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Columbia Fuel Site
5801 Bluff Road
Hopkins, South Carolina 29061-9121
USA

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Your ref:
Our ref: LTR-RAC-16-36

June 14, 2016

SUBJECT: WESTINGHOUSE LICENSE RENEWAL APPLICATION – REQUESTED DOCUMENT (TAC #: L33317)

Per your request, Westinghouse Electric Company LLC (Westinghouse) is pleased to submit the enclosed document in support of our license renewal activity.

If you have any questions, please contact me at (803) 647-3338.

Nancy Blair Parr

Nancy Blair Parr, Manager
Licensing
Westinghouse Columbia Fuel Fabrication Facility
Docket 70-1151 License SNM-1107

Enclosure: AECOM Report – 229 pages

cc:

U. S. Nuclear Regulatory Commission, Region II
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Attn: Mr. Thomas Vukovinsky

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Attn: Mr. Christopher Ryder, Mail Stop T-4A60

AECOM
101 Research Drive
Columbia, SC 29203

803.254.4400 tel
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September 24, 2015

Ms. Addie Walker
State Remediation Section
Bureau of Land and Waste Management
SC Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

RE: Revised Remedial Investigation Report
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina

Dear Ms. Walker:

AECOM has received your comments dated September 15, 2015 to the Remedial Investigation Report dated December 2013. Four of the comments addressed references to figure numbers on pages 3-4 and 3-5 of the RI Report. The figure numbers have been corrected in the text of the attached RI Report, as requested.

If you have any questions or need additional information please feel free to contact me.

Sincerely,

AECOM Technical Services, Inc.

Charles K. Suddeth

Charles K. Suddeth, PG
Project Manager
charles.suddeth@aecom.com
803-254-4400

Attachment
cc: Cynthia Logsdon, Westinghouse Columbia Fuel Fabrication Facility

Remedial Investigation Report

Westinghouse Columbia Fuel Fabrication Facility
5801 Bluff Road
Hopkins, South Carolina

Prepared for:
Westinghouse Columbia Fuel Fabrication Facility
5801 Bluff Road
Hopkins, South Carolina 29061-9121

Prepared by:

AECOM Technical Services, Inc.
810 Dutch Square Blvd.
Suite 202
Columbia, SC 29210

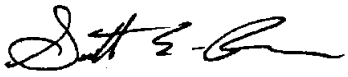
AECOM Project No. 60302740

December 31, 2013

Remedial Investigation Report

Westinghouse Columbia Fuel Fabrication Facility
5801 Bluff Road
Hopkins, South Carolina

Prepared By Charles K. Suddeth, P.G., Senior Hydrogeologist



Reviewed By Scott Ross, P.G., Project Director

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AS	Air sparge
bgs	below ground surface
CFFF	(Westinghouse) Columbia Fuel Fabrication Facility
COPC	Chemicals of Potential Concern
CVOC	Chlorinated Volatile Organic Compound
cis-1,2-DCE	cis-1,2-Dichloroethene
Davis and Floyd	Davis and Floyd, Inc.
DPT	Direct Push Technology
Earth Tech	Earth Tech, Inc.
EPA	(U.S.) Environmental Protection Agency
ft	foot, or feet
MCL	Maximum Contaminant Level
mg/L	milligrams per liter
msl	Mean sea level
Mrem/yr	Millirems per year
NRC	(U.S.) Nuclear Regulatory Commission
O&M	Operation and Maintenance
PCE	tetrachloroethene
pCi/G	picocuries per gram
pCi/L	picocuries per liter
Rust	Rust Environment & Infrastructure
SCDHEC	South Carolina Department of Health and Environmental Control
Scfm	Standard cubic feet per minute
Shealy	Shealy Environmental Services
S&ME	Soil and Material Engineers, Inc.
SSI	Screening Site Inspection
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compound
TCE	Trichloroethene
TPH	Total Petroleum Hydrocarbons
ug/L	Micrograms per liter
UST	Underground Storage Tank
VC	Vinyl Chloride
VOC	Volatile Organic Compound
WEGS	Westinghouse Environmental and Geotechnical Services, Inc.
WWTP	Wastewater Treatment Plant

1.0 INTRODUCTION

1.1 Purpose of Report

Numerous environmental investigations have been performed since 1980 at the Westinghouse Columbia Fuel Fabrication Facility (CFFF) located in Hopkins, South Carolina. The investigations have included assessments of groundwater, surface water, soil, and sediment, and have resulted in the delineation of chemicals of potential concern (COPCs) in these media. A total of 41 permanent monitoring wells exist at the site as a result of these investigations. Reports have been submitted to the South Carolina Department of Health and Environmental Control (SCDHEC) following each assessment. The CFFF has routinely sampled groundwater and surface water and reported the results to SCDHEC. Additionally, remedial activities have been performed for groundwater and in source areas.

During a meeting in August 2008, the CFFF indicated that the site may be a candidate for a Groundwater Mixing Zone as set forth in State Regulation R.61-68 through the use of a Consent Agreement prepared by SCDHEC. The CFFF first requested a mixing zone in 1988 at the suggestion of SCDHEC, but the request was denied in 1993 based on concerns about groundwater contaminants at the site. Based on the results of the December 2008 groundwater sampling, the CFFF again indicated the desire to request a groundwater mixing zone for management of identified impacts.

On March 13, 2013, SCDHEC issued a letter indicating that reports from 2010 through 2012 had been reviewed. The letter indicated that future assessments and remedial actions would be evaluated in accordance with the Environmental Protection Agency (EPA) Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA, dated 1988. The letter acknowledged that the fluoride, nitrate, and volatile organic compound (VOC) plumes had been delineated and that fluoride and nitrate sources had been identified. The letter indicated that Gross Beta and Gross Alpha trends and sources were not identified; VOC concentrations had been increasing since the Air Sparge/Soil Vapor Extraction (AS/SVE) system had been turned off for two years, and that “most of the referenced reports submitted to date consist primarily of data without maps or interpretation”. Therefore, SCDHEC requested submittal of a comprehensive Remedial Investigation (RI) Report for the CFFF consistent with the EPA guidance. The letter also requested a Baseline Risk Assessment (BRA). The letter indicated that following approval of the RI and BRA, SCDHEC would require a Feasibility Study (FS) to evaluate potential remedial alternatives.

This document serves as the comprehensive RI report. As discussed with SCDHEC, The BRA will be submitted as a separate document at a later date. The RI Report is intended to summarize investigative activities performed to date, present data documenting the site characteristics, and summarize the extent of impacts. SCDHEC and the CFFF have agreed that data tables and isoconcentration maps for COPCs will include data from 2004 to present.

1.2 Site Background

1.2.1 Site Description

The site is located at 5801 Bluff Road (SC Hwy 48) in a rural portion of Richland County near Hopkins, South Carolina (Figure 1-1). The CFFF property consists of approximately 1,200 acres (Figure 1-2). The plant building and the wastewater treatment plant (WWTP) are situated on the northern portion of the property. The plant building is located approximately 2,700 feet southwest of Bluff Road.

The WWTP is located near the southwest corner of the plant building. Process water is temporarily stored, sampled, and treated (if necessary) in the lagoons at the WWTP. One process water waste stream utilizes the East Lagoon. A second waste stream utilizes the West 2 and West 1 lagoons. Both waste streams then are sent to either the North or South lagoons. Sanitary wastewater is treated in the sanitary lagoon followed by chlorination and de-chlorination. All treated wastewater is then discharged to the Congaree River at a location approximately three miles southwest of the CFFF. The wastewater is discharged through a diffuser at the base of the river channel.

A small man-made pond, which existed prior to construction of the CFFF, is located approximately 500 feet southwest of the WWTP. A small spring discharges into the northern edge of the pond. No surface water outflow occurs from the pond.

Sunset Lake is located immediately west and south of the pond approximately 900 feet southwest of the WWTP (Figures 1-1, 1-2, and 1-3). Sunset Lake is located within a natural oxbow lake and consists of upper and lower sections. Mill Creek flows through Sunset Lake. A manmade dam approximately 1,700 feet south of the WWTP backs up water in Mill Creek, creating Lower Sunset Lake (Figure 1-3). A second manmade dam cuts across Mill Creek approximately 1,000 feet southwest of the WWTP, creating Upper Sunset Lake.

The southern portion of the property, including the pond, Mill Creek, and both portions of Sunset Lake are located within the floodplain of Mill Creek and the Congaree River. The plant/WWTP area and the floodplain are separated by a bluff, approximately 20 feet high, located immediately south of the WWTP.

1.2.2 Site History

The CFFF was constructed in 1969. Prior to construction the site consisted of farmland, woodlands, and floodplain. A drawing from 1968 indicates that the main plant building and the WWTP lagoons were part of the original construction. The main activity has been the assembly of fuel rods for the nuclear power industry.

1.2.3 Previous Investigations/Evaluations

1.2.3.1 1980 Groundwater Investigation

The first environmental investigation was performed at the site in 1980 when a fish kill occurred in the manmade pond southwest of the WWTP. Elevated concentrations of fluoride and ammonia nitrogen were detected by the CFFF in surface water samples collected from the pond and the spring feeding the pond. Davis and Floyd, Inc. (Davis and Floyd) performed a groundwater investigation in 1980 following the surface water sampling. The groundwater investigation included the installation of 28 monitoring wells (W-6 through W-33) between the WWTP and the manmade pond (Figure 1-3). The results were presented in the Report on Groundwater Investigations (Davis and Floyd, 1980).

Elevated concentrations of fluoride and ammonia-nitrogen were detected in groundwater samples collected from several monitoring wells located between the WWTP and the pond. Davis and Floyd concluded that the sources of the fluoride and ammonia nitrogen were the concentrated waste treatment tanks, the ammonia storage tank area, and the waste treatment lagoons in the WWTP.

1.2.3.2 1982 Groundwater Hydrology Study

Following the Davis and Floyd investigation, the CFFF and SCDHEC questioned the need for additional monitoring wells and whether it was likely that deeper aquifers beneath or adjacent to the site could become impacted. Soil and Material Engineers (S&ME) was contracted by Davis and Floyd to review previous studies and make recommendations as to whether additional hydrogeologic investigations were warranted. During the study, S&ME reviewed existing site and regional hydrogeologic data, performed borehole geophysical logging, and completed one deep stratigraphic boring.

The Groundwater Hydrology Study (S&ME, 1982) identified three hydrogeologic units beneath the CFFF, Unit I, Unit II, and Unit III. Unit I, the uppermost unit, was identified as the Terrace Aquifer system. Unit II was identified as a confining unit in the upper portion of the Black Mingo Formation. Unit III was identified as a confined aquifer in the Black Mingo Formation. The groundwater flow direction was determined to be to the south-southwest toward the spring, pond, and Sunset Lake. The Study indicated that the number and depth of the monitoring wells were adequate to monitor groundwater quality.

1.2.3.3 Unknown Studies in 1984 and 1985

Monitoring wells currently designated as W-40 and W-45 were installed in the shallow aquifer in 1984 and well W-3A was installed in the Black Mingo Aquifer in 1985 by Law (RUST, 1995). However, AECOM does not have a report detailing the reasons or findings from the well installations.

1.2.3.4 Groundwater Mixing Zone Request

A report entitled Ground-Water Mixing Zone Request (S&ME, 1988) was submitted to SCDHEC in response to the Department's suggestion that criteria for the establishment of a mixing zone possibly could be met. The report indicated that the four criteria for establishment of a groundwater mixing zone at

the facility could be met based on the groundwater quality data available at the time. Subsequent correspondence by the CFFF resulted in a proposed boundary for the mixing zone and proposed alternate maximum contaminant limits for ammonia, nitrate, and fluoride.

After an initial favorable determination, subsequent correspondence by SCDHEC raised several issues that had been contested by the CFFF and remained unresolved. Among these issues were requests by SCDHEC for further study of the lateral extent of groundwater contamination in the shallow aquifer in the WWTP area, further study of the competency of the underlying confining unit, further study of the discharge of groundwater to surface water at the facility, and the addition of parameters other than ammonia, nitrate, and fluoride.

1.2.3.5 USEPA Screening Site Inspection

The EPA performed a Screening Site Inspection (SSI) in 1989. The SSI involved the collection of groundwater, surface water, soil, sediment, and blank samples for analyses of organic and inorganic constituents. The SSI Report (EPA, 1989) indicated that a variety of organic and inorganic compounds were detected in groundwater samples collected at the facility.

Following submittal of the SSI report, meetings were held between SCDHEC, the CFFF, and SEC Donohue to discuss the results of the SSI and the status of the mixing zone request. Concern with the validity of some of the results of the SSI were raised by both SCDHEC and the CFFF. The basis for the concern was the manner that groundwater samples were obtained during the SSI. High turbidity was noted in the samples. Other concerns were also raised about the results representing one sampling event and that conclusions were based on estimated concentration values. During the meeting it was agreed that additional investigation was warranted to verify the presence, or absence, of organic compounds.

1.2.3.6 Solvent Extraction Area Investigations

In November 1991, Westinghouse Environmental and Geotechnical Services, Inc. (WEGS) completed hand auger borings and collected soil samples below the concrete floor of the plant building in the solvent extraction area where nitric acid is used. Cracks detected in the floor indicated that soil below the building may have been impacted. The soil samples were analyzed for gross alpha by the CFFF. The soil sampling methods and soil boring records were presented in the Report of Soil Sampling (WEGS, 1992). Results of analyses of the soil samples were presented by the CFFF to the U.S. Nuclear Regulatory Commission (NRC) on January 23, 1992. Elevated gross alpha concentrations were detected in depth-discrete soil samples from two borings. As a result of the meeting, the CFFF agreed to perform additional soil and groundwater sampling and analyses outside of the solvent extraction area to assess potential environmental impacts. These data were submitted to SCDHEC.

Soil and groundwater samples were collected by SEC Donohue Environment & Infrastructure (SEC Donohue) outside of the solvent extraction area during a second investigation in February 1992. Soil samples were collected using hand-augers and direct-push technology (DPT) and groundwater samples

were collected using DPT and one permanent monitoring well. The samples were analyzed by a laboratory contracted by the CFFF for nitrate and radioactivity. The results of the second investigation were presented in the Report of Soil and Groundwater Sampling (SEC Donohue, 1992). Gross alpha in soil exceeded concentrations considered above "regulatory concern" in two soil samples. Nitrate concentrations in soil were relatively low, which indicated that soil had not been impacted with nitric acid. Gross alpha in groundwater was relatively low and generally below the EPA maximum contaminant level (MCL), which did not indicated a significant impact. The highest nitrate concentration in groundwater was detected in a groundwater sample collected near the WWTP in the vicinity of the previously documented nitrate plume. The study concluded that it was not likely that a significant impact to groundwater had occurred in the vicinity of the solvent extraction area.

1.2.3.7 Confirmatory Groundwater Investigation

A confirmatory groundwater investigation was performed by SEC Donohue in 1992 based on the meetings following the SSI report. The investigation included redevelopment of existing monitoring wells, replacement of one monitoring well and the installation of two new monitoring wells, collection of filtered and unfiltered groundwater samples for metals analysis, analysis of aluminum and turbidity to determine relative sediment content of each sample, and two rounds of sampling and analysis for verification. The results were presented in the Confirmatory Ground-Water Investigation Report (SEC Donohue, 1992).

The confirmatory groundwater investigation indicated elevated concentrations of fluoride, ammonia, and nitrate in groundwater samples collected from wells near the WWTP. Chemical analyses indicated that tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE) were detected in groundwater samples from two other monitoring wells. One of the monitoring wells was located adjacent to the Oil House which was used to store oils and previously to store solvents. The Oil House was located near the west side of the plant building. Concentrations of metals during the confirmatory investigation were within the range detected in the background samples and generally below MCLs. The Confirmatory Groundwater Investigation Report recommended that the establishment of a groundwater mixing zone in the vicinity of the WWTP should proceed for the fluoride-ammonia-nitrate plume. The report indicated that further investigation may be necessary for the VOCs detected.

1.2.3.8 Chlorinated Solvent Assessment

Based on the results of the Confirmatory Groundwater Investigation, SCDHEC denied granting a groundwater mixing zone and requested that the CFFF assess the source and horizontal and vertical extent of the chlorinated VOCs (CVOCs) in soil and groundwater in 1993. The Chlorinated Solvent Assessment was performed by Rust Environment and Infrastructure (Rust) in late 1993 and early 1994. The assessment included redeveloping three monitoring wells, collecting depth-discrete groundwater samples from 18 borings using a Hydropunch™ sampler, installation and sampling of five new monitoring wells, sampling of eight existing wells, and collection of surface water samples from six locations. The results were presented in the Chlorinated Solvent Assessment Report (Rust, 1994).

The results indicated that elevated concentrations of CVOCs were detected in groundwater samples in the vicinity of the Oil House and areas downgradient. The report indicated that the source of the CVOCs was most likely the Oil House, which was used to store oils and previously to store drums of solvents prior to 1980. The Chlorinated Solvent Assessment Report indicated the partial horizontal and vertical extent of CVOCs in groundwater at the site.

1.2.3.9 Remedial Design Investigation/Conceptual Design Report

Based on the results of the Chlorinated Solvent Assessment, a remedial design investigation was performed by Rust in 1995 as part of a remedial design plan for remediation of CVOCs at the site. The investigation included well abandonments, DPT soil and groundwater sampling, monitoring well and test recovery well installations, groundwater sampling, surface water sampling, and hydraulic testing. The results were presented in the Conceptual Design Report (Rust, 1995).

The report included refined interpretations of the site hydrogeology, source area soil and groundwater results, DPT and monitoring well groundwater results, surface water results, and aquifer hydraulic testing results. The results indicated that CVOCs were detected in soil samples adjacent to the Oil House with elevated concentrations in one sample. Elevated concentrations of total petroleum hydrocarbons (TPH) were detected in one soil sample near the former location of a diesel fuel underground storage tank (UST). Elevated concentrations of fluoride, ammonia, and nitrate were detected in groundwater samples collected within and downgradient of the WWTP. The report indicated that the objectives of remediation would be to limit contaminant migration and remove COPCs through the interception and treatment of groundwater from the leading edge of the plume. The report recommended additional aquifer testing, and review of treatment and disposal options.

The CFFF and Rust met with SCDHEC in 1995 to review the Conceptual Design Report and to discuss practical approaches for groundwater remediation of CVOCs. Groundwater pump and treat technologies were determined to be infeasible. In-situ technologies, specifically air sparging and soil vapor extraction, were considered.

1.2.3.10 Pilot Test for AS and SVE

Rust conducted a pilot test in 1996 to determine the effectiveness of an AS/SVE system for remediation of CVOCs at the site. One AS test well, three AS piezometers, one SVE test well, and three SVE piezometers were constructed in the vicinity of monitoring well W-26 for the pilot test. Air sparging and soil vapor extraction were tested separately initially, and then in combination. The results of the tests were positive for application of both technologies at the site. The pilot test results were presented in the Pilot Test Report (Rust, 1996).

1.2.3.11 Source Investigation

On behalf of the CFFF, AECOM performed a source investigation in the wastewater lagoon area in 2011. The source investigation included DPT borings and groundwater sampling, wastewater sampling from five lagoons, and analysis of groundwater and wastewater samples for fluoride and nitrate.

The results of the source investigation were presented in the Source Investigation Report (AECOM, 2011) and indicated that fluoride and nitrate concentrations in groundwater were elevated in the vicinity of the North, South, and East Lagoons and surrounding facilities. Additionally, nitrate was slightly elevated in groundwater in the vicinity of the West II Lagoon. Fluoride and nitrate concentrations were relatively low adjacent to the West I and Sanitary Lagoons. The report indicated that there was no clear evidence that the wastewater lagoons were a continuing source of fluoride in groundwater at the facility, but that groundwater had been impacted by nitrate from wastewater seepage from one or both of these two lagoons.

1.2.4 Previous Remediation Activities

1.2.4.1 AS/SVE System

An AS/SVE pilot study was conducted in 1996 that indicated AS/SVE technology was effective for removing CVOCs from the shallow aquifer and unsaturated zone. A full-scale AS/SVE system was constructed in 1997 in downgradient areas of the CVOC plume. The system consisted of a southern area of five AS wells and four SVE wells and a northern area of six AS wells and five SVE wells as depicted on Figure 1-4. Monitoring wells W-26, W-42, W-48, and W-49 are located in the southern AS/SVE area and monitoring wells W-33, RW-2, and W-41 are located in the northern AS/SVE area.

The AS wells are piped below grade to a compressed air system located at the southern equipment pad. The design flow rate to each well is approximately 15 to 20 standard cubic feet per minute (scfm) if one zone is operating and 10-15 scfm if two zones are operating. The maximum operating pressure at the well head controls should not exceed 30 psi under normal operating conditions.

The SVE wells are piped below grade to a vacuum extraction system. A blower extracts air from the ground through the system and exhausts the air to a stack on site without treatment. The SVE well head controls are mounted on pipe racks located on the southern and northern equipment pads. Based on the pilot study, the design flow rate to each well is approximately 35-45 scfm at 20-30 inches of water. Operation and maintenance (O&M) procedures were documented in a manual dated May 1998. The maintenance and calibration operating procedure was most recently updated by the CFFF in March 2007.

The operation of the system resulted in decreasing CVOC concentrations in a number of monitoring wells. Of the wells indicating decreasing concentration trends, wells W-15, W-16, W-26, and W-48 are located along the escarpment. Well W-48 indicated a dramatic change, where TCE, DCE, and vinyl chloride (VC) concentrations no longer exceed MCLs and the PCE concentration decreased significantly between April 1995 and December 2008. This dramatic decrease was likely due to the proximity of well W-48 to the southern AS/SVE area. Other wells indicating decreasing concentration trends are located near the northern AS/SVE area. Well W-41R indicated a dramatic change, which is likely due to the proximity of well W-41R to the northern AS/SVE area.

The estimated total was reduced approximately 76 percent eleven years after the AS/SVE system was installed in 1997. Apparent mass reduction in the areas influenced by the AS/SVE system was

97 percent, in the southern AS/SVE area, and 44 percent in the northern AS/SVE area. The mass removal in these areas is likely attributable to air sparging, biodegradation of the CVOCs, and other natural attenuation mechanisms.

The system was turned off in 2011 when the system performance appeared to have reached a plateau phase with reduced efficiency and decreased ability to reduce contaminant concentrations, as described in Section 1.2.3.13.

1.2.4.2 Remediation Monitoring During Operation of AS and SVE

The AS/SVE system was constructed in 1997 and operated from 1998 until 2011 as described in Section 1.2.4.1. The CFFF performed groundwater monitoring during this time and submitted monitoring reports to SCDHEC.

1.2.4.3 Response to SCDHEC Comments and Five-Year AS/SVE Performance Monitoring Evaluation

SCDHEC provided comments in a letter dated July 11, 2007 following a file review and review of the most recent groundwater monitoring report. In the letter, SCDHEC requested isoconcentration maps and historical groundwater data tables in future monitoring reports, a five year performance review of the AS/SVE system, and proposed remedial alternatives for fluoride, ammonia, and nitrate.

Earth Tech Inc. (Earth Tech) responded to the July 11 letter on October 25, 2007 in the Response to July 11, 2007 DHEC comments and Five-Year AS/SVE Performance Monitoring Evaluation (Earth Tech, 2007). In the response, Earth Tech provided data spreadsheets and isoconcentration maps as requested. Earth Tech also provided a five-year performance monitoring evaluation in the submittal. The evaluation indicated that the extent of the PCE and TCE plumes had stabilized but noted that PCE and TCE concentrations had gradually increased at two monitoring wells located near the AS/SVE system. The operation of the system had controlled the migration of PCE and TCE; however, the overall performance was less evident and less effective on PCE and TCE compared to VC and DCE. Earth Tech recommended shutting down the system and developing a monitored natural attenuation (MNA) demonstration plan to evaluate CVOC concentration trends. Earth Tech recommended that the groundwater mixing zone approach was favorable for the fluoride-nitrate-ammonia plumes.

1.2.4.4 Remediation Performance Evaluation and Application for Groundwater Mixing Zone

A meeting was held with SCDHEC, the CFFF, and AECOM Technical Services, Inc. (AECOM) on August 28, 2008. It was discussed during the meeting that the CFFF would sample various wells and surface water locations for analysis of CVOCs, gross alpha, gross beta, ammonia, fluoride, and nitrate. Isoconcentration maps for these parameters would be created and a groundwater mixing zone application would be prepared using the latest data. In addition, a performance evaluation of the existing AS/SVE remediation system would be prepared to include calculations of mass removal and evaluations of remediation methods.

A summary of the meeting was submitted in the Remediation Performance Evaluation and Application for Groundwater Mixing Zone (AECOM, 2009). The evaluation indicated that the system performance appeared to have reached a plateau phase with reduced efficiency and decreased ability to reduce contaminant concentrations. Evaluations of CVOC, radiological, and inorganic data were included. AECOM recommended shutting down the system and developing an MNA strategy within the framework of a groundwater mixing zone. The evaluation concluded that requirements for hydrogeologic control for a groundwater mixing zone were satisfied.

1.2.4.5 Response to August 30, 2010 Letter

In December 2010, on behalf of the CFFF, AECOM provided the Response to August 30, 2010 Letter (AECOM, 2010) to the SCDHEC letter of August 30, 2010 concerning review of the Remediation Performance Evaluation and Application for Groundwater Mixing Zone dated April 24, 2009. The response indicated that the CFFF would cease operation of the AS/SVE system in 2011 and perform quarterly groundwater monitoring for CVOCs for one year.

SCDHEC had stated that gross alpha and gross beta radiological activity tended to fluctuate with no clear trends. The response indicated that contrary to SCDHEC's statement in the August 30, 2010 letter, gross beta activity did not exceed the MCL of 4 millirems per year (mrem/yr) as demonstrated in Section 1.2 and Table 4 of the April 24, 2009 submittal (AECOM, 2009). Speciation of gross alpha and gross beta activity was forwarded by the CFFF as requested by SCDHEC. The response indicated that further investigation of gross alpha and gross beta activity in groundwater was not necessary.

Based on fluoride and nitrate concentrations in groundwater in the WWTP area, the CFFF agreed to perform a source investigation in the vicinity of the WWTP consisting of DPT borings and groundwater sampling for analysis of fluoride and nitrate. The investigation would also include collection of water samples from nearby wastewater impoundments and discharge pipes, and review of any past integrity testing of pipes and liners in an attempt to identify potential sources of leakage. The response indicated that plans to inhibit fluoride plume migration to surface water at Sunset Lake would begin with source remediation in the WWTP. If fluoride concentrations in groundwater in the vicinity of Sunset Lake did not subside, other steps may be considered.

1.2.4.6 Liner Replacement in Wastewater Lagoons

The CFFF has replaced the liners in four of the six WWTP lagoons since 2008 to prevent wastewater from being released from the lagoons into the shallow aquifer. The new liners consisted of 80 mil HDPE. The liners in the West II and West I Lagoons were replaced in December 2008 and February 2009, respectively. The liners in the South and North Lagoons were replaced in January 201 and February 2012, respectively.

1.3 Report Organization

The RI Report summarizes the investigative activities performed at the site. The remainder of this report has been prepared according to the outline presented below.

Section 2.0 Site Investigation Activities summarizes field activities that were conducted recently in support of this RI report. This section describes the rationale for where samples were collected and the procedures used to collect samples. It also includes maps depicting historical and RI sample locations.

Section 3.0 Physical Characteristics of the Study Area describes the physical characteristics of the study area in terms of surface features, surface-water hydrology, geology, hydrogeology, and ecology using information gathered during literature searches and previous investigations.

Section 4.0 Nature and Extent of COPCs presents information regarding the nature and extent of constituents present in soils, sediment, surface water, and groundwater at the site. This section summarizes results of previous investigations as well as data collected for this RI report and presents the data in table and map format.

Section 5.0 Contaminant Fate and Transport discusses the potential route of contaminant migration and the factors affecting contaminant persistence and migration.

Section 6.0 Conclusions and Recommendations presents a summary of RI findings and conclusions regarding the nature and extent of contaminants and recommendations regarding the need for further investigations or remediation.

Section 7.0 References lists the references cited in this report.

Tables and **Figures** for each section are presented at the end of the report.

Appendices - includes historical CVOC data (Appendix A) and copies of the laboratory analytical reports for sediment sampling performed in 2013 (Appendix B).

2.0 SITE INVESTIGATION ACTIVITIES

Multiple investigation activities have occurred at the site from 1980 to 2011. Additionally, the CFFF has performed routine groundwater monitoring at the site from 1997 to 2013. The results of these investigations, including a description of field activities and sample locations, have been submitted in previous reports. Therefore, the site investigation activities conducted during these investigations and sampling efforts are briefly discussed in this section with references to the previous reports.

Limited site investigation activities were performed in 2013 in support of this RI. These include sediment sampling, water level measurements, and surveying. The field activities associated with these investigations are described in this section.

2.1 Soil Investigations

2.1.1 EPA Screening Site Inspection

The EPA performed an SSI in 1989. A total of two subsurface soil quality samples (WH-24 and WH-27) were collected as part of the SSI. Subsurface soil sample WH-24 was collected from a depth interval of 10-12.4 feet below ground surface (bgs) at a location on the north side of the plant building. Subsurface soil sample WH-27 was collected from a depth interval of 12-13.5 feet bgs at a location on the west side of the plant building. While the report (EPA, 1989) did not provide details on the site investigation methods, it indicated that the sampling was "conducted in accordance with the Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual". The soil quality results from the SSI are discussed in Sections 4.2.1 and 4.2.2 of this report.

2.1.2 Solvent Extraction Area Investigation

In November 1991, soil samples were obtained from 13 borings below the concrete floor of the plant building in the solvent extraction area where nitric acid is used. Soil samples were collected at two-foot intervals using a hand auger to depths ranging from 3.5 feet to 13.5 feet. The soil samples were analyzed by the CFFF and were presented by the CFFF to the NRC on January 23, 1992.

Based on the results of the soil samples collected in November 1991, soil samples were collected outside of the solvent extraction area during February 1992. Soil samples were collected using hand-augers and DPT at depth intervals of 2-3, 5-6, and 8-9 feet. The samples were analyzed by a contract laboratory for nitrate and radioactivity. Details regarding the soil sampling were included in the Report of Soil and Ground-Water Sampling Outside of the Solvent Extraction Area (SEC Donohue, 1992). The soil quality results of the Solvent Extraction Area investigations are discussed in Section 4.2.3.

2.1.3 Remedial Design Investigation 1995

A soil quality investigation was performed as part of the remedial design investigation in 1995 to further delineate the horizontal and vertical extent of VOCs in soil in the vicinity of the Oil House, which was suspected to be the source area of the CVOC plume. The results of the Chlorinated Solvent Assessment

(Rust, 1994) had indicated that the source of the chlorinated solvents was most likely the Oil House, which was used to store oils and previously to store drums of solvents prior to 1980.

A total of 18 DPT soil borings were completed in the vicinity of the Oil House using a Geoprobe® rig. Soil samples were collected from various depths between 3 and 11 feet bgs and analyzed for VOCs and TPH by an on-site mobile laboratory. Select samples were shipped to an off-site laboratory for analysis for VOCs and TPH. Details regarding the site investigation activities for the Remedial Design Investigation were included in the Conceptual Design Report (Rust, 1995). The soil quality results of the Remedial Design Investigation are discussed in Section 4.2.2.

2.2 Surface Water and Sediment Investigations

2.2.1 EPA Screening Site Inspection

A total of 8 surface water and 8 sediment samples were collected from 7 locations during the EPA SSI performed in 1989. The samples were collected from the ditch system that drains the plant area, the spring feeding the pond, and areas of Sunset Lake. The surface water and sediment samples were co-located. The samples were analyzed for VOCs, semi-volatile organic compounds (SVOCs), pesticides, PCBs, metals, cyanide, fluoride, ammonia, nitrate-nitrite, nitrogen, and total Kjeldahl nitrogen. While the report (EPA, 1989) did not provide details on the site investigation methods, it indicated that the sampling was "conducted in accordance with the Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual". The surface water/sediment quality results from the SSI are discussed in Sections 4.4.1 and 4.4.2.

2.2.2 Chlorinated Solvent Assessment

A total of 6 surface water samples were collected as part of the Chlorinated Solvent Assessment performed in late 1993 and early 1994. One surface water sample was collected from Sunset Lake and 5 from the drainage ditches in the plant area. The samples were analyzed for VOCs.

Details regarding the surface water sampling methods and results were presented in the Chlorinated Solvent Assessment Report (Rust, 1994). The surface water quality results of the Chlorinated Solvent Assessment are also discussed in Section 4.4.1.

2.2.3 Remedial Design Investigation 1995

A total of 7 surface water samples were collected as part of the remedial design investigation in 1995 to further delineate the horizontal and vertical extent of CVOCs at the site. One surface water sample was collected from Sunset Lake and 5 from the drainage ditches in the plant area at the same locations sampled as part of the previous Chlorinated Solvent Assessment. One additional surface water sample was collected further downstream in the drainage ditch that flows toward Upper Sunset Lake. The samples were analyzed for VOCs, TPH, fluoride, ammonia-nitrogen, and nitrate. Details regarding the surface water sampling methods and results were presented in the Conceptual Design Report (Rust,

1995). The surface water quality results of the Remedial Design Investigation are discussed in Sections 4.4.1 and 4.4.2.

2.2.4 Remedial Investigation 2013

Based on conversations with SCDHEC in 2013, the CFFF agreed that a total of 10 sediment samples would be collected at locations coinciding with previous surface water samples as part of the RI. Sediment samples SED-2 through SED-8 were collected from the ditches that drain the plant and WWTP area (Figure 1-3). Sediment samples SED-1 and SED-9 were collected adjacent to the dike separating Upper and Lower Sunset Lakes, respectively. Sample SED-10 was collected from the southeast corner of the pond.

The sediment samples were collected in accordance with methods described in the EPA Region 4 Surface Water Sampling Operating Procedure – SESDPROC-201-R1 and Sediment Sampling Operating Procedure – SESDPROC-200-R2. To reduce the potential of cross-contamination, sampling started with the downstream sample point and continued upstream. The sediment samples were collected using a stainless steel hand auger from the 6-inch depth interval at each location.

The sampling tools were cleaned before sampling began, after each sample was collected, and after the last sample was collected in accordance with the Field Equipment Cleaning and Decontamination Operating Procedure – SESDPROC-205-R2. The decontamination of the tools included washing with soap and tap water, and rinsing with tap water followed by a double rinse with deionized water. The tools were allowed to air-dry before re-use.

The sediment samples were delivered by AECOM to Shealy Environmental Services (Shealy) in West Columbia, South Carolina for analysis for fluoride, nitrate, TCL VOCs, gross alpha, and gross beta. Shealy performed the laboratory analyses for fluoride, nitrate, and VOCs. The sediment samples to be analyzed for gross alpha and gross beta were shipped by Shealy to General Engineering Laboratories (GEL) in Charleston, South Carolina for analysis.

The sediment sampling results are discussed in Sections 4.4.1 and 4.4.2.

2.3 Groundwater Investigations

2.3.1 1980 Groundwater Investigation

A total of 28 monitoring wells (W-6 through W-33) were installed by Davis and Floyd in areas between the WWTP and the pond (Figure 1-3). Monitoring wells W-6 through W-17 were originally constructed during Phase I of the Davis and Floyd investigation and monitoring wells W-18 through W-33 were constructed during Phase II of the Davis and Floyd investigation. Groundwater samples were collected from the monitoring wells and analyzed for ammonia and fluoride. Details regarding the groundwater sampling methods and results were presented in the Report on Groundwater Investigations (Davis and Floyd, 1980). The groundwater quality results from monitoring wells installed during the 1980 groundwater investigation are discussed in Section 4.3.1.1 of this report for samples collected after 2004.

2.3.2 EPA Screening Site Inspection

A total of 9 groundwater samples were collected from 7 existing monitoring wells and two temporary monitoring wells during the EPA SSI performed in 1989. Six of the groundwater samples were collected from existing monitoring wells in the WWTP area. One groundwater sample was collected from an existing monitoring well located upgradient from the site near the entrance to the facility. One temporary well was located near the north end of the plant building and the other was located near the west side of the plant building. The samples were analyzed for VOCs, SVOCs, pesticides, PCBs, metals, cyanide, fluoride, ammonia, nitrate-nitrite, nitrogen, and total Kjeldahl nitrogen. While the report (EPA, 1989) did not provide details on the site investigation methods, it indicated that the sampling was "conducted in accordance with the Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual". The results of the EPA SSI are discussed in Sections 4.3.1 and 4.3.2.

2.3.3 Solvent Extraction Area Investigation

In February 1991, a total of 19 groundwater samples were collected from 9 DPT borings and one permanent monitoring well just outside of the solvent extraction area. Two groundwater samples were collected from each DPT boring at different depth intervals. One permanent monitoring well was installed and a groundwater sample was collected. The groundwater samples were analyzed for gross alpha, gross beta, and nitrate.

Details regarding the groundwater sampling were included in the Report of Soil and Ground-Water Sampling Outside of the Solvent Extraction Area (SEC Donohue, 1992). The results of the Solvent Extraction Area investigations are also discussed in Section 4.3.3.

2.3.4 Confirmatory Groundwater Investigation

Groundwater samples were collected from 9 monitoring wells on two separate occasions in 1992 during the Confirmatory Groundwater Investigation. Seven of the wells were sampled to determine water quality in the shallow aquifer. A shallow aquifer background well and one was a deep well were also sampled. The samples were analyzed for VOCs, SVOCs, total and dissolved metals, turbidity, fluoride, nitrate, and ammonia. Details regarding the groundwater sampling were included in the Confirmatory Ground-Water Investigation Report (SEC Donohue, 1992). The results of the Confirmatory Ground-Water Investigation are also discussed in Sections 4.3.1 and 4.3.2.

2.3.5 Chlorinated Solvent Assessment

Groundwater samples were collected from multiple locations using a Hydropunch™ tool and from monitoring wells in late 1993 and early 1994 during the Chlorinated Solvent Assessment. A total of 30 Hydropunch™ groundwater samples were collected from 18 locations to determine the extent of VOCs in groundwater. Shallow samples were collected from depths ranging from 12 to 17 feet bgs and deep samples were collected from depths ranging from 22 to 31 feet bgs. Additionally, groundwater samples were collected from 13 new and existing monitoring wells. The samples were analyzed for VOCs. Details

regarding the groundwater sampling were included in the Chlorinated Solvent Assessment Report (Rust, 1994). The results of the Chlorinated Solvent Assessment are also discussed in Section 4.3.2.

2.3.6 Remedial Design Investigation

Groundwater samples were collected from DPT borings at 23 locations and from monitoring wells in 1995 during the Remedial Design Investigation. Samples were collected from various depths to delineate VOCs in groundwater. Additionally, groundwater samples were collected from all but one of the monitoring wells at the site. The DPT groundwater samples were analyzed for VOCs and TPH. The monitoring well groundwater samples were analyzed for VOCs, TPH, fluoride, ammonia-nitrogen, and nitrate. Details regarding the groundwater sampling were included in the Conceptual Design Report (Rust, 1995). The results of the Remedial Design Investigation are also discussed in Sections 4.3.1 and 4.3.2.

2.3.7 Remediation Monitoring by Westinghouse

The CFFF performed groundwater monitoring for VOCs form 1998 to 2011 during the operation of the AS/SVE system. Details regarding the groundwater sampling were included in monitoring reports submitted by the CFFF to SCDHEC during this time. The results of the remediation monitoring are also discussed in Sections 4.3.1 and 4.3.2.

2.3.8 Source Investigation

The source investigation performed in the wastewater lagoon area in 2011 included groundwater sampling from 20 DPT borings. The samples were analyzed for fluoride and nitrate. A total of 40 DPT groundwater samples were collected from the 20 locations to determine the extent of fluoride and nitrate in the upper and lower portions of the shallow aquifer at the site. Details regarding the groundwater sampling were included in the Source Investigation Report (AECOM, 2011). The results of the Source Investigation are also discussed in Section 4.3.1.2.

2.4 Surveying

A South Carolina licensed surveyor completed a site survey to determine the horizontal location and elevation of the monitoring wells and sediment sample locations at the facility. Northing and Easting coordinates were determined using survey-grade GPS and referenced to the North American Datum 1983. Vertical elevations (ground surface and top of well casing) were determined using traditional differential leveling and referenced to the North American Vertical Datum 1988 (NAVD88).

The Northing and Easting Coordinates were used by AECOM to accurately depict the monitoring well and sediment sample locations shown on Figure 1-3 and subsequent figures. The elevations at the top of the well casings were used to determine groundwater elevations and are included on Table 3-1 along with the northing and easting coordinates for each well.

3.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

Section 3.0 describes the physical setting of the Site in terms of its topography, surrounding land use, surface water hydrology, geology, hydrogeology, and ecology and was prepared using information derived from published reports, previous site investigations, and the RI.

3.1 Surface Features

The plant building and the WWTP are situated within a fenced area on the northern portion of the property along with hay fields and wooded areas (Figure 1-2). The plant building is located approximately 2,700 feet southwest of Bluff Road. Site access is limited to the main entrance off Bluff Road which, connects to security facilities, the plant area, and other gravel and dirt roads that cross the site property outside the fenced area.

The WWTP is located near the southwest corner of the plant building (Figure 1-3). Process water is temporarily stored, sampled, and treated (if necessary) in the lagoons at the WWTP. Wastewater from one plant process is sent to the East Lagoon. Wastewater from a second plant process utilizes the West 2 and West 1 lagoons. Wastewater from both processes is then sent to either the North or South lagoons (Figure 1-3). Sanitary wastewater is treated in the sanitary lagoon followed by chlorination and de-chlorination. Treated wastewater from all three processes is then discharged to the Congaree River at a location approximately three miles southwest of the CFFF. The wastewater is discharged through a diffuser at the base of the river channel.

A small man-made pond, which existed prior to construction of the CFFF is located approximately 500 feet southwest of the WWTP (Figure 1-3). A small spring discharges into the northern edge of the pond. No surface water outflow occurs from the pond.

Sunset Lake is located immediately west and south of the pond approximately 900 feet southwest of the WWTP (Figures 1-1, 1-2, and 1-3). Sunset Lake is located within a natural oxbow lake and consists of upper and lower sections. Mill Creek flows through Sunset Lake. A manmade dam approximately 1,700 feet south of the WWTP backs up water in Mill Creek, creating Lower Sunset Lake (Figure 1-3). A second manmade dam cuts across Mill Creek approximately 1,000 feet southwest of the WWTP, creating Upper Sunset Lake.

Surface drainage at the facility flows toward several drainage ditches that cross the plant and surrounding areas. One drainage ditch originates at Bluff Road approximately 800 feet northwest of the plant entrance, flows southwest before turning northwest just before the plant area (Figure 1-3). This drainage ditch then flows northwest, west, and southwest and discharges into an upstream area of Mill Creek approximately 3,000 feet west of the plant. A second drainage ditch originates near the northeast corner of the plant building and flows around the west side of the plant and WWTP area. Two other ditches intersect east of the southern plant area after flowing under plant parking areas and from Bluff Road approximately 1,000 feet southeast of the plant entrance, respectively. The resulting drainage ditch from the intersection of the two previously mentioned ditches then flows southwest to the plant area and then

west until it intersects the ditch that flows around the west side of the plant and WWTP area. The resulting ditch then flows generally to the west until discharging into an upstream area of Upper Sunset Lake (Mill Creek) approximately 1,500 feet west of the plant (Figure 1-3).

The plant building and WWTP areas are relatively flat and are located on an ancient terrace, known as the Okefenokee Terrace of the Upper Coastal Plain physiographic province (RUST, 1994). Based on past and present survey data and online data from Richland County, the plant and WWTP area lies at elevations ranging from 136 to 138 feet above mean sea level (msl). The southern portion of the property lies within the floodplain of Mill Creek and the Congaree River. Mill Creek is a tributary of the Congaree River. The terrace and floodplain are separated by a bluff, approximately 20 feet high, located immediately south of the WWTP. The previously mentioned pond and Sunset Lake are located within the floodplain Congaree River floodplain. Mill Creek flows through an ancient river channel system.

3.2 Surrounding Land Use

The CFFF property is bordered to the north and northeast by Bluff Road (Figure 1-2). The South Carolina Recycling and Disposal, Inc. (SCRDI) Superfund Site is located across Bluff Road to the northeast. Undeveloped forested lands are located to the north and northeast of Bluff Road and the SCRDI Site. Undeveloped forested land is located east of the property. Undeveloped forested lands and Mill Creek are located south and west of the site within the Congaree River Floodplain. Undeveloped forested land and agricultural land is located west and northwest of the site.

3.3 Surface Water Hydrology

The areas surrounding the CFFF are located within the Congaree River Basin. These areas are included within Watershed 03050110-03 according to the SCDHEC Watersheds web site. This watershed consists of the Congaree River and its tributaries from the origin of the Congaree River to Cedar Creek located approximately four miles southeast of the site.

Surface water drainage north and east of Bluff Road flows northeast toward Myers Creek, which then flows southeast, crosses Bluff Road approximately two miles southeast of the site, and continues toward the southeast before intersecting Cedar Creek at the Congaree National Park. Surface water drainage south and west of Bluff Road flows toward Mill Creek, located within the Congaree River floodplain (Figures 1-2 and 1-3).

Drainage at the site flows through a storm water drainage system that discharges to the drainage ditches described in Section 3.1, or occurs as overland flow directly to the drainage ditches. The two drainage ditches in the plant and WWTP area intersect west of the Sanitary Lagoon. The resulting drainage ditch flows generally to the west until discharging into an upstream area of Upper Sunset Lake (Mill Creek) approximately 1,500 feet west of the plant (Figure 1-3). Mill Creek eventually flows into the Congaree River approximately three miles south of the site.

3.4 Geology

The geology of the site was previously described in the Conceptual Design Report (Rust, 1995). The Rust report summarized geologic findings from all previous reports dating back to 1980. The site geology described in the Rust report is included in this section.

3.4.1 Regional Geology

The CFFF is located in the Upper Coastal Plain physiographic province. The Upper Coastal Plain of South Carolina is bounded to the southeast by the Orangeburg Scarp and by the crystalline rocks of the Piedmont province to the northwest. The sedimentary units of the Coastal Plain form a wedge of accumulation that thickens from the fall line to the coast. These units directly overlie crystalline basement composed of metamorphic and igneous rock.

The uppermost geologic formations in the site area are either Pleistocene terrace material composed of mixtures of sand, silt, and alluvial clay, or river alluvium in the Congaree River floodplain (Newcome, 2003). The Black Mingo Formation occurs below the shallow sediments and, in the site area, consists of an upper silt/clay unit and a lower sand unit. The Middendorf Formation occurs below the Black Mingo Formation and overlies bedrock. The Middendorf Formation generally consists of multi-colored clay interbedded with fine- to coarse-grained sand. The bedrock, which occurs at a depth of approximately 240 to 290 feet in the area of the CFFF, is typically composed of igneous and metamorphic rock.

3.4.2 Site Geology

The plant building and the WWTP are located on an ancient terrace, known as the Okefenokee terrace, of the Upper Coastal Plain physiographic province (S&ME, 1982). The southern portion of the plant property lies on the Wicomico terrace within the floodplain of Mill Creek. The terraces are separated by a 20-foot high bluff, known as the Surry Scarp, located immediately south of the WWTP.

Three hydrogeologic cross-sections were prepared during previous investigations at locations indicated on Figure 3-1. Figures 3-2, 3-3, and 3-4 present the three cross-sections depicting the geology of the site. The uppermost geologic formation at the site is composed of a stratified, but poorly sorted, mixture of alluvial clay, silt, sand, and gravel. These sediments are assigned to the Okefenokee Formation, which underlies the Okefenokee terrace north of the scarp, and the Wicomico Formation, which underlies the Wicomico terrace south of the scarp (Colquhoun, 1965). The shallow sediments generally occur to a depth of 20 to 40 feet at the plant site, depending on topography, and can be differentiated into an upper firm clayey, silty sand unit (10 to 20 feet thick) and a lower loose sand and silty sand unit (also 10 to 20 feet thick). The Black Mingo Formation occurs below the shallow sediments and consists of an upper silt/clay unit and a lower sand unit. The thickness of the Black Mingo Formation beneath the plant site is estimated to be 75 to 100 feet. The Middendorf Formation, which occurs below the Black Mingo Formation and overlies bedrock, has not been encountered in borings drilled at the site.

