,4-Trimethylbenzene	EPA 8260B	11H3792	1.0	4.2	0.996	8/29/2011	8/29/2011	
1,3,5-Trimethylbenzene	EPA 8260B	11H3792	1.0	1.3	0.996	8/29/2011	8/29/2011	
Vinyl chloride	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
m,p-Xylenes	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
o-Xylene	EPA 8260B	11H3792	1.0	ND	0.996	8/29/2011	8/29/2011	
Di-isopropyl Ether (DIPE)	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	11H3792	2.0	ND	0.996	8/29/2011	8/29/2011	
tert-Butanol (TBA)	EPA 8260B	11H3792	25	ND	0.996	8/29/2011	8/29/2011	
Surrogate: 4-Bromofluorobenzene (80-120%)								93 %
Surrogate: Dibromofluoromethane (80-125%)								110 %
Surrogate: Toluene-d8 (80-120%)								97 %

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Project Manager

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IUH2741 <Page 9 of 67>

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Sampled: 06/18/11-08/24/11
Received: 08/26/11

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-12RE1 (MH-01-2011 - Soil) - cont.				Sampled: 06/18/11				H-1
Reporting Units: ug/kg								
Acetone	EPA 8260B	11H3764	9.9	25	0.992	8/29/2011	8/29/2011	M1
Surrogate: 4-Bromofluorobenzene (80-120%)				100 %				
Surrogate: Dibromofluoromethane (80-125%)				90 %				
Surrogate: Toluene-d8 (80-120%)				105 %				

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IUH2741 <Page 10 of 67>

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-04 (SO-201108-04 - Soil)			Sampled: 08/24/11					
Reporting Units: ug/kg								
Acenaphthene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Acenaphthylene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Aniline	EPA 8270C	11H3595	420	ND	0.999	8/26/2011	8/27/2011	
Anthracene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Benzidine	EPA 8270C	11H3595	660	ND	0.999	8/26/2011	8/27/2011	
Benzo(a)anthracene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Benzo(a)pyrene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Benzo(b)fluoranthene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Benzo(g,h,i)perylene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Benzo(k)fluoranthene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Benzoic acid	EPA 8270C	11H3595	830	ND	0.999	8/26/2011	8/27/2011	C-2
Benzyl alcohol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
4-Bromophenyl phenyl ether	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Butyl benzyl phthalate	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
4-Chloro-3-methylphenol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
4-Chloroaniline	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Bis(2-chloroethoxy)methane	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Bis(2-chloroethyl)ether	EPA 8270C	11H3595	170	ND	0.999	8/26/2011	8/27/2011	
Bis(2-chloroisopropyl)ether	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Bis(2-ethylhexyl)phthalate	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
2-Chloronaphthalene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
2-Chlorophenol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
4-Chlorophenyl phenyl ether	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Chrysene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Dibenz(a,h)anthracene	EPA 8270C	11H3595	420	ND	0.999	8/26/2011	8/27/2011	
Dibenzofuran	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Di-n-butyl phthalate	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
1,2-Dichlorobenzene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
1,3-Dichlorobenzene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
1,4-Dichlorobenzene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
3,3'-Dichlorobenzidine	EPA 8270C	11H3595	830	ND	0.999	8/26/2011	8/27/2011	
2,4-Dichlorophenol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Diethyl phthalate	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
2,4-Dimethylphenol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Dimethyl phthalate	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
4,6-Dinitro-2-methylphenol	EPA 8270C	11H3595	420	ND	0.999	8/26/2011	8/27/2011	
2,4-Dinitrophenol	EPA 8270C	11H3595	660	ND	0.999	8/26/2011	8/27/2011	
2,4-Dinitrotoluene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
2,6-Dinitrotoluene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Di-n-octyl phthalate	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
1,2-Diphenylhydrazine/Azobenzene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	

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IUH2741 <Page 11 of 67>

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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-04 (SO-201108-04 - Soil) - cont.				Sampled: 08/24/11				
Reporting Units: ug/kg								
Fluoranthene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Fluorene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Hexachlorobenzene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Hexachlorobutadiene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Hexachlorocyclopentadiene	EPA 8270C	11H3595	830	ND	0.999	8/26/2011	8/27/2011	
Hexachloroethane	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Indeno(1,2,3-cd)pyrene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Isophorone	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
2-Methylnaphthalene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
2-Methylphenol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
4-Methylphenol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Naphthalene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
2-Nitroaniline	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
3-Nitroaniline	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
4-Nitroaniline	EPA 8270C	11H3595	830	ND	0.999	8/26/2011	8/27/2011	
Nitrobenzene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
2-Nitrophenol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
4-Nitrophenol	EPA 8270C	11H3595	830	ND	0.999	8/26/2011	8/27/2011	
N-Nitroso-di-n-propylamine	EPA 8270C	11H3595	250	ND	0.999	8/26/2011	8/27/2011	
N-Nitrosodiphenylamine	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Pentachlorophenol	EPA 8270C	11H3595	830	ND	0.999	8/26/2011	8/27/2011	
Phenanthrene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Phenol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Pyrene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
1,2,4-Trichlorobenzene	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
2,4,5-Trichlorophenol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
2,4,6-Trichlorophenol	EPA 8270C	11H3595	330	ND	0.999	8/26/2011	8/27/2011	
Surrogate: 2,4,6-Tribromophenol (35-125%)				102 %				
Surrogate: 2-Fluorobiphenyl (35-120%)				90 %				
Surrogate: 2-Fluorophenol (25-120%)				89 %				
Surrogate: Nitrobenzene-d5 (30-120%)				79 %				
Surrogate: Phenol-d6 (35-120%)				98 %				
Surrogate: Terphenyl-d14 (40-135%)				100 %				

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IUH2741 <Page 12 of 67>

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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-06 (SO-201108-06 - Soil)			Sampled: 08/24/11					
Reporting Units: ug/kg								
Acenaphthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Acenaphthylene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Aniline	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
Anthracene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzidine	EPA 8270C	11H3595	660	ND	1	8/26/2011	8/27/2011	
Benzo(a)anthracene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(a)pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(b)fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(g,h,i)perylene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(k)fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzoic acid	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	C-2
Benzyl alcohol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Bromophenyl phenyl ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Butyl benzyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chloro-3-methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chloroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroethoxy)methane	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroethyl)ether	EPA 8270C	11H3595	170	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroisopropyl)ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-ethylhexyl)phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Chloronaphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Chlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chlorophenyl phenyl ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Chrysene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Dibenz(a,h)anthracene	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
Dibenzofuran	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Di-n-butyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,3-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,4-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
3,3'-Dichlorobenzidine	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
2,4-Dichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Diethyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4-Dimethylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Dimethyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4,6-Dinitro-2-methylphenol	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
2,4-Dinitrophenol	EPA 8270C	11H3595	660	ND	1	8/26/2011	8/27/2011	
2,4-Dinitrotoluene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,6-Dinitrotoluene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Di-n-octyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2-Diphenylhydrazine/Azobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	

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IUH2741 <Page 13 of 67>

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Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-06 (SO-201108-06 - Soil) - cont.				Sampled: 08/24/11				
Reporting Units: ug/kg								
Fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Fluorene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorobutadiene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorocyclopentadiene	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Hexachloroethane	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Indeno(1,2,3-cd)pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Isophorone	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Methylnaphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Naphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Nitroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
3-Nitroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Nitroaniline	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Nitrobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Nitrophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Nitrophenol	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
N-Nitroso-di-n-propylamine	EPA 8270C	11H3595	250	ND	1	8/26/2011	8/27/2011	
N-Nitrosodiphenylamine	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Pentachlorophenol	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Phenanthrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Phenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2,4-Trichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4,5-Trichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4,6-Trichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Surrogate: 2,4,6-Tribromophenol (35-125%)				100 %				
Surrogate: 2-Fluorobiphenyl (35-120%)				86 %				
Surrogate: 2-Fluorophenol (25-120%)				86 %				
Surrogate: Nitrobenzene-d5 (30-120%)				79 %				
Surrogate: Phenol-d6 (35-120%)				94 %				
Surrogate: Terphenyl-d14 (40-135%)				97 %				

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Project Manager

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IUH2741 <Page 14 of 67>

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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-07 (SO-201108-07 - Soil)			Sampled: 08/24/11					
Reporting Units: ug/kg								
Acenaphthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Acenaphthylene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Aniline	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
Anthracene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzidine	EPA 8270C	11H3595	660	ND	1	8/26/2011	8/27/2011	
Benzo(a)anthracene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(a)pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(b)fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(g,h,i)perylene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(k)fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzoic acid	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	C-2
Benzyl alcohol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Bromophenyl phenyl ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Butyl benzyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chloro-3-methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chloroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroethoxy)methane	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroethyl)ether	EPA 8270C	11H3595	170	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroisopropyl)ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-ethylhexyl)phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Chloronaphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Chlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chlorophenyl phenyl ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Chrysene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Dibenz(a,h)anthracene	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
Dibenzofuran	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Di-n-butyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,3-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,4-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
3,3'-Dichlorobenzidine	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
2,4-Dichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Diethyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4-Dimethylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Dimethyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4,6-Dinitro-2-methylphenol	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
2,4-Dinitrophenol	EPA 8270C	11H3595	660	ND	1	8/26/2011	8/27/2011	
2,4-Dinitrotoluene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,6-Dinitrotoluene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Di-n-octyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2-Diphenylhydrazine/Azobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	

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IUH2741 <Page 15 of 67>

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-07 (SO-201108-07 - Soil) - cont.				Sampled: 08/24/11				
Reporting Units: ug/kg								
Fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Fluorene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorobutadiene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorocyclopentadiene	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Hexachloroethane	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Indeno(1,2,3-cd)pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Isophorone	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Methylnaphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Naphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Nitroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
3-Nitroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Nitroaniline	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Nitrobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Nitrophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Nitrophenol	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
N-Nitroso-di-n-propylamine	EPA 8270C	11H3595	250	ND	1	8/26/2011	8/27/2011	
N-Nitrosodiphenylamine	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Pentachlorophenol	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Phenanthrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Phenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2,4-Trichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4,5-Trichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4,6-Trichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Surrogate: 2,4,6-Tribromophenol (35-125%)				97 %				
Surrogate: 2-Fluorobiphenyl (35-120%)				86 %				
Surrogate: 2-Fluorophenol (25-120%)				82 %				
Surrogate: Nitrobenzene-d5 (30-120%)				76 %				
Surrogate: Phenol-d6 (35-120%)				93 %				
Surrogate: Terphenyl-d14 (40-135%)				95 %				

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IUH2741 <Page 16 of 67>



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New World Technology
448 Commerce Way
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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-09 (SO-201108-09 - Soil)			Sampled: 08/24/11					
Reporting Units: ug/kg								
Acenaphthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Acenaphthylene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Aniline	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
Anthracene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzidine	EPA 8270C	11H3595	660	ND	1	8/26/2011	8/27/2011	
Benzo(a)anthracene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(a)pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(b)fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(g,h,i)perylene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(k)fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzoic acid	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	C-2
Benzyl alcohol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Bromophenyl phenyl ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Butyl benzyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chloro-3-methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chloroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroethoxy)methane	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroethyl)ether	EPA 8270C	11H3595	170	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroisopropyl)ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-ethylhexyl)phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Chloronaphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Chlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chlorophenyl phenyl ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Chrysene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Dibenz(a,h)anthracene	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
Dibenzofuran	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Di-n-butyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,3-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,4-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
3,3'-Dichlorobenzidine	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
2,4-Dichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Diethyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4-Dimethylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Dimethyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4,6-Dinitro-2-methylphenol	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
2,4-Dinitrophenol	EPA 8270C	11H3595	660	ND	1	8/26/2011	8/27/2011	
2,4-Dinitrotoluene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,6-Dinitrotoluene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Di-n-octyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2-Diphenylhydrazine/Azobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	

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IUH2741 <Page 17 of 67>

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New World Technology
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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-09 (SO-201108-09 - Soil) - cont.			Sampled: 08/24/11					
Reporting Units: ug/kg								
Fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Fluorene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorobutadiene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorocyclopentadiene	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Hexachloroethane	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Indeno(1,2,3-cd)pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Isophorone	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Methylnaphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Naphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Nitroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
3-Nitroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Nitroaniline	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Nitrobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Nitrophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Nitrophenol	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
N-Nitroso-di-n-propylamine	EPA 8270C	11H3595	250	ND	1	8/26/2011	8/27/2011	
N-Nitrosodiphenylamine	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Pentachlorophenol	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Phenanthrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Phenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2,4-Trichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4,5-Trichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4,6-Trichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Surrogate: 2,4,6-Tribromophenol (35-125%)				88 %				
Surrogate: 2-Fluorobiphenyl (35-120%)				83 %				
Surrogate: 2-Fluorophenol (25-120%)				86 %				
Surrogate: Nitrobenzene-d5 (30-120%)				74 %				
Surrogate: Phenol-d6 (35-120%)				95 %				
Surrogate: Terphenyl-d14 (40-135%)				94 %				

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Project Manager

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IUH2741 <Page 18 of 67>



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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-11 (SO-201108-11 - Soil)			Sampled: 08/24/11					
Reporting Units: ug/kg								
Acenaphthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Acenaphthylene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Aniline	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
Anthracene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzidine	EPA 8270C	11H3595	660	ND	1	8/26/2011	8/27/2011	
Benzo(a)anthracene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(a)pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(b)fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(g,h,i)perylene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzo(k)fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Benzoic acid	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	C-2
Benzyl alcohol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Bromophenyl phenyl ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Butyl benzyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chloro-3-methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chloroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroethoxy)methane	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroethyl)ether	EPA 8270C	11H3595	170	ND	1	8/26/2011	8/27/2011	
Bis(2-chloroisopropyl)ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Bis(2-ethylhexyl)phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Chloronaphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Chlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Chlorophenyl phenyl ether	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Chrysene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Dibenz(a,h)anthracene	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
Dibenzofuran	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Di-n-butyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,3-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,4-Dichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
3,3'-Dichlorobenzidine	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
2,4-Dichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Diethyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4-Dimethylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Dimethyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4,6-Dinitro-2-methylphenol	EPA 8270C	11H3595	420	ND	1	8/26/2011	8/27/2011	
2,4-Dinitrophenol	EPA 8270C	11H3595	660	ND	1	8/26/2011	8/27/2011	
2,4-Dinitrotoluene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,6-Dinitrotoluene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Di-n-octyl phthalate	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2-Diphenylhydrazine/Azobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	

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IUH2741 <Page 19 of 67>

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Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-11 (SO-201108-11 - Soil) - cont.				Sampled: 08/24/11				
Reporting Units: ug/kg								
Fluoranthene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Fluorene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorobutadiene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Hexachlorocyclopentadiene	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Hexachloroethane	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Indeno(1,2,3-cd)pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Isophorone	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Methylnaphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Methylphenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Naphthalene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Nitroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
3-Nitroaniline	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Nitroaniline	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Nitrobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2-Nitrophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
4-Nitrophenol	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
N-Nitroso-di-n-propylamine	EPA 8270C	11H3595	250	ND	1	8/26/2011	8/27/2011	
N-Nitrosodiphenylamine	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Pentachlorophenol	EPA 8270C	11H3595	830	ND	1	8/26/2011	8/27/2011	
Phenanthrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Phenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Pyrene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
1,2,4-Trichlorobenzene	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4,5-Trichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
2,4,6-Trichlorophenol	EPA 8270C	11H3595	330	ND	1	8/26/2011	8/27/2011	
Surrogate: 2,4,6-Tribromophenol (35-125%)				110 %				
Surrogate: 2-Fluorobiphenyl (35-120%)				95 %				
Surrogate: 2-Fluorophenol (25-120%)				90 %				
Surrogate: Nitrobenzene-d5 (30-120%)				84 %				
Surrogate: Phenol-d6 (35-120%)				97 %				
Surrogate: Terphenyl-d14 (40-135%)				98 %				

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IUH2741 <Page 20 of 67>

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-12 (MH-01-2011 - Soil)				Sampled: 06/18/11				113
Reporting Units: ug/kg								
Acenaphthene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Acenaphthylene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Aniline	EPA 8270C	11H3595	420	ND	0.998	8/26/2011	8/27/2011	
Anthracene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Benzidine	EPA 8270C	11H3595	660	ND	0.998	8/26/2011	8/27/2011	
Benzo(a)anthracene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Benzo(a)pyrene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Benzo(b)fluoranthene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Benzo(g,h,i)perylene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Benzo(k)fluoranthene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Benzoic acid	EPA 8270C	11H3595	830	ND	0.998	8/26/2011	8/27/2011	C-2
Benzyl alcohol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
4-Bromophenyl phenyl ether	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Butyl benzyl phthalate	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
4-Chloro-3-methylphenol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
4-Chloroaniline	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Bis(2-chloroethoxy)methane	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Bis(2-chloroethyl)ether	EPA 8270C	11H3595	170	ND	0.998	8/26/2011	8/27/2011	
Bis(2-chloroisopropyl)ether	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Bis(2-ethylhexyl)phthalate	EPA 8270C	11H3595	330	530	0.998	8/26/2011	8/27/2011	
2-Chloronaphthalene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
2-Chlorophenol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
4-Chlorophenyl phenyl ether	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Chrysene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Dibenz(a,h)anthracene	EPA 8270C	11H3595	420	ND	0.998	8/26/2011	8/27/2011	
Dibenzofuran	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Di-n-butyl phthalate	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
1,2-Dichlorobenzene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
1,3-Dichlorobenzene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
1,4-Dichlorobenzene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
3,3'-Dichlorobenzidine	EPA 8270C	11H3595	830	ND	0.998	8/26/2011	8/27/2011	
2,4-Dichlorophenol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Diethyl phthalate	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
2,4-Dimethylphenol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Dimethyl phthalate	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
4,6-Dinitro-2-methylphenol	EPA 8270C	11H3595	420	ND	0.998	8/26/2011	8/27/2011	
2,4-Dinitrophenol	EPA 8270C	11H3595	660	ND	0.998	8/26/2011	8/27/2011	
2,4-Dinitrotoluene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
2,6-Dinitrotoluene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Di-n-octyl phthalate	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
1,2-Diphenylhydrazine/Azobenzene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	

