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Army Environmental Command
and
Fort Stewart Directorate of Public Works
Under Contract Number W91ZLK-05-D-0015 D.O. 0003

Corrective Action Plan – Part B Addendum #1
Former Aboveground Storage Tanks 7001 & 7003
Bulk Fuel Facility – HAA-09 Release #3
Hunter Army Airfield, Savannah, GA
Facility ID No. 9-025113*3

October 29, 2009

ARCADIS

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Corrective Action Plan – Part B Addendum #1
Former ASTs 7001 & 7003
(Bulk Fuel Facility: HAA-09)
Release #3
Facility ID No. 9-025113*3
Hunter Army Air Field
Savannah, Georgia

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Army Environmental Command

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Our Ref.:
GP08HAFS.H09B EHCAP

Date:
October 29, 2009

COMMENTS PROJECT REVIEW	Date: 26 Oct 2009	Page 1 of 2
To: Chuck Bertz	**From:** Environmental & Natural Resource Division (ENRD) (Reviewer): Algeana Stevenson	
Project: Draft CAP-Part B Addendum #1, Former ASTs 7001 & 7003		
Type of Action: (Check Appropriate Boxes)	[X] Draft [ ] Final [ ] Other	

ITEM NUMBER	REFERENCE DRAWING OR PAGE NUMBER	COMMENT	RESPONSE
1	Page 2-1, 2nd Paragraph, 3rd Sentence	Please denote that the free product removal activities associated with Release #2 will be addressed in a separate report.	Statement was added to text.
2	Page 2-3, Section 2.2, 2nd Paragraph, 1st Sentence	Please denote that while (58) DPT points were installed the reason why DPT points 46 and 47 are not listed in Figure 2-3 and Table 2-2.	Numbers 46 and 47 were inadvertently omitted in the numbering sequence and only 56 points were installed. The text has been changed accordingly.
3	Page 3-3, Section 3.2.4.2	**Spring 2009 Update**: EPA has released the updated Regional Screening Table in May of 2009. The Regional Screening Table (RSL) has replaced the Region 3 RBC tab.	Reference in text has been updated.
4	Page 4-2, Section 4.2	Will any MWs be installed downgradient of the site?	Two of the wells will be down gradient of the source areas.
5	Page 4-3, Section 4.3.3	Time given for completion report submission, does not take into consideration time for review of draft report.	The time for completion report submission has been deleted from the text. Please note that the 30 days for completion report submission was based on the requirement in the CAP-Part B Guidance that "a final completion report is required within 30 days of completing all corrective action specified in the CAP-Part B."
E-mail from Algeana Stevenson dated October 27, 2009			
6		Please add a map with the groundwater flow direction to this report.	A statement has been added to Section 2.1.5 that figures depicting historical groundwater flow direction are included in Appendix I.

COMMENTS PROJECT REVIEW	Date: 26 Oct 2009	Page 2 of 2
To: Chuck Bertz	**From:** Environmental & Natural Resource Division (ENRD) (Reviewer): Algeana Stevenson	
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Type of Action: (Check Appropriate Boxes)	[X] Draft [ ] Final [ ] Other	

E-mail from Zsolt Haverland dated October 1, 2009

7	Section 3.2.2	The section states that GW impacts will be remediated but only monitoring is proposed. What is the proposed remedy? GW monitoring alone is not a remedy, however, enhanced MNA could be.	Groundwater impacts will be remediated to the approved concentration limits through the excavation of the source mass and application of an oxygen source (Calcium Peroxide) to the groundwater through the excavation. Monitor wells will be installed after excavation to determine the extent of groundwater concentrations exceeding IWQS or approved ACLs and to monitor the enhanced natural attenuation of residual mass. The text has been changed to clarify.
8	Section 4.3.5	Would suggest performance monitoring of some remedial technology of which semiannual monitoring would not be consistent with past regulatory requirements for performance monitoring.	Text has been changed to state that monitoring will be conducted initially on a quarterly basis. The monitoring periods will be adjusted as data become available on contaminant concentrations, attenuation and transport.

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Acronyms

ACL	Alternate Concentration Limit
ATL	Alternate Threshold Level
AST	Aboveground Storage Tanks
BFF	Bulk Fuel Facility
bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, And Xylenes
CAP	Corrective Action Plan
COPC	Chemical of Potential Concern
DAF	Dilution Attenuation Factor
DPT	Direct Push Technology
DRO	Diesel Range Organics
EFR	Enhanced Fluid Recovery
ft	Feet
FP	Free Product
GA EPD	Georgia Environmental Protection Division
GUST	Georgia Underground Storage Tank
GRO	Gasoline Range Organics
HAAF	Hunter Army Airfield
IDW	Investigation Derived Waste
IWQS	In-Stream Water Quality Standard
µg/L	Microgram per liter
mg/kg	Milligram per kilogram
PAH	Polyaromatic Hydrocarbon
PID	Photo Ionization Detector
RBC	Risk Based Concentrations
SAIC	Science Applications International Corporation
STL	Soil Threshold Level
TOC	Total Organic Carbon
TCLP	Toxicity Characteristic Leaching Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
USTMP	Underground Storage Tank Management Program
VOC	Volatile Organic Compounds

ARCADIS

CORRECTIVE ACTION PLAN-PART B

Facility Name:	Former AST 7001/7003 (HAA-9)			Street Address:	Bulk Fuel facility		
Facility ID:	9-025113*3	City:	Hunter Army Airfield	County:	Chatham	Zip Code:	31409
Latitude:	32° 00′ 54″	Longitude:	81° 08′ 26″				

Submitted by UST Owner/Operator:		Prepared by Consultant/Contractor:	
Name:	Thomas C. Fry/ Environmental Branch	Name:	Charles Bertz
Company:	U. S. Army/HQ 3d, Inf. Div. (Mech)	Company:	ARCADIS
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Zip Code:	31314-4927	Zip Code:	27607
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I. PLAN CERTIFICATION:

A. UST OWNER/OPERATOR

I hereby certify that the information contained in this plan and in all the attachments is true, accurate, and the plan satisfies all criteria and requirements of rule 391-3-15-09 of the Georgia Rules for Underground Storage tank Management.

Name: Thomas C. Fry

Signature:_____ Date:_____

B. REGISTERED PROFESSIONAL ENGINEER OR PROFESSIONAL GEOLOGIST CERTIFICATION

I hereby certify that I have directed and supervised the fieldwork and preparation of this plan in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the Georgia State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: Scott Bostian, PE

Signature:

Date: 10/29/09

Georgia Stamp or Seal

Check all boxes that apply. Attach supporting documentation, i.e. narrative, figures, tables, maps, boring/well logs, etc., for all items checked. Supporting documentation should be three-hole punched and prepared in conformity with the guidance document "Underground Storage Tank (UST) Release: Corrective Action Plan-Part B (CAP-B) Content", GUST 7B.

II. SITE INVESTIGATION REPORT

☐ **Not Applicable** **The extent of contamination, and the local & site hydrogeology requirements have been fulfilled under the CAP Part A, therefore additional SIR reporting is not necessary.**

☒ **Extent of Contamination:**

☒ Soil ☐ Groundwater ☒ Free Product ☐ Surface water

☒ **Local and Site Hydrogeology:**

☒ Documentation of Local Groundwater Conditions

☒ Stratigraphic Boring Logs

☐ Stratigraphic Cross Sections

☒ Referenced or Documented Calculations of Relevant Aquifer Parameters

☒ Direction of Groundwater Flow

☒ Table of Monitoring Well Data

☒ Potentiometric Map

☒ Flow Net Superimposed on a Base Map

III. REMEDIAL ACTION PLAN

A. Corrective Action Completed or In-Progress:

☐ Not Applicable

☒ Recovery/Removal of Free Product (Non-Aqueous Phase Hydrocarbons)

☐ Remediation/Treatment of Contaminated Soils

☐ Other (specify)

_____

_____

B. Objectives of Corrective Action:

☐ No Further Action

☒ Remove Free Product That Exceeds One-Eighth Inch

☒ Remediate Groundwater Contamination That Exceeds:

☐ Maximum Contaminant Levels (MCLs)

OR

☒ In-stream Water Quality Standards

B. Objectives of Corrective Action (CONTINUED):

☒ Remediate Soil Contamination That Exceeds:

☐ Threshold Values Listed In Table A

OR

☐ Threshold Values Listed In Table B

OR

☒ Alternate Threshold Levels (ATLs) (Reference CAP A App. I)

☐ Provide Risk-Based Corrective Action (Reference CAP B App. I):

☒ Remediate Soil and/or Groundwater Contamination That Exceeds Alternate Concentration Limits (ACLs) and Monitor Residual Contaminants

OR

☐ Monitor Soil and/or Groundwater Contamination That Exceeds Levels In Rule – 391-3-15-.09(3).

C. Design and Operation of Corrective Action Systems:

☒ Soil ☒ Groundwater ☒ Free Product ☐ Surface water ☐ Not Applicable

D. Implementation (MUST INCLUDE THE FOLLOWING):

NOTE: If No Further Action is proposed and none of the following apply, a brief explanation must be provided with the signed Certificate of Completion.

- Milestone schedule for proposed site activities

- Inspection and preventive maintenance schedule for all specialized remediation equipment

AND / OR

Monitoring/sampling and reporting plan for measuring interim progress and project completion

- Plan to decommission equipment/wells and close site

IV. PUBLIC NOTICE:

- ☐ Not Applicable **The Corrective Action Objectives submitted and approved under the CAP-Part A have not changed.**
- ☐ Certified Letters to Adjacent, Potentially Affected Property Owners and Local Officials
- ☒ Legal Notice in Newspaper, as approved by EPD
- ☐ Other EPD-approved Method (specify) _____

V. CLAIM FOR REIMBURSEMENT (For GUST Trust Fund sites only)

- ☒ Not Applicable (specify) _____

- ☐ GUST Trust Fund Application - (attach if applicable)

- ☐ Cost Proposal:
  - ☐ A Total of All Costs Incurred To Date (MUST INCLUDE THE FOLLOWING):
    - ▶ Invoices and Proofs-of-Payment For All Costs Incurred To Date
    - ▶ Invoices itemized on the GUST-4D
    - ▶ All Non-Eligible Costs Clearly Identified as such
    - ▶ Incurred Costs Itemized per GUST-92 form or EPD provided form/specifications
  - ☐ A Total of Estimated Costs To Complete Corrective Action
    - ▶ Estimated Costs Itemized per GUST-92 form or EPD provided form or specifications
  - ☐ Total Project Costs

- ☐ Proposed Schedule For Reimbursement
  - ☐ Lump Sum Payment Upon Completion Of Corrective Action

    OR
  - ☐ Interim Payments With Final Payment Upon Completion

    OR
  - ☐ EPD Established Payment Schedule

2. Site Investigation Report

Addendum #1 to the Corrective Action Plan (CAP) Part-B for Release #3 at the Bulk Fuel Facility (BFF) has been prepared to summarize the soil and groundwater investigation conducted in June 2009. The BFF is located at Hunter Army Airfield (HAAF) and is approximately 600 by 1,200 feet covering approximately 16.5 acres (Figure 2-1). The site status and release history in the area were described in the CAP-Part B (ARCADIS 2009).

In the past, remediation activities have been conducted to address impacts identified as Release #1 and Release #2. Release #1 (Underground Storage Tank (UST) 117, Facility ID #9-025113*1) was granted no further action by Georgia Environmental Protection Division (GA EPD) UST Management Program (USTMP) on October 6, 2003 (Lewis 2003). Release #2 is associated with free product observed in well BF-MW-E5, which is in the vicinity of above ground storage tank (AST) 7009 (Facility ID #9-025113*2). Free product removal activities are currently being conducted for Release #2 and will be addressed in a separate report. The concrete foundations of former ASTs 7001 and 7003 were removed in May 2006. Free product was discovered approximately 3 to 4 feet (ft) below ground surface (bgs) at the former location of AST 7003 and identified as Release #3. Four 2-foot diameter sumps were installed in the area of former AST 7003 to collect free product. The level of free product was measured in the sumps and free product was removed on a routine basis from May through August 2006. In November 2006, forty-two (42) free product (FP) monitoring points (FP-1 through FP-42) were installed on 50-foot centers in the area of former ASTs 7001 and 7003 (Figure 2-2). Monitor wells associated with Release #1 located throughout the BFF were abandoned in 2006 and there are currently no monitor wells in the Release #3 area. In December 2008, liquid levels were measured in the 42 FP monitoring points and 4 sumps. Free product was detected in 6 FP monitoring points and two sumps in the area around former AST 7003 and one FP monitoring point around former AST 7001. Free product was detected in a similar distribution in April 2009.

The CAP-Part B for release #3 was approved by GA EPD USTMP in April 2009. The approved corrective action includes excavation of impacted soil and installation of monitor wells to address potential groundwater impacts. In accordance with the approved CAP-Part B, soil and groundwater samples were taken with direct push technology (DPT) in June 2009 to evaluate the extent of impacts prior to excavation. The results of the June 2009 investigation are presented in this addendum.

2.1 Regional, Local, and Site Hydrogeology

A discussion of the regional, local, and site hydrogeology was included in the CAP-Part B for release #3. The information was based on the CAP Part A, Former Underground Storage Tank 117, Building 7002, Facility Identification Number 9-025113*1, Bulk Fuel Facility (HAA-09) Hunter Army Airfield, Georgia (Science Applications International Corporation (SAIC) 2000), which addressed Release #1. The area impacted by Release #1 is the same as that impacted by Release #3 and the hydrogeology and geological information is applicable to Release #3. Updates to the geology and hydrogeology previously presented are summarized below.

2.1.1 Groundwater Usage

No additional information on groundwater usage was obtained.

2.1.2 Aquifer Description

Data obtained confirmed the aquifer description previously provided.

2.1.3 Surface Water

Further investigation was conducted to confirm the presence of a series of storm drains and catch basins located along the southern border of the BFF. The storm drains and catch basins were formerly used to drain the bermed area around each of the ASTs. The CAP-Part B for UST 117 (SAIC 2000) stated that one of the storm drains was located approximately 120 feet from the area of greatest soil and groundwater contamination for release #1 in the vicinity of AST 7003. The drain could not be located but a valve box matching the previously described location was noted in the approximate area. The drain may have been removed or obstructed during previous demolition activities. Since the pipes from the drains potentially convey water to the Lamar Canal, the location will be used as a conservative receptor. The Lamar Canal is located approximately 650 ft from the former ASTs. Historical figures indicate that Lamar Canal is lined with concrete in some areas down gradient of the BFF (SAIC 1999).

2.1.4 Site Stratigraphy

The soil descriptions from borings installed in June 2009 confirmed the site stratigraphy from soil borings drilled during the UST 117 CAP-Part A (SAIC 2000) and CAP-Part B

(SAIC 2001) Site Investigations. The lithology present within 15 feet of the surface at the site correlates with the regional stratigraphic section. The lithology consists of interbedded layers of fine sand with varying amounts of silt and clay. Boring logs from the June 2009 DPT investigation are provided in Appendix D.

2.1.5 Direction of Groundwater Flow

Historic groundwater flow direction is southeast toward the Lamar Canal (SAIC 2001). All monitor wells in the area have been abandoned and groundwater potentiometric surface measurements were not taken during the June 2009 DPT investigation. Monitor wells will be installed as part of this corrective action. Historical groundwater potentiometric surface maps from the CAP-Part B are included in Appendix I.

2.2 Horizontal and Vertical Extent of Contamination

Liquid levels were measured in free product monitor points and sumps prior to starting DPT investigation. The liquid level results from June 2009 and previous measurements from December 2008 and April 2009 are provided in Tables 2-1c, a and b, respectively and free product thicknesses are presented on Figure 2-2.

Fifty-six (56) DPT points were installed in the vicinity of former ASTs 7001 and 7003. Please note that DPT points are numbered to 58 because numbers 46 and 47 were inadvertently omitted in the numbering sequence. The DPT investigation was conducted to define the limits of soil with petroleum hydrocarbon impacts that exceed the regulatory limits. All soil within these limits will be excavated and transported off-site as described in the CAP-Part B (ARCADIS 2009). There were fewer DPT locations in areas where free product is known to be present since these areas will be excavated to remove free product. The initial DPT points were outside of the known free product areas with the goal of investigating the extent of impacts. The vertical extent of impacts through the entire historical smear zone was also evaluated. Additional DPT points were located based on the first set of screening results as time and weather allowed. Three (3) DPT points were installed in the area manifesting free product to provide additional data on vertical free product distribution. Field screening results were used to determine extent of impacts and select samples for laboratory analysis. Screening results were obtained through visual inspection of soil samples and measurement of volatile organic compound (VOC) headspace concentrations. For each 2-foot interval, soil grab samples were collected in plastic bags. The samples were set aside for at least 15 minutes for volatilization and temperature equilibration. After 15 minutes, the headspace VOC concentration was measured with a photo-ionization detector (PID)

with the proper lamp to quantify the VOCs. DPT locations for soil delineation extended to a depth of 8 ft bgs. Samples were collected at intervals determined with field screening equipment. Samples were collected from the subset of initial borings that indicated elevated vapors but were outside the area obviously impacted by free product. When no VOCs were detected during screening, a laboratory confirmatory sample was taken at the interval just above the water table. When VOCs are detected in one or more of the borehole intervals, samples for laboratory analysis were selected from the interval with the highest PID reading. Some sample locations with adjacent locations with similar screening results were not selected for laboratory analysis. Soil samples were analyzed by the United States Environmental Protection Agency (USEPA) Method 8260B and USEPA Method 8270C in accordance with GA EPD USTMP Guidance. Because groundwater samples were collected at the worst-case locations, only three soil samples were analyzed for USEPA Method 8015B gasoline range organics (GRO) and diesel range organics (DRO). Two samples were collected in "clean" areas for analysis of total organic carbon (TOC). Laboratory analytical results are included in Appendix C. Survey data for all sample locations are included in Appendix E.

Groundwater samples were taken at four locations to evaluate vertical and horizontal groundwater impacts and to select the location and screen interval for monitor wells that will be installed after the excavation activities are complete. The groundwater samples were taken in two selected "hotspot" locations and at two locations slightly down gradient of the source areas. A screen-point sampler was advanced to depth of 15 ft to collect groundwater samples. The average depth for the initial collection of groundwater was approximately 6 ft bgs. Samples were collected at 5-foot intervals to 15 ft bgs. Groundwater samples were analyzed for benzene, toluene, ethylbenzene and xylene (BTEX) and polyaromatic hydrocarbons (PAHs) in accordance with USEPA Method 8260B and USEPA Method 8270C respectively. Previous vertical investigations in the area for Release #1 indicated the dissolved impacts were predominantly above 15 ft bgs.

Soil samples were taken from investigation derived waste (IDW) drums for analysis of additional parameters (e.g., toxicity characteristic leaching procedure [TCLP]) as required for transportation and disposal of impacted soil and water.

2.2.1 Delineation of Soil Contamination

The data from samples analyzed with field and laboratory methods are displayed on Figures 2-3, 2-4 and 2-5. All analytical data from soil samples are summarized in Table

2-2. In general, the PID screening results correlated well with the laboratory results. The soil contamination was more widespread than expected and the extent of soil impacts above soil threshold levels (STL) was not reached in some directions. BTEX were detected at concentrations that exceeded the STL in the three samples from the known free product area and in the samples taken from the northern and southern line of samples points intended to establish extent of soil contamination. Isolated hotspots exceeding the STL were also discovered on the eastern and western line of extent points. PAH concentrations did not exceed STLs in any soil sample. The results indicated that most of the hydrocarbon mass was located between 2 and 6 ft bgs. Contaminant mass located between 0 and 2 ft bgs was mostly located in points in known free product areas.

2.2.2 Delineation of Groundwater Contamination

As stated previously, the monitor wells in the area of former ASTs 7001 and 7003 were abandoned. Consequently, there is no groundwater concentration data subsequent to the May 2006 discovery of the impacts designated as Release #3.

An assessment of the vertical and horizontal extent of groundwater impacts was performed with DPT in June 2009 in conjunction with the delineation of soil impacts. The groundwater samples were analyzed for BTEX and PAH constituents. Concentrations are presented in Table 2-3 and on Figure 2-6. The data from the vertical profile borings indicate groundwater impacts are predominantly located in the upper interval of the shallow aquifer and dissolved concentrations are much lower in samples from 11 to 15 ft bgs. Down gradient groundwater samples did not contain BTEX above the In-stream Water Quality Standard (IWQS). PAH compounds detected above the IWQS in down gradient groundwater samples were Dibenzo(a,h)anthracene at an estimated concentration of 0.59 µg/L and Indeno(1,2,3-c,d)pyrene at an estimated concentration of 0.56 µg/L.

Following excavation and site restoration activities, monitor wells will be installed to further evaluate groundwater impacts.

2.2.3 Delineation of Free Product

The extent of free product associated with Release #3 was first delineated by activities performed from May through August 2006 with installation of 4 sumps and product recovery. In November 2006, 42 FP points were installed on 50-ft centers. Free product was not detected in November 2006 when liquid levels were measured. Liquid

levels in FP points were measured in December 2008 and in April and June 2009. Free product was detected during all three events. The data from these activities are provided in Tables 2-1a, b and c and are presented on Figure 2-2.

When liquid levels were measured in the sumps and monitoring points in December 2008, April 2009 and June 2009, free product was detected in monitoring points FP-04, FP-06, FP-08, FP-16 and FP-38. Free product was also detected in Sump 1 and Sump 4. Free Product thickness measurements in the sumps ranged from 0.07 to 0.22 ft. In December 2008, free product was also detected in monitoring points FP-05, FP-13 and FP-38.

2.2.4 Delineation of Surface Water and Sediment Contamination

Results from the surface water and sediment samples collected during the CAP–Part A investigation for Release #1 indicated that the surface water in Lamar Canal was not being impacted by impacts from the BFF and additional samples were not recommended (SAIC 2000). Surface water and sediment samples have not been collected since. After monitor well installation, the need for surface water samples or sediment samples will be evaluated based on contaminant concentrations in down gradient wells. Surface water features at the site are shown on Figure 2-7.

3. Remedial Action Plan

3.1 Corrective Action Completed or in Progress

3.1.1 Recovery/Removal of Free Product

Four 2-foot sumps were installed in the area of the former AST 7003 foundation to collect free product in May 2006. Free product in the sumps was measured and pumped on a routine basis from May through August 2006. Forty-two free product monitoring points were installed in November 2006. The monitoring points contained no free product or other liquids when measured in November 2006. No free product removal activities were conducted in 2007, 2008 or to date in 2009. Free product measurements were conducted in December 2008, April 2009 and June 2009. Free product was detected during all three events but not in sufficient thickness to indicate vacuum recovery would be effective.

3.1.2 Remediation/Treatment of Contaminated Backfill Material and Native Soil

The concrete foundations of former ASTs 7001 and 7003 and UST 117 were removed in May 2006 (SAIC 2007). During the removal of the concrete foundations, free product was discovered approximately 3 to 4 ft bgs at the former location of AST 7003. Soil that was excavated during the removal of the concrete foundations was temporarily staged on the site pending sample analysis. Analytical results from the soil samples indicated detections of BTEX and GRO. The contaminated soil was removed as part of these activities.

3.2 Objectives of Corrective Action

3.2.1 Remove Free Product That Exceeds One-Eighth Inch at the Former AST 7001/7003 (Release #3)

Removal of free product that exceeds 1/8-inch will be achieved through excavation of saturated and unsaturated soil containing free product. The excavation interval will encompass the historic smear zone. The target excavation area is presented on Figure 3-1. The extent of the excavation area will be expanded as necessary to include free product and soil exceeding approved limits. The excavation will remain open and will be monitored for free product recharge. A vacuum truck will be onsite to remove any free product detected.

3.2.2 Remediate Groundwater Contamination at the Former AST 7001/7003 (Release #3)

Groundwater impacts will be remediated to the IWQS or approved alternate concentration limit (ACL) through the excavation of the source mass and application of an oxygen source (Calcium Peroxide) to the groundwater through the excavation. There are no monitor wells in the vicinity of Former AST 7001/7003. Monitor wells will be installed after excavation to determine the extent of groundwater concentrations exceeding IWQS or approved ACLs and to monitor the enhanced natural attenuation of residual mass. The estimated optimal monitor well locations are shown on Figure 3-1. Proposed monitor well locations were selected based on DPT investigation results and may be adjusted based on excavation results with GA EPD approval.

3.2.3 Remediate Soil Contamination at the Former AST 7001/7003 (Release #3)

Soil impacts will be reduced to below STLs or approved Alternate Threshold Limits (ATLs). The corrective action for soil remediation is excavation of soil with concentrations exceeding approved limits. Proposed ATLs were calculated for Release #3 and are included in Appendix F. The estimated location of this excavation is provided on Figure 3-1. Prior to backfilling, an oxygen source (Calcium Peroxide) will be applied to the bottom of the excavation to enhance biodegradation of residual contamination.

3.2.4 Provide Risk-Based Corrective Action

Due to the nature of the contamination and land use, the risk-based approach was limited to human health concerns. Ecological risk concerns are negligible because of the land use surrounding the site. During evaluation for Release #1, the analytical results from surface water and sediment sampling in the drainage ditch indicated that habitat potentially associated with Lamar Canal was not impacted by the former AST operations. The methods for assessing human health concern for the site were derived from Georgia USTMP CAP-Part B guidance (GA EPD 1995). Results from the site investigation were screened against the available regulatory levels to identify chemicals of potential concern (COPCs). Site specific ACLs and ATLs were developed for COPCs using the receptor locations and fate and transport modeling in accordance with the referenced guidance.

3.2.4.1 Potential Receptor Survey

The exposure assessment identified potentially complete pathways between the contaminant source and potential current and future receptors. The Former AST 7001 and 7003 sites are located within an active military installation and within an access-controlled fence. Lamar Canal is located approximately 180 ft south-southeast (downgradient) of the southern boundary of the site. A series of storm drains and catch basins are located along the southern border of the BFF and were used to drain the formerly bermed area around former ASTs 7001 and 7003. The drains associated with 7001 and 7003 could not be located but drain valves were noted in the drain locations depicted on historical figures.

No connection between site impacts and current off-site receptors was identified during current or previous evaluations. Site impacts associated with Release #1 migrated to the surficial aquifer only. The data indicates Release #3 is behaving similarly to release #3. The Hawthorne Group, which is approximately 90 ft of clay, separates the surficial aquifer from the deep drinking water aquifer, known as the Floridian aquifer. The Hawthorn Group, a thick and highly effective confining unit, separates the water supply wells from the surficial aquifer.

Current on-site receptors have not been identified for the site. Potential future on-site receptors might include industrial workers and military residents. Potential future on-site industrial receptors may come in direct contact with site impacted soil during construction or excavation activities. Due to the restricted access to the site, no near-term on-site receptors are likely to come into contact with groundwater unless the surficial aquifer discharges into the drainage basin or Lamar Canal (SAIC 2001).

3.2.4.2 Screening for Chemicals of Potential Concern

3.2.4.2.1 Screening Methodology

The DPT data were used to identify the COPCs and areas of concern at a site. Free product associated with Release #3 has been identified and remedial action will be implemented. The COPCs were determined using screening levels which are conservative and can be used to indicate site risk status. Screening criteria are the Georgia UST STL (GA EPD 2005), Georgia IWQS (Environmental Rule 391-3-6-.03) and USEPA Regional Screening Level Table (USEPA 2009).

3.2.4.2.2 Site-Specific Levels

BTEX concentrations in soil exceeded the STLs. Consequently, BTEX were identified as COPCs for soil. None of the PAH constituents exceeded their STLs.

The limited groundwater data indicated that benzene and 2 PAHs (dibenzo(a,h)anthracene and indeno(1,2,3-c,d)pyrene) exceeded the IWQS. These constituents were identified as COPCs for groundwater. Naphthalene does not have an IWQS but exceeded the EPA Region III RBC and was also designated as a COPC for groundwater. Detection limits exceeded the IWQS for 6 PAHs with an IWQS of 0.018 µg/L. For these constituents, screening levels represent values below achievable analytical levels. No additional COPCs were selected for groundwater based on detection limits for these PAHs.

ATLs and ACLs were developed for the COPCs using site-specific information for fate and transport modeling and applicable regulatory levels.

3.2.4.2.3 Alternate Threshold Levels

The ATLs were calculated after soil data indicated concentrations of BTEX exceeded the Soil Threshold Levels. Fate and transport modeling was used to develop a site-specific dilution attenuation factor (DAF) between the source mass and the receptor location, a drain located approximately 100 ft down gradient. ATL calculations for these compounds are presented in Appendix F. The ATLs were calculated in accordance with GA EPD USTMP guidance (GA EPD 2005). The ATLs were determined as follows:

- Benzene 0.3 milligram per kilogram (mg/kg)
- Toluene 54.3 mg/kg
- Ethylbenzene 25.3 mg/kg
- Xylenes 436.6 mg/kg

3.2.4.2.4 Alternate Concentration Limits

Benzene and 3 PAHs (naphthalene, dibenzo(a,h)anthracene and indeno(1,2,3-c,d)pyrene) were identified as COPCs for groundwater. Benzene was modeled to the potential downgradient receptor, a storm drain previously noted as located approximately 100 feet downgradient from the center of the source area (based on the current free product distribution). Fate and transport modeling was used to develop a site-specific DAF between the approximate center of source mass and receptor location. The modeling results estimated a DAF for benzene of 14.5. A DAF of 10

times the benzene DAF was used as a conservative DAF for the other BTEX constituents and PAH constituents. Compound specific regulatory levels were used in conjunction with site-specific DAFs identified for the potential migration of contaminants from the site to determine the ACL for each compound. The ACLs were calculated as follows:

- Benzene 700 micrograms per liter (µg/L)
- Napthalene 942.5 µg/L
- Dibenzo(a,h)anthracene 2.6 µg/L
- indeno(1,2,3-c,d)pyrene 2.6 µg/L

The ACL calculations are included in Appendix F.

3.2.4.2.5 Fate and Transport Model

Site specific DAFs between the source and the receptor locations were developed in accordance with Georgia UST guidance. The DAF is the ratio of chemical concentrations at the source and at the receptor and is used to conservatively quantify the natural attenuation of COPC. Bioscreen was used to model fate and transport for developing DAFs for groundwater. Bioscreen is a well known analytical fate and transport model for groundwater (USEPA 1996). The maximum soil concentration at the site was not above the water table and modeling of leaching to groundwater by percolating rainwater was not performed. The potential receptor is a storm drain approximately 100 ft southwest (downgradient) of the most highly impacted area of the site. This storm drain was part of a series of drains used to drain the formerly bermed areas around the ASTs at the BFF. These drains empty into Lamar Canal. This is the nearest possible location at which a receptor might encounter migrating groundwater contamination due to a possible hydraulic connection between the groundwater and the surface water in Lamar Canal (SAIC 2001). The drain could not be located but a valve was located during a recent site inspection. The drain may have been damaged or obstructed during past demolition activities. The drain was used as an extremely conservative receptor for modeling. If the drains are no longer conveying water to the canal then the canal, which is approximately 250 ft from the impacted area, would be the nearest receptor.

The model could not be calibrated to match the limited groundwater data. Parameter values were conservatively selected. Predicted contaminant transport exceeded actual results providing additional evidence that the model is protective.

The fate and transport modeling results are presented in Appendix G.

3.2.4.2.6 Conclusions and Recommendations

The initial goal of the proposed remedial approach will be removal of free product so that no hydrocarbon layer which exceeds 1/8-inch in thickness is detected in the monitoring points, sumps or monitor wells. Along with free product removal, soil impacts exceeding STLs or approved ATLs will be excavated and transported off site for disposal. Groundwater concentrations will be monitored to ensure levels are less than the IWQS or approved ACLs and are attenuating.

4. Design and Operation of Corrective Action

The approved corrective actions include excavation of contaminated soil and installation of groundwater monitor wells. Prior to any invasive site work all required permits and utility clearances will be obtained.

4.1 Excavation

Impacted soil will be excavated in the areas with concentrations above the approved applicable limits. The available data on groundwater elevations indicate that depth to water in the area of former AST 7001/7003 has ranged from 1.5 to 5 ft bgs (smear zone.) Therefore, the initial target depth of the excavation will be 5 ft bgs. DPT results indicated some contaminant mass in deeper intervals. The initial estimate of excavation depth was adjusted based on DPT data and will also be adjusted based on field results during excavation. Confirmatory soil samples will be taken from the sidewalls as part of the excavation activities. Soil samples will be taken for field screening. Remediation of impacted soil by excavation will be confirmed with samples taken for laboratory analysis of BTEX and PAHs by USEPA Method 8260 and USEPA Method 8270 respectively. Confirmatory samples will be taken approximately every 30 linear feet along the base of the side walls. The excavation depth will extend into the water table in all areas and soil samples will not be taken from the bottom of the excavation. Groundwater samples from the most impacted areas of the excavation will be collected and analyzed in order to comply with USTMP Guidance. Groundwater samples will be analyzed for BTEX and PAHs by USEPA Method 8260 and USEPA Method 8270, respectively.

Free product points and product recovery sumps in the area targeted for excavation will be removed during excavation.

All excavated soils will be stockpiled on polyethylene sheeting with hay bales or bermed soil around the perimeter to prevent runoff of sediments. All stockpiles will be sampled in accordance with USEPA guidance procedures. Soil excavated from the saturated zone will be allowed to drain back into the excavation. Dewatering pumps will be utilized if necessary to allow effective excavation to the target depth. Storage tanks will be brought to the site for containment of water extracted from the excavation. The storage areas will be staged in accordance with direction from HAAF personnel and in compliance with all applicable regulations.

If the excavated material is contaminated below the applicable STLs or ATLs, it may be returned to the excavation. Analytical results from representative samples taken from the staged soil will be required to demonstrate compliance with reuse criteria. All excavated materials contaminated above applicable threshold levels will be disposed off-site at an EPD-approved facility, in accordance with the guidance document on Petroleum Contaminated Soil Disposal/Treatment (GUST-39). Waste Profile Manifests will be submitted for soil disposition.

The excavated area will be maintained open for free product evaluation. The area around the excavation will be marked with warning tape and access will be controlled. Enhanced fluid recovery (EFR) events will be performed to address any free product that is detected in the excavation. Backfilling of the excavation will commence following completion of the removal of the impacted soil and verification of free product removal. An oxygen-releasing compound (calcium peroxide) will be applied to the bottom of the excavation along with approximately 1 ft of coarse sand. The backfill will be soil from an approved borrow source. The remediation area will be cleaned of all sediment and debris. All areas will be graded to match existing conditions.

4.2 Installation of Monitor Wells

At least four groundwater monitor wells will be installed after backfill and compaction activities are completed. The estimated optimal locations for the monitor wells are shown on Figure 3-1. With GA EPD concurrence, monitor well locations and number will be adjusted if necessary based on data from the excavation. The wells will be constructed to a depth of approximately 15-ft bgs as previously described in the CAP-Part B (ARCADIS 2009).

4.3 Implementation

4.3.1 Milestone Schedule

The milestone schedule for the proposed corrective action was presented in the CAP-Part B. HAAF will notify GA EPD of any significant changes to the schedule and will provide GA EPD with an updated Gantt chart, as necessary.

4.3.2 Progress Reporting

The remedial action completion report will include:

1. Project summary
2. Activities and assessment of existing conditions
3. A site map depicting the areas and dimensions of the soil excavation and showing the location and concentrations of confirmatory samples
4. Description of sampling procedures
5. Analytical data
6. Site ranking
7. Conclusions and recommendations on corrective action status.

4.3.3 Certificate of Completion Report

A completion report will be prepared at the conclusion of the corrective action and post-remediation monitoring work. The report will summarize the corrective actions accomplished and provide data confirming achievement of the remediation objectives. The completion report will include the following certification:

"I hereby certify that the Corrective Action Plan–Part B, dated February 2, 2009, for Hunter Army Airfield, Former AST 7003 site (Release #3), Facility ID #9-025113*3, including any and all certified amendments/addenda thereto, has been implemented in accordance with the schedules, specifications, sampling programs, and conditions contained therein and that the plan's stated objectives have been met."

_____

Signature (Owner/Operator)

4.3.4 Inspection Schedule and Preventative Maintenance Program

The current plan does not require the installation of a permanent remediation system. Thus, on-site inspection and preventative maintenance are not applicable.

4.3.5 Periodic Monitoring

Monitoring will be conducted initially on a quarterly basis. Recommendations concerning subsequent monitoring periods will be included in each report based on the data on contaminant concentrations, attenuation and transport. Monitor wells will be measured and sampled until groundwater concentrations are below the applicable regulatory limit.

4.3.6 Effectiveness of Corrective Action

The effectiveness of the soil excavation will be determined with confirmatory soil samples. The excavation and monitor wells subsequently installed will be monitored to verify effective removal of free product. Groundwater samples will be collected from each monitor well to document groundwater contaminant concentrations. Groundwater contaminant concentrations will be evaluated for trends and compliance with remediation goals.

4.3.7 Confirmatory Soil Sampling Plan

The extent of soil with concentrations above STLs was not determined in some areas during the DPT investigation. Confirmatory sampling of the excavation will be performed with field screening and samples for laboratory analysis in accordance with GA EPD USTMP guidance.

4.3.8 Stockpiled Bulk Soil Sampling

Excavated soil that is stockpiled will be characterized with DPT investigation data and with confirmation samples taken in accordance with GA EPD guidance.

4.3.9 Monitoring Only Termination Conditions

The proposed remedial approach, which includes soil excavation, will remove free product such that no floating hydrocarbon layer that exceeds 1/8 inch in thickness is present. Soil with concentrations above approved limits will be removed via excavation and transported off-site for disposal. Groundwater will be monitored to ensure contaminant concentrations are below approved limits.

4.3.10 Post-Completion Site Restoration Activities

There will be no permanent equipment or systems located at the site as part of this remediation. The excavated area will be backfilled and graded to match existing.

4.4 Public Notification

The former ASTs 7001 and 7003 site is located entirely within the confines of HAAF, a federal facility. The U. S. Government owns all of the property contiguous to the site. The Fort Stewart Directorate of Public Works will comply with the public notice requirements defined by GA EPD guidance.

5. Claim for Reimbursement

HAAF is a federally owned facility. Application for GUST Trust Fund reimbursement is not being pursued at this time.

6. References

ARCADIS. 2009. Corrective Action Plan Part B, Former Aboveground Storage tanks 7001 & 7003, Bulk Fuel Facility – HAA-09 Release #3, Hunter Army Airfield, Savannah, Georgia. March.

Georgia Environmental Protection Division. 2005. Guidance Document Underground Storage Tank Release: Corrective Action Plan (CAP) Part A. Department of Natural Resources. March.

Georgia Environmental Protection Division. 1995. Guidance Document Underground Storage Tank Release: Corrective Action Plan (CAP) Part B. Department of Natural Resources. January.

Lewis, Lisa L. 2003. Letter from Thomas C. Fry (Fort Stewart Directorate of Public Works Environmental Branch), October 2003.

Science Applications International Corporation. 2007. Third Annual Monitoring Only report for Former Underground Storage Tank 117, Building 7002, Facility ID 9-025113*1, Bulk Fuel Facility (HAA-09), Hunter Army Airfield, Georgia. U.S. Army Corps of Engineers, Savannah District, September 2007.

Science Applications International Corporation. 2001. Corrective Action Plan-Part B Report for Former Underground Storage Tank 117, Building 7002, Facility ID 9-025113*1, Bulk Fuel Facility (HAA-09), Hunter Army Airfield, Georgia. U.S. Army Corps of Engineers, Savannah District, July 2001.

Science Applications International Corporation. 2000. Corrective Action Plan-Part A Report for Former Underground Storage Tank 117, Building 7002, Facility ID 9-025113*1, Bulk Fuel Facility (HAA-09), Hunter Army Airfield, Georgia. U.S. Army Corps of Engineers, Savannah District, June.