3.5 Site Hydrogeology

The sediments occurring beneath the site can be divided into four hydrogeologic units. The uppermost hydrogeologic unit is the shallow aquifer which includes the sediments of the Okefenokee and Wicomico Formations. Groundwater in the shallow aquifer occurs under unconfined (water-table) conditions where the water table generally is a subdued replica of the topography. Thus, groundwater in the shallow aquifer generally flows from areas of higher topography in the vicinity of the plant building to areas of lower topography in the floodplain of Mill Creek. Beneath the shallow aquifer is a confining bed composed of dry silt/clay and brittle shale of the upper Black Mingo Formation. Figures 3-1 through 3-3 indicate that the upper silt/clay unit (the Black Mingo confining bed) ranges in thickness from 39 feet at well W-3A to 83 feet at well W-50. Beneath the confining bed is an artesian sand aquifer within the lower Black Mingo Formation known as the Black Mingo aquifer. Below the Black Mingo aquifer is the Middendorf Aquifer System which also contains artesian sand aquifers.

Figure 3-5 is a structure contour map of the top of the Black Mingo Formation. The map indicates that the surface of the Black Mingo confining bed forms a structural ridge plunging to the south-southeast. West Lagoon 2 and the sanitary lagoon in the wastewater treatment area lie above the axis of the ridge. Interpretation of the data indicates that the flow of dense fluids in the shallow aquifer is being influenced by the configuration of the top of the confining bed.

Figures 3-6 and 3-7 are water table surface maps of the shallow aquifer based on water levels measured on April 18, 1995 and June 6, 2013, respectively. Water level data for June 6, 2013 is included on Table 3-1. The maps indicate that the direction of ground-water flow in the vicinity of the WWTP is southwest toward Mill Creek Swamp and Sunset Lake. The Conceptual Design Report indicated that radial hydraulic gradients in the shallow aquifer within the map area range from 0.006 to 0.03 feet/feet based on the 1995 data (Rust, 1995). Based on the 2013 water level data, hydraulic gradients in the shallow aquifer range from 0.005 to 0.027 feet/feet. Using the 1995 and 2013 water table surface maps, the hydraulic gradient in the surficial aquifer averaged 0.018 feet per foot (ft/ft).

Figure 3-8 is a potentiometric map of the Black Mingo Aquifer for water levels measured at wells W-3A, W-49, and W-50 on June 6, 2013. Based on triangulation of the water-levels, the direction of groundwater flow in the Black Mingo aquifer is southwest. The radial hydraulic gradient in the Black Mingo aquifer is 0.004 feet/feet.

Hydraulic testing was performed on monitoring and recovery wells at the site in 1995 to determine the hydraulic conductivity of the shallow aquifer (Rust, 1995). Falling head slug tests were performed on monitoring wells W-26, W-33, W-35, and W-41. Aquifer tests were performed at recovery wells RW-1 and RW-2. Values of hydraulic conductivity obtained from the slug tests ranged from 0.59 ft/day at well W-33 to 15 ft/day at well W-35, with an average of 7.0 ft/day. The aquifer test at well RW-1 yielded an estimate of transmissivity of 282 ft^2/day. The hydraulic conductivity obtained from this transmissivity value is 12.8 ft/day, based on an aquifer thickness of 22 feet. Based on early time-drawdown and recovery data, the aquifer test yielded transmissivity estimates of 12.2 ft^2/day and 7.9 ft^2/day, respectively. The hydraulic conductivities obtained from these transmissivity values are 0.81 ft/day and 0.53 ft/day, respectively,

based on an aquifer thickness of 15 feet. The average hydraulic conductivity from the aquifer tests was 6.74 ft/day, which is close to the average hydraulic conductivity determined from the slug test data.

Estimates of the horizontal groundwater flow velocity were calculated using a modified form of the Darcy equation:

$$V = (K/n) * (dh/dl)$$

where,

V = horizontal groundwater flow velocity (ft/day)

K = horizontal hydraulic conductivity (ft/day)

n = effective porosity (assume 0.3)

dh/dl = hydraulic gradient (ft/day)

The Conceptual Design Report (Rust, 1995) presented average linear flow velocities in the shallow aquifer ranging from 0.01 ft/day (3.65 ft/year) to 1.5 ft/day (550 ft/year). These velocities were based on the lowest hydraulic conductivity and gradient of 0.5 ft/day and 0.006, respectively, and the highest hydraulic conductivity and gradient of 15 ft/day and 0.03, respectively and an estimated porosity of 30 percent (0.30). Using averages for the hydraulic conductivity (7.0 ft/day) and gradient (0.018 ft/ft), the average linear flow velocity in the shallow aquifer was estimated to be 0.42 ft/day ((7.0 ft/day / 0.3) * 0.018) or 153 ft/year.

The potential for flow between the shallow aquifer and the Black Mingo aquifer is downward in the vicinity of well clusters W-42/W-49 and W-40/W-50 at vertical hydraulic gradients of 0.04 and 0.1 feet/feet, respectively for the 1995 and 2013 water level data. The potential for vertical flow in the vicinity of well cluster W-4/W-3A was upward at a vertical hydraulic gradient of 0.05 feet/feet in 1995. A water level was not measured at well W-4 in 2013. However, low moisture conditions and low vertical hydraulic conductivities (less than 10^{-7} cm/sec, S&ME, 1982) throughout the 39- to 83-foot thickness of the Black Mingo confining bed preclude significant transfer of fluid between the shallow aquifer and the Black Mingo aquifer. The potentiometric surfaces of both aquifers for the 1995 data are depicted on the hydrogeologic cross-sections (Figures 3-1 through 3-4).

There is a dynamic relationship between surface water in the ditches that transect the site and ground water in the shallow aquifer. The bottom of the upper reaches of the ditches is often above the water table and thus the ditches at these locations are dry, as demonstrated during sampling at location SW-6 in 1995. Runoff from precipitation that enters the dry portions of the ditches may infiltrate to the water table, temporarily recharging the shallow aquifer. The bottom of the lower reaches of the ditches is below the water table and continually receives discharge of ground water from the shallow aquifer. Intermediate portions of the ditches may recharge the shallow aquifer during low water-table conditions and may receive ground-water discharge during high water-table conditions.

3.6 Site Ecology

The CFFF is located in a rural area of Richland County near Hopkins, South Carolina. The site ecology in this section is described for two different settings, the upland areas near the plant building and WWTP and the floodplain and wetland areas on the southern portion of the property.

3.6.1 Upland Areas

The northern portion of the property is relatively flat upland areas. The habitat of the northern portion of the property is a cultivated hay field between the plant building and Bluff Road, and forested upland west, north, and east of the plant. Woody vegetation in this region includes areas of planted pines and areas of mixed pines and hardwoods.

3.6.2 Floodplain/Wetland Areas

The southern portion of the property lies within the floodplain of Mill Creek and the Congaree River. The terrace (upland areas) and floodplain are separated by a bluff, approximately 20 feet high, located immediately south of the wastewater treatment plant. The habitat of this area includes wetlands associated with the manmade pond and Sunset Lake, Mill Creek, and the unnamed stream that flows from the drainage ditches at the site, and flat areas of slightly higher elevation. Woody vegetation in this region includes bald cypress and other wetland-type trees in the wetland areas, and planted pines on the flat areas of higher elevation within the floodplain.

4.0 NATURE AND EXTENT OF CONTAMINATION

This section of the RI Report presents and discusses the nature and extent of the COPCs in terms of their sources, occurrence, and distribution at the Site and by media. The data summarized in this section was generated from multiple investigations and routine sampling efforts performed at the site between 1980 and 2013. The results of the historical investigations and sampling events have been previously submitted to SCDHEC. Many of these historical reports have been referenced in this RI Report.

4.1 Sources

The results of the investigation activities that have occurred at the site from 1980 to 2011 have identified three sources of soil and/or groundwater contamination. The original groundwater investigation and several subsequent investigations focused on the WWTP as the first source area investigated at the site. The EPA SSI in 1989 and subsequent investigations for VOCs during 1992-1995 indicated that the Former Oil House was the second source investigated. Soil and groundwater investigations were performed in 1991 and 1992 in the solvent extraction area to investigate soils and groundwater for nitrate, gross alpha, and gross beta.

4.1.1 Wastewater Treatment Plant

The WWTP is located near the southwest corner of the plant building (Figure 1-3). The WWTP was first suspected as a source in 1980 when a fish kill occurred in the manmade pond, due to elevated concentrations of fluoride and ammonia nitrogen in surface water samples from the pond and the spring feeding the pond. A total of 28 monitoring wells (W-6 through W-33) were installed in areas between the WWTP area and the pond (Figure 1-3). Davis and Floyd concluded that the sources of the fluoride and ammonia nitrogen in groundwater and the pond were the concentrated waste treatment tanks, the ammonia storage tank area, and the waste treatment lagoons in the WWTP. Several subsequent groundwater investigations focused on the WWTP. COPCs associated with the WWTP include fluoride, nitrate, ammonia, gross alpha, and gross beta. The extent of these COPCs is discussed in Sections 4.2.1, 4.3.1, 4.4.2, and 4.4.3.

4.1.2 Former Oil House

The former Oil House was located near the west side of the plant building (Figure 1-3) and was used prior to 1980 to store petroleum products and drums of solvents. The EPA SSI in 1989 first identified the presence of VOCs in groundwater at the site (EPA, 1989). Additional work to delineate the source and extent of VOCs were performed during the Confirmatory Ground-Water Investigation (SEC Donohue, 1992), Chlorinated Solvent Assessment (Rust, 1994), and Remedial Design Investigation (Rust, 1995). The former Oil House was identified as the likely source of VOC contamination in the Chlorinated Solvent Assessment Report (Rust, 1994). COPCs associated with the former Oil House include PCE, TCE, cis-1,2-DCE, and VC. The extent of these COPCs is discussed in Sections 4.2.2, 4.3.2, and 4.4.1.

4.1.3 Solvent Extraction Area

The Solvent Extraction Area is located within the plant building near the southwest corner (Figure 4-1). Nitric acid is used as a solvent inside the Solvent Extraction Area. In 1991 soil samples were obtained below the concrete floor in the Solvent Extraction Area where cracks had been detected. The soil samples were analyzed by the CFFF for gross alpha. The sampling locations and methods were presented in the Report of Soil Sampling, Solvent Extraction Area (WEGS, 1992). The results were submitted to the NRC and SCDHEC by the CFFF. Based on the results of the 1991 sampling, soil and groundwater samples were collected outside of the Solvent Extraction Area in 1992 and analyzed for nitrate and radioactivity (SEC Donohue, 1992). The extent of these COPCs is discussed in Sections 4.2.3 and 4.3.3.

4.2 Soils and Vadose Zone

Soil sampling was performed at the site as part of the EPA SSI in 1989, the Solvent Extraction area investigations in 1991-1992, and the remedial design investigation in 1995.

4.2.1 Wastewater Treatment Plant

Soil quality sampling has not been performed specifically for the WWTP. However, subsurface soil samples were collected from three soil borings, HC-7 through HC-9, located at the north end of the WWTP in 1992 as part of the Solvent Extraction Area investigation (Figure 4-1). The soil quality results are included in Table 4-1 and in the Report of Soil and Ground-Water Sampling Outside of the Solvent Extraction Area (SEC Donohue, 1992). Gross alpha in subsurface soil ranged from 7.3 picocuries per gram (pCi/g) to 30.5 pCi/g in borings HC-7 through HC-9 (Figure 4-1). The report indicated that gross alpha below 30 pCi/g were considered “below regulatory concern”. Relatively low nitrate concentrations were detected ranging from 0.1 milligrams per kilogram (mg/kg) to 1.2 mg/kg, indicating that subsurface soils in the vicinity of the north end of the WWTP were not impacted by the WWTP.

4.2.2 Former Oil House

Subsurface soil sampling was performed in 1995 using DPT methods in the vicinity of the Former Oil House during the Remedial Design Investigation, and the results were presented in the Conceptual Design Report (Rust, 1995). This sampling was performed after the Chlorinated Solvent Assessment (Rust, 1994) delineated CVOCs in groundwater and indicated that the Former Oil House was the likely source of CVOC contamination in groundwater at the site. Some of these borings were completed near a former diesel UST, which was located approximately 75 feet east of the Former Oil House.

Soil quality results for total VOCs and TPH are summarized in Table 4-2 and are presented on Figures 4-2 and 4-3, respectively. CVOCs detected in the soil samples included PCE, TCE, and cis-1,2-DCE. The highest concentration of total VOCs (4.5 mg/kg) occurred in the shallow soil sample at location GP-1 adjacent to the southeast corner of the Former Oil House (Figure 4-2). Of the VOCs detected in this sample, PCE was the highest at a concentration of 4.1 mg/kg. Figure 4-3 indicates the highest TPH concentration (7,200 mg/kg) occurred in the soil sample from boring GP-11 near the location of the former

diesel UST. Other soil samples in the vicinity of the Former UST and the Former Oil House also indicated concentrations of TPH.

The Conceptual Design Report (Rust, 1995) indicated that PCE concentrations in soil in the immediate vicinity of the Former Oil House could be the source of CVOCs detected in groundwater and that TPH detected near the former UST and the Former Oil House could be the source of TPH detected in groundwater.

4.2.3 Solvent Extraction Area

The Solvent Extraction Area is located near the southwest corner of the plant building (Figure 4-1). The locations of the hand-auger borings completed in 1991 are presented on Figure 4-4. As previously stated, the gross alpha results were not included in the Report of Soil Sampling, Solvent Extraction Area (WEGS, 1992). However, the Report of Soil and Groundwater Sampling Outside of the Solvent Extraction Area (SEC Donohue, 1992) indicated that gross alpha in soil samples collected in the 1991 investigation ranged from 1.9 pCi/G to 2,711 pCi/G, with the highest concentrations occurring in soil samples from borings HA-1 through HA-4. As shown on Figure 4-4, borings HA-1 through HA-4 were located along the inside of the outer (southwestern) plant building wall.

The DPT and hand-auger boring locations completed in 1992 are presented on Figure 4-1. Soil quality results for gross alpha and nitrate are summarized in Table 4-1. Gross alpha ranged from 4.1 pCi/G to 44.3 pCi/G. The report indicated that the regulatory philosophy at the time considered gross alpha below 30 pCi/G to be “below regulatory concern”. Gross alpha exceeded 30 pCi/G in two samples: the sample from 7.5-9 feet at HC-7 (30.5 pCi/G) and the sample from 5-6 feet at HA-14 (44.3 pCi/G). The report concluded that the elevated gross alpha detected for samples from HA-14 and HA-15 (28.8 pCi/G) likely indicated an impact from the solvent extraction area. Gross alpha concentrations were relatively low in soil samples collected from borings outside the plant building wall opposite previous borings HA-1 through HA-4 (Figure 4-4). Therefore, it was presumed that the elevated gross alpha detected at borings HA-14 and HA-15 represented only a minor localized impact to soil immediately outside of the solvent extraction area (Figure 4-1). The relatively low nitrate concentrations (Table 4-1) indicated that contamination by nitric acid was not occurring.

4.3 Groundwater

Groundwater sampling has been performed extensively at the site over the past 32 years. Based on historical data and recent correspondence with SCDHEC, the COPCs in groundwater at the CFFF include fluoride, nitrate, gross alpha, gross beta, PCE, TCE, cis-1,2-DCE, and vinyl chloride (VC).

4.3.1 Wastewater Treatment Plant Groundwater Results

4.3.1.1 Historical Monitoring Well Data

The original monitoring wells at the site were installed adjacent to the WWTP and areas downgradient. Many of these wells have been replaced and other new wells have been installed in this area.

Groundwater quality data for the WWTP prior to 1996 has been previously submitted in the following reports:

- Report on Groundwater Investigations (Davis & Floyd, 1980);
- Ground-Water Mixing Zone Request (S&ME, 1988);
- Westinghouse Screening Site Inspection Final Report (EPA, 1989);
- Confirmatory Ground-Water Investigation Report (SEC Donohue, 1992);
- Chlorinated Solvent Assessment Report (Rust, 1994); and
- Conceptual Design Report (Rust, 1995).

The Groundwater Mixing Zone Request (S&ME, 1988) included historical data from 1980 through 1987 and isoconcentration maps for fluoride and nitrate for dates in 1980, 1984, and 1987. Groundwater quality data for the WWTP after 1996 has been previously submitted by the CFFF to SCDHEC in regular monitoring reports.

SCDHEC and the CFFF agreed that the historical groundwater quality data discussed in this report would be for data after 2004. Monitoring well data for COPCs related to the WWTP (fluoride, nitrate, gross alpha, and gross beta) are summarized in Table 4-3.

Table 4-3 indicates that since 2004, fluoride concentrations ranged from <0.50 milligrams per liter (mg/L) to 33.70 mg/L. The fluoride MCL (4 mg/L) has been exceeded in groundwater samples from 16 of the 38 wells including W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-27, W-28, W-29, W-30, W-32, W-37, W-38, and W-47 since 2004. Fluoride isoconcentration maps for select dates from December 2004 through October 2013 are included as Figures 4-5 through 4-9. Figures 4-5, 4-6, and 4-9 illustrate fluoride data for regular groundwater monitoring events in December 2004, December 2008, and October 2013 respectively. The December 2004 (Figure 4-5) and October 2013 (Figure 4-9) water quality data are from select monitoring wells. The December 2008 (Figure 4-6) data is from all monitoring wells at the site and was previously submitted in the Remediation Performance Evaluation and Application for Groundwater Mixing Zone (AECOM, 2009). Fluoride data for DPT borings completed in April 2011 for the upper and lower portions of the shallow aquifer combined with groundwater quality data from December 2010 are presented in Figures 4-7 and 4-8, respectively. This data was previously submitted in the Source Investigation Report (AECOM, 2011). The data on Figures 4-5 through 4-9 indicates that the concentrations of fluoride exceeding the MCL are located from the vicinity of the WWTP to the area of the manmade pond and Sunset Lake.

Table 4-3 indicates that since 2004, nitrate concentrations ranged from <0.02 mg/L to 2,900 mg/L. The nitrate MCL (10 mg/L) has been exceeded in groundwater samples from 23 of the 38 wells including W-7, W-10, W-13, W-15, W-17, W-18, W-22, W-23, W-26, W-28, W-29, W-30, W-32, W-33, W-38, W-39, W-41, W-43, W-44, W-47, W-48, and RW-2 since 2004. Nitrate isoconcentration maps for select dates from

December 2004 through October 2013 are included as Figures 4-10 through 4-14. Figures 4-10, 4-11, and 4-14 illustrate nitrate data for regular groundwater monitoring events in December 2004, December 2008, and October 2013, respectively. The December 2004 (Figure 4-10) and October 2013 (Figure 4-14) water quality data are from select monitoring wells. The December 2008 (Figure 4-11) data is from all monitoring wells at the site and was previously submitted (AECOM, 2009). Nitrate data for DPT borings completed in April 2011 for the upper and lower portions of the shallow aquifer combined with groundwater quality data from December 2010 are presented in Figures 4-12 and 4-13, respectively. The data indicates that the concentrations of nitrate exceeding the MCL are located from the vicinity of the WWTP to the area of the escarpment just north of Sunset Lake. Areas of elevated nitrate include the WWTP, the vicinity of the northern and southern equipment pads, and West Lagoon 2. Nitrate has generally increased in the area of the WWTP since 2008.

Table 4-3 indicates that since 2004, gross alpha concentrations ranged from <1.00 picocuries per liter (pCi/L) to 155 pCi/L. The gross alpha MCL (15 pCi/L) has been exceeded in groundwater samples from 11 of the 38 wells including W-7, W-13, W-16, W-18, W-22, W-23, W-28, W-30, W-32, W-45, and RW-2. Gross Alpha isoconcentration maps for December 2004, December 2008, and October 2013 are included as Figures 4-15, 4-16 and 4-17, respectively. The December 2004 (Figure 4-15) and October 2013 (Figure 4-17) water quality data are from select monitoring wells. The December 2008 (Figure 4-16) data is from all monitoring wells at the site and was previously submitted (AECOM, 2009). The data indicates that the concentrations of gross alpha exceeding the MCL have fluctuated but are located from the vicinity of the WWTP to the area of the escarpment adjacent to the manmade pond.

Table 4-3 indicates that since 2004, gross beta concentrations ranged from <1.00 pCi/L to 1,810 pCi/L. The MCL for gross beta particle activity is 4 mrem/yr. The EPA Radionuclides rule (EPA, 2000) indicates that if the gross beta particle activity minus the naturally occurring potassium-40 activity exceeds 50 pCi/L, speciation may be required by the State. AECOM previously compared gross beta concentrations reported in pCi/L to dose equivalent values in mrem/yr for samples from 5 wells sampled in December 2008 (AECOM, 2009). Samples from wells W-7A, W-15, W-18R, W-30, and W-32 exceeded the screening level of 50 pCi/L in December 2008. The adjusted gross beta concentration for these wells were converted to mrem/yr using a “sum-of-the-fractions” method. The dose equivalent values for these samples ranged from 0.28 mrem/yr to 1.15 mrem/yr, which were below the MCL of 4 mrem/yr. Gross beta isoconcentration maps for December 2004, December 2008, and October 2013 are included as Figures 4-18, 4-19 and 4-20, respectively. The December 2004 (Figure 4-18) and October 2013 (Figure 4-20) water quality data are from select monitoring wells and are not adjusted for potassium 40. The December 2008 (Figure 4-19) data previously submitted (AECOM, 2009) is from all monitoring wells at the site and is adjusted for potassium 40. The data indicates that the concentrations of gross beta exceeding the MCL are located from the vicinity of the WWTP to the area of the manmade pond. The 2013 map indicates a greater extent of gross beta near the WWTP because monitoring well W-17 was not sampled in 2004 or 2008.

4.3.1.2 Source Investigation 2011 Groundwater Data

The fluoride and nitrate isoconcentration maps produced during the source investigation (AECOM, 2011) are presented as Figures 4-7, 4-8, 4-12, and 4-13 and were discussed in Section 4.3.1.1. The results of the source investigation performed in the WWTP area in 2011 indicated that fluoride and nitrate concentrations in groundwater were elevated in the vicinity of the North, South, and East Lagoons and surrounding facilities. Additionally, nitrate was slightly elevated in groundwater in the vicinity of the West II Lagoon. Fluoride and nitrate concentrations were relatively low adjacent to the West I and Sanitary Lagoons. The Source Investigation Report indicated that there was no clear evidence that the wastewater lagoons were a continuing source of fluoride in groundwater but that groundwater was likely impacted by nitrate from the lagoons.

4.3.2 Former Oil House Groundwater Results

The results of the SSI performed in 1989 indicated that VOCs were detected in groundwater samples from five of the original monitoring wells installed at the site. The Confirmatory Groundwater Investigation performed in 1992 identified the Oil House as a storage area for oils and lubricants and a former storage area for drums of solvents. Groundwater quality data for VOCs related to the former Oil House prior to 1996 has been previously submitted in the following reports:

- Westinghouse Screening Site Inspection Final Report (EPA, 1989)
- Confirmatory Ground-Water Investigation Report (SEC Donohue, 1992);
- Chlorinated Solvent Assessment Report (Rust, 1994); and
- Conceptual Design Report (Rust, 1995).

The COPCs related to the Former Oil House Source include PCE, TCE, cis-1,2-DCE, and vinyl chloride.

Isoconcentration maps for total VOCs in DPT groundwater samples from the upper and lower portions of the shallow aquifer in 1993 are included as Figures 4-21 and 4-22, respectively (Rust, 1994). A total VOC isoconcentration map for shallow aquifer monitoring well samples in 1994 is included as Figure 4-23. Total VOCs for DPT and monitoring well samples from 1995 are included as Figure 4-24 (Rust, 1995) The Chlorinated Solvent Assessment and Conceptual Design reports indicated the extent of chlorinated solvents in shallow aquifer groundwater, that PCE, TCE, cis-1,2-DCE, and VC were detected at concentrations exceeding MCLs, and that the Oil House was the likely source of the CVOCs. Historical monitoring well data from 1992 through 1995 are included in Table 4-4 (Rust, 1995).

Groundwater quality data for CVOCs related to the former Oil House after 1995 has been previously submitted by the CFFF to SCDHEC in regular monitoring reports. SCDHEC and the CFFF agreed that the historical groundwater quality data included in this report would be for data collected after 2004. This historical monitoring well data is included in Table 4-3. Monitoring wells RW-2R, W-26, W-41, and W-48

have been sampled on a regular basis for CVOCs since 2004. All site monitoring wells were sampled for CVOCs in December 2008.

Table 4-3 indicates that since 2004, PCE concentrations ranged from 8.4 micrograms per liter (ug/L) to 290 ug/L in groundwater samples from wells RW-2, 51 ug/L to 360 ug/L in samples from well W-41R, and 130 ug/L to 390 ug/L in samples from well W-48. The PCE MCL (5 ug/L) has been exceeded in groundwater samples from wells W-14A, W-15, W-16, W-26, W-33, W-39, W-40, W-41R, W-48, and RW-2. PCE concentrations increased slightly in wells W-41R and RW-2 after shut down of the AS/SVE system in 2011, but decreased in 2012 and 2013. PCE has decreased since 2010 in W-48 and decreased since 2011 in RW-2. A PCE isoconcentration map for December 2008 is included as Figure 4-25.

TCE concentrations ranged from <1.0 ug/L to 72 ug/L in groundwater from monitoring wells RW-2, W-41R, and W-48 since 2004. The TCE MCL (5 ug/L) has been exceeded in groundwater samples from wells W-14A, W-16, W-18R, W-26, W-33, W-38, W-39, W-41R, W-48, and RW-2. TCE concentrations in wells W-41R, W-48, and RW-2 have either decreased or remained stable after 2011. A TCE isoconcentration map for December 2008 is included as Figure 4-26.

Concentrations of cis-1,2-DCE ranged from <1.0 ug/L to 22 ug/L in groundwater from monitoring wells RW-2, W-41R, and W-48 since 2004. The cis-1,2-DCE MCL (70 ug/L) has not been exceeded in any groundwater samples from the CFFF since 2005. Concentrations of cis-1,2-DCE remained stable before and after the operation of the AS/SVE system. An isoconcentration map for cis-1,2-DCE for December 2008 is included as Figure 4-27.

VC has not been detected above the detection limit or MCL of 2.0 ug/L in any groundwater samples collected since 2004. VC was detected at a concentration of 2.2 ug/L in the groundwater sample from well W-45 in December 2001. Elevated concentrations of VC were detected at well W-26 in 1994, 1995, and 1997 (AECOM, 2010). A VC isoconcentration map for December 2008 is included as Figure 4-19.

4.3.3 Solvent Extraction Area Groundwater Results

Based on the results of the soil sampling performed in the Solvent Extraction Area in 1991, the CFFF performed groundwater sampling outside of this area in 1992. Additionally, numerous monitoring wells in the plant and WWTP area have been sampled routinely for gross alpha and gross beta.

Groundwater samples were collected from DPT borings and monitoring well W-37 (Figure 4-1) in areas adjacent to and downgradient of the Solvent Extraction Area in 1992 (SEC Donohue, 1992). The results (Table 4-5) indicated that gross alpha in groundwater ranged from non-detect 4 to 21 pCi/L. Gross beta was detected at a concentration of 166 pCi/L in the lower portion of the shallow aquifer in boring HC-7 located near the southeast corner of the plant building approximately 200 feet south of the Solvent Extraction Area. All other gross beta concentrations ranged from 11 pCi/L to 19 pCi/L.

Nitrate concentrations in the groundwater samples ranged from 2.7 mg/L to 41.2 mg/L. Nitrate concentrations exceeded the MCL of 10 mg/L in samples form borings HC-4, HC-5, HC-7, HC-8, and HC-

9. Borings HC-7, HC-8, and HC-9 were located south of the plant building in the vicinity of previously documented spills and leaks in the nitric acid storage area. The solvent extraction area report indicated that the spills and leaks were previously contained.

4.4 Surface Water and Sediments

The CFFF has historically monitored surface water quality in the pond and Sunset Lake and provided the results to SCDHEC. Surface water samples have been occasionally collected from the system of drainage ditches that drain the plant area, which is the focus of this report. The surface water sampling locations are indicated on Figure 1-3. Surface water quality and/or sediment quality data has been previously submitted in the following reports:

- Westinghouse Screening Site Inspection Final Report (EPA, 1989)
- Chlorinated Solvent Assessment Report (Rust, 1994)
- Conceptual Design Report (Rust, 1995)
- Remediation Performance Evaluation (AECOM, 2008)

Sediment sampling was also performed in July 2013 as described in Section 2.2.4 to fill a data gap and to support this RI. Sediment samples SED-1 through SED-10 were collected at the historical surface water sample locations SW-1 through SW-10 (Figure 1-3). This recent data is reported in the sections below along with historical data.

Since the ditches drain multiple areas downgradient of the WWTP and the Former Oil House, and since the samples were collected sporadically, the results are summarized by contaminant type.

4.4.1 VOCs

4.4.1.1 Surface Water

Surface water sample results from 10 locations in December 2008 are indicated on Table 4-6. PCE was detected in surface water samples SW-7, SW-8, and SW-10 in December 2008 at concentrations ranging from 1.6 ug/L to 9.2 ug/L. The MCL for PCE (5 ug/L) was exceeded only in SW-8. A resample collected in March 2009 at location SW-8 confirmed the exceedance at a concentration of 14 µg/L. TCE, cis-1,2-DCE, and VC were not detected in any of the December 2008 surface water samples.

It is suspected that the low concentration of PCE detected at location SW-8 is the result of contaminated groundwater entering the ditch that intersects the plume near the northern AS/SVE area just downstream of surface water location SW-7. It should be noted that the recent PCE concentration at location SW-8 is significantly lower than the concentration of 120 µg/L detected in 1995. Downstream samples from Upper Sunset Lake (SW-1) and Sunset Lake (SW-9) are below detection limits for PCE as would be expected from dilution in the larger water bodies.

4.4.1.2 Sediment

The results of the sediment samples collected in July 2013 indicated that PCE was detected at a concentration of 30 ug/kg in sediment sample SED-7 (Table 4-7). No other CVOCs were detected in sediment samples. Other VOCs including acetone, 2-butanone, cis-1,2-dichlorobenzene, methyl acetate, and toluene were detected in several sediment samples, but are possibly laboratory artifacts and are not believed to be site-related. As discussed in the previous section, SED-7 is located near the previously documented PCE groundwater plume.

4.4.2 Inorganics

4.4.2.1 Surface Water

Fluoride concentrations in the December 2008 surface water samples ranged from 0.5 mg/L at location SW-6 to 12.1 mg/L at locations SW-1 (Upper Sunset Lake) and SW-9 (Sunset Lake). Other locations where the MCL of 4 mg/L for fluoride was exceeded were locations SW-7 (4.7 mg/L), SW-8 (4.4 mg/L), and SW-10 (10.3 mg/L).

Nitrate concentrations in the December 2008 surface water samples ranged from less than 0.1 mg/L at two locations to 19.4 mg/L at location SW-10 (Pond). Only the sample from location SW-10 exceeded the MCL for nitrate of 10 mg/L.

4.4.2.2 Sediment

Flouride was detected at relatively low concentrations ranging from non-detect to 18.0 mg/kg in sediment samples SED-1, SED-2, SED-3, SED-5, SED-6, SED-7, SED-8, and SED-9. Elevated fluoride was detected in sediment samples SED-4 (66 .0 mg/kg) located in the ditch adjacent to the WWTP and SED-10 (220 mg/kg) located in the Pond downgradient from the WWTP.

4.4.3 Radiological Parameters

4.4.3.1 Surface Water

Data for surface water samples analyzed in December 2008 for gross alpha and gross beta radiological activity are summarized on Table 4-6. Gross alpha activity concentrations exceeding the MCL of 15 pCi/L were detected in samples from location SW-4 (164 pCi/L) and further upstream at location SW-5 (192 pCi/L). Gross alpha concentrations downstream were below the MCL, indicating a decreasing trend from upstream to downstream. Adjusted gross beta activity concentrations in surface water samples were below the screening level of 50 pCi/L.

4.4.3.2 Sediment

Gross alpha was detected in sediment sample SED-5 at a concentration of 377 pCi/g (Table 4-7). Gross alpha in the remaining sediment samples ranged from non-detect to 23.40 pCi/g. The gross alpha

concentrations at SED-5 and downstream areas indicate a similar decreasing trend from upstream to downstream as in the surface water samples. Gross beta was detected in sediment sample SED-10 at a concentration of 295 pCi/g, with the remaining gross beta concentrations ranging from 15.7 pCi/g to 52.1 pCi/g.

5.0 CONTAMINANT FATE AND TRANSPORT

This section presents a discussion of the fate and transport of contaminants in environmental media at the Site. This discussion focuses on those parameters that were detected above screening levels including the EPA Regional Screening Levels (RSLs) and federal primary drinking water standards MCLs. The media impacted include subsurface soil, sediment, surface water, and groundwater beneath the Site. Multiple phases of site analytical data were compared to the screening levels identified above and the following COPCs were identified and are discussed in this fate and transport section:

- CVOCs: PCE, TCE, cis-1,2-DCE, and VC.
- Inorganics: Fluoride and Nitrate
- Radionuclides: Gross Alpha and Gross Beta

5.1 Potential Routes of Migration

COPCs have been detected in soil, groundwater, surface water, and sediment at the site as discussed in Section 4.0. The primary source areas for COPCs are the WWTP and the former Oil House. The primary routes of migration are:

- Leaching of COPCs from subsurface soil to groundwater within the shallow aquifer;
- Groundwater flow within the shallow aquifer toward the manmade pond and Sunset Lake; and
- Surface water flow through the system of ditches that drain the plant area and flow toward Upper Sunset Lake.

5.1.1 Groundwater

The COPCs at the site are originating from one of two sources, either the WWTP or the former Oil House. COPCs originating from the WWTP source include fluoride, nitrate, gross alpha, and gross beta. COPCs originating from the former Oil House source include PCE, TCE, cis-1,2-DCE, and VC.

COPCs released to subsurface soil will migrate downward through the vadose zone. The rate of migration depends on soil permeability and other characteristics such as organic carbon content. Infiltrating rain water may cause continued leaching of COPCs in unsaturated soils to groundwater.

Once in groundwater, chemicals may be transported with groundwater flow and subjected to processes that may reduce concentration. These processes include advection, dispersion, biodegradation, adsorption, and diffusion.

5.1.2 Surface Water

COPCs detected in surface water from the ditches, the pond, Upper Sunset Lake, and Lower Sunset Lake are likely the result of impacted groundwater entering the surface water bodies. Contaminant migration from surface water in the ditch system flows from areas where the ditches intersect impacted groundwater toward the northwest and west before discharging into Mill Creek. COPCs detected in the pond are likely the result of groundwater discharge to this surface water body. A possible mitigating circumstance is that the Pond is a man-made impoundment with no outflow to the stream system.

5.2 Contaminant Persistence

This section briefly discusses the persistence of the COPCs in groundwater since it is the primary transport mechanism for the contaminants at the Site.

Fluoride and nitrate are soluble in water and are likely entering shallow groundwater in the vicinity of the WWTP. Fluoride generally does not adsorb to soil or react with other compounds. Therefore, fluoride moves with groundwater flow (advection). Fluoride in groundwater at the site is present from the WWTP to downgradient wells near the pond and Sunset Lake.

Nitrate also moves with groundwater flow but can be depleted through the processes of denitrification and nitrate reduction. Denitrification occurs when nitrate is converted to nitrogen and nitrate concentrations measured in groundwater decrease. Nitrate reduction is the process of converting nitrate to nitrite to ammonia. Denitrification can also occur as groundwater discharges to surface water due to the presence of organic carbon.

Gross alpha and gross beta have fluctuated and at times exceed the MCL for gross alpha. The gross alpha and gross beta occurs in groundwater between the WWTP and the manmade pond.

The results indicate that concentrations of CVOCs have decreased in most site wells since 2004 and that concentrations in downgradient wells are significantly lower that wells located closer to the source area. The presence of cis-1,2-DCE indicates that reductive dechlorination of PCE and TCE may be partially occurring at the Site. However, the absence of vinyl chloride (VC) indicates that complete dechlorination is not occurring at the site. The historical analytical data indicate a decrease in concentrations of both PCE and TCE across the site at most well locations. These observed decreases may be due to a combination of both biotic reductive dechlorination and abiotic reductive elimination processes.

6.0 SUMMARY AND CONCLUSIONS

6.1 Summary

Numerous environmental investigations have been performed since 1980 at the CFFF. The investigations have included assessments of groundwater, surface water, soil, and sediment, and have resulted in the delineation of COPCs in these media. On March 13, 2013, SCDHEC issued a letter indicating that that future assessments and remedial actions would be evaluated in accordance with the EPA CERCLA Guidance dated 1988. Therefore, SCDHEC requested submittal of a comprehensive RI Report for the CFFF consistent with the EPA guidance. The letter also requested a Baseline Risk Assessment (BRA). The letter indicated that following approval of the RI and BRA, SCDHEC would require a Feasibility Study (FS) to evaluate potential remedial alternatives.

6.1.1 Nature and Extent of Contamination

The following conclusions on the nature and extent of contamination are presented based on the investigations performed at the site since 1980:

- The results of the investigation activities at the site from 1980 to 2011 have identified three potential sources of soil and/or groundwater contamination, the WWTP, the Former Oil House, and the Solvent Extraction Area.

- COPCs from these source areas include fluoride, nitrate, gross alpha, gross beta, and the CVOCs PCE, TCE, cis-1,2-DCE, and VC. The WWTP is the source area for fluoride, nitrate, gross alpha, and gross beta. The former Oil House is the source area for the CVOCs. Previous studies indicated that soil and groundwater were not impacted by the Solvent Extraction Area

- COPCs are present in the shallow aquifer between the source areas and the man-made pond and Sunset Lake.

- COPCs have been detected in surface water samples from the ditches as well as the Pond and Sunset Lake.

- The shallow aquifer is underlain by a confining bed composed of dry silt/clay and brittle shale of the upper Black Mingo Formation. This confining unit ranges in thickness from 39 feet to 83 feet. Beneath the confining bed is an artesian sand aquifer within the lower Black Mingo Formation known as the Black Mingo aquifer. The previous studies indicate that the Black Mingo aquifer is not impacted by COPCs at the site.

- COPCs in soil and groundwater have been delineated during the past studies. Numerous isoconcentration maps have been provided that illustrate the delineation of COPCs.

6.1.2 Fate and Transport

The following conclusions on the fate and transport of contamination are presented based on the investigations performed at the site since 1980:

- The primary routes of migration of COPC at the site are groundwater flow within the shallow aquifer from source areas toward the manmade pond and Sunset Lake, and surface water flow through the system of ditches that drain the plant area. COPCs from the WWTP are generally flowing southwest from the WWTP toward the Pond and Sunset Lake. COPCs from the former Oil House are flowing southwest toward Upper Sunset Lake.

- COPCs released to subsurface soil migrate downward through the vadose zone to shallow groundwater due to infiltrating rain water.

- Fluoride, nitrate, gross alpha, and gross beta are soluble in water and generally do not adsorb to soil. Therefore, these COPCs move with groundwater flow. Nitrate can be depleted through the processes of denitrification and nitrate reduction. However, these processes have not been confirmed at the site.

- Concentrations of CVOCs have decreased in most site wells since 2004 and concentrations in downgradient wells are significantly lower than wells located closer to the source area. The presence of cis-1,2-DCE and observed decreases in CVOCs may be due to a combination of both biotic reductive dechlorination and abiotic reductive elimination processes.

6.2 Conclusions

- The nature and extent of COPCs at the site has been determined through the numerous investigations and regular groundwater and surface water monitoring.

- The source areas include the WWTP and the Former Oil House.

- COPCs include fluoride, nitrate, gross alpha, gross beta, and the CVOCs PCE, TCE, cis-1,2-DCE, and VC.

- While COPCs have been detected in groundwater near surface water bodies, only fluoride has been detected in Sunset Lake at concentrations exceeding MCLs. However, fluoride was not detected above the MCL at the spillway, indicating that the fluoride MCL was exceeded only in a localized area near the location of the groundwater plumes. A mitigating circumstance for the Pond is that it is a man-made impoundment with no outflow to the stream system and, therefore is not a natural surface water body.

- CVOC concentrations have decreased or remained stable since shutdown of the AS/SVE system in 2011. It is evident that CVOC mass is depleting and that mass reduction over time can be expected to continue.

- As indicated in 2009 the site was believed to be a candidate for a Mixing Zone, since the COPCs are confined to the property where they originated, groundwater is not used onsite or on adjacent properties, reasonable measures have been taken to minimize and/or control contaminant migration, and concentrations are expected to decrease over time. While the site is being evaluated in accord with CERCLA guidance, the mixing zone criteria have been demonstrated and should be considered when evaluating the site for future remedial options, including monitored natural attenuation.

6.3 Recommendations

Based on the results of the RI and the site now being managed under the CERCLA guidance, AECOM recommends performing the initial portions of a Baseline Risk Assessment (BRA). For this scope of work, only the initial portions of the BRA will be completed in a preliminary risk evaluation (PRE). The PRE will comprise the initial steps of the human health risk assessment and the ecological risk assessment, including evaluation of the exposure setting, development of a conceptual site model (CSM), and conservative screenings of existing data. The results of the PRE will indicate if additional data and/or additional steps in the BRA process are needed to complete the BRA.

Upon completion of the BRA, in accordance with CERCLA guidance, a Feasibility Study (FS) will be required. The FS will present and evaluate potential remedial options for impacted environmental media, including MNA for groundwater.

Additionally, groundwater and surface water sampling will continue to be performed with the current sampling schedule with submittal of data to SCDHEC.