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IUH2741 <Page 21 of 67>

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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-12 (MH-01-2011 - Soil) - cont.				Sampled: 06/18/11				HS
Reporting Units: ug/kg								
Fluoranthene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Fluorene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Hexachlorobenzene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Hexachlorobutadiene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Hexachlorocyclopentadiene	EPA 8270C	11H3595	830	ND	0.998	8/26/2011	8/27/2011	
Hexachloroethane	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Indeno(1,2,3-cd)pyrene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Isophorone	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
2-Methylnaphthalene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
2-Methylphenol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
4-Methylphenol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Naphthalene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
2-Nitroaniline	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
3-Nitroaniline	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
4-Nitroaniline	EPA 8270C	11H3595	830	ND	0.998	8/26/2011	8/27/2011	
Nitrobenzene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
2-Nitrophenol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
4-Nitrophenol	EPA 8270C	11H3595	830	ND	0.998	8/26/2011	8/27/2011	
N-Nitroso-di-n-propylamine	EPA 8270C	11H3595	250	ND	0.998	8/26/2011	8/27/2011	
N-Nitrosodiphenylamine	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Pentachlorophenol	EPA 8270C	11H3595	830	ND	0.998	8/26/2011	8/27/2011	
Phenanthrene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Phenol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Pyrene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
1,2,4-Trichlorobenzene	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
2,4,5-Trichlorophenol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
2,4,6-Trichlorophenol	EPA 8270C	11H3595	330	ND	0.998	8/26/2011	8/27/2011	
Surrogate: 2,4,6-Tribromophenol (35-125%)				42 %				
Surrogate: 2-Fluorobiphenyl (35-120%)				83 %				
Surrogate: 2-Fluorophenol (25-120%)				74 %				
Surrogate: Nitrobenzene-d5 (30-120%)				77 %				
Surrogate: Phenol-d6 (35-120%)				89 %				
Surrogate: Terphenyl-d14 (40-135%)				95 %				

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IUH2741 <Page 22 of 67>

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New World Technology
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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

POLYCHLORINATED BIPHENYLS (EPA 3545/8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-01 (SO-201108-01 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				85 %				
Sample ID: IUH2741-02 (SO-201108-02 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				88 %				
Sample ID: IUH2741-03 (SO-201108-03 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				85 %				

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Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

POLYCHLORINATED BIPHENYLS (EPA 3545/8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-04 (SO-201108-04 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				85 %				
Sample ID: IUH2741-05 (SO-201108-05 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				87 %				
Sample ID: IUH2741-06 (SO-201108-06 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				86 %				

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Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

POLYCHLORINATED BIPHENYLS (EPA 3545/8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-07 (SO-201108-07 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				84 %				
Sample ID: IUH2741-08 (SO-201108-08 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				86 %				
Sample ID: IUH2741-09 (SO-201108-09 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				87 %				

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IUH2741 <Page 25 of 67>

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Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

POLYCHLORINATED BIPHENYLS (EPA 3545/8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-10 (SO-201108-10 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				84 %				
Sample ID: IUH2741-11 (SO-201108-11 - Soil)				Sampled: 08/24/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				83 %				
Sample ID: IUH2741-12 (MH-01-2011 - Soil)				Sampled: 06/18/11				
Reporting Units: ug/kg								
Aroclor 1016	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1221	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1232	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1242	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1248	EPA 8082	11H3642	50	59	1	8/26/2011	8/26/2011	
Aroclor 1254	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Aroclor 1260	EPA 8082	11H3642	50	ND	1	8/26/2011	8/26/2011	
Surrogate: Decachlorobiphenyl (45-120%)				87 %				

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IUH2741 <Page 26 of 67>

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METALS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-01 (SO-201108-01 - Soil)			Sampled: 08/24/11					
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	ND	0.98	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	6.3	0.995	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	1.0	83	0.995	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.50	ND	0.995	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	1.0	3.4	0.995	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	3.0	0.995	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	0.995	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	1.0	ND	0.995	8/26/2011	8/26/2011	
Sample ID: IUH2741-02 (SO-201108-02 - Soil)			Sampled: 08/24/11					
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	ND	0.98	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	3.3	0.99	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	0.99	67	0.99	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.50	ND	0.99	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	0.99	3.1	0.99	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	3.6	0.99	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	0.99	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	0.99	ND	0.99	8/26/2011	8/26/2011	
Sample ID: IUH2741-03 (SO-201108-03 - Soil)			Sampled: 08/24/11					
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	ND	1	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	4.9	0.99	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	0.99	66	0.99	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.50	ND	0.99	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	0.99	3.9	0.99	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	5.8	0.99	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	0.99	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	0.99	ND	0.99	8/26/2011	8/26/2011	

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IUH2741 <Page 27 of 67>

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METALS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-04 (SO-201108-04 - Soil)				Sampled: 08/24/11				
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	ND	1	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	ND	0.985	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	0.99	3.9	0.985	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.49	ND	0.985	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	0.99	ND	0.985	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	4.2	0.985	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	0.985	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	0.99	ND	0.985	8/26/2011	8/26/2011	
Sample ID: IUH2741-05 (SO-201108-05 - Soil)				Sampled: 08/24/11				
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	0.038	1.02	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	ND	1	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	1.0	13	1	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.50	ND	1	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	1.0	ND	1	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	2.4	1	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	1	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	1.0	ND	1	8/26/2011	8/26/2011	
Sample ID: IUH2741-06 (SO-201108-06 - Soil)				Sampled: 08/24/11				
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	ND	1.02	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	ND	0.98	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	0.98	5.6	0.98	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.49	ND	0.98	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	0.98	ND	0.98	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	4.8	0.98	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	0.98	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	0.98	ND	0.98	8/26/2011	8/26/2011	

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IUH2741 <Page 28 of 67>

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METALS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-07 (SO-201108-07 - Soil)				Sampled: 08/24/11				
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	ND	1.02	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	2.1	1	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	1.0	45	1	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.50	ND	1	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	1.0	1.7	1	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	3.8	1	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	1	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	1.0	ND	1	8/26/2011	8/26/2011	
Sample ID: IUH2741-08 (SO-201108-08 - Soil)				Sampled: 08/24/11				
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	ND	1	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	ND	0.99	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	0.99	19	0.99	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.50	ND	0.99	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	0.99	1.3	0.99	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	2.4	0.99	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	0.99	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	0.99	ND	0.99	8/26/2011	8/26/2011	
Sample ID: IUH2741-09 (SO-201108-09 - Soil)				Sampled: 08/24/11				
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	ND	0.98	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	ND	0.995	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	1.0	5.9	0.995	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.50	ND	0.995	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	1.0	1.7	0.995	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	2.2	0.995	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	0.995	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	1.0	ND	0.995	8/26/2011	8/26/2011	

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METALS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-10 (SO-201108-10 - Soil)				Sampled: 08/24/11				
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	0.022	1.02	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	ND	0.995	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	1.0	47	0.995	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.50	ND	0.995	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	1.0	2.6	0.995	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	3.3	0.995	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	0.995	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	1.0	ND	0.995	8/26/2011	8/26/2011	
Sample ID: IUH2741-11 (SO-201108-11 - Soil)				Sampled: 08/24/11				
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	0.034	1.02	8/26/2011	8/26/2011	
Arsenic	EPA 6010B	11H3643	2.0	ND	0.995	8/26/2011	8/26/2011	
Barium	EPA 6010B	11H3643	1.0	49	0.995	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	0.50	ND	0.995	8/26/2011	8/26/2011	
Chromium	EPA 6010B	11H3643	1.0	2.6	0.995	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	2.0	5.5	0.995	8/26/2011	8/26/2011	
Selenium	EPA 6010B	11H3643	2.0	ND	0.995	8/26/2011	8/26/2011	
Silver	EPA 6010B	11H3643	1.0	ND	0.995	8/26/2011	8/26/2011	
Sample ID: IUH2741-12 (MH-01-2011 - Soil)				Sampled: 06/18/11				
Reporting Units: mg/kg								
Mercury	EPA 7471A	11H3639	0.020	ND	1.02	8/26/2011	8/26/2011	H3
Arsenic	EPA 6010B	11H3643	39	ND	19.7	8/26/2011	8/26/2011	RL1
Barium	EPA 6010B	11H3643	20	33	19.7	8/26/2011	8/26/2011	
Cadmium	EPA 6010B	11H3643	9.9	ND	19.7	8/26/2011	8/26/2011	RL1
Chromium	EPA 6010B	11H3643	20	20	19.7	8/26/2011	8/26/2011	
Lead	EPA 6010B	11H3643	39	ND	19.7	8/26/2011	8/26/2011	RL1
Selenium	EPA 6010B	11H3643	39	ND	19.7	8/26/2011	8/26/2011	RL1
Silver	EPA 6010B	11H3643	20	ND	19.7	8/26/2011	8/26/2011	RL1

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TCLP METALS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	TCLP Limit	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IUH2741-01 (SO-201108-01 - Soil)			Sampled: 08/24/11						
Reporting Units: mg/l									
Mercury	EPA 7470A	1111725	0.0020	ND	1	0.2	9/15/2011	9/15/2011	
Arsenic	EPA 6010B	1111676	0.20	ND	1	5.0	9/15/2011	9/15/2011	
Barium	EPA 6010B	1111676	0.20	1.4	1	100.0	9/15/2011	9/15/2011	
Cadmium	EPA 6010B	1111676	0.10	ND	1	1.0	9/15/2011	9/15/2011	
Chromium	EPA 6010B	1111676	0.10	ND	1	5.0	9/15/2011	9/15/2011	
Lead	EPA 6010B	1111676	0.10	ND	1	5.0	9/15/2011	9/15/2011	
Selenium	EPA 6010B	1111676	0.10	ND	1	1.0	9/15/2011	9/15/2011	
Silver	EPA 6010B	1111676	0.20	ND	1	5.0	9/15/2011	9/15/2011	
Sample ID: IUH2741-11 (SO-201108-11 - Soil)			Sampled: 08/24/11						
Reporting Units: mg/l									
Mercury	EPA 7470A	1111725	0.0020	ND	1	0.2	9/15/2011	9/15/2011	
Arsenic	EPA 6010B	1111676	0.20	ND	1	5.0	9/15/2011	9/15/2011	
Barium	EPA 6010B	1111676	0.20	1.0	1	100.0	9/15/2011	9/15/2011	
Cadmium	EPA 6010B	1111676	0.10	ND	1	1.0	9/15/2011	9/15/2011	
Chromium	EPA 6010B	1111676	0.10	ND	1	5.0	9/15/2011	9/15/2011	
Lead	EPA 6010B	1111676	0.10	ND	1	5.0	9/15/2011	9/15/2011	
Selenium	EPA 6010B	1111676	0.10	ND	1	1.0	9/15/2011	9/15/2011	
Silver	EPA 6010B	1111676	0.20	ND	1	5.0	9/15/2011	9/15/2011	
Sample ID: IUH2741-12 (MH-01-2011 - Soil)			Sampled: 06/18/11						
Reporting Units: mg/l									
Mercury	EPA 7470A	1111725	0.0020	ND	1	0.2	9/15/2011	9/15/2011	
Arsenic	EPA 6010B	1111674	0.20	ND	1	5.0	9/15/2011	9/15/2011	
Barium	EPA 6010B	1111674	0.20	0.24	1	100.0	9/15/2011	9/15/2011	
Cadmium	EPA 6010B	1111674	0.10	ND	1	1.0	9/15/2011	9/15/2011	
Chromium	EPA 6010B	1111674	0.10	ND	1	5.0	9/15/2011	9/15/2011	
Lead	EPA 6010B	1111674	0.10	ND	1	5.0	9/15/2011	9/15/2011	
Selenium	EPA 6010B	1111674	0.10	0.11	1	1.0	9/15/2011	9/15/2011	
Silver	EPA 6010B	1111674	0.20	ND	1	5.0	9/15/2011	9/15/2011	

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IUH2741 <Page 31 of 67>

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Report Number: IUH2741

Sampled: 06/18/11-08/24/11
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TCLP EXTRACTION - Metals

Analyte	Method	Batch	Extraction Start Date	Extraction End Date	Data Qualifiers
Sample ID: IUH2741-01 (SO-201108-01 - Soil)			Sampled: 08/24/11		
Extraction	EPA 1311-Met	1111587	9/14/2011	9/15/2011	
Sample ID: IUH2741-11 (SO-201108-11 - Soil)			Sampled: 08/24/11		
Extraction	EPA 1311-Met	1111587	9/14/2011	9/15/2011	
Sample ID: IUH2741-12 (MH-01-2011 - Soil)			Sampled: 06/18/11		H-I
Extraction	EPA 1311-Met	1111588	9/14/2011	9/15/2011	

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IUH2741 <Page 32 of 67>



THE LEADER IN ENVIRONMENTAL TESTING

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 11H3702 Extracted: 08/27/11									
Blank Analyzed: 08/27/2011 (11H3702-BLK1)									
Acetone	ND	10	ug/kg						
Benzene	ND	1.0	ug/kg						
Bromobenzene	ND	2.0	ug/kg						
Bromochloromethane	ND	2.0	ug/kg						
Bromodichloromethane	ND	1.0	ug/kg						
Bromoform	ND	2.0	ug/kg						
Bromomethane	ND	2.0	ug/kg						
2-Butanone (MEK)	ND	10	ug/kg						
n-Butylbenzene	ND	2.0	ug/kg						
sec-Butylbenzene	ND	2.0	ug/kg						
tert-Butylbenzene	ND	2.0	ug/kg						
Carbon tetrachloride	ND	2.0	ug/kg						
Chlorobenzene	ND	1.0	ug/kg						
Chloroethane	ND	2.0	ug/kg						
Chloroform	ND	1.0	ug/kg						
Chloromethane	ND	2.0	ug/kg						
2-Chlorotoluene	ND	2.0	ug/kg						
4-Chlorotoluene	ND	2.0	ug/kg						
1,2-Dibromo-3-chloropropane	ND	10	ug/kg						
Dibromochloromethane	ND	1.0	ug/kg						
1,2-Dibromoethane (EDB)	ND	1.0	ug/kg						
Dibromomethane	ND	1.0	ug/kg						
1,2-Dichlorobenzene	ND	1.0	ug/kg						
1,3-Dichlorobenzene	ND	1.0	ug/kg						
1,4-Dichlorobenzene	ND	1.0	ug/kg						
Dichlorodifluoromethane	ND	5.0	ug/kg						
1,1-Dichloroethane	ND	1.0	ug/kg						
1,2-Dichloroethane	ND	1.0	ug/kg						
1,1-Dichloroethene	ND	2.0	ug/kg						
cis-1,2-Dichloroethene	ND	1.0	ug/kg						
trans-1,2-Dichloroethene	ND	1.0	ug/kg						
1,2-Dichloropropane	ND	1.0	ug/kg						
1,3-Dichloropropane	ND	1.0	ug/kg						
2,2-Dichloropropane	ND	1.0	ug/kg						
cis-1,3-Dichloropropene	ND	1.0	ug/kg						
trans-1,3-Dichloropropene	ND	1.0	ug/kg						

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Project Manager

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IUH2741 <Page 33 of 67>

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New World Technology
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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3702 Extracted: 08/27/11										
Blank Analyzed: 08/27/2011 (11H3702-BLK1)										
1,1-Dichloropropene	ND	1.0	ug/kg							
Ethylbenzene	ND	1.0	ug/kg							
Hexachlorobutadiene	ND	2.0	ug/kg							
2-Hexanone	ND	10	ug/kg							
Isopropylbenzene	ND	1.0	ug/kg							
p-Isopropyltoluene	ND	1.0	ug/kg							
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/kg							
Methylene chloride	ND	10	ug/kg							
Naphthalene	ND	2.0	ug/kg							
n-Propylbenzene	ND	1.0	ug/kg							
Styrene	ND	1.0	ug/kg							
1,1,1,2-Tetrachloroethane	ND	2.0	ug/kg							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg							
Tetrachloroethene	ND	1.0	ug/kg							
Toluene	ND	1.0	ug/kg							
1,2,3-Trichlorobenzene	ND	2.0	ug/kg							
1,2,4-Trichlorobenzene	ND	2.0	ug/kg							
1,1,1-Trichloroethane	ND	1.0	ug/kg							
1,1,2-Trichloroethane	ND	1.0	ug/kg							
Trichloroethene	ND	1.0	ug/kg							
Trichlorofluoromethane	ND	2.0	ug/kg							
1,2,3-Trichloropropane	ND	2.0	ug/kg							
1,2,4-Trimethylbenzene	ND	1.0	ug/kg							
1,3,5-Trimethylbenzene	ND	1.0	ug/kg							
Vinyl chloride	ND	2.0	ug/kg							
m,p-Xylenes	ND	2.0	ug/kg							
o-Xylene	ND	1.0	ug/kg							
Di-isopropyl Ether (DIPE)	ND	2.0	ug/kg							
Ethyl tert-Butyl Ether (ETBE)	ND	2.0	ug/kg							
Methyl-tert-butyl Ether (MTBE)	ND	2.0	ug/kg							
tert-Amyl Methyl Ether (TAME)	ND	2.0	ug/kg							
tert-Butanol (TBA)	ND	25	ug/kg							
Surrogate: 4-Bromofluorobenzene	47.8		ug/kg	50.0		96	80-120			
Surrogate: Dibromofluoromethane	53.1		ug/kg	50.0		106	80-125			
Surrogate: Toluene-d8	49.2		ug/kg	50.0		98	80-120			

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IUH2741 <Page 34 of 67>



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Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3702 Extracted: 08/27/11										
LCS Analyzed: 08/27/2011 (11H3702-BS1)										
Acetone	91.7	10	ug/kg	50.0		183	25-145			L
Benzene	51.1	1.0	ug/kg	50.0		102	65-120			
Bromobenzene	54.3	2.0	ug/kg	50.0		109	75-120			
Bromochloromethane	59.3	2.0	ug/kg	50.0		119	70-135			
Bromodichloromethane	55.5	1.0	ug/kg	50.0		111	70-135			
Bromoform	60.1	2.0	ug/kg	50.0		120	55-135			
Bromomethane	49.8	2.0	ug/kg	50.0		100	60-145			
2-Butanone (MEK)	75.5	10	ug/kg	50.0		151	40-145			L
n-Butylbenzene	49.1	2.0	ug/kg	50.0		98	70-130			
sec-Butylbenzene	49.0	2.0	ug/kg	50.0		98	70-125			
tert-Butylbenzene	49.1	2.0	ug/kg	50.0		98	70-125			
Carbon tetrachloride	51.2	2.0	ug/kg	50.0		102	65-140			
Chlorobenzene	52.5	1.0	ug/kg	50.0		105	75-120			
Chloroethane	48.4	2.0	ug/kg	50.0		97	60-140			
Chloroform	53.1	1.0	ug/kg	50.0		106	70-130			
Chloromethane	41.5	2.0	ug/kg	50.0		83	45-145			
2-Chlorotoluene	50.0	2.0	ug/kg	50.0		100	70-125			
4-Chlorotoluene	50.9	2.0	ug/kg	50.0		102	75-125			
1,2-Dibromo-3-chloropropane	57.2	10	ug/kg	50.0		114	50-135			
Dibromochloromethane	58.4	1.0	ug/kg	50.0		117	65-140			
1,2-Dibromoethane (EDB)	60.0	1.0	ug/kg	50.0		120	70-130			
Dibromomethane	59.7	1.0	ug/kg	50.0		119	70-130			
1,2-Dichlorobenzene	51.6	1.0	ug/kg	50.0		103	75-120			
1,3-Dichlorobenzene	50.8	1.0	ug/kg	50.0		102	75-125			
1,4-Dichlorobenzene	50.7	1.0	ug/kg	50.0		101	75-120			
Dichlorodifluoromethane	30.9	5.0	ug/kg	50.0		62	35-160			
1,1-Dichloroethane	54.9	1.0	ug/kg	50.0		110	70-130			
1,2-Dichloroethane	58.9	1.0	ug/kg	50.0		118	60-140			
1,1-Dichloroethene	52.0	2.0	ug/kg	50.0		104	70-125			
cis-1,2-Dichloroethene	59.4	1.0	ug/kg	50.0		119	70-125			
trans-1,2-Dichloroethene	53.0	1.0	ug/kg	50.0		106	70-125			
1,2-Dichloropropane	54.0	1.0	ug/kg	50.0		108	70-130			
1,3-Dichloropropane	59.3	1.0	ug/kg	50.0		119	70-125			
2,2-Dichloropropane	55.4	1.0	ug/kg	50.0		111	60-145			
cis-1,3-Dichloropropene	54.5	1.0	ug/kg	50.0		109	75-125			
trans-1,3-Dichloropropene	61.2	1.0	ug/kg	50.0		122	70-135			