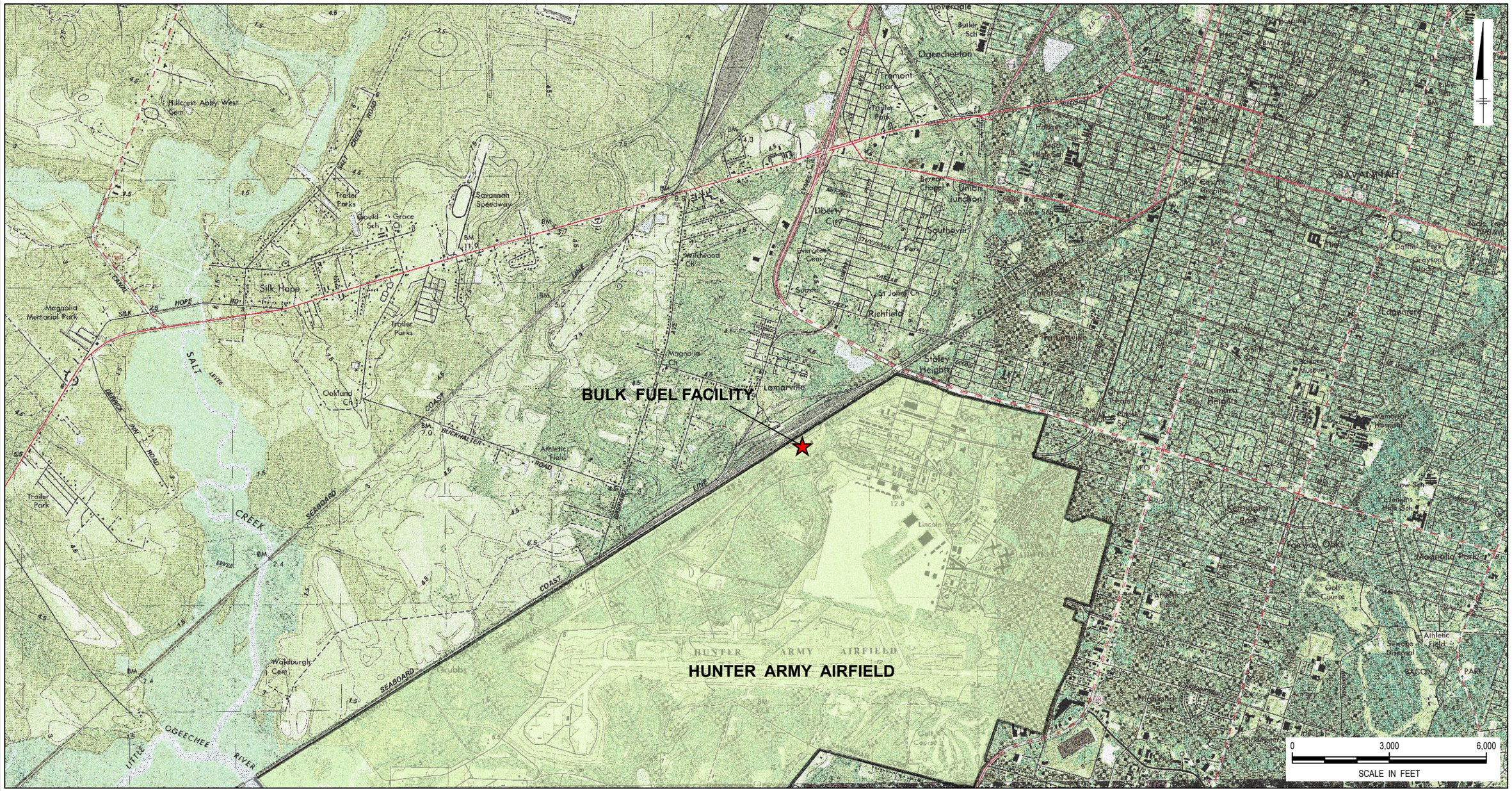
USEPA, Mid-Atlantic Risk Assessment. 2009. Regional Screening Level Table (RSL) Master April 2009. May.

USEPA, Office of Research and Development. 1996. Bioscreen Natural Attenuation Decision Support System, User's Manual Version 1.3. August.

ARCADIS

Appendix A

Figures



REFERENCE:
DIGITAL RASTER GRAPHIC COUNTY MOSAIC FROM NRCS,
CHATHAM COUNTY. FILE NAME: DRG_S_GA051.SID
USGS Topographic Quadrangles, Garden City and Savannah, Georgia.

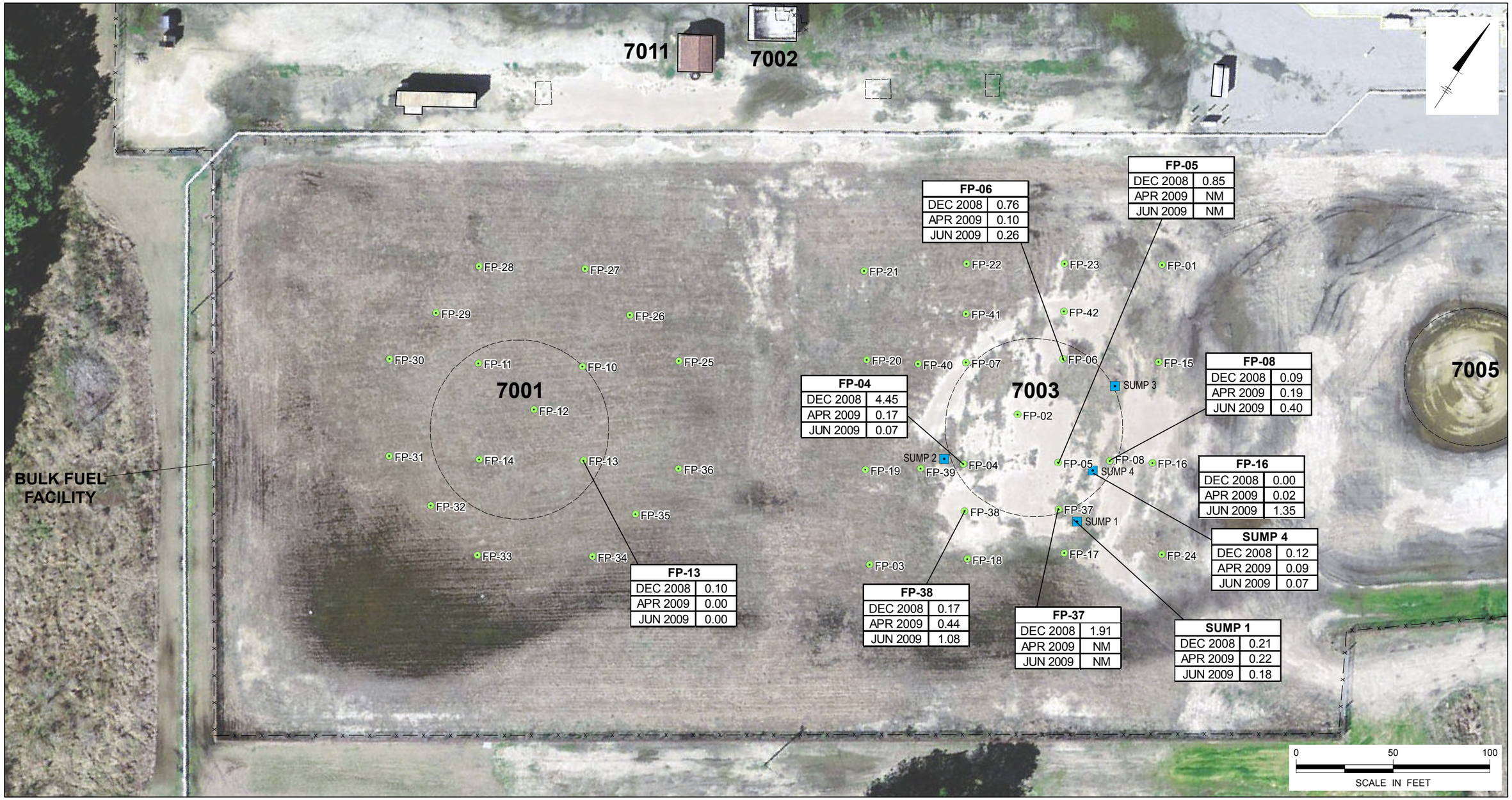
HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
CORRECTIVE ACTION PLAN – PART B ADDENDUM #1

Site Location Map

ARCADIS

FIGURE
2-1

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) LD:(B.ALTOM) PIC:(M.FENNER) PM:(C.BERTZ) TM:(S.BOSTIAN/E.MADDOX)
PROJECT: GP08HAFS:H09B:EHCAP PATH: G:\GIS\GP08HAFS\H09\2009 CAP PTB ADD1\F2-1 H09_CAPADD1_REG.mxd SAVED: 3SEP2009



FP-06	
DEC 2008	0.76
APR 2009	0.10
JUN 2009	0.26

FP-05	
DEC 2008	0.85
APR 2009	NM
JUN 2009	NM

FP-04	
DEC 2008	4.45
APR 2009	0.17
JUN 2009	0.07

FP-08	
DEC 2008	0.09
APR 2009	0.19
JUN 2009	0.40

FP-16	
DEC 2008	0.00
APR 2009	0.02
JUN 2009	1.35

SUMP 4	
DEC 2008	0.12
APR 2009	0.09
JUN 2009	0.07

FP-13	
DEC 2008	0.10
APR 2009	0.00
JUN 2009	0.00

FP-38	
DEC 2008	0.17
APR 2009	0.44
JUN 2009	1.08

FP-37	
DEC 2008	1.91
APR 2009	NM
JUN 2009	NM

SUMP 1	
DEC 2008	0.21
APR 2009	0.22
JUN 2009	0.18

AERIAL REFERENCE: SAGIS (FLOWN IN 2008).

LEGEND:

- Sump
- Free-Product Monitoring Point

NOTE: All free-product monitoring points and sumps were measured during each field event. Only detections are shown.

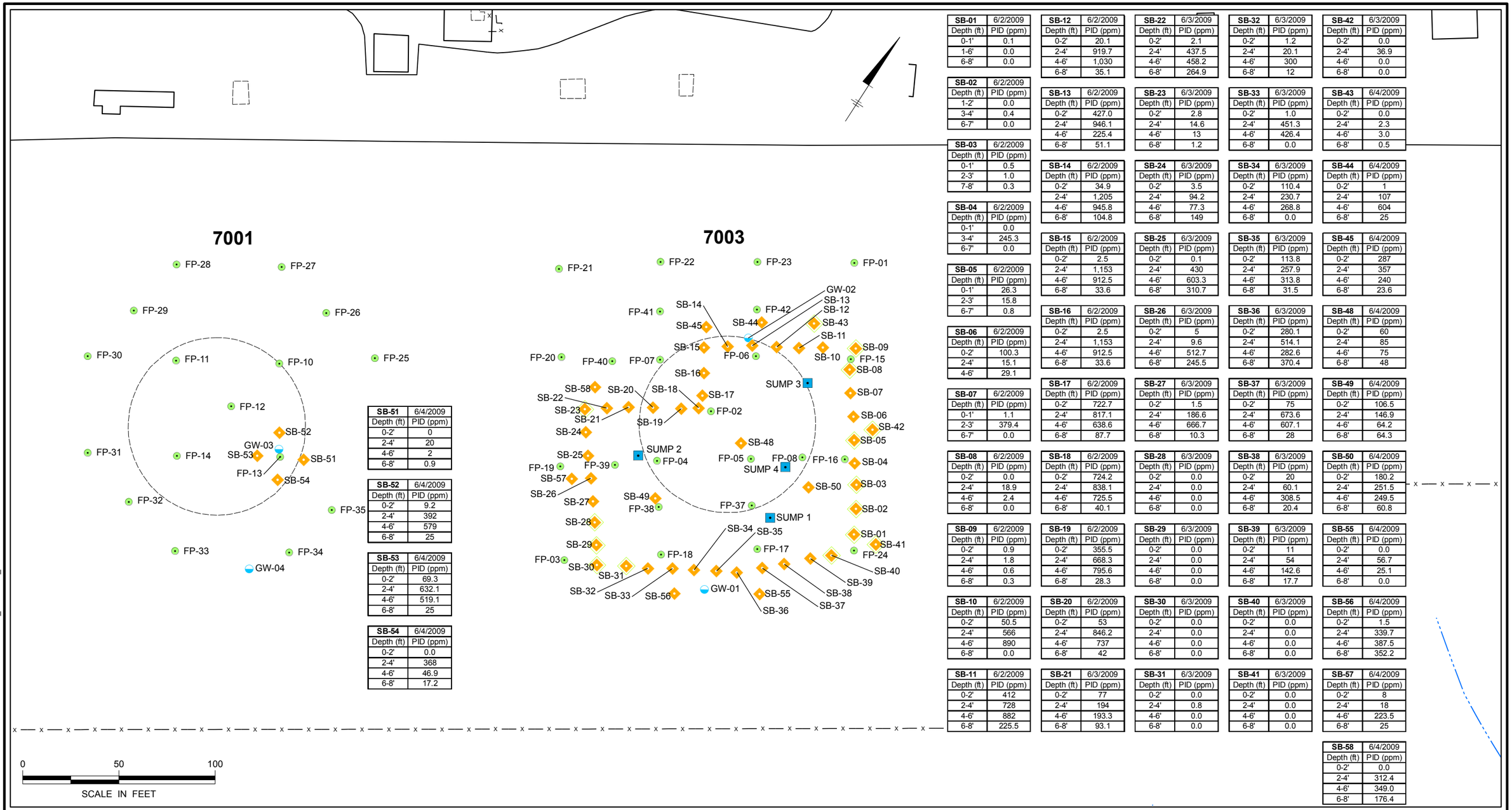
HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
CORRECTIVE ACTION PLAN – PART B ADDENDUM #1

Summary of Free-Product Thicknesses (December 2008 through June 2009)

ARCADIS

FIGURE
2-2

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) LD:(B.ALTOM) PIC:(M.FENNER) PM:(C.BERTZ) TM:(S.BOSTIAN/E.MADDOX)
PROJECT: GP08HAFS.H09B.EHCAP PATH: G:\GIS\GP08HAFS\H09\2009 CAP PTB ADD1\F2-2 H09_CAPADD1_FP.mxd SAVED: 4SEP2009



SB-51	6/4/2009
Depth (ft)	PID (ppm)
0-2'	0
2-4'	20
4-6'	2
6-8'	0.9

SB-52	6/4/2009
Depth (ft)	PID (ppm)
0-2'	9.2
2-4'	392
4-6'	579
6-8'	25

SB-53	6/4/2009
Depth (ft)	PID (ppm)
0-2'	69.3
2-4'	632.1
4-6'	519.1
6-8'	25

SB-54	6/4/2009
Depth (ft)	PID (ppm)
0-2'	0.0
2-4'	368
4-6'	46.9
6-8'	17.2

SB-01	6/2/2009
Depth (ft)	PID (ppm)
0-1'	0.1
1-6'	0.0
6-8'	0.0

SB-02	6/2/2009
Depth (ft)	PID (ppm)
1-2'	0.0
3-4'	0.4
6-7'	0.0

SB-03	6/2/2009
Depth (ft)	PID (ppm)
0-1'	0.5
2-3'	1.0
7-8'	0.3

SB-04	6/2/2009
Depth (ft)	PID (ppm)
0-1'	0.0
3-4'	245.3
6-7'	0.0

SB-05	6/2/2009
Depth (ft)	PID (ppm)
0-1'	26.3
2-3'	15.8
6-7'	0.8

SB-06	6/2/2009
Depth (ft)	PID (ppm)
0-2'	100.3
2-4'	15.1
4-6'	29.1

SB-07	6/2/2009
Depth (ft)	PID (ppm)
0-1'	1.1
2-3'	379.4
6-7'	0.0

SB-08	6/2/2009
Depth (ft)	PID (ppm)
0-2'	0.0
2-4'	18.9
4-6'	2.4
6-8'	0.0

SB-09	6/2/2009
Depth (ft)	PID (ppm)
0-2'	0.9
2-4'	1.8
4-6'	0.6
6-8'	0.3

SB-10	6/2/2009
Depth (ft)	PID (ppm)
0-2'	50.5
2-4'	566
4-6'	890
6-8'	0.0

SB-11	6/2/2009
Depth (ft)	PID (ppm)
0-2'	412
2-4'	728
4-6'	882
6-8'	225.5

SB-12	6/2/2009
Depth (ft)	PID (ppm)
0-2'	20.1
2-4'	919.7
4-6'	1,030
6-8'	35.1

SB-13	6/2/2009
Depth (ft)	PID (ppm)
0-2'	427.0
2-4'	946.1
4-6'	225.4
6-8'	51.1

SB-14	6/2/2009
Depth (ft)	PID (ppm)
0-2'	34.9
2-4'	1,205
4-6'	945.8
6-8'	104.8

SB-15	6/2/2009
Depth (ft)	PID (ppm)
0-2'	2.5
2-4'	1,153
4-6'	912.5
6-8'	33.6

SB-16	6/2/2009
Depth (ft)	PID (ppm)
0-2'	2.5
2-4'	1,153
4-6'	912.5
6-8'	33.6

SB-17	6/2/2009
Depth (ft)	PID (ppm)
0-2'	722.7
2-4'	817.1
4-6'	638.6
6-8'	87.7

SB-18	6/2/2009
Depth (ft)	PID (ppm)
0-2'	724.2
2-4'	838.1
4-6'	725.5
6-8'	40.1

SB-19	6/2/2009
Depth (ft)	PID (ppm)
0-2'	355.5
2-4'	668.3
4-6'	795.6
6-8'	28.3

SB-20	6/2/2009
Depth (ft)	PID (ppm)
0-2'	53
2-4'	846.2
4-6'	737
6-8'	42

SB-21	6/3/2009
Depth (ft)	PID (ppm)
0-2'	77
2-4'	194
4-6'	193.3
6-8'	93.1

SB-22	6/3/2009
Depth (ft)	PID (ppm)
0-2'	2.1
2-4'	437.5
4-6'	458.2
6-8'	264.9

SB-23	6/3/2009
Depth (ft)	PID (ppm)
0-2'	2.8
2-4'	14.6
4-6'	13
6-8'	1.2

SB-24	6/3/2009
Depth (ft)	PID (ppm)
0-2'	3.5
2-4'	94.2
4-6'	77.3
6-8'	149

SB-25	6/3/2009
Depth (ft)	PID (ppm)
0-2'	0.1
2-4'	430
4-6'	603.3
6-8'	310.7

SB-26	6/3/2009
Depth (ft)	PID (ppm)
0-2'	5
2-4'	9.6
4-6'	512.7
6-8'	245.5

SB-27	6/3/2009
Depth (ft)	PID (ppm)
0-2'	1.5
2-4'	186.6
4-6'	666.7
6-8'	10.3

SB-28	6/3/2009
Depth (ft)	PID (ppm)
0-2'	0.0
2-4'	0.0
4-6'	0.0
6-8'	0.0

SB-29	6/3/2009
Depth (ft)	PID (ppm)
0-2'	0.0
2-4'	0.0
4-6'	0.0
6-8'	0.0

SB-30	6/3/2009
Depth (ft)	PID (ppm)
0-2'	0.0
2-4'	0.0
4-6'	0.0
6-8'	0.0

SB-31	6/3/2009
Depth (ft)	PID (ppm)
0-2'	0.0
2-4'	0.8
4-6'	0.0
6-8'	0.0

SB-32	6/3/2009
Depth (ft)	PID (ppm)
0-2'	1.2
2-4'	20.1
4-6'	300
6-8'	12

SB-33	6/3/2009
Depth (ft)	PID (ppm)
0-2'	1.0
2-4'	451.3
4-6'	426.4
6-8'	0.0

SB-34	6/3/2009
Depth (ft)	PID (ppm)
0-2'	110.4
2-4'	230.7
4-6'	268.8
6-8'	0.0

SB-35	6/3/2009
Depth (ft)	PID (ppm)
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2-4'	257.9
4-6'	313.8
6-8'	31.5

SB-36	6/3/2009
Depth (ft)	PID (ppm)
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2-4'	514.1
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6-8'	370.4

SB-37	6/3/2009
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0-2'	75
2-4'	673.6
4-6'	607.1
6-8'	28

SB-38	6/3/2009
Depth (ft)	PID (ppm)
0-2'	20
2-4'	60.1
4-6'	308.5
6-8'	20.4

SB-39	6/3/2009
Depth (ft)	PID (ppm)
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2-4'	54
4-6'	142.6
6-8'	17.7

SB-40	6/3/2009
Depth (ft)	PID (ppm)
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4-6'	0.0
6-8'	0.0

SB-41	6/3/2009
Depth (ft)	PID (ppm)
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4-6'	0.0
6-8'	0.0

SB-42	6/3/2009
Depth (ft)	PID (ppm)
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2-4'	36.9
4-6'	0.0
6-8'	0.0

SB-43	6/4/2009
Depth (ft)	PID (ppm)
0-2'	0.0
2-4'	2.3
4-6'	3.0
6-8'	0.5

SB-44	6/4/2009
Depth (ft)	PID (ppm)
0-2'	1
2-4'	107
4-6'	604
6-8'	25

SB-45	6/4/2009
Depth (ft)	PID (ppm)
0-2'	287
2-4'	357
4-6'	240
6-8'	23.6

SB-48	6/4/2009
Depth (ft)	PID (ppm)
0-2'	60
2-4'	85
4-6'	75
6-8'	48

SB-49	6/4/2009
Depth (ft)	PID (ppm)
0-2'	106.5
2-4'	146.9
4-6'	64.2
6-8'	64.3

SB-50	6/4/2009
Depth (ft)	PID (ppm)
0-2'	180.2
2-4'	251.5
4-6'	249.5
6-8'	60.8

SB-55	6/4/2009
Depth (ft)	PID (ppm)
0-2'	0.0
2-4'	56.7
4-6'	25.1
6-8'	0.0

SB-56	6/4/2009
Depth (ft)	PID (ppm)
0-2'	1.5
2-4'	339.7
4-6'	387.5
6-8'	352.2

SB-57	6/4/2009
Depth (ft)	PID (ppm)
0-2'	8
2-4'	18
4-6'	223.5
6-8'	25

SB-58	6/4/2009
Depth (ft)	PID (ppm)
0-2'	0.0
2-4'	312.4
4-6'	349.0
6-8'	176.4

LEGEND

- Sump
- Free-Product Monitoring Point
- DPT Groundwater Sample
- DPT Soil Boring
- <50 pmm at all depths

NOTES:

1) All sample locations (except sumps) were surveyed by Chatham Surveying Services, Inc. (June 5, 2009).
2) All depths reported in feet below ground surface (ft, bgs).
3) PID readings are reported in parts per million (ppm).

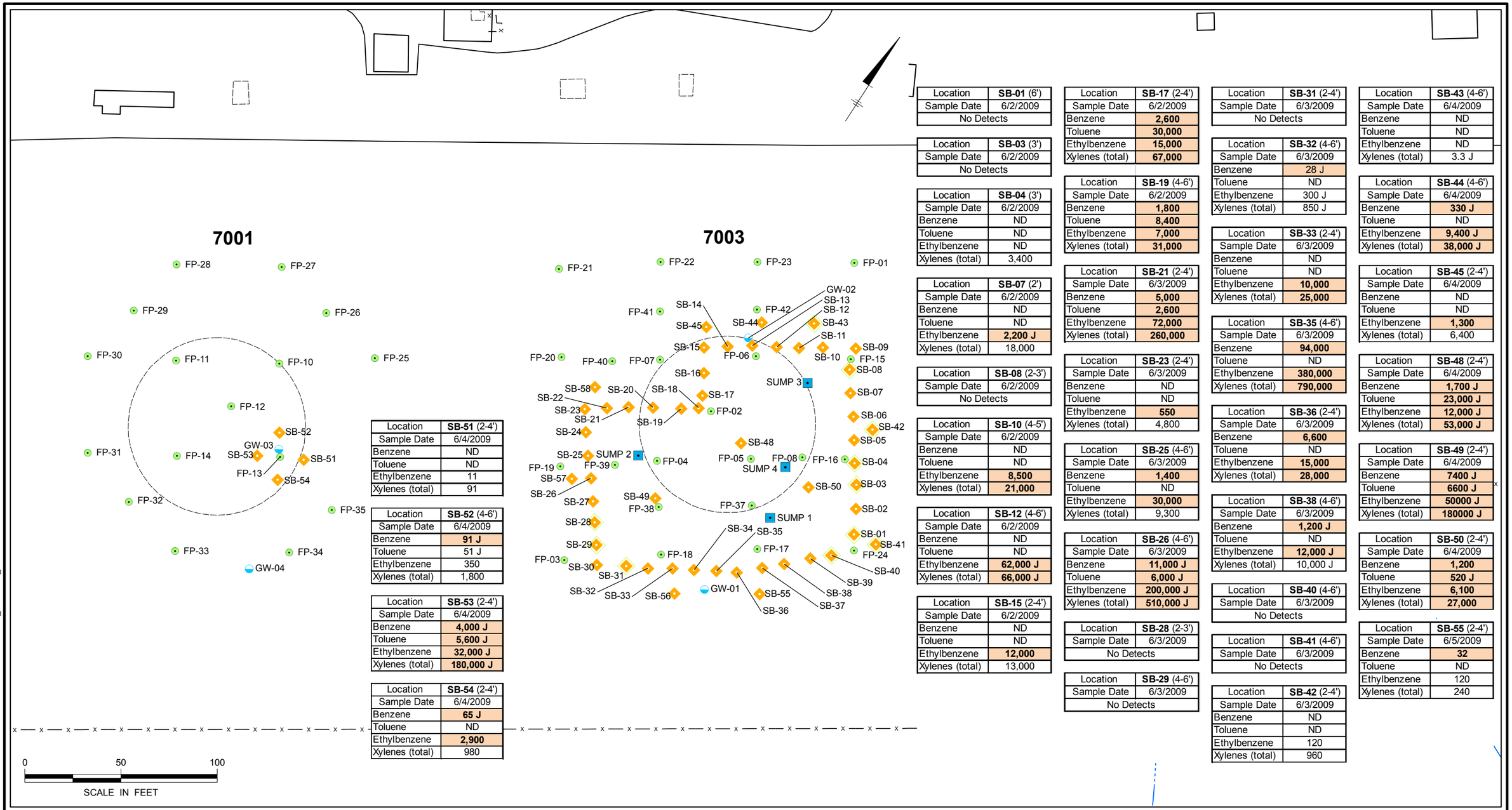
HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
REVISED CORRECTIVE ACTION PLAN – PART B ADDENDUM #1

PID Screening Data
(June 2009)

ARCADIS

FIGURE
2-3

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) LD:(B.ALTOM) PIC:(M.FENNER) PM:(C.BERTZ) TM:(S.BOSTIAN/E.MADDOX)
PROJECT: GP08HAFS:H09B:EHCAP PATH: G:\GIS\GP08HAFS\H09\2009 CAP PTB ADD1\F2-3 H09_CAPADD1_200906-PID SOIL.mxd SAVED: 4SEP2009



Location	SB-51 (2-4')
Sample Date	6/4/2009
Benzene	ND
Toluene	ND
Ethylbenzene	11
Xylenes (total)	91

Location	SB-52 (4-6')
Sample Date	6/4/2009
Benzene	**91 J**
Toluene	51 J
Ethylbenzene	350
Xylenes (total)	1,800

Location	SB-53 (2-4')
Sample Date	6/4/2009
Benzene	**4,000 J**
Toluene	**5,600 J**
Ethylbenzene	**32,000 J**
Xylenes (total)	**180,000 J**

Location	SB-54 (2-4')
Sample Date	6/4/2009
Benzene	**65 J**
Toluene	ND
Ethylbenzene	**2,900**
Xylenes (total)	980

Location	SB-01 (6')
Sample Date	6/2/2009
No Detects	

Location	SB-03 (3')
Sample Date	6/2/2009
No Detects	

Location	SB-04 (3')
Sample Date	6/2/2009
Benzene	ND
Toluene	ND
Ethylbenzene	ND
Xylenes (total)	3,400

Location	SB-07 (2')
Sample Date	6/2/2009
Benzene	ND
Toluene	ND
Ethylbenzene	**2,200 J**
Xylenes (total)	18,000

Location	SB-08 (2-3')
Sample Date	6/2/2009
No Detects	

Location	SB-10 (4-5')
Sample Date	6/2/2009
Benzene	ND
Toluene	ND
Ethylbenzene	**8,500**
Xylenes (total)	**21,000**

Location	SB-12 (4-6')
Sample Date	6/2/2009
Benzene	ND
Toluene	ND
Ethylbenzene	**62,000 J**
Xylenes (total)	**66,000 J**

Location	SB-15 (2-4')
Sample Date	6/2/2009
Benzene	ND
Toluene	ND
Ethylbenzene	**12,000**
Xylenes (total)	13,000

Location	SB-17 (2-4')
Sample Date	6/2/2009
Benzene	**2,600**
Toluene	**30,000**
Ethylbenzene	**15,000**
Xylenes (total)	**67,000**

Location	SB-19 (4-6')
Sample Date	6/2/2009
Benzene	**1,800**
Toluene	**8,400**
Ethylbenzene	**7,000**
Xylenes (total)	**31,000**

Location	SB-21 (2-4')
Sample Date	6/3/2009
Benzene	**5,000**
Toluene	**2,600**
Ethylbenzene	**72,000**
Xylenes (total)	**260,000**

Location	SB-23 (2-4')
Sample Date	6/3/2009
Benzene	ND
Toluene	ND
Ethylbenzene	**550**
Xylenes (total)	4,800

Location	SB-25 (4-6')
Sample Date	6/3/2009
Benzene	**1,400**
Toluene	ND
Ethylbenzene	**30,000**
Xylenes (total)	9,300

Location	SB-26 (4-6')
Sample Date	6/3/2009
Benzene	**11,000 J**
Toluene	**6,000 J**
Ethylbenzene	**200,000 J**
Xylenes (total)	**510,000 J**

Location	SB-28 (2-3')
Sample Date	6/3/2009
No Detects	

Location	SB-29 (4-6')
Sample Date	6/3/2009
No Detects	

Location	SB-31 (2-4')
Sample Date	6/3/2009
No Detects	

Location	SB-32 (4-6')
Sample Date	6/3/2009
Benzene	28 J
Toluene	ND
Ethylbenzene	300 J
Xylenes (total)	850 J

Location	SB-33 (2-4')
Sample Date	6/3/2009
Benzene	ND
Toluene	ND
Ethylbenzene	**10,000**
Xylenes (total)	**25,000**

Location	SB-35 (4-6')
Sample Date	6/3/2009
Benzene	**94,000**
Toluene	ND
Ethylbenzene	**380,000**
Xylenes (total)	**790,000**

Location	SB-36 (2-4')
Sample Date	6/3/2009
Benzene	**6,600**
Toluene	ND
Ethylbenzene	**15,000**
Xylenes (total)	**28,000**

Location	SB-38 (4-6')
Sample Date	6/3/2009
Benzene	**1,200 J**
Toluene	ND
Ethylbenzene	**12,000 J**
Xylenes (total)	10,000 J

Location	SB-40 (4-6')
Sample Date	6/3/2009
No Detects	

Location	SB-41 (4-6')
Sample Date	6/3/2009
No Detects	

Location	SB-42 (2-4')
Sample Date	6/3/2009
Benzene	ND
Toluene	ND
Ethylbenzene	120
Xylenes (total)	960

Location	SB-43 (4-6')
Sample Date	6/4/2009
Benzene	ND
Toluene	ND
Ethylbenzene	ND
Xylenes (total)	3.3 J

Location	SB-44 (4-6')
Sample Date	6/4/2009
Benzene	**330 J**
Toluene	ND
Ethylbenzene	**9,400 J**
Xylenes (total)	**38,000 J**

Location	SB-45 (2-4')
Sample Date	6/4/2009
Benzene	ND
Toluene	ND
Ethylbenzene	**1,300**
Xylenes (total)	6,400

Location	SB-48 (2-4')
Sample Date	6/4/2009
Benzene	**1,700 J**
Toluene	**23,000 J**
Ethylbenzene	**12,000 J**
Xylenes (total)	**53,000 J**

Location	SB-49 (2-4')
Sample Date	6/4/2009
Benzene	**7400 J**
Toluene	**6600 J**
Ethylbenzene	**50000 J**
Xylenes (total)	**180000 J**

Location	SB-50 (2-4')
Sample Date	6/4/2009
Benzene	**1,200**
Toluene	**520 J**
Ethylbenzene	**6,100**
Xylenes (total)	**27,000**

Location	SB-55 (2-4')
Sample Date	6/5/2009
Benzene	**32**
Toluene	ND
Ethylbenzene	120
Xylenes (total)	240

LEGEND

- Sump
- Free-Product Monitoring Point
- DPT Groundwater Sample
- DPT Soil Boring
- All concentrations <STL.
- ND Not Detected
- J Estimated Value

NOTES:

1) All sample locations (except sumps) were surveyed by Chatham Surveying Services, Inc. (June 5, 2009).
2) All depths reported in feet below ground surface (ft, bgs).
3) All concentrations reported in micrograms per kilogram (µg/kg).
4) Shaded values exceed Soil Threshold Levels (STL).
5) All DPT soil boring locations are shown. Some borings were not sampled for laboratory analysis.

Constituent	STL
Benzene	5
Toluene	400
Ethylbenzene	370
Xylenes (total)	20,000

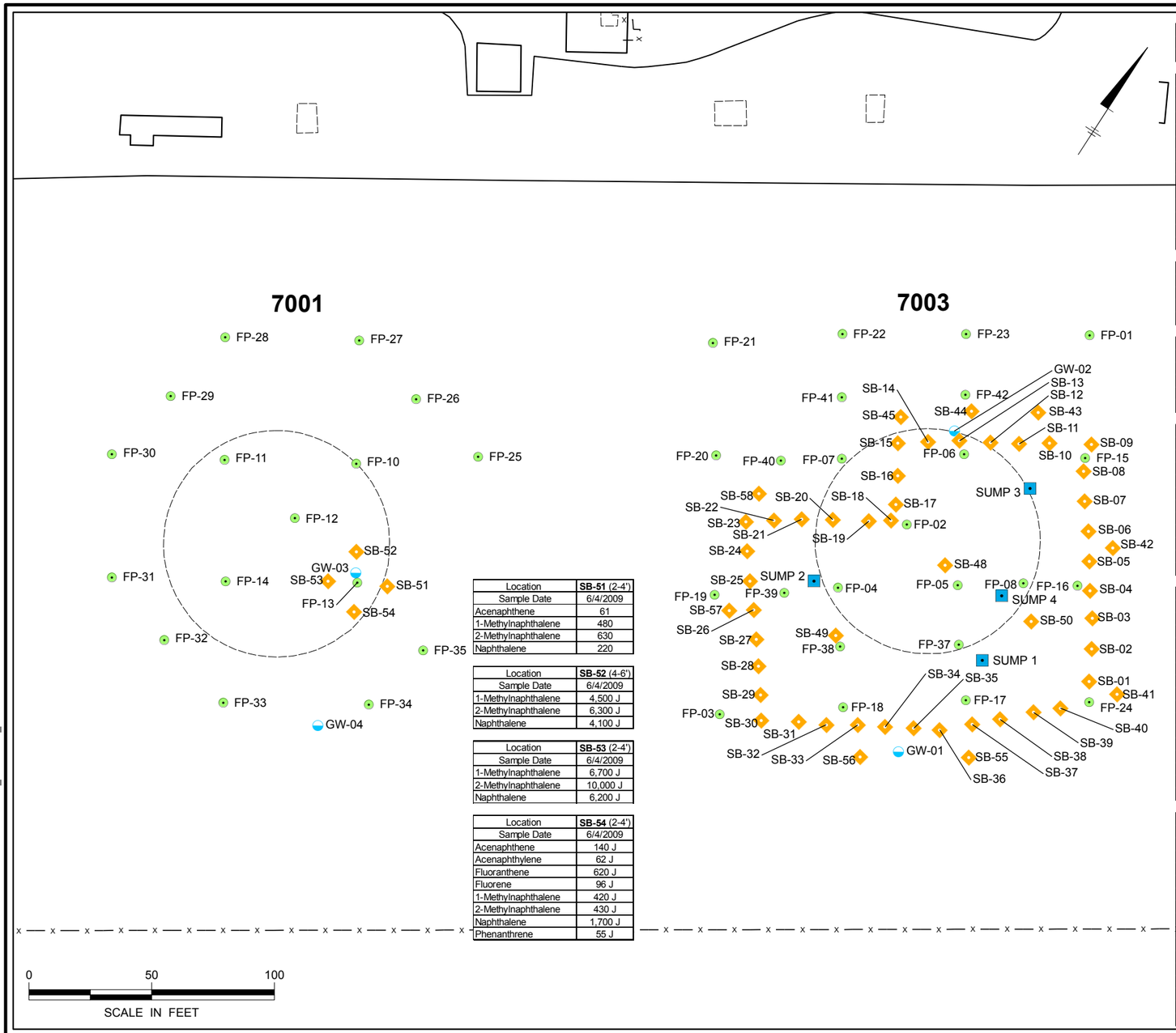
HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
REVISED CORRECTIVE ACTION PLAN – PART B ADDENDUM #1

BTEX in Soil
(June 2009)

ARCADIS

FIGURE
2-4

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) LD:(B.ALTOM) PIC:(M.FENNER) PM:(C.BERTZ) TM:(S.BOSTIAN/E.MADDOX)
PROJECT: GP08HAFS.H09B.EHCAP PATH: G:\GIS\GP08HAFS\H09\2009 CAP PTB ADD1\F2-4 H09_CAPADD1_200906-btex SOIL.mxd SAVED: 4SEP2009



Location	SB-51 (2-4')
Sample Date	6/4/2009
Acenaphthene	61
1-Methylnaphthalene	480
2-Methylnaphthalene	630
Naphthalene	220

Location	SB-52 (4-6')
Sample Date	6/4/2009
1-Methylnaphthalene	4,500 J
2-Methylnaphthalene	6,300 J
Naphthalene	4,100 J

Location	SB-53 (2-4')
Sample Date	6/4/2009
1-Methylnaphthalene	6,700 J
2-Methylnaphthalene	10,000 J
Naphthalene	6,200 J

Location	SB-54 (2-4')
Sample Date	6/4/2009
Acenaphthene	140 J
Acenaphthylene	62 J
Fluoranthene	620 J
Fluorene	96 J
1-Methylnaphthalene	420 J
2-Methylnaphthalene	430 J
Naphthalene	1,700 J
Phenanthrene	55 J

Location	SB-01 (6')
Sample Date	6/2/2009
No Detects	

Location	SB-03 (3')
Sample Date	6/2/2009
Anthracene	13 J
Benzo(a)anthracene	100
Benzo(a)pyrene	96
Benzo(b)fluoranthene	130
Benzo(g,h,i)perylene	54 J
Benzo(k)fluoranthene	50 J
Chrysene	88
Dibenzo(a,h)anthracene	25 J
Fluoranthene	120
Indeno(1,2,3-c,d)pyrene	53 J
Phenanthrene	63 J
Pyrene	140

Location	SB-04 (3')
Sample Date	6/2/2009
1-Methylnaphthalene	1,100
2-Methylnaphthalene	1,700
Naphthalene	960

Location	SB-07 (2')
Sample Date	6/2/2009
1-Methylnaphthalene	2,600
2-Methylnaphthalene	5,800
Naphthalene	1,600
Phenanthrene	18 J

Location	SB-08 (2-3')
Sample Date	6/2/2009
Anthracene	38 J
Benzo(a)anthracene	72 J
Benzo(a)pyrene	62 J
Benzo(b)fluoranthene	63 J
Benzo(k)fluoranthene	24 J
Chrysene	31 J
Fluoranthene	160
Fluorene	150
Phenanthrene	150
Pyrene	130