7.0 REFERENCES

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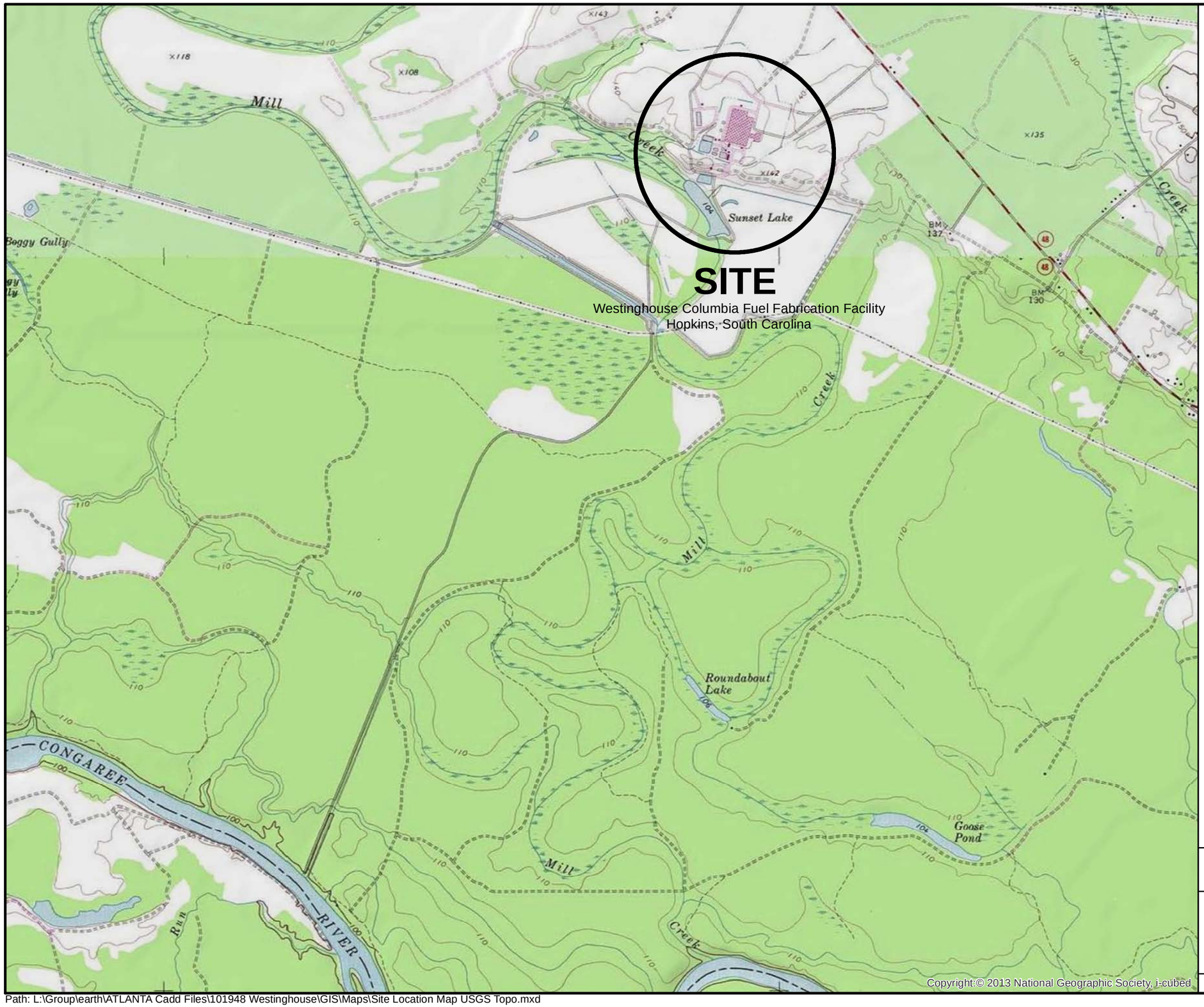
FIGURES



N

Source:
Seamless, USGS Topographic Map obtained ArcGIS Map Service.
(http://services.arcgisonline.com)

2,000 1,000 0 2,000 Feet

1:24,000

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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SITE LOCATION MAP

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 1-1**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Site Location Map USGS Topo.mxd

N

Legend

Property Line
(Obtained from Richland County WMS Services)

1,000 500 0 1,000
Feet

1:12,000

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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PROPERTY MAP

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 1-2**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Site Map and Property Lines.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch

EL	East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon 1
WL2	West Lagoon 2

400 200 0 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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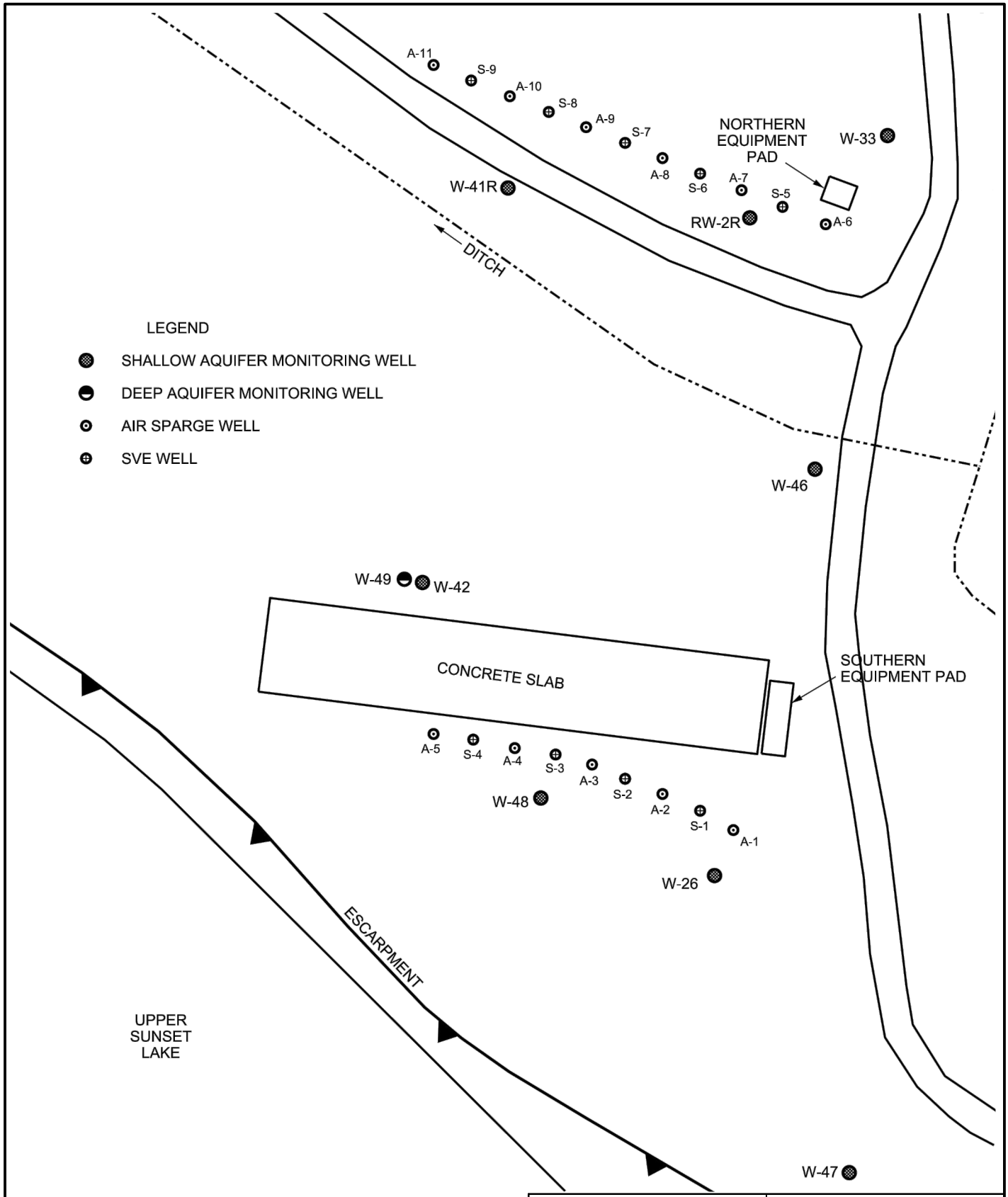
SITE MAP

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 1-3**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Comprehensive Sample and Site Map from Surveyed Data 08-2013.mxd



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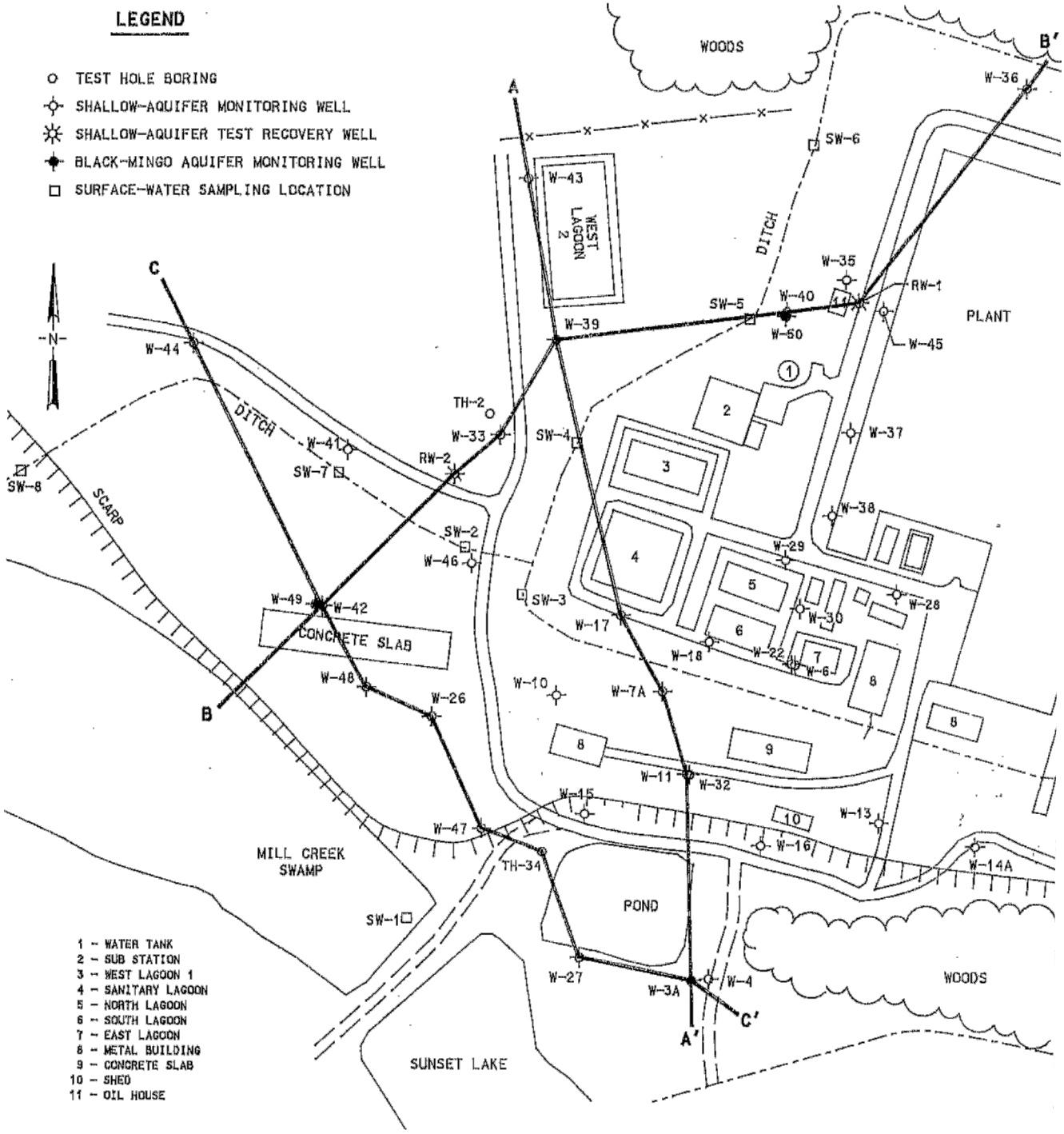
AIR SPARGE/SVE SYSTEM LAYOUT

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 1-4

L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\Air Sparge and SVE System Layout.dwg, 12/31/2013 9:27:54 AM, stubblefieldr



REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

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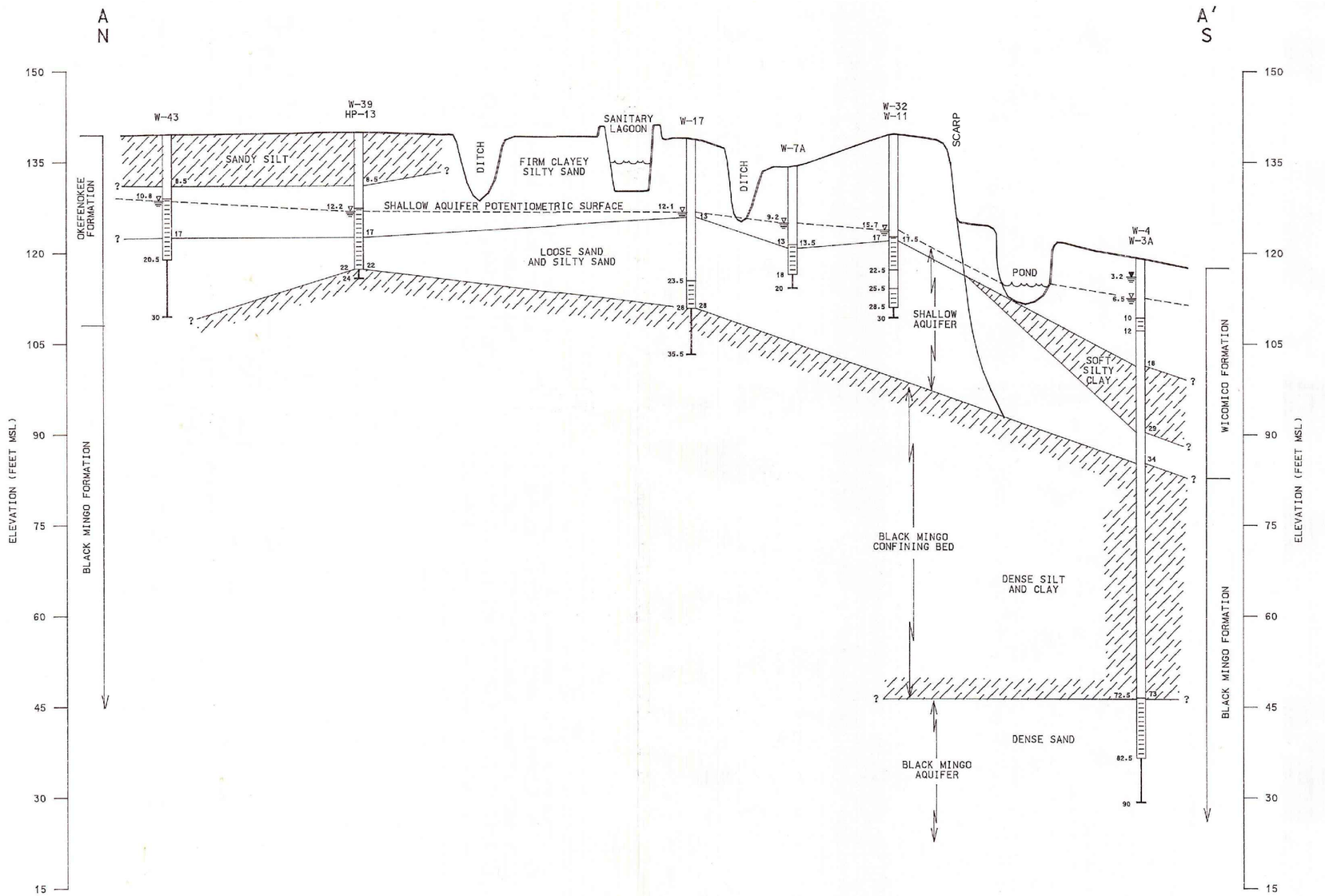
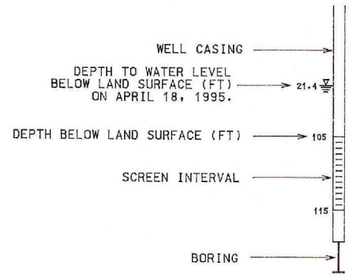
CROSS-SECTION LOCATION MAP

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 3-1



LEGEND



REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

0 100 200 400
HORIZONTAL SCALE IN FEET

0 40 20 40
VERTICAL SCALE IN FEET
VERTICAL EXAGGERATION = 10X

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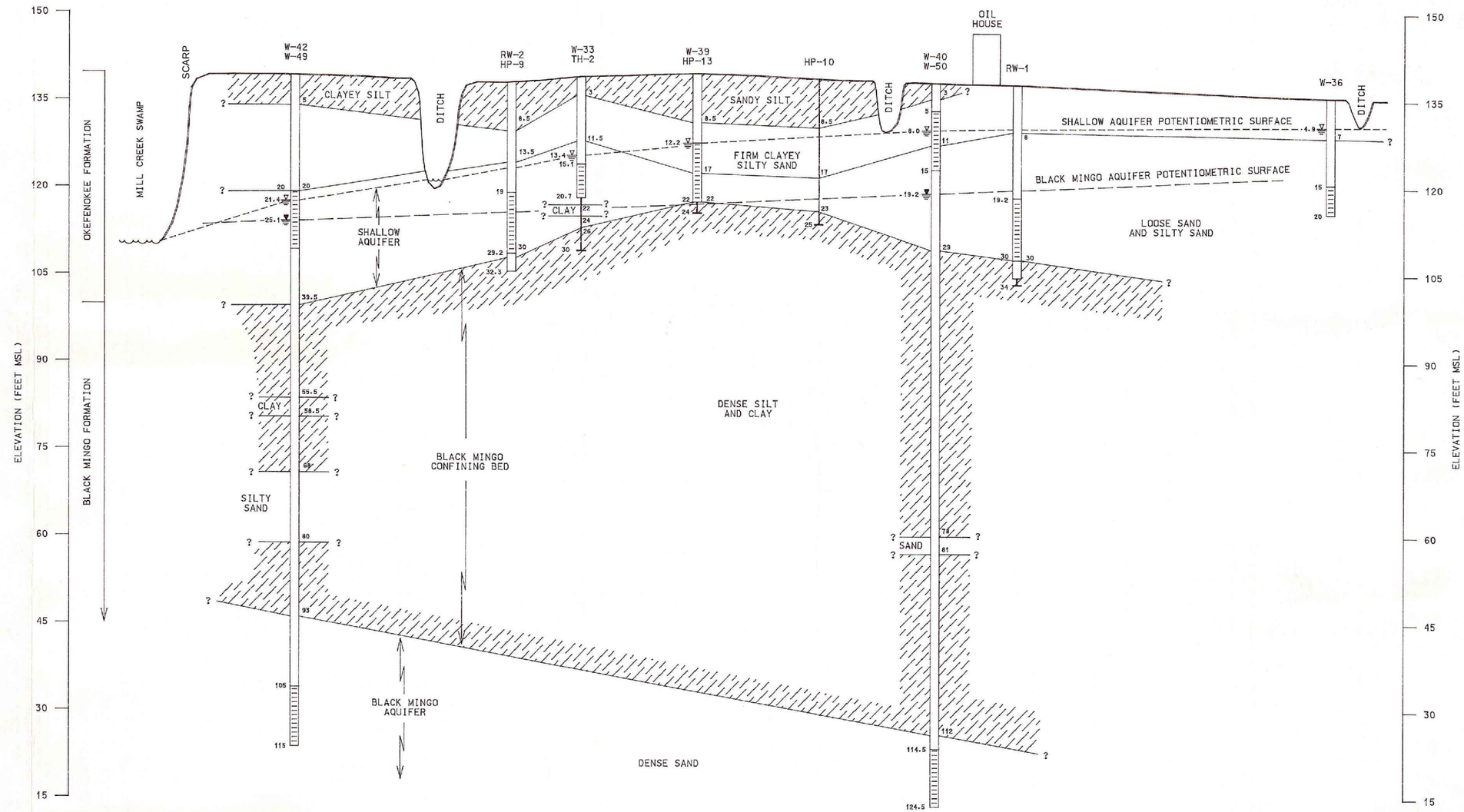
HYDROGEOLOGIC CROSS-SECTION A-A'

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 3-2**



LEGEND

WELL CASING

DEPTH TO WATER LEVEL BELOW LAND SURFACE (FT) ON APRIL 18, 1995.

DEPTH BELOW LAND SURFACE (FT)

SCREEN INTERVAL

BORING

REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

0 100 200 400
HORIZONTAL SCALE IN FEET

0 10 20 40
VERTICAL SCALE IN FEET
VERTICAL EXAGGERATION = 10X

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HYDROGEOLOGIC CROSS-SECTION B-B'

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 3-3**

C
NW

C′
SE

ELEVATION (FEET MSL)

OKEFENOKEE FORMATION

BLACK MINGO FORMATION

WICOMICO FORMATION

W-44

W-42
W-49

W-48

W-26

W-47

SCARP

TH-34

W-27

W-4
W-3A

DITCH

CLAYEY SILT

FIRM CLAYEY SILTY SAND

SHALLOW AQUIFER POTENTIOMETRIC SURFACE

BLACK MINGO AQUIFER POTENTIOMETRIC SURFACE

SHALLOW AQUIFER

LOOSE SAND AND SILTY SAND

POND

SOFT SILTY CLAY

LOOSE SILTY SAND

CLAY

SILTY SAND

BLACK MINGO CONFINING BED

DENSE SILT AND CLAY

BLACK MINGO AQUIFER

DENSE SAND

LEGEND

WELL CASING

DEPTH TO WATER LEVEL BELOW LAND SURFACE (FT) ON APRIL 18, 1995.

DEPTH BELOW LAND SURFACE (FT)

SCREEN INTERVAL

BORING

REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

0 100 200 400
HORIZONTAL SCALE IN FEET

0 10 20 40
VERTICAL SCALE IN FEET
VERTICAL EXAGGERATION = 10X

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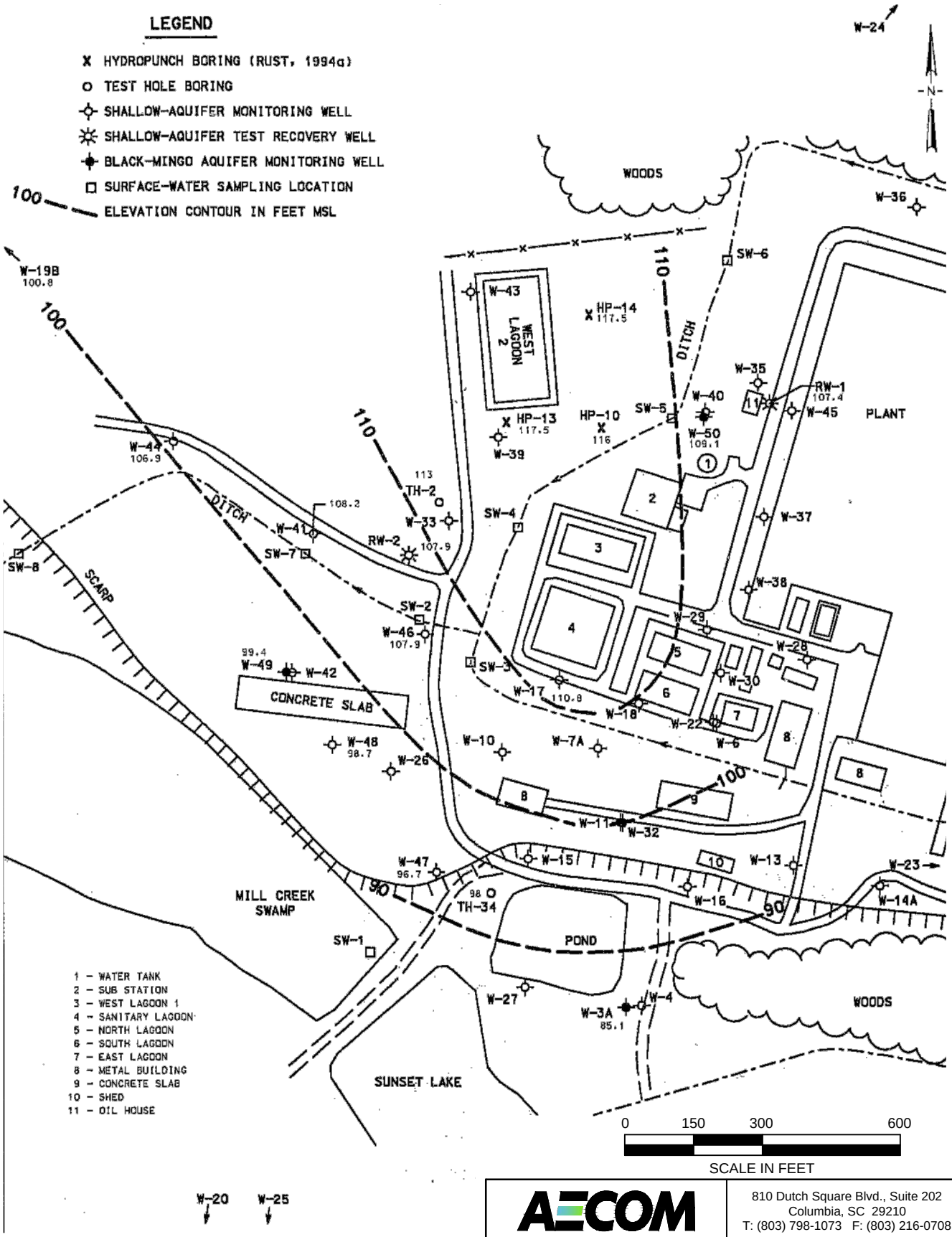
HYDROGEOLOGIC CROSS-SECTION C-C'

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 3-4**



REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

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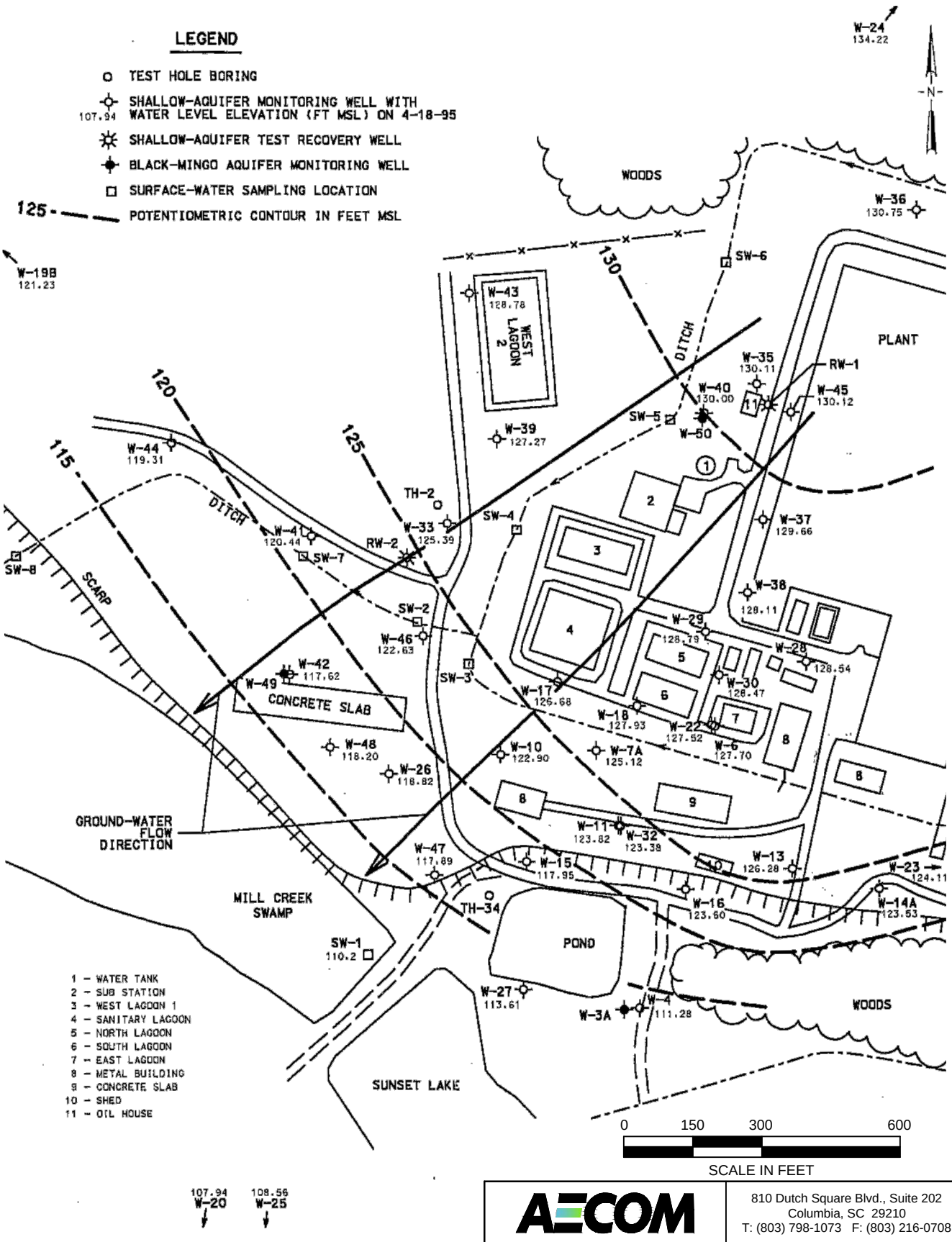
STRUCTURE CONTOUR MAP OF THE TOP OF THE BLACK MINGO FORMATION

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 3-5



REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

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WATER TABLE SURFACE MAP
APRIL 18, 1995

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 3-6

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- Water Table Surface Contours 06-06-13
- 120.79 Water Level Elevation (Ft msl) on June 6, 2013
- Inferred Groundwater Flow Direction
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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WATER TABLE SURFACE MAP JUNE 6, 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 3-7**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Water Table Surface 06-2013.mxd

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 116.35 Black Mingo Aquifer Water Level Elevation (Ft msl) on June 6, 2013
- Potentiometric Contours of the Black Mingo Aquifer
- Inferred Groundwater Flow Direction

EL	East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon 1
WL2	West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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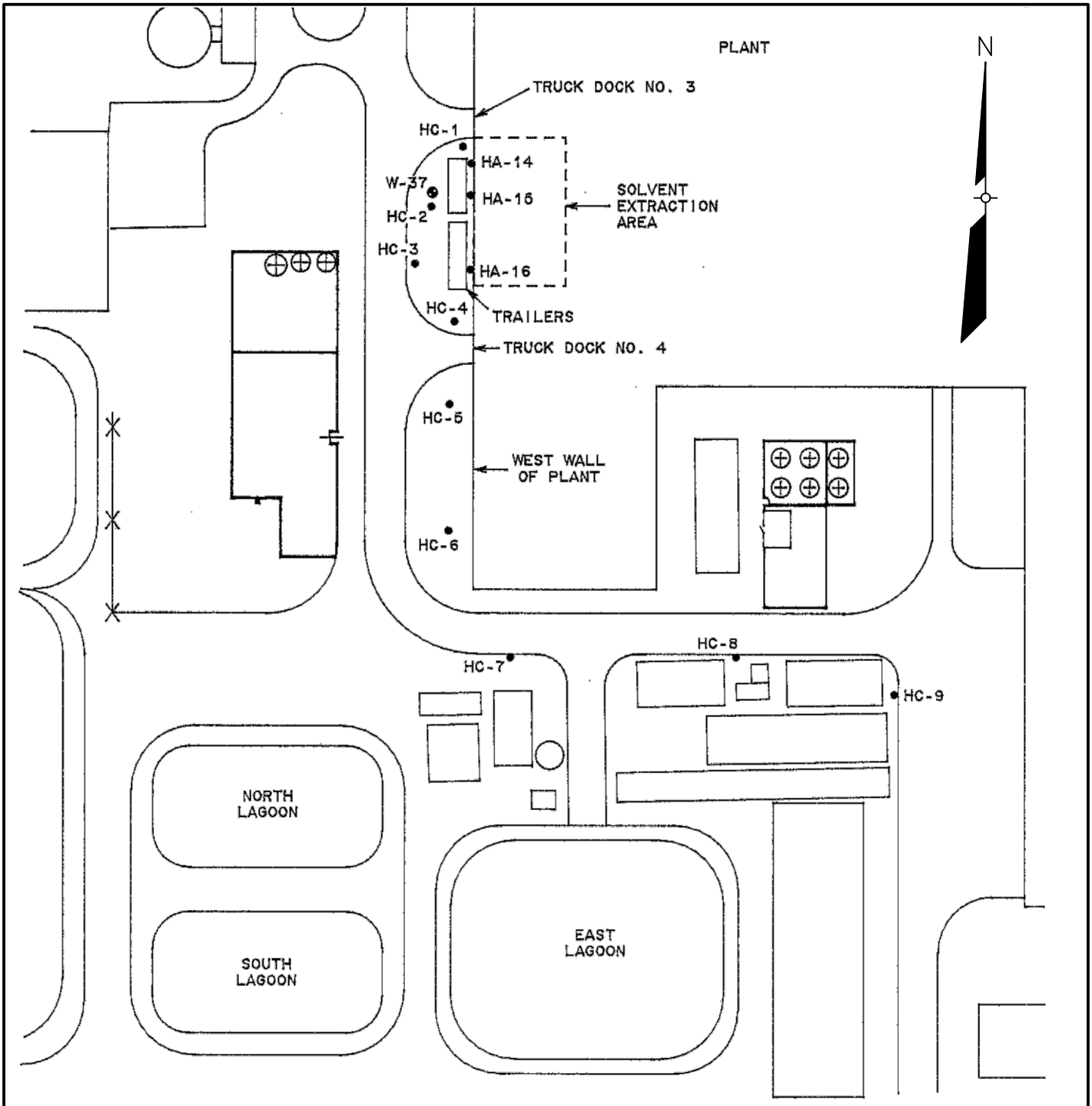
POTENTIOMETRIC SURFACE MAP BLACK MINGO AQUIFER JUNE 6, 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 3-8**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Deep Water Table Surface 06-2013.mxd



REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

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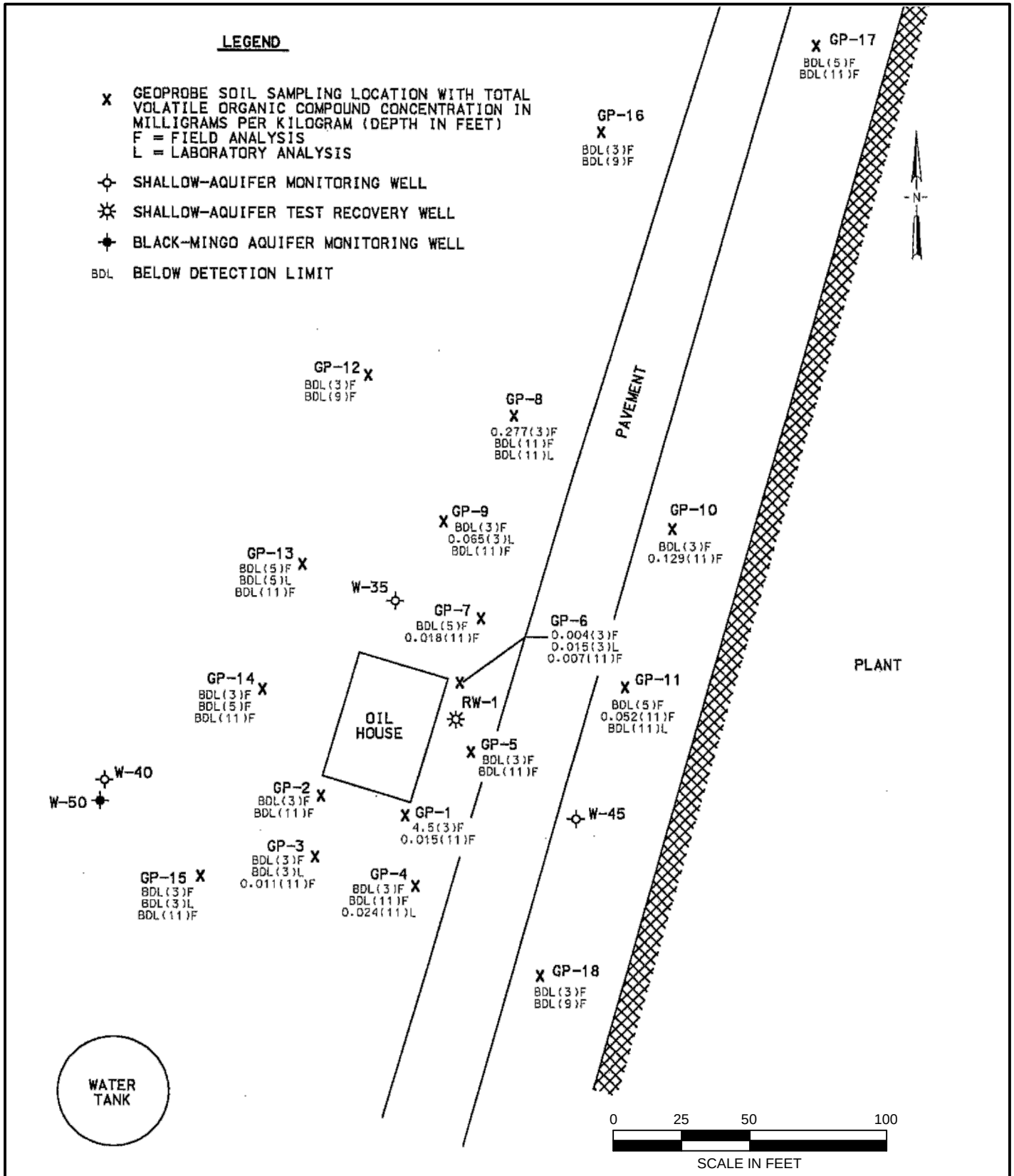
SOIL AND GROUNDWATER SAMPLING LOCATIONS SOLVENT EXTRATION AREA AND WWTP 1992

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 4-1



REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

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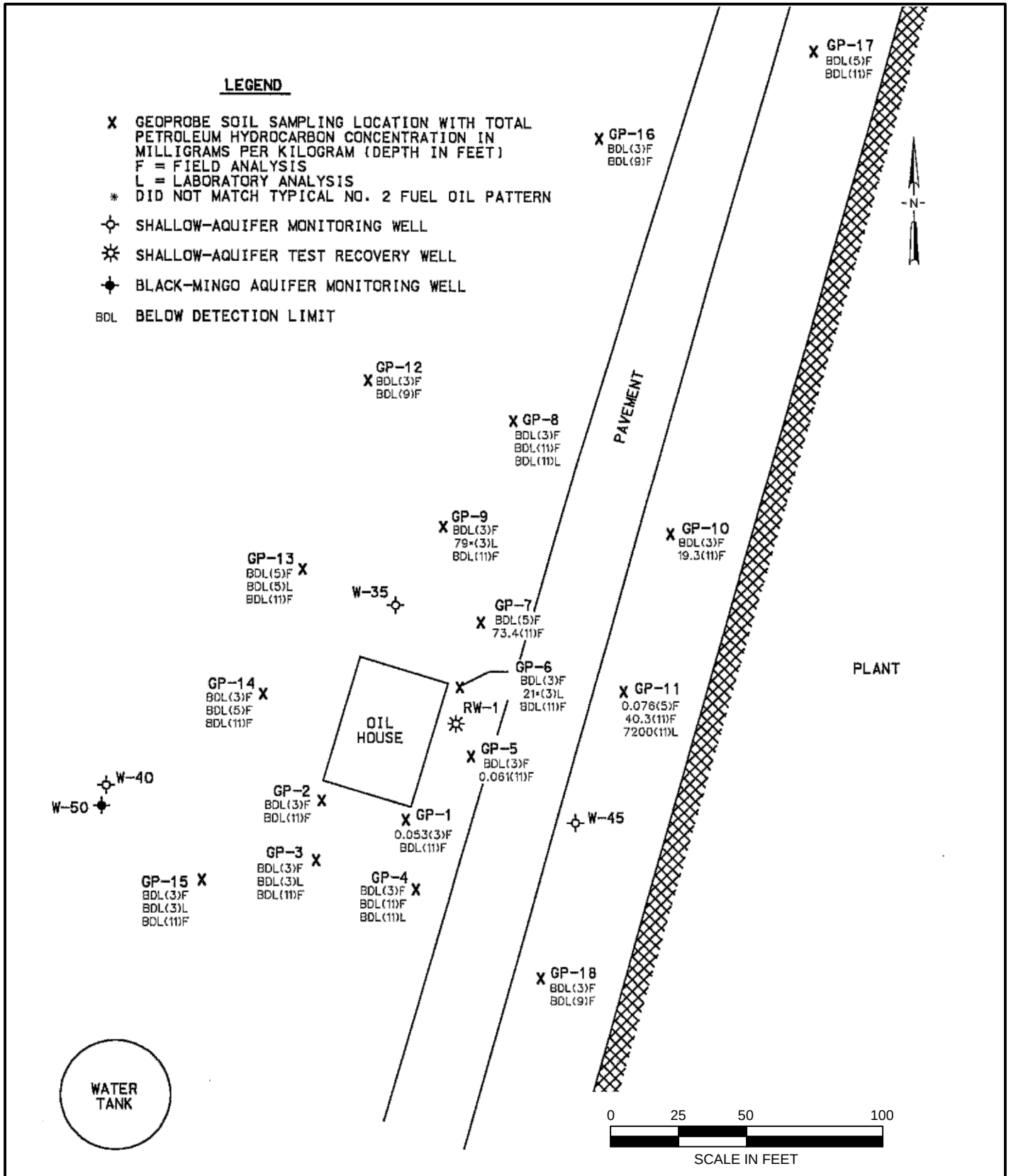
TOTAL VOCs IN SOIL
1995

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 4-2



REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

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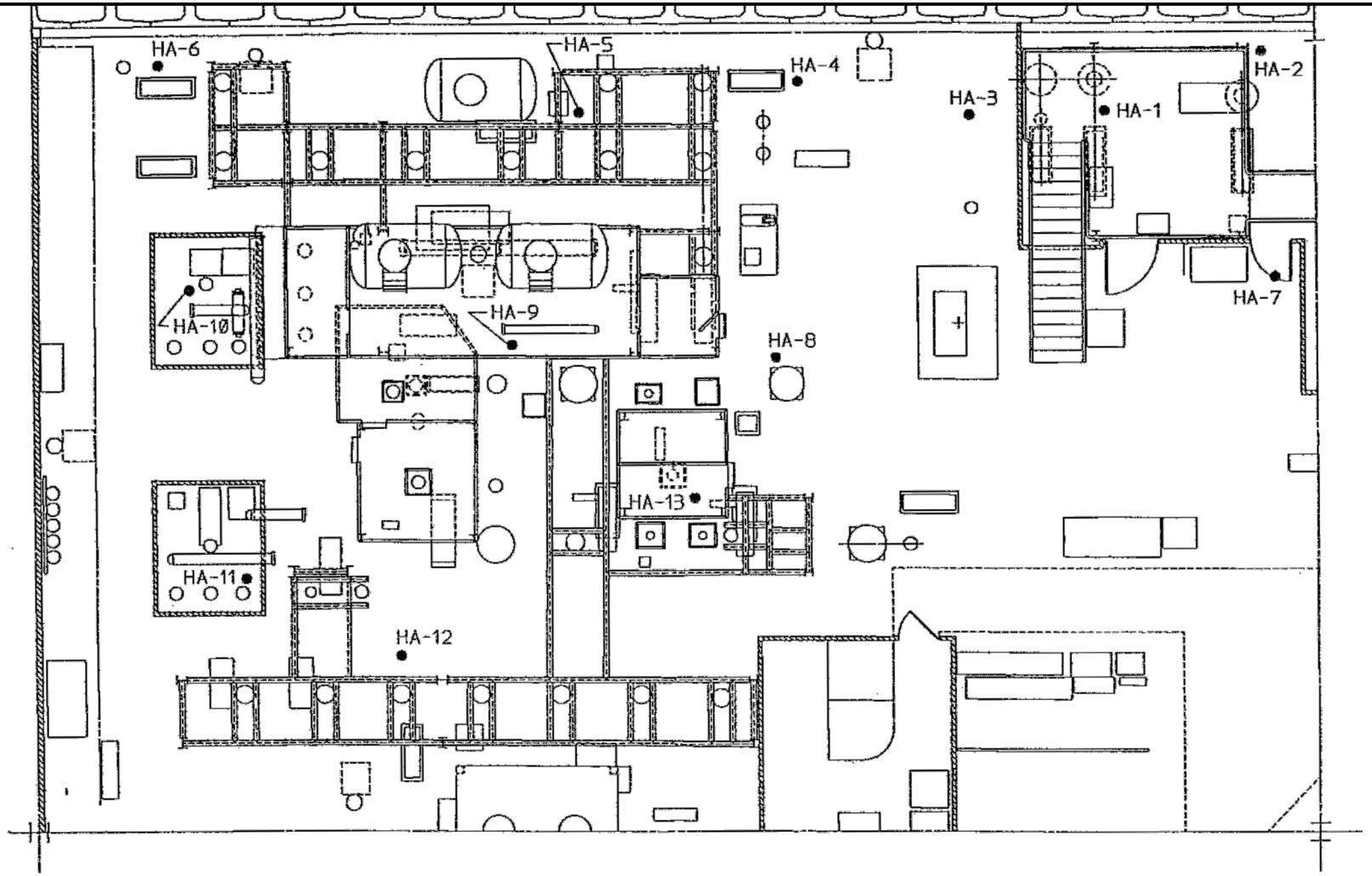
TPH IN SOIL
1995

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 4-3



REFERENCE:
REPORT OF SOIL SAMPLING, SOLVENT EXTRACTION AREA, WEGS, 1991.

LEGEND

HA-1Ø ● HAND-AUGER SOIL SAMPLING LOCATION

0 5 10 20

SCALE IN FEET

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SOIL SAMPLING LOCATIONS SOLVENT EXTRACTION AREA 1991

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 4-4

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 1.78 Flouride Concentration (mg/L)
- Fluoride Isoconcentration Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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FLUORIDE IN GROUNDWATER DECEMBER 2004

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-5**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Fluoride in Groundwater 12-2004.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 1.2 Flouride Concentration (mg/L)
- Flouride Isoconcentration Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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FLOURIDE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-6**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Flouride in Groundwater 12-2008.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Soil Boring Location
- Ditch
- 0.5 Fluoride Concentration (mg/L)
- Fluoride Isoconcentration Contour (mg/L)

Note:
Groundwater samples from the monitoring wells were collected in December 2010 or April 2011.

Reference:
Source Investigation Report, AECOM, 2011.

100 50 0 100 Feet

1:1,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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FLUORIDE IN UPPER SHALLOW AQUIFER GROUNDWATER DECEMBER 2010 TO APRIL 2011

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-7**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\60158741_G002 Fluoride in Shallow GW.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Soil Boring Location
- Ditch
- 0.05 Fluoride Concentration (mg/L)
- Fluoride Isoconcentration Contour (mg/L)

Note:
Groundwater samples from the monitoring wells were collected in December 2010 or April 2011.

Reference:
Source Investigation Report, AECOM, 2011.

100 50 0 100 Feet

1:1,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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FLUORIDE IN LOWER SHALLOW AQUIFER GROUNDWATER DECEMBER 2010 TO APRIL 2011

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-8**

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 1.96 Flouride Concentration (mg/L)
- Fluoride Isoconcentration Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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FLUORIDE IN GROUNDWATER OCTOBER 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-9**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Fluoride in Groundwater 10-2013.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 27.70 Nitrate Concentration (mg/L)
- Nitrate Isoconcentration Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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NITRATE IN GROUNDWATER DECEMBER 2004

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-10**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Nitrate in Groundwater 12-2004.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water Sampling Locations
- Ditch
- 3.6 Nitrate Concentration (mg/L)
- Nitrate Isoconcentration Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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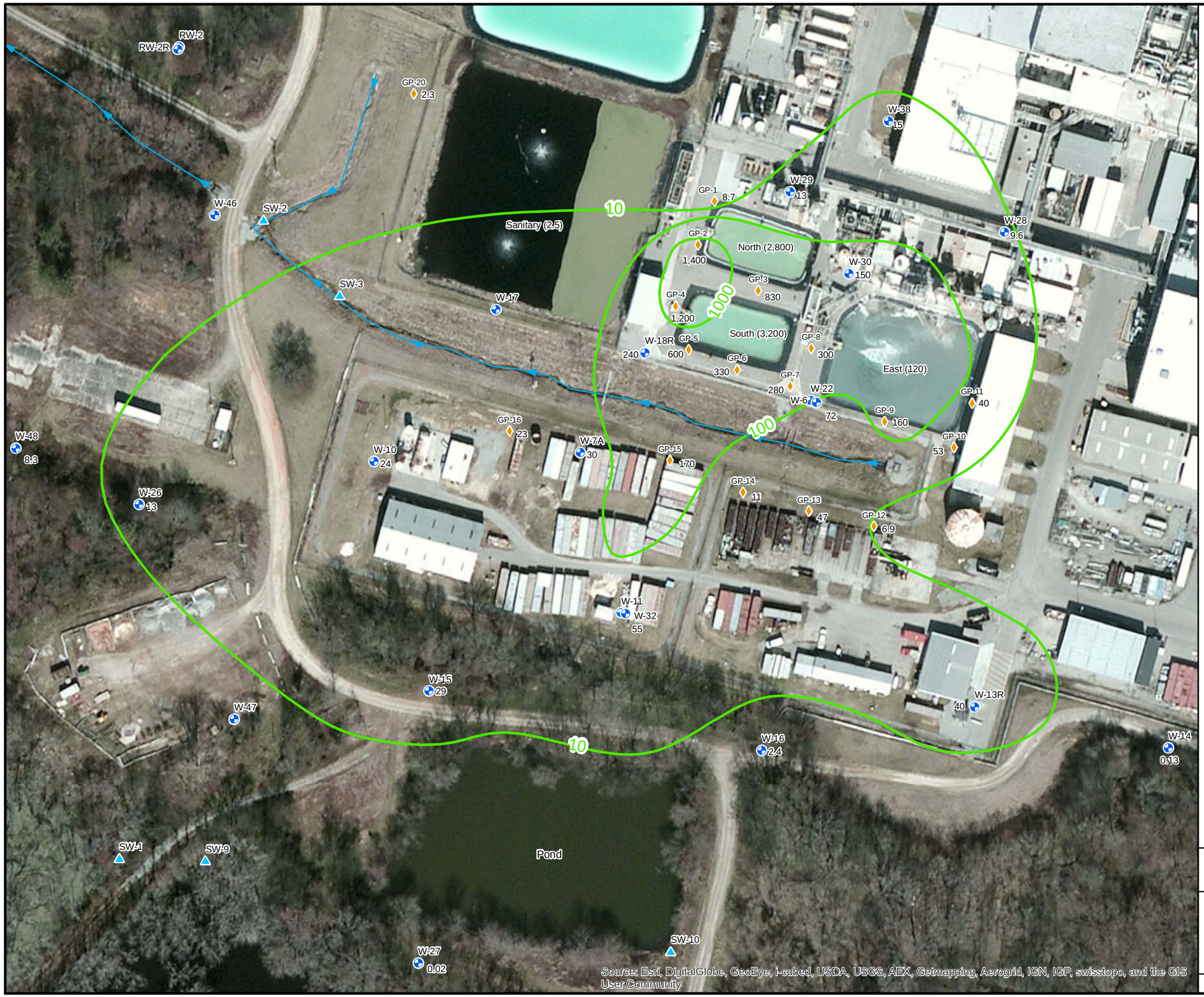
NITRATE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-11**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Nitrate in Groundwater 12-2008.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Soil Boring Location
- Ditch
- 0.13 Nitrate Concentration (mg/L)
- Nitrate Isoconcentration Countuor (mg/L)

Note:
Groundwater samples from the monitoring wells were collected in December 2010 or April 2011.

Reference:
Source Investigation Report, AECOM, 2011.

100 50 0 100 Feet

1:1,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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NITRATE IN UPPER SHALLOW AQUIFER GROUNDWATER DECEMBER 2010 TO APRIL 2011

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-12**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\60158741_G004 Nitrate in Shallow GW.mxd

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Soil Boring Location
- Ditch
- 0.13 Nitrate Conentration (mg/L)
- Nitrate Isoconcentration Contour (mg/L)

Note:
Groundwater samples from the monitoring wells were collected in December 2010 or April 2011.

Reference:
Source Investigation Report, AECOM, 2011.

100 50 0 100 Feet

1:1,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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NITRATE IN LOWER SHALLOW AQUIFER GROUNDWATER DECEMBER 2010 TO APRIL 2011

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-13**

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 3.5 Nitrate Concentration (mg/L)
- Nitrate in Groundwater Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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NITRATE IN GROUNDWATER OCTOBER 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-14**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Nitrate in Groundwater 10-2013.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 2.0 Gross Alpha Concentration (pCi/L)
- Gross Alpha Isoconcentration Contour (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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GROSS ALPHA IN GROUNDWATER DECEMBER 2004

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-15**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Alpha in Groundwater 12-2004.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 0.6 Gross Alpha Concentration (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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GROSS ALPHA IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-16**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Alpha in Groundwater 12-2008.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 0.16 Gross Alpha Concentration (pCi/L)
- Gross Alpha Isoconcentration (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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GROSS ALPHA IN GROUNDWATER OCTOBER 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-17**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Alpha in Groundwater 10-2013.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 4.0 Gross Beta Concentration (pCi/L)
- Gross Beta Isoconcentration Contour (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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GROSS BETA IN GROUNDWATER DECEMBER 2004

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-18**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Beta in Groundwater 12-2004.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 1.6 Gross Beta Concentration (pCi/L)
- Gross Beta Isoconcentration Contour (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:
Concentrations are adjusted for pottasium-40.