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IUH2741 <Page 35 of 67>

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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3702 Extracted: 08/27/11										
I.C.S Analyzed: 08/27/2011 (11H3702-BS1)										
1,1-Dichloropropene	51.0	1.0	ug/kg	50.0		102	70-130			
Ethylbenzene	53.5	1.0	ug/kg	50.0		107	70-125			
Hexachlorobutadiene	42.0	2.0	ug/kg	50.0		84	60-135			
2-Hexanone	68.6	10	ug/kg	50.0		137	40-150			
Isopropylbenzene	50.3	1.0	ug/kg	50.0		101	75-130			
p-Isopropyltoluene	48.9	1.0	ug/kg	50.0		98	75-125			
4-Methyl-2-pentanone (MIBK)	64.6	5.0	ug/kg	50.0		129	40-145			
Methylene chloride	53.2	10	ug/kg	50.0		106	55-135			
Naphthalene	58.7	2.0	ug/kg	50.0		117	55-135			
n-Propylbenzene	50.1	1.0	ug/kg	50.0		100	70-130			
Styrene	58.2	1.0	ug/kg	50.0		116	75-130			
1,1,1,2-Tetrachloroethane	55.8	2.0	ug/kg	50.0		112	70-130			
1,1,2,2-Tetrachloroethane	60.5	2.0	ug/kg	50.0		121	55-140			
Tetrachloroethene	51.0	1.0	ug/kg	50.0		102	70-125			
Toluene	53.3	1.0	ug/kg	50.0		107	70-125			
1,2,3-Trichlorobenzene	53.5	2.0	ug/kg	50.0		107	60-130			
1,2,4-Trichlorobenzene	51.3	2.0	ug/kg	50.0		103	70-135			
1,1,1-Trichloroethane	52.8	1.0	ug/kg	50.0		106	65-135			
1,1,2-Trichloroethane	58.2	1.0	ug/kg	50.0		116	65-135			
Trichloroethene	50.9	1.0	ug/kg	50.0		102	70-125			
Trichlorofluoromethane	53.2	2.0	ug/kg	50.0		106	60-145			
1,2,3-Trichloropropane	58.2	2.0	ug/kg	50.0		116	60-135			
1,2,4-Trimethylbenzene	53.3	1.0	ug/kg	50.0		107	70-125			
1,3,5-Trimethylbenzene	51.8	1.0	ug/kg	50.0		104	70-125			
Vinyl chloride	44.5	2.0	ug/kg	50.0		89	55-135			
m,p-Xylenes	111	2.0	ug/kg	100		111	70-125			
o-Xylene	57.5	1.0	ug/kg	50.0		115	70-125			
Di-isopropyl Ether (DIPE)	59.7	2.0	ug/kg	50.0		119	60-140			
Ethyl tert-Butyl Ether (ETBE)	56.7	2.0	ug/kg	50.0		113	60-140			
Methyl-tert-butyl Ether (MTBE)	56.4	2.0	ug/kg	50.0		113	60-140			
tert-Amyl Methyl Ether (TAME)	58.0	2.0	ug/kg	50.0		116	60-145			
tert-Butanol (TBA)	277	25	ug/kg	250		111	70-135			
Surrogate: 4-Bromofluorobenzene	50.9		ug/kg	50.0		102	80-120			
Surrogate: Dibromofluoromethane	53.6		ug/kg	50.0		107	80-125			
Surrogate: Toluene-d8	49.4		ug/kg	50.0		99	80-120			

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IUH2741 <Page 36 of 67>



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Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3702 Extracted: 08/27/11										
Matrix Spike Analyzed: 08/27/2011 (11H3702-MS1)				Source: IUH2807-01				MCP		
Acetone	127	11	ug/kg	52.5	ND	243	20-145			M7
Benzene	54.1	1.1	ug/kg	52.5	ND	103	65-130			
Bromobenzene	65.5	2.1	ug/kg	52.5	ND	125	65-140			
Bromochloromethane	67.8	2.1	ug/kg	52.5	ND	129	65-145			
Bromodichloromethane	58.2	1.1	ug/kg	52.5	ND	111	65-145			
Bromoform	61.5	2.1	ug/kg	52.5	ND	117	50-145			
Bromomethane	59.8	2.1	ug/kg	52.5	ND	114	60-155			
2-Butanone (MEK)	102	11	ug/kg	52.5	ND	194	25-170			M7
n-Butylbenzene	35.2	2.1	ug/kg	52.5	ND	67	55-145			
sec-Butylbenzene	38.7	2.1	ug/kg	52.5	ND	74	60-135			
tert-Butylbenzene	43.3	2.1	ug/kg	52.5	ND	82	60-140			
Carbon tetrachloride	48.4	2.1	ug/kg	52.5	ND	92	60-145			
Chlorobenzene	54.2	1.1	ug/kg	52.5	ND	103	70-130			
Chloroethane	59.0	2.1	ug/kg	52.5	ND	112	60-150			
Chloroform	58.4	1.1	ug/kg	52.5	ND	111	65-135			
Chloromethane	52.1	2.1	ug/kg	52.5	ND	99	40-145			
2-Chlorotoluene	54.3	2.1	ug/kg	52.5	ND	103	60-135			
4-Chlorotoluene	57.0	2.1	ug/kg	52.5	ND	109	65-135			
1,2-Dibromo-3-chloropropane	73.2	11	ug/kg	52.5	ND	139	40-150			
Dibromochloromethane	65.1	1.1	ug/kg	52.5	ND	124	60-145			
1,2-Dibromoethane (EDB)	69.3	1.1	ug/kg	52.5	ND	132	65-140			
Dibromomethane	64.2	1.1	ug/kg	52.5	ND	122	65-140			
1,2-Dichlorobenzene	57.4	1.1	ug/kg	52.5	ND	109	70-130			
1,3-Dichlorobenzene	53.3	1.1	ug/kg	52.5	ND	101	70-130			
1,4-Dichlorobenzene	54.0	1.1	ug/kg	52.5	ND	103	70-130			
Dichlorodifluoromethane	36.5	5.3	ug/kg	52.5	ND	69	30-160			
1,1-Dichloroethane	62.1	1.1	ug/kg	52.5	ND	118	65-135			
1,2-Dichloroethane	64.8	1.1	ug/kg	52.5	ND	123	60-150			
1,1-Dichloroethene	56.3	2.1	ug/kg	52.5	ND	107	65-135			
cis-1,2-Dichloroethene	66.0	1.1	ug/kg	52.5	ND	126	65-135			
trans-1,2-Dichloroethene	59.0	1.1	ug/kg	52.5	ND	112	70-135			
1,2-Dichloropropane	57.9	1.1	ug/kg	52.5	ND	110	65-130			
1,3-Dichloropropane	66.7	1.1	ug/kg	52.5	ND	127	65-140			
2,2-Dichloropropane	65.3	1.1	ug/kg	52.5	ND	124	65-150			
cis-1,3-Dichloropropene	59.4	1.1	ug/kg	52.5	ND	113	70-135			
trans-1,3-Dichloropropene	65.1	1.1	ug/kg	52.5	ND	124	60-145			

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IUH2741 <Page 37 of 67>

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Project ID: Tuba City Remediation
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Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3702 Extracted: 08/27/11										
Matrix Spike Analyzed: 08/27/2011 (11H3702-MS1)					Source: IUH2807-01					MCP
1,1-Dichloropropene	50.4	1.1	ug/kg	52.5	ND	96	65-135			
Ethylbenzene	51.5	1.1	ug/kg	52.5	ND	98	70-135			
Hexachlorobutadiene	13.7	2.1	ug/kg	52.5	ND	26	50-145			M2
2-Hexanone	93.3	11	ug/kg	52.5	ND	178	35-160			M1
Isopropylbenzene	51.3	1.1	ug/kg	52.5	ND	98	70-145			
p-Isopropyltoluene	38.3	1.1	ug/kg	52.5	ND	73	60-140			
4-Methyl-2-pentanone (MIBK)	77.2	5.3	ug/kg	52.5	ND	147	40-155			
Methylene chloride	67.4	11	ug/kg	52.5	ND	128	55-145			
Naphthalene	59.8	2.1	ug/kg	52.5	2.02	110	40-150			
n-Propylbenzene	50.0	1.1	ug/kg	52.5	ND	95	65-140			
Styrene	59.0	1.1	ug/kg	52.5	ND	112	70-140			
1,1,1,2-Tetrachloroethane	59.0	2.1	ug/kg	52.5	ND	112	65-145			
1,1,2,2-Tetrachloroethane	77.3	2.1	ug/kg	52.5	ND	147	40-160			
Tetrachloroethene	46.6	1.1	ug/kg	52.5	ND	89	65-135			
Toluene	53.4	1.1	ug/kg	52.5	ND	102	70-130			
1,2,3-Trichlorobenzene	41.8	2.1	ug/kg	52.5	1.45	77	45-145			
1,2,4-Trichlorobenzene	40.5	2.1	ug/kg	52.5	ND	77	50-140			
1,1,1-Trichloroethane	55.7	1.1	ug/kg	52.5	ND	106	65-145			
1,1,2-Trichloroethane	62.9	1.1	ug/kg	52.5	ND	120	65-140			
Trichloroethene	52.4	1.1	ug/kg	52.5	ND	100	65-140			
Trichlorofluoromethane	56.0	2.1	ug/kg	52.5	ND	107	55-155			
1,2,3-Trichloropropane	78.7	2.1	ug/kg	52.5	ND	150	50-150			
1,2,4-Trimethylbenzene	52.9	1.1	ug/kg	52.5	ND	101	65-140			
1,3,5-Trimethylbenzene	50.1	1.1	ug/kg	52.5	ND	95	65-135			
Vinyl chloride	54.8	2.1	ug/kg	52.5	ND	104	55-140			
m,p-Xylenes	106	2.1	ug/kg	105	ND	101	70-130			
o-Xylene	53.6	1.1	ug/kg	52.5	ND	102	65-130			
Di-isopropyl Ether (DIPE)	68.7	2.1	ug/kg	52.5	ND	131	60-150			
Ethyl tert-Butyl Ether (ETBE)	64.8	2.1	ug/kg	52.5	ND	123	60-145			
Methyl-tert-butyl Ether (MTBE)	66.4	2.1	ug/kg	52.5	ND	127	55-155			
tert-Amyl Methyl Ether (TAME)	66.7	2.1	ug/kg	52.5	ND	127	60-150			
tert-Butanol (TBA)	291	26	ug/kg	263	ND	111	65-145			
Surrogate: 4-Bromofluorobenzene	50.9		ug/kg	52.5		97	80-120			
Surrogate: Dibromofluoromethane	61.2		ug/kg	52.5		116	80-125			
Surrogate: Toluene-d8	49.4		ug/kg	52.5		94	80-120			

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IUH2741 <Page 38 of 67>

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THE LEADER IN ENVIRONMENTAL TESTING

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New World Technology
448 Commerce Way
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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3764 Extracted: 08/29/11										
Blank Analyzed: 08/29/2011 (11H3764-BLK1)										
Acetone	ND	10	ug/kg							
Surrogate: 4-Bromofluorobenzene	49.2		ug/kg	50.0		98	80-120			
Surrogate: Dibromofluoromethane	47.0		ug/kg	50.0		94	80-125			
Surrogate: Toluene-d8	52.4		ug/kg	50.0		105	80-120			
LCS Analyzed: 08/29/2011 (11H3764-BS1)										
Acetone	61.8	10	ug/kg	50.0		124	25-145			
Surrogate: 4-Bromofluorobenzene	50.8		ug/kg	50.0		102	80-120			
Surrogate: Dibromofluoromethane	47.3		ug/kg	50.0		95	80-125			
Surrogate: Toluene-d8	52.7		ug/kg	50.0		105	80-120			
Matrix Spike Analyzed: 08/29/2011 (11H3764-MS1)										
Acetone	147	9.9	ug/kg	49.5	25.5	246	20-145			M1
Surrogate: 4-Bromofluorobenzene	50.4		ug/kg	49.5		102	80-120			
Surrogate: Dibromofluoromethane	46.4		ug/kg	49.5		94	80-125			
Surrogate: Toluene-d8	52.0		ug/kg	49.5		105	80-120			
Matrix Spike Dup Analyzed: 08/29/2011 (11H3764-MSD1)										
Acetone	146	10	ug/kg	50.0	25.5	242	20-145	0.6	40	M1
Surrogate: 4-Bromofluorobenzene	49.0		ug/kg	50.0		98	80-120			
Surrogate: Dibromofluoromethane	47.2		ug/kg	50.0		94	80-125			
Surrogate: Toluene-d8	52.6		ug/kg	50.0		105	80-120			
Batch: 11H3792 Extracted: 08/29/11										
Blank Analyzed: 08/29/2011 (11H3792-BLK1)										
Acetone	ND	10	ug/kg							
Benzene	ND	1.0	ug/kg							
Bromobenzene	ND	2.0	ug/kg							
Bromochloromethane	ND	2.0	ug/kg							
Bromodichloromethane	ND	1.0	ug/kg							
Bromoform	ND	2.0	ug/kg							
Bromomethane	ND	2.0	ug/kg							
2-Butanone (MEK)	ND	10	ug/kg							
n-Butylbenzene	ND	2.0	ug/kg							
sec-Butylbenzene	ND	2.0	ug/kg							
tert-Butylbenzene	ND	2.0	ug/kg							
Carbon tetrachloride	ND	2.0	ug/kg							

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IUH2741 <Page 39 of 67>

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Highway 160 Project
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Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3792 Extracted: 08/29/11									
Blank Analyzed: 08/29/2011 (11H3792-BLK1)									
Chlorobenzene	ND	1.0	ug/kg						
Chloroethane	ND	2.0	ug/kg						
Chloroform	ND	1.0	ug/kg						
Chloromethane	ND	2.0	ug/kg						
2-Chlorotoluene	ND	2.0	ug/kg						
4-Chlorotoluene	ND	2.0	ug/kg						
1,2-Dibromo-3-chloropropane	ND	10	ug/kg						
Dibromochloromethane	ND	1.0	ug/kg						
1,2-Dibromoethane (EDB)	ND	1.0	ug/kg						
Dibromomethane	ND	1.0	ug/kg						
1,2-Dichlorobenzene	ND	1.0	ug/kg						
1,3-Dichlorobenzene	ND	1.0	ug/kg						
1,4-Dichlorobenzene	ND	1.0	ug/kg						
Dichlorodifluoromethane	ND	5.0	ug/kg						
1,1-Dichloroethane	ND	1.0	ug/kg						
1,2-Dichloroethane	ND	1.0	ug/kg						
1,1-Dichloroethene	ND	2.0	ug/kg						
cis-1,2-Dichloroethene	ND	1.0	ug/kg						
trans-1,2-Dichloroethene	ND	1.0	ug/kg						
1,2-Dichloropropane	ND	1.0	ug/kg						
1,3-Dichloropropane	ND	1.0	ug/kg						
2,2-Dichloropropane	ND	1.0	ug/kg						
cis-1,3-Dichloropropene	ND	1.0	ug/kg						
trans-1,3-Dichloropropene	ND	1.0	ug/kg						
1,1-Dichloropropene	ND	1.0	ug/kg						
Ethylbenzene	ND	1.0	ug/kg						
Hexachlorobutadiene	ND	2.0	ug/kg						
2-Hexanone	ND	10	ug/kg						
Isopropylbenzene	ND	1.0	ug/kg						
p-Isopropyltoluene	ND	1.0	ug/kg						
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/kg						
Methylene chloride	ND	10	ug/kg						
Naphthalene	ND	2.0	ug/kg						
n-Propylbenzene	ND	1.0	ug/kg						
Styrene	ND	1.0	ug/kg						
1,1,1,2-Tetrachloroethane	ND	2.0	ug/kg						

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IUH2741 <Page 40 of 67>

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Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3792 Extracted: 08/29/11										
Blank Analyzed: 08/29/2011 (11H3792-BLK1)										
1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg							
Tetrachloroethene	ND	1.0	ug/kg							
Toluene	ND	1.0	ug/kg							
1,2,3-Trichlorobenzene	ND	2.0	ug/kg							
1,2,4-Trichlorobenzene	ND	2.0	ug/kg							
1,1,1-Trichloroethane	ND	1.0	ug/kg							
1,1,2-Trichloroethane	ND	1.0	ug/kg							
Trichloroethene	ND	1.0	ug/kg							
Trichlorofluoromethane	ND	2.0	ug/kg							
1,2,3-Trichloropropane	ND	2.0	ug/kg							
1,2,4-Trimethylbenzene	ND	1.0	ug/kg							
1,3,5-Trimethylbenzene	ND	1.0	ug/kg							
Vinyl chloride	ND	2.0	ug/kg							
m,p-Xylenes	ND	2.0	ug/kg							
o-Xylene	ND	1.0	ug/kg							
Di-isopropyl Ether (DIPE)	ND	2.0	ug/kg							
Ethyl tert-Butyl Ether (ETBE)	ND	2.0	ug/kg							
Methyl-tert-butyl Ether (MTBE)	ND	2.0	ug/kg							
tert-Amyl Methyl Ether (TAME)	ND	2.0	ug/kg							
tert-Butanol (TBA)	ND	25	ug/kg							
Surrogate: 4-Bromofluorobenzene	47.7		ug/kg	50.0		95	80-120			
Surrogate: Dibromofluoromethane	55.9		ug/kg	50.0		112	80-125			
Surrogate: Toluene-d8	48.3		ug/kg	50.0		97	80-120			
LCS Analyzed: 08/29/2011 (11H3792-BLS1)										
Acetone	75.0	10	ug/kg	50.0		150	25-145			L
Benzene	39.6	1.0	ug/kg	50.0		79	65-120			
Bromobenzene	49.5	2.0	ug/kg	50.0		99	75-120			
Bromochloromethane	47.7	2.0	ug/kg	50.0		95	70-135			
Bromodichloromethane	53.6	1.0	ug/kg	50.0		107	70-135			
Bromoform	51.0	2.0	ug/kg	50.0		102	55-135			
Bromomethane	37.0	2.0	ug/kg	50.0		74	60-145			
2-Butanone (MEK)	53.2	10	ug/kg	50.0		106	40-145			
n-Butylbenzene	48.5	2.0	ug/kg	50.0		97	70-130			
sec-Butylbenzene	48.0	2.0	ug/kg	50.0		96	70-125			
tert-Butylbenzene	45.4	2.0	ug/kg	50.0		91	70-125			