Location	SB-10 (4-5')
Sample Date	6/2/2009
Anthracene	68 J
Benzo(a)anthracene	110
Benzo(a)pyrene	130
Benzo(b)fluoranthene	110
Benzo(g,h,i)perylene	110
Benzo(k)fluoranthene	120
Chrysene	110
Fluorene	110
Fluoranthene	60 J
Indeno(1,2,3-c,d)pyrene	110
1-Methylnaphthalene	1,200
2-Methylnaphthalene	1,800
Naphthalene	680
Phenanthrene	81
Pyrene	110

Location	SB-12 (4-6')
Sample Date	6/2/2009
Anthracene	130
Benzo(a)anthracene	160
Benzo(a)pyrene	140
Benzo(b)fluoranthene	160
Benzo(g,h,i)perylene	54 J
Benzo(k)fluoranthene	70 J
Chrysene	50 J
Fluoranthene	500
Fluorene	260
Indeno(1,2,3-c,d)pyrene	50 J
1-Methylnaphthalene	9,200
2-Methylnaphthalene	12,000
Naphthalene	6,100
Phenanthrene	480
Pyrene	400

Location	SB-15 (2-4')
Sample Date	6/2/2009
Anthracene	36 J
Benzo(a)pyrene	47 J
Benzo(b)fluoranthene	57 J
Benzo(g,h,i)perylene	24 J
Benzo(k)fluoranthene	20 J
Fluoranthene	140
Fluorene	130
1-Methylnaphthalene	8,500
2-Methylnaphthalene	11,000
Naphthalene	3,600
Phenanthrene	120
Pyrene	110
TPH-DRO	2,500,000 J
TPH-GRO	1,500,000

Location	SB-17 (2-4')
Sample Date	6/2/2009
Fluorene	85
1-Methylnaphthalene	3,600
2-Methylnaphthalene	6,200
Naphthalene	2,200

Location	SB-19 (4-6')
Sample Date	6/2/2009
Acenaphthene	55 J
Acenaphthylene	27 J
Fluorene	56 J
1-Methylnaphthalene	1,700
2-Methylnaphthalene	2,300
Naphthalene	1,000

Location	SB-21 (2-4')
Sample Date	6/3/2009
Acenaphthene	120 J
1-Methylnaphthalene	ND
2-Methylnaphthalene	2,900 J
Naphthalene	1,600 J

Location	SB-23 (2-4')
Sample Date	6/3/2009
Benzo(a)pyrene	4.1
Benzo(b)fluoranthene	4.4
Benzo(g,h,i)perylene	10
Indeno(1,2,3-c,d)pyrene	8.5
1-Methylnaphthalene	26
2-Methylnaphthalene	30
Naphthalene	78

Location	SB-25 (4-6')
Sample Date	6/3/2009
Acenaphthene	69 J
Acenaphthylene	51 J
Benzo(g,h,i)perylene	66 J
Dibenzo(a,h)anthracene	50 J
Indeno(1,2,3-c,d)pyrene	53 J
1-Methylnaphthalene	980 J
2-Methylnaphthalene	1,400 J
Naphthalene	600 J

Location	SB-26 (4-6')
Sample Date	6/3/2009
Fluorene	44 J
1-Methylnaphthalene	1,600 J
2-Methylnaphthalene	2,200 J
Naphthalene	1,400 J
TPH-DRO	220,000 J
TPH-GRO	1,200,000

Location	SB-28 (2-3')
Sample Date	6/3/2009
Benzo(a)anthracene	4.2
Benzo(a)pyrene	5.8
Benzo(b)fluoranthene	7.6
Benzo(k)fluoranthene	3.2 J
Chrysene	4.7
Fluoranthene	6.7
Fluorene	0.85 J
1-Methylnaphthalene	14
2-Methylnaphthalene	19
Naphthalene	9.1
Pyrene	16
TOC	4,800

Location	SB-29 (4-6')
Sample Date	6/3/2009
TOC	550

Location	SB-31 (2-4')
Sample Date	6/3/2009
No Detects	

Location	SB-32 (4-6')
Sample Date	6/3/2009
Acenaphthene	8.6
Acenaphthylene	6.8
Fluorene	5.7
1-Methylnaphthalene	150
2-Methylnaphthalene	180
Naphthalene	110
Phenanthrene	1.4 J

Location	SB-33 (2-4')
Sample Date	6/3/2009
1-Methylnaphthalene	120
2-Methylnaphthalene	170
Naphthalene	84

Location	SB-35 (4-6')
Sample Date	6/3/2009
Acenaphthene	190 J
Acenaphthylene	140 J
Benzo(g,h,i)perylene	140 J
Indeno(1,2,3-c,d)pyrene	110 J
1-Methylnaphthalene	3,000 J
2-Methylnaphthalene	4,300 J
Naphthalene	2,200 J

Location	SB-36 (2-4')
Sample Date	6/3/2009
Acenaphthene	26 J
Acenaphthylene	22 J
Benzo(a)anthracene	7.2 J
Benzo(a)pyrene	11J
Benzo(b)fluoranthene	13 J
Benzo(g,h,i)perylene	7.4
Benzo(k)fluoranthene	6.4 J
Chrysene	7.8 J
Fluoranthene	9.4
Fluorene	18 J
Indeno(1,2,3-c,d)pyrene	6.6
1-Methylnaphthalene	760
2-Methylnaphthalene	1,200 J
Naphthalene	680 J
Phenanthrene	7.9
Pyrene	16 J
TPH-DRO	220,000 J
TPH-GRO	200,000

Location	SB-38 (4-6')
Sample Date	6/3/2009
1-Methylnaphthalene	4,300 J
2-Methylnaphthalene	6,600 J
Naphthalene	4,300 J

Location	SB-40 (4-6')
Sample Date	6/3/2009
1-Methylnaphthalene	4.3
2-Methylnaphthalene	6.6
Naphthalene	5.8
TOC	5,400

Location	SB-41 (4-6')
Sample Date	6/3/2009
No Detects	

Location	SB-42 (2-4')
Sample Date	6/3/2009
Benzo(g,h,i)perylene	1.7 J
1-Methylnaphthalene	120
2-Methylnaphthalene	170
Naphthalene	120

Location	SB-43 (4-6')
Sample Date	6/4/2009
No Detects	

Location	SB-44 (4-6')
Sample Date	6/4/2009
Acenaphthene	62
Acenaphthylene	50
Anthracene	20
Benzo(a)anthracene	21
Benzo(a)pyrene	16
Benzo(b)fluoranthene	20
Benzo(g,h,i)perylene	6.3
Benzo(k)fluoranthene	9.2
Chrysene	18
Fluoranthene	62
Fluorene	40
Indeno(1,2,3-c,d)pyrene	5.8
1-Methylnaphthalene	1,400 J
2-Methylnaphthalene	2,000 J
Naphthalene	1,000 J
Phenanthrene	65
Pyrene	96

Location	SB-45 (2-4')
Sample Date	6/4/2009
1-Methylnaphthalene	2,000 J
2-Methylnaphthalene	2,700 J
Naphthalene	1,600 J

Location	SB-48 (2-4')
Sample Date	6/4/2009
Acenaphthene	930 J
1-Methylnaphthalene	27,000 J
2-Methylnaphthalene	36,000 J
Naphthalene	23,000 J

Location	SB-49 (2-4')
Sample Date	6/4/2009
1-Methylnaphthalene	6,300 J
2-Methylnaphthalene	8,900 J
Naphthalene	4,500 J

Location	SB-50 (2-4')
Sample Date	6/4/2009
Acenaphthene	55
Acenaphthylene	49
Fluorene	46
1-Methylnaphthalene	910
2-Methylnaphthalene	1,200
Naphthalene	370

Location	SB-55 (2-4')
Sample Date	6/5/2009
1-Methylnaphthalene	140
2-Methylnaphthalene	220
Naphthalene	220

LEGEND

- Sump
- Free-Product Monitoring Point
- DPT Groundwater Sample
- DPT Soil Boring
- ND Not Detected
- J Estimated Value

NOTES:

1) All sampling locations (except sumps) were surveyed by Chatham Surveying Services, Inc. (June 5, 2009).
2) All depths reported in feet below ground surface (ft, bgs).
3) All concentrations reported in micrograms per kilogram (µg/kg).
4) All DPT soil boring locations are shown. Some borings were not sampled for laboratory analysis.

TPH Total Petroleum Hydrocarbons
DRO Diesel Range Organics
GRO Gasoline Range Organics
TOC Total Organic Carbon

Constituent	STL
Acenaphthene	---
Acenaphthylene	---
Anthracene	---
Benzo(a)anthracene	660
Benzo(a)pyrene	660
Benzo(b)fluoranthene	660
Benzo(g,h,i)perylene	---
Benzo(k)fluoranthene	660
Chrysene	660
Fluoranthene	---

Constituent	STL
Fluorene	---
Indeno(1,2,3-c,d)pyrene	660
1-Methylnaphthalene	---
2-Methylnaphthalene	---
Naphthalene	---
Phenanthrene	---
Pyrene	---
TPH-DRO	---
TPH-GRO	---
TOC	---

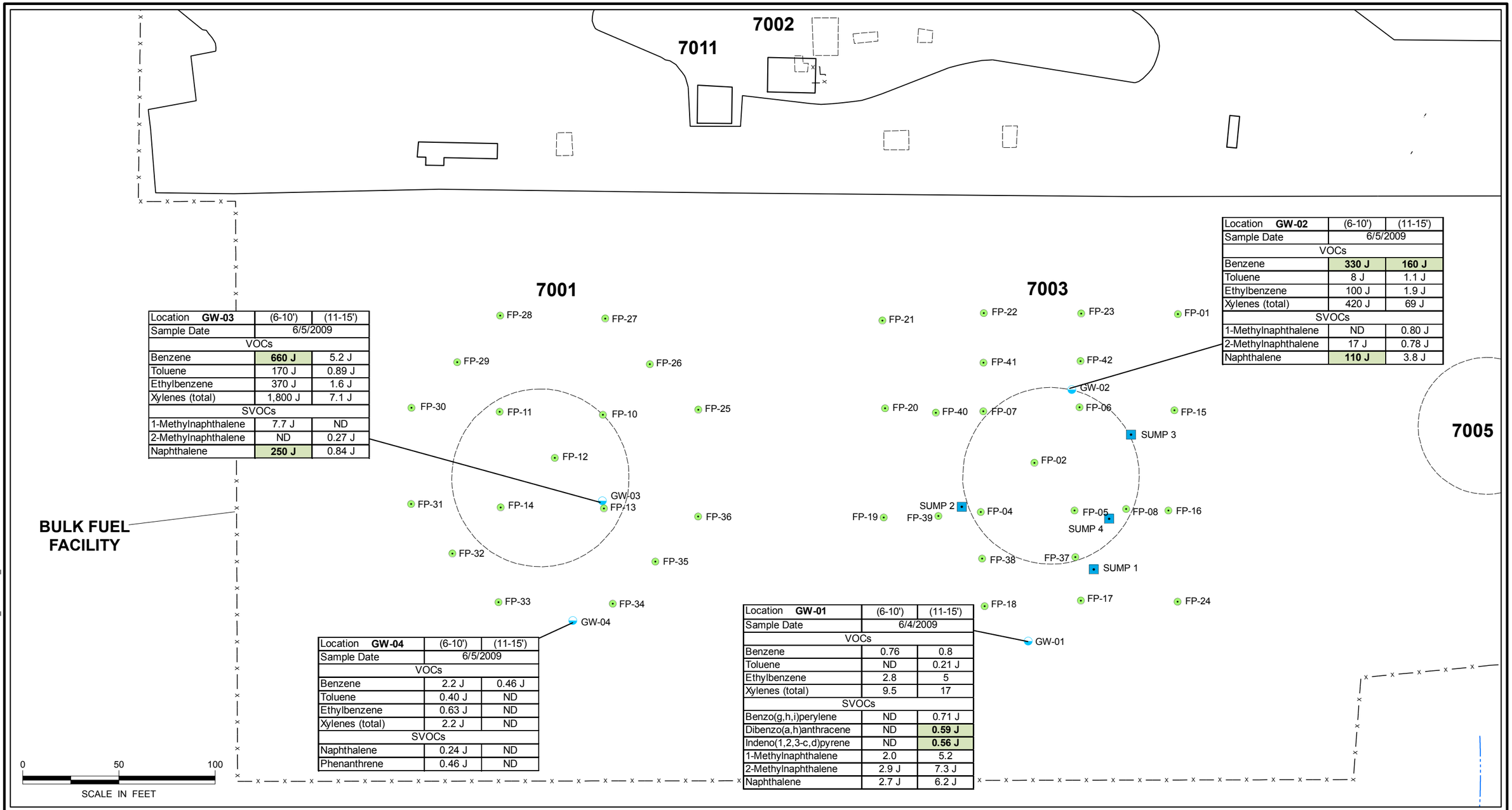
HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
REVISED CORRECTIVE ACTION PLAN – PART B ADDENDUM #1

PAH in Soil
(June 2009)

ARCADIS

FIGURE
2-5

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) LD:(B.ALTOM) PIC:(M.FENNER) PM:(C.BERTZ) TM:(S.BOSTIAN/E.MADDOX)
PROJECT: GP08HAFS.H09B.EHCAP PATH: G:\GIS\GP08HAFS\H09\2009 CAP PTB ADD1\F2-5 H09_CAPADD1_200906-PAH SOIL.mxd SAVED: 4SEP2009



Location GW-03	(6-10')	(11-15')
Sample Date	6/5/2009	
VOCs		
Benzene	**660 J**	5.2 J
Toluene	170 J	0.89 J
Ethylbenzene	370 J	1.6 J
Xylenes (total)	1,800 J	7.1 J
SVOCs		
1-Methylnaphthalene	7.7 J	ND
2-Methylnaphthalene	ND	0.27 J
Naphthalene	**250 J**	0.84 J

Location GW-02	(6-10')	(11-15')
Sample Date	6/5/2009	
VOCs		
Benzene	**330 J**	**160 J**
Toluene	8 J	1.1 J
Ethylbenzene	100 J	1.9 J
Xylenes (total)	420 J	69 J
SVOCs		
1-Methylnaphthalene	ND	0.80 J
2-Methylnaphthalene	17 J	0.78 J
Naphthalene	**110 J**	3.8 J

Location GW-04	(6-10')	(11-15')
Sample Date	6/5/2009	
VOCs		
Benzene	2.2 J	0.46 J
Toluene	0.40 J	ND
Ethylbenzene	0.63 J	ND
Xylenes (total)	2.2 J	ND
SVOCs		
Naphthalene	0.24 J	ND
Phenanthrene	0.46 J	ND

Location GW-01	(6-10')	(11-15')
Sample Date	6/4/2009	
VOCs		
Benzene	0.76	0.8
Toluene	ND	0.21 J
Ethylbenzene	2.8	5
Xylenes (total)	9.5	17
SVOCs		
Benzo(g,h,i)perylene	ND	0.71 J
Dibenzo(a,h)anthracene	ND	**0.59 J**
Indeno(1,2,3-c,d)pyrene	ND	**0.56 J**
1-Methylnaphthalene	2.0	5.2
2-Methylnaphthalene	2.9 J	7.3 J
Naphthalene	2.7 J	6.2 J

LEGEND

- Sump
- Free-Product Monitoring Point
- DPT Groundwater Sample
- ND Not Detected
- J Estimated Value

NOTES:

1) All sample locations (except sumps) were surveyed by Chatham Surveying Services, Inc. (June 5, 2009).
2) All depths reported in feet below ground surface (ft, bgs).
3) All concentrations reported in micrograms per liter (µg/L).
4) Shaded values exceed the In-Stream Water Quality Standard (IWQS).

Constituent	IWQS
Benzene	51
Toluene	5,980
Ethylbenzene	2,100
Xylenes (total)	10,000*
Benzo(g,h,i)perylene	---
Dibenzo(a,h)anthracene	0.018
Indeno(1,2,3-c,d)pyrene	0.018
1-Methylnaphthalene	---
2-Methylnaphthalene	---
Naphthalene	6.5**
Phenanthrene	---

--- No IWQS determined.
* No IWQS, EPA Region III Risk-Based Criteria (RBC) used.
** No IWQS, Maximum Contaminant Level (MCL) used.

HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
REVISED CORRECTIVE ACTION PLAN – PART B ADDENDUM #1

BTEX and PAHs in Groundwater (June 2009)

ARCADIS

FIGURE
2-6

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) LD:(B.ALTOM) PIC:(M.FENNER) PM:(C.BERTZ) TM:(S.BOSTIAN/E.MADDOX)
PROJECT: GP08HAFS.H09B.EHCAP PATH: G:\GIS\GP08HAFSH09\2009 CAP PTB ADD1\F2-6 H09_CAPADD1_200906-BTEX-PAH GW.mxd SAVED: 4SEP2009

AERIAL REFERENCE: SAGIS (FLOWN IN 2008).

LEGEND

- Stormwater Drain System System
- Canal/Surface Water
- Drainage Ditch
- Flow Direction

HUNTER ARMY AIRFIELD, GEORGIA

FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
CORRECTIVE ACTION PLAN – PART B ADDENDUM #1

Surface Water Features

ARCADIS

FIGURE
2-7

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) LD:(B.ALTOM) PIC:(M.FENNER) PM:(C.BERTZ) TM:(S.BOSTIAN/E.MADDOX)
PROJECT: GP08HAFS.H09B.EHCAP PATH: G:\GIS\GP08HAFS\H09\2009 CAP PTB ADD1\F2-7 H09_CAPADD1_SW.mxd SAVED: 4SEP2009

AERIAL REFERENCE: SAGIS (FLOWN IN 2008).

LEGEND

- Estimated Extent of Excavation Area
- Proposed Monitor Well

HUNTER ARMY AIRFIELD, GEORGIA

FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
CORRECTIVE ACTION PLAN – PART B ADDENDUM #1

Estimated Extent of Excavations and Proposed Monitor-Well Locations

ARCADIS

FIGURE
3-1

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) LD:(B.ALTOM) PIC:(M.FENNER) PM:(C.BERTZ) TM:(S.BOSTIAN/E.MADDOX)
PROJECT: GP08HAFS.H09B.EHCAP PATH: G:\GIS\GP08HAFS\H09\2009 CAP PTB ADD1\F3-1 H09_CAPADD1_EXC_PMW.mxd SAVED: 4SEP2009

ARCADIS

Appendix B

Tables

Table 2-1a
Liquid Levels in Free Product Monitoring Points - December 2008
Corrective Action Plan-Part B Addendum #1
HAA-09 Bulk Fuel Facility
Hunter Army Airfield, Georgia

Well Number	Date Measured	Top of Casing Elevation (ft AMSL)	Depth of Screened Interval (ft BGS)	Depth to Water (ft BTOC)	Depth to Free Product (ft BTOC)	Product Thickness (ft)	Corrected Groundwater Elevation (ft AMSL)
Monitoring Points around 7003							
FP-01	12/11/2008	[b]	1.3 – 4.5	2.50	--	0	[b]
FP-02	12/11/2008	[b]	1.3 – 4.5	1.58	--	0	[b]
FP-03	12/11/2008	[b]	1.3 – 4.5	1.95	--	0	[b]
FP-04**	12/11/2008	[b]	1.3 – 4.5	6.00	1.55	4.45	[b]
FP-05	12/11/2008	[b]	1.3 – 4.5	1.95	1.1	0.85	[b]
FP-06	12/11/2008	[b]	1.3 – 4.5	2.25	1.49	0.76	[b]
FP-07	12/11/2008	[b]	1.3 – 4.5	1.77	--	0	[b]
FP-08	12/11/2008	[b]	1.3 – 4.5	1.54	1.45	0.09	[b]
FP-09	12/11/2008	[b]	1.3 – 4.5	NM	NM	0	[b]
FP-15	12/11/2008	[b]	1.3 – 4.5	1.40	--	0	[b]
FP-16	12/11/2008	[b]	1.3 – 4.5	2.76	--	0	[b]
FP-17	12/11/2008	[b]	1.3 – 4.5	NM	NM	0	[b]
FP-18	12/11/2008	[b]	1.3 – 4.5	2.27	--	0	[b]
FP-19	12/11/2008	[b]	1.3 – 4.5	1.35	--	0	[b]
FP-20	12/11/2008	[b]	1.3 – 4.5	1.34	--	0	[b]
FP-21	12/11/2008	[b]	1.3 – 4.5	1.49	--	0	[b]
FP-22	12/11/2008	[b]	1.3 – 4.5	1.34	--	0	[b]
FP-23	12/11/2008	[b]	1.3 – 4.5	2.44	--	0	[b]
FP-24	12/11/2008	[b]	1.3 – 4.5	2.49	--	0	[b]
FP-37	12/11/2008	[b]	1.3 – 4.5	2.71	0.8	1.91	[b]
FP-38	12/11/2008	[b]	1.3 – 4.5	1.50	1.33	0.17	[b]
FP-39	12/11/2008	[b]	1.3 – 4.5	1.76	--	0	[b]
FP-40	12/11/2008	[b]	1.3 – 4.5	2.02	sheen	0	[b]
FP-41	12/11/2008	[b]	1.3 – 4.5	1.60	--	0	[b]
FP-42	12/11/2008	[b]	1.3 – 4.5	2.07	--	0	[b]
Sump-1	12/11/2008	[b]	1.3 – 4.5	2.49	2.28	0.21	[b]
Sump-2	12/11/2008	[b]	1.3 – 4.5	3.03	sheen	0	[b]
Sump-3	12/11/2008	[b]	1.3 – 4.5	2.54	sheen	0	[b]
Sump-4	12/11/2008	[b]	1.3 – 4.5	2.55	2.43	0.12	[b]
Monitoring Points around 7001							
FP-10	12/16/2008	[b]	1.3 – 4.5	1.3	--	0	[b]
FP-11	12/16/2008	[b]	1.3 – 4.5	1.09	--	0	[b]
FP-12	12/16/2008	[b]	1.3 – 4.5	0.95	--	0	[b]
FP-13	12/16/2008	[b]	1.3 – 4.5	1.23	1.13	0.10	[b]
FP-14	12/16/2008	[b]	1.3 – 4.5	0.91	--	0	[b]
FP-25	12/16/2008	[b]	1.3 – 4.5	1.95	--	0	[b]
FP-26	12/16/2008	[b]	1.3 – 4.5	1.00	--	0	[b]
FP-27	12/16/2008	[b]	1.3 – 4.5	1.64	--	0	[b]
FP-28	12/16/2008	[b]	1.3 – 4.5	0.9	--	0	[b]
FP-29	12/16/2008	[b]	1.3 – 4.5	0.80	--	0	[b]
FP-30	12/16/2008	[b]	1.3 – 4.5	1.53	--	0	[b]
FP-31	12/16/2008	[b]	1.3 – 4.5	1.63	--	0	[b]
FP-32	12/16/2008	[b]	1.3 – 4.5	1.99	--	0	[b]
FP-33	12/16/2008	[b]	1.3 – 4.5	NM	NM	0	[b]
FP-34	12/16/2008	[b]	1.3 – 4.5	2.6	--	0	[b]
FP-35	12/16/2008	[b]	1.3 – 4.5	2,34	--	0	[b]
FP-36	12/16/2008	[b]	1.3 – 4.5	1.89	--	0	[b]

NOTES:
[b] Elevations were not surveyed.
** Measurement listed was verified as accurate but appears anomalous. Liquid levels will be confirmed in next gauging activity

AMSL above mean sea level
BGS Below ground surface.
BTOC Below Top of Casing
ft feet
NM Not measured because well was in a low lying area covered in water

Table 2-1b
Liquid Levels in Free Product Monitoring Points - April 2009
Corrective Action Plan - Part B Addendum #1
HAA-9 Bulk Fuel Facility
Hunter Army Airfield, Georgia

Well Number	Date Measured	Top of Casing Elevation (ft AMSL)	Depth of Screened Interval (ft BGS)	Depth to Water (ft BTOC)	Depth to Free Product (ft BTOC)	Product Thickness (ft)	Corrected Groundwater Elevations (ft AMSL)
Monitoring Points around 7003							
FP-01	4/1/2009	[b]	1.3 – 4.5	1.70	--	0	[b]
FP-02	4/1/2009	[b]	1.3 – 4.5	1.70	--	0	[b]
FP-03	4/1/2009	[b]	1.3 – 4.5	1.39	--	0	[b]
FP-04	4/1/2009	[b]	1.3 – 4.5	1.74	1.57	0.17	[b]
FP-05	4/1/2009	[b]	1.3 – 4.5	NM	NM	0	[b]
FP-06	4/1/2009	[b]	1.3 – 4.5	1.79	1.69	0.10	[b]
FP-07	4/1/2009	[b]	1.3 – 4.5	1.91	--	0	[b]
FP-08	4/1/2009	[b]	1.3 – 4.5	1.52	1.33	0.19	[b]
FP-09	4/1/2009	[b]	1.3 – 4.5	NM	NM	0	[b]
FP-15	4/1/2009	[b]	1.3 – 4.5	2.01	--	0	[b]
FP-16	4/1/2009	[b]	1.3 – 4.5	1.22	1.2	0.02	[b]
FP-17	4/1/2009	[b]	1.3 – 4.5	1.14	--	0	[b]
FP-18	4/1/2009	[b]	1.3 – 4.5	1.29	--	0	[b]
FP-19	4/1/2009	[b]	1.3 – 4.5	2.06	--	0	[b]
FP-20	4/1/2009	[b]	1.3 – 4.5	2.06	--	0	[b]
FP-21	4/1/2009	[b]	1.3 – 4.5	2.18	--	0	[b]
FP-22	4/1/2009	[b]	1.3 – 4.5	2.34	--	0	[b]
FP-23	4/1/2009	[b]	1.3 – 4.5	2.20	--	0	[b]
FP-24	4/1/2009	[b]	1.3 – 4.5	1.25	--	0	[b]
FP-37	4/1/2009	[b]	1.3 – 4.5	NM	NM	0	[b]
FP-38	4/1/2009	[b]	1.3 – 4.5	1.74	1.3	0.44	[b]
FP-39	4/1/2009	[b]	1.3 – 4.5	1.94	--	0	[b]
FP-40	4/1/2009	[b]	1.3 – 4.5	1.84	NM	0	[b]
FP-41	4/1/2009	[b]	1.3 – 4.5	1.29	--	0	[b]
FP-42	4/1/2009	[b]	1.3 – 4.5	1.70	--	0	[b]
Sump-1	4/1/2009	[b]	1.3 – 4.5	2.49	2.27	0.22	[b]
Sump-2	4/1/2009	[b]	1.3 – 4.5	3.25	--	0	[b]
Sump-3	4/1/2009	[b]	1.3 – 4.5	2.49	--	0	[b]
Sump-4	4/1/2009	[b]	1.3 – 4.5	2.54	2.45	0.09	[b]
Monitoring Points around 7001							
FP-10	4/1/2009	[b]	1.3 – 4.5	2.19	--	0	[b]
FP-11	4/1/2009	[b]	1.3 – 4.5	2.09	--	0	[b]
FP-12	4/1/2009	[b]	1.3 – 4.5	1.75	--	0	[b]
FP-13	4/1/2009	[b]	1.3 – 4.5	2.08	--	0	[b]
FP-14	4/1/2009	[b]	1.3 – 4.5	1.93	--	0	[b]
FP-25	4/1/2009	[b]	1.3 – 4.5	1.96	--	0	[b]
FP-26	4/1/2009	[b]	1.3 – 4.5	1.97	--	0	[b]
FP-27	4/1/2009	[b]	1.3 – 4.5	1.82	--	0	[b]
FP-28	4/1/2009	[b]	1.3 – 4.5	1.95	--	0	[b]
FP-29	4/1/2009	[b]	1.3 – 4.5	1.93	--	0	[b]
FP-30	4/1/2009	[b]	1.3 – 4.5	2.20	--	0	[b]
FP-31	4/1/2009	[b]	1.3 – 4.5	2.23	--	0	[b]
FP-32	4/1/2009	[b]	1.3 – 4.5	2.15	--	0	[b]
FP-33	4/1/2009	[b]	1.3 – 4.5	2.30	--	0	[b]
FP-34	4/1/2009	[b]	1.3 – 4.5	2.15	--	0	[b]
FP-35	4/1/2009	[b]	1.3 – 4.5	1.60	--	0	[b]
FP-36	4/1/2009	[b]	1.3 – 4.5	1.85	--	0	[b]

NOTES:
[b] Elevations were not surveyed.

AMSL	above mean sea level
BGS	Below ground surface.
BTOC	Below Top of Casing
ft	feet
NM	Not measured because well was in a low lying area covered in water

Table 2-1c
Liquid Levels in Free Product Monitoring Points - June 2009
Corrective Action Plan - Part B Addendum #1
HAA-9 Bulk Fuel Facility
Hunter Army Airfield, Georgia

Well Number	Date Measured	Top of Casing Elevation (ft AMSL)	Depth of Screened Interval (ft BGS)	Depth to Water (ft BTOC)	Depth to Free Product (ft BTOC)	Product Thickness (ft)	Corrected Groundwater Elevations (ft AMSL)
Monitoring Points around 7003							
FP-01	6/1/2009	[b]	1.3 – 4.5	1.63	--	0	[b]
FP-02	6/1/2009	[b]	1.3 – 4.5	NM	NM	0	[b]
FP-03	6/1/2009	[b]	1.3 – 4.5	1.47	--	0	[b]
FP-04	6/1/2009	[b]	1.3 – 4.5	1.58	1.51	0.07	[b]
FP-05	6/1/2009	[b]	1.3 – 4.5	NM	NM	0	[b]
FP-06	6/1/2009	[b]	1.3 – 4.5	1.52	1.26	0.26	[b]
FP-07	6/1/2009	[b]	1.3 – 4.5	1.50	--	0	[b]
FP-08	6/1/2009	[b]	1.3 – 4.5	1.39	0.99	0.40	[b]
FP-09	6/1/2009	[b]	1.3 – 4.5	NM	NM	0	[b]
FP-15	6/1/2009	[b]	1.3 – 4.5	1.23	--	0	[b]
FP-16	6/1/2009	[b]	1.3 – 4.5	2.10	0.75	1.35	[b]
FP-17	6/1/2009	[b]	1.3 – 4.5	0.76	--	0	[b]
FP-18	6/1/2009	[b]	1.3 – 4.5	0.49	--	0	[b]
FP-19	6/1/2009	[b]	1.3 – 4.5	1.51	--	0	[b]
FP-20	6/1/2009	[b]	1.3 – 4.5	1.52	--	0	[b]
FP-21	6/1/2009	[b]	1.3 – 4.5	1.81	--	0	[b]
FP-22	6/1/2009	[b]	1.3 – 4.5	1.91	--	0	[b]
FP-23	6/1/2009	[b]	1.3 – 4.5	1.76	--	0	[b]
FP-24	6/1/2009	[b]	1.3 – 4.5	1.02	--	0	[b]
FP-37	6/1/2009	[b]	1.3 – 4.5	NM	NM	0	[b]
FP-38	6/1/2009	[b]	1.3 – 4.5	1.64	0.56	1.08	[b]
FP-39	6/1/2009	[b]	1.3 – 4.5	1.52	--	0	[b]
FP-40	6/1/2009	[b]	1.3 – 4.5	1.68	NM	0	[b]
FP-41	6/1/2009	[b]	1.3 – 4.5	1.87	--	0	[b]
FP-42	6/1/2009	[b]	1.3 – 4.5	0.98	--	0	[b]
Sump-1	6/1/2009	[b]	1.3 – 4.5	1.91	1.73	0.18	[b]
Sump-2	6/1/2009	[b]	1.3 – 4.5	2.91	--	0	[b]
Sump-3	6/1/2009	[b]	1.3 – 4.5	1.95	--	0	[b]
Sump-4	6/1/2009	[b]	1.3 – 4.5	2.10	2.03	0.07	[b]
Monitoring Points around 7001							
FP-10	6/1/2009	[b]	1.3 – 4.5	1.81	--	0	[b]
FP-11	6/1/2009	[b]	1.3 – 4.5	1.72	--	0	[b]
FP-12	6/1/2009	[b]	1.3 – 4.5	1.33	--	0	[b]
FP-13	6/1/2009	[b]	1.3 – 4.5	1.71	--	0	[b]
FP-14	6/1/2009	[b]	1.3 – 4.5	1.62	--	0	[b]
FP-25	6/1/2009	[b]	1.3 – 4.5	1.61	--	0	[b]
FP-26	6/1/2009	[b]	1.3 – 4.5	1.71	--	0	[b]
FP-27	6/1/2009	[b]	1.3 – 4.5	1.5	--	0	[b]
FP-28	6/1/2009	[b]	1.3 – 4.5	1.61	--	0	[b]
FP-29	6/1/2009	[b]	1.3 – 4.5	1.24	--	0	[b]
FP-30	6/1/2009	[b]	1.3 – 4.5	1.49	--	0	[b]
FP-31	6/1/2009	[b]	1.3 – 4.5	1.47	--	0	[b]
FP-32	6/1/2009	[b]	1.3 – 4.5	1.99	--	0	[b]
FP-33	6/1/2009	[b]	1.3 – 4.5	0.99	--	0	[b]
FP-34	6/1/2009	[b]	1.3 – 4.5	0.72	--	0	[b]
FP-35	6/1/2009	[b]	1.3 – 4.5	1.09	--	0	[b]
FP-36	6/1/2009	[b]	1.3 – 4.5	1.13	--	0	[b]

NOTES:
[b] Elevations were not surveyed.

AMSL	above mean sea level
BGS	Below ground surface.
BTOC	Below Top of Casing
ft	feet
NM	Not measured because well was in a low lying area covered in water

Table 2-2
Soil Analytical Data - June 2009
Corrective Action Plan - Part B Addendum #1
HAA-9 Bulk Fuel Facility
Hunter Army Airield, Georgia

			Sample ID	HA09SB01 (6)	HA09SB03 (3)	HA09SB04 (3)	HA09SB07 (2)	HA09SB08 (2-3)	HA09SB10 (4-5)	HA09SB12 (4-6)	HA09SB15 (2-4)	HA09SB17 (2-4)	HA09SB19 (4-6)
			Location ID	09-SB-01	09-SB-03	09-SB-04	09-SB-07	09-SB-08	09-SB-10	09-SB-12	09-SB-15	09-SB-17	09-SB-19
			Sample Date	6/2/2009	6/2/2009	6/2/2009	6/2/2009	6/2/2009	6/2/2009	6/2/2009	6/2/2009	6/2/2009	6/2/2009
Chemical Name	Analytical Method	STL*	Unit										
VOCs													
Benzene	SW8260B	5	ug/kg	< 3.2 U	< 5.6 U	< 1400 U	< 2800 U	< 3.2 U	< 6100 U	< 16000 U	< 930 U	**2600**	**1800 J**
Toluene	SW8260B	400	ug/kg	< 3.2 U	< 5.6 U	< 1400 U	< 2800 U	< 3.2 U	< 6100 U	< 16000 U	< 930 U	**30000**	**8400 J**
Ethylbenzene	SW8260B	370	ug/kg	< 3.2 U	< 5.6 U	< 1400 U	**2200 J**	< 3.2 U	**8500**	**62000 J**	**12000**	**15000**	**7000 J**
Xylenes (total)	SW8260B	20000	ug/kg	< 3.2 U	< 5.6 U	3400	18000	< 3.2 U	**21000**	**66000 J**	13000	**67000**	**31000 J**
tert-Butyl methyl ether	SW8260B	--	ug/kg										
SVOCs													
1-Methylnaphthalene	SW8270	--	ug/kg	< 82 U	< 74 U	1100	2600	< 73 U	1200	9200	8500	3600	1700
2-Methylnaphthalene	SW8270	--	ug/kg	< 82 U	< 74 U	1700	5800	< 73 U	1800	12000	11000	6200	2300
Acenaphthene	SW8270	--	ug/kg	< 82 U	< 74 U	< 74 U	< 76 U	< 73 U	< 81 U	< 83 U	< 76 U	< 80 U	55 J
Acenaphthylene	SW8270	--	ug/kg	< 82 U	< 74 U	< 74 U	< 76 U	< 73 U	< 81 U	< 83 U	< 76 U	< 80 U	27 J
Anthracene	SW8270	--	ug/kg	< 82 U	13 J	< 74 U	< 76 U	38 J	68 J	130	36 J	< 80 U	< 80 U
Benz(a)anthracene	SW8270	660	ug/kg	< 82 U	100	< 74 U	< 76 U	72 J	110	160	< 76 U	< 80 U	< 80 U
Benzo(a)pyrene	SW8270	660	ug/kg	< 82 U	96	< 74 U	< 76 U	62 J	130	140	47 J	< 80 U	< 80 U
Benzo(b)fluoranthene	SW8270	660	ug/kg	< 82 U	130	< 74 U	< 76 U	63 J	110	160	57 J	< 80 U	< 80 U
Benzo(ghi)perylene	SW8270	--	ug/kg	< 82 U	54 J	< 74 U	< 76 U	< 73 U	110	54 J	24 J	< 80 U	< 80 U
Benzo(k)fluoranthene	SW8270	660	ug/kg	< 82 U	50 J	< 74 U	< 76 U	24 J	120	70 J	20 J	< 80 U	< 80 U
Chrysene	SW8270	660	ug/kg	< 82 U	88	< 74 U	< 76 U	31 J	110	50 J	< 76 U	< 80 U	< 80 U
Dibenz(a,h)anthracene	SW8270	660	ug/kg	< 82 U	25 J	< 74 U	< 76 U	< 73 U	< 81 U	< 83 U	< 76 U	< 80 U	< 80 U
Fluoranthene	SW8270	--	ug/kg	< 82 U	120	< 74 U	< 76 U	160	110	500	140	< 80 U	< 80 U
Fluorene	SW8270	--	ug/kg	< 82 U	< 74 U	< 74 U	< 76 U	150	60 J	260	130	85	56 J
Indeno(1,2,3-cd)pyrene	SW8270	660	ug/kg	< 82 U	53 J	< 74 U	< 76 U	< 73 U	110	50 J	< 76 U	< 80 U	< 80 U
Naphthalene	SW8270	--	ug/kg	< 82 U	< 74 U	960	1600	< 73 U	680	6100	3600	2200	1000
Phenanthrene	SW8270	--	ug/kg	< 82 U	63 J	< 74 U	18 J	150	81	480	120	< 80 U	< 80 U
Pyrene	SW8270	--	ug/kg	< 82 U	140	< 74 U	< 76 U	130	110	400	110	< 80 U	< 80 U
Biogeochemical													
TPH-GRO	8015C	--	ug/kg	--	--	--	--	--	--	--	1500000	--	--
TPH-DRO	SW8015	--	ug/kg	--	--	--	--	--	--	--	2500000 J	--	--
TOC	WBLACK	--	mg/kg	--	--	--	--	--	--	--	--	--	--
Percent Solid	E160.3	--	%	80.7	90.0	89.8	87.7	89.1	82.4	79.8	86.8	81.9	82.1

Notes:
ug/kg - microgram per kilogram
mg/kg - microgram per kilogram
% - percent
J - estimated result
UJ - estimated non-detect
TPH - Total Petroleum Hydrocarbons
DRO - Diesel Range Organics
GRO - Gasoline Range Organics
(4-6) - depth of soil sample
Bold values exceed Soil Treshold Levels (STL)
* - STL based on Average or Higher Groundwater Pollution Susceptibility Area and lower of "Within 2 miles of Public Water Supply" and "Less Than 500 feet to Surface Water Body"
TOC - Total Organic Carbon
VOC - volatile organic compound
SVOC - semivolatile organic compound

Table 2-2
Soil Analytical Data - June 2009
Corrective Action Plan - Part B Addendum #1
HAA-9 Bulk Fuel Facility
Hunter Army Airield, Georgia