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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ADJUSTED GROSS BETA IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-19**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Beta in Groundwater 12-2008.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 2.93 Gross Beta Concentration (pCi/L)
- Gross Beta Isoconcentration Contour (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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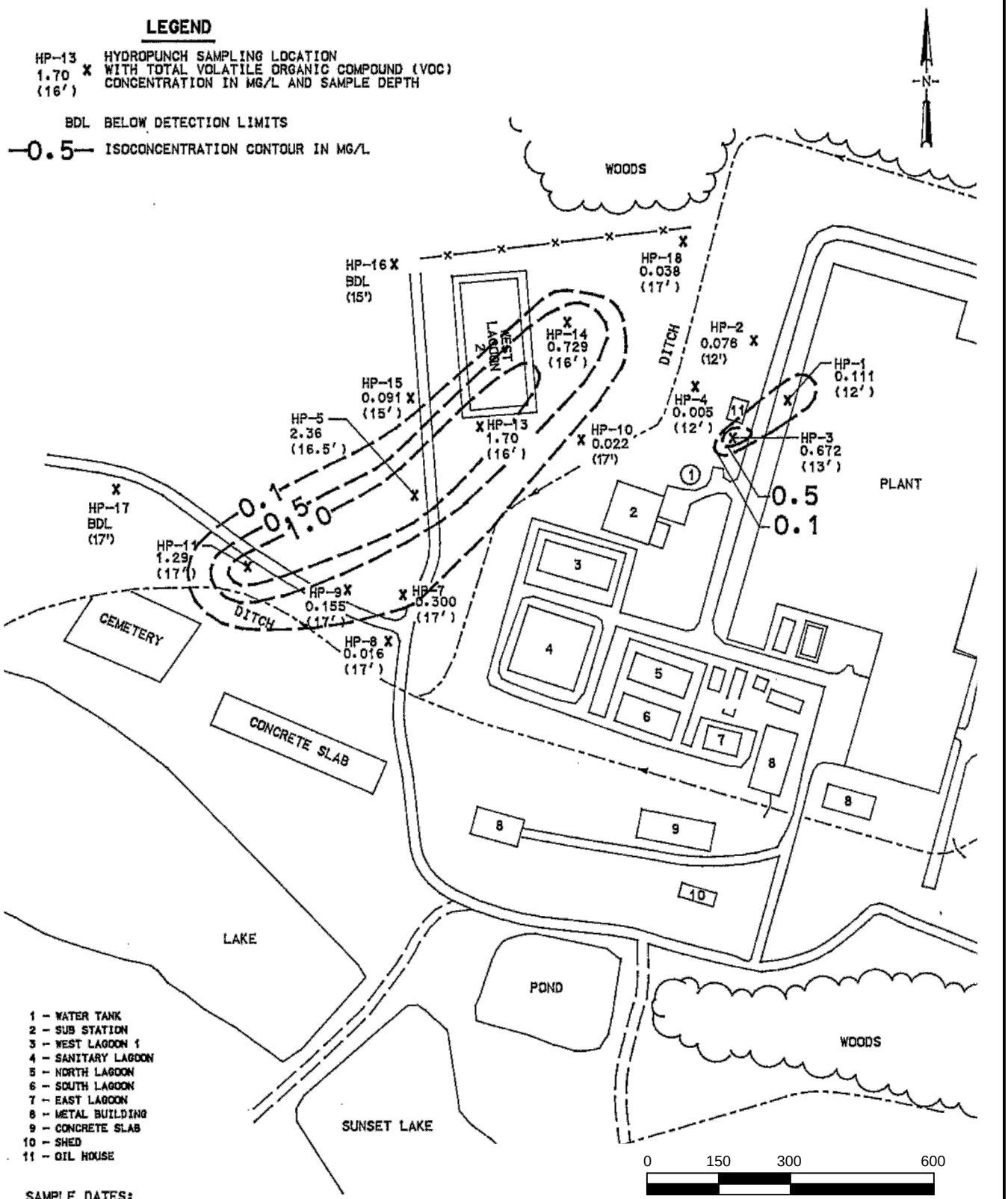
GROSS BETA IN GROUNDWATER OCTOBER 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-20**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Beta in Groundwater 10-2013.mxd



REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

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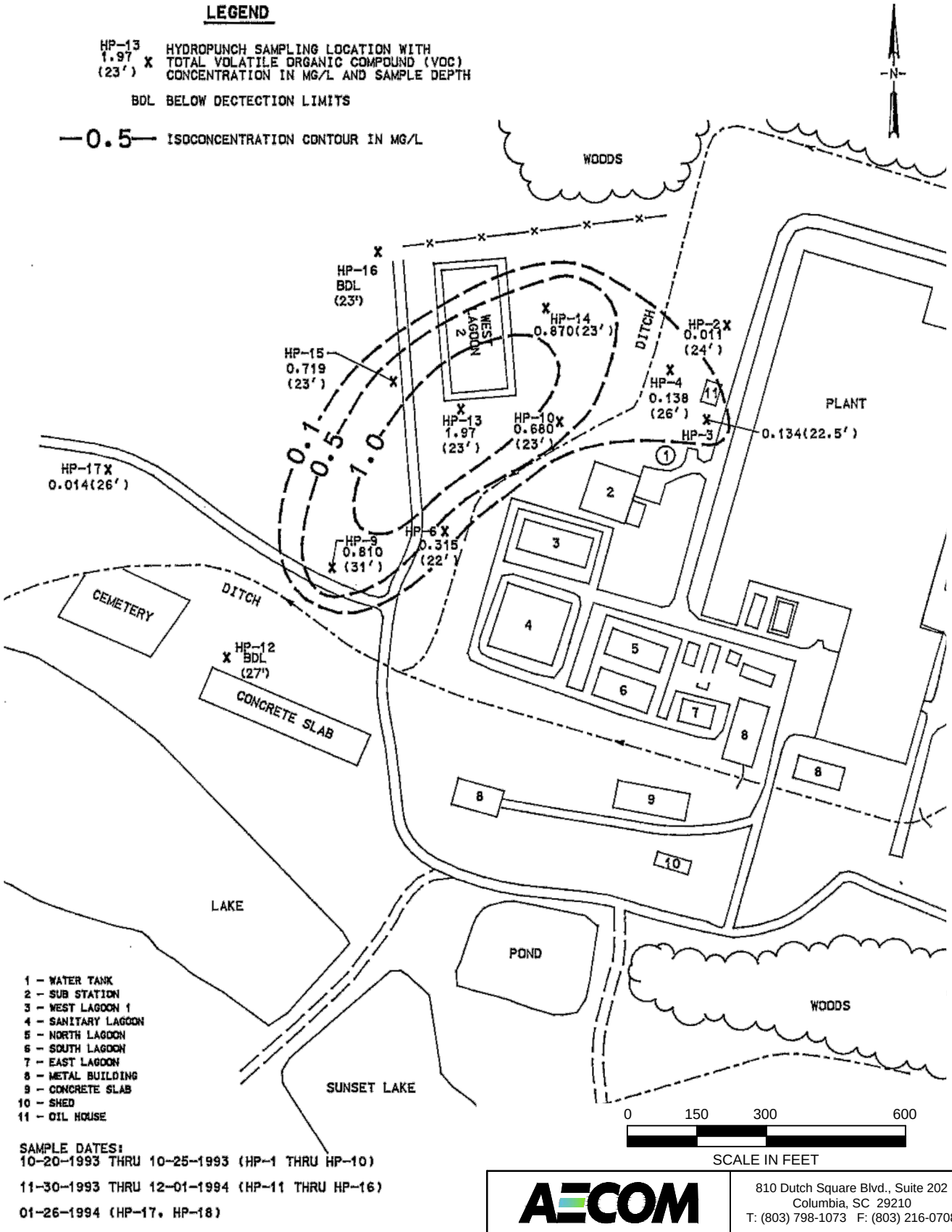
TOTAL VOCs IN UPPER SHALLOW AQUIFER HYDROPUNCH SAMPLES 1993

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 4-21



REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

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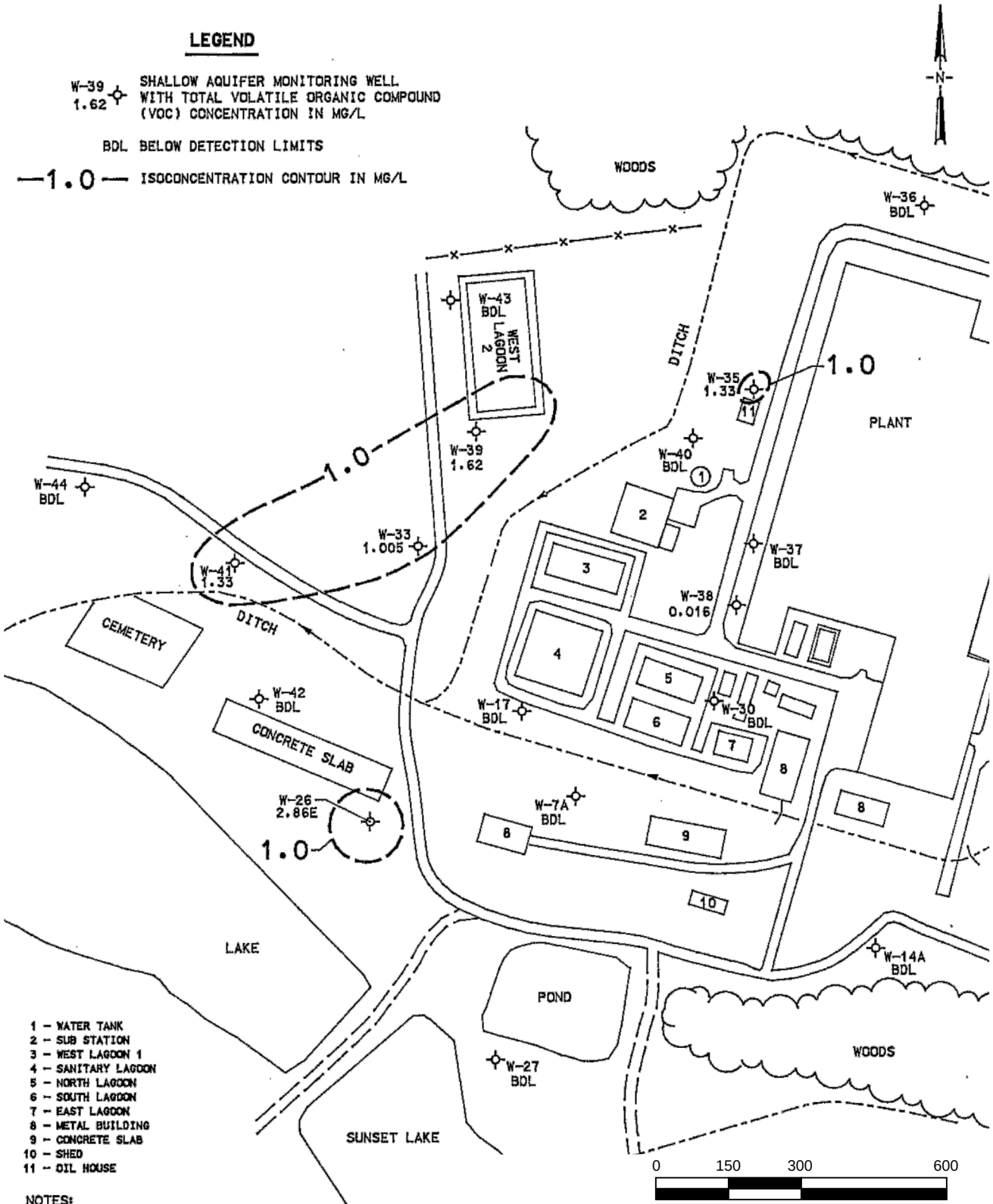
TOTAL VOCs IN LOWER SHALLOW AQUIFER HYDROPUNCH SAMPLES 1993

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 4-22



NOTES:
E-CONCENTRATIONS EXCEEDED CALIBRATION RANGE BY <5%
SAMPLES FROM WELLS W-7A, W-14A, W-27,
AND W-30 OBTAINED ON APRIL 14-15, 1992.
ALL OTHER SAMPLES OBTAINED ON FEBRUARY 7 AND 9, 1994.

REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

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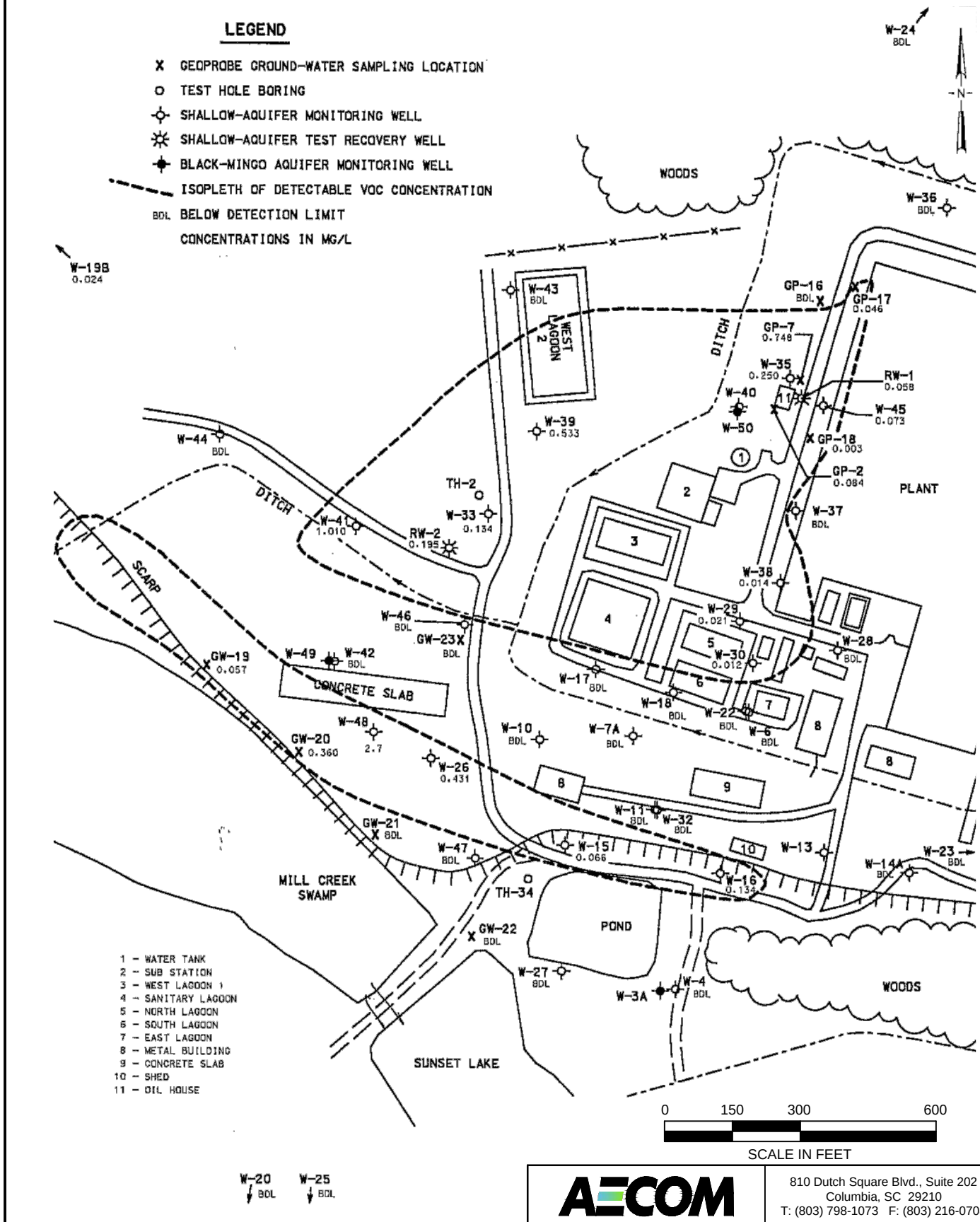
TOTAL VOCs IN SHALLOW AQUIFER MONITORING WELL SAMPLES 1994

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 4-23



REFERENCE:
CONCEPTUAL DESIGN REPORT, RUST, 1995.

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TOTAL VOCs IN GROUNDWATER 1995

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 4-24

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 1.6 PCE Concentration (µg/L)
- PCE Isoconcentration Contour (µg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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PCE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-25**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\PCE in Groundwater 12-2008.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 3.5 TCE Concentration (µg/L)
- TCE Isoconcentration Contour (µg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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TCE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-26**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\TCE in Groundwater 12-2008.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 2.0 1,2-DCE Concentration (µg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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1,2-DCE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-27**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\DCE in Groundwater 12-2008.mxd

N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- <2.0 Vinyl Chloride Concentration (µg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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VINYL CHLORIDE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-28**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Vinyl Chloride in Groundwater 12-2008.mxd

TABLES

Table 3-1
Summary of Groundwater Elevation Data

Westinghouse Electric Company - Nuclear Fuel
Hopkins, South Carolina
AECOM Project No. 60302740

Well Number	Date Measured	Screen Interval (ft bgs)	Top of Casing Elevation (ft NAVD-88)	Depth to Water (ft btoc)	Groundwater Elevation (ft NAVD-88)
W-3A	06/06/13	72.5-82.5	119.91	6.20	113.71
W-4	06/06/13	10.0-12.0	117.96	NM	NM
W-6	06/06/13	23.5-28.5	136.37	10.90	125.47
W-7A	06/06/13	13.0-18.0	135.01	11.30	123.71
W-10	06/06/13	18.5-23.5	136.77	16.10	120.67
W-11	06/06/13	25.5-28.5	140.13	18.60	121.53
W-13R	06/06/13	15.5-18.5	135.89	12.50	123.39
W-14	06/06/13	23.5-28.5	137.76	17.20	120.56
W-15	06/06/13	13.5-18.5	127.85	12.20	115.65
W-16	06/06/13	15.5-18.5	124.87	4.10	120.77
W-17	06/06/13	23.5-28.0	139.21	14.40	124.81
W-18R	06/06/13	12.5-17.5	136.99	11.10	125.89
W-19	06/06/13	30.0-40.5	142.59	27.00	115.59
W-20	06/06/13	11.5-16.3	115.80	7.50	108.30
W-22	06/06/13	13.4-17.8	136.48	10.90	125.58
W-23R	06/06/13	15.0-20.0	140.24	19.80	120.44
W-24	06/06/13	10.1-15.1	141.84	10.90	130.94
W-26	06/06/13	25.5-30.5	141.98	25.80	116.18
W-27	06/06/13	14.1-18.9	121.79	9.90	111.89
W-28	06/06/13	9.8-14.7	138.78	12.50	126.28
W-29	06/06/13	10.0-15.1	138.50	12.20	126.30
W-30	06/06/13	10.2-15.2	138.76	12.50	126.26
W-32	06/06/13	17.0-22.5	140.46	19.20	121.26
W-33	06/06/13	15.1-20.7	139.10	15.80	123.30
W-35	06/06/13	16.0-21	138.98	12.30	126.68
W-36	06/06/13	15.0-20	136.25	9.10	127.15
W-37	06/06/13	15.5-20.5	138.99	12.40	126.59
W-38	06/06/13	15.0-20.0	136.41	10.00	126.41

Table 3-1
Summary of Groundwater Elevation Data

Westinghouse Electric Company - Nuclear Fuel
Hopkins, South Carolina
AECOM Project No. 60302740

Well Number	Date Measured	Screen Interval (ft bgs)	Top of Casing Elevation (ft NAVD-88)	Depth to Water (ft btoc)	Groundwater Elevation (ft NAVD-88)
W-39	06/06/13	12.0-22.0	141.10	16.40	124.70
W-40	06/06/13	5.0-15.0	139.13	12.50	126.63
W-41R	06/06/13	14.0-24.0	133.66	16.20	117.46
W-42	06/06/13	20.0-30.0	140.87	25.50	115.37
W-43	06/06/13	10.5-20.5	141.22	15.80	125.42
W-44	06/06/13	16.0-26.0	134.53	19.40	115.13
W-45	06/06/13	6.0-16.0	140.06	13.40	126.66
W-46	06/06/13	15.5-25.5	134.49	13.70	120.79
W-47	06/06/13	34.3-44.8	141.81	26.40	115.41
W-48	06/06/13	30.7-41.3	142.36	26.60	115.76
W-49	06/06/13	105.0-115.0	140.25	28.30	111.95
W-50	06/06/13	114.5-124.5	139.45	23.10	116.35
RW-2R	06/06/13	19.0-29.2	139.69	18.50	106.37

Notes:
ft bgs = feet below ground surface
ft btoc = feet below top of casing
Elevations are in feet above mean sea level based on the North American Vertical Datum of 1988 (NAVD-88)
ND = not detected
NM = not measured

Table 4-1
Summary of Soil Analyses
Solvent Extraction Area and WWTP Area 1992
(SEC Donohue, 1992)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

SAMPLE LOCATION	DEPTH INTERVAL feet	RADIOACTIVITY GROSS ALPHA pCi/G	NITRATE mg/kg
HC-1	1.5-3	5.4	0.9
	4.5-6	4.6	0.4
	7.5-9	4.4	0.3
HC-2	1.5-3	5.1	0.9
	4.5-6	4.1	4.3
	7.5-9	5.1	2.2
HC-3	1.5-3	5.2	2.0
	4.5-6	5.0	1.4
	7.5-9	4.9	1.1
HC-4	1.5-3	5.7	0.9
	4.5-6	7.8	1.2
	7.5-9	5.7	1.7
HC-5	1.5-3	18.5	2.0
	4.5-6	8.1	4.0
	7.5-9	9.0	2.4
HC-6	1.5-3	12.8	0.5
	4.5-6	6.8	1.0
	7.5-9	9.0	2.0
HC-7	1.5-3	9.5	0.9
	4.5-6	7.3	0.7
	7.5-9	30.5	0.5
HC-8	1.5-3	8.8	0.5
	4.5-6	9.3	0.6
	7.5-9	14.0	1.2
HC-9	1.5-3	11.3	0.1
	4.5-6	22.5	0.2
	7.5-9	12.3	0.5
HA-14	2-3	18.3	1.5
	5-6	44.3	0.9
	8-9	4.2	1.0
HA-15	2-3	21.3	0.9
	5-6	28.8	0.5
	8-9	18.4	0.6
HA-16	2-3	9.3	1.8
	5-6	6.0	1.8

Table 4-2
Summary of VOCs and TPH in Soil
Former Oil House 1995
(Rust, 1995)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

				Volatile Organic Compounds (VOCs)									
		Total Diesel Range		Acetone	Tetrachloroethene		Trichloroethene		1,2-Dichloroethene (Total)		Total VOCs	
Geoprobe Location	Sample Depth (Feet)	Field (mg/kg)	Laboratory (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)
GP-1	3	0.053	NA	NA	4.1	NA	0.356	NA	0.014	NA	4.5	NA
GP-1	11	< 0.025	NA	NA	0.015	NA	< 0.002	NA	< 0.005	NA	0.015	NA
GP-2	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-2	11	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-3	3	< 0.025	< 10	< 0.010	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	BDL	BDL
GP-3	11	< 0.025	NA	NA	0.011	NA	< 0.002	NA	< 0.005	NA	0.011	NA
GP-4	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-4	11	< 0.025	< 10	0.012	< 0.002	0.012	< 0.002	< 0.005	< 0.005	< 0.005	BDL	0.024
GP-5	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-5	11	0.061	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-6	3	< 0.025	21 *	0.015	0.004	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	0.004	0.015
GP-6	11	< 0.025	NA	NA	< 0.002	NA	0.002	NA	0.005	NA	0.007	NA
GP-7	5	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-7	11	73.4	NA	NA	0.007	NA	0.005	NA	0.006	NA	0.018	NA
GP-8	3	< 0.025	NA	NA	0.274	NA	0.003	NA	< 0.005	NA	0.277	NA
GP-8	11	< 0.025	< 10	< 0.010	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	BDL	BDL
GP-9	3	< 0.025	79 *	0.051	< 0.002	0.014	< 0.002	< 0.005	< 0.005	< 0.005	BDL	0.065
GP-9	11	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-10	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-10	11	19.3	NA	NA	0.129	NA	< 0.002	NA	< 0.005	NA	0.129	NA

Table 4-2
Summary of VOCs and TPH in Soil
Former Oil House 1995
(Rust, 1995)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Geoprobe Location	Sample Depth (Feet)	Total Diesel Range		Volatile Organic Compounds (VOCs)								Total VOCs	
				Acetone	Tetrachloroethene		Trichloroethene		1,2-Dichloroethene (Total)				
		Field (mg/kg)	Laboratory (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)		Field (mg/kg)	Laboratory (mg/kg)
GP-11	5	0.076	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-11	11	40.3	7200	< 12.5	< 0.002	< 6.25	< 0.002	< 6.25	0.052	< 6.25		0.052	BDL
GP-12	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-12	9	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-13	5	< 0.025	< 10	< 0.010	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005		BDL	BDL
GP-13	11	< 0.025	NA		< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-14	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-14	5	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-14	11	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-15	3	< 0.025	< 10	< 0.010	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005		BDL	BDL
GP-15	11	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-16	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-16	9	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-17	5	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-17	11	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-18	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA
GP-18	9	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA		BDL	NA

Notes: mg/kg = Milligrams per kilogram.
Field analyses performed by Microseeps.
Laboratory analyses performed by IEA, Inc.
* = Did not match typical No. 2 Fuel Oil pattern.
BDL = Below Detection Limit.
NA = Not analyzed.

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W3A	**Mar-04**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
W3A	**Jun-05**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W3A	**Jun-06**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W3A	**Jun-07**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W3A	**Mar-08**	NA	NA	NA	NA	NA	NA	**0.11**	**2.10**	**1.53**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	NA	NA	**0.15**	**2.98**	**2.39**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**0.14**	**2.46**	0.00	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	**0.03**	**0.30**	**2.48**	<5.0	NA	NA
W3A	**Mar-09**	NA	NA	NA	NA	<0.50	**4.92**	**0.22**	**0.90**	**0.02**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	<0.50	<1.00	**0.11**	**0.76**	0.00	NA	NA	NA
	Sep-09	NA	NA	NA	NA	<0.50	<1.00	**0.13**	**2.76**	**6.17**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	<0.50	<1.00	NA	**0.65**	0.00	NA	NA	NA
W3A	**Mar-10**	NA	NA	NA	NA	<0.50	<1.00	**49.00**	**1.27**	<0.001	NA	NA	NA
	Jun-10	<1.00	<1.00	<1.00	<2.00	<0.50	<1.00	**0.12**	**2.66**	**10.70**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	<0.50	<1.00	**0.08**	**2.94**	**1.20**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	<0.50	<1.00	<0.02	**2.02**	**3.16**	NA	NA	NA
W3A	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	<0.02	**0.28**	0.00	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	<0.02	**0.86**	**2.07**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	<0.02	**2.33**	**1.32**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	<0.02	**1.81**	**0.17**	NA	NA	NA
W3A	**Mar-12**	NA	NA	NA	NA	<0.50	**0.05**	**0.04**	**2.86**	**1.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	<0.02	**1.33**	**1.52**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	N/A	**1.35**	**0.00**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	<0.02	0.00	**0.73**	NA	NA	NA
W3A	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	<0.02	**0.46**	**4.85**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	<0.50	<1.00	<0.02	**2.65**	**1.25**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	<0.50	<1.00	<0.02	<0.77	<0.31	NA	NA	NA
W7	**Feb/Mar 04**	<1.0	<1.0	<1.0	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	**18.60**	**33.30**	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	**17.20**	**45.00**	NA	NA	NA	NA	NA	NA
	Dec-04	**1.30**	<1.0	<1.0	<2.0	**19.60**	**0.97**	**38.80**	**9.00**	**97.00**	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W7	**Jun-05**	NA	NA	NA	NA	**16.00**	**45.80**	**41.50**	**5.00**	**175.00**	NA	NA	NA
	Dec-05	NA	NA	NA	NA	**17.70**	**39.80**	**240.00**	**8.00**	**240.00**	NA	NA	NA
W7	**Jun-06**	<1.0	<1.0	<1.0	<2.0	**15.20**	**54.30**	**42.70**	**5.00**	**127.00**	NA	NA	NA
	Dec-06	NA	NA	NA	NA	**16.00**	**52.30**	**48.80**	**1.00**	**215.00**	NA	NA	NA
W7	**Jun-07**	**1.30**	<1.0	<1.0	<2.0	**13.00**	**54.20**	**53.30**	**2.00**	**141.00**	NA	NA	NA
	Dec-07	NA	NA	NA	NA	**17.00**	**45.10**	**46.90**	**2.00**	**195.00**	NA	NA	NA
W7	**Mar-08**	NA	NA	NA	NA	NA	NA	**42.60**	**14.80**	**234.00**	NA	NA	NA
	Jun-08	**1.20**	<1.0	<1.0	<2.0	**11.30**	**46.30**	**43.60**	**1.00**	**143.00**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**38.70**	**1.27**	**139.00**	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**12.20**	**34.00**	**35.60**	**1.10**	**171.00**	**5.0**	**4.1**	**166.9**
W7	**Mar-09**	NA	NA	NA	NA	**12.85**	**51.50**	**40.10**	**26.10**	**122.00**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	**29.40**	**46.00**	**35.70**	**0.35**	**214.00**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	**12.45**	**63.10**	**40.50**	**9.95**	**211.00**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	**14.75**	**48.00**	**43.00**	**7.29**	**169.00**	NA	NA	NA
W7	**Mar-10**	NA	NA	NA	NA	**12.30**	**64.00**	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	**11.90**	**52.00**	**63.00**	**4.21**	**153.00**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	**9.50**	**58.00**	**90.00**	**1.30**	**215.00**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	**10.20**	**49.00**	**130.00**	**5.72**	**212.00**	NA	NA	NA
W7	**Apr-11**	NA	NA	NA	NA	**7.60**	**52.00**	<20.00	**3.24**	**136.00**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**7.60**	**53.00**	**150.00**	**5.63**	**146.00**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**7.60**	**45.00**	**140.00**	**7.78**	**112.00**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**8.55**	**59.40**	**130.00**	**9.03**	**185.00**	NA	NA	NA
W7	**Mar-12**	NA	NA	NA	NA	**8.40**	**54.80**	**140.00**	**10.30**	**199.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**9.05**	**51.60**	**120.00**	**5.80**	**92.70**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**8.35**	**40.40**	**74.00**	**4.82**	**102.00**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**8.60**	**53.50**	**91.00**	**6.43**	**181.00**	NA	NA	NA
W7	**Mar-13**	NA	NA	NA	NA	**8.95**	**45.90**	**120.00**	**5.35**	**135.00**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**6.75**	**51.00**	**140.00**	**2.24**	**102.00**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**8.15**	**55.90**	**160.00**	**5.12**	**164.00**	NA	NA	NA
W10	**Feb/Mar-04**	<1.0	<1.0	<1.0	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	**5.16**	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	**4.10**	**6.26**	NA	NA	NA	NA	NA	NA
	Dec-04	<1.0	<1.0	<1.0	<2.0	**5.64**	**6.85**	**25.00**	**6.00**	**25.00**	NA	NA	NA
W10	**Jun-05**	NA	NA	NA	NA	**1.70**	**4.70**	**22.90**	**7.00**	**28.00**	NA	NA	NA
	Dec-05	NA	NA	NA	NA	**7.00**	**6.90**	**29.80**	**4.00**	**58.00**	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W10	**Jun-06**	NA	NA	NA	NA	**7.40**	**3.70**	**26.80**	**6.00**	**63.00**	NA	NA	NA
	Dec-06	NA	NA	NA	NA	**5.10**	**2.50**	**31.40**	0.00	**77.00**	NA	NA	NA
W10	**Jun-07**	NA	NA	NA	NA	**5.10**	**7.60**	**43.40**	**3.00**	**72.00**	NA	NA	NA
	Dec-07	NA	NA	NA	NA	**4.80**	**14.00**	**11.80**	**4.00**	**70.00**	NA	NA	NA
W10	**Mar-08**	NA	NA	NA	NA	NA	NA	**16.00**	**5.71**	**65.70**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	**0.50**	**1.10**	**17.20**	**3.00**	**41.00**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**11.20**	**0.65**	**28.30**	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**2.90**	**2.00**	**10.50**	**0.52**	**47.60**	<5.0	NA	NA
W10	**Mar-09**	NA	NA	NA	NA	**3.50**	**1.40**	**15.30**	**3.83**	**34.30**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	**3.14**	**2.00**	**13.50**	**0.68**	**38.80**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	**3.36**	**3.40**	**18.60**	**2.46**	**46.10**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	**3.93**	**3.00**	**19.00**	**2.48**	**43.30**	NA	NA	NA
W10	**Mar-10**	NA	NA	NA	NA	**3.10**	**7.00**	NA	NA	NA	NA	NA	NA
	Jun-10	<1.0	<1.0	<1.0	<2.0	**3.07**	**3.00**	**34.00**	**3.55**	**70.20**	NA	NA	NA
	Sep-10	<1.0	<1.0	<1.0	<2.0	**3.40**	**7.00**	**47.00**	**4.35**	**78.80**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	**4.86**	**11.00**	**24.00**	**0.34**	**55.20**	NA	NA	NA
W10	**Apr-11**	NA	NA	NA	NA	**6.75**	**4.00**	<20.00	**1.48**	**86.80**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**3.22**	**3.00**	**44.00**	**5.49**	**81.70**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**4.60**	**12.00**	**41.00**	**5.08**	**77.80**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**4.19**	**15.20**	**27.00**	**6.22**	**99.30**	NA	NA	NA
W10	**Mar-12**	NA	NA	NA	NA	**4.15**	**10.40**	**35.00**	**6.12**	**117.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**4.23**	**2.21**	**39.00**	**2.72**	**58.60**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**2.57**	**3.41**	**28.00**	**3.10**	**53.50**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**3.78**	**15.70**	**18.00**	**1.41**	**56.70**	NA	NA	NA
W10	**Mar-13**	NA	NA	NA	NA	**4.59**	<1.00	**83.00**	**4.04**	**79.80**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**2.30**	**5.42**	**76.00**	**5.13**	**53.90**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**2.20**	**6.19**	**39.00**	<4.51	**59.20**	NA	NA	NA
W13	**Mar-04**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	**0.44**	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	**0.48**	<1.00	**8.10**	**2.00**	**13.00**	NA	NA	NA
W13	**Jun-05**	NA	NA	NA	NA	<0.50	<1.00	**6.90**	0.00	**1.00**	NA	NA	NA
	Dec-05	NA	NA	NA	NA	<0.50	<1.00	**16.60**	**3.00**	**3.00**	NA	NA	NA
W13	**Jun-06**	NA	NA	NA	NA	<0.50	<1.00	**7.20**	**2.00**	**3.00**	NA	NA	NA
	Dec-06	NA	NA	NA	NA	<0.50	<1.00	**8.00**	**2.00**	0.00	NA	NA	NA
W13	**Jun-07**	NA	NA	NA	NA	<0.50	<1.00	**12.30**	**4.00**	**4.00**	NA	NA	NA
	Dec-07	NA	NA	NA	NA	<0.50	<1.00	**15.10**	**6.00**	**7.00**	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W13	**Mar-08**	NA	NA	NA	NA	NA	NA	**5.15**	**2.58**	**6.61**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	<0.50	<1.00	**8.29**	**3.00**	**3.00**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	**8.30**	NA	NA	<5.0	NA	NA
W13	**Mar-09**	NA	NA	NA	NA	<0.50	<1.00	**3.62**	**4.04**	**5.24**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NA	NA	NA	NA	<0.50	<1.00	**1.60**	**1.61**	**4.98**	NA	NA	NA
W13	**Mar-10**	NA	NA	NA	NA	<0.50	<1.00	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	<0.50	<1.00	**7.20**	**0.68**	<0.001	NA	NA	NA
	Sep-10	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NA	NA	NA	NA	**12.15**	**43.00**	**40.00**	**0.78**	**81.40**	NA	NA	NA
W13	**Apr-11**	NA	NA	NA	NA	**10.75**	**54.00**	<20.00	**2.60**	**85.60**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**10.35**	**56.00**	**35.00**	**9.92**	**121.00**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**10.00**	**47.00**	**40.00**	**16.90**	**90.60**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**10.40**	**56.70**	**51.00**	**17.90**	**132.00**	NA	NA	NA
W13	**Mar-12**	NA	NA	NA	NA	**9.60**	**53.70**	**44.00**	**7.30**	**138.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**10.90**	**59.00**	**43.00**	**7.66**	**68.20**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**9.85**	**46.30**	**38.00**	**2.94**	**110.00**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**11.10**	**51.00**	**36.00**	**9.65**	**142.00**	NA	NA	NA
W13	**Mar-13**	NA	NA	NA	NA	**10.40**	**41.60**	**40.00**	**5.78**	**99.30**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**10.90**	**50.20**	**39.00**	**3.01**	**130.00**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**10.20**	**48.10**	**31.00**	<1.94	**140.00**	NA	NA	NA
W14	**Mar-04**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	**1.21**	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	<0.40	**1.22**	NA	NA	NA	NA	NA	NA
W14	**Jun-05**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W14	**Jun-06**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W14	**Jun-07**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W14	**Mar-08**	NA	NA	NA	NA	NA	NA	**2.24**	**3.01**	**6.41**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	NA	NA	**0.17**	**4.22**	**17.30**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**0.49**	**6.53**	**8.88**	NA	NA	NA
	Dec-08	**42.00**	**7.40**	**2.00**	<2.0	<0.50	<1.00	**2.90**	**1.50**	**9.00**	**8.0**	**6.6**	**2.4**

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W14	**Mar-09**	NA	NA	NA	NA	<0.50	**7.79**	**0.41**	**4.39**	**11.70**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	<0.50	**2.15**	**0.12**	**1.43**	**17.50**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	<0.50	**2.60**	**0.14**	**3.29**	**9.50**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	<0.50	<1.00	NA	**3.64**	**10.30**	NA	NA	NA
W14	**Mar-10**	NA	NA	NA	NA	<0.50	**2.60**	<0.02	**2.92**	**11.40**	NA	NA	NA
	Jun-10	NA	NA	NA	NA	<0.50	**2.00**	<0.02	**3.85**	**14.00**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	<0.50	**2.41**	**0.30**	**14.40**	**23.10**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	<0.50	**2.00**	**0.13**	**2.99**	**11.30**	NA	NA	NA
W14	**Apr-11**	NA	NA	NA	NA	<0.50	**2.00**	**0.79**	**1.69**	**10.40**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	**3.00**	**0.10**	**6.41**	**10.10**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	**3.00**	**0.20**	**3.23**	**8.74**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	**1.40**	**2.01**	**9.88**	NA	NA	NA
W14	**Mar-12**	NA	NA	NA	NA	<0.50	<1.00	**3.90**	**0.22**	**5.01**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	**1.76**	**2.60**	**0.91**	**6.62**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	**1.28**	**3.10**	**0.00**	**4.12**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	**2.77**	**0.84**	**6.91**	**15.90**	NA	NA	NA
W14	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**4.70**	**1.32**	**2.82**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	<0.50	<1.00	**4.30**	**0.82**	**3.98**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	<0.50	1.43	**2.30**	<0.97	**28.60**	NA	NA	NA
W15	**Feb/Mar-04**	**49.00**	**4.10**	**2.00**	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	<0.40	**9.53**	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	**5.00**	**15.60**	NA	NA	NA	NA	NA	NA
	Dec-04	**44.00**	**3.80**	**2.20**	<2.0	**7.20**	**17.20**	**15.90**	**1.00**	**62.00**	NA	NA	NA
W15	**Jun-05**	NA	NA	NA	NA	**4.60**	<1.00	**16.50**	**1.00**	**5.00**	NA	NA	NA
	Dec-05	NA	NA	NA	NA	**6.20**	**15.10**	**18.40**	**6.00**	**158.00**	NA	NA	NA
W15	**Jun-06**	NA	NA	NA	NA	**5.40**	**17.70**	**19.70**	**6.00**	**101.00**	NA	NA	NA
	Dec-06	NA	NA	NA	NA	**3.90**	**10.10**	**23.60**	**12.00**	**231.00**	NA	NA	NA
W15	**Jun-07**	NA	NA	NA	NA	**5.90**	**7.60**	**16.00**	**1.00**	**132.00**	NA	NA	NA
	Dec-07	NA	NA	NA	NA	**6.70**	**13.40**	**15.20**	**7.00**	**131.00**	NA	NA	NA
W15	**Mar-08**	NA	NA	NA	NA	NA	NA	**20.70**	**10.30**	**268.00**	NA	NA	NA
	Jun-08	**28.00**	**2.70**	**1.90**	<2.0	**6.60**	**13.60**	**16.90**	**0.35**	**153.00**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**14.40**	**1.33**	**144.00**	NA	NA	NA
	Dec-08	**35.00**	**3.50**	**2.50**	<2.0	**6.60**	**10.70**	**20.00**	**2.10**	**210.00**	**6.4**	**5.2**	**204.8**

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W15	Mar-09	NA	NA	NA	NA	4.20	13.40	19.80	9.82	154.00	NA	NA	NA
	Jun-09	NA	NA	NA	NA	4.92	15.00	17.20	1.70	141.00	NA	NA	NA
	Sep-09	NA	NA	NA	NA	5.50	20.90	14.90	7.86	209.00	NA	NA	NA
	Dec-09	NA	NA	NA	NA	3.73	9.00	23.00	5.07	210.00	NA	NA	NA
W15	Mar-10	NA	NA	NA	NA	3.00	13.20	27.00	7.34	184.00	NA	NA	NA
	Jun-10	NA	NA	NA	NA	4.41	15.00	19.00	4.52	201.00	NA	NA	NA
	Sep-10	NA	NA	NA	NA	2.30	12.10	21.00	11.30	293.00	NA	NA	NA
	Dec-10	NA	NA	NA	NA	2.65	10.00	29.00	4.61	159.00	NA	NA	NA
W15	Apr-11	NA	NA	NA	NA	2.15	10.00	19.00	4.17	188.00	NA	NA	NA
	Jun-11	NA	NA	NA	NA	2.00	12.00	23.00	9.89	232.00	NA	NA	NA
	Sep-11	NA	NA	NA	NA	2.00	14.00	20.00	6.20	177.00	NA	NA	NA
	Dec-11	NA	NA	NA	NA	2.90	13.00	20.00	3.25	203.00	NA	NA	NA
W15	Mar-12	NA	NA	NA	NA	2.12	12.10	25.00	3.68	229.00	NA	NA	NA
	Jun-12	NA	NA	NA	NA	2.48	14.40	28.00	4.60	111.00	NA	NA	NA
	Sep-12	NA	NA	NA	NA	2.76	12.30	22.00	0.95	165.00	NA	NA	NA
	Dec-12	NA	NA	NA	NA	3.00	14.70	22.00	3.22	160.00	NA	NA	NA
W15	Mar-13	NA	NA	NA	NA	2.37	13.90	21.00	3.89	174.00	NA	NA	NA
	Jun-13	NA	NA	NA	NA	2.55	15.60	23.00	4.08	145.00	NA	NA	NA
	Oct-13	NA	NA	NA	NA	2.80	12.70	23.00	<0.37	268.00	NA	NA	NA
W16	Feb/Mar-04	62.00	12.00	47.00	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	0.78	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	8.40	20.90	NA	NA	NA	NA	NA	NA
	Dec-04	56.00	11.00	56.00	<2.0	13.04	23.60	4.60	1.00	17.00	NA	NA	NA
W16	Jun-05	NA	NA	NA	NA	0.90	<1.00	5.20	4.00	14.00	NA	NA	NA
	Dec-05	39.00	8.70	40.00	<2.0	12.10	19.70	5.90	1.00	21.00	NA	NA	NA
W16	Jun-06	37.00	9.00	34.00	NA	12.00	31.80	2.80	1.00	23.00	NA	NA	NA
	Dec-06	NA	NA	NA	NA	7.90	14.90	3.40	0.00	19.00	NA	NA	NA
W16	Jun-07	35.00	8.80	23.00	<2.0	11.80	14.90	3.20	2.00	17.00	NA	NA	NA
	Dec-07	NA	NA	NA	NA	13.10	17.10	4.30	1.00	21.00	NA	NA	NA
W16	Mar-08	NA	NA	NA	NA	NA	NA	5.30	0.00	22.80	NA	NA	NA
	Jun-08	NA	NA	NA	NA	12.60	20.50	3.80	0.54	19.80	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	3.27	1.29	21.20	NA	NA	NA
	Dec-08	26.00	7.70	18.00	<2.0	11.00	16.20	3.60	1.20	22.40	12.0	9.8	12.6
W16	Mar-09	NA	NA	NA	NA	9.10	17.10	3.88	1.44	9.60	NA	NA	NA
	Jun-09	NA	NA	NA	NA	6.75	18.00	3.61	0.89	19.40	NA	NA	NA
	Sep-09	NA	NA	NA	NA	9.30	23.90	3.02	<0.001	22.90	NA	NA	NA
	Dec-09	NA	NA	NA	NA	8.10	16.00	2.80	1.88	19.10	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W16	**Mar-10**	NA	NA	NA	NA	**11.30**	**22.50**	**0.15**	**1.04**	**13.20**	NA	NA	NA
	Jun-10	NA	NA	NA	NA	**9.95**	**18.00**	**2.30**	**1.76**	**25.90**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	**9.20**	**21.60**	**3.30**	**31.20**	**59.80**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	**10.50**	**17.00**	**2.40**	**3.19**	**15.00**	NA	NA	NA
W16	**Apr-11**	NA	NA	NA	NA	**1.00**	**20.20**	**3.20**	**0.03**	**14.80**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**9.00**	**17.00**	**3.40**	**1.26**	**17.90**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**8.00**	**23.00**	**2.80**	**0.64**	**19.10**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**10.60**	**20.00**	**3.40**	**0.75**	**18.00**	NA	NA	NA
W16	**Mar-12**	NA	NA	NA	NA	**7.40**	**17.90**	**3.70**	**1.98**	**18.80**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**10.10**	**21.60**	**5.10**	**0.70**	**18.10**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**9.65**	**16.10**	**4.10**	**0.97**	**14.40**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**10.10**	**20.40**	**2.60**	**0.11**	**16.60**	NA	NA	NA
W16	**Mar-13**	NA	NA	NA	NA	**11.50**	**19.80**	**2.90**	**3.59**	**25.70**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**7.90**	**15.20**	**3.40**	**3.81**	**19.20**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**9.65**	**15.30**	**1.90**	<0.32	**16.10**	NA	NA	NA
W17	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W17	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W17	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W17	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W17	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W17	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W17	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 4-3
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Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W17	**Apr-11**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-11	NA	NA	NA	NA	**2.40**	**7.00**	**11.00**	**6.81**	**224.00**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**2.48**	**7.40**	**5.20**	**3.29**	**273.00**	NA	NA	NA
W17	**Mar-12**	NA	NA	NA	NA	**2.64**	**7.32**	**11.00**	**7.43**	**263.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**2.30**	**8.02**	**21.00**	**1.54**	**257.00**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**2.53**	**6.88**	**11.00**	**6.35**	**202.00**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**2.28**	**6.99**	**12.00**	**0.53**	**356.00**	NA	NA	NA
W17	**Mar-13**	NA	NA	NA	NA	**2.64**	**7.95**	**11.00**	**5.90**	**314.00**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**2.45**	**7.37**	**12.00**	**2.63**	**264.00**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**1.96**	**6.07**	**12.00**	**12.80**	**372.00**	NA	NA	NA
W18	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W18	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	**4.30**	<1.0	**1.00**	<2.0	**15.90**	<1.00	**55.90**	**155.00**	**119.00**	NA	NA	NA
W18	**Jun-06**	**2.10**	<1.0	<1.0	<2.0	**25.70**	<1.00	**132.00**	**9.00**	**296.00**	NA	NA	NA
	Dec-06	NA	NA	NA	NA	**11.60**	**3.10**	**2.40**	**66.00**	**18.00**	NA	NA	NA
W18	**Jun-07**	**2.50**	<1.0	<1.0	<2.0	**1.70**	**3.10**	**3.90**	**112.00**	**19.00**	NA	NA	NA
	Dec-07	NA	NA	NA	NA	**10.80**	**39.40**	**69.80**	**31.00**	**38.00**	NA	NA	NA
W18	**Mar-08**	NA	NA	NA	NA	NA	NA	**12.50**	**3.46**	**11.80**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	**12.00**	**82.60**	**141.00**	**8.44**	**72.20**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**86.40**	**12.40**	**47.40**	NA	NA	NA
	Dec-08	**1.10**	<1.0	<1.0	<2.0	**12.40**	**63.60**	**94.20**	**5.00**	**71.00**	**7.6**	**6.2**	**64.8**
W18	**Mar-09**	NA	NA	NA	NA	**13.15**	**88.50**	**151.00**	**9.50**	**103.00**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	**3.82**	**3.00**	**142.00**	**9.25**	**94.70**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	**11.45**	**106.00**	**85.60**	**17.80**	**55.70**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	**14.95**	**71.00**	**15.00**	**17.40**	**45.10**	NA	NA	NA
W18	**Mar-10**	NA	NA	NA	NA	**10.60**	**130.00**	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	**6.00**	**90.00**	**3.80**	**10.40**	**101.00**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	**13.00**	**110.00**	**200.00**	**24.60**	**115.00**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	**12.00**	**92.00**	**240.00**	**4.52**	**118.00**	NA	NA	NA
W18	**Apr-11**	NA	NA	NA	NA	**11.90**	**91.00**	<20.00	**8.85**	**176.00**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**11.15**	**106.00**	**290.00**	**10.90**	**214.00**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**10.00**	**82.00**	**250.00**	**10.40**	**142.00**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**11.40**	**110.00**	**0.22**	**16.60**	**151.00**	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W18	**Mar-12**	NA	NA	NA	NA	**10.60**	**114.00**	**360.00**	**13.80**	**242.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**8.70**	**83.90**	**270.00**	**11.30**	**103.00**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**8.55**	**88.10**	**310.00**	**16.40**	**110.00**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**7.15**	**95.70**	**350.00**	**18.00**	**162.00**	NA	NA	NA
W18	**Mar-13**	NA	NA	NA	NA	**9.30**	**78.60**	**280.00**	**37.20**	**192.00**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**7.75**	**82.30**	**490.00**	**18.60**	**184.00**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**7.60**	**103.00**	**510.00**	**12.60**	**235.00**	NA	NA	NA
W19	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
W19	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W19	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W19	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W19	**Mar-08**	NA	NA	NA	NA	NA	NA	**6.10**	**1.52**	**3.65**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	NA	NA	**6.50**	**1.57**	**1.51**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**5.95**	**2.39**	**7.77**	NA	NA	NA
	Dec-08	NA	NA	NA	NA	<0.50	<1.00	**6.20**	**0.90**	**1.60**	NA	NA	NA
W19	**Mar-09**	NA	NA	NA	NA	<0.50	**5.33**	**6.16**	**0.81**	**2.08**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	<0.50	<1.00	**6.17**	**0.44**	**1.06**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	<0.50	<1.00	**5.93**	**1.30**	**3.91**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	<0.50	<1.00	NA	**1.10**	0.00	NA	NA	NA
W19	**Mar-10**	NA	NA	NA	NA	**5.40**	**13.00**	**6.10**	**0.00**	**0.00**	NA	NA	NA
	Jun-10	NA	NA	NA	NA	N/A	<1.00	**6.20**	**1.60**	**3.12**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	<0.50	<1.00	**5.70**	**1.66**	**1.93**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	<0.50	<1.00	**6.50**	0.00	0.00	NA	NA	NA
W19	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**6.50**	0.00	**1.05**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**4.60**	**1.19**	**1.55**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**4.90**	**0.79**	**1.09**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	**4.90**	**0.95**	0.00	NA	NA	NA
W19	**Mar-12**	NA	NA	NA	NA	<0.50	**0.03**	**6.90**	**0.35**	**1.01**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**6.10**	**0.27**	**2.57**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**5.40**	**0.61**	**1.30**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**5.10**	**1.55**	**2.54**	NA	NA	NA