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IUH2741 <Page 41 of 67>

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Highway 160 Project
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METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11H3792 Extracted: 08/29/11</u>										
LCS Analyzed: 08/29/2011 (11H3792-BST)										
Carbon tetrachloride	56.9	2.0	ug/kg	50.0		114	65-140			
Chlorobenzene	47.0	1.0	ug/kg	50.0		94	75-120			
Chloroethane	37.1	2.0	ug/kg	50.0		74	60-140			
Chloroform	45.8	1.0	ug/kg	50.0		92	70-130			
Chloromethane	28.7	2.0	ug/kg	50.0		57	45-145			
2-Chlorotoluene	47.4	2.0	ug/kg	50.0		95	70-125			
3-Chlorotoluene	48.0	2.0	ug/kg	50.0		96	75-125			
1,2-Dibromo-3-chloropropane	49.7	10	ug/kg	50.0		99	50-135			
Dibromochloromethane	53.8	1.0	ug/kg	50.0		108	65-140			
1,2-Dibromomethane (EDB)	50.4	1.0	ug/kg	50.0		101	70-130			
Dibromomethane	51.1	1.0	ug/kg	50.0		102	70-130			
1,2-Dichlorobenzene	47.1	1.0	ug/kg	50.0		94	75-120			
1,3-Dichlorobenzene	45.6	1.0	ug/kg	50.0		91	75-125			
1,4-Dichlorobenzene	46.3	1.0	ug/kg	50.0		93	75-120			
Dichlorodifluoromethane	28.6	5.0	ug/kg	50.0		57	35-160			
1,1-Dichloroethane	43.1	1.0	ug/kg	50.0		86	70-130			
1,2-Dichloroethane	55.2	1.0	ug/kg	50.0		110	60-140			
1,1-Dichloroethene	43.7	2.0	ug/kg	50.0		87	70-125			
cis-1,2-Dichloroethene	45.0	1.0	ug/kg	50.0		90	70-125			
trans-1,2-Dichloroethene	43.9	1.0	ug/kg	50.0		88	70-125			
1,2-Dichloropropane	43.3	1.0	ug/kg	50.0		87	70-130			
1,3-Dichloropropane	46.7	1.0	ug/kg	50.0		93	70-125			
2,2-Dichloropropane	53.2	1.0	ug/kg	50.0		106	60-145			
cis-1,3-Dichloropropene	50.1	1.0	ug/kg	50.0		100	75-125			
trans-1,3-Dichloropropene	47.4	1.0	ug/kg	50.0		95	70-135			
1,1-Dichloropropene	46.3	1.0	ug/kg	50.0		93	70-130			
Ethylbenzene	48.1	1.0	ug/kg	50.0		96	70-125			
Hexachlorobutadiene	48.4	2.0	ug/kg	50.0		97	60-135			
2-Hexanone	50.2	10	ug/kg	50.0		100	40-150			
Isopropylbenzene	47.7	1.0	ug/kg	50.0		95	75-130			
p-Isopropyltoluene	46.2	1.0	ug/kg	50.0		92	75-125			
4-Methyl-2-pentanone (MIBK)	45.9	5.0	ug/kg	50.0		92	40-145			
Methylene chloride	38.5	10	ug/kg	50.0		77	55-135			
Naphthalene	52.2	2.0	ug/kg	50.0		104	55-135			
n-Propylbenzene	46.8	1.0	ug/kg	50.0		94	70-130			
Styrene	49.2	1.0	ug/kg	50.0		98	75-130			

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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3792 Extracted: 08/29/11										
LCS Analyzed: 08/29/2011 (11H3792-BS1)										
1,1,1,2-Tetrachloroethane	53.8	2.0	ug/kg	50.0		108	70-130			
1,1,2,2-Tetrachloroethane	48.5	2.0	ug/kg	50.0		97	55-140			
Tetrachloroethene	48.4	1.0	ug/kg	50.0		97	70-125			
Toluene	45.1	1.0	ug/kg	50.0		90	70-125			
1,2,3-Trichlorobenzene	50.9	2.0	ug/kg	50.0		102	60-130			
1,2,4-Trichlorobenzene	53.0	2.0	ug/kg	50.0		106	70-135			
1,1,1-Trichloroethane	51.9	1.0	ug/kg	50.0		104	65-135			
1,1,2-Trichloroethane	48.5	1.0	ug/kg	50.0		97	65-135			
Trichloroethene	48.4	1.0	ug/kg	50.0		97	70-125			
Trichlorofluoromethane	54.1	2.0	ug/kg	50.0		108	60-145			
1,2,3-Trichloropropane	49.1	2.0	ug/kg	50.0		98	60-135			
1,2,4-Trimethylbenzene	49.2	1.0	ug/kg	50.0		98	70-125			
1,3,5-Trimethylbenzene	49.8	1.0	ug/kg	50.0		100	70-125			
Vinyl chloride	35.8	2.0	ug/kg	50.0		72	55-135			
m,p-Xylenes	92.5	2.0	ug/kg	100		92	70-125			
o-Xylene	47.7	1.0	ug/kg	50.0		95	70-125			
Di-isopropyl Ether (DIPE)	41.7	2.0	ug/kg	50.0		83	60-140			
Ethyl tert-Butyl Ether (ETBE)	36.6	2.0	ug/kg	50.0		73	60-140			
Methyl-tert-butyl Ether (MTBE)	42.4	2.0	ug/kg	50.0		85	60-140			
tert-Amyl Methyl Ether (TAME)	37.9	2.0	ug/kg	50.0		76	60-145			
tert-Butanol (TBA)	245	25	ug/kg	250		98	70-135			
Surrogate: 4-Bromofluorobenzene	49.8		ug/kg	50.0		100	80-120			
Surrogate: Dibromofluoromethane	54.1		ug/kg	50.0		108	80-125			
Surrogate: Toluene-d8	48.3		ug/kg	50.0		97	80-120			
LCS Dup Analyzed: 08/29/2011 (11H3792-BSD1)										
Acetone	73.7	10	ug/kg	50.0		147	25-145	2	30	L
Benzene	44.6	1.0	ug/kg	50.0		89	65-120	12	20	
Bromobenzene	52.3	2.0	ug/kg	50.0		105	75-120	6	20	
Bromochloromethane	51.0	2.0	ug/kg	50.0		102	70-135	7	20	
Bromodichloromethane	57.4	1.0	ug/kg	50.0		115	70-135	7	20	
Bromoform	50.9	2.0	ug/kg	50.0		102	55-135	0.2	25	
Bromomethane	38.9	2.0	ug/kg	50.0		78	60-145	5	20	
2-Butanone (MEK)	55.6	10	ug/kg	50.0		111	40-145	4	35	
n-Butylbenzene	53.0	2.0	ug/kg	50.0		106	70-130	9	20	
sec-Butylbenzene	52.4	2.0	ug/kg	50.0		105	70-125	9	20	

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Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1UH3792 Extracted: 08/29/11										
LCS Dup Analyzed: 08/29/2011 (1UH3792-BSD1)										
tert-Butylbenzene	49.2	2.0	ug/kg	50.0		98	70-125	8	20	
Carbon tetrachloride	62.7	2.0	ug/kg	50.0		125	65-140	10	20	
Chlorobenzene	50.4	1.0	ug/kg	50.0		101	75-120	7	20	
Chloroethane	38.5	2.0	ug/kg	50.0		77	60-140	4	25	
Chloroform	49.3	1.0	ug/kg	50.0		99	70-130	7	20	
Chloromethane	31.9	2.0	ug/kg	50.0		64	45-145	11	25	
2-Chlorotoluene	51.1	2.0	ug/kg	50.0		102	70-125	8	20	
4-Chlorotoluene	51.8	2.0	ug/kg	50.0		104	75-125	8	20	
1,2-Dibromo-3-chloropropane	47.1	1.0	ug/kg	50.0		94	50-135	5	30	
Dibromochloromethane	55.7	1.0	ug/kg	50.0		111	65-140	4	20	
1,2-Dibromoethane (EDB)	50.6	1.0	ug/kg	50.0		101	70-130	0.4	20	
Dibromomethane	53.0	1.0	ug/kg	50.0		106	70-130	4	20	
1,2-Dichlorobenzene	50.6	1.0	ug/kg	50.0		101	75-120	7	20	
1,3-Dichlorobenzene	50.0	1.0	ug/kg	50.0		100	75-125	9	20	
1,4-Dichlorobenzene	49.6	1.0	ug/kg	50.0		99	75-120	7	20	
Dichlorodifluoromethane	32.3	5.0	ug/kg	50.0		65	35-160	12	30	
1,1-Dichloroethane	46.9	1.0	ug/kg	50.0		94	70-130	8	20	
1,2-Dichloroethane	57.3	1.0	ug/kg	50.0		115	60-140	4	20	
1,1-Dichloroethene	47.5	2.0	ug/kg	50.0		95	70-125	8	20	
cis-1,2-Dichloroethene	50.5	1.0	ug/kg	50.0		101	70-125	12	20	
trans-1,2-Dichloroethene	48.4	1.0	ug/kg	50.0		97	70-125	10	20	
1,2-Dichloropropane	46.0	1.0	ug/kg	50.0		92	70-130	6	20	
1,3-Dichloropropane	48.5	1.0	ug/kg	50.0		97	70-125	4	20	
2,2-Dichloropropane	61.7	1.0	ug/kg	50.0		123	60-145	15	20	
cis-1,3-Dichloropropene	52.0	1.0	ug/kg	50.0		104	75-125	4	20	
trans-1,3-Dichloropropene	50.8	1.0	ug/kg	50.0		102	70-135	7	20	
1,1-Dichloropropene	49.7	1.0	ug/kg	50.0		99	70-130	7	20	
Ethylbenzene	51.5	1.0	ug/kg	50.0		103	70-125	7	20	
Hexachlorobutadiene	52.2	2.0	ug/kg	50.0		104	60-135	8	20	
2-Hexanone	51.2	1.0	ug/kg	50.0		102	40-150	2	35	
Isopropylbenzene	52.3	1.0	ug/kg	50.0		105	75-130	9	20	
p-Isopropyltoluene	50.2	1.0	ug/kg	50.0		100	75-125	8	20	
4-Methyl-2-pentanone (MIBK)	45.5	5.0	ug/kg	50.0		91	40-145	1	35	
Methylene chloride	42.3	1.0	ug/kg	50.0		85	55-135	9	20	
Naphthalene	52.4	2.0	ug/kg	50.0		105	55-135	0.4	25	
n-Propylbenzene	51.3	1.0	ug/kg	50.0		103	70-130	9	20	

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Project Manager

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IUH2741 <Page 44 of 67>



THE LEADER IN ENVIRONMENTAL TESTING

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3792 Extracted: 08/29/11										
LCS Dup Analyzed: 08/29/2011 (11H3792-BS01)										
Styrene	51.9	1.0	ug/kg	50.0		104	75-130	5	20	
1,1,1,2-Tetrachloroethane	58.3	2.0	ug/kg	50.0		117	70-130	8	20	
1,1,2,2-Tetrachloroethane	48.7	2.0	ug/kg	50.0		97	55-140	0.4	30	
Tetrachloroethene	53.0	1.0	ug/kg	50.0		106	70-125	9	20	
Toluene	48.1	1.0	ug/kg	50.0		96	70-125	6	20	
1,2,3-Trichlorobenzene	51.8	2.0	ug/kg	50.0		104	60-130	2	20	
1,2,4-Trichlorobenzene	54.7	2.0	ug/kg	50.0		109	70-135	3	20	
1,1,1-Trichloroethane	56.7	1.0	ug/kg	50.0		113	65-135	9	20	
1,1,2-Trichloroethane	48.7	1.0	ug/kg	50.0		97	65-135	0.5	20	
Trichloroethene	51.0	1.0	ug/kg	50.0		102	70-125	5	20	
Trichlorofluoromethane	58.6	2.0	ug/kg	50.0		117	60-145	8	25	
1,2,3-Trichloropropane	48.8	2.0	ug/kg	50.0		98	60-135	0.4	25	
1,2,4-Trimethylbenzene	53.9	1.0	ug/kg	50.0		108	70-125	9	20	
1,3,5-Trimethylbenzene	54.3	1.0	ug/kg	50.0		109	70-125	9	20	
Vinyl chloride	39.7	2.0	ug/kg	50.0		79	55-135	10	25	
m,p-Xylenes	101	2.0	ug/kg	100		101	70-125	9	20	
o-Xylene	50.6	1.0	ug/kg	50.0		101	70-125	6	20	
Di-isopropyl Ether (DIPE)	44.8	2.0	ug/kg	50.0		90	60-140	7	20	
Ethyl tert-Butyl Ether (ETBE)	39.5	2.0	ug/kg	50.0		79	60-140	8	20	
Methyl-tert-butyl Ether (MTBE)	44.8	2.0	ug/kg	50.0		90	60-140	5	25	
tert-Amyl Methyl Ether (TAME)	40.3	2.0	ug/kg	50.0		81	60-145	6	20	
tert-Butanol (TBA)	282	25	ug/kg	250		113	70-135	14	20	
Surrogate: 4-Bromofluorobenzene	48.5		ug/kg	50.0		97	80-120			
Surrogate: Dibromofluoromethane	54.6		ug/kg	50.0		109	80-125			
Surrogate: Toluene-d8	48.5		ug/kg	50.0		97	80-120			
Matrix Spike Analyzed: 08/29/2011 (11H3792-MS1)										
Acetone	113	10	ug/kg	50.0	25.7	174	20-145			MT
Benzene	45.4	1.0	ug/kg	50.0	ND	91	65-130			
Bromobenzene	54.5	2.0	ug/kg	50.0	ND	109	65-140			
Bromochloromethane	53.6	2.0	ug/kg	50.0	ND	107	65-145			
Bromodichloromethane	58.4	1.0	ug/kg	50.0	ND	117	65-145			
Bromoform	52.2	2.0	ug/kg	50.0	ND	104	50-145			
Bromomethane	40.6	2.0	ug/kg	50.0	ND	81	60-155			
2-Butanone (MEK)	58.7	10	ug/kg	50.0	ND	117	25-170			
n-Butylbenzene	52.8	2.0	ug/kg	50.0	ND	106	55-145			

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Sushmitha Reddy
Project Manager

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IUH2741 <Page 45 of 67>

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THE LEADER IN ENVIRONMENTAL TESTING

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3792 Extracted: 08/29/11									
Matrix Spike Analyzed: 08/29/2011 (11H3792-MS1)					Source: IUH2741-12				
sec-Butylbenzene	51.2	2.0	ug/kg	50.0	ND	102	60-135		
tert-Butylbenzene	49.6	2.0	ug/kg	50.0	ND	99	60-140		
Carbon tetrachloride	62.9	2.0	ug/kg	50.0	ND	126	60-145		
Chlorobenzene	51.5	1.0	ug/kg	50.0	ND	103	70-130		
Chloroethane	38.4	2.0	ug/kg	50.0	ND	77	60-150		
Chloroform	51.1	1.0	ug/kg	50.0	ND	102	65-135		
Chloromethane	32.6	2.0	ug/kg	50.0	ND	65	40-145		
2-Chlorotoluene	52.8	2.0	ug/kg	50.0	ND	106	60-135		
4-Chlorotoluene	53.4	2.0	ug/kg	50.0	ND	107	65-135		
1,2-Dibromo-3-chloropropane	48.2	1.0	ug/kg	50.0	ND	96	40-150		
Dibromochloromethane	55.9	1.0	ug/kg	50.0	ND	112	60-145		
1,2-Dibromoethane (EDB)	51.9	1.0	ug/kg	50.0	ND	104	65-140		
Dibromomethane	53.9	1.0	ug/kg	50.0	ND	108	65-140		
1,2-Dichlorobenzene	51.8	1.0	ug/kg	50.0	ND	104	70-130		
1,3-Dichlorobenzene	51.2	1.0	ug/kg	50.0	ND	102	70-130		
1,4-Dichlorobenzene	50.2	1.0	ug/kg	50.0	ND	100	70-130		
Dichlorodifluoromethane	32.1	5.0	ug/kg	50.0	ND	64	30-160		
1,1-Dichloroethane	49.5	1.0	ug/kg	50.0	ND	99	65-135		
1,2-Dichloroethane	59.2	1.0	ug/kg	50.0	ND	118	60-150		
1,1-Dichloroethene	47.8	2.0	ug/kg	50.0	ND	96	65-135		
cis-1,2-Dichloroethene	51.6	1.0	ug/kg	50.0	ND	103	65-135		
trans-1,2-Dichloroethene	49.2	1.0	ug/kg	50.0	ND	98	70-135		
1,2-Dichloropropane	47.9	1.0	ug/kg	50.0	ND	96	65-130		
1,3-Dichloropropane	48.6	1.0	ug/kg	50.0	ND	97	65-140		
2,2-Dichloropropane	61.8	1.0	ug/kg	50.0	ND	124	65-150		
cis-1,3-Dichloropropene	53.6	1.0	ug/kg	50.0	ND	107	70-135		
trans-1,3-Dichloropropene	51.8	1.0	ug/kg	50.0	ND	104	60-145		
1,1-Dichloropropene	50.0	1.0	ug/kg	50.0	ND	100	65-135		
Ethylbenzene	52.5	1.0	ug/kg	50.0	ND	105	70-135		
Hexachlorobutadiene	45.8	2.0	ug/kg	50.0	ND	92	50-145		
2-Hexanone	52.1	1.0	ug/kg	50.0	ND	104	35-160		
Isopropylbenzene	53.5	1.0	ug/kg	50.0	ND	107	70-145		
p-Isopropyltoluene	51.4	1.0	ug/kg	50.0	1.14	101	60-140		
4-Methyl-2-pentanone (MIBK)	50.7	5.0	ug/kg	50.0	ND	101	40-155		
Methylene chloride	45.5	1.0	ug/kg	50.0	ND	91	55-145		
Naphthalene	55.0	2.0	ug/kg	50.0	ND	110	40-150		