			Sample ID	HA09SB21 (2-4)	HA09SB23 (2-4)	HA09SB25 (4-6)	HA09SB26 (4-6)	HA09SB28 (2-3)	HA09SB29 (4-6)	HA09SB31 (2-4)	HA09SB32 (4-6)	HA09SB33 (2-4)
			Location ID	09-SB-21	09-SB-23	09-SB-25	09-SB-26	09-SB-28	09-SB-29	09-SB-31	09-SB-32	09-SB-33
			Sample Date	6/3/2009	6/3/2009	6/3/2009	6/3/2009	6/3/2009	6/3/2009	6/3/2009	6/3/2009	6/3/2009
Chemical Name	Analytical Method	STL*	Unit									
VOCs												
Benzene	SW8260B	5	ug/kg	**5000**	< 170 U	**1400**	**11000 J**	< 2.4 U	< 2.6 U	< 3.4 U	**28 J**	140 U
Toluene	SW8260B	400	ug/kg	**2600**	< 170 U	< 170 U	**6000 J**	< 2.4 U	< 2.6 U	< 3.4 U	< 120 UJ	< 120 U
Ethylbenzene	SW8260B	370	ug/kg	**72000**	**550**	**30000**	**200000 J**	< 2.4 U	< 2.6 U	< 3.4 U	300 J	**10000**
Xylenes (total)	SW8260B	20000	ug/kg	**260000**	4800	9300	**510000 J**	< 2.4 U	< 2.6 U	< 3.4 U	850 J	**25000**
tert-Butyl methyl ether	SW8260B	--	ug/kg	< 630 U	< 170 U	< 170 U	< 1400 U	< 2.4 U	< 2.6 U	< 3.4 U	< 120 U	< 120 U
SVOCs												
1-Methylnaphthalene	SW8270	--	ug/kg	2100 UJ	26	980 J	1600 J	14	< 4 U	< 3.9 U	150	120
2-Methylnaphthalene	SW8270	--	ug/kg	2900 J	30	1400 J	2200 J	19	< 4 U	< 3.9 U	180	170
Acenaphthene	SW8270	--	ug/kg	120 J	< 3.8 U	69 J	< 81 UJ	< 3.8 U	< 4 U	< 3.9 U	8.6	< 4.3 U
Acenaphthylene	SW8270	--	ug/kg	< 78 UJ	< 3.8 U	51 J	< 81 UJ	< 3.8 U	< 4 U	< 3.9 U	6.8	< 4.3 U
Anthracene	SW8270	--	ug/kg	< 78 UJ	< 3.8 U	< 43 UJ	< 81 UJ	< 3.8 U	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Benz(a)anthracene	SW8270	660	ug/kg	< 78 UJ	< 3.8 U	< 43 UJ	< 81 UJ	4.2	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Benzo(a)pyrene	SW8270	660	ug/kg	< 78 UJ	4.1	< 43 UJ	< 81 UJ	5.8	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Benzo(b)fluoranthene	SW8270	660	ug/kg	< 78 UJ	4.4	< 43 UJ	< 81 UJ	7.6	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Benzo(ghi)perylene	SW8270	--	ug/kg	< 78 UJ	10	66 J	< 81 UJ	< 3.8 U	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Benzo(k)fluoranthene	SW8270	660	ug/kg	< 78 UJ	< 3.8 U	< 43 UJ	< 81 UJ	3.2 J	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Chrysene	SW8270	660	ug/kg	< 78 UJ	< 3.8 U	< 43 UJ	< 81 UJ	4.7	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Dibenz(a,h)anthracene	SW8270	660	ug/kg	< 78 UJ	< 3.8 U	50 J	< 81 UJ	< 3.8 U	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Fluoranthene	SW8270	--	ug/kg	47 UJ	< 3.8 U	< 43 UJ	< 81 UJ	6.7	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Fluorene	SW8270	--	ug/kg	< 78 UJ	< 3.8 U	< 43 UJ	44 J	0.85 J	< 4 U	< 3.9 U	5.7	< 4.3 U
Indeno(1,2,3-cd)pyrene	SW8270	660	ug/kg	< 78 UJ	8.5	53 J	< 81 UJ	< 3.8 U	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Naphthalene	SW8270	--	ug/kg	1600 J	78	600 J	1400 J	9.1	< 4 U	< 3.9 U	110	84
Phenanthrene	SW8270	--	ug/kg	< 78 UJ	< 3.8 U	< 43 UJ	< 81 UJ	< 3.8 U	< 4 U	< 3.9 U	1.4 J	< 4.3 U
Pyrene	SW8270	--	ug/kg	< 78 UJ	< 3.8 U	< 43 UJ	< 81 UJ	16	< 4 U	< 3.9 U	< 4.2 U	< 4.3 U
Biogeochemical												
TPH-GRO	8015C	--	ug/kg	--	--	--	1200000	--	--	--	--	--
TPH-DRO	SW8015	--	ug/kg	--	--	--	220000 J	--	--	--	--	--
TOC	WBLACK	--	mg/kg	--	--	--	--	4800	550	--	--	--
Percent Solid	E160.3	--	%	83.7	85.5	76.1	81.2	83.7	80.5	84.9	78.0	75.1

Notes:
ug/kg - microgram per kilogram
mg/kg - microgram per kilogram
% - percent
J - estimated result
UJ - estimated non-detect
TPH - Total Petroleum Hydrocarbons
DRO - Diesel Range Organics
GRO - Gasoline Range Organics
(4-6) - depth of soil sample
Bold values exceed Soil Treshold Levels (STL)
* - STL based on Average or Higher Groundwater Pollution Susce
TOC - Total Organic Carbon
VOC - volatile organic compound
SVOC - semivolatile organic compound

Table 2-2
Soil Analytical Data - June 2009
Corrective Action Plan - Part B Addendum #1
HAA-9 Bulk Fuel Facility
Hunter Army Airield, Georgia

			Sample ID	HA09SB35 (4-6)	HA09SB36 (2-4)	HA09SB38 (4-6)	HA09SB40 (4-6)	HA09SB41 (4-6)	HA09SB42 (2-4)	HA09SB43(4-6)	HA09SB44(4-6)	HA09SB45(2-4)
			Location ID	09-SB-35	09-SB-36	09-SB-38	09-SB-40	09-SB-41	09-SB-42	09-SB-43	09-SB-44	09-SB-45
			Sample Date	6/3/2009	6/3/2009	6/3/2009	6/3/2009	6/3/2009	6/3/2009	6/4/2009	6/4/2009	6/4/2009
Chemical Name	Analytical Method	STL*	Unit									
VOCs												
Benzene	SW8260B	5	ug/kg	**94000**	**6600**	**1200 J**	< 3 U	< 2.8 U	< 110 U	< 3.9 U	**330 J**	< 150 U
Toluene	SW8260B	400	ug/kg	5200 U	420 U	< 1200 UJ	< 3 U	< 2.8 U	< 110 U	< 3.9 U	< 1200 U	< 150 U
Ethylbenzene	SW8260B	370	ug/kg	**380000**	**15000**	**12000 J**	< 3 U	< 2.8 U	120	< 3.9 U	**9400 J**	**1300**
Xylenes (total)	SW8260B	20000	ug/kg	**790000**	**28000**	10000 J	< 3 U	< 2.8 U	960	3.3 J	**38000 J**	6400
tert-Butyl methyl ether	SW8260B	--	ug/kg	< 3100 U	< 150 U	< 1200 U	< 3 U	< 2.8 U	< 110 U	< 3.9 U	< 1200 U	< 150 U
SVOCs												
1-Methylnaphthalene	SW8270	--	ug/kg	3000 J	760	4300 J	4.3	< 4 U	120	< 3.8 U	1400 J	2000 J
2-Methylnaphthalene	SW8270	--	ug/kg	4300 J	1200 J	6600 J	6.6	< 4 U	170	< 3.8 U	2000 J	2700 J
Acenaphthene	SW8270	--	ug/kg	190 J	26 J	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	62	< 190 UJ
Acenaphthylene	SW8270	--	ug/kg	140 J	22 J	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	50	< 190 UJ
Anthracene	SW8270	--	ug/kg	< 100 UJ	< 4 U	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	20	< 190 UJ
Benz(a)anthracene	SW8270	660	ug/kg	< 100 UJ	7.2 J	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	21	< 190 UJ
Benzo(a)pyrene	SW8270	660	ug/kg	< 100 UJ	11 J	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	16	< 190 UJ
Benzo(b)fluoranthene	SW8270	660	ug/kg	< 100 UJ	13 J	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	20	< 190 UJ
Benzo(ghi)perylene	SW8270	--	ug/kg	140 J	7.4	< 200 UJ	< 4.3 U	< 4 U	1.7 J	< 3.8 U	6.3	< 190 UJ
Benzo(k)fluoranthene	SW8270	660	ug/kg	< 100 UJ	6.4 J	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	9.2	< 190 UJ
Chrysene	SW8270	660	ug/kg	< 100 UJ	7.8 J	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	18	< 190 UJ
Dibenz(a,h)anthracene	SW8270	660	ug/kg	< 100 UJ	< 4 U	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	< 4.1 U	< 190 UJ
Fluoranthene	SW8270	--	ug/kg	< 100 UJ	9.4	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	62	< 190 UJ
Fluorene	SW8270	--	ug/kg	< 100 UJ	18 J	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	40	< 190 UJ
Indeno(1,2,3-cd)pyrene	SW8270	660	ug/kg	110 J	6.6	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	5.8	< 190 UJ
Naphthalene	SW8270	--	ug/kg	2200 J	680 J	4300 J	5.8	< 4 U	120	< 3.8 U	1000 J	1600 J
Phenanthrene	SW8270	--	ug/kg	< 100 UJ	7.9	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	65	< 190 UJ
Pyrene	SW8270	--	ug/kg	< 100 UJ	16 J	< 200 UJ	< 4.3 U	< 4 U	< 3.8 U	< 3.8 U	96	< 190 UJ
Biogeochemical												
TPH-GRO	8015C	--	ug/kg	--	200000	--	--	--	--	--	--	--
TPH-DRO	SW8015	--	ug/kg	--	220000 J	--	--	--	--	--	--	--
TOC	WBLACK	--	mg/kg	--	--	--	5400	--	--	--	--	--
Percent Solid	E160.3	--	%	76.6	82.3	83.2	75.7	80.0	87.3	85.1	80.1	85.8

Notes:
ug/kg - microgram per kilogram
mg/kg - microgram per kilogram
% - percent
J - estimated result
UJ - estimated non-detect
TPH - Total Petroleum Hydrocarbons
DRO - Diesel Range Organics
GRO - Gasoline Range Organics
(4-6) - depth of soil sample
Bold values exceed Soil Treshold Levels (STL)
* - STL based on Average or Higher Groundwater Pollution Susce
TOC - Total Organic Carbon
VOC - volatile organic compound
SVOC - semivolatile organic compound

Table 2-2
Soil Analytical Data - June 2009
Corrective Action Plan - Part B Addendum #1
HAA-9 Bulk Fuel Facility
Hunter Army Airield, Georgia

			Sample ID	HA09SB48(2-4)	HA09SB49(2-4)	HA09SB50(2-4)	HA09SB51(2-4)	HA09SB52(4-6)	HA09SB53 (2-4)	HA09SB54 (2-4)	HA09SB55 (2-4)
			Location ID	09-SB-48	09-SB-49	09-SB-50	09-SB-51	09-SB-52	09-SB-53	09-SB-54	09-SB-55
			Sample Date	6/4/2009	6/4/2009	6/4/2009	6/4/2009	6/4/2009	6/4/2009	6/4/2009	6/5/2009
Chemical Name	Analytical Method	STL*	Unit								
VOCs											
Benzene	SW8260B	5	ug/kg	**1700 J**	**7400 J**	**1200**	< 2.3 U	**91 J**	**4000 J**	**65 J**	**32**
Toluene	SW8260B	400	ug/kg	**23000 J**	**6600 J**	**520 J**	< 2.3 U	51 J	**5600 J**	< 110 U	< 3 U
Ethylbenzene	SW8260B	370	ug/kg	**12000 J**	**50000 J**	**6100**	11	350	**32000 J**	**2900**	120
Xylenes (total)	SW8260B	20000	ug/kg	**53000 J**	**180000 J**	**27000**	91	1800	**180000 J**	980	240
tert-Butyl methyl ether	SW8260B	--	ug/kg	< 1900 UJ	< 3400 U	< 960 U	< 2.3 U	< 140 U	< 5100 U	< 110 U	--
SVOCs											
1-Methylnaphthalene	SW8270	--	ug/kg	27000 J	6300 J	910	480	4500 J	6700 J	420 J	140
2-Methylnaphthalene	SW8270	--	ug/kg	36000 J	8900 J	1200	630	6300 J	10000 J	430 J	220
Acenaphthene	SW8270	--	ug/kg	930 J	< 380 UJ	55	61	< 370 UJ	< 380 UJ	140 J	< 20 U
Acenaphthylene	SW8270	--	ug/kg	< 770 UJ	< 380 UJ	49	< 20 U	< 370 UJ	< 380 UJ	62 J	< 20 U
Anthracene	SW8270	--	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	< 40 UJ	< 20 U
Benz(a)anthracene	SW8270	660	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	< 40 UJ	< 20 U
Benzo(a)pyrene	SW8270	660	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	< 40 UJ	< 20 U
Benzo(b)fluoranthene	SW8270	660	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	< 40 UJ	< 20 U
Benzo(ghi)perylene	SW8270	--	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	< 40 UJ	< 20 U
Benzo(k)fluoranthene	SW8270	660	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	< 40 UJ	< 20 U
Chrysene	SW8270	660	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	< 40 UJ	< 20 U
Dibenz(a,h)anthracene	SW8270	660	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	< 40 UJ	< 20 U
Fluoranthene	SW8270	--	ug/kg	< 770 U	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	620 J	< 20 U
Fluorene	SW8270	--	ug/kg	< 770 UJ	< 380 UJ	46	< 20 U	< 370 UJ	< 380 UJ	96 J	< 20 U
Indeno(1,2,3-cd)pyrene	SW8270	660	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	< 40 UJ	< 20 U
Naphthalene	SW8270	--	ug/kg	23000 J	4500 J	370	220	4100 J	6200 J	1700 J	220
Phenanthrene	SW8270	--	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	55 J	< 20 U
Pyrene	SW8270	--	ug/kg	< 770 UJ	< 380 UJ	< 39 U	< 20 U	< 370 UJ	< 380 UJ	< 40 UJ	< 20 U
Biogeochemical											
TPH-GRO	8015C	--	ug/kg	--	--	--	--	--	--	--	--
TPH-DRO	SW8015	--	ug/kg	--	--	--	--	--	--	--	--
TOC	WBLACK	--	mg/kg	--	--	--	--	--	--	--	--
Percent Solid	E160.3	--	%	84.1	85.4	84.2	83.6	85.6	85.3	83.3	83.0

Notes:
ug/kg - microgram per kilogram
mg/kg - microgram per kilogram
% - percent
J - estimated result
UJ - estimated non-detect
TPH - Total Petroleum Hydrocarbons
DRO - Diesel Range Organics
GRO - Gasoline Range Organics
(4-6) - depth of soil sample
Bold values exceed Soil Treshold Levels (STL)
* - STL based on Average or Higher Groundwater Pollution Susce
TOC - Total Organic Carbon
VOC - volatile organic compound
SVOC - semivolatile organic compound

Table 2-3
Groundwater Analytical Data - June 2009
Corrective Action Plan - Part B Addendum #1
HAA-9 Bulk Fuel Facility
Hunter Army Airield, Georgia

			Sample ID	HA09GW01 (6-10)	HA09GW01 (11-15)	HA09GW02(6-10)	HA09GW02(11-15)	HA09GW03(6-10)	HA09GW03(11-15)	HA09GW04(6-10)	HA09GW04(11-15)
			Location ID	09-GW-01	09-GW-01	09-GW-02	09-GW-02	09-GW-03	09-GW-03	09-GW-04	09-GW-04
			Sample Date	6/4/2009	6/4/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Chemical Name	Analytical Method	In-Stream Water Quality Standard (IWQS) **(Revised 2009)**	Unit								
VOCs											
Benzene	SW8260B	51	ug/L	0.76	0.8	**330 J**	**160 J**	**660 J**	5.2 J	2.2 J	0.46 J
Toluene	SW8260B	5,980	ug/L	< 0.5 U	0.21 J	8 J	1.1 J	170 J	0.89 J	0.4 J	< 0.5 UJ
Ethylbenzene	SW8260B	2,100	ug/L	2.8	5	100 J	1.9 J	370 J	1.6 J	0.63 J	< 0.5 UJ
Xylenes (total) *	SW8260B	10,000	ug/L	9.5	17	420 J	69 J	1800 J	7.1 J	2.2 J	0.65 UJ
SVOCs											
1-Methylnaphthalene	SW8270D	--	ug/L	2	5.2	< 10 UJ	0.8 J	7.7 J	0.21 UJ	< 0.2 UJ	< 0.2 UJ
2-Methylnaphthalene	SW8270D	--	ug/L	2.9 J	7.3 J	17 J	0.78 J	< 10 UJ	0.27 J	< 0.2 UJ	< 0.2 UJ
Acenaphthene	SW8270D	990	ug/L	< 0.2 U	< 1 U	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Acenaphthylene	SW8270D	--	ug/L	< 0.2 U	< 1 U	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Anthracene	SW8270D	40000	ug/L	< 0.2 UJ	< 1 UJ	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Benz(a)anthracene	SW8270D	0.018	ug/L	< 0.2 UJ	< 1 UJ	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Benzo(a)pyrene	SW8270D	0.018	ug/L	< 0.2 U	< 1 U	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Benzo(b)fluoranthene	SW8270D	--	ug/L	< 0.2 UJ	< 1 UJ	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Benzo(ghi)perylene	SW8270D	--	ug/L	< 0.2 UJ	0.71 J	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Benzo(k)fluoranthene	SW8270D	0.018	ug/L	< 0.2 UJ	< 1 UJ	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Chrysene	SW8270D	0.018	ug/L	< 0.2 UJ	< 1 UJ	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Dibenz(a,h)anthracene	SW8270D	0.018	ug/L	< 0.2 UJ	**0.59 J**	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Fluoranthene	SW8270D	140	ug/L	< 0.2 UJ	< 1 UJ	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Fluorene	SW8270D	5300	ug/L	< 0.2 UJ	< 1 UJ	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Indeno(1,2,3-cd)pyrene	SW8270D	0.018	ug/L	< 0.2 UJ	**0.56 J**	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ
Naphthalene **	SW8270D	6.5	ug/L	2.7 J	6.2 J	**110 J**	3.8 J	**250 J**	0.84 J	0.24 J	< 0.2 UJ
Phenanthrene	SW8270D	--	ug/L	< 0.2 U	< 1 U	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	0.46 J	< 0.2 UJ
Pyrene	SW8270D	4000	ug/L	< 0.2 UJ	< 1 UJ	< 0.2 UJ	< 0.2 UJ	< 10 UJ	< 0.2 UJ	< 0.2 UJ	< 0.2 UJ

Notes:
ug/L - microgram per Liter
J - estimated result
UJ - estimated non-detect
* - There is no IWQS for this constituent. Maximum Contaminant Limit was used for screening.
** - There is no IWQS for this constituent. USEPA Region III RBC was used for screening.
(4-6) - depth of groundwater sample (ft below ground surface)
Bold values exceed IWQS or other designated screening value.
ft -feet
U - non-detect
VOC - volatile organic compounds

ARCADIS

Appendix C

Soil Boring Logs (June 2009)

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB01 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
6	Grab	0922	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	~~Blow Counts per 6 Inches~~ PID depth	Sample/Core Description
0	1	0.1	0.5	dark grayish brown silty clay slight plasticity, roots
1	6	0.0	3	dark gray firm clay, high plasticity, trace fine sand
6	8	0.0	6	medium gray clay and fine sand, firm, high plasticity
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB02 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
~~4-5~~ 5	Grab	0937	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization: ~~PID~~ depth

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	~~Blow Counts per 6 inches~~	Sample/Core Description
0	1			light brown silty fine sand, non plastic, roots
1	2	0.0		very dark gray - black silty fine sand,
2	3			non plastic
3	4	0.4		medium firm sandy clay, high plasticity
4	5			
5	6			
6	7	0.0		
7	8			
				wet @ 5'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB03 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-2-09 Drilling Completed: 6-2-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
3	Grab	1008	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1		0.5	Dark brown silty fine sand, roots, non plastic
1	2			Very dark brown-black hard sandy clay
2	3		1.0	Dark gray sandy clay, high plasticity
3	4			Dark gray clayey ~~san~~ fine sand, moderate plasticity
4	5			Light greenish gray sandy clay, high plasticity
5	6			
6	7			
7	8		0.3	
				wet @ 5'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09 SB04 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
3	Grab	1020	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		Light brown silty fine sand, non plastic, lense of
1	2			angular gravel @ 6"
2	3			Very dark brown hard sandy clay
3	4	245.3		↓
4	5			Firm sandy clay, dark gray, high plasticity
5	6			Light greenish gray clayey fine sand,
6	7	0.0		slight plasticity ↓
7	8			
				wet @ 5'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB05 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
1	Grab	1040	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	26.3		light brown silty fine sand, roots
1	2			↓
2	3	15.8		black, hard sandy clay
3	4			↓
4	5			medium firm dark gray sandy clay, high plasticity
5	6			↓
6	7	0.8		light greenish gray clayey fine sand, slight
7	8			plasticity
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB06 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
1	Grab	1100	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.1		light brown silty fine sand, trace angular gravel, non plastic
1	2	100.3		Very dark brown hard sandy clay
2	3			↓
3	4	15.1		Dark gray firm sandy clay, high plasticity
4	5			↓
5	6			medium gray clayey fine sand slight plasticity
6	7	29.1		strong reddish brown sandy clay lens ~2" thick
7	8			@ 6'
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well H A09 SB 07 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-2-09 Drilling Completed: 6-2-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2	Grab	~~1021~~ 1120	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	1.1		light brown silty sand, non plastic
1	2			dark gray hard sandy clay
2	3	379.4		↓
3	4			dark gray Firm sandy clay, high plasticity
4	5			↓
5	6			↓
6	7	0.0		light gray silty fine sand, non plastic
7	8			↓
				wet @ 5'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09 SB08 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-3	Grab	1245	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		medium grayish brown silty fine sand, roots, lens
1	2			of angular gravel @ 1'
2	3	18.9		very dark brown sandy silt, non-plastic
3	4			dark gray firm sandy clay, high plasticity
4	5	2.4		~~medium~~ reddish ↓
5	6			medium reddish brown clayey fine to medium
6	7	0.0		sand, light gray mottling, slight plasticity
7	8			↓
				wet @ 5'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well ~~B09~~ HA09SB09 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-2-09 Drilling Completed: 6-2-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet

Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A

Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-3	Grab	1300	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.9		light brown, silty fine sand, angular gravel lens @ 1 foot, non-plastic
1	2			very dark gray sandy silt, non plastic
2	3	1.8		light brown silty fine sand
3	4			dark gray firm sandy clay, high plasticity,
4	5	0.6		reddish brown mottling from 5-6'
5	6			~~light gray~~
6	7	0.3		light gray silty fine sand
7	8			
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB10 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-2-09 Drilling Completed: 6-2-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-5	Grab	1315	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	50.5		Dark brown silty fine sand, angular gravel lens
				@ 1'
1	2			very dark gray silty very fine sand
2	3	566.0		
3	4			very dark gray firm clay, sandy, high
				plasticity
4	5	890.0		
5	6			
				light greenish gray clay and fine sand
6	7	0.0		slight plasticity
7	8			wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB11 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
0-2	Grab	1335	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	912.0		Dark brown silty fine sand, lens of angular gravel
				and light brown medium sand
1	2			dark gray clayey fine sand, slight plasticity
				↓
2	3	728.0		
				↓
3	4			Dark gray firm sandy clay, high plasticity,
				↓
4	5	882.0		
				↓
5	6			
				↓
6	7	225.5		same as above with light greenish gray
				mottling
7	8			↓
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB12 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
~~2-4~~ 4-6	Grab	1347	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	20.1		Dark brown silty fine sand roots
1	2			coarse angular gravel
2	3	919.7		medium gray silty subangular poorly sorted
				fine to medium sand
3	4			↓
4	5	1030		
				↓
5	6			medium gray sandy clay, firm, moderate
				plasticity
6	7	35.1		light gray silty fine sand
7	8			↓
				wet @ 5'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA 09SB13 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-3	Grab	1415	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	427.0		medium brown silt and fine sand, non-plastic
				roots, concrete fragment @ 1'
1	2			medium brown silty very fine sand, non-plastic,
				wood fragment @ 2.5'
2	3	946.1		dark grayish brown poorly sorted subangular fine-
				medium sand, silty
3	4			dark brown silty fine sand
4	5	225.4		
5	6			
6	7	51.1		
7	8			light greenish gray clayey fine sand,
				slight plasticity

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SOIL CORE / SAMPLING LOG

Boring/Well HA09 SB14 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1435	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	34.9		Medium grayish brown silty fine sand
				Angular gravel
1	2			Dark brown silty very fine sand, non plastic,
				2"-thick firm high plasticity clay lens @ 3'
2	3	1205		
3	4			
4	5	945.8		poorly sorted subangular fine-coarse silty
				sand, medium gray
5	6			
6	7	104.8		medium-dark brown silty very fine sand,
				non plastic
7	8			

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SOIL CORE / SAMPLING LOG

Boring/Well HA09SB15 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1500	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	2.5		medium brown silty fine sand, roots
				↓
1	2			medium grayish brown silty fine sand
				↓
2	3	1153		
3	4			
4	5	912.5		
5	6			
6	7	33.6		
7	8			

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SOIL CORE / SAMPLING LOG

Boring/Well HA09SB16 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-2-09 Drilling Completed: 6-2-09

Drilling Contractor: Zebra Driller: Don Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1515	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	4.0		light grayish brown silty very fine sand, non-plastic
1	2			very dark gray silty very fine sand, non-plastic
2	3	1668.1		medium yellowish brown silty fine sand, non plastic
3	4			
4	5	635.4		
5	6			
6	7	527		dark brown silty fine sand, non-plastic
7	8			

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SOIL CORE / SAMPLING LOG

Boring/Well HA09SB17 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-2-09 Drilling Completed: 6-2-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 4 Feet

Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A

Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1545	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	722.7		light brown silty very fine sand, non plastic
				↓
1	2			light yellowish brown silty fine sand, non plastic
				↓
2	3	817.1		
				↓
3	4			dark grayish brown silty very fine sand, non plastic
				↓
4	5	638.6		
				↓
5	6			
				↓
6	7	87.7		
				↓
7	8			

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SOIL CORE / SAMPLING LOG

Boring/Well HA09SB18 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-2-09 Drilling Completed 6-2-09

Drilling Contractor Zebra Driller Dan Helper Dan

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1600	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	724.2		medium brown silty fine sand, non plastic
1	2			
2	3	838.1		medium yellowish brown silty fine sand,
				non plastic
3	4			
4	5	725.5		
5	6			
6	7	40.1		
7	8			
				wet @ 4'

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SOIL CORE / SAMPLING LOG

Boring/Well HA09SB19 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-2-09 Drilling Completed: 6-2-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1615	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	355.5		light brown silty very fine sand, non plastic
1	2			
2	3	668.3		medium yellowish brown silty fine sand,
				non plastic, some very dark brown mottling.
3	4			
4	5	795.6		
5	6			
6	7	28.3		
7	8			
				wet @ 4'

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SOIL CORE / SAMPLING LOG

Boring/Well HA09SB20 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-2-09 Drilling Completed: 6-2-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet

Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A

Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1640	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	53.0		medium grayish brown silty fine sand, non plastic
1	2			↓
2	3	846.2		medium yellowish brown silty fine sand, non plastic
3	4			↓
4	5	737.0		dark brown silty fine sand, very dark brown mottling, non plastic
5	6			↓
6	7	42.0		
7	8			↓
				wet @ 4'

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SOIL CORE / SAMPLING LOG

Boring/Well HA09SB21 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	0845	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	770		medium brown silty fine sand, non plastic
1	2			
2	3	194.0		
3	4			
4	5	193.3		
5	6			
6	7	931		light greenish gray clayey fine sand,
				slight plasticity
7	8			
8				
				wet @ 3'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB22 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-3-09 Drilling Completed: 6-3-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	0900	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	2.1		medium brown silty fine sand, 1" thick
				lens of subrounded gravel @ 1', non plastic
1	2			
2	3	437.5		
3	4			medium gray silty fine sand, non-plastic
4	5	458.2		medium gray clayey fine sand, slightly
				plastic
5	6	~~26~~		
6	7	264.9		medium gray sandy clay, high plasticity
7	8			
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB23 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-3-09 Drilling Completed: 6-3-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	0915	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	2.8		medium brown silty fine sand, 1" thick
				lens of subangular gravel + coarse sand @ 1'
1	2			black silty-clayey fine sand, slight plasticity
				↓
2	3	14.6		interbedded light gray and light reddish brown
				clayey fine sand, slight plasticity
3	4			very dark grayish brown silty-clayey fine
				sand, slight plasticity, wood fragment
4	5	13.0		@ 6.5'
5	6			
6	7	1.2		
7	8			
8				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well ~~HA5B09~~ HA095B24 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-3-09 Drilling Completed: 6-3-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
6-7	Grab	0945	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	3.5		light brown silty fine sand, non-plastic
				↓
1	2			very dark gray silty fine sand, non plastic
				↓
2	3	94.2		medium gray silty fine sand, non-plastic
				↓
3	4			medium gray sandy clay, medium plasticity
				↓
4	5	77.3		dark brown silty very fine sand, non plastic
				↓
5	6			medium gray firm sandy clay, high plasticity
6	7	149.0		↓
7	8			↓
				wet @ 7'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB25 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1000	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.1		light brown silty fine sand, some angular gravel, non-plastic
1	2			very dark gray silty fine sand, non plastic
2	3	430.0		dark brownish gray sandy clay, high plasticity
3	4			
4	5	683.3		dark brown silty fine sand
5	6			light gray to light greenish gray sandy clay, high plasticity
6	7	310.7		
7	8			

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB26 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-3-09 Drilling Completed: 6-3-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1020	BTEX, PAH, TPH
~~4-6~~	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	5.0		light brown silty fine sand, some angular gravel, non-plastic
1	2			very dark grayish brown silty fine sand, non plastic
2	3	9.6		dark grayish brown silty fine sand, non plastic
3	4			↓
4	5	512.7		medium gray silty-clayey fine sand, slight plasticity
5	6			light greenish gray clay, high plasticity
6	7	245.5		↓
7	8			
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well H409SB27 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-3-09 Drilling Completed: 6-3-09

Drilling Contractor: Zebra

Driller: ~~6-3~~ Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1035	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	1.5		light brown silty fine sand, roots, some angular gravel
1	2			dark grayish brown silty fine sand, non plastic
2	3	186.6		
3	4			
4	5	666.7		dark gray clayey fine sand, slight to moderate plasticity
5	6			
6	7	10.3		light yellowish brown sandy clay, moderate-high plasticity
7	8			
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB28 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper Dave

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-3	Grab	1050	BTEX, PAH, TOC
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		light brown silty fine sand, non plastic
1	2			very dark grayish brown silty fine sand,
				non-plastic
2	3	0.0		
3	4			
4	5	0.0		medium grayish brown silty to clayey
				fine sand, moderate to high plasticity
5	6			
6	7	0.0		
7	8			
				wet @ 3'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB29 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1100	BTEX, PAH, TOC
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		light brown silty fine sand and angular gravel
				Very dark brownish gray silty very fine sand,
1	2			non plastic
2	3	0.0		
3	4			dark brownish gray clay, high plasticity
4	5	0.0		
5	6			
6	7	0.0		medium gray clayey fine sand, slight
				plasticity
7	8			
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA69SB30 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-3-09 Drilling Completed: 6-3-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1110	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		light brown silty sand, some angular gravel
1	2			dark brown silty fine sand, non-plastic
2	3	0.0		
3	4			dark gray high plasticity clay
4	5	0.0		
5	6			
6	7	0.0		light greenish gray high plasticity clay
7	8			
				wet @ 5'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB31 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-3-09 Drilling Completed: 6-3-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1120	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		light brown silty fine sand, some angular gravel
1	2			very dark grayish brown silty very fine sand, non-plastic
2	3	0.8		
3	4			very dark brownish gray clayey fine sand, slight plasticity
4	5	0.0		medium greenish gray firm clay, high plasticity
5	6			
6	7	0.0		medium reddish brown sandy clay, moderate plasticity
7	8			firm medium gray firm clay, sandy, high plasticity

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB32 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-3-09 Drilling Completed: 6-3-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1130	BTEX, PAH, TPH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	1.2		light brown silty fine sand, some angular gravel, roots
1	2			very dark brownish gray silty very fine sandy non-plastic
2	3	20.1		
3	4			
4	5	~~300.0~~	300.0	very dark brownish gray clayey fine sand, slight plasticity
5	6			medium greenish gray firm clay, high plasticity
6	7	12.0		medium gray clay and fine sand, moderate plasticity
7	8			
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB33 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1300	BTEX, PAH, TPH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	1.0		light brown clayey fine sand, some angular gravel, roots, slight plasticity
1	2			very dark grayish brown clayey fine sand, slight plasticity
2	3	451.3		↓
3	4			↓
4	5	1264		dark brownish gray medium firm sandy clay, high plasticity
5	6			light gray high plasticity clay ↓
6	7	0.0		light gray silty well sorted fine sand, non plastic ↓
7	8			↓
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09 SB 34 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebog Driller ~~6-3~~ Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1330	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	110.4		light brown sandy silt, some angular gravel, roots
				very dark brownish gray sandy silt, non plastic
1	2			
2	3	230.7		
				very dark brownish gray sandy clay, moderate
3	4			- high plasticity, 2" lens of black non-plastic
				silt @ 4.5'
4	5	268.8		
				light greenish gray sandy clay, high plasticity
5	6			
6	7	0.0		
				light gray silty fine sand, non-plastic
7	8			

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB35 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1345	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	1138		Dark grayish brown silty-clayey fine sand, slight plasticity
1	2			
2	3	257.9		
3	4			Dark grayish brown sandy clay, moderate-high plasticity
4	5	313.8		medium gray sandy clay, high plasticity
5	6			
6	7	31.5		light gray silty sand, ~~mout~~ non-plastic
7	8			

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB36 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-3-09 Drilling Completed: 6-3-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1410	BTEX, PAH, TPH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	280.1		dark brown silty sand, non-plastic
				↓
1	2			medium greenish gray clayey sand, dark
				grayish brown and medium reddish brown
2	3	514.1		mottling, slight - moderate plasticity
				↓
3	4			
4	5	282.6		↓
				~~light~~ dark brown silty fine sand, non-
5	6			plastic
				↓
6	7	370.4		
7	8			↓
				wet @ 4.5', sheen

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB37 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-3-09 Drilling Completed: 6-3-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1425	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	75.0		Dark brown silty fine sand, non-plastic
1	2			
2	3	673.6		
3	4			medium grayish brown clayey fine sand,
				slight plasticity
4	5	607.1		dark grayish brown sandy clay, high plasticity
5	6			
6	7	28.0		light greenish gray silty fine sand,
				non-plastic
7	8			
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09-B38 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper Dave

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1500	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	19.6		very dark brown silty fine sand, non plastic
1	2			
2	3	60.1		very dark brownish gray sandy clay, high plasticity
3	4			
4	5	308.5		medium greenish gray sandy clay, high plasticity
				very dark greenish gray sandy clay, moderate plasticity
5	6			
6	7	20.4		medium gray sandy clay, moderate plasticity
7	8			

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB39 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1515	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	11.3		very dark brownish gray clayey fine sand, firm, slight plasticity
1	2			
2	3	54.0		
3	4			
4	5	142.6		medium-dark greenish gray sandy clay, high plasticity
5	6			
6	7	17.7		light greenish gray silty fine sand, non plastic
7	8			

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB40 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1530	BTEX, PAH, TOC
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		light brown silty fine sand, some angular gravel, roots
1	2			very dark brownish gray silty very fine sand, non-plastic
2	3	0.0		
3	4			
4	5	0.0		very dark brownish gray medium firm clay, high plasticity
5	6			very dark brownish gray soft sandy clay, moderate - high plasticity
6	7	0.0		light greenish gray silty-clayey ~~fine~~ fine sand, slight plasticity,
7	8			wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB41 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1600	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		light brown poorly sorted sand and gravel
1	2			very dark grayish brown very firm clay and fine sand, slight plasticity
2	3	0.0		
3	4			
4	5	0.0		dark brownish gray medium firm clay, high plasticity
5	6			
6	7	0.0		light greenish gray sandy clay, moderate - high plasticity
7	8			
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB42 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-3-09 Drilling Completed 6-3-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1630	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	10.0		light brown silty sand and sub angular gravel
1	2			
				very dark brownish gray very firm clayey
2	3	36.9		fine sand, slight plasticity
3	4			
4	5	0.0		medium brownish gray medium firm sandy
				clay, high plasticity
5	6			
6	7	0.0		medium greenish gray medium firm
				sandy clay, high plasticity
7	8			
				wet @ 6'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB43 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-4-09 Drilling Completed: 6-4-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1405	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		medium brown silty fine sand, non-plastic
1	2			
2	3	2.3		dark brownish gray clayey fine sand, slight-moderate plasticity
3	4			medium gray medium firm clay, high plasticity
4	5	3.0		
5	6			
6	7	0.5		
7	8			
8				

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09-SB44 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-4-09 Drilling Completed: 6-4-09

Drilling Contractor: Zebra

Driller: 6-4-09 Helper: 6-4-09

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet

Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A

Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1415	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1		1.0	light brown silty fine sand, some angular
				gravel, roots
1	2			↓
				dark brownish gray sandy clay, firm,
2	3		107.0	high plasticity
3	4			
4	5		604.0	
				↓
5	6			dark grayish brown silty fine sand, non plastic
				dark greenish gray clay, firm high
6	7		25.0	plasticity
7	8			↓
				wet @ 5'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA-09-SB45 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-4-09 Drilling Completed: 6-4-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet

Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A

Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1420	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	287.0		medium brown silty fine sand, non-plastic,
				very dark grayish brown from 1-1.5'
1	2			
2	3	357.0		
3	4			
4	5	240.0		medium gray sandy firm clay, high
				plasticity
5	6			
6	7	23.6		
7	8			

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB48 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-4-09 Drilling Completed: 6-4-09

Drilling Contractor: Zebra

Driller: 6-4-09 Helper: 6-4-09

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1340	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	60.0		medium grayish brown silty fine sand,
				non plastic
1	2			light brown silty fine sand, non-plastic
				↓
2	3	85.0		very dark grayish brown silty fine sand,
				non plastic, very strong odor
3	4			medium yellowish brown silty fine sand,
				non-plastic
4	5	75.0		↓
5	6			
6	7	43.0		↓
				medium brown silty fine sand, non plastic
7	8			↓

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB49 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-4-09 Drilling Completed: 6-4-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1350	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	106.5		dark brown silty fine sand, non plastic
				↓
1	2			same as above, light brownish gray
				↓
2	3	146.9		same as above, very dark brownish gray
				↓
3	4			same as above, medium brown
				↓
4	5	64.2		
5	6			
6	7	64.3		
				↓
7	8			light gray clayey fine sand, slight plasticity