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Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W19	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**5.10**	**5.69**	**4.87**	NA	NA	NA
	Jun-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W20	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
W20	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W20	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W20	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W20	**Mar-08**	NA	NA	NA	NA	NA	NA	**0.91**	**1.08**	**1.43**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	NA	NA	**0.11**	**2.58**	**2.96**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**0.16**	**0.92**	0.00	NA	NA	NA
	Dec-08	NA	NA	NA	NA	<0.50	<1.00	**0.40**	0.00	**3.40**	NA	NA	NA
W20	**Mar-09**	NA	NA	NA	NA	<0.50	**4.98**	**0.62**	**2.02**	**0.80**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	<0.50	<1.00	**0.41**	**1.69**	**0.16**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	<0.50	<1.00	**0.09**	0.00	**7.88**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	<0.50	<1.00	NA	**0.73**	0.00	NA	NA	NA
W20	**Mar-10**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	N/A	<1.00	**0.48**	**3.16**	**1.02**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	<0.50	<1.00	**0.49**	**3.69**	0.00	NA	NA	NA
	Dec-10	NA	NA	NA	NA	<0.50	<1.00	**0.03**	**1.48**	**0.20**	NA	NA	NA
W20	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**0.25**	**0.09**	**2.35**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**0.19**	**0.81**	0.00	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**0.73**	**2.76**	0.00	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	<0.02	**0.55**	**1.93**	NA	NA	NA
W20	**Mar-12**	NA	NA	NA	NA	**0.48**	**0.08**	**0.23**	**0.38**	**0.78**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**0.83**	**2.38**	**3.03**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**0.09**	**1.62**	0.00	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**0.03**	**1.85**	**2.46**	NA	NA	NA
W20	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**0.14**	**2.03**	0.00	NA	NA	NA
	Jun-13	NA	NA	NA	NA	<0.50	<1.00	**0.52**	**0.15**	**0.59**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	<0.50	<1.00	<0.02	<0.44	<2.27	NA	NA	NA

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Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W22	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	<0.40	**6.94**	**37.00**	**6.00**	**144.00**	NA	NA	NA
W22	**Jun-05**	NA	NA	NA	NA	<0.50	<1.00	**2.50**	0.00	**7.00**	NA	NA	NA
	Dec-05	NA	NA	NA	NA	<0.50	<1.00	**2.50**	0.00	**7.00**	NA	NA	NA
W22	**Jun-06**	NA	NA	NA	NA	**33.70**	<1.00	**35.00**	0.00	**2.00**	NA	NA	NA
	Dec-06	NA	NA	NA	NA	**3.10**	**52.30**	**56.80**	**3.00**	**38.00**	NA	NA	NA
W22	**Jun-07**	NA	NA	NA	NA	**5.00**	**10.20**	**22.80**	**2.00**	**8.00**	NA	NA	NA
	Dec-07	NA	NA	NA	NA	**5.00**	**10.20**	**22.80**	NA	NA	NA	NA	NA
W22	**Mar-08**	NA	NA	NA	NA	NA	NA	**10.80**	**2.43**	**10.40**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	**20.50**	**87.70**	**71.40**	**2.08**	**25.60**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	<1.0	<1.0	<1.0	<2.0	**5.60**	**5.70**	21.60	**2.60**	**13.70**	<5.0	NA	NA
W22	**Mar-09**	NA	NA	NA	NA	**6.30**	**22.90**	43.90	**4.00**	**26.20**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	**1.22**	<1.00	**6.74**	**0.50**	**6.54**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	**16.55**	**21.80**	**75.10**	**2.64**	**31.30**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	**1.84**	**3.00**	**7.80**	**0.75**	**7.59**	NA	NA	NA
W22	**Mar-10**	NA	NA	NA	NA	**5.40**	**13.00**	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	**6.80**	**14.00**	**5.70**	**6.78**	**33.80**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	**15.00**	**94.00**	**72.00**	**13.50**	**67.50**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W22	**Apr-11**	NA	NA	NA	NA	**11.35**	**34.00**	<20.00	**5.92**	**21.60**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**15.05**	**84.00**	**150.00**	**14.70**	**95.10**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**7.00**	**49.00**	**100.00**	**12.30**	**86.70**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**23.10**	**105.00**	**0.12**	**32.60**	**224.00**	NA	NA	NA
W22	**Mar-12**	NA	NA	NA	NA	**16.00**	**78.00**	**190.00**	**14.30**	**126.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**6.35**	**19.90**	**28.00**	**7.82**	**5.13**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**11.90**	**27.40**	**110.00**	**8.67**	**51.20**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**16.40**	**94.20**	**290.00**	**28.20**	**143.00**	NA	NA	NA
W22	**Mar-13**	NA	NA	NA	NA	**11.40**	**43.90**	**220.00**	**4.92**	**70.90**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**5.50**	**7.24**	**26.00**	**9.88**	**26.10**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**15.80**	**65.00**	**260.00**	**8.13**	**91.20**	NA	NA	NA
W23	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA

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Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W23	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W23	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W23	**Mar-08**	NA	NA	NA	NA	NA	NA	**7.62**	**5.09**	**1.26**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	NA	NA	**3.24**	**10.60**	**5.79**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**1.99**	**3.54**	**3.25**	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	**2.30**	**1.30**	**0.40**	<5.0	NA	NA
W23	**Mar-09**	NA	NA	NA	NA	<0.50	**4.75**	**2.72**	**1.90**	**1.51**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	<0.50	<1.00	**2.40**	**0.25**	**3.37**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	<0.50	<1.00	**1.83**	**5.82**	**6.79**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	<0.50	<1.00	NA	**0.59**	**2.68**	NA	NA	NA
W23	**Mar-10**	NA	NA	NA	NA	<0.50	<1.00	**1.80**	**1.14**	<0.001	NA	NA	NA
	Jun-10	NA	NA	NA	NA	<0.50	<1.00	1.90	**25.10**	**18.90**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	<0.50	<1.00	1.10	**46.70**	**27.90**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	<0.50	<1.00	1.30	**2.11**	**1.66**	NA	NA	NA
W23	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**92.00**	**2.02**	**2.92**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**0.27**	**18.80**	**20.50**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**0.30**	**0.23**	**3.87**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	<0.02	**3.40**	**1.03**	NA	NA	NA
W23	**Mar-12**	NA	NA	NA	NA	<0.50	<1.00	**0.34**	**2.69**	**2.60**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**1.20**	**2.25**	**2.76**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**1.20**	**1.10**	**2.49**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**0.77**	**0.94**	**3.19**	NA	NA	NA
W23	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**1.20**	**1.77**	**2.07**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	<0.50	<1.00	**1.30**	**1.27**	**6.40**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	<0.50	<1.00	**1.40**	**6.92**	**5.78**	NA	NA	NA
W24	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	<0.40	<1.00	**2.80**	0.00	**9.00**	NA	NA	NA
W24	**Jun-05**	NA	NA	NA	NA	<0.50	<1.00	**2.20**	0.00	**9.00**	NA	NA	NA
	Dec-05	NA	NA	NA	NA	<0.50	<1.00	**2.10**	0.00	**3.00**	NA	NA	NA
	Jun-06	NA	NA	NA	NA	<0.50	<1.00	**1.20**	**1.00**	**1.00**	NA	NA	NA
	Dec-06	NA	NA	NA	NA	<0.50	<1.00	**1.60**	0.00	**5.00**	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W24	**Jun-07**	NA	NA	NA	NA	<0.50	<1.00	**1.00**	**1.00**	**7.00**	NA	NA	NA
	Dec-07	NA	NA	NA	NA	<0.50	<1.00	**5.90**	**3.00**	**4.00**	NA	NA	NA
W24	**Mar-08**	NA	NA	NA	NA	NA	NA	**3.28**	**0.29**	**1.53**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	<0.50	<1.00	**2.69**	**0.55**	**3.58**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**1.28**	**0.04**	**0.90**	NA	NA	NA
	Dec-08	NA	NA	NA	NA	<0.50	<1.00	**1.30**	**1.50**	**1.10**	NA	NA	NA
W24	**Mar-09**	NA	NA	NA	NA	<0.50	**4.60**	**0.80**	0.00	**2.24**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	<0.50	<1.00	**0.27**	**0.03**	**1.67**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	<0.50	<1.00	**0.37**	**1.25**	**9.14**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	<0.50	<1.00	**0.31**	**1.25**	**0.71**	NA	NA	NA
W24	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NA	NA	NA	NA	<0.50	<1.00	<0.02	**0.11**	**1.13**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	<0.50	<1.00	**0.13**	**8.57**	**4.88**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	<0.50	<1.00	**0.13**	**1.22**	**3.80**	NA	NA	NA
W24	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**0.15**	**0.73**	**0.78**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**16.80**	<1.00	**0.12**	**0.70**	**4.37**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**0.11**	**9.47**	**5.81**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	**0.06**	**2.74**	**2.23**	NA	NA	NA
W24	**Mar-12**	NA	NA	NA	NA	<0.50	<1.00	**0.22**	**3.48**	**2.26**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**0.49**	**1.05**	**1.61**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**0.21**	**0.60**	0.00	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**0.22**	**2.22**	**1.25**	NA	NA	NA
W24	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**0.23**	**5.11**	**5.84**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	<0.50	<1.00	**0.30**	**0.41**	**8.05**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	<0.50	<1.00	**0.04**	**4.88**	<2.34	NA	NA	NA
W26	**Feb/Mar-04**	**7.30**	<1.0	<1.0	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	**3.30**	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	**3.60**	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	**24.00**	**4.80**	**28.00**	<2.0	**3.52**	<1.00	**5.80**	**1.00**	**11.00**	NA	NA	NA
W26	**Jun-05**	**23.00**	**7.20**	**38.00**	<2.0	**3.50**	<1.00	**6.00**	**2.00**	**10.00**	NA	NA	NA
	Dec-05	**24.00**	**9.80**	**65.00**	<2.0	**3.00**	<1.00	**1.00**	**1.00**	**15.00**	NA	NA	NA
W26	**Jun-06**	**2.20**	**1.30**	**13.00**	<2.0	**2.30**	<1.00	**4.50**	**1.00**	**12.00**	NA	NA	NA
	Dec-06	<1.0	<1.0	**1.00**	<2.0	**1.80**	<1.00	**12.30**	**1.00**	**22.00**	NA	NA	NA
W26	**Jun-07**	<1.0	<1.0	**1.20**	<2.0	<0.50	<1.00	**16.00**	**1.00**	**14.00**	NA	NA	NA
	Dec-07	<1.0	NA	NA	NA	<0.50	**7.00**	**12.70**	**1.00**	**23.00**	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W26	**Mar-08**	NA	NA	NA	NA	NA	NA	**11.50**	**1.41**	**19.40**	NA	NA	NA
	Jun-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	**9.76**	**1.83**	**13.00**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**6.87**	**0.27**	**14.70**	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	**9.80**	**0.29**	**14.40**	**5.2**	**4.3**	**10.1**
W26	**Mar-09**	NA	NA	NA	NA	**2.40**	**4.94**	**6.88**	**3.33**	**13.20**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	**2.47**	<1.00	**6.31**	**1.64**	**11.10**	NA	NA	NA
	Aug/Sep-09	<1.0	<1.0	<1.0	<2.0	**2.31**	<1.00	**5.93**	**0.04**	**8.23**	NA	NA	NA
	Dec-09	<1.0	<1.0	<1.0	<2.0	**2.30**	<1.00	NA	<0.001	**10.10**	NA	NA	NA
W26	**Mar-10**	NA	NA	NA	NA	**1.50**	<1.00	**0.94**	**1.56**	**12.10**	NA	NA	NA
	Jun-10	<1.0	<1.0	<1.0	<2.0	**2.50**	<1.00	**15.00**	**6.29**	**27.00**	NA	NA	NA
	Sep-10	<1.0	<1.0	<1.0	<2.0	**2.60**	<1.00	**14.00**	**3.15**	**25.30**	NA	NA	NA
	Dec-10	<1.0	<1.0	<1.0	<2.0	**2.10**	<1.00	**13.00**	0.00	**16.30**	NA	NA	NA
W26	**Apr-11**	<1.0	<1.0	<1.0	<2.0	**2.90**	<1.00	**14.00**	**0.10**	**7.25**	NA	NA	NA
	Jun-11	<1.0	<1.0	<1.0	<2.0	**2.10**	<1.00	**11.00**	**1.78**	**17.70**	NA	NA	NA
	Sep-11	<1.0	<1.0	<1.0	<2.0	**2.18**	<1.00	**10.00**	**0.39**	**11.80**	NA	NA	NA
	Dec-11	<1.0	<1.0	<1.0	<2.0	**2.50**	<1.00	**9.60**	**2.15**	**9.98**	NA	NA	NA
W26	**Mar-12**	<1.0	<1.0	<1.0	<1.0	**2.14**	<1.00	**8.50**	**2.84**	**15.60**	NA	NA	NA
	Jun-12	<1.0	<1.0	<1.0	<1.0	**2.56**	<1.00	**8.90**	**3.21**	**11.40**	NA	NA	NA
	Sep-12	<1.0	<1.0	<1.0	<1.0	**2.70**	<1.00	**5.90**	**0.98**	**8.36**	NA	NA	NA
	Dec-12	<1.0	<1.0	<1.0	<1.0	**2.34**	<1.00	**6.50**	**2.24**	**22.10**	NA	NA	NA
W26	**Mar-13**	<1.0	<1.0	<1.0	<1.0	**2.57**	<1.00	**5.70**	**1.49**	**14.10**	NA	NA	NA
	Jun-13	<1.0	<1.0	<1.0	<1.0	**2.52**	<1.00	**6.50**	**0.57**	**9.21**	NA	NA	NA
	Oct-13	<1.0	<1.0	**1.70**	<1.0	**1.91**	<1.00	**4.80**	<1.86	**13.50**	NA	NA	NA
W27	**Feb/Mar-04**	<1.0	<1.0	<1.0	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	**2.37**	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	**2.10**	**5.33**	NA	NA	NA	NA	NA	NA
	Dec-04	<1.0	<1.0	<1.0	<2.0	**2.96**	**4.98**	NA	NA	NA	NA	NA	NA
W27	**Jun-05**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W27	**Jun-06**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W27	**Jun-07**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W27	**Mar-08**	NA	NA	NA	NA	NA	NA	<0.02	**0.79**	**4.07**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	NA	NA	**0.22**	**0.56**	**7.07**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**0.18**	**0.13**	**3.74**	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**5.25**	<1.00	**0.28**	**1.80**	**8.10**	<5.0	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W27	**Mar-09**	NA	NA	NA	NA	**5.70**	**9.44**	**0.09**	**1.14**	**3.38**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	**5.70**	**7.26**	**0.13**	**1.39**	**6.58**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	**6.25**	**9.60**	**0.24**	**1.64**	**6.96**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	**6.25**	**7.00**	NA	**0.58**	**4.26**	NA	NA	NA
W27	**Mar-10**	NA	NA	NA	NA	**6.35**	**8.60**	<0.02	<0.001	**3.40**	NA	NA	NA
	Jun-10	NA	NA	NA	NA	N/A	**7.00**	<0.02	**2.50**	**7.14**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	**6.20**	**9.72**	<0.02	**6.04**	**8.93**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	**6.45**	**7.00**	<0.02	**2.23**	**5.03**	NA	NA	NA
W27	**Apr-11**	NA	NA	NA	NA	**8.00**	**9.00**	<0.02	**1.28**	**8.56**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**5.85**	**10.00**	<0.02	**3.58**	**5.72**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**6.40**	**9.00**	<0.02	**0.96**	**5.88**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**7.50**	**9.00**	<0.02	**3.07**	**0.38**	NA	NA	NA
W27	**Mar-12**	NA	NA	NA	NA	**7.35**	**9.11**	**0.04**	**3.10**	**6.61**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**6.50**	**9.80**	<0.02	**4.96**	**6.13**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**6.65**	**8.09**	**0.04**	**1.07**	**1.60**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**7.05**	**10.30**	**0.31**	**1.49**	**5.50**	NA	NA	NA
W27	**Mar-13**	NA	NA	NA	NA	**6.75**	**9.72**	<0.02	**3.08**	**12.20**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**6.35**	**7.18**	<0.02	**3.81**	**10.60**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**7.25**	**8.99**	0.04	<0.35	**12.50**	NA	NA	NA
W28	**Mar-04**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	**7.28**	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	**7.60**	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	**10.56**	<1.00	NA	NA	NA	NA	NA	NA
W28	**Jun-05**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W28	**Jun-06**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W28	**Jun-07**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W28	**Mar-08**	NA	NA	NA	NA	NA	NA	**16.10**	**10.80**	**9.92**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	NA	NA	**6.82**	**1.22**	0.00	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**7.03**	**3.29**	**10.80**	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**7.20**	<1.00	**9.10**	**4.20**	**8.99**	**7.7**	**6.3**	**2.7**
W28	**Mar-09**	NA	NA	NA	NA	**12.50**	<1.00	**4.93**	**3.65**	**6.21**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	**6.35**	<1.00	**9.82**	**6.15**	**8.87**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	**14.05**	**2.50**	**2.69**	**9.69**	**10.00**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	**9.45**	<1.00	NA	**2.36**	**7.13**	NA	NA	NA

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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W28	**Mar-10**	NA	NA	NA	NA	**12.20**	<1.00	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	N/A	<1.00	**5.90**	**8.26**	**9.33**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	**23.00**	**5.00**	**1.80**	**18.80**	**15.80**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	**16.40**	**2.00**	**9.60**	**4.56**	**11.80**	NA	NA	NA
W28	**Apr-11**	NA	NA	NA	NA	**4.00**	<1.00	<20.00	**6.89**	**13.80**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**26.05**	**5.00**	**3.80**	**7.71**	**10.70**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**12.00**	<1.00	**13.00**	**14.60**	**18.70**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**6.15**	<1.00	**5.90**	**25.00**	**119.00**	NA	NA	NA
W28	**Mar-12**	NA	NA	NA	NA	**6.30**	**0.81**	**9.80**	**21.30**	**105.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**5.55**	<1.00	**13.00**	**27.40**	**66.40**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**6.85**	**20.60**	**8.50**	**16.40**	**31.10**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**7.00**	<1.00	**3.60**	**19.00**	**47.40**	NA	NA	NA
W28	**Mar-13**	NA	NA	NA	NA	**5.85**	<1.00	**4.70**	**14.70**	**26.70**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**4.02**	<1.00	**5.00**	**11.40**	**22.60**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**7.75**	<1.00	**3.50**	**18.70**	**33.50**	NA	NA	NA
W29	**Mar-04**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	**6.96**	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	**7.10**	**4.80**	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	**9.60**	**9.35**	**27.70**	**2.00**	**7.00**	NA	NA	NA
W29	**Jun-05**	NA	NA	NA	NA	**7.00**	**6.80**	**18.50**	**4.00**	**9.00**	NA	NA	NA
	Dec-05	NA	NA	NA	NA	**9.40**	**9.10**	**37.50**	**4.00**	**19.00**	NA	NA	NA
W29	**Jun-06**	NA	NA	NA	NA	**7.00**	**12.20**	**28.70**	**2.00**	**12.00**	NA	NA	NA
	Dec-06	NA	NA	NA	NA	**7.90**	**6.80**	**37.40**	**2.00**	**12.00**	NA	NA	NA
W29	**Jun-07**	NA	NA	NA	NA	**6.00**	**7.50**	**35.20**	**1.00**	**15.00**	NA	NA	NA
	Dec-07	NA	NA	NA	NA	**7.00**	**6.40**	**23.50**	**1.00**	**15.00**	NA	NA	NA
W29	**Mar-08**	NA	NA	NA	NA	NA	NA	**31.70**	**2.42**	**21.20**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	**4.30**	**6.90**	**32.40**	**2.52**	**19.40**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**26.00**	**3.65**	**15.60**	NA	NA	NA
	Dec-08	**1.80**	<1.0	<1.0	<2.0	**6.50**	**6.40**	**20.90**	**0.24**	**17.40**	<5.0	NA	NA
W29	**Mar-09**	NA	NA	NA	NA	**6.45**	**9.26**	**25.00**	**2.49**	**9.07**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	**6.70**	**3.00**	**28.60**	**1.37**	**12.30**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	**6.80**	**11.70**	**21.20**	**2.64**	**17.20**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	**6.40**	**7.00**	**26.00**	**4.64**	**1.33**	NA	NA	NA
W29	**Mar-10**	NA	NA	NA	NA	**5.10**	**11.00**	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	**6.80**	**7.00**	**13.00**	**2.73**	**10.30**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	**7.10**	**8.00**	**20.00**	**7.30**	**9.51**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	**6.25**	**7.00**	**13.00**	**1.29**	**6.00**	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W29	Apr-11	NA	NA	NA	NA	5.45	9.00	<20.00	1.35	8.33	NA	NA	NA
	Jun-11	NA	NA	NA	NA	4.40	7.00	18.00	3.41	5.38	NA	NA	NA
	Sep-11	NA	NA	NA	NA	4.50	3.00	28.00	3.82	9.78	NA	NA	NA
	Dec-11	NA	NA	NA	NA	4.94	8.50	17.00	7.10	8.30	NA	NA	NA
W29	Mar-12	NA	NA	NA	NA	3.95	18.70	690.00	10.10	97.60	NA	NA	NA
	Jun-12	NA	NA	NA	NA	3.87	36.30	790.00	6.07	101.00	NA	NA	NA
	Sep-12	NA	NA	NA	NA	4.03	5.02	840.00	4.81	78.20	NA	NA	NA
	Dec-12	NA	NA	NA	NA	4.10	38.20	450.00	7.22	50.90	NA	NA	NA
W29	Mar-13	NA	NA	NA	NA	4.06	25.20	980.00	12.70	94.40	NA	NA	NA
	Jun-13	NA	NA	NA	NA	3.89	20.70	440.00	6.42	67.60	NA	NA	NA
	Oct-13	NA	NA	NA	NA	4.44	19.70	170.00	6.94	32.10	NA	NA	NA
W30	Mar-04	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	23.96	31.90	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	20.80	35.90	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	19.24	32.60	380.00	21.00	64.00	NA	NA	NA
W30	Jun-05	NA	NA	NA	NA	10.00	30.60	521.00	45.00	61.00	NA	NA	NA
	Dec-05	NA	NA	NA	NA	15.60	<1.00	476.00	35.00	64.00	NA	NA	NA
W30	Jun-06	NA	NA	NA	NA	12.30	35.90	296.00	28.00	132.00	NA	NA	NA
	Dec-06	NA	NA	NA	NA	17.30	6.30	3.30	3.00	98.00	NA	NA	NA
W30	Jun-07	NA	NA	NA	NA	17.70	5.80	359.00	8.00	66.00	NA	NA	NA
	Dec-07	NA	NA	NA	NA	23.40	4.10	197.00	11.00	29.00	NA	NA	NA
W30	Mar-08	NA	NA	NA	NA	NA	NA	189.00	13.50	45.00	NA	NA	NA
	Jun-08	NA	NA	NA	NA	10.00	3.50	419.00	51.20	121.00	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	187.00	15.60	61.50	NA	NA	NA
	Dec-08	3.30	<1.0	<1.0	<2.0	27.60	2.30	133.00	10.00	70.00	8.0	6.6	63.4
W30	Mar-09	NA	NA	NA	NA	20.10	1.74	95.80	12.20	24.30	NA	NA	NA
	Jun-09	NA	NA	NA	NA	29.50	9.00	194.00	10.30	36.50	NA	NA	NA
	Sep-09	NA	NA	NA	NA	28.65	7.40	87.60	19.30	44.60	NA	NA	NA
	Dec-09	NA	NA	NA	NA	27.50	3.00	120.00	13.10	51.70	NA	NA	NA
W30	Mar-10	NA	NA	NA	NA	37.30	4.00	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	30.10	6.00	83.00	12.90	34.90	NA	NA	NA
	Sep-10	NA	NA	NA	NA	16.10	4.00	180.00	26.00	66.60	NA	NA	NA
	Dec-10	NA	NA	NA	NA	12.50	4.00	150.00	9.52	39.20	NA	NA	NA
W30	Apr-11	NA	NA	NA	NA	11.85	5.00	<20.00	9.32	37.30	NA	NA	NA
	Jun-11	NA	NA	NA	NA	11.00	2.00	110.00	10.50	46.90	NA	NA	NA
	Sep-11	NA	NA	NA	NA	5.00	53.00	230.00	18.90	45.80	NA	NA	NA
	Dec-11	NA	NA	NA	NA	12.15	3.50	2,900.00	26.10	80.20	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W30	**Mar-12**	NA	NA	NA	NA	**13.90**	**12.40**	**1,800.00**	**11.10**	**117.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**12.50**	**8.11**	**620.00**	**20.80**	**77.80**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**13.10**	**60.60**	**540.00**	**17.40**	**56.60**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**14.30**	**10.10**	**1,000.00**	**45.10**	**135.00**	NA	NA	NA
W30	**Mar-13**	NA	NA	NA	NA	**13.20**	**4.09**	**660.00**	**18.80**	**102.00**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**12.70**	**2.78**	**300.00**	**13.30**	**45.70**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**16.60**	<1.00	**140.00**	**18.80**	**53.70**	NA	NA	NA
W32	**Mar-04**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	**1.57**	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	<0.40	<1.00	**37.70**	**75.00**	**546.00**	NA	NA	NA
W32	**Jun-05**	NA	NA	NA	NA	<0.50	<1.00	**46.00**	**70.00**	**1,020.00**	NA	NA	NA
	Dec-05	NA	NA	NA	NA	<0.50	**1.40**	**49.60**	**8.00**	**1,810.00**	NA	NA	NA
W32	**Jun-06**	NA	NA	NA	NA	**13.00**	**52.90**	**44.10**	**7.00**	**171.00**	NA	NA	NA
	Dec-06	NA	NA	NA	NA	**11.70**	**40.40**	**50.20**	**8.00**	**265.00**	NA	NA	NA
W32	**Jun-07**	NA	NA	NA	NA	**9.40**	**59.10**	**61.80**	**3.00**	**190.00**	NA	NA	NA
	Dec-07	NA	NA	NA	NA	**9.90**	**35.10**	**59.50**	**3.00**	**237.00**	NA	NA	NA
W32	**Mar-08**	NA	NA	NA	NA	NA	NA	**71.70**	**6.00**	**260.00**	NA	NA	NA
	Jun-08	NA	NA	NA	NA	**6.00**	**50.60**	**84.60**	**0.87**	**301.00**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**72.90**	**1.57**	**240.00**	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**5.60**	**45.50**	**70.50**	**1.80**	**265.00**	**7.5**	**6.2**	**258.9**
W32	**Mar-09**	NA	NA	NA	NA	**7.10**	**46.10**	**71.10**	**7.72**	**236.00**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	**8.15**	**46.00**	**63.70**	**2.30**	**260.00**	NA	NA	NA
	Sep-09	<1.0	<1.0	<1.0	<2.0	**7.70**	**65.20**	**63.00**	**5.41**	**235.00**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	**8.25**	**42.00**	**57.00**	**3.51**	**285.00**	NA	NA	NA
W32	**Mar-10**	NA	NA	NA	NA	**6.90**	**54.00**	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	**8.85**	**48.00**	**54.00**	**12.00**	**266.00**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	**9.30**	**46.00**	**57.00**	**3.47**	**270.00**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	**8.70**	**40.00**	**55.00**	**1.11**	**165.00**	NA	NA	NA
W32	**Apr-11**	NA	NA	NA	NA	**7.85**	**48.00**	<20.00	**0.74**	**196.00**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**7.00**	**68.00**	**82.00**	**0.68**	**211.00**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**10.00**	**1.00**	**110.00**	**10.40**	**183.00**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**5.15**	**65.40**	**130.00**	**11.70**	**315.00**	NA	NA	NA
W32	**Mar-12**	NA	NA	NA	NA	**4.36**	**63.60**	**160.00**	**4.88**	**258.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	**4.86**	**72.40**	**190.00**	**5.40**	**208.00**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**4.13**	<1.00	**170.00**	**3.48**	**136.00**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**3.63**	**64.70**	**150.00**	0.00	**283.00**	NA	NA	NA

Table 4-3
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Hopkins, South Carolina
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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W32	**Mar-13**	NA	NA	NA	NA	**3.79**	**47.10**	**84.00**	**8.43**	**264.00**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**3.28**	**54.10**	**170.00**	**2.08**	**213.00**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**3.53**	**69.60**	**180.00**	**14.70**	**265.00**	NA	NA	NA
W33	**Feb/Mar-04**	**470.00**	**94.00**	**5.10**	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	**280.00**	**50.00**	**2.80**	<2.0	<0.40	<1.00	NA	NA	NA	NA	NA	NA
W33	**Jun-05**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	**360.00**	**61.00**	**1.60**	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
W33	**Jun-06**	**530.00**	**87.00**	**2.10**	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W33	**Jun-07**	**450.00**	**61.00**	<2.0	<4.0	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W33	**Mar-08**	NA	NA	NA	NA	NA	NA	**71.70**	**3.12**	**20.70**	NA	NA	NA
	Jun-08	**300.00**	**43.00**	**1.20**	<2.0	NA	NA	**18.20**	**0.45**	**10.80**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**9.56**	0.00	**4.01**	NA	NA	NA
	Dec-08	**240.00**	**36.00**	<1.0	<2.0	<0.50	<1.00	**9.50**	**0.80**	**8.88**	<5.0	NA	NA
W33	**Mar-09**	NA	NA	NA	NA	<0.50	**4.87**	**10.90**	**0.31**	**4.28**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	<0.50	<1.00	**18.10**	**0.17**	**9.19**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	<0.50	<1.00	**19.80**	**0.07**	**8.89**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	<0.50	<1.00	NA	**0.10**	**4.11**	NA	NA	NA
W33	**Mar-10**	NA	NA	NA	NA	<0.50	<1.00	**16.00**	<0.001	**5.01**	NA	NA	NA
	Jun-10	NA	NA	NA	NA	N/A	<1.00	**17.00**	**7.24**	**26.70**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	<0.50	<1.00	**15.00**	**14.60**	**15.40**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	<0.50	<1.00	**15.00**	**2.62**	**4.95**	NA	NA	NA
W33	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**0.10**	**1.19**	**5.07**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**10.00**	0.00	**10.00**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**10.00**	**0.33**	**2.19**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	**9.20**	**0.87**	**6.78**	NA	NA	NA
W33	**Mar-12**	NA	NA	NA	NA	<0.50	<1.00	**8.70**	**1.01**	**2.12**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**16.00**	**3.40**	**7.39**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**9.50**	**0.08**	**3.19**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**7.40**	**4.03**	**6.06**	NA	NA	NA
W33	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**7.90**	**1.96**	**4.28**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	<0.50	<1.00	**7.80**	**0.83**	**6.39**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	<0.50	<1.00	**8.10**	<3.17	**9.44**	NA	NA	NA

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Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W35	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W35	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W35	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W35	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W35	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W35	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W35	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W35	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**0.41**	NA	NA	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**0.30**	**2.22**	**8.30**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**0.57**	**1.73**	**2.88**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**0.02**	<1.00	**0.55**	**1.65**	**3.97**	NA	NA	NA
W35	**Mar-12**	NA	NA	NA	NA	<0.50	<1.00	**0.60**	**1.13**	**2.64**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-12	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-12	NA	NA	NA	NA	<0.50	**1.20**	**0.12**	**4.30**	**7.95**	NA	NA	NA
W35	**Mar-13**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-13	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W36	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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Hopkins, South Carolina
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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W36	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W36	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W36	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W36	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	**0.20**	0.00	0.00	<5.0	NA	NA
W36	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W36	**Jun-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W36	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**0.13**	NA	NA	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**0.17**	**1.14**	**4.94**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**0.21**	**0.87**	**1.00**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	<0.02	**1.20**	**2.39**	NA	NA	NA
W36	**Mar-12**	NA	NA	NA	NA	<0.50	<1.00	**0.55**	**0.57**	**0.94**	NA	NA	NA
	Jun-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W36	**Mar-13**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W37	**Feb-Mar-04**	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
	Jun-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	<1.0	<1.0	<1.0	<2.0	<0.40	<1.00	NA	NA	NA	NA	NA	NA
W37	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W37	**Jun-06**	<1.0	<1.0	<1.0	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W37	**Jun-07**	<1.0	<1.0	<1.0	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W37	**Mar-08**	NA	NA	NA	NA	NA	NA	**5.13**	**3.43**	**3.21**	NA	NA	NA
	Jun-08	<1.0	<1.0	<1.0	<2.0	NA	NA	**3.27**	**0.11**	**2.91**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**3.33**	**0.78**	**4.85**	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	**3.60**	**0.60**	**1.60**	<5.0	NA	NA
W37	**Mar-09**	NA	NA	NA	NA	<0.50	<1.00	**3.58**	**0.14**	**1.24**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	<1.00	<1.00	**3.63**	**2.31**	**1.86**	NA	NA	NA
	Sep-09	NA	NA	NA	NA	<0.50	<1.00	**3.77**	**0.75**	**7.59**	NA	NA	NA
	Dec-09	NA	NA	NA	NA	**1.70**	<1.00	NA	**0.27**	**4.50**	NA	NA	NA
W37	**Mar-10**	NA	NA	NA	NA	<0.50	<1.00	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	N/A	<1.00	**4.10**	**1.34**	**15.90**	NA	NA	NA
	Sep-10	NA	NA	NA	NA	<0.50	<1.00	**5.40**	**7.58**	**13.90**	NA	NA	NA
	Dec-10	NA	NA	NA	NA	<0.50	<1.00	**4.00**	**1.47**	**2.43**	NA	NA	NA
W37	**Apr-11**	NA	NA	NA	NA	<0.50	**2.00**	<20.00	**0.97**	**2.18**	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**3.80**	**1.55**	**3.82**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**6.00**	<1.00	**3.50**	**1.36**	**2.44**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	**2.80**	0.00	**4.28**	NA	NA	NA
W37	**Mar-12**	NA	NA	NA	NA	<0.50	**0.17**	**5.70**	0.00	**5.64**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**5.50**	**0.13**	**3.99**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**3.70**	0.00	**2.58**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**4.10**	**6.32**	**28.50**	NA	NA	NA
W37	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**4.20**	**1.17**	**1.88**	NA	NA	NA
	Jun-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W38	**Feb/Mar-04**	**12.00**	**140.00**	<1.0	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	**0.92**	<1.00	NA	NA	NA	NA	NA	NA
	Sep-04	NA	NA	NA	NA	**1.30**	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	**9.00**	**100.00**	<1.0	<2.0	**1.78**	<1.00	NA	NA	NA	NA	NA	NA
W38	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	**2.50**	**45.00**	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
W38	**Jun-06**	**2.10**	**47.00**	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W38	**Jun-07**	**2.60**	**48.00**	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W38	Mar-08	NA	NA	NA	NA	NA	NA	3.26	0.40	0.00	NA	NA	NA
	Jun-08	2.30	47.00	<1.0	<2.0	NA	NA	6.45	0.62	1.71	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	5.49	1.67	5.46	NA	NA	NA
	Dec-08	2.00	38.00	<1.0	<2.0	1.80	<1.00	6.60	0.50	6.20	<5.0	NA	NA
W38	Mar-09	NA	NA	NA	NA	1.30	<1.00	9.37	1.99	3.99	NA	NA	NA
	Jun-09	NA	NA	NA	NA	1.79	<1.00	9.34	<0.001	3.01	NA	NA	NA
	Sep-09	NA	NA	NA	NA	1.98	<1.00	9.70	0.44	2.50	NA	NA	NA
	Dec-09	NA	NA	NA	NA	<0.50	<1.00	NA	0.57	1.92	NA	NA	NA
W38	Mar-10	NA	NA	NA	NA	0.50	<1.00	NA	NA	NA	NA	NA	NA
	Jun-10	NA	NA	NA	NA	N/A	<1.00	14.00	3.14	3.63	NA	NA	NA
	Sep-10	NA	NA	NA	NA	0.80	<1.00	15.00	5.99	3.23	NA	NA	NA
	Dec-10	NA	NA	NA	NA	0.83	<1.00	15.00	0.83	4.35	NA	NA	NA
W38	Apr-11	NA	NA	NA	NA	1.09	2.00	<20.00	0.00	3.40	NA	NA	NA
	Jun-11	NA	NA	NA	NA	1.08	<1.00	16.00	1.62	6.11	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	9.10	2.30	1.44	NA	NA	NA
	Dec-11	NA	NA	NA	NA	1.12	<1.00	13.00	2.76	2.17	NA	NA	NA
W38	Mar-12	NA	NA	NA	NA	1.11	0.17	17.00	3.50	3.53	NA	NA	NA
	Jun-12	NA	NA	NA	NA	1.47	<1.00	17.00	3.71	7.57	NA	NA	NA
	Sep-12	NA	NA	NA	NA	1.60	<1.00	12.00	2.46	7.22	NA	NA	NA
	Dec-12	NA	NA	NA	NA	1.43	<1.00	14.00	<2.46	4.38	NA	NA	NA
W38	Mar-13	NA	NA	NA	NA	1.60	<1.00	14.00	4.10	5.24	NA	NA	NA
	Jun-13	NA	NA	NA	NA	8.95	<1.00	12.00	7.72	<2.77	NA	NA	NA
	Oct-13	NA	NA	NA	NA	0.70	<1.00	13.00	<0.98	2.93	NA	NA	NA
W39	Feb/Mar-04	210.00	10.00	4.60	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	110.00	7.10	1.20	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
W39	Jun-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	140.00	7.20	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
W39	Jun-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W39	Jun-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W39	Mar-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	110.00	4.40	1.70	<2.0	<0.50	<1.00	58.30	1.50	11.70	<5.0	NA	NA

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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W39	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W39	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W39	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**150.00**	NA	NA	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**99.00**	**7.09**	**17.00**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**92.00**	**11.90**	**29.20**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	**52.00**	**3.02**	**17.80**	NA	NA	NA
W39	**Mar-12**	NA	NA	NA	NA	<0.50	<1.00	**80.00**	**4.34**	**20.10**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**59.00**	**2.74**	**14.30**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**110.00**	**4.58**	**13.70**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**150.00**	**9.83**	**35.40**	NA	NA	NA
W39	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**87.00**	**2.20**	**23.70**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	<0.50	<1.00	**54.00**	**1.70**	**16.00**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	<0.50	<1.00	**56.00**	**5.31**	**19.30**	NA	NA	NA
W40	**Feb/Mar-04**	<1.0	<1.0	<1.0	>2.0	NA	NA	NA	NA	NA	NA	NA	NA
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	**2.20**	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
W40	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W40	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W40	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W40	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	**6.80**	0.00	**1.50**	<5.0	NA	NA
W40	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W40	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W40	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**6.10**	NA	NA	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**6.40**	**2.58**	**5.71**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**9.70**	**4.69**	**3.98**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	**5.70**	**5.72**	**9.54**	NA	NA	NA
W40	**Mar-12**	NA	NA	NA	NA	<0.50	<1.00	**9.30**	**3.95**	**10.70**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**8.20**	**1.27**	**6.52**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**6.40**	**3.10**	**3.95**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**5.50**	**6.25**	**9.37**	NA	NA	NA
W40	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**5.90**	**4.02**	**5.62**	NA	NA	NA
	Jun-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W41	**Mar-04**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	**320.00**	**54.00**	**3.70**	<2.0	<0.40	<1.00	**36.40**	**2.00**	**8.00**	NA	NA	NA
W41	**Jun-05**	**360.00**	**55.00**	**3.20**	<2.0	<0.40	<1.00	**35.10**	**3.00**	**23.00**	NA	NA	NA
	Dec-05	**280.00**	**72.00**	**3.30**	<2.0	<0.40	<1.00	**41.70**	**3.00**	**22.00**	NA	NA	NA
W41	**Jun-06**	**300.00**	**62.00**	**3.00**	<2.0	<0.40	<1.00	**30.10**	**3.00**	**22.00**	NA	NA	NA
	Dec-06	**280.00**	**61.00**	**3.40**	<2.0	<0.40	<1.00	**37.10**	**2.00**	**8.00**	NA	NA	NA
W41	**Jun-07**	**350.00**	**64.00**	**2.90**	<2.0	<0.50	<1.00	**41.80**	**3.00**	**12.00**	NA	NA	NA
	Dec-07	**240.00**	49.00	**2.10**	NA	<0.50	<1.00	**40.10**	**2.00**	**11.00**	NA	NA	NA
W41	**Mar-08**	NA	NA	NA	NA	NA	NA	**37.50**	**2.06**	**9.57**	NA	NA	NA
	Jun-08	**240.00**	**46.00**	**2.10**	<2.0	<0.50	<1.00	**41.10**	**1.88**	**10.90**	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	**38.90**	**1.81**	**10.30**	NA	NA	NA
	Dec-08	**200.00**	**42.00**	**1.80**	<2.0	<0.50	<1.00	**40.30**	**5.50**	**13.40**	**5.3**	**4.3**	**9.1**
W41	**Mar-09**	NA	NA	NA	NA	<0.50	**4.69**	**42.60**	**1.62**	**10.50**	NA	NA	NA
	Jun-09	NA	NA	NA	NA	<0.50	<1.00	**50.00**	**2.16**	**15.60**	NA	NA	NA
	Aug/Sep-09	**140.00**	**29.00**	<1.0	<2.0	<0.50	<1.00	**51.80**	**2.53**	**14.10**	NA	NA	NA
	Dec-09	**230.00**	**47.00**	**2.00**	<2.0	<0.50	<1.00	NA	**1.80**	**16.50**	NA	NA	NA
W41	**Mar-10**	NA	NA	NA	NA	<0.50	<1.00	31.00	**1.90**	**9.30**	NA	NA	NA
	Jun-10	**51.00**	**9.50**	<1.0	<2.0	<0.50	<1.00	**63.00**	**6.19**	**13.90**	NA	NA	NA
	Sep-10	**120.00**	**22.00**	<1.0	<2.0	<0.50	<1.00	**67.00**	**6.24**	**23.20**	NA	NA	NA
	Dec-10	**140.00**	**29.00**	**1.20**	<2.0	<0.50	<1.00	**61.00**	**3.58**	**19.00**	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W41	**Apr-11**	**170.00**	**35.00**	**1.30**	<2.0	<0.50	<1.00	**53.00**	**5.03**	**14.30**	NA	NA	NA
	Jun-11	**180.00**	**39.00**	<2.0	<2.0	<0.50	<1.00	**56.00**	**2.50**	**17.60**	NA	NA	NA
	Sep-11	**200.00**	**44.00**	**1.70**	<2.0	<0.50	<1.00	**59.00**	**3.95**	**16.70**	NA	NA	NA
	Dec-11	**210.00**	**46.00**	**1.70**	<2.0	<0.50	<1.00	**52.00**	**4.60**	**18.40**	NA	NA	NA
W41	**Mar-12**	**220.00**	**50.00**	**1.80**	<2.0	<0.50	<1.00	**56.00**	**4.46**	**16.90**	NA	NA	NA
	Jun-12	**250.00**	**48.00**	**1.60**	<1.0	<0.50	<1.00	**52.00**	**1.50**	**15.00**	NA	NA	NA
	Sep-12	**270.00**	**52.00**	**1.60**	<1.0	<0.50	<1.00	**41.00**	**2.54**	**8.36**	NA	NA	NA
	Dec-12	**210.00**	**41.00**	<20.0	<1.0	<0.50	<1.00	**41.00**	**3.82**	**21.40**	NA	NA	NA
W41	**Mar-13**	**210.00**	**41.00**	<5.0	<1.0	<0.50	<1.00	**37.00**	**4.51**	**11.70**	NA	NA	NA
	Jun-13	**180.00**	**43.00**	**1.20**	<1.0	<0.50	<1.00	**40.00**	**2.87**	**10.60**	NA	NA	NA
	Oct-13	**160.00**	**22.00**	**1.20**	<1.0	<0.50	<1.00	**43.00**	<2.40	**19.30**	NA	NA	NA
W42	**Feb/Mar-04**	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA
W42	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W42	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W42	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W42	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	<1.0	<1.0	<1.0	<2.0	**1.90**	**5.00**	**17.40**	**1.90**	**27.80**	**6.4**	**5.2**	**22.6**
W42	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W42	**Mar-10**	NS	NS	NS	NS								
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W42	**Apr-11**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W42	**Mar-12**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W42	**Mar-13**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W43	**Feb/Mar-04**	<1.0	<1.0	<1.0	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	<1.0	<1.0	<1.0	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
W43	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W43	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W43	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W43	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	**10.80**	**2.50**	**4.40**	<5.0	NA	NA
W43	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W43	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W43	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**8.50**	NA	NA	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**11.00**	**4.07**	**9.07**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**6.20**	**2.42**	**6.58**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	**12.00**	**1.09**	**4.28**	NA	NA	NA
W43	**Mar-12**	NA	NA	NA	NA	<0.50	<1.00	**19.00**	**2.08**	**9.90**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**13.00**	**5.97**	**6.68**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**5.90**	**5.00**	**5.74**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**10.00**	**3.33**	**6.32**	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W43	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**9.40**	**4.74**	**6.44**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	<0.50	<1.00	**6.90**	**0.66**	**5.47**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	<0.50	<1.00	**3.40**	**7.35**	**11.20**	NA	NA	NA
W44	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
W44	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W44	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W44	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W44	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	**3.00**	<1.0	<1.0	<2.0	<0.50	<1.00	**9.30**	**0.90**	**7.90**	<5.0	NA	NA
W44	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W44	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W44	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**4.00**	NA	NA	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**3.60**	**2.41**	**7.98**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**5.00**	**0.65**	**6.92**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	**7.40**	**0.27**	**3.37**	NA	NA	NA
W44	**Mar-12**	NA	NA	NA	NA	<0.50	**0.03**	**9.60**	**1.28**	**7.99**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**10.00**	**2.75**	**7.82**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**7.90**	**3.68**	**2.30**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**9.00**	**5.42**	**4.45**	NA	NA	NA
W44	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**8.80**	**1.28**	**8.40**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	<0.50	<1.00	**8.20**	**1.40**	**5.35**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	<0.50	<1.00	**2.80**	<2.88	**4.21**	NA	NA	NA