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Project Manager

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IUH2741 <Page 46 of 67>



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New World Technology
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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3792 Extracted: 08/29/11									
Matrix Spike Analyzed: 08/29/2011 (11H3792-MS1)					Source: IUH2741-12				
n-Propylbenzene	52.7	1.0	ug/kg	50.0	0.837	104 65-140			
Styrene	53.1	1.0	ug/kg	50.0	ND	106 70-140			
1,1,1,2-Tetrachloroethane	58.9	2.0	ug/kg	50.0	ND	118 65-145			
1,1,2,2-Tetrachloroethane	50.5	2.0	ug/kg	50.0	ND	101 40-160			
Tetrachloroethene	51.7	1.0	ug/kg	50.0	ND	103 65-135			
Toluene	51.7	1.0	ug/kg	50.0	3.53	96 70-130			
1,2,3-Trichlorobenzene	51.9	2.0	ug/kg	50.0	ND	104 45-145			
1,2,4-Trichlorobenzene	55.0	2.0	ug/kg	50.0	ND	110 50-140			
1,1,1-Trichloroethane	58.5	1.0	ug/kg	50.0	ND	117 65-145			
1,1,2-Trichloroethane	51.0	1.0	ug/kg	50.0	ND	102 65-140			
Trichloroethene	52.7	1.0	ug/kg	50.0	ND	105 65-140			
Trichlorofluoromethane	60.5	2.0	ug/kg	50.0	ND	121 55-155			
1,2,3-Trichloropropane	51.1	2.0	ug/kg	50.0	ND	102 50-150			
1,2,4-Trimethylbenzene	59.2	1.0	ug/kg	50.0	4.18	110 65-140			
1,3,5-Trimethylbenzene	56.1	1.0	ug/kg	50.0	1.31	109 65-135			
Vinyl chloride	40.7	2.0	ug/kg	50.0	ND	81 55-140			
m,p-Xylenes	103	2.0	ug/kg	100	1.02	102 70-130			
o-Xylene	51.0	1.0	ug/kg	50.0	ND	102 65-130			
Di-isopropyl Ether (DIPE)	46.8	2.0	ug/kg	50.0	ND	94 60-150			
Ethyl tert-Butyl Ether (ETBE)	39.9	2.0	ug/kg	50.0	ND	80 60-145			
Methyl-tert-butyl Ether (MTBE)	45.6	2.0	ug/kg	50.0	ND	91 55-155			
tert-Amyl Methyl Ether (TAME)	41.9	2.0	ug/kg	50.0	ND	84 60-150			
tert-Butanol (TBA)	309	25	ug/kg	250	11.6	119 65-145			
Surrogate: 4-Bromofluorobenzene	48.3		ug/kg	50.0		97 80-120			
Surrogate: Dibromofluoromethane	55.5		ug/kg	50.0		111 80-125			
Surrogate: Toluene-d8	49.3		ug/kg	50.0		99 80-120			
Matrix Spike Dup Analyzed: 08/29/2011 (11H3792-MSD1)					Source: IUH2741-12				
Acetone	135	10	ug/kg	50.0	25.7	219 20-145	18	40	M7
Benzene	46.3	1.0	ug/kg	50.0	ND	93 65-130	2	20	
Bromobenzene	54.4	2.0	ug/kg	50.0	ND	109 65-140	0.2	25	
Bromochloromethane	51.8	2.0	ug/kg	50.0	ND	104 65-145	3	25	
Bromodichloromethane	59.6	1.0	ug/kg	50.0	ND	119 65-145	2	20	
Bromoform	52.0	2.0	ug/kg	50.0	ND	104 50-145	0.4	30	
Bromomethane	41.8	2.0	ug/kg	50.0	ND	84 60-155	3	25	
2-Butanone (MEK)	70.0	10	ug/kg	50.0	ND	140 25-170	18	40	

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Project Manager

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IUH2741 <Page 47 of 67>

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New World Technology
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Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3792_Extracted: 08/29/11										
Matrix Spike Dup Analyzed: 08/29/2011 (11H3792-MSD1)					Source: IUH2741-12					
n-Butylbenzene	51.7	2.0	ug/kg	50.0	ND	103	55-145	2	30	
sec-Butylbenzene	52.3	2.0	ug/kg	50.0	ND	105	60-135	2	25	
tert-Butylbenzene	49.6	2.0	ug/kg	50.0	ND	99	60-140	0.04	25	
Carbon tetrachloride	63.3	2.0	ug/kg	50.0	ND	127	60-145	0.6	25	
Chlorobenzene	51.0	1.0	ug/kg	50.0	ND	102	70-130	1	25	
Chloroethane	39.1	2.0	ug/kg	50.0	ND	78	60-150	2	25	
Chloroform	50.6	1.0	ug/kg	50.0	ND	101	65-135	1	20	
Chloromethane	32.6	2.0	ug/kg	50.0	ND	65	40-145	0.1	25	
2-Chlorotoluene	51.7	2.0	ug/kg	50.0	ND	103	60-135	2	25	
4-Chlorotoluene	52.4	2.0	ug/kg	50.0	ND	105	65-135	2	25	
1,2-Dibromo-3-chloropropane	50.0	10	ug/kg	50.0	ND	100	40-150	4	30	
Dibromochloromethane	56.2	1.0	ug/kg	50.0	ND	112	60-145	0.6	25	
1,2-Dibromoethane (EDB)	52.3	1.0	ug/kg	50.0	ND	105	65-140	0.7	25	
Dibromomethane	54.6	1.0	ug/kg	50.0	ND	109	65-140	1	25	
1,2-Dichlorobenzene	51.3	1.0	ug/kg	50.0	ND	103	70-130	1	25	
1,3-Dichlorobenzene	50.8	1.0	ug/kg	50.0	ND	102	70-130	0.8	25	
1,4-Dichlorobenzene	49.9	1.0	ug/kg	50.0	ND	100	70-130	0.6	25	
Dichlorodifluoromethane	32.1	5.0	ug/kg	50.0	ND	64	30-160	0.2	35	
1,1-Dichloroethane	48.9	1.0	ug/kg	50.0	ND	98	65-135	1	25	
1,2-Dichloroethane	60.0	1.0	ug/kg	50.0	ND	120	60-150	1	25	
1,1-Dichloroethene	47.9	2.0	ug/kg	50.0	ND	96	65-135	0.2	25	
cis-1,2-Dichloroethene	50.8	1.0	ug/kg	50.0	ND	102	65-135	2	25	
trans-1,2-Dichloroethene	49.5	1.0	ug/kg	50.0	ND	99	70-135	0.5	25	
1,2-Dichloropropane	48.6	1.0	ug/kg	50.0	ND	97	65-130	2	20	
1,3-Dichloropropane	49.8	1.0	ug/kg	50.0	ND	100	65-140	2	25	
2,2-Dichloropropane	60.1	1.0	ug/kg	50.0	ND	120	65-150	3	25	
cis-1,3-Dichloropropene	54.9	1.0	ug/kg	50.0	ND	110	70-135	2	25	
trans-1,3-Dichloropropene	54.6	1.0	ug/kg	50.0	ND	109	60-145	5	25	
1,1-Dichloropropene	51.2	1.0	ug/kg	50.0	ND	102	65-135	2	20	
Ethylbenzene	52.4	1.0	ug/kg	50.0	ND	105	70-135	0.1	25	
Hexachlorobutadiene	45.8	2.0	ug/kg	50.0	ND	92	50-145	0.04	35	
2-Hexanone	55.1	10	ug/kg	50.0	ND	110	35-160	5	40	
Isopropylbenzene	53.2	1.0	ug/kg	50.0	ND	106	70-145	0.7	25	
p-Isopropyltoluene	51.7	1.0	ug/kg	50.0	1.14	101	60-140	0.7	25	
4-Methyl-2-pentanone (MIBK)	54.5	5.0	ug/kg	50.0	ND	109	40-155	7	40	
Methylene chloride	44.4	10	ug/kg	50.0	ND	89	55-145	2	25	

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Sushmitha Reddy
Project Manager

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IUH2741 <Page 48 of 67>



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Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3792 Extracted: 08/29/11										
Matrix Spike Dup Analyzed: 08/29/2011 (11H3792-MSD1)					Source: IUH2741-12					
Naphthalene	57.4	2.0	ug/kg	50.0	ND	115	40-150	4	40	
n-Propylbenzene	53.4	1.0	ug/kg	50.0	0.837	105	65-140	1	25	
Styrene	53.6	1.0	ug/kg	50.0	ND	107	70-140	0.9	25	
1,1,1,2-Tetrachloroethane	59.6	2.0	ug/kg	50.0	ND	119	65-145	1	20	
1,1,2,2-Tetrachloroethane	50.1	2.0	ug/kg	50.0	ND	100	40-160	0.8	30	
Tetrachloroethene	51.9	1.0	ug/kg	50.0	ND	104	65-135	0.4	25	
Toluene	54.4	1.0	ug/kg	50.0	3.53	102	70-130	5	20	
1,2,3-Trichlorobenzene	52.4	2.0	ug/kg	50.0	ND	105	45-145	0.9	30	
1,2,4-Trichlorobenzene	56.0	2.0	ug/kg	50.0	ND	112	50-140	2	30	
1,1,1-Trichloroethane	58.3	1.0	ug/kg	50.0	ND	117	65-145	0.3	20	
1,1,2-Trichloroethane	52.9	1.0	ug/kg	50.0	ND	106	65-140	4	30	
Trichloroethene	53.3	1.0	ug/kg	50.0	ND	107	65-140	1	25	
Trichlorofluoromethane	58.9	2.0	ug/kg	50.0	ND	118	55-155	3	25	
1,2,3-Trichloropropane	51.2	2.0	ug/kg	50.0	ND	102	50-150	0.2	30	
1,2,4-Trimethylbenzene	60.5	1.0	ug/kg	50.0	4.18	113	65-140	2	25	
1,3,5-Trimethylbenzene	56.4	1.0	ug/kg	50.0	1.31	110	65-135	0.6	25	
Vinyl chloride	40.3	2.0	ug/kg	50.0	ND	81	55-140	0.9	30	
m,p-Xylenes	103	2.0	ug/kg	100	1.02	102	70-130	0.5	25	
o-Xylene	52.1	1.0	ug/kg	50.0	ND	104	65-130	2	25	
Di-isopropyl Ether (DIPE)	47.1	2.0	ug/kg	50.0	ND	94	60-150	0.7	25	
Ethyl tert-Butyl Ether (ETBE)	40.7	2.0	ug/kg	50.0	ND	81	60-145	2	30	
Methyl-tert-butyl Ether (MTBE)	46.3	2.0	ug/kg	50.0	ND	93	55-155	1	35	
tert-Amyl Methyl Ether (TAME)	41.1	2.0	ug/kg	50.0	ND	82	60-150	2	25	
tert-Butanol (TBA)	309	25	ug/kg	250	11.6	119	65-145	0.01	30	
Surrogate: 4-Bromofluorobenzene	48.1		ug/kg	50.0		96	80-120			
Surrogate: Dibromofluoromethane	54.5		ug/kg	50.0		109	80-125			
Surrogate: Toluene-d8	49.6		ug/kg	50.0		99	80-120			

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IUH2741 <Page 49 of 67>

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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 11H3595 Extracted: 08/26/11										
Blank Analyzed: 08/27/2011 (11H3595-BLK1)										
Acenaphthene	ND	330	ug/kg							
Acenaphthylene	ND	330	ug/kg							
Aniline	ND	420	ug/kg							
Anthracene	ND	330	ug/kg							
Benzidine	ND	660	ug/kg							
Benzo(a)anthracene	ND	330	ug/kg							
Benzo(a)pyrene	ND	330	ug/kg							
Benzo(b)fluoranthene	ND	330	ug/kg							
Benzo(g,h,i)perylene	ND	330	ug/kg							
Benzo(k)fluoranthene	ND	330	ug/kg							
Benzoic acid	ND	830	ug/kg							
Benzyl alcohol	ND	330	ug/kg							
4-Bromophenyl phenyl ether	ND	330	ug/kg							
Butyl benzyl phthalate	ND	330	ug/kg							
4-Chloro-3-methylphenol	ND	330	ug/kg							
4-Chloroaniline	ND	330	ug/kg							
Bis(2-chloroethoxy)methane	ND	330	ug/kg							
Bis(2-chloroethyl)ether	ND	170	ug/kg							
Bis(2-chloroisopropyl)ether	ND	330	ug/kg							
Bis(2-ethylhexyl)phthalate	ND	330	ug/kg							
2-Chloronaphthalene	ND	330	ug/kg							
2-Chlorophenol	ND	330	ug/kg							
4-Chlorophenyl phenyl ether	ND	330	ug/kg							
Chrysene	ND	330	ug/kg							
Dibenz(a,h)anthracene	ND	420	ug/kg							
Dibenzofuran	ND	330	ug/kg							
Di-n-butyl phthalate	ND	330	ug/kg							
1,2-Dichlorobenzene	ND	330	ug/kg							
1,3-Dichlorobenzene	ND	330	ug/kg							
1,4-Dichlorobenzene	ND	330	ug/kg							
3,3'-Dichlorobenzidine	ND	830	ug/kg							
2,4-Dichlorophenol	ND	330	ug/kg							
Diethyl phthalate	ND	330	ug/kg							
2,4-Dimethylphenol	ND	330	ug/kg							
Dimethyl phthalate	ND	330	ug/kg							
4,6-Dinitro-2-methylphenol	ND	420	ug/kg							

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IUH2741 <Page 50 of 67>



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New World Technology
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Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3595 Extracted: 08/26/11										
Blank Analyzed: 08/27/2011 (11H3595-BLK1)										
2,4-Dinitrophenol	ND	660	ug/kg							
2,4-Dinitrotoluene	ND	330	ug/kg							
2,6-Dinitrotoluene	ND	330	ug/kg							
Di-n-octyl phthalate	ND	330	ug/kg							
1,2-Diphenylhydrazine/Azobenzene	ND	330	ug/kg							
Fluoranthene	ND	330	ug/kg							
Fluorene	ND	330	ug/kg							
Hexachlorobenzene	ND	330	ug/kg							
Hexachlorobutadiene	ND	330	ug/kg							
Hexachlorocyclopentadiene	ND	830	ug/kg							
Hexachloroethane	ND	330	ug/kg							
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg							
Isophorone	ND	330	ug/kg							
2-Methylnaphthalene	ND	330	ug/kg							
2-Methylphenol	ND	330	ug/kg							
4-Methylphenol	ND	330	ug/kg							
Naphthalene	ND	330	ug/kg							
2-Nitroaniline	ND	330	ug/kg							
3-Nitroaniline	ND	330	ug/kg							
4-Nitroaniline	ND	830	ug/kg							
Nitrobenzene	ND	330	ug/kg							
2-Nitrophenol	ND	330	ug/kg							
4-Nitrophenol	ND	830	ug/kg							
N-Nitroso-di-n-propylamine	ND	250	ug/kg							
N-Nitrosodiphenylamine	ND	330	ug/kg							
Pentachlorophenol	ND	830	ug/kg							
Phenanthrene	ND	330	ug/kg							
Phenol	ND	330	ug/kg							
Pyrene	ND	330	ug/kg							
1,2,4-Trichlorobenzene	ND	330	ug/kg							
2,4,5-Trichlorophenol	ND	330	ug/kg							
2,4,6-Trichlorophenol	ND	330	ug/kg							
Surrogate: 2,4,6-Tribromophenol	5550		ug/kg	6670		83	35-125			
Surrogate: 2-Fluorobiphenyl	2720		ug/kg	3330		82	35-120			
Surrogate: 2-Fluorophenol	5420		ug/kg	6670		81	25-120			
Surrogate: Nitrobenzene-d5	2460		ug/kg	3330		74	30-120			

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IUH2741 <Page 51 of 67>

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New World Technology
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Highway 160 Project
Report Number: IUH2741

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Received: 08/26/11

METHOD BLANK/QC DATA

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 11H3595 Extracted: 08/26/11										
Blank Analyzed: 08/27/2011 (11H3595-BLK1)										
Surrogate: Phenol-d6	5650		ug/kg	6670		85	35-120			
Surrogate: Terphenyl-d14	3210		ug/kg	3330		96	40-135			
LCS Analyzed: 08/27/2011 (11H3595-BS1)										
Acenaphthene	2330	330	ug/kg	3330		70	50-120			
Acenaphthylene	2830	330	ug/kg	3330		85	50-120			
Aniline	2230	420	ug/kg	3330		67	25-120			
Anthracene	2860	330	ug/kg	3330		86	55-120			
Benzidine	937	660	ug/kg	3330		28	20-120			
Benzo(a)anthracene	2900	330	ug/kg	3330		87	55-120			
Benzo(a)pyrene	3180	330	ug/kg	3330		96	50-125			
Benzo(b)fluoranthene	3080	330	ug/kg	3330		92	45-125			
Benzo(g,h,i)perylene	3870	330	ug/kg	3330		116	35-130			
Benzo(k)fluoranthene	3220	330	ug/kg	3330		97	45-125			
Benzoic acid	1910	830	ug/kg	3330		57	20-120			
Benzyl alcohol	2560	330	ug/kg	3330		77	35-120			
4-Bromophenyl phenyl ether	3130	330	ug/kg	3330		94	45-120			
Butyl benzyl phthalate	2860	330	ug/kg	3330		86	50-125			
4-Chloro-3-methylphenol	2760	330	ug/kg	3330		83	50-125			
4-Chloroaniline	1990	330	ug/kg	3330		60	20-120			
Bis(2-chloroethoxy)methane	2500	330	ug/kg	3330		75	45-120			
Bis(2-chloroethyl)ether	2490	170	ug/kg	3330		75	35-120			
Bis(2-chloroisopropyl)ether	2070	330	ug/kg	3330		62	40-120			
Bis(2-ethylhexyl)phthalate	2720	330	ug/kg	3330		82	50-130			
2-Chloronaphthalene	2520	330	ug/kg	3330		76	45-120			
2-Chlorophenol	2640	330	ug/kg	3330		79	40-120			
4-Chlorophenyl phenyl ether	2780	330	ug/kg	3330		83	55-120			
Chrysene	3000	330	ug/kg	3330		90	55-120			
Dibenz(a,h)anthracene	3090	420	ug/kg	3330		93	40-135			
Dibenzofuran	2580	330	ug/kg	3330		77	55-120			
Di-n-butyl phthalate	2720	330	ug/kg	3330		82	50-125			
1,2-Dichlorobenzene	2300	330	ug/kg	3330		69	40-120			
1,3-Dichlorobenzene	2230	330	ug/kg	3330		67	35-120			
1,4-Dichlorobenzene	2220	330	ug/kg	3330		67	35-120			
3,3'-Dichlorobenzidine	2380	830	ug/kg	3330		71	20-130			
2,4-Dichlorophenol	2740	330	ug/kg	3330		82	45-120			

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IUH2741 <Page 52 of 67>

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Highway 160 Project
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METHOD BLANK/QC DATA