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09 SB 50 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-4-09 Drilling Completed 6-4-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1400	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	180.2		very dark brown silty fine sand,
				non plastic
1	2			medium grayish brown silty fine sand,
				non-plastic
2	3	251.5		
3	4			
4	5	249.5		
5	6			
6	7	60.8		medium greenish gray clayey fine
				sand, slight plasticity
7	8			
				wet @ 4'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09 SB 51 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-4-09 Drilling Completed 6-4-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1500	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		medium brown silty fine sand, non plastic
				↓
1	2			
				light brown silty fin sand, non plastic
2	3	20.0		
				↓
3	4			dark brownish gray clayey fine sand,
				slight plasticity
4	5	2.0		interbedded greenish gray and reddish brown
				clayey sand, moderate plasticity
5	6			medium gray sandy clay, high plasticity
				↓
6	7	0.9		light greenish gray silty fine sand,
				non plastic
7	8			

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB52 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-4-09 Drilling Completed 6-4-09

Drilling Contractor Zebog Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
4-6	Grab	1505	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	9.2		light brown silty sand, non plastic, roots
				↓
1	2			
2	3	392.0		medium grayish brown silty fine sand,
				non plastic
3	4			
4	5	579.0		
5	6			
6	7	25.0		light greenish gray silty fine sand,
				non plastic
7	8			
				↓

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB53 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-4-09 Drilling Completed: 6-4-09

Drilling Contractor: Zebra

Driller: Dan Helper: David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1515	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	69.3		light - medium brown silty fine sand, non-plastic, 1" thick layer of angular gravel @ 0.5'
1	2			
2	3	632.1		
3	4			
4	5	519.1		
5	6			
6	7	25.0		
7	8			medium gray sandy clay, moderate plasticity

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB54 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-4-09 Drilling Completed: 6-4-09

Drilling Contractor: Debra

Driller: ~~6-4-09~~ Dan Helper: ~~6-4-09~~ David

Drilling Fluid Used: N/A

Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5"

Coring Device: Direct Push Core Barrel

Prepared By: JDF

Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1530	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		medium to dark grayish brown silty fine sand, non plastic, angular gravel lens
1	2			@ 1'
2	3	368.0		
3	4			
4	5	46.9		
5	6			
6	7	17.2		greenish gray firm clay, high plasticity
7	8			greenish gray clayey fine sand, slight plasticity

ARCADIS HA09SB55

SOIL CORE / SAMPLING LOG

Boring/Well ~~HA09SB46~~ Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-4-09 Drilling Completed: 6-4-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
2-4	Grab	1035	BTEX, PAH
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		very dark greyish brown silty fine sand, non-plastic
1	2			
2	3	56.7		
3	4			dark gray firm clay, high plasticity
4	5	25.1		
5	6			medium gray clayey fine sand, moderate plasticity
6	7	0.0		light greenish gray silty fine sand, non-plastic
7	8			
				wet @ 6'

ARCADIS HA09SB56

SOIL CORE / SAMPLING LOG

Boring/~~Well~~ ~~HA09SB47~~ Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: ~~6-4-09~~ 6-5-09 Drilling Completed: ~~6-4-09~~ 6-5-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
No Sample	Grab	~~10:55~~	~~BTEX, PAH~~
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	1.5		medium reddish brown clayey fine sand, slight plasticity
1	2			↓
2	3	539.7		dark brownish gray clayey fine sand, slight plasticity
3	4			↓
4	5	387.5		
5	6			
6	7	352.2		greenish gray firm sandy clay, high plasticity
7	8			↓ reddish brown firm sandy clay, moderate plasticity

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09SB57 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-5-09 Drilling Completed: 6-5-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: Direct Push

Total Depth Drilled: 8 Feet Hole Diameter: 1.5" Coring Device: Direct Push Core Barrel

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
No Sample	Grab		~~BTEX, PAH~~
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	8.0		grayish brown to reddish brown poorly sorted sand and angular gravel
1	2			↓
2	3	18.0		medium grayish brown silty fine sand, non-plastic
3	4			↓
4	5	223.5		medium gray clayey fine sand, slight plasticity
5	6			
6	7	25.0		
7	8			↓
8				

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09 SB 58 Project/No. GP08HAFS.H09A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-5-09 Drilling Completed 6-5-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method Direct Push

Total Depth Drilled 8 Feet Hole Diameter 1.5" Coring Device Direct Push Core Barrel

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth (Feet)	Grab/Composite	Time	Laboratory Analysis
NO SAMPLE	Grab		~~BTEX, PAH~~
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		
	Grab		

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0	1	0.0		Dark brownish gray silty fine sand, non plastic
				↓
1	2			
				↓
2	3	312.4		Medium brown silty fine sand, non plastic
				↓
3	4			Medium gray silty fine sand, non plastic
				↓
4	5	349.0		
				light greenish gray very firm clay,
5	6			high plasticity
				↓
6	7	176.4		light greenish gray clayey fine sand,
				moderate plasticity
7	8			
				wet @ 5'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09 GW01 Project/No. GP08HAFS.HO9A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-4-09 Drilling Completed: 6-4-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: DPT

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
6-10	Grab	1600	BTEX, PAH
11-15	Grab	1615	BTEX, PAH

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
					Sampled groundwater with 15-point
					screen sampler at depths of 5,
					10, and 15 feet bgs (4-foot screen)
					No water recovered from 1-5 foot
					interval

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09 GW02 Project/No. GP08HAFS.HO9A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-5-09 Drilling Completed: 6-5-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: DPT

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
6-10	Grab	0820	BTEX, PAH
11-15	Grab	0830	BTEX, PAH

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
					Sampled groundwater with 15-point screen sampler at depths of 5, 10, and 15 feet bgs (4-foot screen)
					No water recovered from 1-5 foot interval

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09 GW03 Project/No. GP08HAFS.HO9A.KG0EX Page 1 of 1

Site Location: Hunter Army Airfield HAA-9

Drilling Started: 6-5-09 Drilling Completed: 6-5-09

Drilling Contractor: Zebra Driller: Dan Helper: David

Drilling Fluid Used: N/A Drilling Method: DPT

Prepared By: JDF Hammer Weight: N/A Hammer Drop: N/A ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
6-10	Grab	0815 ~~6-10~~	BTEX, PAH
11-15	Grab	0900 ~~11-15~~	BTEX, PAH

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
					Sampled groundwater at depths
					of 5, 10, and 15 feet bgs
					with 15-point screen sampler
					(4-foot screen)
					No water recovered from 1-5
					foot interval

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well HA09 GW04 Project/No. GP08HAFS.HO9A.KG0EX Page 1 of 1

Site Location Hunter Army Airfield HAA-9 Drilling Started 6-5-09 Drilling Completed 6-5-09

Drilling Contractor Zebra Driller Dan Helper David

Drilling Fluid Used N/A Drilling Method DPT

Prepared By JDF Hammer Weight N/A Hammer Drop N/A ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
6-10	Grab	0915	BTEX, PAH
11-15	Grab	0930	BTEX, PAH

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
					Sampled groundwater with 15-point screen sampler at depths of 5, 10, and 15 feet bgs (4-foot screen)
					No water recovered from 1-5 foot interval

ZEBRA

DAILY PROJECT REPORT

Project Day & Date Tues./6-2-09

ZEBRA Office #7997 Crew Base North Carolina Z# 7997 ZEBRA Unit #/Type #132/Truck

CLIENT / OFFICE Arcadis / Atlanta, GA Client Project # GP08HAFS.H09A.KGDEX

PROJECT NAME HAAF - HAA-9

PROJECT LOCATION Sav., GA

Client PM: Chuck Bertz Client Site Contact: Chuck Bertz

ZEBRA PERSONNEL ON SITE:

Name/Company	Start	Arrive	Leave	Finish	Total Site Time	OT	Client Init.
Dan Ferrell / Zebra	9:00	8:00	5:00	4:30	8.5		JDF
David Brown / Zebra	9:00	8:00	5:00	4:30	8.5		JDF
Other Personnel On Site:							

Description of Work (detailed):

20 borings to 8'

APP. DGW:

MATERIALS	QTY. USED	UNIT	EQUIPMENT	
MC Liners 4'	40	Liners	Drill Steel	
LB Liners		Liners	Core Drill	
_____ Expendable Points		Points	Generator	
_____" x 5' PVC Screen		PC's	GS 1000/2000 Grout Pump	
_____" x 5' PVC Riser		PC's	Steam Genny	
_____ PVC points		Points	Rupe Pump	
_____ Flush Mount Well Box		Boxes	Water Level Indicator	
			P.I.D.	
Bentonite Bag	3		Trailer (Decon/Utility)	
Nitrile gloves Box	1			

Probe Tools Damaged / Lost:

Number of Points	Number of Samples	Soil MC	Soil LB	GW	Wells Installed	Soil Gas	Sparge Points	Misc.

Field Verification:

ZEBRA: D. L. Ferrell CLIENT: (Print) Josh Frizzell

(Sign) [signature]

ZEBRA

DAILY PROJECT REPORT

Project Day & Date Thurs. 6-4-09

ZEBRA Office North Carolina Crew Base _____ Z# 7997 ZEBRA Unit #/Type 32/Truck

CLIENT / OFFICE Arcadis / Atlanta, GA Client Project # GPR, HAFS, HOGA, KGOEX

PROJECT NAME HAAF - HAA-9

PROJECT LOCATION Sav. GA

Client PM: Chuck Dentz Client Site Contact: _____

ZEBRA PERSONNEL ON SITE:

Name/Company	Start	Arrive	Leave	Finish	Total Site Time	OT	Client Init.
David Brown / Zebra	8:30	8:00	5:30	5:00	9.0		JDF
Da Ferrell / Zebra	8:30	8:00	5:30	5:00	9.0		JDF
Other Personnel On Site:							

Description of Work (detailed):

13 Soil Borings to 8'
5 GW Points to 15'

APP. DGW:

MATERIALS	QTY. USED	UNIT	EQUIPMENT	
MC Liners 4'	26	Liners	Drill Steel	
LB Liners		Liners	Core Drill	
1" Expendable Points		Points	Generator	
_____" x 5' PVC Screen		PC's	GS 1000/2000 Grout Pump	
_____" x 5' PVC Riser		PC's	Steam Genny	
_____ PVC points		Points	Rupe Pump	
_____ Flush Mount Well Box		Boxes	Water Level Indicator	
			P.I.D.	
Bentonite Bags	2		Trailer (Decon/Utility)	
Sand Bags	4			

Probe Tools Damaged / Lost:

Number of Points	Number of Samples	Soil MC	Soil LB	GW	Wells Installed	Soil Gas	Sparge Points	Misc.

Field Verification:

ZEBRA: _____ CLIENT: (Print) Josh Ferrell

(Sign) [signature]

ZEBRA

DAILY PROJECT REPORT

Project Day & Date Wed. 6-3-09

ZEBRA Office 7997 Crew Base NC Z# 7997 ZEBRA Unit #/Type 32/Truck

CLIENT / OFFICE Arcadis / Atlanta, GA Client Project # 08HAFS.H09A.KGDEX

PROJECT NAME HAAF - HAA-9

PROJECT LOCATION Sav, GA

Client PM: Chuck Brette Client Site Contact:

ZEBRA PERSONNEL ON SITE:

Name/Company	Start	Arrive	Leave	Finish	Total Site Time	OT	Client Init.
Dan Ferrell / Zebra	8:30	8:00	5:00	4:30	8.5		JDF
David Brown / Zebra	8:30	8:00	5:00	4:30	8.5		JDF
Other Personnel On Site:							

Description of Work (detailed):

22 borings to 8'

APP. DGW:

MATERIALS	QTY. USED	UNIT	EQUIPMENT	
MC Liners 4'	44	Liners	Drill Steel	
LB Liners		Liners	Core Drill	
_____ Expendable Points		Points	Generator	
_____" x 5' PVC Screen		PC's	GS 1000/2000 Grout Pump	
_____" x 5' PVC Riser		PC's	Steam Genny	
_____ PVC points		Points	Rupe Pump	
_____ Flush Mount Well Box		Boxes	Water Level Indicator	
			P.I.D.	
Bentonite	3		Trailer (Decon/Utility)	
Nitrile Gloves	1			

Probe Tools Damaged / Lost:

Number of Points	Number of Samples	Soil MC	Soil LB	GW	Wells Installed	Soil Gas	Sparge Points	Misc.

Field Verification:

ZEBRA: Dan T. Ferrell CLIENT: (Print)

(Sign) Josh Frizzell

ZEBRA

DAILY PROJECT REPORT

Project Day & Date Fri 6-5-09

ZEBRA Office 7997 Crew Base NC Z# 7997 ZEBRA Unit #/Type 32/Truck

CLIENT / OFFICE Arcadis / Atlanta, GA Client Project # 6P08HAES.H09A.KGOEX

PROJECT NAME HAAF - HAA-9

PROJECT LOCATION Sgu, GA

Client PM: Chuck Bertz Client Site Contact:

ZEBRA PERSONNEL ON SITE:

Name/Company	Start	Arrive	Leave	Finish	Total Site Time	OT	Client Init.
Dan Ferrell / Zebra	8:30	8:00	3:00	2:30	6.0		JDF
David Brown / Zebra	8:30	8:00	3:00	2:30	6.0		JDF
Other Personnel On Site:							

Description of Work (detailed):

2 - GW Points to 15'
4 - Soil Borings to 8'

APP. DGW:

MATERIALS	QTY. USED	UNIT	EQUIPMENT	
MC Liners 4'	8	Liners	Drill Steel	
LB Liners		Liners	Core Drill	
1" Expendable Points	4	Points	Generator	
____" x 5' PVC Screen		PC's	GS 1000/2000 Grout Pump	
____" x 5' PVC Riser		PC's	Steam Genny	
____ PVC points		Points	Rupe Pump	
____ Flush Mount Well Box		Boxes	Water Level Indicator	
			P.I.D.	
Bentonite Plugs	2		Trailer (Decon/Utility)	
1 300' Roll Tubing	1			

Probe Tools Damaged / Lost:

Number of Points	Number of Samples	Soil MC	Soil LB	GW	Wells Installed	Soil Gas	Sparge Points	Misc.

Field Verification:

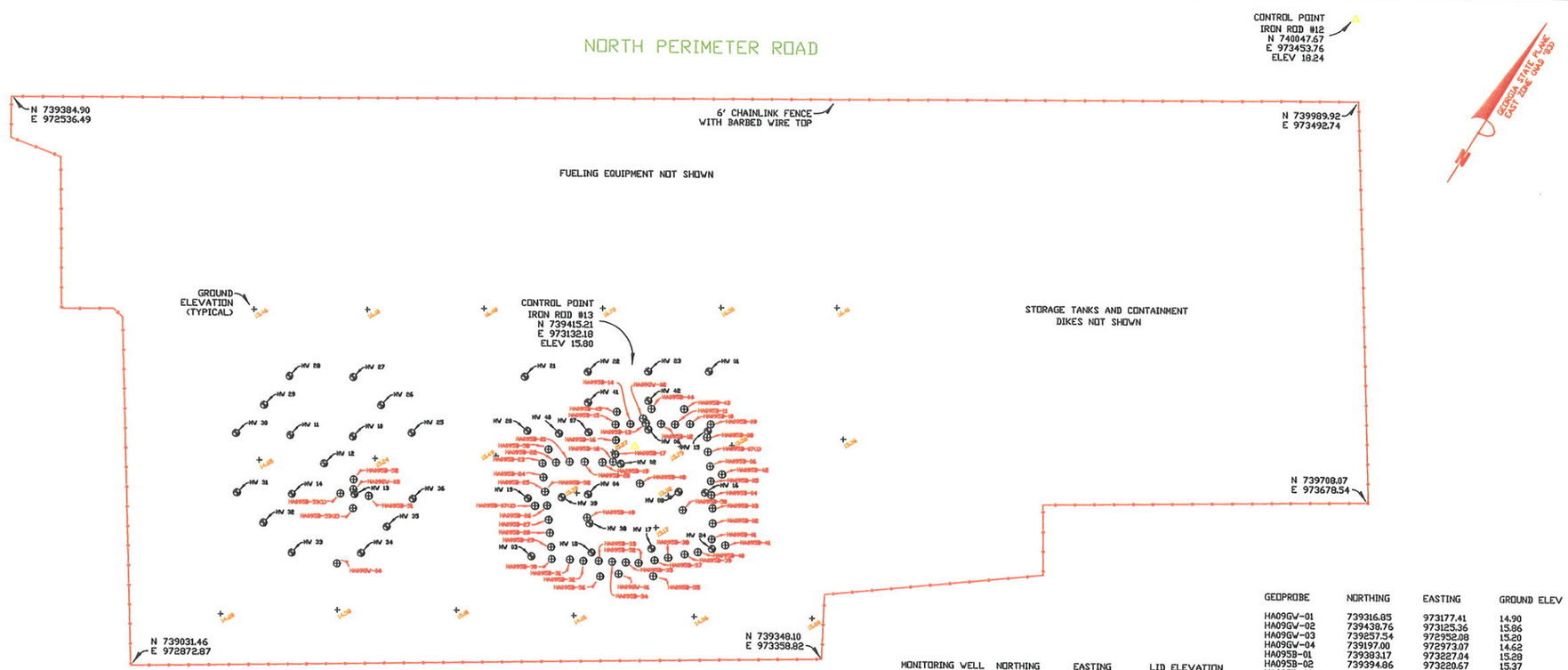
ZEBRA: D. C. Ferrell CLIENT: (Print) Josh Frizzell

(Sign)

ARCADIS

Appendix D

Survey Documentation



GEOPROBE	NORTHING	EASTING	GROUND ELEV
HA09GV-01	739316.85	973177.41	14.90
HA09GV-02	739438.76	973125.36	15.86
HA09GV-03	739257.54	972958.08	15.20
HA09GV-04	739197.00	972973.07	14.62
HA09SB-01	739383.17	973227.04	15.28
HA09SB-02	739394.86	973220.67	15.37
HA09SB-03	739405.61	973213.92	15.49
HA09SB-04	739414.46	973207.10	15.63
HA09SB-05	739424.26	973200.47	15.57
HA09SB-06	739434.49	973193.42	15.54
HA09SB-07(1)	739443.76	973185.52	15.67
HA09SB-07(2)	739327.62	973088.11	15.40
HA09SB-08	739453.77	973178.55	15.74
HA09SB-09	739464.79	973175.18	15.72
HA09SB-10	739455.76	973160.63	15.67
HA09SB-11	739448.76	973150.35	15.78
HA09SB-12	739442.91	973140.33	15.76
HA09SB-13	739436.55	973129.29	15.82
HA09SB-14	739429.21	973118.88	15.95
HA09SB-15	739422.18	973108.71	15.91
HA09SB-16	739411.04	973115.96	15.94
HA09SB-17	739400.74	973121.76	15.83
HA09SB-18	739394.36	973123.45	15.76
HA09SB-19	739389.10	973116.18	15.80
HA09SB-20	739381.54	973103.49	15.62
HA09SB-21	739374.77	973092.78	15.60
HA09SB-22	739368.16	973083.54	15.75
HA09SB-23	739361.45	973074.28	15.69
HA09SB-24	739351.86	973081.17	15.56
HA09SB-25	739342.23	973088.76	15.49
HA09SB-26	739333.22	973096.42	15.34
HA09SB-27	739323.81	973103.86	15.23
HA09SB-28	739315.12	973110.49	15.21
HA09SB-29	739305.63	973117.68	15.15
HA09SB-30	739297.21	973123.53	15.08
HA09SB-31	739305.10	973136.55	15.02
HA09SB-32	739310.18	973146.68	15.06
HA09SB-33	739317.04	973157.48	14.98
HA09SB-34	739322.50	973167.32	15.02
HA09SB-35	739328.33	973177.40	14.89
HA09SB-36	739333.59	973186.60	14.85
HA09SB-37	739342.64	973196.55	14.99
HA09SB-38	739350.55	973204.92	15.05
HA09SB-39	739360.36	973214.86	15.08
HA09SB-40	739367.83	973223.04	15.36
HA09SB-41	739385.05	973239.30	15.27
HA09SB-42	739434.16	973205.48	15.59
HA09SB-43	739463.81	973149.97	15.83
HA09SB-44	739449.35	973126.96	15.92
HA09SB-45	739431.82	973103.92	15.96
HA09SB-48	739390.93	973152.05	15.60
HA09SB-49	739342.74	973130.08	15.36
HA09SB-50	739390.94	973193.88	15.19
HA09SB-51	739259.87	972966.04	15.21
HA09SB-52	739264.72	972947.80	15.17
HA09SB-53(1)	739248.60	972944.51	15.15
HA09SB-53(2)	739243.79	972960.21	14.94
HA09SB-55	739330.65	973202.62	14.84
HA09SB-56	739306.66	973165.36	14.94
HA09SB-58	739374.05	973072.38	15.73

MONITORING WELL	NORTHING	EASTING	LID ELEVATION
MV 01	739501.67	973150.36	16.09
MV 02	739396.42	973129.89	15.76
MV 03	739290.06	973107.94	15.08
MV 04	739259.70	973120.30	15.54
MV 06	739433.18	973133.88	15.79
MV 07	739404.37	973093.04	15.90
MV 08	739402.23	973182.82	15.32
MV 10	739294.98	972928.12	15.46
MV 11	739267.13	972882.25	15.19
MV 12	739262.64	972919.30	14.96
MV 13	739254.58	972954.94	15.23
MV 14	739225.81	972909.63	14.81
MV 15	739458.76	973176.11	15.83
MV 16	739413.45	973201.76	15.50
MV 17	739349.56	973189.00	14.96
MV 18	739319.87	973148.64	15.17
MV 19	739329.81	973079.62	15.59
MV 20	739377.76	973049.28	15.83
MV 21	739415.38	973023.27	16.16
MV 22	739447.18	973065.53	16.57
MV 23	739474.63	973107.98	16.46
MV 24	739376.38	973231.52	15.23
MV 25	739324.40	972968.30	15.55
MV 26	739330.34	972934.27	15.58
MV 27	739337.66	972901.92	15.87
MV 28	739309.05	972855.34	15.43
MV 29	739276.75	972849.79	15.01
MV 30	739243.93	972842.64	15.03
MV 31	739201.94	972869.73	14.69
MV 32	739192.20	972901.61	14.59
MV 33	739183.90	972935.60	14.48
MV 34	739215.62	972985.79	14.67
MV 35	739246.04	972992.38	14.71
MV 36	739277.73	972998.42	15.20
MV 38	739339.85	973134.16	15.35
MV 39	739345.92	973103.04	15.47
MV 40	739390.24	973072.62	15.94
MV 41	739425.42	973079.38	16.32
MV 42	739453.75	973121.12	16.01

LOCATION OF MONITORING WELLS AND GEOPROBE POINTS LOCATED AT THE BULK FUEL STORAGE FACILITY ON NORTH PERIMETER ROAD AT HUNTER ARMY AIRFIELD SAVANNAH, CHATHAM COUNTY, GEORGIA FOR ARCADIS USA, INC.

60 30 0 60 120

1" = 60'

FIELD AS-BUILT: JUNE 05, 2009

DATE OF DRAWING: JUNE 11, 2009

THERE IS NO FORMERLY DELINEATED PARCEL EXISTING FOR THIS SITE.

CHATHAM SURVEYING SERVICES, INC. HAS PERFORMED A LOCATION SURVEY OF THESE SHOWN WELLS AND GEOPROBE POINTS. THE ADJACENT FENCE IS SHOWN FOR ORIENTATION ONLY. THE ADDITION OF ANY OTHER FEATURES ON THIS DRAWING IS BY OTHERS.

REFERENCES: DATA SHEET FOR CHATHAM COUNTY DISK C-37

SHOWN HORIZONTAL COORDINATES ARE GEORGIA STATE PLANE (NAD '83) AND ARE BASED ON CHATHAM COUNTY DISK C-37. SAID COORDINATES WERE TRANSFERRED TO THE SITE BY GPS.

WELL AND GEOPROBE COORDINATES ARE BASED ON SAME SAID HORIZONTAL DATUM.

ELEVATIONS ARE NAVD 1988. ELEVATIONS BASED ON SAME AFORESAID DISK AND GPS SESSION.

ELEVATIONS CAN BE CONVERTED TO NGVD 1929 BY ADDING A FACTOR OF 0.94' TO THE NAVD 1988 VALUES.

EQUIPMENT USED: SOKKIA SET 4110 TOTAL STATION
SOKKIA STRATUS L1 GPS RECEIVER SYSTEM
SOKKIA C320 AUTOMATIC LEVEL.

GEORGIA REGISTERED No. 2743 LAND SURVEYOR JAMES M. KEATON

JAMES M. KEATON
Ga. Reg. No. 2743

CHATHAM SURVEYING SERVICES, INC.
P.O. BOX 61649
SAVANNAH, GEORGIA 31420
912-303-0302

ARCADIS

Appendix E

Laboratory Results (June 2009)

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

Project Number/Name GP08HAFS.H09A.KG0EX

Project Location Hunter Army Air Field HAA-9

Laboratory Severn Trent

Project Manager Chuck Bertz

Sampler(s)/Affiliation Arcadis

KF03046

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	RAH					Remarks	Total
HA09SB01(6)	S	6-2-09/0922		4	1						5
HA09SB02(5)	S	6-2-09/0937		4	1						
HA09SB03(3)	S	6-2-09/1000		4	1						
HA09SB04(3)	S	6-2-09/1020		4	1						
HA09SB05(1)	S	6-2-09/1040		4	1						
HA09SB06(1)	S	6-2-09/1100		4	1						
HA09SB07(2)	S	6-2-09/1120		4	1						
HA09SB08(2-3)	S	6-2-09/1240		4	1						
HA09SB09(2-3)	S	6-2-09/1300		4	1						
HA09SB10(4.5)	S	6-2-09/1315		4	1						
HA09SB11(6-2)	S	6-2-09/1335		4	1						
HA09SB12(4-6)	S	6-2-09/1345		4	1						
HA09SB13(2-3)	S	6-2-09/1415		4	1						
HA09SB14(2-4)	S	6-2-09/1430		4	1						
HA09SB15(2-4)	S	6-2-09/1500		4	1						5
										Total No. of Bottles/ Containers	75

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: [signature]	Organization: Arcadis	Date 6/2/09	Time 1630	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	
Relinquished by: FEDEX	Organization: FEDEX	Date 6/3/09	Time 0930	Seal Intact?	
Received by: [signature]	Organization: Severn Trent	Date 6/3/09	Time 0930	Yes No N/A	

Special Instructions/Remarks: _____

Tc 2.4°

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Project Number/Name GP08HAFS.H09A.KG0EX

Project Location Hunter Army Airfield HAA-9

Laboratory Shealy

Project Manager Chuck Bertz

Sampler(s)/Affiliation Arcadis

KF03048

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	PAH					Remarks	Total
HA09SB16(2-4)	S	6-2-09/1515		4	1						5
HA09SB17(2-4)	S	6-2-09/1545		4	1						5
~~HA09SB18(2-4)~~											
HA09SB18(2-4)	S	6-2-09/1600		4	1						5
HA09SB19(4-6)	S	6-2-09/1615		4	1						5
HA09SB20(2-4)	S	6-2-09/1640		4	1						5

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 25

Relinquished by: [signature]	Organization: Arcadis	Date 6/2/09	Time 1830	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by: FEDEX	Organization: FEDEX	Date 6/3/09	Time 0930	Seal Intact? Yes No N/A
Received by: [signature]	Organization: Shealy Envl	Date 6/3/09	Time 0930	

Special Instructions/Remarks: T-2.6, 4.0

Delivery Method: ☐ In Person ☑ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1

Project Number/Name GP08HAFS.HA09A.KGOEK

Project Location Hunter Army Air Field HAA-9

Laboratory Sealy

Project Manager Chuck Bertz

Sampler(s)/Affiliation Josh Frazell/Arcadis

KF06028

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	PAH	TCLP VOCs	TCLP SVOCs	Ignitability, RCI, Corrosivity		Remarks	Total
HA09SB55(2-4)	S	6-5-09/1035		4	1						5
HA09IDW01	L	6-5-09/1500				1	1	1			3
HA09IDW02	L	6-5-09/1505				3	2	1			6
HA13R23IDW-1	L	6-5-09/1520				3	2	1			6
Trip Blank	L	6-5-09/		2							2
HA13R23IDW-1(6-5-09)	L	6-5-09/1520				3	2	1			6

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 21

Relinquished by: [signature]	Organization: Arcadis	Date 6/5/09	Time 1800	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by: FED EX	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by: [signature]	Organization: Sealy Lab	Date 6/6/09	Time 0930	

Special Instructions/Remarks:

Delivery Method: ☐ In Person ☑ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of _____

Project Number/Name: GP08HAFS. H09A. KG0EX

Project Location: Hunter Army Airfield AAA-9

Laboratory: Shealy

Project Manager: Chuck Beatz

Sampler(s)/Affiliation: Josh Ferrell/Arcadis

KF08028

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	PAH					Remarks	Total
HA09GW02(6-10)	L	6-5-09/0820		3	2						5
HA09GW02(11-15)	L	6-5-09/0830		3	2						5
HA09GW03(6-10)	L	6-5-09/0845		3	2						5
HA09GW03(11-15)	L	6-5-09/0900		3	2						5
HA09GW04(6-10)	L	6-5-09/0915		3	2						5
HA09GW04(11-15)	L	6-5-09/0936		3	2						5
Trip Blank	L	6-5-09/—		2							2
										Total No. of Bottles/Containers	32

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: [signature]	Organization: Arcadis	Date 6/5/09	Time 1800	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by: FedEx	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by: [signature]	Organization: Shealy Labs	Date 6/6/09	Time 0930	

Special Instructions/Remarks:

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) T=6.0 ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Project Number/Name GP08/HAFS.A09A KGOL x

Project Location Hunter Army Airfield HAA 9

Laboratory Shealy

Project Manager Chuck Bertz

Sampler(s)/Affiliation Arcadis

KT 4.29

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	8260	2AH	8082	7196			Remarks	Total
HA09SB36(2-4)	S	6-3-09/1410		4	1	1					6
HA09SB37(2-4)	S	6-3-09/1425		4	1						5
HA09SB38(4-6)	S	6-3-09/1500		4	1						5
HA09SB39(4-6)	S	6-3-09/1515		4	1						5
HA09SB40(4-6)	S	6-3-09/1530		4	1		1				6
HA09SB41(4-6)	S	6-3-09/1600		4	1						5
HA09SB42(2-4)	S	6-3-09/1630		4	1						5

Sample Matrix: L = Liquid; S = Solid; A = Air

T260

Total No. of Bottles/Containers

Relinquished by: [signature]	Organization: Arcadis	Date 6/3/09	Time 1800	Seal Intact? Yes No N/A
Received by: [signature]	Organization:	Date / /	Time	
Relinquished by: [signature]	Organization:	Date 6/4/09	Time 0940	Seal Intact? Yes No N/A
Received by: [signature]	Organization: Shealy	Date 6/4/09	Time 0940	

Special Instructions/Remarks:

T-44

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex ☐ Lab Courier ☐ Other

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

Project Number/Name: GP08HAFS.1109A.K606X

Project Location: Hunter Army Air Field HAA-9

Laboratory: Shealy

Project Manager: Chuck Bertz

Sampler(s)/Affiliation: Arcadis

KF04029

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	SVOC	OAH	TPH	TOC			Remarks	Total
HA09SB21(2-4)	S	6-3-09/0845		4	1						5
HA09SB22(4-6)	S	6-3-09/0900		4	1						5
HA09SB23(2-4)	S	6-3-09/0915		4	1						5
HA09SB24(6-7)	S	6-3-09/0945		4	1						5
HA09SB25(4-6)	S	6-3-09/1000		4	1	1					6
HA09SB26(4-6)	S	6-3-09/1020		4	1						5
HA09SB27(4-6)	S	6-3-09/1035		4	1		1				6
HA09SB28(2-3)	S	6-3-09/1050		4	1		1				6
HA09SB29(4-6)	S	6-3-09/1100		4	1						5
HA09SB30(2-4)	S	6-3-09/1110		4	1						5
HA09SB31(2-4)	S	6-3-09/1120		4	1						6
HA09SB32(4-6)	S	6-3-09/1130		4	1	1					6
HA09SB33(2-4)	S	6-3-09/1300		4	1	1					5
HA09SB34(4-6)	S	6-3-09/1330		4	1						5
HA09SB35(4-6)	S	6-3-09/1345		4	1						5
										Total No. of Bottles/Containers	74

T: 6.0

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: [signature]	Organization: Arcadis	Date 6/3/09	Time 1800	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by: FedEx	Organization:	Date 6/4/09	Time 0940	Seal Intact? Yes No N/A
Received by: [signature]	Organization:	Date 6/4/09	Time 0940	

Special Instructions/Remarks: 1-4 6, 3.9

☐ Common Carrier Fed Ex ☐ Lab Courier ☐ Other _____ SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1

Project Number/Name: G-P08HAFS.H09A.KG0EX

Project Location: Hunter Army Airfield HAA-9

Laboratory: Shealy

Project Manager: Chuck Bentz

Sampler(s)/Affiliation: Josh Frizzell / Erica Maddox, Arcadis

KF05010

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	PAH					Remarks	Total
HA096W01(6-10)	L	6-4-09/1600		3	2						5
HA096W01(11-15)	L	6-4-09/1615		3	2						
HA09SB54(2-4)	S	6-4-09/1530		4	1					As Per Jane	
HA09SB53(2-4)	S	6-4-09/1515		4	1					Kennedy	
HA09SB52(4-6)	S	6-4-09/1505		4	1					Rin Hold	
HA09SB51(2-4)	S	6-4-09/1500		4	1					analysis	
HA09SB45(2-4)	S	6-4-09/1420		4	1						
HA09SB44(4-6)	S	6-4-09/1415		4	1						
HA09SB43(4-6)	S	6-4-09/1405		4	1						
HA09SB50(2-4)	S	6-4-09/1400		4	1						
HA09SB49(2-4)	S	6-4-09/1350		4	1						
HA09SB48(2-4)	S	6-4-09/1340		4	1						
Trip Blank	L	6-4-09		2							2
										Total No. of Bottles/ Containers	62

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: [illegible]	Organization: Arcadis	Date 6/4/09	Time 1800	Seal Intact? Yes No N/A
Received by: [illegible]	Organization: Shealy Environmental	Date [illegible]	Time [illegible]	
Relinquished by: FEDEX	Organization: FedEx	Date 6/5/09	Time [illegible]	Seal Intact? Yes No N/A
Received by: [illegible]	Organization: Shealy Environmental	Date 6/5/09	Time 9:30	

Special Instructions/Remarks:

First cooler received at 5.8°C

Second cooler received at [illegible]

Delivery Method: ☐ In Person ☑ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

ARCADIS U.S., Inc.
30 Patewood Drive
Suite 155
Greenville, SC 29615
Attention: Janet Christy

Project Name: **Hunter Army Airfield HAA-9**

Project Number: **GP08HAFS.H09A.KG0EX**

Lot Number: **KF03048**

Date Completed: **06/18/2009**

Nisreen Saikaly
Project Manager

This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

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

* K F 0 3 0 4 8 *

Case Narrative
ARCADIS U.S., Inc.
Lot Number: KF03048

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.

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.

Volatile Organic Compounds

The surrogate recovery for sample -012 and-019 were outside the acceptance limit. These samples were diluted. The dilution impacted the surrogate recoveries, thus negating their usefulness concerning quality control. The sample results are reported and no corrective action is required.

DRO

Sample -015 has an unknown fuel pattern associated with the DRO analysis.

Semivolatile Organic Compounds

The RPD for MS/MSD exceeded method control limits in batch 11848; however, all other QA/QC criteria for the LCS/LCSD and the MS/MSD were within acceptance criteria and method control limits. The associated sample results were reported and no corrective action was required.