Table 4-3
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Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W45	**Feb/Mar-04**	**1.70**	<1.0	**1.00**	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	<1.0	<1.0	**1.60**	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
W45	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	<1.0	<1.0	<1.0	<2.0	**1.10**	<1.00	**0.20**	**0.30**	**3.90**	<5.0	NA	NA
W45	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	**Apr-11**	NA	NA	NA	NA	**0.80**	<1.00	<0.02	NA	NA	NA	NA	NA
	Jun-11	NA	NA	NA	NA	**1.17**	<1.00	**0.03**	**7.08**	**5.43**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	**1.40**	<1.00	<0.02	**9.88**	**5.28**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	**1.38**	<1.00	<0.02	**21.60**	**8.51**	NA	NA	NA
W45	**Mar-12**	NA	NA	NA	NA	**1.39**	<1.00	<0.02	**22.00**	**13.20**	NA	NA	NA
	Jun-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-12	NA	NA	NA	NA	**1.36**	<1.00	<0.02	**15.90**	**12.70**	NA	NA	NA
W45	**Mar-13**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W46	**Feb/Mar-04**	**1.00**	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	**1.40**	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
W46	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W46	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W46	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W46	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	**1.90**	<1.0	<1.0	<2.0	<0.50	<1.00	**9.50**	**1.60**	**22.40**	<5.0	NA	NA
W46	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W46	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W46	**Apr-11**	NA	NA	NA	NA	<0.50	<1.00	**7.60**	NA	NA	NA	NA	NA
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	**7.60**	**2.52**	**23.50**	NA	NA	NA
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	**8.10**	**3.58**	**33.90**	NA	NA	NA
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	**9.80**	**1.00**	**23.20**	NA	NA	NA
W46	**Mar-12**	NA	NA	NA	NA	**0.12**	**0.03**	**9.20**	**2.41**	**22.00**	NA	NA	NA
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	**8.80**	**0.86**	**28.50**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	**7.30**	**1.62**	**16.20**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	**7.40**	**0.55**	**39.50**	NA	NA	NA
W46	**Mar-13**	NA	NA	NA	NA	<0.50	<1.00	**7.40**	**1.64**	**37.80**	NA	NA	NA
	Jun-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W47	**Feb/Mar-04**	**1.70**	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W47	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W47	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W47	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W47	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	**3.60**	<1.0	<1.0	<2.0	**6.80**	**16.10**	**22.90**	**0.30**	**10.10**	**8.0**	**6.6**	**3.5**
W47	**Mar-09**	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS
W47	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W47	**Apr-11**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W47	**Mar-12**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-12	NA	NA	NA	NA	**6.00**	**20.70**	**26.00**	**1.85**	**59.00**	NA	NA	NA
	Sep-12	NA	NA	NA	NA	**5.35**	**15.00**	**27.00**	**1.25**	**74.10**	NA	NA	NA
	Dec-12	NA	NA	NA	NA	**5.60**	**23.00**	**27.00**	**8.53**	**129.00**	NA	NA	NA
W47	**Mar-13**	NA	NA	NA	NA	**5.50**	**17.90**	**26.00**	**3.97**	**116.00**	NA	NA	NA
	Jun-13	NA	NA	NA	NA	**5.55**	**13.90**	**27.00**	**3.84**	**96.40**	NA	NA	NA
	Oct-13	NA	NA	NA	NA	**5.85**	**18.90**	**37.00**	**9.98**	**102.00**	NA	NA	NA
W48	**Feb/Mar-04**	**320.00**	**2.90**	**12.00**	<2.0	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	**290.00**	**2.80**	**12.00**	<2.0	<0.40	<1.00	**7.80**	**1.00**	**4.00**	NA	NA	NA
W48	**Jun-05**	**360.00**	**4.00**	<1.0	<2.0	<0.50	<1.00	**7.80**	0.00	**11.00**	NA	NA	NA
	Dec-05	**370.00**	**10.00**	**22.00**	<2.0	<0.40	<1.00	**8.70**	0.00	**11.00**	NA	NA	NA
W48	**Jun-06**	**380.00**	**7.50**	**18.00**	<2.0	<0.40	<1.00	**8.10**	**1.00**	**7.00**	NA	NA	NA
	Dec-06	**340.00**	**5.40**	**16.00**	<2.0	<0.40	<1.00	**8.90**	**4.00**	**9.00**	NA	NA	NA

Table 4-3
Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W48	Jun-07	390.00	2.80	7.80	<4.0	<0.50	<1.00	6.50	1.00	6.00	NA	NA	NA
	Dec-07	340.00	2.80	9.20	<4.0	<0.50	<1.00	9.70	2.00	6.00	NA	NA	NA
W48	Mar-08	NA	NA	NA	NA	NA	NA	9.87	2.58	14.80	NA	NA	NA
	Jun-08	170.00	1.20	3.70	<2.0	<0.50	<1.00	9.62	1.09	8.43	NA	NA	NA
	Sep-08	NA	NA	NA	NA	NA	NA	9.27	1.46	14.00	NA	NA	NA
	Dec-08	270.00	1.80	6.70	<2.0	<0.50	<1.00	9.20	0.90	13.40	<5.0	NA	NA
W48	Mar-09	NA	NA	NA	NA	<0.50	4.82	8.41	0.39	7.23	NA	NA	NA
	Jun-09	NA	NA	NA	NA	<0.50	<1.00	7.93	0.72	1.75	NA	NA	NA
	Aug/Sep-09	250.00	3.30	9.60	<4.0	<0.50	<1.00	4.71	0.49	4.98	NA	NA	NA
	Dec-09	320.00	5.00	11.00	<2.0	<0.50	<1.00	NA	<0.001	6.34	NA	NA	NA
W48	Mar-10	NA	NA	NA	NA	<0.50	<1.00	9.10	0.84	3.71	NA	NA	NA
	Jun-10	330.00	2.10	5.90	<2.0	<0.50	<1.00	8.20	<0.001	8.48	NA	NA	NA
	Sep-10	370.00	2.20	6.60	<2.0	<0.50	<1.00	7.40	1.23	9.06	NA	NA	NA
	Dec-10	340.00	1.90	5.10	<2.0	<0.50	<1.00	8.30	0.65	11.80	NA	NA	NA
W48	Apr-11	310.00	1.80	5.10	<2.0	2.80	<1.00	10.00	1.65	8.03	NA	NA	NA
	Jun-11	230.00	<4.0	4.70	<8.0	<0.50	<1.00	8.90	0.94	7.93	NA	NA	NA
	Sep-11	260.00	1.70	5.20	<2.0	<0.50	<1.00	7.80	1.94	4.81	NA	NA	NA
	Dec-11	140.00	<1.0	2.40	<2.0	<0.50	<1.00	6.30	2.03	7.02	NA	NA	NA
W48	Mar-12	140.00	<1.0	2.10	<2.0	<0.50	<1.00	8.60	1.36	8.46	NA	NA	NA
	Jun-12	150.00	<1.0	2.40	<1.0	<0.50	<1.00	10.00	0.02	0.00	NA	NA	NA
	Sep-12	130.00	<1.0	1.70	<1.0	<0.50	<1.00	6.50	0.70	7.72	NA	NA	NA
	Dec-12	180.00	1.40	3.50	<1.0	<0.50	<1.00	6.20	3.60	8.70	NA	NA	NA
W48	Mar-13	180.00	1.30	3.20	<5.0	<0.50	<1.00	6.40	0.00	10.10	NA	NA	NA
	Jun-13	140.00	1.40	3.50	<1.0	<0.50	<1.00	6.20	2.30	7.33	NA	NA	NA
	Oct-13	160.00	2.80	5.00	<1.0	<0.50	<1.00	5.20	6.70	16.60	NA	NA	NA
W49	Mar-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W49	Jun-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W49	Jun-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W49	Jun-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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Hopkins, South Carolina
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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W49	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	<0.02	**0.06**	0.00	<5.0	NA	NA
W49	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W49	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W49	**Apr-11**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W49	**Mar-12**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W49	**Mar-13**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W50	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W50	**Jun-05**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W50	**Jun-06**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W50	**Jun-07**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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Summary of Analytical Results in Groundwater (2004-2013)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
W50	**Mar-08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-08	<1.0	<1.0	<1.0	<2.0	<0.50	<1.00	<0.02	NA	NA	<5.0	NA	NA
W50	**Mar-09**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W50	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W50	**Apr-11**	NS	NS	NS	NS	<0.50	<1.00	**0.06**	NA	NA	NA	NA	NA
	Jun-11	NS	NS	NS	NS	<0.50	<1.00	**0.03**	**1.73**	0.00	NA	NA	NA
	Sep-11	NS	NS	NS	NS	<0.50	<1.00	**0.03**	**2.14**	**3.56**	NA	NA	NA
	Dec-11	NS	NS	NS	NS	<0.50	<1.00	<0.02	**3.46**	0.00	NA	NA	NA
W50	**Mar-12**	NS	NS	NS	NS	<0.50	<1.00	<0.02	**1.35**	**0.49**	NA	NA	NA
	Jun-12	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA
	Sep-12	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA
	Dec-12	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA
W50	**Mar-13**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
WRW-2	**Mar-04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NA	NA	NA	NA	<0.40	<1.00	NA	NA	NA	NA	NA	NA
	Dec-04	NA	NA	NA	NA	**0.42**	<1.00	**54.90**	**7.00**	**15.00**	NA	NA	NA
WRW-2	**Jun-05**	**97.00**	**8.70**	**1.80**	<2.00	<0.50	<1.00	**153.00**	**11.00**	**99.00**	NA	NA	NA
	Dec-05	**83.00**	**7.20**	**1.70**	<2.00	<0.50	<1.00	**510.00**	**28.00**	**184.00**	NA	NA	NA
WRW-2	**Jun-06**	**190.00**	**9.60**	**2.40**	<2.00	**0.60**	**5.60**	**244.00**	**7.00**	**38.00**	NA	NA	NA
	Dec-06	**230.00**	**12.00**	**2.80**	<2.00	**1.50**	**4.20**	**139.00**	**9.00**	**48.00**	NA	NA	NA
WRW-2	**Jun-07**	**290.00**	**13.00**	**3.10**	<2.00	**1.00**	**6.50**	**127.00**	**6.00**	**52.00**	NA	NA	NA
	Dec-07	**160.00**	**9.70**	**2.70**	<2.00	**1.30**	**1.10**	**121.00**	**10.00**	**37.00**	NA	NA	NA
WRW-2	**Mar-08**	NA	NA	NA	<2.00	NA	NA	**77.70**	**3.55**	**23.00**	NA	NA	NA
	Jun-08	**120.00**	**6.00**	**2.20**	<2.00	**1.40**	<1.00	**148.00**	**3.78**	**30.70**	NA	NA	NA
	Sep-08	NA	NA	NA	<2.00	N/A	N/A	**117.00**	**4.18**	**31.90**	NA	NA	NA
	Dec-08	NA	NA	NA	<2.00	**1.20**	<1.00	**114.00**	**3.75**	**37.00**	**5.2**	**4.3**	**32.7**

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Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
WRW-2	**Mar-09**	NA	NA	NA	<2.00	**1.30**	**5.77**	**109.00**	**2.69**	**25.80**	NA	NA	NA
	Jun-09	NA	NA	NA	<2.00	**1.68**	<1.00	**160.00**	**3.03**	**28.60**	NA	NA	NA
	Aug/Sep-09	**44.00**	**2.90**	<1.00	<2.00	**1.27**	**3.40**	**192.00**	**9.86**	**48.60**	NA	NA	NA
	Dec-09	**30.00**	**3.80**	<1.00	<2.00	**0.77**	<1.00	N/A	**5.50**	**45.60**	NA	NA	NA
WRW-2	**Mar-10**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-10	**8.40**	**1.80**	<1.00	<2.00	**0.60**	<1.00	**78.00**	**1.01**	**26.20**	NA	NA	NA
	Sep-10	**12.00**	**1.90**	<1.00	<2.00	**0.60**	<1.00	**66.00**	**20.40**	**26.70**	NA	NA	NA
	Dec-10	**37.00**	**4.00**	<1.00	<2.00	**1.00**	1.00	**56.00**	**1.93**	**17.40**	NA	NA	NA
WRW-2	**Mar/Apr-11**	**180.00**	**9.00**	<1.00	<2.00	<0.50	1.00	**38.00**	**6.92**	**14.30**	NA	NA	NA
	Jun-11	**290.00**	**10.00**	<4.00	<8.00	<0.50	1.00	**33.00**	**6.13**	**14.80**	NA	NA	NA
	Sep-11	NA	NA	NA	<2.00	<0.50	1.00	**16.00**	**6.47**	**8.94**	NA	NA	NA
	Dec-11	**240.00**	**9.30**	**1.50**	<2.00	<0.50	1.00	**31.00**	**4.17**	**8.18**	NA	NA	NA
WRW-2	**Mar-12**	**230.00**	**11.00**	**1.40**	<1.00	<0.50	1.00	**30.00**	**5.03**	**10.50**	NA	NA	NA
	Jun-12	**190.00**	**8.00**	**1.70**	<1.00	<0.50	1.00	**27.00**	**0.54**	**4.78**	NA	NA	NA
	Sep-12	**160.00**	**7.00**	**1.60**	<1.00	<0.50	<1.00	**25.00**	**4.53**	**4.88**	NA	NA	NA
	Dec-12	**190.00**	**10.00**	**1.30**	<1.00	<0.50	<1.00	**34.00**	**3.47**	**14.20**	NA	NA	NA
WRW-2	**Mar-13**	**170.00**	**7.70**	**1.10**	<1.00	<0.50	<1.00	**28.00**	**1.91**	**7.72**	NA	NA	NA
	Jun-13	**130.00**	**5.80**	<1.00	<1.00	<0.50	<1.00	**30.00**	**0.69**	**7.81**	NA	NA	NA
	Oct-13	**130.00**	**12.00**	<1.00	<1.00	<0.50	<1.00	**28.00**	<3.05	**12.50**	NA	NA	NA

Notes:

mg/L: Milligrams per liter

pCi/L: Picocuries per liter

MCL: Maximum contaminant level

Bold: The analyte was detected by the laboratory

Bold and Shaded: The analyte concetration exceeded the EPA MCL

NA: Not available

NS: Not sampled

Table 4-4
Summary of Organic Parameters
Monitoring Well Samples 1992-1995
(Rust, 1995)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well Number	Sample Date	No. 2 Fuel Oil (mg/L)	Volatile Organic Compounds (VOCs) Benzene (mg/L)	Ethyl-benzene (mg/L)	Tetrachloro-ethene (mg/L)	Trichloro-ethene (mg/L)	1,2-DCE (Total) (mg/L)	Vinyl Chloride (mg/L)	Total VOCs (mg/L)
W-3A	03/05/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/14/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	18	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	06/29/95	20	NA	NA	NA	NA	NA	NA	NA
W-4	04/05/95	2.8	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-6	04/04/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-7A	03/04/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/15/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	4.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-10	03/03/95	6.2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	6.4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-11	04/05/95	2.2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-14A	03/05/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/15/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	1.3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-15	03/03/95	4.0	< 0.005	< 0.005	0.042	< 0.005	< 0.005	< 0.010	0.042
	04/05/95	7.0	< 0.005	< 0.005	0.058	0.008	< 0.005	< 0.010	0.066
W-16	04/05/95	1.2	< 0.005	< 0.005	0.100	0.017	0.017	< 0.010	0.134
W-17	12/02/93	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	02/09/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	4.2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-18	04/04/95	2.1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-19B	04/05/95	< 0.50	< 0.005	< 0.005	0.014	0.010	< 0.005	< 0.010	0.024
W-20	04/04/95	0.89	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-22	04/04/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-23	04/06/95	5.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-24	03/04/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/14/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/03/95	2.6	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-25	04/04/95	5.9	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-26	12/02/93	NA	< 0.050	< 0.050	1.600	0.100	< 0.050	< 0.100	1.700
	02/07/94	NA	< 0.050	< 0.050	< 0.050	< 0.050	2.100 E	0.760	2.860 E
	03/03/95	13	< 0.010	< 0.010	< 0.010	0.015	0.260	0.280	0.555
	04/06/95	26	< 0.010	< 0.010	< 0.010	0.011	0.220	0.200	0.431
W-27	03/05/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/14/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	3.3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-28	04/05/95	0.64	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-29	04/05/95	1.9	< 0.005	< 0.005	0.021	< 0.005	< 0.005	< 0.010	0.021
W-30	03/04/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/15/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/04/95	1.4	< 0.005	< 0.005	0.006	0.006	< 0.005	< 0.010	0.012
W-32	04/05/95	3.2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL

Table 4-4
Summary of Organic Parameters
Monitoring Well Samples 1992-1995
(Rust, 1995)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well Number	Sample Date	No. 2 Fuel Oil (mg/L)	Volatile Organic Compounds (VOCs) Benzene (mg/L)	Ethyl-benzene (mg/L)	Tetrachloro-ethene (mg/L)	Trichloro-ethene (mg/L)	1,2-DCE (Total) (mg/L)	Vinyl Chloride (mg/L)	Total VOCs (mg/L)
W-33	03/05/92	NA	< 0.005	< 0.005	0.230	0.110	< 0.005	< 0.010	0.340
	04/14/92	NA	< 0.005	< 0.005	0.210	0.097	< 0.005	< 0.010	0.307
	02/09/94	NA	< 0.025	< 0.025	0.830	0.140	0.035	< 0.050	1.005
	04/05/95	3.6	< 0.005	< 0.005	0.100	0.034	< 0.005	< 0.010	0.134
W-35	03/04/92	NA	< 0.010	< 0.010	0.110	0.010	0.030	< 0.020	0.150
	04/15/92	NA	< 0.025	< 0.025	0.270	< 0.025	0.070	< 0.050	0.340
	02/09/94	NA	< 0.025	< 0.025	0.920	0.120	0.290	< 0.050	1.330
	10/14/94	2.2	<0.012	<0.0125	0.340	0.042	0.120	< 0.025	0.502
	04/04/95	1.9	< 0.010	< 0.010	0.190	0.018	0.042	< 0.020	0.250
W-36	03/04/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/14/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	02/07/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/04/95	1.4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-37	12/02/93	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	02/09/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	10/14/94	3.8	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/04/95	0.57	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-38	02/09/94	NA	< 0.005	< 0.005	0.010	0.006	< 0.005	< 0.010	0.016
	04/04/95	0.52	< 0.005	< 0.005	0.014	< 0.005	< 0.005	< 0.010	0.014
W-39	02/07/94	NA	< 0.050	< 0.050	1.500	0.120	< 0.050	< 0.100	1.620
	04/04/95	2.1	< 0.020	< 0.020	0.470	0.063	< 0.020	< 0.040	0.533
W-40	10/26/93	NA	< 0.005	< 0.005	0.110	0.021	< 0.005	< 0.010	0.131
	02/09/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	10/14/94	0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/06/95	< 0.50	< 0.010	< 0.010	0.310	0.120	< 0.010	< 0.020	0.430
W-41	02/07/94	NA	< 0.050	< 0.050	1.100	0.230	< 0.050	< 0.100	1.330
	04/03/95	4.3	< 0.025	< 0.025	0.910	0.100	< 0.025	< 0.050	1.010
W-42	02/07/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	10/14/94	0.64	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	03/03/95	2.6	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/04/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-43	02/07/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/03/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-44	02/07/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/03/95	1.4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-45	03/08/94	9.9	0.013	0.005	0.012	< 0.005	0.140	< 0.010	0.170
	10/14/94	25	0.012	< 0.005	0.008	< 0.005	0.130	< 0.010	0.150
	04/04/95	88	0.005	< 0.005	0.008	< 0.005	0.060	< 0.010	0.073
W-46	04/04/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-47	04/04/95	0.60	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-48	04/04/95	< 0.50	< 0.005	< 0.005	0.880	0.170	1.100	0.550	2.700
W-49	04/04/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-50	04/06/95	10	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	06/29/95	< 0.50	NA	NA	NA	NA	NA	NA	NA
RW-1	04/04/95	< 0.50	< 0.005	< 0.005	0.049	0.009	< 0.005	< 0.010	0.058
RW-2	04/04/95	< 0.50	< 0.005	< 0.005	0.150	0.045	< 0.005	< 0.010	0.195

Notes:
mg/L = Milligrams per liter.
1,2-DCE = 1,2-Dichloroethene.
BDL = Below Detection Limit.
NA = Not analyzed.
E = Concentration exceeded calibration range.

Table 4-5
Summary of Groundwater Analyses
Solvent Extraction Area and WWTP 1992
(SEC Donohue, 1992)
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

SAMPLE LOCATION	DEPTH INTERVAL feet	FIELD CONDUCTIVITY umhos/cm	LAB pH	RADIOACTIVITY GROSS ALPHA pCi/L	RADIOACTIVITY GROSS BETA pCi/L	NITRATE mg/L
HC-1	14.5-15.5	140	7.0	5	12	3.3
	24-25	120	6.8	5	12	5.1
HC-2	11-12	130	7.1	5	12	6.9
	17-18	180	6.7	6	12	7.7
HC-3	14-15	190	6.7	6	12	7.8
	24-25	90	6.1	5	12	6.0
HC-4	11-12	370	6.4	6	11	29.0
	18-19	170	5.8	5	11	10.6
HC-5	11-12	270	4.6	19	12	11.7
	16.5-17.5	155	7.1	5	12	10.0
HC-6	11-12	130	5.3	21	19	8.6
	18-19	125	5.2	ND	12	9.9
HC-7	11-12	320	5.9	8	13	2.7
	18-19	400	7.6	5	166	41.2
HC-8	11-12	235	6.9	8	14	11.2
	18-19	140	5.6	ND	12	10.3
HC-9	11-12	310	6.2	6	12	9.5
	18-19	295	6.8	6	11	16.6
W-37	15.5-20.5	165	6.0	4	12	5.8

ND = Not Detected

wcp01t2.wk1

Table 4-6
Summary of Analytical Results in Surface Water
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
SW-1	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	<5.0	<5.0	<5.0	<10.0	**0.4**	**0.1**	<0.02	NA	NA	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**12.1**	<1.00	<0.10	**2.28**	**3.77**	<5.0	NA	NA
SW-2	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	**100.0**	**8.0**	<5.0	<10.0	**0.7**	**0.1**	**1.9**	NA	NA	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**2.5**	<1.00	**0.2**	**1.04**	**1.90**	<5.0	NA	NA
	Jul-13	NA	NA	NA	NA	<0.5	<1.00		**3.38**	<2.02	NA	NA	NA
SW-3	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	<5.0	<5.0	<5.0	<10.0	**0.2**	**0.4**	**0.2**	NA	NA	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**1.4**	<1.00	**0.1**	**1.12**	**5.76**	<5.0	NA	NA
SW-4	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	**120.0**	**8.0**	<5.0	<10.0	**1.1**	14.0	**8.0**	NA	NA	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**2.6**	<1.00	**5.3**	**164.00**	**26.50**	<5.0	NA	NA
SW-5	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	**24.0**	<5.0	<5.0	<10.0	**0.8**	**14.0**	**8.0**	NA	NA	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**0.8**	<1.00	**3.1**	**192.00**	**38.40**	<5.0	NA	NA
SW-6	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Dec-08	<1.0	<1.0	<1.0	<2.0	**0.5**	<1.00	**0.1**	**1.60**	**0.00**	<5.0	NA	NA
SW-7	**Apr-95**	**130.0**	**20.0**	<5.0	<10	**0.8**	**1.7**	**5.9**	NA	NA	NA	NA	NA
	Dec-08	**3.8**	<1.0	<1.0	<2.0	**4.7**	**5.7**	**3.6**	**2.78**	**4.88**	<5.0	NA	NA

Table 4-6
Summary of Analytical Results in Surface Water
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
SW-8	**Apr-95**	**120.0**	**27.0**	<5.0	<10	**0.6**	**0.8**	**8.8**	NA	NA	NA	NA	NA
	Dec-08	**9.2**	<1.0	<1.0	<2.0	**4.4**	<1.00	**1.3**	NA	NA	NA	NA	NA
	Mar-09	**14.0**	<2.0	NA	<2.0	NA	NA	NA	**2.24**	**3.97**	NA	NA	NA
SW-9	**Dec-08**	<1.0	<1.0	<1.0	<2.0	**12.1**	<1.00	<0.10	**1.84**	**4.02**	<5.0	NA	NA
SW-10	**Dec-08**	**1.6**	<1.0	<1.0	<2.0	**10.3**	**8.8**	**19.4**	**1.47**	**50.00**	**7.10**	**5.82**	**44.18**
Pond	**Jul-13**	NA	NA	NA	NA	**7.3**	**2.7**		<1.07	4.99	NA	NA	NA
Causeway	**Jul-13**	NA	NA	NA	NA	<0.5	<1.00		<1.50	<4.24	NA	NA	NA
Spillway	**Jul-13**	NA	NA	NA	NA	<0.5	**2.2**		<1.07	4.99	NA	NA	NA

Notes:

mg/L: Milligrams per liter
pCi/L: Picocuries per liter
MCL: Maximum contaminant level
Bold: The analyte was detected by the laboratory
Bold and Shaded: The analyte concetration exceeded the EPA MCL
NA: Not available
NS: Not sampled

Table 4-7
Summary of Analytical Results in Sediment
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Sample	Sample Date	Acetone ug/kg	2-Butanone (MEK) ug/kg	1,2-Dichloro-benzene ug/kg	Methyl Acetate ug/kg	Tetrachloro-ethene ug/kg	Toluene ug/kg	Fluoride mg/kg	Nitrate mg/kg	Gross Alpha pCi/g	Gross Beta pCi/g
SED-1	**07/18/13**	**240.0**	48.0	<12.0	<12.0	<12.0	<12.0	**4.3**	<0.39	**12.10**	**25.90**
SED-2	**07/18/13**	**34.0**	<9.4	<4.7	<4.7	<4.7	<4.7	**12.0**	<0.24	**23.40**	**25.40**
SED-3	**07/18/13**	**59.0**	**13.0**	<6.3	<6.3	<6.3	<6.3	**2.1**	<0.27	**13.20**	**23.50**
SED-4	**07/18/13**	<22.0	<11.0	<5.4	<5.4	<5.4	<5.4	**66.0**	**0.30**	**13.80**	**30.40**
SED-5	**07/18/13**	**400.0**	**41.0**	**13.0**	<7.5	<7.5	<7.5	**18.0**	<0.31	**377.00**	**52.10**
SED-6	**07/18/13**	<19.0	<9.4	<4.7	<4.7	<4.7	<4.7	**2.2**	**0.33**	**3.79**	**15.70**
SED-7	**07/18/13**	<20.0	<10.0	<5.0	<5.0	**30.0**	<5.0	**1.7**	**8.40**	**9.05**	**25.20**
SED-8	**07/18/13**	<21.0	<10.0	<5.1	<5.1	<5.1	<5.1	<1.3	**0.46**	<3.03	**21.80**
SED-9	**07/18/13**	**170.0**	**36.0**	<6.9	**21.0**	<6.9	**11.0**	**7.0**	<0.29	**10.30**	**20.70**
SED-10	**07/18/13**	**570.0**	**110.0**	<34.0	<34.0	<34.0	<34.0	**220.0**	**0.97**	**7.55**	**295.00**

Notes:

mg/kg: Milligrams per kilogram

ug/kg: Micrograms per kilogram

pCi/g: Picocuries per gram

Bold: The analyte was detected by the laboratory

APPENDIX A
HISTORICAL VOC DATA

Table A-1
Summary of Volatile Organic Compounds in Groundwater
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well ID Number	Date Collected	Acetone MCL --	Acetonitrile MCL --	Acrolein MCL --	Acrylonitrile MCL --	Benzene MCL 5	Bromochloro methane MCL --	Bromo dichloro methane MCL 80	Bromoform MCL 80	Bromo methane (Methyl Bromide) MCL --	2- Butanone (MEK) MCL --	Carbon Disulfide MCL --	Carbon Tectra chloride MCL 5	2-Chloro-1,3-Butadiene (Chloro prene) MCL --	Chloro benzene MCL 100	Chlorethane MCL --	Chloroform MCL 80	Chloro methane (Methyl Chloride) MCL --	3-Chloro propene (Allyl Chloride) MCL --
RW-2R	06/07/05	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	**1.0**	< 2.0	< 2.0
RW2	12/19/05	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	06/19/06	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	12/14/06	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	06/21/07	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2R	12/31/07	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	06/20/08	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	08/21/09	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	12/08/09	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	06/29/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	09/24/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	12/22/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	03/29/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	06/24/11	< 80.0	< 80.0	< 80.0	< 80.0	< 4.0	< 4.0	< 4.0	< 4.0	< 8.0	< 40.0	< 4.0	< 4.0	< 20.0	< 4.0	< 8.0	< 4.0	< 8.0	< 8.0
RW-2	12/06/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	03/16/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
RW-2	06/01/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
RW-2	09/18/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
RW-2	12/19/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
RW-2	03/11/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
RW-2	06/12/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
RW-2	10/14/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
26	06/07/05	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W26	12/19/05	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	06/19/06	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
26	12/14/06	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	06/21/07	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	12/31/07	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	06/20/08	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	**17.0**	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	08/21/09	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	12/08/09	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	06/29/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	09/24/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	12/22/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	03/29/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	06/24/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
MW-26	09/28/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	12/06/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	03/16/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-26	06/01/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
W-26	09/18/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
W-26	12/19/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
W-26	03/11/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
MW-26	06/12/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
MW-26	10/14/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0

Notes:
All units are in micrograms per liter (ug/L).
"<" indicates result for sample is less than the PQL shown on the column to the right
MCL - Maximum Contaminant Level (United States Environmental Protection Agency, April 2012).
Bold numbers indicate compound was detected above PQL in sample
Shaded numbers Indicate compound was detected above MCL

Table A-1
Summary of Volatile Organic Compounds in Groundwater
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well ID Number	Date Collected	Acetone MCL --	Acetonitrile MCL --	Acrolein MCL --	Acrylonitrile MCL --	Benzene MCL 5	Bromochloro methane MCL --	Bromo dichloro methane MCL 80	Bromoform MCL 80	Bromo methane (Methyl Bromide) MCL --	2- Butanone (MEK) MCL --	Carbon Disulfide MCL --	Carbon Tectra chloride MCL 5	2-Chloro-1,3-Butadiene (Chloro prene) MCL --	Chloro benzene MCL 100	Chlorethane MCL --	Chloroform MCL 80	Chloro methane (Methyl Chloride) MCL --	3-Chloro propene (Allyl Chloride) MCL --
41R	06/07/05	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W41	12/19/05	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
41R	12/14/06	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-41	06/21/07	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-41	12/31/07	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-41	06/20/08	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-41	08/21/09	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-41	12/08/09	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-41	06/29/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
MW-41	09/24/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
MW-41	12/22/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-41	03/29/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
MW-41	06/24/11	< 40.0	< 40.0	< 40.0	< 40.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 20.0	< 2.0	< 2.0	< 10.0	< 2.0	< 4.0	< 2.0	< 4.0	< 4.0
MW-41	09/28/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
MW-41	12/06/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-41	03/16/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
MW-41	06/01/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
MW-41	09/18/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
W-41	12/19/12	< 400.0	< 400.0	< 400.0	< 400.0	< 20.0	< 20.0	< 20.0	< 20.0	< 40.0	< 200.0	< 20.0	< 20.0	< 100.0	< 20.0	< 40.0	< 20.0	< 20.0	< 40.0
W-41	03/11/13	< 100.0	< 100.0	< 100.0	< 100.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10.0	< 50.0	< 5.0	< 5.0	< 25.0	< 5.0	< 10.0	< 5.0	< 5.0	< 10.0
MW-41	06/12/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
MW-41	10/14/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
48	06/07/05																		
W48	12/19/05	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
48	12/14/06	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	**1.4**	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-48	06/21/07	< 40.0	< 40.0	< 40.0	< 40.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 20.0	< 2.0	< 2.0	< 10.0	< 2.0	< 4.0	< 2.0	< 4.0	< 4.0
W-48	12/31/07	< 40.0	< 40.0	< 40.0	< 40.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 20.0	< 2.0	< 2.0	< 10.0	< 2.0	< 4.0	< 2.0	< 4.0	< 4.0
W-48	6/20/2008	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-48	08/21/09	< 40.0	< 40.0	< 40.0	< 40.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 20.0	< 2.0	< 2.0	< 10.0	< 2.0	< 4.0	< 2.0	< 4.0	< 4.0
W-48	12/18/09	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-48	06/29/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-48	09/24/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-48	12/22/10	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-48	03/29/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-48	06/24/11	< 80.0	< 80.0	< 80.0	< 80.0	< 4.0	< 4.0	< 4.0	< 4.0	< 8.0	< 40.0	< 4.0	< 4.0	< 20.0	< 4.0	< 8.0	< 4.0	< 8.0	< 8.0
MW-48	09/28/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-48	12/06/11	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-48	03/16/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 2.0	< 2.0
W-48	06/01/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
W-48	09/18/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
W-48	12/19/12	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
MW-48	03/11/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
MW-48	06/12/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0
MW-48	10/14/13	< 20.0	< 20.0	< 20.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10.0	< 1.0	< 1.0	< 5.0	< 1.0	< 2.0	< 1.0	< 1.0	< 2.0

Notes:
All units are in micrograms per liter (ug/L).
"<" indicates result for sample is less than the PQL shown on the column to the right
MCL - Maximum Contaminant Level (United States Environmental Protection Agency, April 2012).
Bold numbers indicate compound was detected above PQL in sample
Shaded numbers Indicate compound was detected above MCL

Table A-1
Summary of Volatile Organic Compounds in Groundwater
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well ID Number	Date Collected	1,2-Dibromo-3-chloroprane (DBCP) MCL 0.2	Dibromo chloro methane MCL 80	1,2-Dibromo ethane (EDB) MCL 0.05	Dibromo methane (Methylene bromide) MCL	Trans-1,4-Dichloro-2-butene MCL 100	1,2-Dichloro benzene MCL 600	1,3-Dichloro benzene MCL --	1,4-Dichloro benzene MCL 75	Dichloro difluoro methane MCL --	1,1-Dichloro ethane MCL --	1,2-Dichloro ethane MCL 5	1,1-Dichloro ethene MCL 7	cis-1,2-Dichloro ethene MCL 70	Trans-1,2-Dichloro ethene MCL 100	1,2-Dichloro propane MCL 5	1,3-Dichloro propane MCL --	2,2-Dichloro propane MCL --	1,1-Dichloro propene MCL --
RW-2R	06/07/05	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.8**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW2	12/19/05	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.7**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	06/19/06	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.4**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	12/14/06	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.8**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	06/21/07	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**3.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2R	12/31/07	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.7**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	06/20/08	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	08/21/09	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	12/08/09	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	06/29/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	09/24/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	12/22/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	03/29/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	06/24/11	< 4.0	< 4.0	< 4.0	< 4.0	< 8.0	< 4.0	< 4.0	< 4.0	< 8.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 8.0
RW-2	12/06/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.5**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	03/16/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.4**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	06/01/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.7**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	09/18/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.6**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	12/19/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.3**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	03/11/13	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	06/12/13	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
RW-2	10/14/13	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
26	06/07/05	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**38.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W26	12/19/05	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**65.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	06/19/06	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**13.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
26	12/14/06	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	06/21/07	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	12/31/07	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	06/20/08	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	08/21/09	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	12/08/09	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	06/29/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	09/24/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	12/22/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	03/29/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	06/24/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-26	09/28/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	12/06/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	03/16/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	06/01/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	09/18/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	12/19/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-26	03/11/13	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-26	06/12/13	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-26	10/14/13	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.7**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0

Notes:
All units are in micrograms per liter (ug/L).
"<" indicates result for sample is less than the PQL shown on the column to the right
MCL - Maximum Contaminant Level (United States Environmental Protection Agency, April 2012).
Bold numbers indicate compound was detected above PQL in sample
Shaded numbers Indicate compound was detected above MCL

Table A-1
Summary of Volatile Organic Compounds in Groundwater
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well ID Number	Date Collected	1,2-Dibromo-3-chloroprane (DBCP) MCL 0.2	Dibromo chloro methane MCL 80	1,2-Dibromo ethane (EDB) MCL 0.05	Dibromo methane (Methylene bromide) MCL	Trans-1,4-Dichloro-2-butene MCL 100	1,2-Dichloro benzene MCL 600	1,3-Dichloro benzene MCL --	1,4-Dichloro benzene MCL 75	Dichloro difluoro methane MCL --	1,1-Dichloro ethane MCL --	1,2-Dichloro ethane MCL 5	1,1-Dichloro ethene MCL 7	cis-1,2-Dichloro ethene MCL 70	Trans-1,2-Dichloro ethene MCL 100	1,2-Dichloro propane MCL 5	1,3-Dichloro propane MCL --	2,2-Dichloro propane MCL --	1,1-Dichloro propene MCL --
41R	06/07/05	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**3.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W41	12/19/05	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**3.3**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
41R	12/14/06	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**3.4**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-41	06/21/07	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.9**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-41	12/31/07	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-41	06/20/08	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-41	08/21/09	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-41	12/08/09	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-41	06/29/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-41	09/24/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-41	12/22/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-41	03/29/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.3**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-41	06/24/11	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0
MW-41	09/28/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.7**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-41	12/06/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.7**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-41	03/16/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.8**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-41	06/01/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.6**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-41	09/18/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.6**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-41	12/19/12	< 20.0	< 20.0	< 20.0	< 20.0	< 40.0	< 20.0	< 20.0	< 20.0	< 40.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 40.0
W-41	03/11/13	< 5.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10.0
MW-41	06/12/13	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-41	10/14/13	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
48	06/07/05								< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**3.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W48	12/19/05	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**22.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
48	12/14/06	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**16.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	06/21/07	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	**7.8**	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0
W-48	12/31/07	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	**9.2**	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0
W-48	6/20/2008	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**3.7**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	08/21/09	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	< 2.0	< 2.0	**9.6**	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0
W-48	12/18/09	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**11.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	06/29/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**5.9**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	09/24/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**6.6**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	12/22/10	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**5.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	03/29/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**5.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	06/24/11	< 4.0	< 4.0	< 4.0	< 4.0	< 8.0	< 4.0	< 4.0	< 4.0	< 8.0	< 4.0	< 4.0	< 4.0	**4.7**	< 4.0	< 4.0	< 4.0	< 4.0	< 8.0
MW-48	09/28/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**5.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	12/06/11	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.4**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	03/16/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	06/01/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**2.4**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	09/18/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**1.7**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
W-48	12/19/12	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**3.5**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-48	03/11/13	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**3.2**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-48	06/12/13	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**3.5**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0
MW-48	10/14/13	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	**5.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0

Notes:
All units are in micrograms per liter (ug/L).
"<" indicates result for sample is less than the PQL shown on the column to the right
MCL - Maximum Contaminant Level (United States Environmental Protection Agency, April 2012).
Bold numbers indicate compound was detected above PQL in sample
Shaded numbers Indicate compound was detected above MCL

Table A-1
Summary of Volatile Organic Compounds in Groundwater
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well ID Number	Date Collected	cis-1,3-Dichloropropene MCL --	Trans-1,3-Dichloropropene MCL --	Ethyl methacrylate MCL --	Ethyl benzene MCL 700	2-Hexanone MCL --	Isobutyl alcohol MCL --	Methacrylonitrile MCL --	Methyl iodide (Iodomethane) MCL --	Methyl methacrylate MCL --	4-Methyl-2-pentanone MCL --	Methylene chloride MCL 5	Propionitrile (Ethyl cyanide) MCL --	Styrene MCL 100	1,1,1,2-Tetrachloroethane MCL --	1,1,2,2-Tetrachloroethane MCL --	Tetrachloroethene MCL 5	Toluene MCL 1,000	1,1,1-Trichloroethane MCL 200
RW-2R	06/07/05	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**97.0**	< 1.0	< 1.0
RW2	12/19/05	, 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**83.0**	< 1.0	< 1.0
RW-2	06/19/06	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**190.0**	< 1.0	< 1.0
RW-2	12/14/06	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**230.0**	< 1.0	< 1.0
RW-2	06/21/07	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**290.0**	< 1.0	< 1.0
RW-2R	12/31/07	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**160.0**	< 1.0	< 1.0
RW-2	06/20/08	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**120.0**	< 1.0	< 1.0
RW-2	08/21/09	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**44.0**	< 1.0	< 1.0
RW-2	12/08/09	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**30.0**	< 1.0	< 1.0
RW-2	06/29/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**8.4**	< 1.0	< 1.0
RW-2	09/24/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**12.0**	< 1.0	< 1.0
RW-2	12/22/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**37.0**	< 1.0	< 1.0
RW-2	03/29/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**180.0**	< 1.0	< 1.0
RW-2	06/24/11	< 20.0	< 20.0	< 20.0	< 4.0	< 40.0	< 200.0	< 20.0	< 20.0	< 20.0	< 40.0	< 20.0	< 80.0	< 20.0	< 4.0	< 4.0	**290.0**	< 4.0	< 4.0
RW-2	12/06/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**240.0**	< 1.0	< 1.0
RW-2	03/16/12	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**230.0**	< 1.0	< 1.0
RW-2	06/01/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**190.0**	< 1.0	< 1.0
RW-2	09/18/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**160.0**	< 1.0	< 1.0
RW-2	12/19/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**190.0**	< 1.0	< 1.0
RW-2	03/11/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**170.0**	< 1.0	< 1.0
RW-2	06/12/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**130.0**	< 1.0	< 1.0
RW-2	10/14/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**130.0**	< 1.0	< 1.0
26	06/07/05	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**23.0**	< 1.0	< 1.0
W26	12/19/05	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**24.0**	< 1.0	< 1.0
W-26	06/19/06	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**2.2**	< 1.0	< 1.0
26	12/14/06	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	06/21/07	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	12/31/07	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	06/20/08	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	08/21/09	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	12/08/09	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	06/29/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	09/24/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	12/22/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	03/29/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	06/24/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-26	09/28/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	12/06/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	03/16/12	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	06/01/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	09/18/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	12/19/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
W-26	03/11/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-26	06/12/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-26	10/14/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Notes:
All units are in micrograms per liter (ug/L).
"<" indicates result for sample is less than the PQL shown on the column to the right
MCL - Maximum Contaminant Level (United States Environmental Protection Agency, April 2012).
Bold numbers indicate compound was detected above PQL in sample
Shaded numbers Indicate compound was detected above MCL