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3595_Extracted: 08/26/11										
LCS Analyzed: 08/27/2011 (11H3595-BS1)										
Diethyl phthalate	2610	330	ug/kg	3330		78	50-125			
2,4-Dimethylphenol	2400	330	ug/kg	3330		72	40-120			
Dimethyl phthalate	2680	330	ug/kg	3330		80	50-125			
4,6-Dinitro-2-methylphenol	2430	420	ug/kg	3330		73	40-120			
2,4-Dinitrophenol	1980	660	ug/kg	3330		59	25-120			
2,4-Dinitrotoluene	2710	330	ug/kg	3330		81	55-125			
2,6-Dinitrotoluene	2730	330	ug/kg	3330		82	55-125			
Di-n-octyl phthalate	2830	330	ug/kg	3330		85	50-135			
1,2-Diphenylhydrazine/Azobenzene	2520	330	ug/kg	3330		76	50-125			
Fluoranthene	2830	330	ug/kg	3330		85	55-120			
Fluorene	2640	330	ug/kg	3330		79	55-120			
Hexachlorobenzene	2980	330	ug/kg	3330		89	50-120			
Hexachlorobutadiene	2380	330	ug/kg	3330		71	40-120			
Hexachlorocyclopentadiene	1940	830	ug/kg	3330		58	30-125			
Hexachloroethane	2290	330	ug/kg	3330		69	40-120			
Indeno(1,2,3-cd)pyrene	3270	330	ug/kg	3330		98	30-135			
Isophorone	2680	330	ug/kg	3330		80	40-120			
2-Methylnaphthalene	2410	330	ug/kg	3330		72	45-120			
2-Methylphenol	2800	330	ug/kg	3330		84	40-120			
4-Methylphenol	2990	330	ug/kg	3330		90	45-120			
Naphthalene	2330	330	ug/kg	3330		70	45-120			
2-Nitroaniline	2480	330	ug/kg	3330		74	50-125			
3-Nitroaniline	2110	330	ug/kg	3330		63	35-120			
4-Nitroaniline	2070	830	ug/kg	3330		62	45-125			
Nitrobenzene	2280	330	ug/kg	3330		68	45-120			
2-Nitrophenol	2540	330	ug/kg	3330		76	45-120			
4-Nitrophenol	2040	830	ug/kg	3330		61	40-125			
N-Nitroso-di-n-propylamine	2720	250	ug/kg	3330		82	40-120			
N-Nitrosodiphenylamine	2760	330	ug/kg	3330		83	50-120			
Pentachlorophenol	2540	830	ug/kg	3330		76	40-120			
Phenanthrene	2760	330	ug/kg	3330		83	50-120			
Phenol	2870	330	ug/kg	3330		86	40-120			
Pyrene	2830	330	ug/kg	3330		85	45-125			
1,2,4-Trichlorobenzene	2270	330	ug/kg	3330		68	40-120			
2,4,5-Trichlorophenol	2770	330	ug/kg	3330		83	50-120			
2,4,6-Trichlorophenol	2800	330	ug/kg	3330		84	50-120			

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IUH2741 <Page 53 of 67>

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Highway 160 Project
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METHOD BLANK/QC DATA

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 11H3595 Extracted: 08/26/11										
LCS Analyzed: 08/27/2011 (11H3595-BS1)										
Surrogate: 2,4,6-Tribromophenol	6810		ug/kg	6670		102	35-125			
Surrogate: 2-Fluorobiphenyl	2630		ug/kg	3330		79	35-120			
Surrogate: 2-Fluorophenol	5250		ug/kg	6670		79	25-120			
Surrogate: Nitrobenzene-d5	2410		ug/kg	3330		72	30-120			
Surrogate: Phenol-d6	5890		ug/kg	6670		88	35-120			
Surrogate: Terphenyl-d14	3160		ug/kg	3330		95	40-135			
Matrix Spike Analyzed: 08/27/2011 (11H3595-MS1)										
				Source: IUH2685-01						
Acenaphthene	16900	2500	ug/kg	24900	ND	68	45-120			
Acenaphthylene	20500	2500	ug/kg	24900	ND	82	45-120			
Aniline	14900	3100	ug/kg	24900	ND	60	25-120			
Anthracene	22000	2500	ug/kg	24900	ND	88	55-120			
Benzidine	ND	4900	ug/kg	24900	ND		20-120			M2
Benzo(a)anthracene	21400	2500	ug/kg	24900	ND	86	50-120			
Benzo(a)pyrene	24100	2500	ug/kg	24900	ND	97	45-125			
Benzo(b)fluoranthene	23400	2500	ug/kg	24900	ND	94	45-125			
Benzo(g,h,i)perylene	29300	2500	ug/kg	24900	ND	118	25-130			
Benzo(k)fluoranthene	24500	2500	ug/kg	24900	ND	98	45-125			
Benzoic acid	7720	6200	ug/kg	24900	ND	31	20-120			
Benzyl alcohol	15200	2500	ug/kg	24900	ND	61	20-120			
4-Bromophenyl phenyl ether	23300	2500	ug/kg	24900	ND	94	45-120			
Butyl benzyl phthalate	22000	2500	ug/kg	24900	ND	88	45-125			
4-Chloro-3-methylphenol	19100	2500	ug/kg	24900	ND	77	50-125			
4-Chloroaniline	8060	2500	ug/kg	24900	ND	32	20-120			
Bis(2-chloroethoxy)methane	17300	2500	ug/kg	24900	ND	70	45-120			
Bis(2-chloroethyl)ether	21100	1200	ug/kg	24900	ND	85	35-110			
Bis(2-chloroisopropyl)ether	14800	2500	ug/kg	24900	ND	60	40-120			
Bis(2-ethylhexyl)phthalate	22000	2500	ug/kg	24900	2060	80	45-130			
2-Chloronaphthalene	18300	2500	ug/kg	24900	ND	74	45-120			
2-Chlorophenol	19100	2500	ug/kg	24900	ND	77	40-120			
4-Chlorophenyl phenyl ether	20300	2500	ug/kg	24900	ND	82	50-120			
Chrysene	22000	2500	ug/kg	24900	ND	88	55-120			
Dibenz(a,h)anthracene	22900	3100	ug/kg	24900	ND	92	25-135			
Dibenzofuran	18800	2500	ug/kg	24900	ND	75	50-120			
Di-n-butyl phthalate	21200	2500	ug/kg	24900	ND	85	50-125			
1,2-Dichlorobenzene	16500	2500	ug/kg	24900	ND	66	40-120			

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IUH2741 <Page 54 of 67>



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METHOD BLANK/QC DATA

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3595 Extracted: 08/26/11									
Matrix Spike Analyzed: 08/27/2011 (11H3595-MS1)					Source: IUH2685-01				
1,3-Dichlorobenzene	15600	2500	ug/kg	24900	ND	63 35-120			
1,4-Dichlorobenzene	15400	2500	ug/kg	24900	ND	62 35-120			
1,3'-Dichlorobenzidine	11600	6200	ug/kg	24900	ND	47 20-130			
2,4-Dichlorophenol	19400	2500	ug/kg	24900	ND	78 45-120			
Diethyl phthalate	19400	2500	ug/kg	24900	ND	78 50-125			
2,4-Dimethylphenol	15400	2500	ug/kg	24900	ND	62 30-120			
Dimethyl phthalate	19800	2500	ug/kg	24900	ND	79 45-125			
4,6-Dinitro-2-methylphenol	18100	3100	ug/kg	24900	ND	73 35-120			
2,4-Dinitrophenol	12200	4900	ug/kg	24900	ND	49 20-120			
2,4-Dinitrotoluene	20400	2500	ug/kg	24900	ND	82 50-125			
2,6-Dinitrotoluene	19700	2500	ug/kg	24900	ND	79 50-125			
Di-n-octyl phthalate	24800	2500	ug/kg	24900	ND	100 50-135			
1,2-Diphenylhydrazine/Azobenzene	17900	2500	ug/kg	24900	ND	72 50-125			
Fluoranthene	19600	2500	ug/kg	24900	ND	79 45-120			
Fluorene	18900	2500	ug/kg	24900	ND	76 50-120			
Hexachlorobenzene	22800	2500	ug/kg	24900	ND	92 50-120			
Hexachlorobutadiene	16800	2500	ug/kg	24900	ND	68 40-120			
Hexachlorocyclopentadiene	12800	6200	ug/kg	24900	ND	51 20-125			
Hexachloroethane	16300	2500	ug/kg	24900	ND	66 35-120			
Indeno(1,2,3-cd)pyrene	22900	2500	ug/kg	24900	ND	92 20-130			
Isophorone	18900	2500	ug/kg	24900	ND	76 40-120			
2-Methylnaphthalene	16400	2500	ug/kg	24900	ND	66 40-120			
2-Methylphenol	19200	2500	ug/kg	24900	ND	77 40-120			
4-Methylphenol	21600	2500	ug/kg	24900	ND	87 45-120			
Naphthalene	16700	2500	ug/kg	24900	ND	67 40-120			
2-Nitroaniline	18300	2500	ug/kg	24900	ND	74 45-120			
3-Nitroaniline	13300	2500	ug/kg	24900	ND	54 30-120			
4-Nitroaniline	14300	6200	ug/kg	24900	ND	57 40-125			
Nitrobenzene	16300	2500	ug/kg	24900	ND	66 40-120			
2-Nitrophenol	17900	2500	ug/kg	24900	ND	72 40-120			
4-Nitrophenol	13900	6200	ug/kg	24900	ND	56 35-125			
N-Nitroso-di-n-propylamine	19800	1900	ug/kg	24900	ND	80 35-120			
N-Nitrosodiphenylamine	21900	2500	ug/kg	24900	ND	88 45-125			
Pentachlorophenol	18000	6200	ug/kg	24900	ND	72 30-120			
Phenanthrene	20600	2500	ug/kg	24900	ND	83 50-120			
Phenol	19400	2500	ug/kg	24900	ND	78 40-120			

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IUH2741 <Page 55 of 67>

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METHOD BLANK/QC DATA

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3595 Extracted: 08/26/11									
Matrix Spike Analyzed: 08/27/2011 (11H3595-MS1)					Source: IUH2685-01				
Pyrene	20000	2500	ug/kg	24900	ND	80 40-125			
1,2,4-Trichlorobenzene	16100	2500	ug/kg	24900	ND	65 40-120			
2,4,5-Trichlorophenol	21600	2500	ug/kg	24900	ND	87 45-120			
2,4,6-Trichlorophenol	20000	2500	ug/kg	24900	ND	81 45-120			
Surrogate: 2,4,6-Tribromophenol	47900		ug/kg	49800		96 35-125			
Surrogate: 2-Fluorobiphenyl	19200		ug/kg	24900		77 35-120			
Surrogate: 2-Fluorophenol	36800		ug/kg	49800		74 25-120			
Surrogate: Nitrobenzene-d5	17000		ug/kg	24900		68 30-120			
Surrogate: Phenol-d6	41200		ug/kg	49800		83 35-120			
Surrogate: Terphenyl-d14	22400		ug/kg	24900		90 40-135			
Matrix Spike Dup Analyzed: 08/27/2011 (11H3595-MSD1)					Source: IUH2685-01				
Acenaphthene	18400	2500	ug/kg	24900	ND	74 45-120	8	25	
Acenaphthylene	22200	2500	ug/kg	24900	ND	89 45-120	8	20	
Aniline	12100	3100	ug/kg	24900	ND	48 25-120	21	30	
Anthracene	22600	2500	ug/kg	24900	ND	91 55-120	3	25	
Benzidine	ND	4900	ug/kg	24900	ND	20-120		30	M2
Benzo(a)anthracene	22800	2500	ug/kg	24900	ND	91 50-120	6	25	
Benzo(a)pyrene	25400	2500	ug/kg	24900	ND	102 45-125	5	25	
Benzo(b)fluoranthene	24000	2500	ug/kg	24900	ND	96 45-125	3	30	
Benzo(g,h,i)perylene	30900	2500	ug/kg	24900	ND	124 25-130	5	30	
Benzo(k)fluoranthene	26600	2500	ug/kg	24900	ND	107 45-125	8	30	
Benzoic acid	7030	6200	ug/kg	24900	ND	28 20-120	9	30	
Benzyl alcohol	17500	2500	ug/kg	24900	ND	70 20-120	14	30	
4-Bromophenyl phenyl ether	25500	2500	ug/kg	24900	ND	103 45-120	9	20	
Butyl benzyl phthalate	23800	2500	ug/kg	24900	ND	96 45-125	8	25	
4-Chloro-3-methylphenol	20900	2500	ug/kg	24900	ND	84 50-125	9	25	
4-Chloroaniline	10300	2500	ug/kg	24900	ND	41 20-120	24	30	
Bis(2-chlorooctoxy)methane	19400	2500	ug/kg	24900	ND	78 45-120	11	25	
Bis(2-chloroethyl)ether	26100	1200	ug/kg	24900	ND	105 35-110	21	25	
Bis(2-chloroisopropyl)ether	16100	2500	ug/kg	24900	ND	65 40-120	8	25	
Bis(2-ethylhexyl)phthalate	23700	2500	ug/kg	24900	2060	87 45-130	7	25	
2-Chloronaphthalene	20200	2500	ug/kg	24900	ND	81 45-120	10	20	
2-Chlorophenol	21000	2500	ug/kg	24900	ND	84 40-120	10	20	
4-Chlorophenyl phenyl ether	21700	2500	ug/kg	24900	ND	87 50-120	6	25	
Chrysene	23500	2500	ug/kg	24900	ND	95 55-120	7	25	

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IUH2741 <Page 56 of 67>



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New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3595 Extracted: 08/26/11										
Matrix Spike Dup Analyzed: 08/27/2011 (11H3595-MSD1)					Source: IUH2685-01					
Dibenz(a,h)anthracene	24200	3100	ug/kg	24900	ND	97	25-135	6	30	
Dibenzofuran	20000	2500	ug/kg	24900	ND	80	50-120	6	25	
Di-n-butyl phthalate	22300	2500	ug/kg	24900	ND	90	50-125	5	25	
1,2-Dichlorobenzene	18200	2500	ug/kg	24900	ND	73	40-120	10	25	
1,3-Dichlorobenzene	17000	2500	ug/kg	24900	ND	68	35-120	8	25	
1,4-Dichlorobenzene	17400	2500	ug/kg	24900	ND	70	35-120	12	25	
3,3'-Dichlorobenzidine	14500	6200	ug/kg	24900	ND	58	20-130	22	25	
2,4-Dichlorophenol	21600	2500	ug/kg	24900	ND	87	45-120	10	25	
Diethyl phthalate	20300	2500	ug/kg	24900	ND	82	50-125	4	25	
2,4-Dimethylphenol	16800	2500	ug/kg	24900	ND	68	30-120	9	25	
Dimethyl phthalate	20600	2500	ug/kg	24900	ND	83	45-125	4	25	
4,6-Dinitro-2-methylphenol	18700	3100	ug/kg	24900	ND	75	35-120	3	25	
2,4-Dinitrophenol	12400	4900	ug/kg	24900	ND	50	20-120	1	25	
2,4-Dinitrotoluene	21000	2500	ug/kg	24900	ND	84	50-125	3	25	
2,6-Dinitrotoluene	21000	2500	ug/kg	24900	ND	84	50-125	6	20	
Di-n-octyl phthalate	26600	2500	ug/kg	24900	ND	107	50-135	7	25	
1,2-Diphenylhydrazine/Azobenzene	18900	2500	ug/kg	24900	ND	76	50-125	6	25	
Fluoranthene	20000	2500	ug/kg	24900	ND	80	45-120	2	25	
Fluorene	19800	2500	ug/kg	24900	ND	80	50-120	5	25	
Hexachlorobenzene	23600	2500	ug/kg	24900	ND	95	50-120	3	25	
Hexachlorobutadiene	18500	2500	ug/kg	24900	ND	74	40-120	9	25	
Hexachlorocyclopentadiene	14600	6200	ug/kg	24900	ND	59	20-125	14	30	
Hexachloroethane	18100	2500	ug/kg	24900	ND	73	35-120	10	30	
Indeno(1,2,3-cd)pyrene	24300	2500	ug/kg	24900	ND	98	20-130	6	30	
Isophorone	21100	2500	ug/kg	24900	ND	85	40-120	11	25	
2-Methylnaphthalene	18500	2500	ug/kg	24900	ND	74	40-120	12	20	
2-Methylphenol	22000	2500	ug/kg	24900	ND	89	40-120	14	25	
4-Methylphenol	23500	2500	ug/kg	24900	ND	94	45-120	8	25	
Naphthalene	18600	2500	ug/kg	24900	ND	75	40-120	11	25	
2-Nitroaniline	19500	2500	ug/kg	24900	ND	78	45-120	6	25	
3-Nitroaniline	14300	2500	ug/kg	24900	ND	57	30-120	7	25	
4-Nitroaniline	14400	6200	ug/kg	24900	ND	58	40-125	0.8	30	
Nitrobenzene	18400	2500	ug/kg	24900	ND	74	40-120	12	25	
2-Nitrophenol	20100	2500	ug/kg	24900	ND	81	40-120	12	25	
4-Nitrophenol	13900	6200	ug/kg	24900	ND	56	35-125	0.5	30	
N-Nitroso-di-n-propylamine	22000	1900	ug/kg	24900	ND	88	35-120	10	25	

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IUH2741 <Page 57 of 67>

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Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3595, Extracted: 08/26/11										
Matrix Spike Dup Analyzed: 08/27/2011 (11H3595-MSD1)					Source: IUH2685-01					
N-Nitrosodiphenylamine	23000	2500	ug/kg	24900	ND	93	45-125	5	25	
Pentachlorophenol	18200	6200	ug/kg	24900	ND	73	30-120	1	25	
Phenanthrene	21600	2500	ug/kg	24900	ND	87	50-120	5	25	
Phenol	21800	2500	ug/kg	24900	ND	88	40-120	12	25	
Pyrene	21300	2500	ug/kg	24900	ND	86	40-125	7	30	
1,2,4-Trichlorobenzene	18100	2500	ug/kg	24900	ND	73	40-120	12	25	
2,4,5-Trichlorophenol	22400	2500	ug/kg	24900	ND	90	45-120	4	20	
2,4,6-Trichlorophenol	21500	2500	ug/kg	24900	ND	86	45-120	7	25	
Surrogate: 2,4,6-Tribromophenol	49700		ug/kg	49800		100	35-125			
Surrogate: 2-Fluorobiphenyl	21000		ug/kg	24900		84	35-120			
Surrogate: 2-Fluorophenol	40300		ug/kg	49800		81	25-120			
Surrogate: Nitrobenzene-d5	19100		ug/kg	24900		77	30-120			
Surrogate: Phenol-d6	44400		ug/kg	49800		89	35-120			
Surrogate: Terphenyl-d14	24400		ug/kg	24900		98	40-135			

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IUH2741 <Page 58 of 67>

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METHOD BLANK/QC DATA

POLYCHLORINATED BIPHENYLS (EPA 3545/8082)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3642 Extracted: 08/26/11										
Blank Analyzed: 08/26/2011 (11H3642-BLK1)										
Aroclor 1016	ND	50	ug/kg							
Aroclor 1221	ND	50	ug/kg							
Aroclor 1232	ND	50	ug/kg							
Aroclor 1242	ND	50	ug/kg							
Aroclor 1248	ND	50	ug/kg							
Aroclor 1254	ND	50	ug/kg							
Aroclor 1260	ND	50	ug/kg							
Surrogate: Decachlorobiphenyl	28.3		ug/kg	33.3		83	45-120			
LCS Analyzed: 08/26/2011 (11H3642-BS1)										
Aroclor 1016	256	50	ug/kg	267		96	65-115			
Aroclor 1260	224	50	ug/kg	267		84	65-115			
Surrogate: Decachlorobiphenyl	27.7		ug/kg	33.3		83	45-120			
Matrix Spike Analyzed: 08/26/2011 (11H3642-MS1)										
Aroclor 1016	256	50	ug/kg	267	ND	96	50-120			
Aroclor 1260	226	50	ug/kg	267	ND	85	50-125			
Surrogate: Decachlorobiphenyl	28.0		ug/kg	33.3		84	45-120			
Matrix Spike Dup Analyzed: 08/26/2011 (11H3642-MSD1)										
Aroclor 1016	245	50	ug/kg	267	ND	92	50-120	4	30	
Aroclor 1260	222	50	ug/kg	267	ND	83	50-125	2	30	
Surrogate: Decachlorobiphenyl	28.4		ug/kg	33.3		85	45-120			