The MS/MSD recoveries for various analytes in batch 12352 were outside acceptance criteria. The RPD for MS/MSD exceeded method control limits. The surrogate recovery was outside the acceptance limit. 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
ARCADIS U.S., Inc.
Lot Number: KF03048

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	HA09SB01 (6)	Solid	06/02/2009 0922	06/03/2009
002	HA09SB02 (5)	Solid	06/02/2009 0937	06/03/2009
003	HA09SB03 (3)	Solid	06/02/2009 1000	06/03/2009
004	HA09SB04 (3)	Solid	06/02/2009 1020	06/03/2009
005	HA09SB05 (1)	Solid	06/02/2009 1040	06/03/2009
006	HA09SB06 (1)	Solid	06/02/2009 1100	06/03/2009
007	HA09SB07 (2)	Solid	06/02/2009 1120	06/03/2009
008	HA09SB08 (2-3)	Solid	06/02/2009 1245	06/03/2009
009	HA09SB09 (2-3)	Solid	06/02/2009 1300	06/03/2009
010	HA09SB10 (4-5)	Solid	06/02/2009 1315	06/03/2009
011	HA09SB11 (0-2)	Solid	06/02/2009 1335	06/03/2009
012	HA09SB12 (4-6)	Solid	06/02/2009 1347	06/03/2009
013	HA09SB13 (2-3)	Solid	06/02/2009 1415	06/03/2009
014	HA09SB14 (2-4)	Solid	06/02/2009 1435	06/03/2009
015	HA09SB15 (2-4)	Solid	06/02/2009 1500	06/03/2009
016	HA09SB16 (2-4)	Solid	06/02/2009 1515	06/03/2009
017	HA09SB17 (2-4)	Solid	06/02/2009 1545	06/03/2009
018	HA09SB18 (2-4)	Solid	06/02/2009 1600	06/03/2009
019	HA09SB19 (4-6)	Solid	06/02/2009 1615	06/03/2009
020	HA09SB20 (2-4)	Solid	06/02/2009 1640	06/03/2009

(20 samples)

Executive Summary
ARCADIS U.S., Inc.
Lot Number: KF03048

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
003	HA09SB03 (3)	Solid	Anthracene	8270D	13	J	ug/kg	10
003	HA09SB03 (3)	Solid	Benzo(a)anthracene	8270D	100		ug/kg	10
003	HA09SB03 (3)	Solid	Benzo(a)pyrene	8270D	96		ug/kg	10
003	HA09SB03 (3)	Solid	Benzo(b)fluoranthene	8270D	130		ug/kg	10
003	HA09SB03 (3)	Solid	Benzo(g,h,i)perylene	8270D	54	J	ug/kg	10
003	HA09SB03 (3)	Solid	Benzo(k)fluoranthene	8270D	50	J	ug/kg	10
003	HA09SB03 (3)	Solid	Chrysene	8270D	88		ug/kg	10
003	HA09SB03 (3)	Solid	Dibenzo(a,h)anthracene	8270D	25	J	ug/kg	10
003	HA09SB03 (3)	Solid	Fluoranthene	8270D	120		ug/kg	10
003	HA09SB03 (3)	Solid	Indeno(1,2,3-c,d)pyrene	8270D	53	J	ug/kg	10
003	HA09SB03 (3)	Solid	Phenanthrene	8270D	63	J	ug/kg	10
003	HA09SB03 (3)	Solid	Pyrene	8270D	140		ug/kg	10
004	HA09SB04 (3)	Solid	Xylenes (total)	8260B	3400		ug/kg	11
004	HA09SB04 (3)	Solid	1-Methylnaphthalene	8270D	1100		ug/kg	12
004	HA09SB04 (3)	Solid	2-Methylnaphthalene	8270D	1700		ug/kg	12
004	HA09SB04 (3)	Solid	Naphthalene	8270D	960		ug/kg	12
007	HA09SB07 (2)	Solid	Ethylbenzene	8260B	2200	J	ug/kg	13
007	HA09SB07 (2)	Solid	Xylenes (total)	8260B	18000		ug/kg	13
007	HA09SB07 (2)	Solid	1-Methylnaphthalene	8270D	2600		ug/kg	14
007	HA09SB07 (2)	Solid	2-Methylnaphthalene	8270D	5800		ug/kg	14
007	HA09SB07 (2)	Solid	Naphthalene	8270D	1600		ug/kg	14
007	HA09SB07 (2)	Solid	Phenanthrene	8270D	18	J	ug/kg	14
008	HA09SB08 (2-3)	Solid	Anthracene	8270D	38	J	ug/kg	16
008	HA09SB08 (2-3)	Solid	Benzo(a)anthracene	8270D	72	J	ug/kg	16
008	HA09SB08 (2-3)	Solid	Benzo(a)pyrene	8270D	62	J	ug/kg	16
008	HA09SB08 (2-3)	Solid	Benzo(b)fluoranthene	8270D	63	J	ug/kg	16
008	HA09SB08 (2-3)	Solid	Benzo(k)fluoranthene	8270D	24	J	ug/kg	16
008	HA09SB08 (2-3)	Solid	Chrysene	8270D	31	J	ug/kg	16
008	HA09SB08 (2-3)	Solid	Fluoranthene	8270D	160		ug/kg	16
008	HA09SB08 (2-3)	Solid	Fluorene	8270D	150		ug/kg	16
008	HA09SB08 (2-3)	Solid	Phenanthrene	8270D	150		ug/kg	16
008	HA09SB08 (2-3)	Solid	Pyrene	8270D	130		ug/kg	16
010	HA09SB10 (4-5)	Solid	Ethylbenzene	8260B	8500		ug/kg	17
010	HA09SB10 (4-5)	Solid	Xylenes (total)	8260B	21000		ug/kg	17
010	HA09SB10 (4-5)	Solid	Anthracene	8270D	68	J	ug/kg	18
010	HA09SB10 (4-5)	Solid	Benzo(a)anthracene	8270D	110		ug/kg	18
010	HA09SB10 (4-5)	Solid	Benzo(a)pyrene	8270D	130		ug/kg	18
010	HA09SB10 (4-5)	Solid	Benzo(b)fluoranthene	8270D	110		ug/kg	18
010	HA09SB10 (4-5)	Solid	Benzo(g,h,i)perylene	8270D	110		ug/kg	18
010	HA09SB10 (4-5)	Solid	Benzo(k)fluoranthene	8270D	120		ug/kg	18
010	HA09SB10 (4-5)	Solid	Chrysene	8270D	110		ug/kg	18
010	HA09SB10 (4-5)	Solid	Fluoranthene	8270D	110		ug/kg	18
010	HA09SB10 (4-5)	Solid	Fluorene	8270D	60	J	ug/kg	18
010	HA09SB10 (4-5)	Solid	Indeno(1,2,3-c,d)pyrene	8270D	110		ug/kg	18
010	HA09SB10 (4-5)	Solid	1-Methylnaphthalene	8270D	1200		ug/kg	18

Executive Summary (Continued)

Lot Number: KF03048

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
010	HA09SB10 (4-5)	Solid	2-Methylnaphthalene	8270D	1800		ug/kg	18
010	HA09SB10 (4-5)	Solid	Naphthalene	8270D	680		ug/kg	18
010	HA09SB10 (4-5)	Solid	Phenanthrene	8270D	81		ug/kg	18
010	HA09SB10 (4-5)	Solid	Pyrene	8270D	110		ug/kg	18
012	HA09SB12 (4-6)	Solid	Ethylbenzene	8260B	62000		ug/kg	19
012	HA09SB12 (4-6)	Solid	Xylenes (total)	8260B	66000		ug/kg	19
012	HA09SB12 (4-6)	Solid	Anthracene	8270D	130		ug/kg	20
012	HA09SB12 (4-6)	Solid	Benzo(a)anthracene	8270D	160		ug/kg	20
012	HA09SB12 (4-6)	Solid	Benzo(a)pyrene	8270D	140		ug/kg	20
012	HA09SB12 (4-6)	Solid	Benzo(b)fluoranthene	8270D	160		ug/kg	20
012	HA09SB12 (4-6)	Solid	Benzo(g,h,i)perylene	8270D	54	J	ug/kg	20
012	HA09SB12 (4-6)	Solid	Benzo(k)fluoranthene	8270D	70	J	ug/kg	20
012	HA09SB12 (4-6)	Solid	Chrysene	8270D	50	J	ug/kg	20
012	HA09SB12 (4-6)	Solid	Fluoranthene	8270D	500		ug/kg	20
012	HA09SB12 (4-6)	Solid	Fluorene	8270D	260		ug/kg	20
012	HA09SB12 (4-6)	Solid	Indeno(1,2,3-c,d)pyrene	8270D	50	J	ug/kg	20
012	HA09SB12 (4-6)	Solid	1-Methylnaphthalene	8270D	9200		ug/kg	20
012	HA09SB12 (4-6)	Solid	2-Methylnaphthalene	8270D	12000		ug/kg	20
012	HA09SB12 (4-6)	Solid	Naphthalene	8270D	6100		ug/kg	20
012	HA09SB12 (4-6)	Solid	Phenanthrene	8270D	480		ug/kg	20
012	HA09SB12 (4-6)	Solid	Pyrene	8270D	400		ug/kg	20
015	HA09SB15 (2-4)	Solid	Ethylbenzene	8260B	12000		ug/kg	21
015	HA09SB15 (2-4)	Solid	Xylenes (total)	8260B	13000		ug/kg	21
015	HA09SB15 (2-4)	Solid	Anthracene	8270D	36	J	ug/kg	22
015	HA09SB15 (2-4)	Solid	Benzo(a)pyrene	8270D	47	J	ug/kg	22
015	HA09SB15 (2-4)	Solid	Benzo(b)fluoranthene	8270D	57	J	ug/kg	22
015	HA09SB15 (2-4)	Solid	Benzo(g,h,i)perylene	8270D	24	J	ug/kg	22
015	HA09SB15 (2-4)	Solid	Benzo(k)fluoranthene	8270D	20	J	ug/kg	22
015	HA09SB15 (2-4)	Solid	Fluoranthene	8270D	140		ug/kg	22
015	HA09SB15 (2-4)	Solid	Fluorene	8270D	130		ug/kg	22
015	HA09SB15 (2-4)	Solid	1-Methylnaphthalene	8270D	8500		ug/kg	22
015	HA09SB15 (2-4)	Solid	2-Methylnaphthalene	8270D	11000		ug/kg	22
015	HA09SB15 (2-4)	Solid	Naphthalene	8270D	3600		ug/kg	22
015	HA09SB15 (2-4)	Solid	Phenanthrene	8270D	120		ug/kg	22
015	HA09SB15 (2-4)	Solid	Pyrene	8270D	110		ug/kg	22
015	HA09SB15 (2-4)	Solid	TPH-DRO	8015B	2500000	B	ug/kg	23
015	HA09SB15 (2-4)	Solid	TPH-GRO	8015C	1500000	B	ug/kg	24
017	HA09SB17 (2-4)	Solid	Benzene	8260B	2600		ug/kg	25
017	HA09SB17 (2-4)	Solid	Ethylbenzene	8260B	15000		ug/kg	25
017	HA09SB17 (2-4)	Solid	Toluene	8260B	30000		ug/kg	25
017	HA09SB17 (2-4)	Solid	Xylenes (total)	8260B	67000		ug/kg	25
017	HA09SB17 (2-4)	Solid	Fluorene	8270D	85		ug/kg	26
017	HA09SB17 (2-4)	Solid	1-Methylnaphthalene	8270D	3600		ug/kg	26
017	HA09SB17 (2-4)	Solid	2-Methylnaphthalene	8270D	6200		ug/kg	26
017	HA09SB17 (2-4)	Solid	Naphthalene	8270D	2200		ug/kg	26
019	HA09SB19 (4-6)	Solid	Benzene	8260B	1800		ug/kg	27
019	HA09SB19 (4-6)	Solid	Ethylbenzene	8260B	7000		ug/kg	27
019	HA09SB19 (4-6)	Solid	Toluene	8260B	8400		ug/kg	27

Executive Summary (Continued)

Lot Number: KF03048

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
019	HA09SB19 (4-6)	Solid	Xylenes (total)	8260B	31000		ug/kg	27
019	HA09SB19 (4-6)	Solid	Acenaphthene	8270D	55	J	ug/kg	28
019	HA09SB19 (4-6)	Solid	Acenaphthylene	8270D	27	J	ug/kg	28
019	HA09SB19 (4-6)	Solid	Fluorene	8270D	56	J	ug/kg	28
019	HA09SB19 (4-6)	Solid	1-Methylnaphthalene	8270D	1700		ug/kg	28
019	HA09SB19 (4-6)	Solid	2-Methylnaphthalene	8270D	2300		ug/kg	28
019	HA09SB19 (4-6)	Solid	Naphthalene	8270D	1000		ug/kg	28

(100 detections)

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-001**
Description: **HA09SB01 (6)**
Matrix: **Solid**
Date Sampled: **06/02/2009 0922**
% Solids: **80.7** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	06/08/2009 1455	DLB		12087	9.51

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		3.2	0.72	ug/kg	2
Ethylbenzene	100-41-4	8260B	ND		3.2	1.1	ug/kg	2
Toluene	108-88-3	8260B	ND		3.2	1.1	ug/kg	2
Xylenes (total)	1330-20-7	8260B	ND		3.2	1.9	ug/kg	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		73	53-142
Bromofluorobenzene		95	47-138
Toluene-d8		81	68-124

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

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-001**
Description: **HA09SB01 (6)**
Matrix: **Solid**
Date Sampled: **06/02/2009 0922**
% Solids: **80.7** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	06/05/2009 1526	DC	06/04/2009 1742	11848

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		82	13	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		82	13	ug/kg	1
Anthracene	120-12-7	8270D	ND		82	9.0	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		82	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		82	11	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		82	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		82	14	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		82	12	ug/kg	1
Chrysene	218-01-9	8270D	ND		82	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		82	11	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		82	13	ug/kg	1
Fluorene	86-73-7	8270D	ND		82	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		82	12	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D	ND		82	12	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		82	12	ug/kg	1
Naphthalene	91-20-3	8270D	ND		82	12	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		82	11	ug/kg	1
Pyrene	129-00-0	8270D	ND		82	16	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		47	33-102
Nitrobenzene-d5		43	22-109
Terphenyl-d14		64	41-120

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

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-003**
Description: **HA09SB03 (3)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1000**
% Solids: **90.0** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	06/04/2009 1511	DLB		11883	4.93

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		5.6	1.2	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		5.6	1.9	ug/kg	1
Toluene	108-88-3	8260B	ND		5.6	1.9	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		5.6	3.3	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		80	53-142
Bromofluorobenzene		65	47-138
Toluene-d8		76	68-124

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

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-003**
Description: **HA09SB03 (3)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1000**
% Solids: **90.0** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	3550C	8270D	1	06/15/2009 2257	GLR	06/12/2009 1730	12352

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		74	12	ug/kg	2
Acenaphthylene	208-96-8	8270D	ND		74	11	ug/kg	2
Anthracene	**120-12-7**	**8270D**	**13**	**J**	**74**	**8.1**	**ug/kg**	**2**
Benzo(a)anthracene	**56-55-3**	**8270D**	**100**		**74**	**9.7**	**ug/kg**	**2**
Benzo(a)pyrene	**50-32-8**	**8270D**	**96**		**74**	**10**	**ug/kg**	**2**
Benzo(b)fluoranthene	**205-99-2**	**8270D**	**130**		**74**	**10**	**ug/kg**	**2**
Benzo(g,h,i)perylene	**191-24-2**	**8270D**	**54**	**J**	**74**	**13**	**ug/kg**	**2**
Benzo(k)fluoranthene	**207-08-9**	**8270D**	**50**	**J**	**74**	**10**	**ug/kg**	**2**
Chrysene	**218-01-9**	**8270D**	**88**		**74**	**12**	**ug/kg**	**2**
Dibenzo(a,h)anthracene	**53-70-3**	**8270D**	**25**	**J**	**74**	**10**	**ug/kg**	**2**
Fluoranthene	**206-44-0**	**8270D**	**120**		**74**	**12**	**ug/kg**	**2**
Fluorene	86-73-7	8270D	ND		74	9.9	ug/kg	2
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270D**	**53**	**J**	**74**	**11**	**ug/kg**	**2**
1-Methylnaphthalene	90-12-0	8270D	ND		74	11	ug/kg	2
2-Methylnaphthalene	91-57-6	8270D	ND		74	11	ug/kg	2
Naphthalene	91-20-3	8270D	ND		74	11	ug/kg	2
Phenanthrene	**85-01-8**	**8270D**	**63**	**J**	**74**	**9.9**	**ug/kg**	**2**
Pyrene	**129-00-0**	**8270D**	**140**		**74**	**14**	**ug/kg**	**2**

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
2-Fluorobiphenyl		76	33-102
Nitrobenzene-d5		67	22-109
Terphenyl-d14		79	41-120

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

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-004**
Description: **HA09SB04 (3)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1020**
% Solids: **89.8** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	50	06/04/2009 1712	DLB		11884	1.00

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1400	310	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		1400	470	ug/kg	1
Toluene	108-88-3	8260B	ND		1400	470	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**3400**		**1400**	**810**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	53-142
Bromofluorobenzene		96	47-138
Toluene-d8		94	68-124

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

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-004**
Description: **HA09SB04 (3)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1020**
% Solids: **89.8** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	06/11/2009 1253	GLR	06/04/2009 1742	11848

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		74	12	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		74	11	ug/kg	1
Anthracene	120-12-7	8270D	ND		74	8.1	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		74	9.7	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		74	10	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		74	10	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		74	13	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		74	10	ug/kg	1
Chrysene	218-01-9	8270D	ND		74	12	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		74	10	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		74	12	ug/kg	1
Fluorene	86-73-7	8270D	ND		74	9.9	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		74	11	ug/kg	1
1-Methylnaphthalene	**90-12-0**	**8270D**	**1100**		**74**	**11**	**ug/kg**	**1**
2-Methylnaphthalene	**91-57-6**	**8270D**	**1700**		**74**	**11**	**ug/kg**	**1**
Naphthalene	**91-20-3**	**8270D**	**960**		**74**	**11**	**ug/kg**	**1**
Phenanthrene	85-01-8	8270D	ND		74	9.8	ug/kg	1
Pyrene	129-00-0	8270D	ND		74	14	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		74	33-102
Nitrobenzene-d5		65	22-109
Terphenyl-d14		90	41-120

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

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**	Laboratory ID: **KF03048-007**
Description: **HA09SB07 (2)**	Matrix: **Solid**
Date Sampled: **06/02/2009 1120**	% Solids: **87.7** **06/04/2009 0059**
Date Received: **06/03/2009**	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	100	06/04/2009 1805	DLB		11884	1.00

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		2800	630	ug/kg	1
Ethylbenzene	**100-41-4**	**8260B**	**2200**	**J**	**2800**	**970**	**ug/kg**	**1**
Toluene	108-88-3	8260B	ND		2800	970	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**18000**		**2800**	**1600**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	53-142
Bromofluorobenzene		97	47-138
Toluene-d8		92	68-124

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

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-007**
Description: **HA09SB07 (2)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1120**
% Solids: **87.7** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	06/05/2009 1704	DC	06/04/2009 1742	11848
2	3550C	8270D	2	06/12/2009 1928	DC	06/04/2009 1742	11848

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		76	12	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		76	12	ug/kg	1
Anthracene	120-12-7	8270D	ND		76	8.4	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		76	10	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		76	10	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		76	11	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		76	13	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		76	11	ug/kg	1
Chrysene	218-01-9	8270D	ND		76	12	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		76	10	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		76	12	ug/kg	1
Fluorene	86-73-7	8270D	ND		76	10	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		76	11	ug/kg	1
1-Methylnaphthalene	**90-12-0**	**8270D**	**2600**		**76**	**11**	**ug/kg**	**1**
2-Methylnaphthalene	**91-57-6**	**8270D**	**5800**		**150**	**22**	**ug/kg**	**2**
Naphthalene	**91-20-3**	**8270D**	**1600**		**76**	**12**	**ug/kg**	**1**
Phenanthrene	**85-01-8**	**8270D**	**18**	**J**	**76**	**10**	**ug/kg**	**1**
Pyrene	129-00-0	8270D	ND		76	15	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
2-Fluorobiphenyl		53	33-102		76	33-102
Nitrobenzene-d5		50	22-109		73	22-109
Terphenyl-d14		57	41-120		81	41-120

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

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-008**
Description: **HA09SB08 (2-3)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1245**
% Solids: **89.1** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	06/04/2009 1226	DLB		11883	8.61

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		3.2	0.72	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		3.2	1.1	ug/kg	1
Toluene	108-88-3	8260B	ND		3.2	1.1	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		3.2	1.9	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		88	53-142
Bromofluorobenzene		84	47-138
Toluene-d8		82	68-124

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

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-008**
Description: **HA09SB08 (2-3)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1245**
% Solids: **89.1** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	06/11/2009 1441	GLR	06/04/2009 1742	11848
2	3550C	8270D	1	06/15/2009 2318	GLR	06/04/2009 1742	11848

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		73	12	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		73	11	ug/kg	1
Anthracene	**120-12-7**	**8270D**	**38**	**J**	**73**	**8.1**	**ug/kg**	**1**
Benzo(a)anthracene	**56-55-3**	**8270D**	**72**	**J**	**73**	**9.6**	**ug/kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270D**	**62**	**J**	**73**	**10**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270D**	**63**	**J**	**73**	**10**	**ug/kg**	**1**
Benzo(g,h,i)perylene	191-24-2	8270D	ND		73	13	ug/kg	1
Benzo(k)fluoranthene	**207-08-9**	**8270D**	**24**	**J**	**73**	**10**	**ug/kg**	**1**
Chrysene	**218-01-9**	**8270D**	**31**	**J**	**73**	**12**	**ug/kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		73	9.9	ug/kg	1
Fluoranthene	**206-44-0**	**8270D**	**160**		**73**	**12**	**ug/kg**	**1**
Fluorene	**86-73-7**	**8270D**	**150**		**73**	**9.8**	**ug/kg**	**1**
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		73	11	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D	ND		73	11	ug/kg	2
2-Methylnaphthalene	91-57-6	8270D	ND		73	11	ug/kg	2
Naphthalene	91-20-3	8270D	ND		73	11	ug/kg	2
Phenanthrene	**85-01-8**	**8270D**	**150**		**73**	**9.8**	**ug/kg**	**1**
Pyrene	**129-00-0**	**8270D**	**130**		**73**	**14**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
2-Fluorobiphenyl		78	33-102		60	33-102
Nitrobenzene-d5		70	22-109		51	22-109
Terphenyl-d14		74	41-120		68	41-120

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

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-010**
Description: **HA09SB10 (4-5)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1315**
% Solids: **82.4** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	200	06/04/2009 1828	DLB		11884	1.00

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		6100	1300	ug/kg	1
Ethylbenzene	**100-41-4**	**8260B**	**8500**		**6100**	**2100**	**ug/kg**	**1**
Toluene	108-88-3	8260B	ND		6100	2100	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**21000**		**6100**	**3500**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		114	53-142
Bromofluorobenzene		112	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
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-010**
Description: **HA09SB10 (4-5)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1315**
% Solids: **82.4** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	06/14/2009 0827	GLR	06/12/2009 1730	12352

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		81	13	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		81	12	ug/kg	1
Anthracene	**120-12-7**	**8270D**	**68**	**J**	**81**	**8.9**	**ug/kg**	**1**
Benzo(a)anthracene	**56-55-3**	**8270D**	**110**		**81**	**11**	**ug/kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270D**	**130**		**81**	**11**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270D**	**110**		**81**	**12**	**ug/kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270D**	**110**		**81**	**14**	**ug/kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270D**	**120**		**81**	**12**	**ug/kg**	**1**
Chrysene	**218-01-9**	**8270D**	**110**		**81**	**13**	**ug/kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		81	11	ug/kg	1
Fluoranthene	**206-44-0**	**8270D**	**110**		**81**	**13**	**ug/kg**	**1**
Fluorene	**86-73-7**	**8270D**	**60**	**J**	**81**	**11**	**ug/kg**	**1**
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270D**	**110**		**81**	**12**	**ug/kg**	**1**
1-Methylnaphthalene	**90-12-0**	**8270D**	**1200**		**81**	**12**	**ug/kg**	**1**
2-Methylnaphthalene	**91-57-6**	**8270D**	**1800**		**81**	**12**	**ug/kg**	**1**
Naphthalene	**91-20-3**	**8270D**	**680**		**81**	**12**	**ug/kg**	**1**
Phenanthrene	**85-01-8**	**8270D**	**81**		**81**	**11**	**ug/kg**	**1**
Pyrene	**129-00-0**	**8270D**	**110**		**81**	**16**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		79	33-102
Nitrobenzene-d5		65	22-109
Terphenyl-d14		84	41-120

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

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-012**
Description: **HA09SB12 (4-6)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1347**
% Solids: **79.8** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	500	06/04/2009 1852	DLB		11884	1.00

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		16000	3400	ug/kg	1
Ethylbenzene	**100-41-4**	**8260B**	**62000**		**16000**	**5300**	**ug/kg**	**1**
Toluene	108-88-3	8260B	ND		16000	5300	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**66000**		**16000**	**9100**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4	N	152	53-142
Bromofluorobenzene		112	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
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-012**
Description: **HA09SB12 (4-6)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1347**
% Solids: **79.8** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	06/14/2009 0848	GLR	06/12/2009 1730	12352
2	3550C	8270D	5	06/18/2009 1604	DC	06/12/2009 1730	12352

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		83	13	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		83	13	ug/kg	1
Anthracene	**120-12-7**	**8270D**	**130**		**83**	**9.1**	**ug/kg**	**1**
Benzo(a)anthracene	**56-55-3**	**8270D**	**160**		**83**	**11**	**ug/kg**	**1**
Benzo(a)pyrene	**50-32-8**	**8270D**	**140**		**83**	**12**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270D**	**160**		**83**	**12**	**ug/kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270D**	**54**	**J**	**83**	**14**	**ug/kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270D**	**70**	**J**	**83**	**12**	**ug/kg**	**1**
Chrysene	**218-01-9**	**8270D**	**50**	**J**	**83**	**14**	**ug/kg**	**1**
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		83	11	ug/kg	1
Fluoranthene	**206-44-0**	**8270D**	**500**		**83**	**13**	**ug/kg**	**1**
Fluorene	**86-73-7**	**8270D**	**260**		**83**	**11**	**ug/kg**	**1**
Indeno(1,2,3-c,d)pyrene	**193-39-5**	**8270D**	**50**	**J**	**83**	**12**	**ug/kg**	**1**
1-Methylnaphthalene	**90-12-0**	**8270D**	**9200**		**410**	**62**	**ug/kg**	**2**
2-Methylnaphthalene	**91-57-6**	**8270D**	**12000**		**410**	**61**	**ug/kg**	**2**
Naphthalene	**91-20-3**	**8270D**	**6100**		**410**	**63**	**ug/kg**	**2**
Phenanthrene	**85-01-8**	**8270D**	**480**		**83**	**11**	**ug/kg**	**1**
Pyrene	**129-00-0**	**8270D**	**400**		**83**	**16**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
2-Fluorobiphenyl		90	33-102		74	33-102
Nitrobenzene-d5		76	22-109		50	22-109
Terphenyl-d14		78	41-120		65	41-120

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

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**	Laboratory ID: **KF03048-015**
Description: **HA09SB15 (2-4)**	Matrix: **Solid**
Date Sampled: **06/02/2009 1500**	% Solids: **86.8** **06/04/2009 0059**
Date Received: **06/03/2009**	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	200	06/08/2009 1629	DLB		12085	6.20

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		930	200	ug/kg	1
Ethylbenzene	**100-41-4**	**8260B**	**12000**		**930**	**320**	**ug/kg**	**1**
Toluene	108-88-3	8260B	ND		930	320	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**13000**		**930**	**540**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	53-142
Bromofluorobenzene		95	47-138
Toluene-d8		85	68-124

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

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-015**
Description: **HA09SB15 (2-4)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1500**
% Solids: **86.8** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	06/05/2009 1802	DC	06/04/2009 1742	11848
2	3550C	8270D	5	06/12/2009 1949	DC	06/04/2009 1742	11848

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		76	12	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		76	12	ug/kg	1
Anthracene	**120-12-7**	**8270D**	**36**	**J**	**76**	**8.4**	**ug/kg**	**1**
Benzo(a)anthracene	56-55-3	8270D	ND		76	10	ug/kg	1
Benzo(a)pyrene	**50-32-8**	**8270D**	**47**	**J**	**76**	**10**	**ug/kg**	**1**
Benzo(b)fluoranthene	**205-99-2**	**8270D**	**57**	**J**	**76**	**11**	**ug/kg**	**1**
Benzo(g,h,i)perylene	**191-24-2**	**8270D**	**24**	**J**	**76**	**13**	**ug/kg**	**1**
Benzo(k)fluoranthene	**207-08-9**	**8270D**	**20**	**J**	**76**	**11**	**ug/kg**	**1**
Chrysene	218-01-9	8270D	ND		76	12	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		76	10	ug/kg	1
Fluoranthene	**206-44-0**	**8270D**	**140**		**76**	**12**	**ug/kg**	**1**
Fluorene	**86-73-7**	**8270D**	**130**		**76**	**10**	**ug/kg**	**1**
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		76	11	ug/kg	1
1-Methylnaphthalene	**90-12-0**	**8270D**	**8500**		**380**	**57**	**ug/kg**	**2**
2-Methylnaphthalene	**91-57-6**	**8270D**	**11000**		**380**	**56**	**ug/kg**	**2**
Naphthalene	**91-20-3**	**8270D**	**3600**		**76**	**12**	**ug/kg**	**1**
Phenanthrene	**85-01-8**	**8270D**	**120**		**76**	**10**	**ug/kg**	**1**
Pyrene	**129-00-0**	**8270D**	**110**		**76**	**15**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
2-Fluorobiphenyl		58	33-102		83	33-102
Nitrobenzene-d5		69	22-109		104	22-109
Terphenyl-d14		56	41-120		86	41-120

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

TPH - DRO

Client:	**ARCADIS U.S., Inc.**	Laboratory ID:	**KF03048-015**
Description:	**HA09SB15 (2-4)**	Matrix:	**Solid**
Date Sampled:	**06/02/2009 1500**	% Solids:	**86.8 06/04/2009 0059**
Date Received:	**06/03/2009**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550B	8015B	1	06/13/2009 0714	ASB	06/10/2009 1145	12158

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TPH-DRO		**8015B**	**2500000**	**B**	**7600**	**1400**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
o - Terphenyl		70	55-120

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

TPH - GRO

Client:	**ARCADIS U.S., Inc.**	Laboratory ID:	**KF03048-015**
Description:	**HA09SB15 (2-4)**	Matrix:	**Solid**
Date Sampled:	**06/02/2009 1500**	% Solids:	**86.8 06/04/2009 0059**
Date Received:	**06/03/2009**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8015C	10	06/16/2009 1459	IVC		12560

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TPH-GRO		**8015C**	**1500000**	**B**	**56000**	**6900**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		127	45-132

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

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-017**
Description: **HA09SB17 (2-4)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1545**
% Solids: **81.9** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	500	06/08/2009 1716	DLB		12085	7.64

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**2600**		**2000**	**440**	**ug/kg**	**1**
Ethylbenzene	**100-41-4**	**8260B**	**15000**		**2000**	**680**	**ug/kg**	**1**
Toluene	**108-88-3**	**8260B**	**30000**		**2000**	**680**	**ug/kg**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**67000**		**2000**	**1200**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	53-142
Bromofluorobenzene		86	47-138
Toluene-d8		80	68-124

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

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-017**
Description: **HA09SB17 (2-4)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1545**
% Solids: **81.9** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	06/05/2009 1842	DC	06/04/2009 1742	11848
2	3550C	8270D	2	06/11/2009 1546	GLR	06/04/2009 1742	11848

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		80	13	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		80	12	ug/kg	1
Anthracene	120-12-7	8270D	ND		80	8.9	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		80	10	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		80	11	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		80	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		80	14	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		80	11	ug/kg	1
Chrysene	218-01-9	8270D	ND		80	13	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		80	11	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		80	13	ug/kg	1
Fluorene	**86-73-7**	**8270D**	**85**		**80**	**11**	**ug/kg**	**1**
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		80	12	ug/kg	1
1-Methylnaphthalene	**90-12-0**	**8270D**	**3600**		**80**	**12**	**ug/kg**	**1**
2-Methylnaphthalene	**91-57-6**	**8270D**	**6200**		**160**	**24**	**ug/kg**	**2**
Naphthalene	**91-20-3**	**8270D**	**2200**		**80**	**12**	**ug/kg**	**1**
Phenanthrene	85-01-8	8270D	ND		80	11	ug/kg	1
Pyrene	129-00-0	8270D	ND		80	16	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
2-Fluorobiphenyl		66	33-102		91	33-102
Nitrobenzene-d5		76	22-109		71	22-109
Terphenyl-d14		69	41-120		85	41-120

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

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**	Laboratory ID: **KF03048-019**
Description: **HA09SB19 (4-6)**	Matrix: **Solid**
Date Sampled: **06/02/2009 1615**	% Solids: **82.1** **06/04/2009 0059**
Date Received: **06/03/2009**	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	500	06/08/2009 1852	DLB		12085	10.82

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**1800**		**1400**	**310**	**ug/kg**	**1**
Ethylbenzene	**100-41-4**	**8260B**	**7000**		**1400**	**480**	**ug/kg**	**1**
Toluene	**108-88-3**	**8260B**	**8400**		**1400**	**480**	**ug/kg**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**31000**		**1400**	**820**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		70	53-142
Bromofluorobenzene		77	47-138
Toluene-d8	N	59	68-124

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

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **KF03048-019**
Description: **HA09SB19 (4-6)**
Matrix: **Solid**
Date Sampled: **06/02/2009 1615**
% Solids: **82.1** **06/04/2009 0059**
Date Received: **06/03/2009**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	06/05/2009 1921	DC	06/04/2009 1742	11848

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	**83-32-9**	**8270D**	**55**	**J**	**80**	**13**	**ug/kg**	**1**
Acenaphthylene	**208-96-8**	**8270D**	**27**	**J**	**80**	**12**	**ug/kg**	**1**
Anthracene	120-12-7	8270D	ND		80	8.9	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		80	10	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		80	11	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		80	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		80	14	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		80	11	ug/kg	1
Chrysene	218-01-9	8270D	ND		80	13	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		80	11	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		80	13	ug/kg	1
Fluorene	**86-73-7**	**8270D**	**56**	**J**	**80**	**11**	**ug/kg**	**1**
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		80	12	ug/kg	1
1-Methylnaphthalene	**90-12-0**	**8270D**	**1700**		**80**	**12**	**ug/kg**	**1**
2-Methylnaphthalene	**91-57-6**	**8270D**	**2300**		**80**	**12**	**ug/kg**	**1**
Naphthalene	**91-20-3**	**8270D**	**1000**		**80**	**12**	**ug/kg**	**1**
Phenanthrene	85-01-8	8270D	ND		80	11	ug/kg	1
Pyrene	129-00-0	8270D	ND		80	16	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		42	33-102
Nitrobenzene-d5		30	22-109
Terphenyl-d14		58	41-120

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

QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: KQ11883-001
Batch: 11883
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	5.0	1.1	ug/kg	06/04/2009 1022
Ethylbenzene	ND		1	5.0	1.7	ug/kg	06/04/2009 1022
Toluene	ND		1	5.0	1.7	ug/kg	06/04/2009 1022
Xylenes (total)	ND		1	5.0	2.9	ug/kg	06/04/2009 1022

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	47-138
1,2-Dichloroethane-d4		80	53-142
Toluene-d8		85	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ11883-002
Batch: 11883
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	48		1	96	69-123	06/04/2009 0912
Ethylbenzene	50	47		1	95	59-128	06/04/2009 0912
Toluene	50	46		1	92	61-129	06/04/2009 0912
Xylenes (total)	100	91		1	91	58-128	06/04/2009 0912

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	47-138
1,2-Dichloroethane-d4		85	53-142
Toluene-d8		88	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ11883-003
Batch: 11883
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
Benzene	50	47		1	94	2.1	69-123	20	06/04/2009 0935
Ethylbenzene	50	46		1	93	1.9	59-128	20	06/04/2009 0935
Toluene	50	45		1	90	2.4	61-129	20	06/04/2009 0935
Xylenes (total)	100	91		1	91	0.64	58-128	20	06/04/2009 0935

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	47-138
1,2-Dichloroethane-d4		83	53-142
Toluene-d8		87	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ11884-001
Batch: 11884
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		50	250	55	ug/kg	06/04/2009 1621
Ethylbenzene	ND		50	250	85	ug/kg	06/04/2009 1621
Toluene	ND		50	250	85	ug/kg	06/04/2009 1621
Xylenes (total)	ND		50	250	140	ug/kg	06/04/2009 1621

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		78	47-138
1,2-Dichloroethane-d4		78	53-142
Toluene-d8		76	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ11884-002
Batch: 11884
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	2500	1800		50	73	69-123	06/04/2009 1534
Ethylbenzene	2500	1900		50	75	59-128	06/04/2009 1534
Toluene	2500	1800		50	71	61-129	06/04/2009 1534
Xylenes (total)	5000	3600		50	73	58-128	06/04/2009 1534

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		80	47-138
1,2-Dichloroethane-d4		77	53-142
Toluene-d8		75	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ11884-003
Batch: 11884
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
Benzene	2500	1800		50	74	0.63	69-123	20	06/04/2009 1558
Ethylbenzene	2500	1900		50	74	0.92	59-128	20	06/04/2009 1558
Toluene	2500	1800		50	71	0.092	61-129	20	06/04/2009 1558
Xylenes (total)	5000	3600		50	72	1.0	58-128	20	06/04/2009 1558

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		78	47-138
1,2-Dichloroethane-d4		79	53-142
Toluene-d8		76	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12085-001
Batch: 12085
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		50	250	55	ug/kg	06/04/2009 1621
Ethylbenzene	ND		50	250	85	ug/kg	06/04/2009 1621
Toluene	ND		50	250	85	ug/kg	06/04/2009 1621
Xylenes (total)	ND		50	250	140	ug/kg	06/04/2009 1621

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		78	47-138
1,2-Dichloroethane-d4		78	53-142
Toluene-d8		76	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12085-002
Batch: 12085
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	2500	1800		50	73	69-123	06/04/2009 1534
Ethylbenzene	2500	1900		50	75	59-128	06/04/2009 1534
Toluene	2500	1800		50	71	61-129	06/04/2009 1534
Xylenes (total)	5000	3600		50	73	58-128	06/04/2009 1534

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		80	47-138
1,2-Dichloroethane-d4		77	53-142
Toluene-d8		75	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12085-003
Batch: 12085
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
Benzene	2500	1800		50	74	0.63	69-123	20	06/04/2009 1558
Ethylbenzene	2500	1900		50	74	0.92	59-128	20	06/04/2009 1558
Toluene	2500	1800		50	71	0.092	61-129	20	06/04/2009 1558
Xylenes (total)	5000	3600		50	72	1.0	58-128	20	06/04/2009 1558

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		78	47-138
1,2-Dichloroethane-d4		79	53-142
Toluene-d8		76	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12087-001
Batch: 12087
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	5.0	1.1	ug/kg	06/08/2009 1411
Ethylbenzene	ND		1	5.0	1.7	ug/kg	06/08/2009 1411
Toluene	ND		1	5.0	1.7	ug/kg	06/08/2009 1411
Xylenes (total)	ND		1	5.0	2.9	ug/kg	06/08/2009 1411

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	47-138
1,2-Dichloroethane-d4		73	53-142
Toluene-d8		81	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12087-002
Batch: 12087
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	46		1	93	69-123	06/08/2009 1300
Ethylbenzene	50	48		1	96	59-128	06/08/2009 1300
Toluene	50	46		1	92	61-129	06/08/2009 1300
Xylenes (total)	100	93		1	93	58-128	06/08/2009 1300

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	47-138
1,2-Dichloroethane-d4		72	53-142
Toluene-d8		81	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12087-003
Batch: 12087
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
Benzene	50	45		1	90	3.1	69-123	20	06/08/2009 1324
Ethylbenzene	50	47		1	93	3.3	59-128	20	06/08/2009 1324
Toluene	50	45		1	90	2.4	61-129	20	06/08/2009 1324
Xylenes (total)	100	90		1	90	3.5	58-128	20	06/08/2009 1324

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	47-138
1,2-Dichloroethane-d4		73	53-142
Toluene-d8		81	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: KQ11848-001
Batch: 11848
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/04/2009 1742

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1-Methylnaphthalene	ND		1	67	10	ug/kg	06/08/2009 1632
2-Methylnaphthalene	ND		1	67	9.9	ug/kg	06/08/2009 1632
Acenaphthene	ND		1	67	11	ug/kg	06/08/2009 1632
Acenaphthylene	ND		1	67	10	ug/kg	06/08/2009 1632
Anthracene	ND		1	67	7.4	ug/kg	06/08/2009 1632
Benzo(a)anthracene	ND		1	67	8.8	ug/kg	06/08/2009 1632
Benzo(a)pyrene	ND		1	67	9.3	ug/kg	06/08/2009 1632
Benzo(b)fluoranthene	ND		1	67	9.6	ug/kg	06/08/2009 1632
Benzo(g,h,i)perylene	ND		1	67	12	ug/kg	06/08/2009 1632
Benzo(k)fluoranthene	ND		1	67	9.5	ug/kg	06/08/2009 1632
Chrysene	ND		1	67	11	ug/kg	06/08/2009 1632
Dibenzo(a,h)anthracene	ND		1	67	9.1	ug/kg	06/08/2009 1632
Fluoranthene	ND		1	67	10	ug/kg	06/08/2009 1632
Fluorene	ND		1	67	9.0	ug/kg	06/08/2009 1632
Indeno(1,2,3-c,d)pyrene	ND		1	67	9.7	ug/kg	06/08/2009 1632
Naphthalene	ND		1	67	10	ug/kg	06/08/2009 1632
Phenanthrene	ND		1	67	9.0	ug/kg	06/08/2009 1632
Pyrene	ND		1	67	13	ug/kg	06/08/2009 1632

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		58	33-102
Nitrobenzene-d5		52	22-109
Terphenyl-d14		60	41-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: KQ11848-002
Batch: 11848
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/04/2009 1742

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
2-Methylnaphthalene	1300	890		1	66	30-130	06/05/2009 1507
Acenaphthene	1300	920		1	69	30-130	06/05/2009 1507
Acenaphthylene	1300	1100		1	85	30-130	06/05/2009 1507
Anthracene	1300	1000		1	78	30-130	06/05/2009 1507
Benzo(a)anthracene	1300	1100		1	81	30-130	06/05/2009 1507
Benzo(a)pyrene	1300	1300		1	97	30-130	06/05/2009 1507
Benzo(b)fluoranthene	1300	1100		1	80	30-130	06/05/2009 1507
Benzo(g,h,i)perylene	1300	1000		1	78	30-130	06/05/2009 1507
Benzo(k)fluoranthene	1300	1100		1	80	30-130	06/05/2009 1507
Chrysene	1300	1100		1	80	30-130	06/05/2009 1507
Dibenzo(a,h)anthracene	1300	1000		1	76	30-130	06/05/2009 1507
Fluoranthene	1300	1000		1	80	30-130	06/05/2009 1507
Fluorene	1300	960		1	72	30-130	06/05/2009 1507
Indeno(1,2,3-c,d)pyrene	1300	1100		1	82	30-130	06/05/2009 1507
Naphthalene	1300	840		1	63	30-130	06/05/2009 1507
Phenanthrene	1300	1000		1	77	30-130	06/05/2009 1507
Pyrene	1300	1000		1	79	30-130	06/05/2009 1507

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		72	33-102
Nitrobenzene-d5		66	22-109
Terphenyl-d14		75	41-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: KF03048-001MS
Batch: 11848
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/04/2009 1742