Table A-1
Summary of Volatile Organic Compounds in Groundwater
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well ID Number	Date Collected	cis-1,3-Dichloropropene MCL --	Trans-1,3-Dichloropropene MCL --	Ethyl methacrylate MCL --	Ethyl benzene MCL 700	2-Hexanone MCL --	Isobutyl alcohol MCL --	Methacrylonitrile MCL --	Methyl iodide (Iodomethane) MCL --	Methyl methacrylate MCL --	4-Methyl-2-pentanone MCL --	Methylene chloride MCL 5	Propionitrile (Ethyl cyanide) MCL --	Styrene MCL 100	1,1,1,2-Tetrachloroethane MCL --	1,1,2,2-Tetrachloroethane MCL --	Tetrachloroethene MCL 5	Toluene MCL 1,000	1,1,1-Trichloroethane MCL 200
41R	06/07/05	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**360.0**	< 1.0	< 1.0
W41	12/19/05	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**280.0**	< 1.0	< 1.0
41R	12/14/06	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**280.0**	< 1.0	< 1.0
W-41	06/21/07	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**350.0**	< 1.0	< 1.0
W-41	12/31/07	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**240.0**	< 1.0	< 1.0
W-41	06/20/08	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**240.0**	< 1.0	< 1.0
W-41	08/21/09	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**140.0**	< 1.0	< 1.0
W-41	12/08/09	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**230.0**	< 1.0	< 1.0
W-41	06/29/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**51.0**	< 1.0	< 1.0
MW-41	09/24/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**120.0**	< 1.0	< 1.0
MW-41	12/22/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**140.0**	< 1.0	< 1.0
W-41	03/29/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**170.0**	< 1.0	< 1.0
MW-41	06/24/11	< 10.0	< 10.0	< 10.0	< 2.0	< 20.0	< 100.0	< 10.0	< 10.0	< 10.0	< 20.0	< 10.0	< 40.0	< 10.0	< 2.0	< 2.0	**180.0**	< 2.0	< 2.0
MW-41	09/28/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**200.0**	< 1.0	< 1.0
MW-41	12/06/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**210.0**	< 1.0	< 1.0
W-41	03/16/12	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**220.0**	< 1.0	< 1.0
MW-41	06/01/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**250.0**	< 1.0	< 1.0
MW-41	09/18/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**270.0**	< 1.0	< 1.0
W-41	12/19/12	< 20.0	< 20.0	< 100.0	< 20.0	< 200.0	< ####	< 100.0	< 100.0	< 100.0	< 200.0	< 20.0	< 400.0	< 20.0	< 20.0	< 20.0	**210.0**	< 20.0	< 20.0
W-41	03/11/13	< 5.0	< 5.0	< 25.0	< 5.0	< 50.0	< 250.0	< 25.0	< 25.0	< 25.0	< 50.0	< 5.0	< 100.0	< 1.0	< 5.0	< 5.0	**210.0**	< 5.0	< 5.0
MW-41	06/12/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**180.0**	< 1.0	< 1.0
MW-41	10/14/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**160.0**	< 1.0	< 1.0
48	06/07/05	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**360.0**	< 1.0	< 1.0
W48	12/19/05	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**370.0**	< 1.0	< 1.0
48	12/14/06	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**340.0**	< 1.0	< 1.0
W-48	06/21/07	< 10.0	< 10.0	< 10.0	< 2.0	< 20.0	< 100.0	< 10.0	< 10.0	< 10.0	< 20.0	< 10.0	< 40.0	< 10.0	< 2.0	< 2.0	**390.0**	< 2.0	< 2.0
W-48	12/31/07	< 10.0	< 10.0	< 10.0	< 2.0	< 20.0	< 100.0	< 10.0	< 10.0	< 10.0	< 20.0	< 10.0	< 40.0	< 10.0	< 2.0	< 2.0	**340.0**	< 2.0	< 2.0
W-48	6/20/2008	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**170.0**	< 1.0	< 1.0
W-48	08/21/09	< 10.0	< 10.0	< 10.0	< 2.0	< 20.0	< 100.0	< 10.0	< 10.0	< 10.0	< 20.0	< 10.0	< 40.0	< 10.0	< 2.0	< 2.0	**250.0**	< 2.0	< 2.0
W-48	12/18/09	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**320.0**	< 1.0	< 1.0
W-48	06/29/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**330.0**	< 1.0	< 1.0
W-48	09/24/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**370.0**	< 1.0	< 1.0
W-48	12/22/10	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**340.0**	< 1.0	< 1.0
W-48	03/29/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**310.0**	< 1.0	< 1.0
W-48	06/24/11	< 20.0	< 20.0	< 20.0	< 4.0	< 40.0	< 200.0	< 20.0	< 20.0	< 20.0	< 40.0	< 20.0	< 80.0	< 20.0	< 4.0	< 4.0	**230.0**	< 4.0	< 4.0
MW-48	09/28/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**260.0**	< 1.0	< 1.0
W-48	12/06/11	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**140.0**	< 1.0	< 1.0
W-48	03/16/12	< 5.0	< 5.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 20.0	< 5.0	< 1.0	< 1.0	**140.0**	< 1.0	< 1.0
W-48	06/01/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**150.0**	< 1.0	< 1.0
W-48	09/18/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**130.0**	< 1.0	< 1.0
W-48	12/19/12	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**180.0**	< 1.0	< 1.0
MW-48	03/11/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**180.0**	< 1.0	< 1.0
MW-48	06/12/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**140.0**	< 1.0	< 1.0
MW-48	10/14/13	< 1.0	< 1.0	< 5.0	< 1.0	< 10.0	< 50.0	< 5.0	< 5.0	< 5.0	< 10.0	< 1.0	< 20.0	< 1.0	< 1.0	< 1.0	**160.0**	< 1.0	< 1.0

Notes:
All units are in micrograms per liter (ug/L).
"<" indicates result for sample is less than the PQL shown on the column to the right
MCL - Maximum Contaminant Level (United States Environmental Protection Agency, April 2012).
Bold numbers indicate compound was detected above PQL in sample
Shaded numbers Indicate compound was detected above MCL

Table A-1
Summary of Volatile Organic Compounds in Groundwater
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well ID Number	Date Collected	1,1,2-Trichloro ethane MCL 5	Trichloro ethene MCL 5	Trichloro fluoro methane MCL --	1,2,3-Trichloro propane MCL --	Vinyl acetate MCL --	Vinyl chloride MCL 2	Xylenes MCL 10,000
RW-2R	06/07/05	< 1.0	**8.7**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW2	12/19/05	< 1.0	**7.2**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	06/19/06	**1.4**	**9.6**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	12/14/06	**1.8**	**12.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	06/21/07	< 1.0	**13.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2R	12/31/07	< 1.0	**9.7**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	06/20/08	< 1.0	**6.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	08/21/09	< 1.0	**2.9**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	12/08/09	< 1.0	**3.8**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	06/29/10	< 1.0	**1.8**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	09/24/10	< 1.0	**1.9**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	12/22/10	< 1.0	**4.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	03/29/11	< 1.0	**9.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	06/24/11	< 4.0	**10.0**	< 8.0	< 8.0	< 20.0	< 8.0	< 4.0
RW-2	12/06/11	< 1.0	**9.3**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	03/16/12	< 1.0	**11.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
RW-2	06/01/12	< 1.0	**8.0**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
RW-2	09/18/12	< 1.0	**7.0**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
RW-2	12/19/12	< 1.0	**10.0**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
RW-2	03/11/13	< 1.0	**7.7**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
RW-2	06/12/13	< 1.0	**5.8**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
RW-2	10/14/13	< 1.0	**12.0**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
26	06/07/05	< 1.0	**7.2**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W26	12/19/05	< 1.0	**9.8**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	06/19/06	< 1.0	**1.3**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
26	12/14/06	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	06/21/07	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	12/31/07	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	06/20/08	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	08/21/09	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	12/08/09	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	06/29/10	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	09/24/10	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	12/22/10	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	03/29/11	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	06/24/11	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
MW-26	09/28/11	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	12/06/11	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	03/16/12	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-26	06/01/12	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
W-26	09/18/12	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
W-26	12/19/12	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
W-26	03/11/13	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW-26	06/12/13	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW-26	10/14/13	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0

Notes:
All units are in micrograms per liter (ug/L).
"<" indicates result for sample is less than the PQL shown on the column to the right
MCL - Maximum Contaminant Level (United States Environmental Protection Agency, April 2012).
Bold numbers indicate compound was detected above PQL in sample
Shaded numbers Indicate compound was detected above MCL

Table A-1
Summary of Volatile Organic Compounds in Groundwater
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well ID Number	Date Collected	1,1,2-Trichloro ethane MCL 5	Trichloro ethene MCL 5	Trichloro fluoro methane MCL --	1,2,3-Trichloro propane MCL --	Vinyl acetate MCL --	Vinyl chloride MCL 2	Xylenes MCL 10,000
41R	06/07/05	< 1.0	**55.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W41	12/19/05	< 1.0	**72.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
41R	12/14/06	< 1.0	**61.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-41	06/21/07	< 1.0	**64.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-41	12/31/07	< 1.0	**49.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-41	06/20/08	< 1.0	**46.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-41	08/21/09	< 1.0	**29.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-41	12/08/09	< 1.0	**47.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-41	06/29/10	< 1.0	**9.5**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
MW-41	09/24/10	< 1.0	**22.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
MW-41	12/22/10	< 1.0	**29.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-41	03/29/11	< 1.0	**35.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
MW-41	06/24/11	< 2.0	**39.0**	< 4.0	< 4.0	< 10.0	< 4.0	< 2.0
MW-41	09/28/11	< 1.0	**44.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
MW-41	12/06/11	< 1.0	**46.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-41	03/16/12	< 1.0	**50.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
MW-41	06/01/12	< 1.0	**48.0**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW-41	09/18/12	< 1.0	**52.0**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
W-41	12/19/12	< 20.0	**41.0**	< 20.0	< 20.0	< 100.0	< 20.0	< 20.0
W-41	03/11/13	< 5.0	**41.0**	< 5.0	< 5.0	< 25.0	< 1.0	< 5.0
MW-41	06/12/13	< 1.0	**43.0**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW-41	10/14/13	< 1.0	**22.0**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
48	06/07/05	< 1.0	**4.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W48	12/19/05	< 1.0	**10.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
48	12/14/06	< 1.0	**5.4**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-48	06/21/07	**2.1**	**2.8**	< 4.0	< 4.0	< 10.0	< 4.0	< 2.0
W-48	12/31/07	**2.1**	**2.8**	< 4.0	< 4.0	< 10.0	< 4.0	< 2.0
W-48	6/20/2008	< 1.0	**1.2**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-48	08/21/09	< 2.0	**3.3**	< 4.0	< 4.0	< 10.0	< 4.0	< 2.0
W-48	12/18/09	< 1.0	**5.0**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-48	06/29/10	< 1.0	**2.1**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-48	09/24/10	< 1.0	**2.2**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-48	12/22/10	< 1.0	**1.9**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-48	03/29/11	< 1.0	**1.8**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-48	06/24/11	< 4.0	< 4.0	< 8.0	< 8.0	< 20.0	< 8.0	< 4.0
MW-48	09/28/11	< 1.0	**1.7**	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-48	12/06/11	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-48	03/16/12	< 1.0	< 1.0	< 2.0	< 2.0	< 5.0	< 2.0	< 1.0
W-48	06/01/12	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
W-48	09/18/12	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
W-48	12/19/12	< 1.0	**1.4**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW-48	03/11/13	< 1.0	**1.3**	< 1.0	< 1.0	< 5.0	< 5.0	< 1.0
MW-48	06/12/13	< 1.0	**1.4**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW-48	10/14/13	< 1.0	**2.8**	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0

Notes:
All units are in micrograms per liter (ug/L).
"<" indicates result for sample is less than the PQL shown on the column to the right
MCL - Maximum Contaminant Level (United States Environmental Protection Agency, April 2012).
Bold numbers indicate compound was detected above PQL in sample
Shaded numbers Indicate compound was detected above MCL

APPENDIX B

LABORATORY ANALYTICAL RESULTS

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

AECOM
810 Dutch Square Blvd.
Suite 202
Columbia, SC 29210
Attention: Charles Suddeth

Project Name: **Westinghouse**

Lot Number: **OG18031**
Date Completed: **07/30/2013**

Nisreen Saikaly
Project Manager

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

OG18031

Case Narrative
AECOM
Lot Number: OG18031

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Nitrate

The MS/MSD recoveries in batch 25496 were outside acceptance criteria. All other QA/QC criteria for the batch were within acceptance criteria and method control limits. The MS/MSD recovery results are attributed to matrix interference. The associated sample results were reported and no corrective action was required.

Sample Summary

AECOM

Lot Number: OG18031

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	SED-8	Solid	07/18/2013 0850	07/18/2013
002	SED-1	Solid	07/18/2013 0920	07/18/2013
003	SED-9	Solid	07/18/2013 0955	07/18/2013
004	SED-10	Solid	07/18/2013 1100	07/18/2013
005	SED-7	Solid	07/18/2013 1135	07/18/2013
006	SED-2	Solid	07/18/2013 1210	07/18/2013
007	SED-3	Solid	07/18/2013 1240	07/18/2013
008	SED-4	Solid	07/18/2013 1315	07/18/2013
009	SED-5	Solid	07/18/2013 1335	07/18/2013
010	SED-6	Solid	07/18/2013 1400	07/18/2013

(10 samples)

Executive Summary

AECOM

Lot Number: OG18031

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	SED-8	Solid	Nitrate - N (soluble)	353.2	0.46		mg/kg	5
002	SED-1	Solid	Fluoride (soluble)	300.0	4.3		mg/kg	8
002	SED-1	Solid	Acetone	8260B	240		ug/kg	9
002	SED-1	Solid	2-Butanone (MEK)	8260B	48		ug/kg	9
003	SED-9	Solid	Fluoride (soluble)	300.0	7.0		mg/kg	11
003	SED-9	Solid	Acetone	8260B	170		ug/kg	12
003	SED-9	Solid	2-Butanone (MEK)	8260B	36		ug/kg	12
003	SED-9	Solid	Methyl acetate	8260B	21		ug/kg	12
003	SED-9	Solid	Toluene	8260B	11		ug/kg	12
004	SED-10	Solid	Fluoride (soluble)	300.0	220		mg/kg	14
004	SED-10	Solid	Nitrate - N (soluble)	353.2	0.97		mg/kg	14
004	SED-10	Solid	Acetone	8260B	570		ug/kg	15
004	SED-10	Solid	2-Butanone (MEK)	8260B	110		ug/kg	15
005	SED-7	Solid	Fluoride (soluble)	300.0	1.7		mg/kg	17
005	SED-7	Solid	Nitrate - N (soluble)	353.2	8.4		mg/kg	17
005	SED-7	Solid	Tetrachloroethene	8260B	30		ug/kg	18
006	SED-2	Solid	Fluoride (soluble)	300.0	12		mg/kg	20
006	SED-2	Solid	Acetone	8260B	34		ug/kg	21
007	SED-3	Solid	Fluoride (soluble)	300.0	2.1		mg/kg	23
007	SED-3	Solid	Acetone	8260B	59		ug/kg	24
007	SED-3	Solid	2-Butanone (MEK)	8260B	13		ug/kg	24
008	SED-4	Solid	Fluoride (soluble)	300.0	66		mg/kg	26
008	SED-4	Solid	Nitrate - N (soluble)	353.2	0.30		mg/kg	26
009	SED-5	Solid	Fluoride (soluble)	300.0	18		mg/kg	29
009	SED-5	Solid	Acetone	8260B	400		ug/kg	30
009	SED-5	Solid	2-Butanone (MEK)	8260B	41		ug/kg	30
009	SED-5	Solid	1,2-Dichlorobenzene	8260B	13		ug/kg	30
010	SED-6	Solid	Fluoride (soluble)	300.0	2.2		mg/kg	32
010	SED-6	Solid	Nitrate - N (soluble)	353.2	0.33		mg/kg	32

(29 detections)

Inorganic non-metals

Client: **AECOM**
Laboratory ID: **OG18031-001**
Description: **SED-8**
Matrix: **Solid**
Date Sampled: **07/18/2013 0850**
% Solids: **75.4** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride (so) 300.0	1	07/23/2013 0052	SMH		25662
1		(Nitrate - N) 353.2	1	07/19/2013 1951	HBB		25496

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Fluoride (soluble)	16984-48-8	300.0	ND		1.3	mg/kg	1
Nitrate - N (soluble)		**353.2**	**0.46**		**0.27**	**mg/kg**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-001**
Description: **SED-8**
Matrix: **Solid**
Date Sampled: **07/18/2013 0850**
% Solids: **75.4** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2128	AWM		25727	6.44

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	67-64-1	8260B	ND		21	ug/kg	1
Benzene	71-43-2	8260B	ND		5.1	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		5.1	ug/kg	1
Bromoform	75-25-2	8260B	ND		5.1	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		5.1	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		5.1	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		5.1	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		5.1	ug/kg	1
Chloroethane	75-00-3	8260B	ND		5.1	ug/kg	1
Chloroform	67-66-3	8260B	ND		5.1	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.1	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		5.1	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.1	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		5.1	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.1	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.1	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.1	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.1	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		5.1	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		5.1	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.1	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		5.1	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.1	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.1	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		5.1	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.1	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.1	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		5.1	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		10	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		5.1	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		5.1	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.1	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		5.1	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		5.1	ug/kg	1
Styrene	100-42-5	8260B	ND		5.1	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.1	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		5.1	ug/kg	1
Toluene	108-88-3	8260B	ND		5.1	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.1	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.1	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.1	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.1	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-001**
Description: **SED-8**
Matrix: **Solid**
Date Sampled: **07/18/2013 0850**
% Solids: **75.4** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2128	AWM		25727	6.44

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Trichloroethene	79-01-6	8260B	ND		5.1	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		5.1	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		5.1	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		5.1	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		119	53-142
Bromofluorobenzene		96	47-138
Toluene-d8		111	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **AECOM**
Laboratory ID: **OG18031-002**
Description: **SED-1**
Matrix: **Solid**
Date Sampled: **07/18/2013 0920**
% Solids: **50.8** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride (so) 300.0	1	07/23/2013 0141	SMH		25662
1		(Nitrate - N) 353.2	1	07/19/2013 1959	HBB		25496

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Fluoride (soluble)	**16984-48-8**	**300.0**	**4.3**		**2.0**	**mg/kg**	**1**
Nitrate - N (soluble)		353.2	ND		0.39	mg/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-002**
Description: **SED-1**
Matrix: **Solid**
Date Sampled: **07/18/2013 0920**
% Solids: **50.8** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2152	AWM		25727	4.02

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	**67-64-1**	**8260B**	**240**		**49**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		12	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		12	ug/kg	1
Bromoform	75-25-2	8260B	ND		12	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		12	ug/kg	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**48**		**24**	**ug/kg**	**1**
Carbon disulfide	75-15-0	8260B	ND		12	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		12	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		12	ug/kg	1
Chloroethane	75-00-3	8260B	ND		12	ug/kg	1
Chloroform	67-66-3	8260B	ND		12	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		12	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		12	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		12	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		12	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		12	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		12	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		12	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		12	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		12	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		12	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		12	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		12	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		12	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		12	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		12	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		12	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		12	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		12	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		24	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		12	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		12	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		12	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		24	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		12	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		12	ug/kg	1
Styrene	100-42-5	8260B	ND		12	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		12	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		12	ug/kg	1
Toluene	108-88-3	8260B	ND		12	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		12	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		12	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		12	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		12	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-002**
Description: **SED-1**
Matrix: **Solid**
Date Sampled: **07/18/2013 0920**
% Solids: **50.8** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2152	AWM		25727	4.02

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Trichloroethene	79-01-6	8260B	ND		12	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		12	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		12	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		12	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		123	53-142
Bromofluorobenzene		93	47-138
Toluene-d8		114	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **AECOM**
Laboratory ID: **OG18031-003**
Description: **SED-9**
Matrix: **Solid**
Date Sampled: **07/18/2013 0955**
% Solids: **68.4** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride (so) 300.0	1	07/23/2013 0205	SMH		25662
1		(Nitrate - N) 353.2	1	07/19/2013 2000	HBB		25496

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Fluoride (soluble)	**16984-48-8**	**300.0**	**7.0**		**1.5**	**mg/kg**	**1**
Nitrate - N (soluble)		353.2	ND		0.29	mg/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **OG18031-003**

Description: **SED-9** Matrix: **Solid**

Date Sampled: **07/18/2013 0955** % Solids: **68.4** **07/18/2013 2050**

Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2215	AWM		25727	5.31

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	**67-64-1**	**8260B**	**170**		**28**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		6.9	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		6.9	ug/kg	1
Bromoform	75-25-2	8260B	ND		6.9	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		6.9	ug/kg	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**36**		**14**	**ug/kg**	**1**
Carbon disulfide	75-15-0	8260B	ND		6.9	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		6.9	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		6.9	ug/kg	1
Chloroethane	75-00-3	8260B	ND		6.9	ug/kg	1
Chloroform	67-66-3	8260B	ND		6.9	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		6.9	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		6.9	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		6.9	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		6.9	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		6.9	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		6.9	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		6.9	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		6.9	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		6.9	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		6.9	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		6.9	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		6.9	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		6.9	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		6.9	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		6.9	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		6.9	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		6.9	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		6.9	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		14	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		6.9	ug/kg	1
Methyl acetate	**79-20-9**	**8260B**	**21**		**6.9**	**ug/kg**	**1**
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		6.9	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		14	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		6.9	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		6.9	ug/kg	1
Styrene	100-42-5	8260B	ND		6.9	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		6.9	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		6.9	ug/kg	1
Toluene	**108-88-3**	**8260B**	**11**		**6.9**	**ug/kg**	**1**
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		6.9	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		6.9	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		6.9	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		6.9	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-003**
Description: **SED-9**
Matrix: **Solid**
Date Sampled: **07/18/2013 0955**
% Solids: **68.4** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2215	AWM		25727	5.31

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Trichloroethene	79-01-6	8260B	ND		6.9	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		6.9	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		6.9	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		6.9	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		122	53-142
Bromofluorobenzene		90	47-138
Toluene-d8		108	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **AECOM**
Laboratory ID: **OG18031-004**
Description: **SED-10**
Matrix: **Solid**
Date Sampled: **07/18/2013 1100**
% Solids: **20.8** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride (so) 300.0	1	07/23/2013 0229	SMH		25662
1		(Nitrate - N) 353.2	1	07/19/2013 2001	HBB		25496

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Fluoride (soluble)	**16984-48-8**	**300.0**	**220**		**4.8**	**mg/kg**	**1**
Nitrate - N (soluble)		**353.2**	**0.97**		**0.96**	**mg/kg**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-004**
Description: **SED-10**
Matrix: **Solid**
Date Sampled: **07/18/2013 1100**
% Solids: **20.8** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2239	AWM		25727	3.49

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	**67-64-1**	**8260B**	**570**		**140**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		34	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		34	ug/kg	1
Bromoform	75-25-2	8260B	ND		34	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		34	ug/kg	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**110**		**69**	**ug/kg**	**1**
Carbon disulfide	75-15-0	8260B	ND		34	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		34	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		34	ug/kg	1
Chloroethane	75-00-3	8260B	ND		34	ug/kg	1
Chloroform	67-66-3	8260B	ND		34	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		34	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		34	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		34	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		34	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		34	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		34	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		34	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		34	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		34	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		34	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		34	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		34	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		34	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		34	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		34	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		34	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		34	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		34	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		69	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		34	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		34	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		34	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		69	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		34	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		34	ug/kg	1
Styrene	100-42-5	8260B	ND		34	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		34	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		34	ug/kg	1
Toluene	108-88-3	8260B	ND		34	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		34	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		34	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		34	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		34	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-004**
Description: **SED-10**
Matrix: **Solid**
Date Sampled: **07/18/2013 1100**
% Solids: **20.8** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2239	AWM		25727	3.49

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Trichloroethene	79-01-6	8260B	ND		34	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		34	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		34	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		34	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		123	53-142
Bromofluorobenzene		96	47-138
Toluene-d8		106	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **AECOM**
Laboratory ID: **OG18031-005**
Description: **SED-7**
Matrix: **Solid**
Date Sampled: **07/18/2013 1135**
% Solids: **78.9** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride (so) 300.0	1	07/23/2013 0253	SMH		25662
1		(Nitrate - N) 353.2	1	07/19/2013 2002	HBB		25496

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Fluoride (soluble)	**16984-48-8**	**300.0**	**1.7**		**1.3**	**mg/kg**	**1**
Nitrate - N (soluble)		**353.2**	**8.4**		**0.25**	**mg/kg**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **OG18031-005**

Description: **SED-7** Matrix: **Solid**

Date Sampled: **07/18/2013 1135** % Solids: **78.9** **07/18/2013 2050**

Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2302	AWM		25727	6.33

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	67-64-1	8260B	ND		20	ug/kg	1
Benzene	71-43-2	8260B	ND		5.0	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		5.0	ug/kg	1
Bromoform	75-25-2	8260B	ND		5.0	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		5.0	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		5.0	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		5.0	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		5.0	ug/kg	1
Chloroethane	75-00-3	8260B	ND		5.0	ug/kg	1
Chloroform	67-66-3	8260B	ND		5.0	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.0	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		5.0	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.0	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		5.0	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.0	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.0	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.0	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.0	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		5.0	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		5.0	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		5.0	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.0	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.0	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		5.0	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.0	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.0	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		5.0	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		10	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		5.0	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		5.0	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		5.0	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		5.0	ug/kg	1
Styrene	100-42-5	8260B	ND		5.0	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.0	ug/kg	1
Tetrachloroethene	**127-18-4**	**8260B**	**30**		**5.0**	**ug/kg**	**1**
Toluene	108-88-3	8260B	ND		5.0	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.0	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.0	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.0	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.0	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-005**
Description: **SED-7**
Matrix: **Solid**
Date Sampled: **07/18/2013 1135**
% Solids: **78.9** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2302	AWM		25727	6.33

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Trichloroethene	79-01-6	8260B	ND		5.0	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		5.0	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		5.0	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		5.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		125	53-142
Bromofluorobenzene		94	47-138
Toluene-d8		111	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **AECOM**
Laboratory ID: **OG18031-006**
Description: **SED-2**
Matrix: **Solid**
Date Sampled: **07/18/2013 1210**
% Solids: **83.3** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride (so) 300.0	1	07/23/2013 0405	SMH		25662
1		(Nitrate - N) 353.2	1	07/19/2013 2003	HBB		25496

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Fluoride (soluble)	**16984-48-8**	**300.0**	**12**		**1.2**	**mg/kg**	**1**
Nitrate - N (soluble)		353.2	ND		0.24	mg/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **OG18031-006**

Description: **SED-2** Matrix: **Solid**

Date Sampled: **07/18/2013 1210** % Solids: **83.3** **07/18/2013 2050**

Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2326	AWM		25727	6.40

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	**67-64-1**	**8260B**	**34**		**19**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		4.7	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		4.7	ug/kg	1
Bromoform	75-25-2	8260B	ND		4.7	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		4.7	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		9.4	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		4.7	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		4.7	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		4.7	ug/kg	1
Chloroethane	75-00-3	8260B	ND		4.7	ug/kg	1
Chloroform	67-66-3	8260B	ND		4.7	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		4.7	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		4.7	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		4.7	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		4.7	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		4.7	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		4.7	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		4.7	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		4.7	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		4.7	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		4.7	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		4.7	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		4.7	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		4.7	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		4.7	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		4.7	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		4.7	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		4.7	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		4.7	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		9.4	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		4.7	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		4.7	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		4.7	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		9.4	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		4.7	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		4.7	ug/kg	1
Styrene	100-42-5	8260B	ND		4.7	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		4.7	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		4.7	ug/kg	1
Toluene	108-88-3	8260B	ND		4.7	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		4.7	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		4.7	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		4.7	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		4.7	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-006**
Description: **SED-2**
Matrix: **Solid**
Date Sampled: **07/18/2013 1210**
% Solids: **83.3** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/23/2013 2326	AWM		25727	6.40

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Trichloroethene	79-01-6	8260B	ND		4.7	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		4.7	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		4.7	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		4.7	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		132	53-142
Bromofluorobenzene		95	47-138
Toluene-d8		112	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **AECOM**
Laboratory ID: **OG18031-007**
Description: **SED-3**
Matrix: **Solid**
Date Sampled: **07/18/2013 1240**
% Solids: **73.6** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride (so) 300.0	1	07/23/2013 0429	SMH		25662
1		(Nitrate - N) 353.2	1	07/19/2013 2004	HBB		25496

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Fluoride (soluble)	**16984-48-8**	**300.0**	**2.1**		**1.4**	**mg/kg**	**1**
Nitrate - N (soluble)		353.2	ND		0.27	mg/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-007**
Description: **SED-3**
Matrix: **Solid**
Date Sampled: **07/18/2013 1240**
% Solids: **73.6** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/24/2013 0232	AWM		25730	5.38
2	5035	8260B	1	07/24/2013 1520	AAC		25802	5.52

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	**67-64-1**	**8260B**	**59**		**25**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		6.3	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		6.3	ug/kg	1
Bromoform	75-25-2	8260B	ND		6.3	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		6.3	ug/kg	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**13**		**13**	**ug/kg**	**1**
Carbon disulfide	75-15-0	8260B	ND		6.3	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		6.3	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		6.3	ug/kg	1
Chloroethane	75-00-3	8260B	ND		6.3	ug/kg	1
Chloroform	67-66-3	8260B	ND		6.3	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		6.3	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		6.3	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		6.3	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		6.3	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		6.3	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		6.3	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		6.3	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		6.3	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		6.2	ug/kg	2
1,1-Dichloroethane	75-34-3	8260B	ND		6.3	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		6.3	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		6.3	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		6.3	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		6.3	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		6.3	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		6.3	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		6.3	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		6.3	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		13	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		6.3	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		6.3	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		6.3	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		13	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		6.3	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		6.2	ug/kg	2
Styrene	100-42-5	8260B	ND		6.3	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		6.3	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		6.3	ug/kg	1
Toluene	108-88-3	8260B	ND		6.3	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		6.3	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		6.3	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		6.3	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-007**
Description: **SED-3**
Matrix: **Solid**
Date Sampled: **07/18/2013 1240**
% Solids: **73.6** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/24/2013 0232	AWM		25730	5.38
2	5035	8260B	1	07/24/2013 1520	AAC		25802	5.52

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260B	ND		6.3	ug/kg	1
Trichloroethene	79-01-6	8260B	ND		6.3	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		6.3	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		6.3	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		6.3	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	53-142		100	53-142
Bromofluorobenzene		96	47-138		100	47-138
Toluene-d8		102	68-124		103	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **AECOM**
Laboratory ID: **OG18031-008**
Description: **SED-4**
Matrix: **Solid**
Date Sampled: **07/18/2013 1315**
% Solids: **77.6** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride (so) 300.0	1	07/23/2013 0453	SMH		25662
1		(Nitrate - N) 353.2	1	07/19/2013 2005	HBB		25496

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Fluoride (soluble)	**16984-48-8**	**300.0**	**66**		**1.3**	**mg/kg**	**1**
Nitrate - N (soluble)		**353.2**	**0.30**		**0.26**	**mg/kg**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **OG18031-008**

Description: **SED-4** Matrix: **Solid**

Date Sampled: **07/18/2013 1315** % Solids: **77.6** **07/18/2013 2050**

Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	07/24/2013 1635	AAC		25802	5.99

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	67-64-1	8260B	ND		22	ug/kg	2
Benzene	71-43-2	8260B	ND		5.4	ug/kg	2
Bromodichloromethane	75-27-4	8260B	ND		5.4	ug/kg	2
Bromoform	75-25-2	8260B	ND		5.4	ug/kg	2
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		5.4	ug/kg	2
2-Butanone (MEK)	78-93-3	8260B	ND		11	ug/kg	2
Carbon disulfide	75-15-0	8260B	ND		5.4	ug/kg	2
Carbon tetrachloride	56-23-5	8260B	ND		5.4	ug/kg	2
Chlorobenzene	108-90-7	8260B	ND		5.4	ug/kg	2
Chloroethane	75-00-3	8260B	ND		5.4	ug/kg	2
Chloroform	67-66-3	8260B	ND		5.4	ug/kg	2
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.4	ug/kg	2
Cyclohexane	110-82-7	8260B	ND		5.4	ug/kg	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.4	ug/kg	2
Dibromochloromethane	124-48-1	8260B	ND		5.4	ug/kg	2
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.4	ug/kg	2
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.4	ug/kg	2
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.4	ug/kg	2
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.4	ug/kg	2
Dichlorodifluoromethane	75-71-8	8260B	ND		5.4	ug/kg	2
1,1-Dichloroethane	75-34-3	8260B	ND		5.4	ug/kg	2
1,2-Dichloroethane	107-06-2	8260B	ND		5.4	ug/kg	2
1,1-Dichloroethene	75-35-4	8260B	ND		5.4	ug/kg	2
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.4	ug/kg	2
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.4	ug/kg	2
1,2-Dichloropropane	78-87-5	8260B	ND		5.4	ug/kg	2
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.4	ug/kg	2
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.4	ug/kg	2
Ethylbenzene	100-41-4	8260B	ND		5.4	ug/kg	2
2-Hexanone	591-78-6	8260B	ND		11	ug/kg	2
Isopropylbenzene	98-82-8	8260B	ND		5.4	ug/kg	2
Methyl acetate	79-20-9	8260B	ND		5.4	ug/kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.4	ug/kg	2
4-Methyl-2-pentanone	108-10-1	8260B	ND		11	ug/kg	2
Methylcyclohexane	108-87-2	8260B	ND		5.4	ug/kg	2
Methylene chloride	75-09-2	8260B	ND		5.4	ug/kg	2
Styrene	100-42-5	8260B	ND		5.4	ug/kg	2
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.4	ug/kg	2
Tetrachloroethene	127-18-4	8260B	ND		5.4	ug/kg	2
Toluene	108-88-3	8260B	ND		5.4	ug/kg	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.4	ug/kg	2
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.4	ug/kg	2
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.4	ug/kg	2
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.4	ug/kg	2

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-008**
Description: **SED-4**
Matrix: **Solid**
Date Sampled: **07/18/2013 1315**
% Solids: **77.6** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	07/24/2013 1635	AAC		25802	5.99

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Trichloroethene	79-01-6	8260B	ND		5.4	ug/kg	2
Trichlorofluoromethane	75-69-4	8260B	ND		5.4	ug/kg	2
Vinyl chloride	75-01-4	8260B	ND		5.4	ug/kg	2
Xylenes (total)	1330-20-7	8260B	ND		5.4	ug/kg	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	53-142
Bromofluorobenzene		101	47-138
Toluene-d8		104	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **AECOM**
Laboratory ID: **OG18031-009**
Description: **SED-5**
Matrix: **Solid**
Date Sampled: **07/18/2013 1335**
% Solids: **65.4** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride (so) 300.0	1	07/23/2013 0518	SMH		25662
1		(Nitrate - N) 353.2	1	07/19/2013 2006	HBB		25496

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Fluoride (soluble)	**16984-48-8**	**300.0**	**18**		**1.5**	**mg/kg**	**1**
Nitrate - N (soluble)		353.2	ND		0.31	mg/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **OG18031-009**

Description: **SED-5** Matrix: **Solid**

Date Sampled: **07/18/2013 1335** % Solids: **65.4** **07/18/2013 2050**

Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	07/24/2013 1544	AAC		25802	5.12

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	**67-64-1**	**8260B**	**400**		**30**	**ug/kg**	**2**
Benzene	71-43-2	8260B	ND		7.5	ug/kg	2
Bromodichloromethane	75-27-4	8260B	ND		7.5	ug/kg	2
Bromoform	75-25-2	8260B	ND		7.5	ug/kg	2
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		7.5	ug/kg	2
2-Butanone (MEK)	**78-93-3**	**8260B**	**41**		**15**	**ug/kg**	**2**
Carbon disulfide	75-15-0	8260B	ND		7.5	ug/kg	2
Carbon tetrachloride	56-23-5	8260B	ND		7.5	ug/kg	2
Chlorobenzene	108-90-7	8260B	ND		7.5	ug/kg	2
Chloroethane	75-00-3	8260B	ND		7.5	ug/kg	2
Chloroform	67-66-3	8260B	ND		7.5	ug/kg	2
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		7.5	ug/kg	2
Cyclohexane	110-82-7	8260B	ND		7.5	ug/kg	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		7.5	ug/kg	2
Dibromochloromethane	124-48-1	8260B	ND		7.5	ug/kg	2
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		7.5	ug/kg	2
1,2-Dichlorobenzene	**95-50-1**	**8260B**	**13**		**7.5**	**ug/kg**	**2**
1,3-Dichlorobenzene	541-73-1	8260B	ND		7.5	ug/kg	2
1,4-Dichlorobenzene	106-46-7	8260B	ND		7.5	ug/kg	2
Dichlorodifluoromethane	75-71-8	8260B	ND		7.5	ug/kg	2
1,1-Dichloroethane	75-34-3	8260B	ND		7.5	ug/kg	2
1,2-Dichloroethane	107-06-2	8260B	ND		7.5	ug/kg	2
1,1-Dichloroethene	75-35-4	8260B	ND		7.5	ug/kg	2
cis-1,2-Dichloroethene	156-59-2	8260B	ND		7.5	ug/kg	2
trans-1,2-Dichloroethene	156-60-5	8260B	ND		7.5	ug/kg	2
1,2-Dichloropropane	78-87-5	8260B	ND		7.5	ug/kg	2
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		7.5	ug/kg	2
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		7.5	ug/kg	2
Ethylbenzene	100-41-4	8260B	ND		7.5	ug/kg	2
2-Hexanone	591-78-6	8260B	ND		15	ug/kg	2
Isopropylbenzene	98-82-8	8260B	ND		7.5	ug/kg	2
Methyl acetate	79-20-9	8260B	ND		7.5	ug/kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		7.5	ug/kg	2
4-Methyl-2-pentanone	108-10-1	8260B	ND		15	ug/kg	2
Methylcyclohexane	108-87-2	8260B	ND		7.5	ug/kg	2
Methylene chloride	75-09-2	8260B	ND		7.5	ug/kg	2
Styrene	100-42-5	8260B	ND		7.5	ug/kg	2
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		7.5	ug/kg	2
Tetrachloroethene	127-18-4	8260B	ND		7.5	ug/kg	2
Toluene	108-88-3	8260B	ND		7.5	ug/kg	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		7.5	ug/kg	2
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		7.5	ug/kg	2
1,1,1-Trichloroethane	71-55-6	8260B	ND		7.5	ug/kg	2
1,1,2-Trichloroethane	79-00-5	8260B	ND		7.5	ug/kg	2

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-009**
Description: **SED-5**
Matrix: **Solid**
Date Sampled: **07/18/2013 1335**
% Solids: **65.4** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	07/24/2013 1544	AAC		25802	5.12

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Trichloroethene	79-01-6	8260B	ND		7.5	ug/kg	2
Trichlorofluoromethane	75-69-4	8260B	ND		7.5	ug/kg	2
Vinyl chloride	75-01-4	8260B	ND		7.5	ug/kg	2
Xylenes (total)	1330-20-7	8260B	ND		7.5	ug/kg	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	53-142
Bromofluorobenzene		93	47-138
Toluene-d8		104	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **AECOM**
Laboratory ID: **OG18031-010**
Description: **SED-6**
Matrix: **Solid**
Date Sampled: **07/18/2013 1400**
% Solids: **80.8** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Fluoride (so) 300.0	1	07/23/2013 0542	SMH		25662
1		(Nitrate - N) 353.2	1	07/19/2013 2007	HBB		25496

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Fluoride (soluble)	**16984-48-8**	**300.0**	**2.2**		**1.2**	**mg/kg**	**1**
Nitrate - N (soluble)		**353.2**	**0.33**		**0.25**	**mg/kg**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-010**
Description: **SED-6**
Matrix: **Solid**
Date Sampled: **07/18/2013 1400**
% Solids: **80.8** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/24/2013 0013	AWM		25727	6.57

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	67-64-1	8260B	ND		19	ug/kg	1
Benzene	71-43-2	8260B	ND		4.7	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		4.7	ug/kg	1
Bromoform	75-25-2	8260B	ND		4.7	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		4.7	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		9.4	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		4.7	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		4.7	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		4.7	ug/kg	1
Chloroethane	75-00-3	8260B	ND		4.7	ug/kg	1
Chloroform	67-66-3	8260B	ND		4.7	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		4.7	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		4.7	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		4.7	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		4.7	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		4.7	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		4.7	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		4.7	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		4.7	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		4.7	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		4.7	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		4.7	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		4.7	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		4.7	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		4.7	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		4.7	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		4.7	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		4.7	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		4.7	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		9.4	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		4.7	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		4.7	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		4.7	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		9.4	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		4.7	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		4.7	ug/kg	1
Styrene	100-42-5	8260B	ND		4.7	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		4.7	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		4.7	ug/kg	1
Toluene	108-88-3	8260B	ND		4.7	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		4.7	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		4.7	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		4.7	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		4.7	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **AECOM**
Laboratory ID: **OG18031-010**
Description: **SED-6**
Matrix: **Solid**
Date Sampled: **07/18/2013 1400**
% Solids: **80.8** **07/18/2013 2050**
Date Received: **07/18/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	07/24/2013 0013	AWM		25727	6.57

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Trichloroethene	79-01-6	8260B	ND		4.7	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		4.7	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		4.7	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		4.7	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		134	53-142
Bromofluorobenzene		97	47-138
Toluene-d8		115	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

QC Summary

Inorganic non-metals - MB

Sample ID: OQ25496-001
Batch: 25496
Analytical Method: 353.2
Matrix: Solid

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Nitrate - N (soluble)	ND		1	0.20	mg/kg	07/19/2013 1948

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Inorganic non-metals - LCS

Sample ID: OQ25496-002
Batch: 25496
Analytical Method: 353.2
Matrix: Solid

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Nitrate - N (soluble)	0.80	0.80		1	101	90-110	07/19/2013 1949

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Inorganic non-metals - LCSD

Sample ID: OQ25496-003 **Matrix:** Solid
Batch: 25496
Analytical Method: 353.2

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Nitrate - N (soluble)	0.80	0.82		1	102	1.6	90-110	20	07/19/2013 1950

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Inorganic non-metals - MS

Sample ID: OG18031-010MS
Batch: 25496
Analytical Method: 353.2
Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Nitrate - N (soluble)	0.33	49	19	N	1	37	90-110	07/19/2013 2008

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Inorganic non-metals - MSD

Sample ID: OG18031-010MD
Batch: 25496
Analytical Method: 353.2
Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Nitrate - N (soluble)	0.33	49	19	N	1	38	0.66	90-110	20	07/19/2013 2016

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Inorganic non-metals - MB

Sample ID: OQ25662-001
Batch: 25662
Analytical Method: 300.0
Matrix: Solid

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Fluoride (soluble)	ND		1	1.0	mg/kg	07/22/2013 2340

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Inorganic non-metals - LCS

Sample ID: OQ25662-002
Batch: 25662
Analytical Method: 300.0
Matrix: Solid

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Fluoride (soluble)	40	42		1	105	90-110	07/23/2013 0004

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Inorganic non-metals - LCSD

Sample ID: OQ25662-003 **Matrix:** Solid
Batch: 25662
Analytical Method: 300.0

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Fluoride (soluble)	40	44		1	109	4.1	90-110	20	07/23/2013 0028

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Inorganic non-metals - Duplicate

Sample ID: OG18031-001DU
Batch: 25662
Analytical Method: 300.0
Matrix: Solid

Parameter	Sample Amount (mg/kg)	Result (mg/kg)	Q	Dil	% RPD	% RPD Limit	Analysis Date
Fluoride (soluble)	ND	ND		1	0.00	20	07/23/2013 0117

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Inorganic non-metals - MS

Sample ID: OG18031-010MS
Batch: 25662
Analytical Method: 300.0
Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Fluoride (soluble)	2.2	40	42		1	101	90-110	07/23/2013 0606

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Inorganic non-metals - MSD

Sample ID: OG18031-010MD
Batch: 25662
Analytical Method: 300.0
Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Fluoride (soluble)	2.2	40	44		1	105	3.5	90-110	20	07/23/2013 0630

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ25727-001
Batch: 25727
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Acetone	ND		1	20	ug/kg	07/23/2013 1924
Benzene	ND		1	5.0	ug/kg	07/23/2013 1924
Bromodichloromethane	ND		1	5.0	ug/kg	07/23/2013 1924
Bromoform	ND		1	5.0	ug/kg	07/23/2013 1924
Bromomethane (Methyl bromide)	ND		1	5.0	ug/kg	07/23/2013 1924
2-Butanone (MEK)	ND		1	10	ug/kg	07/23/2013 1924
Carbon disulfide	ND		1	5.0	ug/kg	07/23/2013 1924
Carbon tetrachloride	ND		1	5.0	ug/kg	07/23/2013 1924
Chlorobenzene	ND		1	5.0	ug/kg	07/23/2013 1924
Chloroethane	ND		1	5.0	ug/kg	07/23/2013 1924
Chloroform	ND		1	5.0	ug/kg	07/23/2013 1924
Chloromethane (Methyl chloride)	ND		1	5.0	ug/kg	07/23/2013 1924
Cyclohexane	ND		1	5.0	ug/kg	07/23/2013 1924
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	5.0	ug/kg	07/23/2013 1924
Dibromochloromethane	ND		1	5.0	ug/kg	07/23/2013 1924
1,2-Dibromoethane (EDB)	ND		1	5.0	ug/kg	07/23/2013 1924
1,4-Dichlorobenzene	ND		1	5.0	ug/kg	07/23/2013 1924
1,3-Dichlorobenzene	ND		1	5.0	ug/kg	07/23/2013 1924
1,2-Dichlorobenzene	ND		1	5.0	ug/kg	07/23/2013 1924
Dichlorodifluoromethane	ND		1	5.0	ug/kg	07/23/2013 1924
1,2-Dichloroethane	ND		1	5.0	ug/kg	07/23/2013 1924
1,1-Dichloroethane	ND		1	5.0	ug/kg	07/23/2013 1924
trans-1,2-Dichloroethene	ND		1	5.0	ug/kg	07/23/2013 1924
cis-1,2-Dichloroethene	ND		1	5.0	ug/kg	07/23/2013 1924
1,1-Dichloroethene	ND		1	5.0	ug/kg	07/23/2013 1924
1,2-Dichloropropane	ND		1	5.0	ug/kg	07/23/2013 1924
trans-1,3-Dichloropropene	ND		1	5.0	ug/kg	07/23/2013 1924
cis-1,3-Dichloropropene	ND		1	5.0	ug/kg	07/23/2013 1924
Ethylbenzene	ND		1	5.0	ug/kg	07/23/2013 1924
2-Hexanone	ND		1	10	ug/kg	07/23/2013 1924
Isopropylbenzene	ND		1	5.0	ug/kg	07/23/2013 1924
Methyl acetate	ND		1	5.0	ug/kg	07/23/2013 1924
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	ug/kg	07/23/2013 1924
4-Methyl-2-pentanone	ND		1	10	ug/kg	07/23/2013 1924
Methylcyclohexane	ND		1	5.0	ug/kg	07/23/2013 1924
Methylene chloride	ND		1	5.0	ug/kg	07/23/2013 1924
Styrene	ND		1	5.0	ug/kg	07/23/2013 1924
1,1,2,2-Tetrachloroethane	ND		1	5.0	ug/kg	07/23/2013 1924
Tetrachloroethene	ND		1	5.0	ug/kg	07/23/2013 1924
Toluene	ND		1	5.0	ug/kg	07/23/2013 1924
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	5.0	ug/kg	07/23/2013 1924
1,2,4-Trichlorobenzene	ND		1	5.0	ug/kg	07/23/2013 1924
1,1,2-Trichloroethane	ND		1	5.0	ug/kg	07/23/2013 1924
1,1,1-Trichloroethane	ND		1	5.0	ug/kg	07/23/2013 1924

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ25727-001
Batch: 25727
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Trichloroethene	ND		1	5.0	ug/kg	07/23/2013 1924
Trichlorofluoromethane	ND		1	5.0	ug/kg	07/23/2013 1924
Vinyl chloride	ND		1	5.0	ug/kg	07/23/2013 1924
Xylenes (total)	ND		1	5.0	ug/kg	07/23/2013 1924

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	47-138
1,2-Dichloroethane-d4		104	53-142
Toluene-d8		111	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ25727-002
Batch: 25727
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	100	110		1	110	42-149	07/23/2013 1747
Benzene	50	45		1	90	69-123	07/23/2013 1747
Bromodichloromethane	50	44		1	87	69-121	07/23/2013 1747
Bromoform	50	46		1	91	61-119	07/23/2013 1747
Bromomethane (Methyl bromide)	50	48		1	96	10-168	07/23/2013 1747
2-Butanone (MEK)	100	100		1	104	57-148	07/23/2013 1747
Carbon disulfide	50	42		1	83	58-122	07/23/2013 1747
Carbon tetrachloride	50	41		1	82	58-136	07/23/2013 1747
Chlorobenzene	50	45		1	90	59-129	07/23/2013 1747
Chloroethane	50	47		1	94	42-163	07/23/2013 1747
Chloroform	50	43		1	85	71-125	07/23/2013 1747
Chloromethane (Methyl chloride)	50	56		1	111	34-134	07/23/2013 1747
Cyclohexane	50	41		1	82	53-139	07/23/2013 1747
1,2-Dibromo-3-chloropropane (DBCP)	50	48		1	96	55-125	07/23/2013 1747
Dibromochloromethane	50	46		1	92	66-119	07/23/2013 1747
1,2-Dibromoethane (EDB)	50	46		1	93	74-124	07/23/2013 1747
1,4-Dichlorobenzene	50	44		1	89	52-133	07/23/2013 1747
1,3-Dichlorobenzene	50	45		1	90	51-134	07/23/2013 1747
1,2-Dichlorobenzene	50	45		1	91	57-131	07/23/2013 1747
Dichlorodifluoromethane	50	70		1	140	10-157	07/23/2013 1747
1,2-Dichloroethane	50	45		1	90	67-129	07/23/2013 1747
1,1-Dichloroethane	50	43		1	85	71-127	07/23/2013 1747
trans-1,2-Dichloroethene	50	42		1	84	68-131	07/23/2013 1747
cis-1,2-Dichloroethene	50	43		1	86	70-122	07/23/2013 1747
1,1-Dichloroethene	50	41		1	81	69-138	07/23/2013 1747
1,2-Dichloropropane	50	45		1	90	72-124	07/23/2013 1747
trans-1,3-Dichloropropene	50	46		1	92	70-124	07/23/2013 1747
cis-1,3-Dichloropropene	50	44		1	89	70-126	07/23/2013 1747
Ethylbenzene	50	45		1	90	59-128	07/23/2013 1747
2-Hexanone	100	110		1	105	54-137	07/23/2013 1747
Isopropylbenzene	50	46		1	92	50-136	07/23/2013 1747
Methyl acetate	50	48		1	96	59-137	07/23/2013 1747
Methyl tertiary butyl ether (MTBE)	50	44		1	87	70-130	07/23/2013 1747
4-Methyl-2-pentanone	100	100		1	100	60-134	07/23/2013 1747
Methylcyclohexane	50	40		1	79	41-144	07/23/2013 1747
Methylene chloride	50	41		1	83	70-130	07/23/2013 1747
Styrene	50	47		1	93	54-136	07/23/2013 1747
1,1,2,2-Tetrachloroethane	50	46		1	93	69-132	07/23/2013 1747
Tetrachloroethene	50	43		1	86	45-150	07/23/2013 1747
Toluene	50	44		1	87	61-129	07/23/2013 1747
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	38		1	76	49-136	07/23/2013 1747
1,2,4-Trichlorobenzene	50	45		1	90	34-145	07/23/2013 1747
1,1,2-Trichloroethane	50	46		1	92	55-128	07/23/2013 1747
1,1,1-Trichloroethane	50	41		1	82	63-128	07/23/2013 1747