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IUH2741 <Page 59 of 67>

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11H3639 Extracted: 08/26/11										
Blank Analyzed: 08/26/2011 (11H3639-BLK1)										
Mercury	ND	0.0020	mg/kg							
LCS Analyzed: 08/26/2011 (11H3639-BS1)										
Mercury	0.0826	0.0020	mg/kg	0.0800		103	80-120			
Matrix Spike Analyzed: 08/26/2011 (11H3639-MS1)										
Mercury	0.795	0.020	mg/kg	0.800	ND	99	70-130			
Matrix Spike Dup Analyzed: 08/26/2011 (11H3639-MSD1)										
Mercury	0.793	0.020	mg/kg	0.800	ND	99	70-130	0.3	20	
Batch: 11H3643 Extracted: 08/26/11										
Blank Analyzed: 08/26/2011 (11H3643-BLK1)										
Arsenic	ND	2.0	mg/kg							
Barium	ND	1.0	mg/kg							
Cadmium	ND	0.50	mg/kg							
Chromium	ND	1.0	mg/kg							
Lead	ND	2.0	mg/kg							
Selenium	ND	2.0	mg/kg							
Silver	ND	1.0	mg/kg							
LCS Analyzed: 08/26/2011 (11H3643-BS1)										
Arsenic	50.8	2.0	mg/kg	49.5		103	80-120			
Barium	55.6	0.99	mg/kg	49.5		112	80-120			
Cadmium	51.7	0.50	mg/kg	49.5		104	80-120			
Chromium	53.1	0.99	mg/kg	49.5		107	80-120			
Lead	51.9	2.0	mg/kg	49.5		105	80-120			
Selenium	47.2	2.0	mg/kg	49.5		95	80-120			
Silver	28.3	0.99	mg/kg	24.8		114	80-120			

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IUH2741 <Page 60 of 67>



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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Data Qualifiers
Batch: 11H3643 Extracted: 08/26/11								
Matrix Spike Analyzed: 08/26/2011 (11H3643-MS1)				Source: IUH2741-01				
Arsenic	53.1	2.0	mg/kg	49.5	6.30	95 75-125		
Barium	140	0.99	mg/kg	49.5	82.9	115 75-125		
Cadmium	50.8	0.50	mg/kg	49.5	ND	103 75-125		
Chromium	58.0	0.99	mg/kg	49.5	3.38	110 75-125		
Lead	54.7	2.0	mg/kg	49.5	3.04	104 75-125		
Selenium	46.5	2.0	mg/kg	49.5	1.45	91 75-125		
Silver	28.6	0.99	mg/kg	24.8	ND	116 75-125		
Matrix Spike Dup Analyzed: 08/26/2011 (11H3643-MSD1)				Source: IUH2741-01				
Arsenic	53.2	2.0	mg/kg	49.8	6.30	94 75-125	0.3	20
Barium	123	1.0	mg/kg	49.8	82.9	81 75-125	13	20
Cadmium	48.1	0.50	mg/kg	49.8	ND	97 75-125	5	20
Chromium	54.1	1.0	mg/kg	49.8	3.38	102 75-125	7	20
Lead	51.2	2.0	mg/kg	49.8	3.04	97 75-125	7	20
Selenium	45.6	2.0	mg/kg	49.8	1.45	89 75-125	2	20
Silver	27.0	1.0	mg/kg	24.9	ND	109 75-125	6	20

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METHOD BLANK/QC DATA

TCLP METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 1111674 Extracted: 09/15/11

Blank Analyzed: 09/15/2011 (1111674-BLK1)

Arsenic	ND	0.20	mg/l							
Barium	ND	0.20	mg/l							
Cadmium	ND	0.10	mg/l							
Chromium	ND	0.10	mg/l							
Lead	ND	0.10	mg/l							
Selenium	ND	0.10	mg/l							
Silver	ND	0.20	mg/l							

LCS Analyzed: 09/15/2011 (1111674-BS1)

Arsenic	1.95	0.20	mg/l	2.00		98	80-120			
Barium	2.10	0.20	mg/l	2.00		105	80-120			
Cadmium	2.02	0.10	mg/l	2.00		101	80-120			
Chromium	2.08	0.10	mg/l	2.00		104	80-120			
Lead	2.03	0.10	mg/l	2.00		102	80-120			
Selenium	1.76	0.10	mg/l	2.00		88	80-120			
Silver	1.03	0.20	mg/l	1.00		103	80-120			

Matrix Spike Analyzed: 09/15/2011 (1111674-MS1)

Source: IUH2741-12

Arsenic	1.99	0.20	mg/l	2.00	ND	100	75-125			
Barium	2.26	0.20	mg/l	2.00	0.243	101	75-125			
Cadmium	2.05	0.10	mg/l	2.00	0.0855	98	75-125			
Chromium	2.08	0.10	mg/l	2.00	ND	104	75-125			
Lead	2.03	0.10	mg/l	2.00	ND	101	75-125			
Selenium	1.91	0.10	mg/l	2.00	0.105	90	75-125			
Silver	1.03	0.20	mg/l	1.00	ND	103	75-125			

Batch: 1111676 Extracted: 09/15/11

Blank Analyzed: 09/15/2011 (1111676-BLK1)

Arsenic	ND	0.20	mg/l							
Barium	ND	0.20	mg/l							
Cadmium	ND	0.10	mg/l							
Chromium	ND	0.10	mg/l							
Lead	ND	0.10	mg/l							
Selenium	ND	0.10	mg/l							
Silver	ND	0.20	mg/l							

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Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

METHOD BLANK/QC DATA

TCLP METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1111676 Extracted: 09/15/11										
LCS Analyzed: 09/15/2011 (1111676-BS1)										
Arsenic	2.04	0.20	mg/l	2.00		102	80-120			
Barium	2.08	0.20	mg/l	2.00		104	80-120			
Cadmium	2.09	0.10	mg/l	2.00		104	80-120			
Chromium	2.11	0.10	mg/l	2.00		105	80-120			
Lead	2.06	0.10	mg/l	2.00		103	80-120			
Selenium	1.91	0.10	mg/l	2.00		95	80-120			
Silver	1.04	0.20	mg/l	1.00		104	80-120			
Matrix Spike Analyzed: 09/15/2011 (1111676-MS1)										
				Source: IUH2741-11						
Arsenic	1.98	0.20	mg/l	2.00	ND	99	75-125			
Barium	3.09	0.20	mg/l	2.00	1.03	103	75-125			
Cadmium	2.04	0.10	mg/l	2.00	ND	102	75-125			
Chromium	2.07	0.10	mg/l	2.00	ND	104	75-125			
Lead	2.03	0.10	mg/l	2.00	ND	101	75-125			
Selenium	1.99	0.10	mg/l	2.00	ND	100	75-125			
Silver	1.03	0.20	mg/l	1.00	ND	103	75-125			
Batch: 1111725 Extracted: 09/15/11										
Blank Analyzed: 09/15/2011 (1111725-BLK1)										
Mercury	ND	0.0020	mg/l							
LCS Analyzed: 09/15/2011 (1111725-BS1)										
Mercury	0.0780	0.0020	mg/l	0.0800		98	80-120			
Matrix Spike Analyzed: 09/15/2011 (1111725-MS1)										
				Source: IUH2741-01						
Mercury	0.0795	0.0020	mg/l	0.0800	ND	99	70-130			

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IUH2741 <Page 63 of 67>

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Report Number: IUH2741

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Received: 08/26/11

METHOD BLANK/QC DATA

TCLP METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 1111725 Extracted: 09/15/11</u>									
Matrix Spike Dup Analyzed: 09/15/2011 (1111725-MSD1)					Source: IUH2741-01				
Mercury	0.0770	0.0020	mg/l	0.0800	ND	96 70-130	3	20	

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IUH2741 <Page 64 of 67>

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GCMS CALIBRATION CHECK CRITERIA

The % recovery for the following individual compounds fell outside the $\pm 15\%$ criteria, however the average % recovery of all compounds in the calibration check solution was within $\pm 15\%$, thus meeting the overall calibration check criteria.

Compound	Footnote	Calibration Check % Recovery	Lab Number	Batch
Benzoic acid	2	68%	IUH2741-04	11H3595
Benzoic acid	2	68%	IUH2741-06	11H3595
Benzoic acid	2	68%	IUH2741-07	11H3595
Benzoic acid	2	68%	IUH2741-09	11H3595
Benzoic acid	2	68%	IUH2741-11	11H3595
Benzoic acid	2	68%	IUH2741-12	11H3595

Footnotes:

- 1 The calibration demonstrated a high bias for this compound. Samples were flagged to indicate a possible high bias in the result for this compound.
- 2 The calibration demonstrated a low bias for this compound. Samples were flagged to indicate a possible low bias in the result for this compound.

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Sushmitha Reddy
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced,
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IUH2741 <Page 65 of 67>

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

17461 Derim Avenue, Suite 100, Irvine, CA 92614 (949) 261-1022 Fax: (949) 260-3297

New World Technology
448 Commerce Way
Livermore, CA 94551
Attention: Angel Reyes

Project ID: Tuba City Remediation
Highway 160 Project
Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

DATA QUALIFIERS AND DEFINITIONS

- C** Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
- C-2** Calibration Verification recovery was below the method control limit for this analyte, however the average % difference for all analytes met method criteria. See Calibration Summary form.
- R-1** Sample analysis performed past the method-specified holding time per client's approval.
- H3** Sample was received and analyzed past holding time.
- L** Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Analyte not detected, data not impacted.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M7** The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
- MCP** No results were reported for the MS and/or MSD due to a clogged autosampler port. Batch was accepted based on Blank Spike (LCS) recoveries.
- RL1** Reporting limit raised due to sample matrix effects.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

ADDITIONAL COMMENTS

For 8260 analyses:

Due to the high water solubility of alcohols and ketones, the calibration criteria for these compounds is <30% RSD. The average % RSD of all compounds in the calibration is 15%, in accordance with EPA methods.

For 1,2-Diphenylhydrazine:

The result for 1,2-Diphenylhydrazine is based upon the reading of its breakdown product, Azobenzene.

TestAmerica Irvine
Sushmitha Roddy
Project Manager

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IUH2741 <Page 66 of 67>

TestAmerica

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New World Technology
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Project ID: Tuha City Remediation
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Report Number: IUH2741

Sampled: 06/18/11-08/24/11
Received: 08/26/11

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelap	California
EPA 1311-Met	Soil	X	X
EPA 6010B	Soil	X	X
EPA 7470A	Soil		
EPA 7471A	Soil	X	X
EPA 8082	Soil	X	X
EPA 8260B	Soil	X	X
EPA 8270C	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

TestAmerica Richland

2800 George Washington Way - Richland, WA 99354

Analysis Performed: Gross Alpha
Samples: IUH2741-12

Analysis Performed: Gross Beta
Samples: IUH2741-12

Analysis Performed: Radium 226
Samples: IUH2741-12

Analysis Performed: Thorium Isotopes
Samples: IUH2741-12

Analysis Performed: Uranium Isotopes
Samples: IUH2741-12

TestAmerica Irvine

Sushmitha Reddy
Project Manager

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IUH2741 <Page 67 of 67>

Irvine
17461 Derian Ave
Attn: Steve Lazar
Irvine, CA 92614
Phone 949.261.1022 fax 949.260.3299

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

1042741

TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Todd Davidson		Site Contact: Angel Reyes, III		Date: 8/24/2011		COC No: NWE 20110824							
New World Environmental		Tel: 636-448-8633		Lab Contact: Steve Lazar		Carrier: Fed Ex		COCs: _____ of _____ COCs							
448 Commerce Way		Analysis Turnaround Time						Job No.							
Livermore, CA 94551-5215		Calendar (C) or Work Days (W)						SDG No.							
636-448-8833 Phone		TAT (if different from Below 20 Business Days)													
NA FAX		<input type="checkbox"/> 2 weeks													
Project Name: Highway 160 Project		<input type="checkbox"/> 1 week													
Site: Tuba City, AZ		<input type="checkbox"/> 2 days													
P O #		<input checked="" type="checkbox"/> 1 day													
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOAS SW946 82608	SVDA SW946 8279C	RCRA List Metals SW946 6010B	PCR SW946 8082	Isotopic U - alpha spec	Isotopic Th - alpha spec	Re-236 - gamma spec	Crack alpha/beta - GPC	Sample Specific Notes:
SO-201108-01	08/24/11		soil						x	x					
SO-201108-02	08/24/11		soil						x	x					
SO-201108-03	08/24/11		soil						x	x					
SO-201108-04	08/24/11		soil				x	x	x	x					
SO-201108-05	08/24/11		soil						x	x					
SO-201108-06	08/24/11		soil				x	x	x	x					
SO-201108-07	08/24/11		soil				x	x	x	x					
SO-201108-08	08/24/11		soil						x	x					
SO-201108-09	08/24/11		soil						x	x					
SO-201108-10	08/24/11		soil						x	x					
SO-201108-11	08/24/11		soil						x	x					
MH-01-2011	06/18/11		soil				x	x	x	x	x	x	x	x	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other _____ Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/>															
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months															
Special Instructions/QC Requirements & Comments: Please email results to tdavidson@newworld.org Please include a comma-delimited file for the data.															
Relinquished by: Chris Kerasas		Company: AECOM		Date/Time: 1-11-2011		Received by: Natalie Theobald		Company: TestAmerica		Date/Time: 1-11-2011					
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:					
Relinquished by:		Company:		Date/Time:		Received by: Ju Bank		Company: TAI RT		Date/Time: 8/26/11 9:50					

Analytical Data Package Prepared For
TestAmerica - Irvine, CA

IUH2741

Radiochemical Analysis By

TestAmerica

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: TART

Data Package Contains 17 Pages

Report No.: 48704

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
43714		IUH2741-12 (MH-01-2011- SOIL)	J1H20419-1	MMC6A1AD	9MMC6A10	1256130
		IUH2741-12 (MH-01-2011- SOIL)	J1H20419-1	MMC6A1AA	9MMC6A10	1256131
		IUH2741-12 (MH-01-2011- SOIL)	J1H20419-1	MMC6A1AC	9MMC6A10	1256132

Certificate of Analysis

October 7, 2011

TestAmerica – Irvine, CA
17461 Dorian Avenue
Suite# 100
Irvine, California 92614

Attention: Sushmitha Reddy

Date Received by Lab	:	September 9, 2011
Sample Number/Matrix	:	One (1) Soil
SDG Number	:	43714
Project Name	:	Tuba City Remediation
Purchase Order Number	:	IUH2741

CASE NARRATIVE

I. Introduction

On September 9, 2011 one soil sample was received at the TestAmerica Richland laboratory for radiochemical analysis. Upon receipt, the sample was assigned the TestAmerica identification number as described on the cover page of the Analytical Data Package. This sample was assigned to Lot Number J11120419.

II. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in. Custody seals were in tact, initialed and dated.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information; analytical results and the appropriate associated statistical uncertainties.

The analyses requested were:

Gamma Spectroscopy
Gamma by method RL-GAM-001
Gas Proportional Counting
Gross Alpha by method RL-GPC-007
Gross Beta by method RL-GPC-007

IV. Quality Control

The analytical result for each analysis performed includes a minimum of one laboratory control sample (LCS), and one reagent blank sample analysis. Any exceptions have been noted in the "Comments" section.

V. Comments

Gamma Spectroscopy

Gamma Analysis

The LCS, batch blank, sample and sample duplicate results are within acceptance limits.

Gas Proportional Counting

Gross Alpha Analysis:

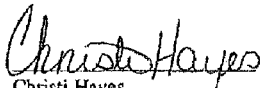
The LCS, batch blank, sample and sample duplicate results are within acceptance limits.

Gross Beta Analysis:

The LCS, batch blank, sample and sample duplicate results are within acceptance limits.