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acenaphthene	ND	1600	910		1	55	30-130	06/05/2009 1546
Acenaphthylene	ND	1600	1100		1	69	30-130	06/05/2009 1546
Anthracene	ND	1600	1000		1	63	30-130	06/05/2009 1546
Benzo(a)anthracene	ND	1600	1100		1	67	30-130	06/05/2009 1546
Benzo(a)pyrene	ND	1600	1300		1	82	30-130	06/05/2009 1546
Benzo(b)fluoranthene	ND	1600	1100		1	65	30-130	06/05/2009 1546
Benzo(g,h,i)perylene	ND	1600	1000		1	63	30-130	06/05/2009 1546
Benzo(k)fluoranthene	ND	1600	1100		1	66	30-130	06/05/2009 1546
Chrysene	ND	1600	1100		1	66	30-130	06/05/2009 1546
Dibenzo(a,h)anthracene	ND	1600	1100		1	67	30-130	06/05/2009 1546
Fluoranthene	ND	1600	1100		1	66	30-130	06/05/2009 1546
Fluorene	ND	1600	980		1	59	30-130	06/05/2009 1546
Indeno(1,2,3-c,d)pyrene	ND	1600	1100		1	68	30-130	06/05/2009 1546
2-Methylnaphthalene	ND	1600	850		1	52	30-130	06/05/2009 1546
Naphthalene	ND	1600	820		1	50	30-130	06/05/2009 1546
Phenanthrene	ND	1600	1000		1	63	30-130	06/05/2009 1546
Pyrene	ND	1600	1100		1	65	30-130	06/05/2009 1546

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		60	33-102
Nitrobenzene-d5		54	22-109
Terphenyl-d14		63	41-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: KF03048-001MD
Batch: 11848
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/04/2009 1742

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	1600	690	+	1	43	27	30-130	20	06/05/2009 1605
Acenaphthylene	ND	1600	870	+	1	54	26	30-130	20	06/05/2009 1605
Anthracene	ND	1600	1100		1	66	3.3	30-130	20	06/05/2009 1605
Benzo(a)anthracene	ND	1600	1200		1	77	12	30-130	20	06/05/2009 1605
Benzo(a)pyrene	ND	1600	1600		1	97	16	30-130	20	06/05/2009 1605
Benzo(b)fluoranthene	ND	1600	1200		1	74	10	30-130	20	06/05/2009 1605
Benzo(g,h,i)perylene	ND	1600	1200		1	73	12	30-130	20	06/05/2009 1605
Benzo(k)fluoranthene	ND	1600	1300		1	78	14	30-130	20	06/05/2009 1605
Chrysene	ND	1600	1300		1	78	15	30-130	20	06/05/2009 1605
Dibenzo(a,h)anthracene	ND	1600	1300		1	78	14	30-130	20	06/05/2009 1605
Fluoranthene	ND	1600	1200		1	72	6.8	30-130	20	06/05/2009 1605
Fluorene	ND	1600	770	+	1	48	23	30-130	20	06/05/2009 1605
Indeno(1,2,3-c,d)pyrene	ND	1600	1300		1	78	12	30-130	20	06/05/2009 1605
2-Methylnaphthalene	ND	1600	680	+	1	42	22	30-130	20	06/05/2009 1605
Naphthalene	ND	1600	630	+	1	39	26	30-130	20	06/05/2009 1605
Phenanthrene	ND	1600	1100		1	66	2.5	30-130	20	06/05/2009 1605
Pyrene	ND	1600	1200		1	78	16	30-130	20	06/05/2009 1605

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		44	33-102
Nitrobenzene-d5		42	22-109
Terphenyl-d14		69	41-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: KQ12352-001
Batch: 12352
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/12/2009 1730

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1-Methylnaphthalene	ND		1	67	10	ug/kg	06/15/2009 0411
2-Methylnaphthalene	ND		1	67	9.9	ug/kg	06/15/2009 0411
Acenaphthene	ND		1	67	11	ug/kg	06/15/2009 0411
Acenaphthylene	ND		1	67	10	ug/kg	06/15/2009 0411
Anthracene	ND		1	67	7.4	ug/kg	06/15/2009 0411
Benzo(a)anthracene	ND		1	67	8.8	ug/kg	06/15/2009 0411
Benzo(a)pyrene	ND		1	67	9.3	ug/kg	06/15/2009 0411
Benzo(b)fluoranthene	ND		1	67	9.6	ug/kg	06/15/2009 0411
Benzo(g,h,i)perylene	ND		1	67	12	ug/kg	06/15/2009 0411
Benzo(k)fluoranthene	ND		1	67	9.5	ug/kg	06/15/2009 0411
Chrysene	ND		1	67	11	ug/kg	06/15/2009 0411
Dibenzo(a,h)anthracene	ND		1	67	9.1	ug/kg	06/15/2009 0411
Fluoranthene	ND		1	67	10	ug/kg	06/15/2009 0411
Fluorene	ND		1	67	9.0	ug/kg	06/15/2009 0411
Indeno(1,2,3-c,d)pyrene	ND		1	67	9.7	ug/kg	06/15/2009 0411
Naphthalene	ND		1	67	10	ug/kg	06/15/2009 0411
Phenanthrene	ND		1	67	9.0	ug/kg	06/15/2009 0411
Pyrene	ND		1	67	13	ug/kg	06/15/2009 0411

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		75	33-102
Nitrobenzene-d5		74	22-109
Terphenyl-d14		85	41-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: KQ12352-002
Batch: 12352
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/12/2009 1730

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
2-Methylnaphthalene	1300	1200		1	88	30-130	06/14/2009 0744
Acenaphthene	1300	1200		1	90	30-130	06/14/2009 0744
Acenaphthylene	1300	1700		1	128	30-130	06/14/2009 0744
Anthracene	1300	1200		1	93	30-130	06/14/2009 0744
Benzo(a)anthracene	1300	1300		1	99	30-130	06/14/2009 0744
Benzo(a)pyrene	1300	1700		1	126	30-130	06/14/2009 0744
Benzo(b)fluoranthene	1300	1300		1	100	30-130	06/14/2009 0744
Benzo(g,h,i)perylene	1300	1300		1	100	30-130	06/14/2009 0744
Benzo(k)fluoranthene	1300	1400		1	102	30-130	06/14/2009 0744
Chrysene	1300	1400		1	102	30-130	06/14/2009 0744
Dibenzo(a,h)anthracene	1300	1400		1	102	30-130	06/14/2009 0744
Fluoranthene	1300	1200		1	94	30-130	06/14/2009 0744
Fluorene	1300	1300		1	96	30-130	06/14/2009 0744
Indeno(1,2,3-c,d)pyrene	1300	1300		1	100	30-130	06/14/2009 0744
Naphthalene	1300	1100		1	84	30-130	06/14/2009 0744
Phenanthrene	1300	1300		1	96	30-130	06/14/2009 0744
Pyrene	1300	1300		1	100	30-130	06/14/2009 0744

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		93	33-102
Nitrobenzene-d5		90	22-109
Terphenyl-d14		92	41-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: KF03048-012MS
Batch: 12352
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/12/2009 1730

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acenaphthene	ND	1600	2100		1	128	30-130	06/15/2009 0535
Acenaphthylene	ND	1600	2400	N	1	146	30-130	06/15/2009 0535
Anthracene	130	1600	1800		1	101	30-130	06/15/2009 0535
Benzo(a)anthracene	160	1600	1800		1	98	30-130	06/15/2009 0535
Benzo(a)pyrene	140	1600	2200		1	124	30-130	06/15/2009 0535
Benzo(b)fluoranthene	160	1600	1800		1	100	30-130	06/15/2009 0535
Benzo(g,h,i)perylene	54	1600	1600		1	94	30-130	06/15/2009 0535
Benzo(k)fluoranthene	70	1600	1600		1	95	30-130	06/15/2009 0535
Chrysene	50	1600	1700		1	100	30-130	06/15/2009 0535
Dibenzo(a,h)anthracene	ND	1600	1600		1	95	30-130	06/15/2009 0535
Fluoranthene	500	1600	2600		1	126	30-130	06/15/2009 0535
Fluorene	260	1600	2000		1	106	30-130	06/15/2009 0535
Indeno(1,2,3-c,d)pyrene	50	1600	1600		1	94	30-130	06/15/2009 0535
2-Methylnaphthalene	12000	1600	26000	N	1	870	30-130	06/15/2009 0535
Naphthalene	6100	1600	14000	N	1	469	30-130	06/15/2009 0535
Phenanthrene	480	1600	2500		1	124	30-130	06/15/2009 0535
Pyrene	400	1600	2400		1	120	30-130	06/15/2009 0535

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl	N	114	33-102
Nitrobenzene-d5	N	136	22-109
Terphenyl-d14		89	41-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: KF03048-012MD
Batch: 12352
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/12/2009 1730

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	1600	1600	+	1	98	28	30-130	20	06/14/2009 0931
Acenaphthylene	ND	1600	2300	N	1	140	5.8	30-130	20	06/14/2009 0931
Anthracene	130	1600	1700		1	97	5.0	30-130	20	06/14/2009 0931
Benzo(a)anthracene	160	1600	1800		1	100	0.93	30-130	20	06/14/2009 0931
Benzo(a)pyrene	140	1600	2200		1	125	0.11	30-130	20	06/14/2009 0931
Benzo(b)fluoranthene	160	1600	1700		1	96	4.7	30-130	20	06/14/2009 0931
Benzo(g,h,i)perylene	54	1600	1600		1	93	1.9	30-130	20	06/14/2009 0931
Benzo(k)fluoranthene	70	1600	1700		1	100	4.1	30-130	20	06/14/2009 0931
Chrysene	50	1600	1700		1	98	3.0	30-130	20	06/14/2009 0931
Dibenzo(a,h)anthracene	ND	1600	1600		1	95	0.85	30-130	20	06/14/2009 0931
Fluoranthene	500	1600	2500		1	120	5.1	30-130	20	06/14/2009 0931
Fluorene	260	1600	1900		1	98	7.8	30-130	20	06/14/2009 0931
Indeno(1,2,3-c,d)pyrene	50	1600	1600		1	94	1.3	30-130	20	06/14/2009 0931
2-Methylnaphthalene	12000	1600	28000	N	1	984	6.2	30-130	20	06/14/2009 0931
Naphthalene	6100	1600	15000	N	1	566	10	30-130	20	06/14/2009 0931
Phenanthrene	480	1600	2500		1	120	3.0	30-130	20	06/14/2009 0931
Pyrene	400	1600	2400		1	120	0.95	30-130	20	06/14/2009 0931

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl	N	109	33-102
Nitrobenzene-d5	N	126	22-109
Terphenyl-d14		87	41-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - DRO - MB

Sample ID: KQ12158-001
Batch: 12158
Analytical Method: 8015B

Matrix: Solid
Prep Method: 3550B
Prep Date: 06/10/2009 1145

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
TPH-DRO	**3900**	**J**	**1**	**6700**	**1200**	**ug/kg**	**06/13/2009 0635**

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		72	55-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - DRO - LCS

Sample ID: KQ12158-002
Batch: 12158
Analytical Method: 8015B

Matrix: Solid
Prep Method: 3550B
Prep Date: 06/10/2009 1145

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TPH-DRO	83000	70000		1	84	50-130	06/13/2009 0655

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		77	55-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - GRO - MB

Sample ID: KQ12560-001
Batch: 12560
Analytical Method: 8015C

Matrix: Solid
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
TPH-GRO	**650**	**J**	**1**	**5000**	**620**	**ug/kg**	**06/16/2009 1059**

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		126	45-132

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - GRO - LCS

Sample ID: KQ12560-002
Batch: 12560
Analytical Method: 8015C

Matrix: Solid
Prep Method: 5030B

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TPH-GRO	50000	62000		1	124	70-130	06/16/2009 1639

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	45-132

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - GRO - LCSD

Sample ID: KQ12560-003
Batch: 12560
Analytical Method: 8015C

Matrix: Solid
Prep Method: 5030B

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TPH-GRO	50000	54000		1	108	13	70-130	20	06/16/2009 1704

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		94	45-132

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Project Number/Name GP08HAFS.H09A.KG0EX

Project Location Hunter Army Airfield HAA-9

Laboratory Shealy

Project Manager Chuck Bertz

Sampler(s)/Affiliation Arcadis

KF03048

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	PAH					Remarks	Total
HA09SB16(2-4)	S	6-2-09/1515		4	1						5
HA09SB17(2-4)	S	6-2-09/1545		4	1						5
~~HA09SB18(2-4)~~											
HA09SB18(2-4)	S	6-2-09/1600		4	1						5
HA09SB19(4-6)	S	6-2-09/1615		4	1						5
HA09SB20(2-4)	S	6-2-09/1640		4	1						5

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 25

Relinquished by: [signature]	Organization: Arcadis	Date 6/2/09	Time 1830	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	
Relinquished by: FEDEX	Organization: FEDEX	Date 6/3/09	Time 0930	Seal Intact?	
Received by: [signature]	Organization: Shealy Envl	Date 6/3/09	Time 0930	Yes No N/A	

Special Instructions/Remarks: T=2.6, 4.0

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

Project Number/Name GP08HAFS.H09A.KG0EX

Project Location Hunter Army Airfield HAA-9

Laboratory Shealy

Project Manager Chuck Bertz

Sampler(s)/Affiliation Arcadis

KF03048

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	PAH					Remarks	Total
HA09SB01(6)	S	6-2-09/0922		4	1						5
HA09SB02(5)	S	6-2-09/0937		4	1						
HA09SB03(3)	S	6-2-09/1000		4	1						
HA09SB04(3)	S	6-2-09/1020		4	1						
HA09SB05(1)	S	6-2-09/1040		4	1						
HA09SB06(1)	S	6-2-09/1100		4	1						
HA09SB07(2)	S	6-2-09/1120		4	1						
HA09SB08(2-3)	S	6-2-09/1245		4	1						
HA09SB09(2-3)	S	6-2-09/1300		4	1						
HA09SB10(4-5)	S	6-2-09/1315		4	1						
HA09SB11(6-2)	S	6-2-09/1335		4	1						
HA09SB12(4-6)	S	6-2-09/1347		4	1						
HA09SB13(2-3)	S	6-2-09/1415		4	1						
HA09SB14(2-4)	S	6-2-09/1435		4	1						
HA09SB15(2-4)	S	6-2-09/1500		4	1						

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 75

Relinquished by: [signature]	Organization: Arcadis	Date 6/2/09	Time 1830	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by: [signature]	Organization: FedEx	Date 6/3/09	Time 0930	Seal Intact?
Received by: [signature]	Organization: Shealy Envl	Date 6/3/09	Time 0930	Yes No N/A

Special Instructions/Remarks:

T= 2.6, 4.0

Delivery Method: ☐ In Person ☑ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05 12/01

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 6

Page 1 of 1
Replaces Date: 09/22/06
Effective Date: 05/29/07

Sample Receipt Checklist (SRC)

Client: Arcadis Cooler Inspected by/date: DMP/4/3/09 Lot #: KF03048

Means of receipt: ☐ SESI ☐ Client ☐ UPS ☑ FedEx ☐ Airborne Exp ☐ Other

Yes ☑	No ☐	NA ☐	1. Were custody seals present on the cooler?
Yes ☑	No ☐	NA ☐	2. If custody seals were present, were they intact and unbroken?

Cooler ID/temperature upon receipt 2.4 °C 4.0 °C / °C / °C / °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 ☑	NA ☐	5. Were proper custody procedures (relinquished/received) followed?
Yes ☑	No ☐	NA ☐	6. Were sample IDs listed?
Yes ☑	No ☐	NA ☐	7. Was collection date & time listed?
Yes ☑	No ☐	NA ☐	8. Were tests to be performed listed on the COC or was quote # provided?
Yes ☑	No ☐	NA ☐	9. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐	NA ☐	10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐	NA ☐	11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐	NA ☐	12. Was adequate sample volume available?
Yes ☑	No ☐	NA ☐	13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑	NA ☐	14. Were any samples containers missing?
Yes ☐	No ☑	NA ☐	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/BNA/pest/PCB/herb (<0.2mg/L) and toxicity (<0.1mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?

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

Sample(s) _____ were received incorrectly preserved and were adjusted accordingly 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/BNA/pest/PCB/herb.

Toxicity sample(s) _____ were received with TRC >0.1 mg/L and were analyzed by method 330.5.

Corrective Action taken, if necessary:

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

SESI employee: _____ Date of response: _____

Comments: _____

Report of Analysis

ARCADIS U.S., Inc.
30 Patewood Drive
Suite 155
Greenville, SC 29615
Attention: Janet Christy

Project Name: Hunter Army Airfield HAA-9

Project Number: GP08HAFS.H09A.KG0EX

Lot Number: KF04029

Date Completed: 06/16/2009

Date Revised: 06/29/2009

Nisreen Saikaly
Project Manager

This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

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

* K F 0 4 0 2 9 *

Case Narrative
ARCADIS U.S., Inc.
Lot Number: KF04029

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.

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.

Semivolatile Organic Compounds by GC/MS (SIM)

The surrogate recovery samples -001, -005, -006, 015 and -018 were outside the acceptance limit. This sample was diluted. The dilution impacted the surrogate recoveries, thus negating their usefulness concerning quality control. The sample results are reported and no corrective action is required.

The MS/MSD recoveries for many analytes in batch 12156 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.

Volatile Organic Compounds by GC/MS

The surrogate recovery samples -006, -012 and -018 were outside the acceptance limit. This sample was diluted. The dilution impacted the surrogate recoveries, thus negating their usefulness concerning quality control. The sample results are reported and no corrective action is required.

The LCS/LCSD recovery associated with samples -001, 003, -005, -006, -011, -012, -013, -015, -016, -018 and -022 for MTBE was outside acceptance criteria. This test was added after the results had been mailed.

DRO

Sample -006, -016 has an unknown fuel pattern associated with the DRO analysis.

The MS/MSD recoveries in batch 12158 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

ARCADIS U.S., Inc.

Lot Number: KF04029

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	HA09SB21 (2-4)	Solid	06/03/2009 0845	06/04/2009
002	HA09SB22 (4-6)	Solid	06/03/2009 0900	06/04/2009
003	HA09SB23 (2-4)	Solid	06/03/2009 0915	06/04/2009
004	HA09SB24 (6-7)	Solid	06/03/2009 0945	06/04/2009
005	HA09SB25 (4-6)	Solid	06/03/2009 1000	06/04/2009
006	HA09SB26 (4-6)	Solid	06/03/2009 1020	06/04/2009
007	HA09SB27 (4-6)	Solid	06/03/2009 1035	06/04/2009
008	HA09SB28 (2-3)	Solid	06/03/2009 1050	06/04/2009
009	HA09SB29 (4-6)	Solid	06/03/2009 1100	06/04/2009
010	HA09SB30 (2-4)	Solid	06/03/2009 1110	06/04/2009
011	HA09SB31 (2-4)	Solid	06/03/2009 1120	06/04/2009
012	HA09SB32 (4-6)	Solid	06/03/2009 1130	06/04/2009
013	HA09SB33 (2-4)	Solid	06/03/2009 1300	06/04/2009
014	HA09SB34 (4-6)	Solid	06/03/2009 1330	06/04/2009
015	HA09SB35 (4-6)	Solid	06/03/2009 1345	06/04/2009
016	HA09SB36 (2-4)	Solid	06/03/2009 1410	06/04/2009
017	HA09SB37 (2-4)	Solid	06/03/2009 1425	06/04/2009
018	HA09SB38 (4-6)	Solid	06/03/2009 1500	06/04/2009
019	HA09SB39 (4-6)	Solid	06/03/2009 1515	06/04/2009
020	HA09SB40 (4-6)	Solid	06/03/2009 1530	06/04/2009
021	HA09SB41 (4-6)	Solid	06/03/2009 1600	06/04/2009
022	HA09SB42 (2-4)	Solid	06/03/2009 1630	06/04/2009

(22 samples)

Executive Summary
ARCADIS U.S., Inc.
Lot Number: KF04029

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	HA09SB21 (2-4)	Solid	Benzene	8260B	5000		ug/kg	7
001	HA09SB21 (2-4)	Solid	Ethylbenzene	8260B	72000		ug/kg	7
001	HA09SB21 (2-4)	Solid	Toluene	8260B	2600		ug/kg	7
001	HA09SB21 (2-4)	Solid	Xylenes (total)	8260B	260000		ug/kg	7
001	HA09SB21 (2-4)	Solid	Acenaphthene	8270D (SIM)	120		ug/kg	8
001	HA09SB21 (2-4)	Solid	Fluoranthene	8270D (SIM)	47	J	ug/kg	8
001	HA09SB21 (2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	2100		ug/kg	8
001	HA09SB21 (2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	2900		ug/kg	8
001	HA09SB21 (2-4)	Solid	Naphthalene	8270D (SIM)	1600		ug/kg	8
003	HA09SB23 (2-4)	Solid	Ethylbenzene	8260B	550		ug/kg	9
003	HA09SB23 (2-4)	Solid	Xylenes (total)	8260B	4800		ug/kg	9
003	HA09SB23 (2-4)	Solid	Benzo(a)pyrene	8270D (SIM)	4.1		ug/kg	10
003	HA09SB23 (2-4)	Solid	Benzo(b)fluoranthene	8270D (SIM)	4.4		ug/kg	10
003	HA09SB23 (2-4)	Solid	Benzo(g,h,i)perylene	8270D (SIM)	10		ug/kg	10
003	HA09SB23 (2-4)	Solid	Indeno(1,2,3-c,d)pyrene	8270D (SIM)	8.5		ug/kg	10
003	HA09SB23 (2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	26		ug/kg	10
003	HA09SB23 (2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	30		ug/kg	10
003	HA09SB23 (2-4)	Solid	Naphthalene	8270D (SIM)	78		ug/kg	10
005	HA09SB25 (4-6)	Solid	Benzene	8260B	1400		ug/kg	11
005	HA09SB25 (4-6)	Solid	Ethylbenzene	8260B	30000		ug/kg	11
005	HA09SB25 (4-6)	Solid	Xylenes (total)	8260B	9300		ug/kg	11
005	HA09SB25 (4-6)	Solid	Acenaphthene	8270D (SIM)	69		ug/kg	12
005	HA09SB25 (4-6)	Solid	Acenaphthylene	8270D (SIM)	51		ug/kg	12
005	HA09SB25 (4-6)	Solid	Benzo(g,h,i)perylene	8270D (SIM)	66		ug/kg	12
005	HA09SB25 (4-6)	Solid	Dibenzo(a,h)anthracene	8270D (SIM)	50		ug/kg	12
005	HA09SB25 (4-6)	Solid	Indeno(1,2,3-c,d)pyrene	8270D (SIM)	53		ug/kg	12
005	HA09SB25 (4-6)	Solid	1-Methylnaphthalene	8270D (SIM)	980		ug/kg	12
005	HA09SB25 (4-6)	Solid	2-Methylnaphthalene	8270D (SIM)	1400		ug/kg	12
005	HA09SB25 (4-6)	Solid	Naphthalene	8270D (SIM)	600		ug/kg	12
006	HA09SB26 (4-6)	Solid	Benzene	8260B	11000		ug/kg	13
006	HA09SB26 (4-6)	Solid	Ethylbenzene	8260B	200000		ug/kg	13
006	HA09SB26 (4-6)	Solid	Toluene	8260B	6000		ug/kg	13
006	HA09SB26 (4-6)	Solid	Xylenes (total)	8260B	510000		ug/kg	13
006	HA09SB26 (4-6)	Solid	Fluorene	8270D (SIM)	44	J	ug/kg	14
006	HA09SB26 (4-6)	Solid	1-Methylnaphthalene	8270D (SIM)	1600		ug/kg	14
006	HA09SB26 (4-6)	Solid	2-Methylnaphthalene	8270D (SIM)	2200		ug/kg	14
006	HA09SB26 (4-6)	Solid	Naphthalene	8270D (SIM)	1400		ug/kg	14
006	HA09SB26 (4-6)	Solid	TPH-DRO	8015B	220000	B	ug/kg	15
006	HA09SB26 (4-6)	Solid	TPH-GRO	8015C	1200000	B	ug/kg	16
008	HA09SB28 (2-3)	Solid	TOC	Walkley-Black	4800		mg/kg	17
008	HA09SB28 (2-3)	Solid	Benzo(a)anthracene	8270D (SIM)	4.2		ug/kg	19
008	HA09SB28 (2-3)	Solid	Benzo(a)pyrene	8270D (SIM)	5.8		ug/kg	19
008	HA09SB28 (2-3)	Solid	Benzo(b)fluoranthene	8270D (SIM)	7.6		ug/kg	19
008	HA09SB28 (2-3)	Solid	Benzo(k)fluoranthene	8270D (SIM)	3.2	J	ug/kg	19
008	HA09SB28 (2-3)	Solid	Chrysene	8270D (SIM)	4.7		ug/kg	19

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
008	HA09SB28 (2-3)	Solid	Fluoranthene	8270D (SIM)	6.7		ug/kg	19
008	HA09SB28 (2-3)	Solid	Fluorene	8270D (SIM)	0.85	J	ug/kg	19
008	HA09SB28 (2-3)	Solid	1-Methylnaphthalene	8270D (SIM)	14		ug/kg	19
008	HA09SB28 (2-3)	Solid	2-Methylnaphthalene	8270D (SIM)	19		ug/kg	19
008	HA09SB28 (2-3)	Solid	Naphthalene	8270D (SIM)	9.1		ug/kg	19
008	HA09SB28 (2-3)	Solid	Pyrene	8270D (SIM)	16		ug/kg	19
009	HA09SB29 (4-6)	Solid	TOC	Walkley-Black	550		mg/kg	20
012	HA09SB32 (4-6)	Solid	Benzene	8260B	28	J	ug/kg	25
012	HA09SB32 (4-6)	Solid	Ethylbenzene	8260B	300		ug/kg	25
012	HA09SB32 (4-6)	Solid	Xylenes (total)	8260B	850		ug/kg	25
012	HA09SB32 (4-6)	Solid	Acenaphthene	8270D (SIM)	8.6		ug/kg	26
012	HA09SB32 (4-6)	Solid	Acenaphthylene	8270D (SIM)	6.8		ug/kg	26
012	HA09SB32 (4-6)	Solid	Fluorene	8270D (SIM)	5.7		ug/kg	26
012	HA09SB32 (4-6)	Solid	1-Methylnaphthalene	8270D (SIM)	150		ug/kg	26
012	HA09SB32 (4-6)	Solid	2-Methylnaphthalene	8270D (SIM)	180		ug/kg	26
012	HA09SB32 (4-6)	Solid	Naphthalene	8270D (SIM)	110		ug/kg	26
012	HA09SB32 (4-6)	Solid	Phenanthrene	8270D (SIM)	1.4	J	ug/kg	26
013	HA09SB33 (2-4)	Solid	Benzene	8260B	140		ug/kg	27
013	HA09SB33 (2-4)	Solid	Ethylbenzene	8260B	10000		ug/kg	27
013	HA09SB33 (2-4)	Solid	Xylenes (total)	8260B	25000		ug/kg	27
013	HA09SB33 (2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	120		ug/kg	28
013	HA09SB33 (2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	170		ug/kg	28
013	HA09SB33 (2-4)	Solid	Naphthalene	8270D (SIM)	84		ug/kg	28
015	HA09SB35 (4-6)	Solid	Benzene	8260B	94000		ug/kg	29
015	HA09SB35 (4-6)	Solid	Ethylbenzene	8260B	380000		ug/kg	29
015	HA09SB35 (4-6)	Solid	Toluene	8260B	5200		ug/kg	29
015	HA09SB35 (4-6)	Solid	Xylenes (total)	8260B	790000		ug/kg	29
015	HA09SB35 (4-6)	Solid	Acenaphthene	8270D (SIM)	190		ug/kg	30
015	HA09SB35 (4-6)	Solid	Acenaphthylene	8270D (SIM)	140		ug/kg	30
015	HA09SB35 (4-6)	Solid	Benzo(g,h,i)perylene	8270D (SIM)	140		ug/kg	30
015	HA09SB35 (4-6)	Solid	Indeno(1,2,3-c,d)pyrene	8270D (SIM)	110		ug/kg	30
015	HA09SB35 (4-6)	Solid	1-Methylnaphthalene	8270D (SIM)	3000		ug/kg	30
015	HA09SB35 (4-6)	Solid	2-Methylnaphthalene	8270D (SIM)	4300		ug/kg	30
015	HA09SB35 (4-6)	Solid	Naphthalene	8270D (SIM)	2200		ug/kg	30
016	HA09SB36 (2-4)	Solid	Benzene	8260B	6600		ug/kg	31
016	HA09SB36 (2-4)	Solid	Ethylbenzene	8260B	15000		ug/kg	31
016	HA09SB36 (2-4)	Solid	Toluene	8260B	420		ug/kg	31
016	HA09SB36 (2-4)	Solid	Xylenes (total)	8260B	28000		ug/kg	31
016	HA09SB36 (2-4)	Solid	Acenaphthene	8270D (SIM)	26		ug/kg	32
016	HA09SB36 (2-4)	Solid	Acenaphthylene	8270D (SIM)	22		ug/kg	32
016	HA09SB36 (2-4)	Solid	Benzo(a)anthracene	8270D (SIM)	7.2		ug/kg	32
016	HA09SB36 (2-4)	Solid	Benzo(a)pyrene	8270D (SIM)	11		ug/kg	32
016	HA09SB36 (2-4)	Solid	Benzo(b)fluoranthene	8270D (SIM)	13		ug/kg	32
016	HA09SB36 (2-4)	Solid	Benzo(g,h,i)perylene	8270D (SIM)	7.4		ug/kg	32
016	HA09SB36 (2-4)	Solid	Benzo(k)fluoranthene	8270D (SIM)	6.4		ug/kg	32
016	HA09SB36 (2-4)	Solid	Chrysene	8270D (SIM)	7.8		ug/kg	32
016	HA09SB36 (2-4)	Solid	Fluoranthene	8270D (SIM)	9.4		ug/kg	32
016	HA09SB36 (2-4)	Solid	Fluorene	8270D (SIM)	18		ug/kg	32

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
016	HA09SB36 (2-4)	Solid	Indeno(1,2,3-c,d)pyrene	8270D (SIM)	6.6		ug/kg	32
016	HA09SB36 (2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	760		ug/kg	32
016	HA09SB36 (2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	1200		ug/kg	32
016	HA09SB36 (2-4)	Solid	Naphthalene	8270D (SIM)	680		ug/kg	32
016	HA09SB36 (2-4)	Solid	Phenanthrene	8270D (SIM)	7.9		ug/kg	32
016	HA09SB36 (2-4)	Solid	Pyrene	8270D (SIM)	16		ug/kg	32
016	HA09SB36 (2-4)	Solid	TPH-DRO	8015B	220000	B	ug/kg	33
016	HA09SB36 (2-4)	Solid	TPH-GRO	8015C	200000	B	ug/kg	34
018	HA09SB38 (4-6)	Solid	Benzene	8260B	1200		ug/kg	35
018	HA09SB38 (4-6)	Solid	Ethylbenzene	8260B	12000		ug/kg	35
018	HA09SB38 (4-6)	Solid	Xylenes (total)	8260B	10000		ug/kg	35
018	HA09SB38 (4-6)	Solid	1-Methylnaphthalene	8270D (SIM)	4300		ug/kg	36
018	HA09SB38 (4-6)	Solid	2-Methylnaphthalene	8270D (SIM)	6600		ug/kg	36
018	HA09SB38 (4-6)	Solid	Naphthalene	8270D (SIM)	4300		ug/kg	36
020	HA09SB40 (4-6)	Solid	TOC	Walkley-Black	5400		mg/kg	37
020	HA09SB40 (4-6)	Solid	1-Methylnaphthalene	8270D (SIM)	4.3		ug/kg	39
020	HA09SB40 (4-6)	Solid	2-Methylnaphthalene	8270D (SIM)	6.6		ug/kg	39
020	HA09SB40 (4-6)	Solid	Naphthalene	8270D (SIM)	5.8		ug/kg	39
022	HA09SB42 (2-4)	Solid	Ethylbenzene	8260B	120		ug/kg	42
022	HA09SB42 (2-4)	Solid	Xylenes (total)	8260B	960		ug/kg	42
022	HA09SB42 (2-4)	Solid	Benzo(g,h,i)perylene	8270D (SIM)	1.7	J	ug/kg	43
022	HA09SB42 (2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	120		ug/kg	43
022	HA09SB42 (2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	170		ug/kg	43
022	HA09SB42 (2-4)	Solid	Naphthalene	8270D (SIM)	120		ug/kg	43

(117 detections)

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-001
Description: HA09SB21 (2-4)	Matrix: Solid
Date Sampled: 06/03/2009 0845	% Solids: 83.7 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	200	06/10/2009 1259	DLB		12172	9.44

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	5000		630	140	ug/kg	1
Ethylbenzene	100-41-4	8260B	72000		630	220	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		630	51	ug/kg	1
Toluene	108-88-3	8260B	2600		630	220	ug/kg	1
Xylenes (total)	1330-20-7	8260B	260000		630	370	ug/kg	1

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

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF04029-001
Description: HA09SB21 (2-4)
Matrix: Solid
Date Sampled: 06/03/2009 0845
% Solids: 83.7 06/04/2009 2114
Date Received: 06/04/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	20	06/14/2009 1521	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	120		78	20	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		78	23	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		78	12	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		78	14	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		78	16	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		78	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		78	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		78	11	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		78	11	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		78	12	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	47	J	78	10	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		78	14	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		78	24	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	2100		78	23	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	2900		78	24	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	1600		78	23	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		78	17	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		78	12	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-003
Description: HA09SB23 (2-4)	Matrix: Solid
Date Sampled: 06/03/2009 0915	% Solids: 85.5 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	50	06/10/2009 1323	DLB		12172	8.36

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		170	38	ug/kg	1
Ethylbenzene	100-41-4	8260B	550		170	59	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		170	14	ug/kg	1
Toluene	108-88-3	8260B	ND		170	59	ug/kg	1
Xylenes (total)	1330-20-7	8260B	4800		170	100	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		128	53-142
Bromofluorobenzene		128	47-138
Toluene-d8		124	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-003
Description: HA09SB23 (2-4)	Matrix: Solid
Date Sampled: 06/03/2009 0915	% Solids: 85.5 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/14/2009 1615	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		3.8	0.96	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		3.8	1.1	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		3.8	0.59	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		3.8	0.68	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	4.1		3.8	0.76	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	4.4		3.8	0.58	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	10		3.8	0.75	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		3.8	0.56	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		3.8	0.52	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		3.8	0.59	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		3.8	0.49	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		3.8	0.66	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	8.5		3.8	1.2	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	26		3.8	1.1	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	30		3.8	1.1	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	78		3.8	1.1	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		3.8	0.83	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		3.8	0.58	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		54	20-150
2-Methylnaphthalene-d10		41	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-005
Description: HA09SB25 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1000	% Solids: 76.1 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	50	06/10/2009 1346	DLB		12172	9.73

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	1400		170	37	ug/kg	1
Ethylbenzene	100-41-4	8260B	30000		170	57	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		170	13	ug/kg	1
Toluene	108-88-3	8260B	ND		170	57	ug/kg	1
Xylenes (total)	1330-20-7	8260B	9300		170	98	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		90	53-142
Bromofluorobenzene		83	47-138
Toluene-d8		81	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF04029-005
Description: HA09SB25 (4-6)
Matrix: Solid
Date Sampled: 06/03/2009 1000
% Solids: 76.1 06/04/2009 2114
Date Received: 06/04/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	10	06/14/2009 1642	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	69		43	11	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	51		43	12	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		43	6.6	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		43	7.7	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		43	8.6	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		43	6.5	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	66		43	8.4	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		43	6.2	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		43	5.8	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	50		43	6.6	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		43	5.5	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		43	7.4	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	53		43	13	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	980		43	13	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	1400		43	13	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	600		43	13	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		43	9.4	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		43	6.5	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-006
Description: HA09SB26 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1020	% Solids: 81.2 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	500	06/10/2009 1410	DLB		12172	10.64

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	11000		1400	320	ug/kg	1
Ethylbenzene	100-41-4	8260B	200000		1400	490	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1400	120	ug/kg	1
Toluene	108-88-3	8260B	6000		1400	490	ug/kg	1
Xylenes (total)	1330-20-7	8260B	510000		1400	840	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4	N	266	53-142
Bromofluorobenzene	N	218	47-138
Toluene-d8	N	224	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF04029-006
Description: HA09SB26 (4-6)
Matrix: Solid
Date Sampled: 06/03/2009 1020
% Solids: 81.2 06/04/2009 2114
Date Received: 06/04/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	20	06/15/2009 1746	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		81	20	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		81	23	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		81	12	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		81	14	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		81	16	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		81	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		81	16	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		81	12	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		81	11	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		81	12	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		81	10	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	44	J	81	14	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		81	24	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	1600		81	24	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	2200		81	24	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	1400		81	24	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		81	18	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		81	12	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

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

TPH - DRO

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-006
Description: HA09SB26 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1020	% Solids: 81.2 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550B	8015B	1	06/13/2009 0752	ASB	06/10/2009 1145	12158

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TPH-DRO		8015B	220000	B	8100	1500	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
o - Terphenyl		68	55-120

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

TPH - GRO

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-006
Description: HA09SB26 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1020	% Solids: 81.2 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8015C	10	06/16/2009 1524	IVC		12560

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TPH-GRO		8015C	1200000	B	60000	7600	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		113	45-132

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

Inorganic non-metals

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-008
Description: HA09SB28 (2-3)	Matrix: Solid
Date Sampled: 06/03/2009 1050	% Solids: 83.7 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) Walkley-Black	1	06/16/2009 1651	PMM		12555

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TOC		Walkley-Black	4800		1800	280	mg/kg	1

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-008
Description: HA09SB28 (2-3)	Matrix: Solid
Date Sampled: 06/03/2009 1050	% Solids: 83.7 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	06/15/2009 1452	MAW		13409	12.29

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		2.4	0.53	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		2.4	0.83	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		2.4	0.19	ug/kg	1
Toluene	108-88-3	8260B	ND		2.4	0.83	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		2.4	1.4	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		75	53-142
Bromofluorobenzene		72	47-138
Toluene-d8		70	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF04029-008
Description: HA09SB28 (2-3)
Matrix: Solid
Date Sampled: 06/03/2009 1050
% Solids: 83.7 06/04/2009 2114
Date Received: 06/04/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/13/2009 0925	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		3.8	0.97	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		3.8	1.1	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		3.8	0.60	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	4.2		3.8	0.69	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	5.8		3.8	0.77	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	7.6		3.8	0.58	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		3.8	0.76	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	3.2	J	3.8	0.56	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	4.7		3.8	0.52	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		3.8	0.60	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	6.7		3.8	0.49	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	0.85	J	3.8	0.66	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		3.8	1.2	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	14		3.8	1.1	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	19		3.8	1.2	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	9.1		3.8	1.1	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		3.8	0.84	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	16		3.8	0.58	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		51	20-150
2-Methylnaphthalene-d10		53	20-150

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

Inorganic non-metals

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-009
Description: HA09SB29 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1100	% Solids: 80.5 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) Walkley-Black	1	06/16/2009 1651	PMM		12555

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TOC		Walkley-Black	550		200	31	mg/kg	1

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-009
Description: HA09SB29 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1100	% Solids: 80.5 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	06/15/2009 1516	MAW		13409	12.14

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		2.6	0.56	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		2.6	0.87	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		2.6	0.20	ug/kg	1
Toluene	108-88-3	8260B	ND		2.6	0.87	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		2.6	1.5	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	53-142
Bromofluorobenzene		94	47-138
Toluene-d8		83	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-009
Description: HA09SB29 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1100	% Solids: 80.5 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/13/2009 0951	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		4.0	1.0	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		4.0	1.1	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		4.0	0.62	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		4.0	0.71	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		4.0	0.80	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		4.0	0.60	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		4.0	0.79	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		4.0	0.58	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		4.0	0.54	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		4.0	0.62	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		4.0	0.51	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		4.0	0.69	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		4.0	1.2	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	ND		4.0	1.2	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	ND		4.0	1.2	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	ND		4.0	1.2	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		4.0	0.87	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		4.0	0.60	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		64	20-150
2-Methylnaphthalene-d10		42	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF04029-011
Description: HA09SB31 (2-4)
Matrix: Solid
Date Sampled: 06/03/2009 1120
% Solids: 84.9 06/04/2009 2114
Date Received: 06/04/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	06/15/2009 1539	MAW		13409	8.77