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ25727-002
Batch: 25727
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Trichloroethene	50	44		1	89	62-126	07/23/2013 1747
Trichlorofluoromethane	50	44		1	89	45-138	07/23/2013 1747
Vinyl chloride	50	53		1	105	42-132	07/23/2013 1747
Xylenes (total)	100	91		1	91	58-128	07/23/2013 1747

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		116	47-138
1,2-Dichloroethane-d4		107	53-142
Toluene-d8		113	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ25727-003
Batch: 25727
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acetone	100	97		1	97	13	42-149	20	07/23/2013 1811
Benzene	50	44		1	88	1.7	69-123	20	07/23/2013 1811
Bromodichloromethane	50	43		1	87	0.30	69-121	20	07/23/2013 1811
Bromoform	50	44		1	88	4.1	61-119	20	07/23/2013 1811
Bromomethane (Methyl bromide)	50	45		1	90	6.1	10-168	20	07/23/2013 1811
2-Butanone (MEK)	100	98		1	98	6.3	57-148	20	07/23/2013 1811
Carbon disulfide	50	41		1	82	2.1	58-122	20	07/23/2013 1811
Carbon tetrachloride	50	40		1	80	2.3	58-136	20	07/23/2013 1811
Chlorobenzene	50	44		1	87	3.5	59-129	20	07/23/2013 1811
Chloroethane	50	46		1	92	2.0	42-163	20	07/23/2013 1811
Chloroform	50	42		1	84	1.4	71-125	20	07/23/2013 1811
Chloromethane (Methyl chloride)	50	55		1	109	1.8	34-134	20	07/23/2013 1811
Cyclohexane	50	40		1	79	3.1	53-139	20	07/23/2013 1811
1,2-Dibromo-3-chloropropane (DBCP)	50	47		1	93	3.3	55-125	20	07/23/2013 1811
Dibromochloromethane	50	45		1	90	1.4	66-119	20	07/23/2013 1811
1,2-Dibromoethane (EDB)	50	45		1	90	2.5	74-124	20	07/23/2013 1811
1,4-Dichlorobenzene	50	43		1	86	3.1	52-133	20	07/23/2013 1811
1,3-Dichlorobenzene	50	44		1	88	2.5	51-134	20	07/23/2013 1811
1,2-Dichlorobenzene	50	44		1	89	2.3	57-131	20	07/23/2013 1811
Dichlorodifluoromethane	50	70		1	141	0.74	10-157	20	07/23/2013 1811
1,2-Dichloroethane	50	44		1	88	1.8	67-129	20	07/23/2013 1811
1,1-Dichloroethane	50	42		1	84	1.8	71-127	20	07/23/2013 1811
trans-1,2-Dichloroethene	50	41		1	82	1.8	68-131	20	07/23/2013 1811
cis-1,2-Dichloroethene	50	43		1	86	0.98	70-122	20	07/23/2013 1811
1,1-Dichloroethene	50	40		1	81	0.65	69-138	20	07/23/2013 1811
1,2-Dichloropropane	50	44		1	89	1.5	72-124	20	07/23/2013 1811
trans-1,3-Dichloropropene	50	44		1	89	3.4	70-124	20	07/23/2013 1811
cis-1,3-Dichloropropene	50	44		1	88	0.79	70-126	20	07/23/2013 1811
Ethylbenzene	50	43		1	86	4.0	59-128	20	07/23/2013 1811
2-Hexanone	100	95		1	95	10	54-137	20	07/23/2013 1811
Isopropylbenzene	50	45		1	90	2.0	50-136	20	07/23/2013 1811
Methyl acetate	50	46		1	92	4.4	59-137	20	07/23/2013 1811
Methyl tertiary butyl ether (MTBE)	50	43		1	86	2.1	70-130	20	07/23/2013 1811
4-Methyl-2-pentanone	100	95		1	95	5.0	60-134	20	07/23/2013 1811
Methylcyclohexane	50	40		1	80	1.6	41-144	20	07/23/2013 1811
Methylene chloride	50	40		1	81	2.3	70-130	20	07/23/2013 1811
Styrene	50	45		1	91	3.0	54-136	20	07/23/2013 1811
1,1,2,2-Tetrachloroethane	50	45		1	89	4.1	69-132	20	07/23/2013 1811
Tetrachloroethene	50	42		1	84	2.4	45-150	20	07/23/2013 1811
Toluene	50	43		1	86	1.4	61-129	20	07/23/2013 1811
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	38		1	77	0.56	49-136	20	07/23/2013 1811
1,2,4-Trichlorobenzene	50	43		1	86	3.7	34-145	20	07/23/2013 1811
1,1,2-Trichloroethane	50	44		1	89	3.2	55-128	20	07/23/2013 1811
1,1,1-Trichloroethane	50	40		1	80	2.7	63-128	20	07/23/2013 1811

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ25727-003
Batch: 25727
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	50	45		1	90	1.1	62-126	20	07/23/2013 1811
Trichlorofluoromethane	50	44		1	89	0.11	45-138	20	07/23/2013 1811
Vinyl chloride	50	52		1	103	2.1	42-132	20	07/23/2013 1811
Xylenes (total)	100	89		1	89	2.2	58-128	20	07/23/2013 1811

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		113	47-138
1,2-Dichloroethane-d4		105	53-142
Toluene-d8		112	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ25730-001
Batch: 25730
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Acetone	ND		1	20	ug/kg	07/24/2013 0152
Benzene	ND		1	5.0	ug/kg	07/24/2013 0152
Bromodichloromethane	ND		1	5.0	ug/kg	07/24/2013 0152
Bromoform	ND		1	5.0	ug/kg	07/24/2013 0152
Bromomethane (Methyl bromide)	ND		1	5.0	ug/kg	07/24/2013 0152
2-Butanone (MEK)	ND		1	10	ug/kg	07/24/2013 0152
Carbon disulfide	ND		1	5.0	ug/kg	07/24/2013 0152
Carbon tetrachloride	ND		1	5.0	ug/kg	07/24/2013 0152
Chlorobenzene	ND		1	5.0	ug/kg	07/24/2013 0152
Chloroethane	ND		1	5.0	ug/kg	07/24/2013 0152
Chloroform	ND		1	5.0	ug/kg	07/24/2013 0152
Chloromethane (Methyl chloride)	ND		1	5.0	ug/kg	07/24/2013 0152
Cyclohexane	ND		1	5.0	ug/kg	07/24/2013 0152
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	5.0	ug/kg	07/24/2013 0152
Dibromochloromethane	ND		1	5.0	ug/kg	07/24/2013 0152
1,2-Dibromoethane (EDB)	ND		1	5.0	ug/kg	07/24/2013 0152
1,4-Dichlorobenzene	ND		1	5.0	ug/kg	07/24/2013 0152
1,3-Dichlorobenzene	ND		1	5.0	ug/kg	07/24/2013 0152
1,2-Dichlorobenzene	ND		1	5.0	ug/kg	07/24/2013 0152
1,2-Dichloroethane	ND		1	5.0	ug/kg	07/24/2013 0152
1,1-Dichloroethane	ND		1	5.0	ug/kg	07/24/2013 0152
trans-1,2-Dichloroethene	ND		1	5.0	ug/kg	07/24/2013 0152
cis-1,2-Dichloroethene	ND		1	5.0	ug/kg	07/24/2013 0152
1,1-Dichloroethene	ND		1	5.0	ug/kg	07/24/2013 0152
1,2-Dichloropropane	ND		1	5.0	ug/kg	07/24/2013 0152
trans-1,3-Dichloropropene	ND		1	5.0	ug/kg	07/24/2013 0152
cis-1,3-Dichloropropene	ND		1	5.0	ug/kg	07/24/2013 0152
Ethylbenzene	ND		1	5.0	ug/kg	07/24/2013 0152
2-Hexanone	ND		1	10	ug/kg	07/24/2013 0152
Isopropylbenzene	ND		1	5.0	ug/kg	07/24/2013 0152
Methyl acetate	ND		1	5.0	ug/kg	07/24/2013 0152
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	ug/kg	07/24/2013 0152
4-Methyl-2-pentanone	ND		1	10	ug/kg	07/24/2013 0152
Methylcyclohexane	ND		1	5.0	ug/kg	07/24/2013 0152
Styrene	ND		1	5.0	ug/kg	07/24/2013 0152
1,1,2,2-Tetrachloroethane	ND		1	5.0	ug/kg	07/24/2013 0152
Tetrachloroethene	ND		1	5.0	ug/kg	07/24/2013 0152
Toluene	ND		1	5.0	ug/kg	07/24/2013 0152
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	5.0	ug/kg	07/24/2013 0152
1,2,4-Trichlorobenzene	ND		1	5.0	ug/kg	07/24/2013 0152
1,1,2-Trichloroethane	ND		1	5.0	ug/kg	07/24/2013 0152
1,1,1-Trichloroethane	ND		1	5.0	ug/kg	07/24/2013 0152
Trichloroethene	ND		1	5.0	ug/kg	07/24/2013 0152
Trichlorofluoromethane	ND		1	5.0	ug/kg	07/24/2013 0152

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ25730-001
Batch: 25730
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Vinyl chloride	ND		1	5.0	ug/kg	07/24/2013 0152
Xylenes (total)	ND		1	5.0	ug/kg	07/24/2013 0152

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	47-138
1,2-Dichloroethane-d4		102	53-142
Toluene-d8		104	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ25730-002
Batch: 25730
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	100	110		1	114	42-149	07/24/2013 0018
Benzene	50	54		1	107	69-123	07/24/2013 0018
Bromodichloromethane	50	53		1	107	69-121	07/24/2013 0018
Bromoform	50	53		1	105	61-119	07/24/2013 0018
Bromomethane (Methyl bromide)	50	59		1	118	10-168	07/24/2013 0018
2-Butanone (MEK)	100	110		1	115	57-148	07/24/2013 0018
Carbon disulfide	50	55		1	110	58-122	07/24/2013 0018
Carbon tetrachloride	50	53		1	107	58-136	07/24/2013 0018
Chlorobenzene	50	51		1	102	59-129	07/24/2013 0018
Chloroethane	50	62		1	124	42-163	07/24/2013 0018
Chloroform	50	53		1	106	71-125	07/24/2013 0018
Chloromethane (Methyl chloride)	50	58		1	116	34-134	07/24/2013 0018
Cyclohexane	50	55		1	111	53-139	07/24/2013 0018
1,2-Dibromo-3-chloropropane (DBCP)	50	47		1	94	55-125	07/24/2013 0018
Dibromochloromethane	50	54		1	108	66-119	07/24/2013 0018
1,2-Dibromoethane (EDB)	50	53		1	105	74-124	07/24/2013 0018
1,4-Dichlorobenzene	50	50		1	100	52-133	07/24/2013 0018
1,3-Dichlorobenzene	50	50		1	101	51-134	07/24/2013 0018
1,2-Dichlorobenzene	50	49		1	99	57-131	07/24/2013 0018
1,2-Dichloroethane	50	53		1	105	67-129	07/24/2013 0018
1,1-Dichloroethane	50	53		1	106	71-127	07/24/2013 0018
trans-1,2-Dichloroethene	50	54		1	108	68-131	07/24/2013 0018
cis-1,2-Dichloroethene	50	52		1	104	70-122	07/24/2013 0018
1,1-Dichloroethene	50	53		1	106	69-138	07/24/2013 0018
1,2-Dichloropropane	50	53		1	105	72-124	07/24/2013 0018
trans-1,3-Dichloropropene	50	54		1	107	70-124	07/24/2013 0018
cis-1,3-Dichloropropene	50	54		1	108	70-126	07/24/2013 0018
Ethylbenzene	50	53		1	106	59-128	07/24/2013 0018
2-Hexanone	100	120		1	117	54-137	07/24/2013 0018
Isopropylbenzene	50	54		1	109	50-136	07/24/2013 0018
Methyl acetate	50	56		1	113	59-137	07/24/2013 0018
Methyl tertiary butyl ether (MTBE)	50	55		1	110	70-130	07/24/2013 0018
4-Methyl-2-pentanone	100	110		1	115	60-134	07/24/2013 0018
Methylcyclohexane	50	55		1	111	41-144	07/24/2013 0018
Styrene	50	51		1	102	54-136	07/24/2013 0018
1,1,2,2-Tetrachloroethane	50	52		1	105	69-132	07/24/2013 0018
Tetrachloroethene	50	54		1	108	45-150	07/24/2013 0018
Toluene	50	51		1	103	61-129	07/24/2013 0018
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	54		1	107	49-136	07/24/2013 0018
1,2,4-Trichlorobenzene	50	52		1	105	34-145	07/24/2013 0018
1,1,2-Trichloroethane	50	51		1	102	55-128	07/24/2013 0018
1,1,1-Trichloroethane	50	55		1	111	63-128	07/24/2013 0018
Trichloroethene	50	52		1	103	62-126	07/24/2013 0018
Trichlorofluoromethane	50	61		1	121	45-138	07/24/2013 0018

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ25730-002
Batch: 25730
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Vinyl chloride	50	60		1	121	42-132	07/24/2013 0018
Xylenes (total)	100	110		1	105	58-128	07/24/2013 0018

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	47-138
1,2-Dichloroethane-d4		101	53-142
Toluene-d8		102	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ25730-003
Batch: 25730
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acetone	100	110		1	109	4.2	42-149	20	07/24/2013 0041
Benzene	50	54		1	107	0.075	69-123	20	07/24/2013 0041
Bromodichloromethane	50	53		1	107	0.22	69-121	20	07/24/2013 0041
Bromoform	50	52		1	104	1.6	61-119	20	07/24/2013 0041
Bromomethane (Methyl bromide)	50	60		1	120	1.2	10-168	20	07/24/2013 0041
2-Butanone (MEK)	100	110		1	111	3.3	57-148	20	07/24/2013 0041
Carbon disulfide	50	57		1	114	3.3	58-122	20	07/24/2013 0041
Carbon tetrachloride	50	57		1	115	7.2	58-136	20	07/24/2013 0041
Chlorobenzene	50	54		1	107	5.0	59-129	20	07/24/2013 0041
Chloroethane	50	64		1	127	2.9	42-163	20	07/24/2013 0041
Chloroform	50	55		1	109	2.8	71-125	20	07/24/2013 0041
Chloromethane (Methyl chloride)	50	61		1	122	4.6	34-134	20	07/24/2013 0041
Cyclohexane	50	56		1	112	1.6	53-139	20	07/24/2013 0041
1,2-Dibromo-3-chloropropane (DBCP)	50	48		1	95	0.93	55-125	20	07/24/2013 0041
Dibromochloromethane	50	53		1	107	1.2	66-119	20	07/24/2013 0041
1,2-Dibromoethane (EDB)	50	52		1	105	0.47	74-124	20	07/24/2013 0041
1,4-Dichlorobenzene	50	53		1	106	6.1	52-133	20	07/24/2013 0041
1,3-Dichlorobenzene	50	51		1	103	1.9	51-134	20	07/24/2013 0041
1,2-Dichlorobenzene	50	52		1	103	4.4	57-131	20	07/24/2013 0041
1,2-Dichloroethane	50	54		1	109	3.4	67-129	20	07/24/2013 0041
1,1-Dichloroethane	50	55		1	110	4.3	71-127	20	07/24/2013 0041
trans-1,2-Dichloroethene	50	55		1	111	2.9	68-131	20	07/24/2013 0041
cis-1,2-Dichloroethene	50	53		1	106	1.4	70-122	20	07/24/2013 0041
1,1-Dichloroethene	50	54		1	108	1.6	69-138	20	07/24/2013 0041
1,2-Dichloropropane	50	53		1	106	0.85	72-124	20	07/24/2013 0041
trans-1,3-Dichloropropene	50	54		1	108	0.57	70-124	20	07/24/2013 0041
cis-1,3-Dichloropropene	50	55		1	109	1.6	70-126	20	07/24/2013 0041
Ethylbenzene	50	53		1	105	0.39	59-128	20	07/24/2013 0041
2-Hexanone	100	110		1	108	8.3	54-137	20	07/24/2013 0041
Isopropylbenzene	50	55		1	109	0.40	50-136	20	07/24/2013 0041
Methyl acetate	50	53		1	107	5.3	59-137	20	07/24/2013 0041
Methyl tertiary butyl ether (MTBE)	50	56		1	112	1.6	70-130	20	07/24/2013 0041
4-Methyl-2-pentanone	100	110		1	106	8.2	60-134	20	07/24/2013 0041
Methylcyclohexane	50	55		1	110	0.092	41-144	20	07/24/2013 0041
Styrene	50	52		1	105	2.6	54-136	20	07/24/2013 0041
1,1,2,2-Tetrachloroethane	50	51		1	103	2.0	69-132	20	07/24/2013 0041
Tetrachloroethene	50	55		1	110	2.0	45-150	20	07/24/2013 0041
Toluene	50	53		1	105	2.1	61-129	20	07/24/2013 0041
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	57		1	113	5.6	49-136	20	07/24/2013 0041
1,2,4-Trichlorobenzene	50	53		1	105	0.13	34-145	20	07/24/2013 0041
1,1,2-Trichloroethane	50	51		1	103	0.82	55-128	20	07/24/2013 0041
1,1,1-Trichloroethane	50	58		1	117	5.2	63-128	20	07/24/2013 0041
Trichloroethene	50	52		1	103	0.021	62-126	20	07/24/2013 0041
Trichlorofluoromethane	50	63		1	126	3.5	45-138	20	07/24/2013 0041

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ25730-003
Batch: 25730
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Vinyl chloride	50	63		1	125	3.4	42-132	20	07/24/2013 0041
Xylenes (total)	100	110		1	108	2.3	58-128	20	07/24/2013 0041

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		106	47-138
1,2-Dichloroethane-d4		104	53-142
Toluene-d8		109	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ25802-001
Batch: 25802
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Acetone	ND		1	20	ug/kg	07/24/2013 1151
Benzene	ND		1	5.0	ug/kg	07/24/2013 1151
Bromodichloromethane	ND		1	5.0	ug/kg	07/24/2013 1151
Bromoform	ND		1	5.0	ug/kg	07/24/2013 1151
Bromomethane (Methyl bromide)	ND		1	5.0	ug/kg	07/24/2013 1151
2-Butanone (MEK)	ND		1	10	ug/kg	07/24/2013 1151
Carbon disulfide	ND		1	5.0	ug/kg	07/24/2013 1151
Carbon tetrachloride	ND		1	5.0	ug/kg	07/24/2013 1151
Chlorobenzene	ND		1	5.0	ug/kg	07/24/2013 1151
Chloroethane	ND		1	5.0	ug/kg	07/24/2013 1151
Chloroform	ND		1	5.0	ug/kg	07/24/2013 1151
Chloromethane (Methyl chloride)	ND		1	5.0	ug/kg	07/24/2013 1151
Cyclohexane	ND		1	5.0	ug/kg	07/24/2013 1151
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	5.0	ug/kg	07/24/2013 1151
Dibromochloromethane	ND		1	5.0	ug/kg	07/24/2013 1151
1,2-Dibromoethane (EDB)	ND		1	5.0	ug/kg	07/24/2013 1151
1,4-Dichlorobenzene	ND		1	5.0	ug/kg	07/24/2013 1151
1,3-Dichlorobenzene	ND		1	5.0	ug/kg	07/24/2013 1151
1,2-Dichlorobenzene	ND		1	5.0	ug/kg	07/24/2013 1151
Dichlorodifluoromethane	ND		1	5.0	ug/kg	07/24/2013 1151
1,2-Dichloroethane	ND		1	5.0	ug/kg	07/24/2013 1151
1,1-Dichloroethane	ND		1	5.0	ug/kg	07/24/2013 1151
trans-1,2-Dichloroethene	ND		1	5.0	ug/kg	07/24/2013 1151
cis-1,2-Dichloroethene	ND		1	5.0	ug/kg	07/24/2013 1151
1,1-Dichloroethene	ND		1	5.0	ug/kg	07/24/2013 1151
1,2-Dichloropropane	ND		1	5.0	ug/kg	07/24/2013 1151
trans-1,3-Dichloropropene	ND		1	5.0	ug/kg	07/24/2013 1151
cis-1,3-Dichloropropene	ND		1	5.0	ug/kg	07/24/2013 1151
Ethylbenzene	ND		1	5.0	ug/kg	07/24/2013 1151
2-Hexanone	ND		1	10	ug/kg	07/24/2013 1151
Isopropylbenzene	ND		1	5.0	ug/kg	07/24/2013 1151
Methyl acetate	ND		1	5.0	ug/kg	07/24/2013 1151
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	ug/kg	07/24/2013 1151
4-Methyl-2-pentanone	ND		1	10	ug/kg	07/24/2013 1151
Methylcyclohexane	ND		1	5.0	ug/kg	07/24/2013 1151
Methylene chloride	ND		1	5.0	ug/kg	07/24/2013 1151
Styrene	ND		1	5.0	ug/kg	07/24/2013 1151
1,1,2,2-Tetrachloroethane	ND		1	5.0	ug/kg	07/24/2013 1151
Tetrachloroethene	ND		1	5.0	ug/kg	07/24/2013 1151
Toluene	ND		1	5.0	ug/kg	07/24/2013 1151
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	5.0	ug/kg	07/24/2013 1151
1,2,4-Trichlorobenzene	ND		1	5.0	ug/kg	07/24/2013 1151
1,1,2-Trichloroethane	ND		1	5.0	ug/kg	07/24/2013 1151
1,1,1-Trichloroethane	ND		1	5.0	ug/kg	07/24/2013 1151

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ25802-001
Batch: 25802
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Trichloroethene	ND		1	5.0	ug/kg	07/24/2013 1151
Trichlorofluoromethane	ND		1	5.0	ug/kg	07/24/2013 1151
Vinyl chloride	ND		1	5.0	ug/kg	07/24/2013 1151
Xylenes (total)	ND		1	5.0	ug/kg	07/24/2013 1151

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		105	47-138
1,2-Dichloroethane-d4		105	53-142
Toluene-d8		106	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ25802-002
Batch: 25802
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	100	110		1	109	42-149	07/24/2013 1040
Benzene	50	46		1	93	69-123	07/24/2013 1040
Bromodichloromethane	50	46		1	92	69-121	07/24/2013 1040
Bromoform	50	48		1	96	61-119	07/24/2013 1040
Bromomethane (Methyl bromide)	50	48		1	97	10-168	07/24/2013 1040
2-Butanone (MEK)	100	100		1	101	57-148	07/24/2013 1040
Carbon disulfide	50	47		1	93	58-122	07/24/2013 1040
Carbon tetrachloride	50	47		1	93	58-136	07/24/2013 1040
Chlorobenzene	50	46		1	91	59-129	07/24/2013 1040
Chloroethane	50	50		1	100	42-163	07/24/2013 1040
Chloroform	50	46		1	92	71-125	07/24/2013 1040
Chloromethane (Methyl chloride)	50	52		1	105	34-134	07/24/2013 1040
Cyclohexane	50	47		1	93	53-139	07/24/2013 1040
1,2-Dibromo-3-chloropropane (DBCP)	50	43		1	86	55-125	07/24/2013 1040
Dibromochloromethane	50	46		1	92	66-119	07/24/2013 1040
1,2-Dibromoethane (EDB)	50	47		1	93	74-124	07/24/2013 1040
1,4-Dichlorobenzene	50	45		1	90	52-133	07/24/2013 1040
1,3-Dichlorobenzene	50	44		1	88	51-134	07/24/2013 1040
1,2-Dichlorobenzene	50	45		1	90	57-131	07/24/2013 1040
Dichlorodifluoromethane	50	66		1	132	10-157	07/24/2013 1040
1,2-Dichloroethane	50	46		1	93	67-129	07/24/2013 1040
1,1-Dichloroethane	50	46		1	92	71-127	07/24/2013 1040
trans-1,2-Dichloroethene	50	45		1	90	68-131	07/24/2013 1040
cis-1,2-Dichloroethene	50	44		1	88	70-122	07/24/2013 1040
1,1-Dichloroethene	50	46		1	91	69-138	07/24/2013 1040
1,2-Dichloropropane	50	46		1	92	72-124	07/24/2013 1040
trans-1,3-Dichloropropene	50	45		1	90	70-124	07/24/2013 1040
cis-1,3-Dichloropropene	50	47		1	94	70-126	07/24/2013 1040
Ethylbenzene	50	46		1	92	59-128	07/24/2013 1040
2-Hexanone	100	100		1	103	54-137	07/24/2013 1040
Isopropylbenzene	50	46		1	92	50-136	07/24/2013 1040
Methyl acetate	50	49		1	99	59-137	07/24/2013 1040
Methyl tertiary butyl ether (MTBE)	50	46		1	92	70-130	07/24/2013 1040
4-Methyl-2-pentanone	100	100		1	102	60-134	07/24/2013 1040
Methylcyclohexane	50	47		1	95	41-144	07/24/2013 1040
Methylene chloride	50	46		1	92	70-130	07/24/2013 1040
Styrene	50	46		1	91	54-136	07/24/2013 1040
1,1,2,2-Tetrachloroethane	50	46		1	93	69-132	07/24/2013 1040
Tetrachloroethene	50	46		1	92	45-150	07/24/2013 1040
Toluene	50	45		1	91	61-129	07/24/2013 1040
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	44		1	89	49-136	07/24/2013 1040
1,2,4-Trichlorobenzene	50	45		1	89	34-145	07/24/2013 1040
1,1,2-Trichloroethane	50	45		1	90	55-128	07/24/2013 1040
1,1,1-Trichloroethane	50	47		1	94	63-128	07/24/2013 1040

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ25802-002
Batch: 25802
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Trichloroethene	50	43		1	86	62-126	07/24/2013 1040
Trichlorofluoromethane	50	51		1	102	45-138	07/24/2013 1040
Vinyl chloride	50	54		1	108	42-132	07/24/2013 1040
Xylenes (total)	100	92		1	92	58-128	07/24/2013 1040

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	47-138
1,2-Dichloroethane-d4		96	53-142
Toluene-d8		102	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ25802-003
Batch: 25802
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acetone	100	110		1	110	1.0	42-149	20	07/24/2013 1104
Benzene	50	45		1	91	2.0	69-123	20	07/24/2013 1104
Bromodichloromethane	50	46		1	91	0.49	69-121	20	07/24/2013 1104
Bromoform	50	48		1	97	1.0	61-119	20	07/24/2013 1104
Bromomethane (Methyl bromide)	50	49		1	99	2.2	10-168	20	07/24/2013 1104
2-Butanone (MEK)	100	100		1	103	2.3	57-148	20	07/24/2013 1104
Carbon disulfide	50	45		1	89	4.2	58-122	20	07/24/2013 1104
Carbon tetrachloride	50	45		1	90	3.7	58-136	20	07/24/2013 1104
Chlorobenzene	50	45		1	90	0.95	59-129	20	07/24/2013 1104
Chloroethane	50	49		1	98	2.0	42-163	20	07/24/2013 1104
Chloroform	50	45		1	89	2.9	71-125	20	07/24/2013 1104
Chloromethane (Methyl chloride)	50	49		1	99	5.9	34-134	20	07/24/2013 1104
Cyclohexane	50	45		1	90	3.4	53-139	20	07/24/2013 1104
1,2-Dibromo-3-chloropropane (DBCP)	50	48		1	96	11	55-125	20	07/24/2013 1104
Dibromochloromethane	50	47		1	94	2.0	66-119	20	07/24/2013 1104
1,2-Dibromoethane (EDB)	50	49		1	97	4.3	74-124	20	07/24/2013 1104
1,4-Dichlorobenzene	50	47		1	94	3.5	52-133	20	07/24/2013 1104
1,3-Dichlorobenzene	50	44		1	88	0.15	51-134	20	07/24/2013 1104
1,2-Dichlorobenzene	50	45		1	89	0.46	57-131	20	07/24/2013 1104
Dichlorodifluoromethane	50	61		1	123	7.2	10-157	20	07/24/2013 1104
1,2-Dichloroethane	50	45		1	91	2.3	67-129	20	07/24/2013 1104
1,1-Dichloroethane	50	43		1	87	5.7	71-127	20	07/24/2013 1104
trans-1,2-Dichloroethene	50	43		1	87	4.1	68-131	20	07/24/2013 1104
cis-1,2-Dichloroethene	50	42		1	85	4.1	70-122	20	07/24/2013 1104
1,1-Dichloroethene	50	43		1	86	6.7	69-138	20	07/24/2013 1104
1,2-Dichloropropane	50	45		1	91	1.3	72-124	20	07/24/2013 1104
trans-1,3-Dichloropropene	50	47		1	95	5.4	70-124	20	07/24/2013 1104
cis-1,3-Dichloropropene	50	47		1	93	1.1	70-126	20	07/24/2013 1104
Ethylbenzene	50	46		1	92	0.20	59-128	20	07/24/2013 1104
2-Hexanone	100	110		1	111	7.5	54-137	20	07/24/2013 1104
Isopropylbenzene	50	45		1	89	3.0	50-136	20	07/24/2013 1104
Methyl acetate	50	51		1	102	3.4	59-137	20	07/24/2013 1104
Methyl tertiary butyl ether (MTBE)	50	45		1	89	2.7	70-130	20	07/24/2013 1104
4-Methyl-2-pentanone	100	110		1	107	5.0	60-134	20	07/24/2013 1104
Methylcyclohexane	50	45		1	90	5.8	41-144	20	07/24/2013 1104
Methylene chloride	50	45		1	89	2.8	70-130	20	07/24/2013 1104
Styrene	50	45		1	91	0.40	54-136	20	07/24/2013 1104
1,1,2,2-Tetrachloroethane	50	48		1	95	2.7	69-132	20	07/24/2013 1104
Tetrachloroethene	50	45		1	90	3.0	45-150	20	07/24/2013 1104
Toluene	50	45		1	90	0.20	61-129	20	07/24/2013 1104
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	43		1	86	3.6	49-136	20	07/24/2013 1104
1,2,4-Trichlorobenzene	50	44		1	88	1.8	34-145	20	07/24/2013 1104
1,1,2-Trichloroethane	50	46		1	91	1.3	55-128	20	07/24/2013 1104
1,1,1-Trichloroethane	50	45		1	89	5.3	63-128	20	07/24/2013 1104

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ25802-003
Batch: 25802
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	50	43		1	85	1.1	62-126	20	07/24/2013 1104
Trichlorofluoromethane	50	49		1	99	2.9	45-138	20	07/24/2013 1104
Vinyl chloride	50	51		1	101	6.5	42-132	20	07/24/2013 1104
Xylenes (total)	100	92		1	92	0.089	58-128	20	07/24/2013 1104

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		111	47-138
1,2-Dichloroethane-d4		105	53-142
Toluene-d8		110	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Chain of Custody Record

Number 27807

Client: AECOM	Report to Contact: CHARLES SUDDETH	Sampler (Printed Name): JAMES LEIGHART	Quote No.
Address: 810 DUTCH SQUARE BLVD. STE 202	Telephone No. / Fax No. / Email: 803 798 1073 CHARLES.SUDDETH@AECOM.COM	Waybill No.	Page: 1 of 1
City: COLUMBIA	State: SC	Zip Code: 29210	
Project Name: WESTINGHOUSE			
Project Number	P.O Number		

Preservative: 1. Unpres. 2. NaOH/ZnA 3. H2SO4 4. HNO3 5. HCL 6. Na Thio. 7. NaOH

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: TCL VOCs	CT	GRAIN SIZE, SPECIFIC GRAVITY, ATTERBERG LIMITS, NITRATE	Number of Containers	Bottle (See Instructions on back)	Preservative	Lot No.	Remarks / Cooler ID
SED - 8	7/18/13	0850	G				X		4	1	1				061831	
SED - 1		0920	G				X		4	1	1					
SED - 9		0955	G				X		4	1	1					
SED - 10		1100	G				X		4	1	1					
SED - 7		1135	G				X		4	1	1					
SED - 2		1210	G				X		4	1	1					
SED - 3		1240	G				X		4	1	1					
SED - 4		1315	G				X		4	1	1					
SED - 5		1335	G				X		4	1	1					
SED - 6		1400	G				X		4	1	1					

Turn Around Time Required (Prior lab approval required for expedited TAT): [X] Standard [ ] Rush (Please Specify)

Sample Disposal: [ ] Return to Client [X] Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison [ ] Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	7/18/13	1440	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory Received by	7-18-13	1440

Note: All samples are retained for six weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) [X] Yes [ ] No [ ] Ice Pack
Receipt Temp. 5.2 °C
Temp. Blank [ ] Y / [ ] N

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Level 1 Report v2.1

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 11

Page 1 of 1
Replaces Date: 01/28/13
Effective Date: 04/18/13

Sample Receipt Checklist (SRC)

Client: AKCOM Cooler Inspected by/date: [illegible] / 7/18/17 Lot #: OG18031

Means of receipt: ☐ SESI ☒ Client ☐ UPS ☐ FedEx ☐ Airborne Exp ☐ Other			
Yes ☐	No ☒		1. Were custody seals present on the cooler?
Yes ☐	No ☒		2. If custody seals were present, were they intact and unbroken?
Cooler ID/temperature upon receipt 1 / 84 / 5.2 °C / / °C / / °C / / °C Method: ☐ Temperature Blank ☒ Against Bottles Method of coolant: ☒ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None			
If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.			
Yes ☐	No ☐	NA ☒	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other:_____. (For coolers received via commercial courier, PMs are to be notified immediately.
Yes ☐	No ☐	NA ☒	4. Is the commercial courier's packing slip attached to this form?
Yes ☒	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☐	No ☐	NA ☒	5a Were samples relinquished by client to commercial courier?
Yes ☒	No ☐		6. Were sample IDs listed?
Yes ☒	No ☐		7. Was collection date & time listed?
Yes ☒	No ☐		8. Were tests to be performed listed on the COC?
Yes ☒	No ☐		9. Did all samples arrive in the proper containers for each test?
Yes ☒	No ☐		10. Did all container label information (ID, date, time) agree with COC?
Yes ☒	No ☐		11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☒	No ☐		12. Was adequate sample volume available?
Yes ☒	No ☐		13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☒		14. Were any samples containers missing?
Yes ☐	No ☒		15. Were there any excess samples not listed on COC?
Yes ☐	No ☐	NA ☒	16. Were bubbles present >"pea-size" (¼"or 6mm in diameter) in any VOA vials?
Yes ☐	No ☐	NA ☒	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes ☐	No ☐	NA ☒	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☒	19. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☒	20. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☒	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) _____ were received incorrectly preserved and were adjusted according/y in sample receiving with _____ (H_2SO_4,HNO_3,HCl,NaOH) with the SR # (number) _____

Sample(s) _____ were received with bubbles >6 mm in diameter.

Sample(s) _____ were received with TRC >0.2 mg/L for NH3/TKN/cyanide/phenol

Sample labels verified by: _____ Date: 7/18/17

Corrective Action taken, if necessary:

Was client notified: Yes ☐ No ☐ Did client respond: Yes ☐ No ☐

SESI employee: _____ Date of response: _____

Comments: _____

GEL Laboratories LLC

a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407

P 843.556.8171 F 843.766.1178

www.gel.com

August 13, 2013

Ms. Nisreen Saikaly
Shealy Environmental Services, Inc.
106 Vantage Point Drive
Cayce, South Carolina 29172

Re: Routine Analysis - Saikaly
Work Order: 330030

Dear Ms. Saikaly:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on July 23, 2013. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4289.

Sincerely,

Julie Robinson

Julie Robinson
Project Manager

Chain of Custody: 22973
Enclosures

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 − (843) 556−8171 − www.gel.com

Certificate of Analysis Report
for

SESI001 Shealy Environmental Services, Inc

Client SDG: 330030 GEL Work Order: 330030

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Julie Robinson.

Reviewed by Julie Robinson

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 13, 2013

Company : Shealy Environmental Services, Inc.
Address : 106 Vantage Point Drive

Cayce, South Carolina 29172
Contact: Ms. Nisreen Saikaly
Project: Routine Analysis - Saikaly

Client Sample ID:	SED - 8	Project:	SESI00309
Sample ID:	330030001	Client ID:	SESI001
Matrix:	Soil		
Collect Date:	18-JUL-13 08:50		
Receive Date:	23-JUL-13		
Collector:	GEL		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid "Dry Weight Corrected"											
Alpha	U	ND	3.03	4.00	pCi/g		MXP1	08/01/13	1420	1318255	1
Beta		21.8	4.22	10.0	pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	07/23/13	1435	1316882

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 13, 2013

Company :	Shealy Environmental Services, Inc.
Address :	106 Vantage Point Drive
	Cayce, South Carolina 29172
Contact:	Ms. Nisreen Saikaly
Project:	Routine Analysis - Saikaly

Client Sample ID:	SED - 1	Project:	SESI00309
Sample ID:	330030002	Client ID:	SESI001
Matrix:	Soil		
Collect Date:	18-JUL-13 09:20		
Receive Date:	23-JUL-13		
Collector:	GEL		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid "Dry Weight Corrected"											
Alpha		12.1	3.21	4.00	pCi/g		MXP1	08/01/13	1431	1318255	1
Beta		25.9	5.53	10.0	pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	07/23/13	1435	1316882

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 13, 2013

Company :	Shealy Environmental Services, Inc.
Address :	106 Vantage Point Drive
	Cayce, South Carolina 29172
Contact:	Ms. Nisreen Saikaly
Project:	Routine Analysis - Saikaly

Client Sample ID:	SED - 9	Project:	SESI00309
Sample ID:	330030003	Client ID:	SESI001
Matrix:	Soil		
Collect Date:	18-JUL-13 09:55		
Receive Date:	23-JUL-13		
Collector:	GEL		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid "Dry Weight Corrected"											
Alpha		10.3	3.06	4.00	pCi/g		MXP1	08/01/13	1401	1318255	1
Beta		20.7	4.51	10.0	pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	07/23/13	1435	1316882

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 13, 2013

Company :	Shealy Environmental Services, Inc.
Address :	106 Vantage Point Drive
	Cayce, South Carolina 29172
Contact:	Ms. Nisreen Saikaly
Project:	Routine Analysis - Saikaly

Client Sample ID:	SED - 10	Project:	SESI00309
Sample ID:	330030004	Client ID:	SESI001
Matrix:	Soil		
Collect Date:	18-JUL-13 11:00		
Receive Date:	23-JUL-13		
Collector:	GEL		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid "Dry Weight Corrected"											
Alpha		7.55	3.00	4.00	pCi/g		MXP1	08/01/13	1431	1318255	1
Beta		295	4.79	10.0	pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	07/23/13	1435	1316882

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

Notes:

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: August 13, 2013

Company : Shealy Environmental Services, Inc.
Address : 106 Vantage Point Drive

Cayce, South Carolina 29172
Contact: Ms. Nisreen Saikaly
Project: Routine Analysis - Saikaly

Client Sample ID:	SED - 7	Project:	SESI00309
Sample ID:	330030005	Client ID:	SESI001
Matrix:	Soil		
Collect Date:	18-JUL-13 11:35		
Receive Date:	23-JUL-13		
Collector:	GEL		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid "Dry Weight Corrected"											
Alpha		9.05	3.20	4.00	pCi/g		MXP1	08/01/13	1420	1318255	1
Beta		25.2	3.60	10.0	pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	07/23/13	1435	1316882

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

Notes:

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: August 13, 2013

Company :	Shealy Environmental Services, Inc.
Address :	106 Vantage Point Drive
	Cayce, South Carolina 29172
Contact:	Ms. Nisreen Saikaly
Project:	Routine Analysis - Saikaly

Client Sample ID:	SED - 2	Project:	SESI00309
Sample ID:	330030006	Client ID:	SESI001
Matrix:	Soil		
Collect Date:	18-JUL-13 12:10		
Receive Date:	23-JUL-13		
Collector:	GEL		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid "Dry Weight Corrected"											
Alpha		23.4	3.01	4.00	pCi/g		MXP1	08/01/13	1401	1318255	1
Beta		25.4	4.75	10.0	pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	07/23/13	1435	1316882

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 13, 2013

Company :	Shealy Environmental Services, Inc.
Address :	106 Vantage Point Drive
	Cayce, South Carolina 29172
Contact:	Ms. Nisreen Saikaly
Project:	Routine Analysis - Saikaly

Client Sample ID:	SED - 3	Project:	SESI00309
Sample ID:	330030007	Client ID:	SESI001
Matrix:	Soil		
Collect Date:	18-JUL-13 12:40		
Receive Date:	23-JUL-13		
Collector:	GEL		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid "Dry Weight Corrected"											
Alpha		13.2	3.37	4.00	pCi/g		MXP1	08/01/13	1521	1318255	1
Beta		23.5	5.27	10.0	pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	07/23/13	1435	1316882

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 13, 2013

Company :	Shealy Environmental Services, Inc.
Address :	106 Vantage Point Drive
	Cayce, South Carolina 29172
Contact:	Ms. Nisreen Saikaly
Project:	Routine Analysis - Saikaly

Client Sample ID:	SED - 4	Project:	SESI00309
Sample ID:	330030008	Client ID:	SESI001
Matrix:	Soil		
Collect Date:	18-JUL-13 13:15		
Receive Date:	23-JUL-13		
Collector:	GEL		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid "Dry Weight Corrected"											
Alpha		13.8	3.14	4.00	pCi/g		MXP1	08/01/13	1401	1318255	1
Beta		30.4	5.62	10.0	pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	07/23/13	1435	1316882

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 13, 2013

Company :	Shealy Environmental Services, Inc.
Address :	106 Vantage Point Drive
	Cayce, South Carolina 29172
Contact:	Ms. Nisreen Saikaly
Project:	Routine Analysis - Saikaly

Client Sample ID:	SED - 5	Project:	SESI00309
Sample ID:	330030009	Client ID:	SESI001
Matrix:	Soil		
Collect Date:	18-JUL-13 13:35		
Receive Date:	23-JUL-13		
Collector:	GEL		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid "Dry Weight Corrected"											
Alpha		377	3.43	4.00	pCi/g		MXP1	08/01/13	1400	1318255	1
Beta		52.1	4.88	10.0	pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	07/23/13	1435	1316882

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 13, 2013

Company : Shealy Environmental Services, Inc.
Address : 106 Vantage Point Drive
Cayce, South Carolina 29172
Contact: Ms. Nisreen Saikaly
Project: Routine Analysis - Saikaly

Client Sample ID:	SED - 6	Project:	SESI00309
Sample ID:	330030010	Client ID:	SESI001
Matrix:	Soil		
Collect Date:	18-JUL-13 14:00		
Receive Date:	23-JUL-13		
Collector:	GEL		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, solid "Dry Weight Corrected"											
Alpha		3.79	2.90	4.00	pCi/g		MXP1	08/01/13	1803	1318255	1
Beta		15.7	4.27	10.0	pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	07/23/13	1435	1316882

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 900.0/SW846 9310/SM 7110B Modified	

Notes:

QC Summary

Report Date: August 13, 2013

Shealy Environmental Services, Inc.
106 Vantage Point Drive
Cayce, South Carolina

Contact: **Ms. Nisreen Saikaly**

Workorder: **330030**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Rad Gas Flow												
Batch 1318255												
QC1202917186 330030001 DUP												
Alpha		U	2.83		4.80	pCi/g	51.7		(0% - 100%)	MXP1	08/01/13	14:03
Beta			21.8		16.0	pCi/g	30.7*		(0%-20%)			
QC1202917189 LCS												
Alpha	100				103	pCi/g		103	(75%-125%)		08/01/13	14:01
Beta	393				409	pCi/g		104	(75%-125%)			
QC1202917185 MB												
Alpha				U	-0.338	pCi/g					08/01/13	14:31
Beta				U	0.209	pCi/g						
QC1202917187 330030001 MS												
Alpha	121	U	2.83		151	pCi/g		125	(75%-125%)		08/01/13	15:21
Beta	474		21.8		558	pCi/g		113	(75%-125%)			
QC1202917188 330030001 MSD												
Alpha	116	U	2.83		144	pCi/g	4.66	124	(0%-20%)		08/01/13	14:00
Beta	456		21.8		454	pCi/g	20.6*	94.7	(0%-20%)			

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD

QC Summary

Workorder: **330030**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time

M	REMP Result > MDC/CL and < RDL
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

There are no "Data Exception Reports" associated with this analytical report.

330030 1.

Chain of Custody Record

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number 22973

Client	Report to Contact	Sampler (Printed Name)	Quote No.
	Nisreen Saikaly		
Address	Telephone No. / Fax No. / Email	Waybill No.	Page ___ of ___
City / State / Zip Code	Preservative: 1. Unpres. 2. NaOH/ZnA 3. H2SO4 4. HNO3 5. HCL 6. Na Thio. 7. NaOH		Number of Containers / Bottle (See Instructions on back) / Preservative
Project Name			
Project Number	P.O Number		Lot No. OG18031

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: Gross Alpha	Gross Beta	Remarks / Cooler ID
SED-8	7/18/13	0850							✓	✓	
SED-1	7/18/13	0920							✓	✓	
SED-9	7/18/13	0955							✓	✓	
SED-10	7/18/13	1100							✓	✓	
SED-7	7/18/13	1135							✓	✓	
SED-2	7/18/13	1210							✓	✓	
SED-3	7/18/13	1240							✓	✓	
SED-4	7/18/13	1315							✓	✓	
SED-5	7/18/13	1335							✓	✓	
SED-6	7/18/13	1400							✓	✓	

Turn Around Time Required (Prior lab approval required for expedited TAT): ☐ Standard ☐ Rush (Please Specify)

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab

QC Requirements (Specify)

Possible Hazard Identification: ☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison ☐Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	7/22/13	1800	1. Received by	7-23-13	0855
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory Received by		

Note: All samples are retained for six weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☐ Yes ☐ No ☐ Ice Pack
Receipt Temp. _____ °C
Temp. Blank ☐ Y / ☐ N

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: Steady			**SDG/AR/COC/Work Order:** 330030
Received By: 7-23-13			**Date Received:** 7-23-13
Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 cpm
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: (Ice bags) Blue ice Dry ice None Other (describe) 2°C *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 4150218 2 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?			✓	Sample ID's affected: no Date/Times on containers
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
					Circle Applicable: (FedEx Air) FedEx Ground UPS Field Services Courier Other
14	Carrier and tracking number.	✓			7621 2082 5469

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials _____ Date 7/23/13 Page 1 of 1

List of current GEL Certifications as of 13 August 2013

State	Certification
Alaska	UST−110
Arkansas	88−0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP A2LA ISO 17025	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M−SC012
Nevada	SC000122011−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−13−8
Utah NELAP	SC000122013−8
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12
Wisconsin	999887790