I certify that this Certificate of Analysis is in compliance with the SOW and/or NELAC, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Christi Hayes
Project Manager

Drinking Water Method Cross References

DRINKING WATER ASTM METHOD CROSS REFERENCES		
Referenced Method	Isotope(s)	TestAmerica Richland's SOP No.
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coproccipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, $R = \text{constants} * f(x, y, z, \dots)$. The components (x, y, z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1, 2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/\sqrt{n}), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) <i>u_c Combined Uncertainty.</i>	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, <i>u_c the combined uncertainty</i> . The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgndCnt}/\text{BkgndCntMin}) / \text{SCntMin})) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC/MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. $MDC = (4.65 * \text{Sqrt}((\text{BkgndCnt}/\text{BkgndCntMin}) / \text{SCntMin}) + 2.71 / \text{SCntMin}) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUncert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RER	The equation Replicate Error Ratio = $(S-D)/[\text{sqrt}(\text{TPUs}^2 + \text{TPUd}^2)]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 07-Oct-11

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 48704

SDG No: 43714

Batch	Client Id Work Order	Parameter	Result +/- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RER2
1256130	RL-GAM-001								
	IUH2741-12 (MH-01-2011-SOIL)								
	MMC6A1AD CS-137		7.18E-02 +/- 5.2E-02	<	pCi/g		7.18E-02	2.00E-01	
	RA-226		9.12E+00 +/- 1.2E+00		pCi/g		1.38E-01	1.00E+00	
	TH-228		2.61E-01 +/- 2.4E-01		pCi/g		2.25E-01		
	TH-232		8.40E-01 +/- 3.8E-01		pCi/g		4.73E-01		
	TH-234		2.29E+02 +/- 3.1E+01		pCi/g		8.35E+00		
	U-234		1.00E+01 +/- 1.3E+00		pCi/g		2.72E-01		
	U-235		1.01E+01 +/- 1.4E+00		pCi/g		4.44E-01		
	U-238		1.04E+01 +/- 1.3E+00		pCi/g		1.37E-01		
	IUH2741-12 (MH-01-2011-SOIL) D								
	MMC6A1AE CS-137		7.48E-02 +/- 5.3E-02	<	pCi/g		7.48E-02	2.00E-01	1.0
	RA-226		1.21E+01 +/- 1.6E+00		pCi/g		1.45E-01	1.00E+00	2.9
	TH-228		4.54E-01 +/- 2.8E-01		pCi/g		2.51E-01		1.1
	TH-232		1.13E+00 +/- 4.1E-01		pCi/g		4.63E-01		1.0
	TH-234		2.64E+02 +/- 4.0E+01		pCi/g		8.80E+00		1.4
	U-234		1.37E+01 +/- 1.7E+00		pCi/g		2.56E-01		3.5
	U-235		1.27E+01 +/- 1.6E+00		pCi/g		4.15E-01		2.4
	U-238		1.36E+01 +/- 1.7E+00		pCi/g		1.39E-01		3.0
1256131	RL-PRP-003								
	IUH2741-12 (MH-01-2011-SOIL)								
	MMC6A1AA ALPHA		2.54E+02 +/- 5.6E+01		pCi/g	100%	4.69E+00	5.00E+00	
	IUH2741-12 (MH-01-2011-SOIL) D								
	MMC6A1AF ALPHA		3.38E+02 +/- 7.3E+01		pCi/g	100%	4.29E+00	5.00E+00	1.8
1256132	RL-PRP-003								
	IUH2741-12 (MH-01-2011-SOIL)								
	MMC6A1AC BETA		4.31E+02 +/- 5.6E+01		pCi/g	100%	5.09E+00	5.00E+00	
	IUH2741-12 (MH-01-2011-SOIL) D								
	MMC6A1AG BETA		4.31E+02 +/- 5.5E+01		pCi/g	100%	4.76E+00	5.00E+00	0.0
	No. of Results:	20							

TestAmerica RER2 - Replicate Error Ratio = $(S-D)/[\text{sq}(\text{TPUs}) + \text{sq}(\text{TPUD})]$ as defined by ICPT BOA.rptSTLRchSaSum
mary2 V5.2.15
A2002

QC Results Summary

Date: 07-Oct-11

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 48704

SDG No.: 43714

Batch	Work Order	Parameter	Result ± Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC MDA
RL-GAM-001									
1256130 BLANK QC,									
	MMD691AA	CS-137	4.22E-02 ± 2.5E-02	<	pCi/g				4.22E-02
		RA-226	1.08E-01 ± 8.8E-02	<	pCi/g				1.08E-01
		TH-228	1.31E-01 ± 1.0E-01	<	pCi/g				1.31E-01
		TH-232	2.57E-01 ± 1.5E-01	<	pCi/g				2.57E-01
		TH-234	5.12E+00 ± 2.8E+00	<	pCi/g				5.12E+00
		U-234	1.50E-01 ± 8.9E-02	<	pCi/g				1.50E-01
		U-235	1.66E-01 ± 9.9E-02	<	pCi/g				1.66E-01
		U-238	9.07E-02 ± 8.0E-02	<	pCi/g				9.07E-02
1256130 LCS,									
	MMD691AC	CS-137	4.39E+01 ± 5.7E+00		pCi/g		101%	0.0	8.86E-02
RL-PRP-003									
1256131 BLANK QC,									
	MMD7C1AA	ALPHA	2.80E+00 ± 1.2E+00	<	pCi/g	100%			2.80E+00
1256131 LCS,									
	MMD7C1AC	ALPHA	7.90E+01 ± 1.8E+01		pCi/g	100%	94%	-0.1	2.39E+00
RL-PRP-003									
1256132 BLANK QC,									
	MMD7D1AA	BETA	3.54E+00 ± 1.6E+00	<	pCi/g	100%			3.54E+00
1256132 LCS,									
	MMD7D1AC	BETA	6.48E+01 ± 9.9E+00		pCi/g	100%	97%	0.0	3.66E+00
No. of Results: 13									

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRehQcSummary V5.2.15
A2002

FORM I
SAMPLE RESULTS

Date: 07-Oct-11

Lab Name: TestAmerica

SDG: 43714

Collection Date: 6/18/2011 5:00:00 PM

Lot-Sample No.: J11120419-1

Report No.: 48704

Received Date: 9/9/2011 10:00:00 AM

Client Sample ID: IUH2741-12 (MH-01-2011-SOIL)

COC No.:

Matrix: SOIL

IUH2741

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst MDL, Rst TotUncert	Analysis, Prep Date	Total Sa Size	Allquot Size	Primary Detector
Batch: 1256130	RL-GAM-001				Work Order: MMC6A1AD		Report DB ID: 9MMC6A10					
CS-137	7.18E-02	<	5.2E-02	5.2E-02	7.18E-02	pCi/g		-0.48 - (1.3)	9/24/11 07:55 a		45.1	GER14S1
							2.00E-01				g	
RA-226	9.12E+00		1.2E+00	1.2E+00	1.38E-01	pCi/g		(66.1)	9/24/11 07:55 a		45.1	GER14S1
							6.90E-02	(15.4)			g	
TH-228	2.61E-01		2.4E-01	2.4E-01	2.25E-01	pCi/g		(1.2)	9/24/11 07:55 a		45.1	GER14S1
							1.02E-01	(2.2)			g	
TH-232	8.40E-01		3.8E-01	3.8E-01	4.73E-01	pCi/g		(1.8)	9/24/11 07:55 a		45.1	GER14S1
							2.37E-01	(4.4)			g	
TH-234	2.29E+02		3.1E+01	3.1E+01	8.35E+00	pCi/g		(27.4)	9/24/11 07:55 a		45.1	GER14S1
							4.16E+00	(14.9)			g	
U-234	1.00E+01		1.3E+00	1.3E+00	2.72E-01	pCi/g		(36.8)	9/24/11 07:55 a		45.1	GER14S1
							1.36E-01	(15.8)			g	
U-235	1.01E+01		1.4E+00	1.4E+00	4.44E-01	pCi/g		(22.7)	9/24/11 07:55 a		45.1	GER14S1
							2.22E-01	(14.3)			g	
U-238	1.04E+01		1.3E+00	1.3E+00	1.37E-01	pCi/g		(76.2)	9/24/11 07:55 a		45.1	GER14S1
							8.86E-02	(16.4)			g	
Ratio U-234/238 = 1.0												
Batch: 1256131	RL-PRP-003				Work Order: MMC6A1AA		Report DB ID: 9MMC6A10					
ALPHA	2.54E+02		2.0E+01	5.6E+01	4.69E+00	pCi/g	100%	(54.3)	10/4/11 09:15 p		0.0503	GPC10A
							1.82E+00	(9.1)			g	
Batch: 1256132	RL-PRP-003				Work Order: MMC6A1AC		Report DB ID: 9MMC6A10					

TestAmerica MDC|MDA, Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

rptSTL RchSample
V5.2.15 A2002

FORM I
SAMPLE RESULTS

Date: 07-Oct-11

Lab Name: TestAmerica

SDG: 43714

Collection Date: 6/18/2011 5:00:00 PM

Lot-Sample No.: J11120419-1

Report No.: 48704

Received Date: 9/9/2011 10:00:00 AM

Client Sample ID: IUH2741-12 (MH-01-2011-SOIL)

COC No.:

Matrix: SOIL

IUH2741

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC/MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
BETA	4.31E+02		1.5E+01	5.5E+01	5.09E+00	pCi/g	100%	(84.7)	10/4/11 11:25 a		0.2006	GPC26A
						2.38E+00	5.00E+00	(15.7)			g	

No. of Results: 10 Comments:

FORM II

Date: 07-Oct-11

DUPLICATE RESULTS

Lab Name: TestAmerica

SDG: 43714

Collection Date: 6/18/2011 5:00:00 PM

Lot-Sample No.: J11120419-1

Report No.: 48704

Received Date: 9/9/2011 10:00:00 AM

Client Sample ID: IUH2741-12 (MH-01-2011-SOIL) D

COC No.:

Matrix: SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC/MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1256130	RL-GAM-001			Work Order: MMC6A1AE		Report DB ID: MMC6A1ER		Orig Sa DB ID: 9MMC6A10				
CS-137	7.48E-02	<	5.3E-02	5.3E-02	7.48E-02	pCi/g		0.01	9/27/11 12:14 p		40.1	GER7S1
	-3.48E-02	<	RER2 1.0			2.00E-01		0.02			g	
RA-226	1.21E+01		1.6E+00	1.6E+00	1.45E-01	pCi/g		(83.3)	9/27/11 12:14 p		40.1	GER7S1
	9.12E+00		RER2 2.9			1.00E+00		(14.7)			g	
TH-228	4.54E-01		2.8E-01	2.8E-01	2.51E-01	pCi/g		(1.8)	9/27/11 12:14 p		40.1	GER7S1
	2.61E-01		RER2 1.1					(3.3)			g	
TH-232	1.13E+00		4.1E-01	4.1E-01	4.63E-01	pCi/g		(2.4)	9/27/11 12:14 p		40.1	GER7S1
	8.40E-01		RER2 1.0					(5.5)			g	
TH-234	2.64E+02		4.0E+01	4.0E+01	8.60E+00	pCi/g		(30.7)	9/27/11 12:14 p		40.1	GER7S1
	2.29E+02		RER2 1.4					(13.2)			g	
U-234	1.37E+01		1.7E+00	1.7E+00	2.56E-01	pCi/g		(53.8)	9/27/11 12:14 p		40.1	GER7S1
	1.00E+01		RER2 3.5					(15.9)			g	
U-235	1.27E+01		1.6E+00	1.6E+00	4.15E-01	pCi/g		(30.6)	9/27/11 12:14 p		40.1	GER7S1
	1.01E+01		RER2 2.4					(15.6)			g	
U-238	1.36E+01		1.7E+00	1.7E+00	1.39E-01	pCi/g		(97.8)	9/27/11 12:14 p		40.1	GER7S1
	1.04E+01		RER2 3.0					(16.)			g	
Ratio U-234/238 = 1.0												
Batch: 1256131	RL-PRP-003			Work Order: MMC6A1AF		Report DB ID: MMC6A1FR		Orig Sa DB ID: 9MMC6A10				
ALPHA	3.38E+02		2.3E+01	7.3E+01	4.29E+00	pCi/g	100%	(78.8)	10/4/11 09:15 p		0.0503	GPC10B
	2.54E+02		RER2 1.8			5.00E+00		(9.2)			g	
Batch: 1256132	RL-PRP-003			Work Order: MMC6A1AG		Report DB ID: MMC6A1GR		Orig Sa DB ID: 9MMC6A10				

TestAmerica RER2 - Replicate Error Ratio = $(S-D)/[\sqrt{(TPUg)^2 + (TPUd)^2}]$ as defined by ICPT BOA.rptSTLRohDupV5.2 MDC/MDA.Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
.15 A2002

FORM II

Date: 07-Oct-11

DUPLICATE RESULTS

Lab Name: TestAmerica

SDG: 43714

Collection Date: 6/18/2011 5:00:00 PM

Lot-Sample No.: J11120419-1

Report No.: 48704

Received Date: 9/9/2011 10:00:00 AM

Client Sample ID: IUH2741-12 (MH-01-2011-SOIL) D

COC No.:

Matrix: SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC[MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
BETA	4.31E+02		1.5E+01	5.5E+01	4.76E+00	pCi/g	100%	(90.6)	10/4/11 11:25 a		0.2008	GPC26B
	4.31E+02		RER2 0.0			5.00E+00		(15.6)			g	

No. of Results: 10 Comments:

TestAmerica RER2 - Replicate Error Ratio = $(S-D)/[\text{sqrt}(\text{sq}(\text{TPUs})+\text{sq}(\text{TPUd}))]$ as defined by ICPT BOA.

rptSTLRchDupV5.2 MDC[MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

.15 A2002

FORM II
BLANK RESULTS

Date: 07-Oct-11

Lab Name: TestAmerica
Matrix: SOIL

SDG: 43714

Report No.: 48704

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC/MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1256130	RL-GAM-001				Work Order: MMD691AA	Report DB ID: MMD691AB						
CS-137	4.22E-02	<	2.5E-02	2.5E-02	4.22E-02	pCi/g		-0.09	9/26/11 08:25 a		52.0	GER14\$1
						2.00E-01		-0.3			g	
RA-226	1.08E-01	<	8.8E-02	8.8E-02	1.08E-01	pCi/g		0.37	9/26/11 08:25 a		52.0	GER14\$1
						1.00E+00		0.9			g	
TH-228	1.31E-01	<	1.0E-01	1.0E-01	1.31E-01	pCi/g		0.16	9/26/11 08:25 a		52.0	GER14\$1
								0.41			g	
TH-232	2.57E-01	<	1.5E-01	1.5E-01	2.57E-01	pCi/g		0.47	9/26/11 08:25 a		52.0	GER14\$1
								(1.6)			g	
TH-234	5.12E+00	<	2.8E+00	2.8E+00	5.12E+00	pCi/g		0.65	9/26/11 08:25 a		52.0	GER14\$1
								(2.4)			g	
U-234	1.50E-01	<	8.9E-02	8.9E-02	1.50E-01	pCi/g		0.81	9/26/11 08:25 a		52.0	GER14\$1
								(2.7)			g	
U-235	1.65E-01	<	9.9E-02	9.9E-02	1.65E-01	pCi/g		-0.39	9/26/11 08:25 a		52.0	GER14\$1
								-(1.3)			g	
U-238	9.07E-02	<	8.0E-02	8.0E-02	9.07E-02	pCi/g		0.55	9/26/11 08:25 a		52.0	GER14\$1
								(1.3)			g	
Ratio U-234/238 = 2.4												
Batch: 1256131	RL-PRP-003				Work Order: MMD7C1AA	Report DB ID: MMD7C1AB						
ALPHA	2.80E+00	<	1.2E+00	1.2E+00	2.80E+00	pCi/g	100%	-0.03	10/4/11 09:15 p		0.0518	GPC10C
					1.14E+00	5.00E+00		-0.16			g	
Batch: 1256132	RL-PRP-003				Work Order: MMD7D1AA	Report DB ID: MMD7D1AB						
BETA	3.54E+00	<	1.6E+00	1.6E+00	3.54E+00	pCi/g	100%	0.24	10/4/11 11:25 a		0.202	GPC26D
					1.64E+00	5.00E+00		(1.1)			g	

TestAmerica MDC/MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
rptSTLRchBlank
V5.2.15 A2002

FORM II
BLANK RESULTS

Date: 07-Oct-11

Lab Name: TestAmerica

SDG: 43714

Matrix: SOIL

Report No. : 48704

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC(MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Allquot Size	Primary Detector
No. of Results: 10	Comments:											

FORM II
LCS RESULTS

Date: 07-Oct-11

Lab Name: TestAmerica

SDG: 43714

Matrix: SOIL

Report No.: 48704

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC(MDA)	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 1256130	RL-GAM-001					Work Order: MMD691AC							
CS-137	4.39E+01		5.7E+00	5.7E+00	8.85E-02	pCi/g		4.34E+01	6.14E-03	101%	9/27/11 12:14 p	54.51	GER14S1
							Rec Limits:	70	130	0.0		g	
Batch: 1256131	RL-PRP-003					Work Order: MMD7C1AC							
ALPHA	7.90E+01		7.8E+00	1.8E+01	2.39E+00	pCi/g	100%	8.38E+01	8.47E-01	94%	10/4/11 09:15 p	0.0543	GPC10D
							Rec Limits:	75	125	-0.1		g	
Batch: 1256132	RL-PRP-003					Work Order: MMD7D1AC							
BETA	6.48E+01		5.3E+00	9.9E+00	3.66E+00	pCi/g	100%	6.65E+01	2.56E+00	97%	10/4/11 11:25 a	0.2035	GPC26C
							Rec Limits:	75	125	0.0		g	
No. of Results: 3			Comments:										

TestAmerica Bias - (Result/Expected) - 1 as defined by ANSI N13.30.

rptSTLResLcs
V5.2.15 A2002

Subcontract Order - TestAmerica Irvine (IUH2741)

Please enter the following code into the Job PO Number field for automated UDZ transfer files: SDG#IRV-IUH2741

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Sushmitha Reddy
Client: New World Technology

RECEIVING LABORATORY:

TestAmerica Richland
2800 George Washington Way
Richland, WA 99354
Phone: (509) 375-3131
Fax: (509) 375-5590
Project Location: California
Receipt Temperature: _____ °C Ice: Y / N

Analysis	Units	Due	Expires	Interlab Price Surch	Comments
----------	-------	-----	---------	----------------------	----------

Sample ID: IUH2741-12 (MH-01-2011 - Soil)

Sampled: 08/18/11 17:00

OK past HT.

MMCLA

Gross Alpha-O	pCi/L	09/19/11	07/02/11 17:00	\$35.00	0%
Gross Beta-O	pCi/L	09/19/11	07/02/11 17:00	\$35.00	0%
Radium 226-O	pCi/L	09/19/11	06/17/12 17:00	\$110.00	0%
Thorium Isotopes - OUT	pCi/L	09/19/11	06/17/12 17:00	\$0.00	0%
Uranium Isotopes-O	pCi/L	09/19/11	06/17/12 17:00	\$0.00	0%

Containers Supplied:

8 oz Jar (B)

SDG# 43714
LOT # J11120419
Report: 10/7/11
TAI



J11120419

Released By

9/8/11
Date/Time

Released By
TestAmerica Laboratories, Inc.

Date/Time

Received By

9/8/11 1700
Date/Time

Received By

9-9-11 1000
Date/Time

15

TAI

Page 1 of 1

Sample Check-in List

Date/Time Received: 9-9-11 / 1000 GM Screen Result: (Airlock) 104 Initials JS
(Sample Receiving) CS Initials JS

Client: DAI SDG #: 43714 NA [] SAF #: NA47

Lot Number: J1I120419

Chain of Custody #: IUH2741

Shipping Container ID: NA47

Samples received inside shipping container/cooler/box Yes JS Continue with 1 through 4. Initial appropriate response.
No [] Go to 5, add comment to #16.

1. Custody Seals on shipping container intact? Yes JS No [] No Custody Seal []

2. Custody Seals dated and signed? Yes JS No [] No Custody Seal []

3. Cooler temperature: _____ °C NA JS

4. Vermiculite/packing materials is ICE NA [] Wet JS Dry []

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes JS No []

6. Number of samples received (Each sample may contain multiple bottles): 1

7. Containers received: 1 x bag glass jar

8. Sample holding times exceeded? NA [] Yes [] No JS

9. Samples have:
_____ tape _____ hazard labels
_____ custody seals JS appropriate sample labels

10. Matrix:
JS A (FLT, Wipe, Solid, Soil) _____ I (Water)
_____ S (Air, Niosh 7400) _____ T (Biological, NI-63)

11. Samples:
JS are in good condition _____ are leaking
_____ are broken _____ have air bubbles (Only for samples requiring no head space)
_____ Other _____

12. Sample pH appropriate for analysis requested Yes [] No [] NA JS
(If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ added and pH after addition on table overleaf)

RPL ID # of preservative used: _____

13. Were any anomalies identified in sample receipt? Yes [] No JS

14. Description of anomalies (include sample numbers): NA

THE LEADER IN ENVIRONMENTAL TESTING

16. Additional Information: _____

Sample Custodian: J. Beck / 1050 Date: 9-9-11

☒ No action necessary; process as is

Project Manager Christa Hayes Date 9/13/11

[illegible]