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		3.4	0.74	ug/kg	2
Ethylbenzene	100-41-4	8260B	ND		3.4	1.1	ug/kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3.4	0.27	ug/kg	2
Toluene	108-88-3	8260B	ND		3.4	1.1	ug/kg	2
Xylenes (total)	1330-20-7	8260B	ND		3.4	1.9	ug/kg	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		82	53-142
Bromofluorobenzene		68	47-138
Toluene-d8		74	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-011
Description: HA09SB31 (2-4)	Matrix: Solid
Date Sampled: 06/03/2009 1120	% Solids: 84.9 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/13/2009 1018	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		3.9	0.97	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		3.9	1.1	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		3.9	0.60	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		3.9	0.69	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		3.9	0.78	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		3.9	0.59	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		3.9	0.76	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		3.9	0.56	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		3.9	0.53	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		3.9	0.60	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		3.9	0.49	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		3.9	0.67	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		3.9	1.2	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	ND		3.9	1.2	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	ND		3.9	1.2	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	ND		3.9	1.1	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		3.9	0.84	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		3.9	0.59	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		52	20-150
2-Methylnaphthalene-d10		44	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-012
Description: HA09SB32 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1130	% Solids: 78.0 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	50	06/15/2009 1846	DLB		12518	12.98

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	28	J	120	27	ug/kg	1
Ethylbenzene	100-41-4	8260B	300		120	42	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		120	9.9	ug/kg	1
Toluene	108-88-3	8260B	ND		120	42	ug/kg	1
Xylenes (total)	1330-20-7	8260B	850		120	72	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		59	53-142
Bromofluorobenzene	N	19	47-138
Toluene-d8	N	16	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-012
Description: HA09SB32 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1130	% Solids: 78.0 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/13/2009 1044	DC	06/10/2009 1159	12156
2	3550C	8270D (SIM)	2	06/15/2009 1814	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	8.6		4.2	1.0	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	6.8		4.2	1.2	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		4.2	0.64	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		4.2	0.74	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		4.2	0.83	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		4.2	0.63	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		4.2	0.82	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		4.2	0.61	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		4.2	0.57	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		4.2	0.64	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		4.2	0.53	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	5.7		4.2	0.72	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		4.2	1.3	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	150		4.2	1.2	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	180		8.3	2.5	ug/kg	2
Naphthalene	91-20-3	8270D (SIM)	110		4.2	1.2	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	1.4	J	4.2	0.91	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		4.2	0.63	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Fluoranthene-d10		69	20-150		69	20-150
2-Methylnaphthalene-d10		58	20-150		54	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-013
Description: HA09SB33 (2-4)	Matrix: Solid
Date Sampled: 06/03/2009 1300	% Solids: 75.1 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	50	06/10/2009 1502	DLB		12172	13.81

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	140		120	26	ug/kg	1
Ethylbenzene	100-41-4	8260B	10000		120	41	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		120	9.6	ug/kg	1
Toluene	108-88-3	8260B	ND		120	41	ug/kg	1
Xylenes (total)	1330-20-7	8260B	25000		120	70	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		81	53-142
Bromofluorobenzene		84	47-138
Toluene-d8		80	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-013
Description: HA09SB33 (2-4)	Matrix: Solid
Date Sampled: 06/03/2009 1300	% Solids: 75.1 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/13/2009 1111	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		4.3	1.1	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		4.3	1.2	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		4.3	0.67	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		4.3	0.77	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		4.3	0.86	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		4.3	0.65	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		4.3	0.85	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		4.3	0.63	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		4.3	0.59	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		4.3	0.67	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		4.3	0.55	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		4.3	0.75	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		4.3	1.3	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	120		4.3	1.3	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	170		4.3	1.3	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	84		4.3	1.3	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		4.3	0.94	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		4.3	0.65	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		49	20-150
2-Methylnaphthalene-d10		49	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-015
Description: HA09SB35 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1345	% Solids: 76.6 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1000	06/10/2009 1525	DLB		12172	10.65

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	94000		3100	670	ug/kg	1
Ethylbenzene	100-41-4	8260B	380000		3100	1000	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3100	240	ug/kg	1
Toluene	108-88-3	8260B	5200		3100	1000	ug/kg	1
Xylenes (total)	1330-20-7	8260B	790000		3100	1800	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		131	53-142
Bromofluorobenzene		79	47-138
Toluene-d8		93	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF04029-015
Description: HA09SB35 (4-6)
Matrix: Solid
Date Sampled: 06/03/2009 1345
% Solids: 76.6 06/04/2009 2114
Date Received: 06/04/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	25	06/14/2009 1802	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	190		100	27	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	140		100	30	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		100	16	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		100	19	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		100	21	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		100	16	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	140		100	21	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		100	15	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		100	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		100	16	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		100	13	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		100	18	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	110		100	32	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	3000		100	31	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	4300		100	32	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	2200		100	31	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		100	23	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		100	16	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF04029-016
Description: HA09SB36 (2-4)
Matrix: Solid
Date Sampled: 06/03/2009 1410
% Solids: 82.3 06/04/2009 2114
Date Received: 06/04/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	50	06/10/2009 1731	DLB		12172	10.03

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	6600		150	33	ug/kg	1
Ethylbenzene	100-41-4	8260B	15000		150	52	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		150	12	ug/kg	1
Toluene	108-88-3	8260B	420		150	52	ug/kg	1
Xylenes (total)	1330-20-7	8260B	28000		150	88	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	53-142
Bromofluorobenzene		106	47-138
Toluene-d8		98	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF04029-016
Description: HA09SB36 (2-4)
Matrix: Solid
Date Sampled: 06/03/2009 1410
% Solids: 82.3 06/04/2009 2114
Date Received: 06/04/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/13/2009 1204	DC	06/10/2009 1159	12156
2	3550C	8270D (SIM)	10	06/15/2009 1841	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	26		4.0	1.0	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	22		4.0	1.1	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		4.0	0.61	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	7.2		4.0	0.71	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	11		4.0	0.79	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	13		4.0	0.60	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	7.4		4.0	0.78	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	6.4		4.0	0.58	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	7.8		4.0	0.54	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		4.0	0.61	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	9.4		4.0	0.50	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	18		4.0	0.68	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	6.6		4.0	1.2	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	760		40	12	ug/kg	2
2-Methylnaphthalene	91-57-6	8270D (SIM)	1200		40	12	ug/kg	2
Naphthalene	91-20-3	8270D (SIM)	680		40	12	ug/kg	2
Phenanthrene	85-01-8	8270D (SIM)	7.9		4.0	0.86	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	16		4.0	0.60	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Fluoranthene-d10		58	20-150		61	20-150
2-Methylnaphthalene-d10		85	20-150		97	20-150

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

TPH - DRO

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-016
Description: HA09SB36 (2-4)	Matrix: Solid
Date Sampled: 06/03/2009 1410	% Solids: 82.3 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550B	8015B	1	06/13/2009 0850	ASB	06/10/2009 1145	12158

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TPH-DRO		8015B	220000	B	8100	1500	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
o - Terphenyl		77	55-120

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

TPH - GRO

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-016
Description: HA09SB36 (2-4)	Matrix: Solid
Date Sampled: 06/03/2009 1410	% Solids: 82.3 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8015C	2	06/16/2009 1549	IVC		12560

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TPH-GRO		8015C	200000	B	12000	1500	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		117	45-132

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-018
Description: HA09SB38 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1500	% Solids: 83.2 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	500	06/15/2009 1909	DLB		12518	12.56

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	1200		1200	260	ug/kg	1
Ethylbenzene	100-41-4	8260B	12000		1200	410	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1200	96	ug/kg	1
Toluene	108-88-3	8260B	ND		1200	410	ug/kg	1
Xylenes (total)	1330-20-7	8260B	10000		1200	690	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		81	53-142
Bromofluorobenzene		54	47-138
Toluene-d8	N	56	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-018
Description: HA09SB38 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1500	% Solids: 83.2 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	50	06/15/2009 1908	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		200	50	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		200	57	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		200	30	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		200	35	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		200	40	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		200	30	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		200	39	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		200	29	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		200	27	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		200	30	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		200	25	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		200	34	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		200	60	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	4300		200	59	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	6600		200	59	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	4300		200	58	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		200	43	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		200	30	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

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

Inorganic non-metals

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-020
Description: HA09SB40 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1530	% Solids: 75.7 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) Walkley-Black	1	06/16/2009 1651	PMM		12555

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TOC		Walkley-Black	5400		1900	300	mg/kg	1

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-020
Description: HA09SB40 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1530	% Solids: 75.7 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	06/15/2009 1602	MAW		13409	11.00

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		3.0	0.66	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		3.0	1.0	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3.0	0.24	ug/kg	1
Toluene	108-88-3	8260B	ND		3.0	1.0	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		3.0	1.7	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		89	53-142
Bromofluorobenzene		80	47-138
Toluene-d8		78	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF04029-020
Description: HA09SB40 (4-6)
Matrix: Solid
Date Sampled: 06/03/2009 1530
% Solids: 75.7 06/04/2009 2114
Date Received: 06/04/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/15/2009 1935	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		4.3	1.1	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		4.3	1.2	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		4.3	0.66	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		4.3	0.76	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		4.3	0.85	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		4.3	0.65	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		4.3	0.84	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		4.3	0.62	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		4.3	0.58	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		4.3	0.66	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		4.3	0.54	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		4.3	0.74	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		4.3	1.3	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	4.3		4.3	1.3	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	6.6		4.3	1.3	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	5.8		4.3	1.2	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		4.3	0.93	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		4.3	0.65	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		64	20-150
2-Methylnaphthalene-d10		52	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-021
Description: HA09SB41 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1600	% Solids: 80.0 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	06/15/2009 1625	MAW		13409	11.30

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		2.8	0.61	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		2.8	0.94	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		2.8	0.22	ug/kg	1
Toluene	108-88-3	8260B	ND		2.8	0.94	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		2.8	1.6	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		84	53-142
Bromofluorobenzene		83	47-138
Toluene-d8		78	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-021
Description: HA09SB41 (4-6)	Matrix: Solid
Date Sampled: 06/03/2009 1600	% Solids: 80.0 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/14/2009 1948	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		4.0	1.0	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		4.0	1.2	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		4.0	0.62	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		4.0	0.72	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		4.0	0.80	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		4.0	0.61	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		4.0	0.79	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		4.0	0.59	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		4.0	0.55	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		4.0	0.62	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		4.0	0.51	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		4.0	0.70	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		4.0	1.2	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	ND		4.0	1.2	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	ND		4.0	1.2	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	ND		4.0	1.2	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		4.0	0.88	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		4.0	0.61	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		58	20-150
2-Methylnaphthalene-d10		32	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-022
Description: HA09SB42 (2-4)	Matrix: Solid
Date Sampled: 06/03/2009 1630	% Solids: 87.3 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	50	06/16/2009 1400	DLB		12497	12.55

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		110	25	ug/kg	1
Ethylbenzene	100-41-4	8260B	120		110	39	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		110	9.1	ug/kg	1
Toluene	108-88-3	8260B	ND		110	39	ug/kg	1
Xylenes (total)	1330-20-7	8260B	960		110	66	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		88	53-142
Bromofluorobenzene		81	47-138
Toluene-d8		80	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF04029-022
Description: HA09SB42 (2-4)	Matrix: Solid
Date Sampled: 06/03/2009 1630	% Solids: 87.3 06/04/2009 2114
Date Received: 06/04/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/14/2009 2015	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		3.8	0.95	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		3.8	1.1	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		3.8	0.58	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		3.8	0.67	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		3.8	0.75	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		3.8	0.57	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	1.7	J	3.8	0.74	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		3.8	0.55	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		3.8	0.51	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		3.8	0.58	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		3.8	0.48	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		3.8	0.65	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		3.8	1.1	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	120		3.8	1.1	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	170		3.8	1.1	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	120		3.8	1.1	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		3.8	0.82	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		3.8	0.57	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		53	20-150
2-Methylnaphthalene-d10		45	20-150

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

QC Summary

Inorganic non-metals - MB

Sample ID: KQ12555-001
Batch: 12555
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
TOC	ND		1	200	31	mg/kg	06/16/2009 1651

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12555-002
Batch: 12555
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TOC	1000	1100		1	110	80-120	06/16/2009 1651

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12555-003
Batch: 12555
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TOC	1000	1100		1	110	0.0	80-120	20	06/16/2009 1651

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KF04029-009MS
Batch: 12555
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TOC	550	990	1300		1	78	70-130	06/16/2009 1651

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KF04029-009MD
Batch: 12555
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TOC	550	990	1500		1	93	11	70-130	20	06/16/2009 1651

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12172-001
Batch: 12172
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		50	250	55	ug/kg	06/10/2009 1208
Ethylbenzene	ND		50	250	85	ug/kg	06/10/2009 1208
Methyl tertiary butyl ether (MTBE)	ND		50	250	20	ug/kg	06/10/2009 1208
Toluene	ND		50	250	85	ug/kg	06/10/2009 1208
Xylenes (total)	ND		50	250	140	ug/kg	06/10/2009 1208

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		91	47-138
1,2-Dichloroethane-d4		96	53-142
Toluene-d8		89	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12172-002
Batch: 12172
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	2500	1900		50	76	69-123	06/10/2009 1057
Ethylbenzene	2500	2000		50	78	59-128	06/10/2009 1057
Methyl tertiary butyl ether (MTBE)	2500	1600	N	50	65	72-122	06/10/2009 1057
Toluene	2500	1900		50	74	61-129	06/10/2009 1057
Xylenes (total)	5000	3700		50	75	58-128	06/10/2009 1057

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		72	47-138
1,2-Dichloroethane-d4		71	53-142
Toluene-d8		70	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12172-003
Batch: 12172
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
Benzene	2500	1900		50	74	2.4	69-123	20	06/10/2009 1121
Ethylbenzene	2500	1900		50	76	2.5	59-128	20	06/10/2009 1121
Methyl tertiary butyl ether (MTBE)	2500	1600	N	50	63	3.0	72-122	20	06/10/2009 1121
Toluene	2500	1800		50	72	3.1	61-129	20	06/10/2009 1121
Xylenes (total)	5000	3700		50	74	2.0	58-128	20	06/10/2009 1121

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		75	47-138
1,2-Dichloroethane-d4		74	53-142
Toluene-d8		71	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12497-001
Batch: 12497
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		50	250	55	ug/kg	06/16/2009 1312
Ethylbenzene	ND		50	250	85	ug/kg	06/16/2009 1312
Methyl tertiary butyl ether (MTBE)	ND		50	250	20	ug/kg	06/16/2009 1312
Toluene	ND		50	250	85	ug/kg	06/16/2009 1312
Xylenes (total)	ND		50	250	140	ug/kg	06/16/2009 1312

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		84	47-138
1,2-Dichloroethane-d4		96	53-142
Toluene-d8		86	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12497-002
Batch: 12497
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	2500	1900		50	77	69-123	06/16/2009 1225
Ethylbenzene	2500	1900		50	76	59-128	06/16/2009 1225
Methyl tertiary butyl ether (MTBE)	2500	1700	N	50	69	72-122	06/16/2009 1225
Toluene	2500	1900		50	76	61-129	06/16/2009 1225
Xylenes (total)	5000	3700		50	73	58-128	06/16/2009 1225

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		72	47-138
1,2-Dichloroethane-d4		79	53-142
Toluene-d8		72	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12497-003
Batch: 12497
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
Benzene	2500	1800		50	74	3.2	69-123	20	06/16/2009 1248
Ethylbenzene	2500	1800		50	74	3.4	59-128	20	06/16/2009 1248
Methyl tertiary butyl ether (MTBE)	2500	1800	N	50	70	0.92	72-122	20	06/16/2009 1248
Toluene	2500	1800		50	74	3.2	61-129	20	06/16/2009 1248
Xylenes (total)	5000	3600		50	72	2.0	58-128	20	06/16/2009 1248

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		76	47-138
1,2-Dichloroethane-d4		91	53-142
Toluene-d8		76	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12518-001
Batch: 12518
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		50	250	55	ug/kg	06/10/2009 1208
Ethylbenzene	ND		50	250	85	ug/kg	06/10/2009 1208
Methyl tertiary butyl ether (MTBE)	ND		50	250	20	ug/kg	06/10/2009 1208
Toluene	ND		50	250	85	ug/kg	06/10/2009 1208
Xylenes (total)	ND		50	250	140	ug/kg	06/10/2009 1208

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		91	47-138
1,2-Dichloroethane-d4		96	53-142
Toluene-d8		89	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12518-002
Batch: 12518
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	2500	1900		50	76	69-123	06/10/2009 1057
Ethylbenzene	2500	2000		50	78	59-128	06/10/2009 1057
Methyl tertiary butyl ether (MTBE)	2500	1600	N	50	65	72-122	06/10/2009 1057
Toluene	2500	1900		50	74	61-129	06/10/2009 1057
Xylenes (total)	5000	3700		50	75	58-128	06/10/2009 1057

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		72	47-138
1,2-Dichloroethane-d4		71	53-142
Toluene-d8		70	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12518-003
Batch: 12518
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
Benzene	2500	1900		50	74	2.4	69-123	20	06/10/2009 1121
Ethylbenzene	2500	1900		50	76	2.5	59-128	20	06/10/2009 1121
Methyl tertiary butyl ether (MTBE)	2500	1600	N	50	63	3.0	72-122	20	06/10/2009 1121
Toluene	2500	1800		50	72	3.1	61-129	20	06/10/2009 1121
Xylenes (total)	5000	3700		50	74	2.0	58-128	20	06/10/2009 1121

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		75	47-138
1,2-Dichloroethane-d4		74	53-142
Toluene-d8		71	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ13409-001
Batch: 13409
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	5.0	1.1	ug/kg	06/15/2009 1145
Ethylbenzene	ND		1	5.0	1.7	ug/kg	06/15/2009 1145
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	0.40	ug/kg	06/15/2009 1145
Toluene	ND		1	5.0	1.7	ug/kg	06/15/2009 1145
Xylenes (total)	ND		1	5.0	2.9	ug/kg	06/15/2009 1145

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	47-138
1,2-Dichloroethane-d4		89	53-142
Toluene-d8		88	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ13409-002
Batch: 13409
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	51		1	102	69-123	06/15/2009 1035
Ethylbenzene	50	48		1	96	59-128	06/15/2009 1035
Methyl tertiary butyl ether (MTBE)	50	49		1	99	72-122	06/15/2009 1035
Toluene	50	48		1	97	61-129	06/15/2009 1035
Xylenes (total)	100	92		1	92	58-128	06/15/2009 1035

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	47-138
1,2-Dichloroethane-d4		93	53-142
Toluene-d8		92	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ13409-003
Batch: 13409
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
Benzene	50	54		1	109	6.9	69-123	20	06/15/2009 1058
Ethylbenzene	50	51		1	102	6.8	59-128	20	06/15/2009 1058
Methyl tertiary butyl ether (MTBE)	50	51		1	102	3.3	72-122	20	06/15/2009 1058
Toluene	50	52		1	104	7.7	61-129	20	06/15/2009 1058
Xylenes (total)	100	98		1	98	6.2	58-128	20	06/15/2009 1058

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	47-138
1,2-Dichloroethane-d4		89	53-142
Toluene-d8		91	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: KQ12156-001
Batch: 12156
Analytical Method: 8270D (SIM)

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/10/2009 1159

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1-Methylnaphthalene	ND		1	3.3	0.98	ug/kg	06/14/2009 1548
2-Methylnaphthalene	ND		1	3.3	0.99	ug/kg	06/14/2009 1548
Acenaphthene	ND		1	3.3	0.83	ug/kg	06/14/2009 1548
Acenaphthylene	ND		1	3.3	0.95	ug/kg	06/14/2009 1548
Anthracene	ND		1	3.3	0.51	ug/kg	06/14/2009 1548
Benzo(a)anthracene	ND		1	3.3	0.59	ug/kg	06/14/2009 1548
Benzo(a)pyrene	ND		1	3.3	0.66	ug/kg	06/14/2009 1548
Benzo(b)fluoranthene	ND		1	3.3	0.50	ug/kg	06/14/2009 1548
Benzo(g,h,i)perylene	ND		1	3.3	0.65	ug/kg	06/14/2009 1548
Benzo(k)fluoranthene	ND		1	3.3	0.48	ug/kg	06/14/2009 1548
Chrysene	ND		1	3.3	0.45	ug/kg	06/14/2009 1548
Dibenzo(a,h)anthracene	ND		1	3.3	0.51	ug/kg	06/14/2009 1548
Fluoranthene	ND		1	3.3	0.42	ug/kg	06/14/2009 1548
Fluorene	ND		1	3.3	0.57	ug/kg	06/14/2009 1548
Indeno(1,2,3-c,d)pyrene	ND		1	3.3	1.0	ug/kg	06/14/2009 1548
Naphthalene	ND		1	3.3	0.97	ug/kg	06/14/2009 1548
Phenanthrene	ND		1	3.3	0.72	ug/kg	06/14/2009 1548
Pyrene	ND		1	3.3	0.50	ug/kg	06/14/2009 1548

Surrogate	Q	% Rec	Acceptance Limit
2-Methylnaphthalene-d10		31	20-150
Fluoranthene-d10		46	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: KQ12156-002
Batch: 12156
Analytical Method: 8270D (SIM)

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/10/2009 1159

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
2-Methylnaphthalene	13	6.8		1	52	20-150	06/14/2009 1428
Acenaphthene	13	6.5		1	50	20-150	06/14/2009 1428
Acenaphthylene	13	8.8		1	68	20-150	06/14/2009 1428
Anthracene	13	8.0		1	62	20-150	06/14/2009 1428
Benzo(a)anthracene	13	7.5		1	58	20-150	06/14/2009 1428
Benzo(a)pyrene	13	10		1	80	20-150	06/14/2009 1428
Benzo(b)fluoranthene	13	8.2		1	63	20-150	06/14/2009 1428
Benzo(g,h,i)perylene	13	18		1	137	20-150	06/14/2009 1428
Benzo(k)fluoranthene	13	8.1		1	62	20-150	06/14/2009 1428
Chrysene	13	7.7		1	59	20-150	06/14/2009 1428
Dibenzo(a,h)anthracene	13	17		1	129	20-150	06/14/2009 1428
Fluoranthene	13	7.8		1	60	20-150	06/14/2009 1428
Fluorene	13	6.6		1	50	20-150	06/14/2009 1428
Indeno(1,2,3-c,d)pyrene	13	17		1	131	20-150	06/14/2009 1428
Naphthalene	13	7.5		1	58	20-150	06/14/2009 1428
Phenanthrene	13	7.1		1	54	20-150	06/14/2009 1428
Pyrene	13	9.7		1	75	20-150	06/14/2009 1428

Surrogate	Q	% Rec	Acceptance Limit
2-Methylnaphthalene-d10		47	20-150
Fluoranthene-d10		62	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - MS

Sample ID: KF04029-016MS
Batch: 12156
Analytical Method: 8270D (SIM)

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/10/2009 1159

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acenaphthene	26	16	29	N	1	20	30-130	06/13/2009 1231
Acenaphthylene	22	16	28		1	42	30-130	06/13/2009 1231
Anthracene	ND	16	11		1	72	30-130	06/13/2009 1231
Benzo(a)anthracene	7.2	16	12	N	1	28	30-130	06/13/2009 1231
Benzo(a)pyrene	11	16	15	N	1	24	30-130	06/13/2009 1231
Benzo(b)fluoranthene	13	16	13	N	1	0.69	30-130	06/13/2009 1231
Benzo(g,h,i)perylene	7.4	16	12		1	32	30-130	06/13/2009 1231
Benzo(k)fluoranthene	6.4	16	11	N	1	29	30-130	06/13/2009 1231
Chrysene	7.8	16	11	N	1	22	30-130	06/13/2009 1231
Dibenzo(a,h)anthracene	ND	16	10		1	66	30-130	06/13/2009 1231
Fluoranthene	9.4	16	14		1	32	30-130	06/13/2009 1231
Fluorene	18	16	21	N	1	14	30-130	06/13/2009 1231
Indeno(1,2,3-c,d)pyrene	6.6	16	11		1	31	30-130	06/13/2009 1231
2-Methylnaphthalene	1200	16	950	N	1	-1020	30-130	06/13/2009 1231
Naphthalene	680	16	500	N	1	-849	30-130	06/13/2009 1231
Phenanthrene	7.9	16	14		1	38	30-130	06/13/2009 1231
Pyrene	16	16	28		1	76	30-130	06/13/2009 1231

Surrogate	Q	% Rec	Acceptance Limit
Fluoranthene-d10		55	20-150
2-Methylnaphthalene-d10		97	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - MSD

Sample ID: KF04029-016MD
Batch: 12156
Analytical Method: 8270D (SIM)

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/10/2009 1159

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	26	15	21	N,+	1	-32	33	30-130	20	06/13/2009 1257
Acenaphthylene	22	15	21	N,+	1	-7.6	32	30-130	20	06/13/2009 1257
Anthracene	ND	15	13		1	83	14	30-130	20	06/13/2009 1257
Benzo(a)anthracene	7.2	15	13		1	37	10	30-130	20	06/13/2009 1257
Benzo(a)pyrene	11	15	16		1	31	6.6	30-130	20	06/13/2009 1257
Benzo(b)fluoranthene	13	15	14	N	1	5.1	5.2	30-130	20	06/13/2009 1257
Benzo(g,h,i)perylene	7.4	15	12		1	32	1.5	30-130	20	06/13/2009 1257
Benzo(k)fluoranthene	6.4	15	14	+	1	48	24	30-130	20	06/13/2009 1257
Chrysene	7.8	15	12		1	31	11	30-130	20	06/13/2009 1257
Dibenzo(a,h)anthracene	ND	15	10		1	65	3.3	30-130	20	06/13/2009 1257
Fluoranthene	9.4	15	16		1	43	11	30-130	20	06/13/2009 1257
Fluorene	18	15	15	N,+	1	-19	29	30-130	20	06/13/2009 1257
Indeno(1,2,3-c,d)pyrene	6.6	15	12		1	32	0.97	30-130	20	06/13/2009 1257
2-Methylnaphthalene	1200	15	1100	N	1	28	16	30-130	20	06/13/2009 1257
Naphthalene	680	15	550	N	1	-559	8.9	30-130	20	06/13/2009 1257
Phenanthrene	7.9	15	16		1	54	16	30-130	20	06/13/2009 1257
Pyrene	16	15	42	N,+	1	168	40	30-130	20	06/13/2009 1257

Surrogate	Q	% Rec	Acceptance Limit
Fluoranthene-d10		55	20-150
2-Methylnaphthalene-d10		98	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - DRO - MB

Sample ID: KQ12158-001
Batch: 12158
Analytical Method: 8015B

Matrix: Solid
Prep Method: 3550B
Prep Date: 06/10/2009 1145

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
TPH-DRO	3900	J	1	6700	1200	ug/kg	06/13/2009 0635

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		72	55-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - DRO - LCS

Sample ID: KQ12158-002
Batch: 12158
Analytical Method: 8015B

Matrix: Solid
Prep Method: 3550B
Prep Date: 06/10/2009 1145

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TPH-DRO	83000	70000		1	84	50-130	06/13/2009 0655

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		77	55-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - DRO - MS

Sample ID: KF04029-006MS
Batch: 12158
Analytical Method: 8015B

Matrix: Solid
Prep Method: 3550B
Prep Date: 06/10/2009 1145

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TPH-DRO	220000	100000	520000	N	1	298	50-130	06/13/2009 0812

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		72	55-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - DRO - MSD

Sample ID: KF04029-006MD
Batch: 12158
Analytical Method: 8015B

Matrix: Solid
Prep Method: 3550B
Prep Date: 06/10/2009 1145

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TPH-DRO	220000	100000	590000	N	1	362	12	50-130	20	06/13/2009 0831

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		79	55-120

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - GRO - MB

Sample ID: KQ12560-001
Batch: 12560
Analytical Method: 8015C

Matrix: Solid
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
TPH-GRO	650	J	1	5000	620	ug/kg	06/16/2009 1059

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		126	45-132

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - GRO - LCS

Sample ID: KQ12560-002
Batch: 12560
Analytical Method: 8015C

Matrix: Solid
Prep Method: 5030B

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TPH-GRO	50000	62000		1	124	70-130	06/16/2009 1639

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	45-132

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - GRO - LCSD

Sample ID: KQ12560-003
Batch: 12560
Analytical Method: 8015C

Matrix: Solid
Prep Method: 5030B

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TPH-GRO	50000	54000		1	108	13	70-130	20	06/16/2009 1704

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		94	45-132

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

Project Number/Name GP08HAFS.H09A.KG0EX

Project Location Hunter Army Air Field HAA-9

Laboratory Shealy

Project Manager Chuck Bertz

Sampler(s)/Affiliation Arcadis

KF04029

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	PAH	TPH	TOC			Remarks	Total
HA09SB21(2-4)	S	6-3-09/0845		4	1						5
HA09SB22(4-6)	S	6-3-09/0900		4	1						5
HA09SB23(2-4)	S	6-3-09/0915		4	1						5
HA09SB24(6-7)	S	6-3-09/0945		4	1						5
HA09SB25(4-6)	S	6-3-09/1000		4	1						5
HA09SB26(4-6)	S	6-3-09/1020		4	1	1					6
HA09SB27(4-6)	S	6-3-09/1035		4	1						5
HA09SB28(2-3)	S	6-3-09/1050		4	1		1				6
HA09SB29(4-6)	S	6-3-09/1100		4	1		1				6
HA09SB30(2-4)	S	6-3-09/1110		4	1						5
HA09SB31(2-4)	S	6-3-09/1120		4	1						5
HA09SB32(4-6)	S	6-3-09/1130		4	1	1					6
HA09SB33(2-4)	S	6-3-09/1300		4	1	1					6
HA09SB34(4-6)	S	6-3-09/1330		4	1						5
HA09SB35(4-6)	S	6-3-09/1345		4	1						5
										Total No. of Bottles/ Containers	74

Sample Matrix: L = Liquid; S = Solid; A = Air

T= 6.0

Relinquished by: [signature]	Organization: Arcadis	Date 6/3/09	Time 1800	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes	No N/A
Relinquished by: [signature]	Organization:	Date 6/4/09	Time 0940	Seal Intact?	
Received by: [signature]	Organization:	Date 6/4/09	Time 0940	Yes	No N/A

Special instructions/Remarks:

T- 4.6 , 3.9

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Project Number/Name GP08HAFS.H09A.KG0EX

Project Location Hunter Army Airfield HAA-9

Laboratory Shealy

Project Manager Chuck Bertz

Sampler(s)/Affiliation Arcadis

KF04029

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	PAH	TPH	TOC			Remarks	Total
HA09SB36(2-4)	S	6-3-09/1410		4	1	1					6
HA09SB37(2-4)	S	6-3-09/1425		4	1						5
HA09SB38(4-6)	S	6-3-09/1500		4	1						5
HA09SB39(4-6)	S	6-3-09/1515		4	1						5
HA09SB40(4-6)	S	6-3-09/1530		4	1		1				6
HA09SB41(4-6)	S	6-3-09/1600		4	1						5
HA09SB42(2-4)	S	6-3-09/1630		4	1						5

Sample Matrix: L = Liquid; S = Solid; A = Air

T=6.0

Total No. of Bottles/Containers

Relinquished by: [signature]	Organization: Arcadis	Date 6/3/09	Time 1800	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	
Relinquished by: FedEx	Organization:	Date 6/4/09	Time 0940	Seal Intact?	
Received by: [signature]	Organization: Shealy	Date 6/4/09	Time 0940	Yes No N/A	

Special Instructions/Remarks:

T=4.6

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-1201

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 6

Page 1 of 1
Replaces Date: 09/22/06
Effective Date: 05/29/07

Sample Receipt Checklist (SRC)

Client: Arcadis Cooler Inspected by/date: DMP / 6/4/06 Lot #: KF04025

Means of receipt: ☐ SESI ☐ Client ☐ UPS ☑ FedEx ☐ Airborne Exp ☐ Other

Yes ☑	No ☐	NA ☐	1. Were custody seals present on the cooler?
Yes ☑	No ☐	NA ☐	2. If custody seals were present, were they intact and unbroken?

Cooler ID/temperature upon receipt 4.6 °C 3.9 °C / °C / °C / °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 ☑	NA ☐	5. Were proper custody procedures (relinquished/received) followed?
Yes ☑	No ☐	NA ☐	6. Were sample IDs listed?
Yes ☑	No ☐	NA ☐	7. Was collection date & time listed?
Yes ☑	No ☐	NA ☐	8. Were tests to be performed listed on the COC or was quote # provided?
Yes ☑	No ☐	NA ☐	9. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐	NA ☐	10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐	NA ☐	11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐	NA ☐	12. Was adequate sample volume available?
Yes ☑	No ☐	NA ☐	13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑	NA ☐	14. Were any samples containers missing?
Yes ☐	No ☑	NA ☐	15. Were there any excess samples not listed on COC?
Yes ☐	No ☐	NA ☑	16. Were bubbles present >"pea-size" (½"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/BNA/pest/PCB/herb (<0.2mg/L) and toxicity (<0.1mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?

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

Sample(s)_____ were received incorrectly preserved and were adjusted accordingly 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/BNA/pest/PCB/herb.

Toxicity sample(s) _____ were received with TRC >0.1 mg/L and were analyzed by method 330.5.

Corrective Action taken, if necessary:

Was client notified: Yes ☐ No ☐ Did client respond: Yes ☐ No ☐
SESI employee:_____ Date of response: _____
Comments:_____

Report of Analysis

ARCADIS U.S., Inc.
30 Patewood Drive
Suite 155
Greenville, SC 29615
Attention: Janet Christy

Project Name: Hunter Army Airfield HAA-9

Project Number: GP08HAFS.H09A.KG0EX

Lot Number: KF05010

Date Completed: 06/18/2009

Date Revised: 06/29/2009

Nisreen Saikaly
Project Manager

This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

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

* K F 0 5 0 1 0 *

Case Narrative
ARCADIS U.S., Inc.
Lot Number: KF05010

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.

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.

Semivolatile Organic Compounds

The surrogate recovery for sample -003, -004, -005, -007, -008, -011 and -012 were outside the acceptance limit. These sample were diluted. The dilution impacted the surrogate recoveries, thus negating their usefulness concerning quality control. The sample results are reported and no corrective action is required.

The concentration in the MS/MSD for batch 12041 and 12078 were greater than five times the spike concentration, and is impacting the MS/MSD recoveries, thus negating their usefulness concerning quality control. All other QC/QA criteria were within acceptance limits. Associated sample data was reported, and no corrective action was required.

Volatile Organic Compounds

The surrogate recovery for sample -004, -008, -011 and -012 were outside the acceptance limit. This sample was diluted. The dilution impacted the surrogate recoveries, thus negating their usefulness concerning quality control. The sample results are reported and no corrective action is required.

Sample Summary

ARCADIS U.S., Inc.

Lot Number: KF05010

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	HA09GW01 (6-10)	Aqueous	06/04/2009 1600	06/05/2009
002	HA09GW01 (11-15)	Aqueous	06/04/2009 1615	06/05/2009
003	HA09SB54 (2-4)	Solid	06/04/2009 1530	06/05/2009
004	HA09SB53 (2-4)	Solid	06/04/2009 1515	06/05/2009
005	HA09SB52(4-6)	Solid	06/04/2009 1505	06/05/2009
006	HA09SB51(2-4)	Solid	06/04/2009 1500	06/05/2009
007	HA09SB45(2-4)	Solid	06/04/2009 1420	06/05/2009
008	HA09SB44(4-6)	Solid	06/04/2009 1415	06/05/2009
009	HA09SB43(4-6)	Solid	06/04/2009 1405	06/05/2009
010	HA09SB50(2-4)	Solid	06/04/2009 1400	06/05/2009
011	HA09SB49(2-4)	Solid	06/04/2009 1350	06/05/2009
012	HA09SB48(2-4)	Solid	06/04/2009 1340	06/05/2009
013	Trip Blank	Aqueous	06/05/2009 0930	06/05/2009

(13 samples)

Executive Summary
ARCADIS U.S., Inc.
Lot Number: KF05010

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	HA09GW01 (6-10)	Aqueous	Benzene	8260B	0.76		ug/L	7
001	HA09GW01 (6-10)	Aqueous	Ethylbenzene	8260B	2.8		ug/L	7
001	HA09GW01 (6-10)	Aqueous	Xylenes (total)	8260B	9.5		ug/L	7
001	HA09GW01 (6-10)	Aqueous	1-Methylnaphthalene	8270D (SIM)	2.0		ug/L	8
001	HA09GW01 (6-10)	Aqueous	2-Methylnaphthalene	8270D (SIM)	2.9		ug/L	8
001	HA09GW01 (6-10)	Aqueous	Naphthalene	8270D (SIM)	2.7		ug/L	8
002	HA09GW01 (11-15)	Aqueous	Benzene	8260B	0.80		ug/L	9
002	HA09GW01 (11-15)	Aqueous	Ethylbenzene	8260B	5.0		ug/L	9
002	HA09GW01 (11-15)	Aqueous	Toluene	8260B	0.21	J	ug/L	9
002	HA09GW01 (11-15)	Aqueous	Xylenes (total)	8260B	17		ug/L	9
002	HA09GW01 (11-15)	Aqueous	Benzo(g,h,i)perylene	8270D (SIM)	0.71	J	ug/L	10
002	HA09GW01 (11-15)	Aqueous	Dibenzo(a,h)anthracene	8270D (SIM)	0.59	J	ug/L	10
002	HA09GW01 (11-15)	Aqueous	Indeno(1,2,3-c,d)pyrene	8270D (SIM)	0.56	J	ug/L	10
002	HA09GW01 (11-15)	Aqueous	1-Methylnaphthalene	8270D (SIM)	5.2		ug/L	10
002	HA09GW01 (11-15)	Aqueous	2-Methylnaphthalene	8270D (SIM)	7.3		ug/L	10
002	HA09GW01 (11-15)	Aqueous	Naphthalene	8270D (SIM)	6.2		ug/L	10
003	HA09SB54 (2-4)	Solid	Benzene	8260B	65	J	ug/kg	11
003	HA09SB54 (2-4)	Solid	Ethylbenzene	8260B	2900		ug/kg	11
003	HA09SB54 (2-4)	Solid	Xylenes (total)	8260B	980		ug/kg	11
003	HA09SB54 (2-4)	Solid	Acenaphthene	8270D (SIM)	140		ug/kg	12
003	HA09SB54 (2-4)	Solid	Acenaphthylene	8270D (SIM)	62		ug/kg	12
003	HA09SB54 (2-4)	Solid	Fluoranthene	8270D (SIM)	620		ug/kg	12
003	HA09SB54 (2-4)	Solid	Fluorene	8270D (SIM)	96		ug/kg	12
003	HA09SB54 (2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	420		ug/kg	12
003	HA09SB54 (2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	430		ug/kg	12
003	HA09SB54 (2-4)	Solid	Naphthalene	8270D (SIM)	1700		ug/kg	12
003	HA09SB54 (2-4)	Solid	Phenanthrene	8270D (SIM)	55		ug/kg	12
004	HA09SB53 (2-4)	Solid	Benzene	8260B	4000	J	ug/kg	13
004	HA09SB53 (2-4)	Solid	Ethylbenzene	8260B	32000		ug/kg	13
004	HA09SB53 (2-4)	Solid	Toluene	8260B	5600		ug/kg	13
004	HA09SB53 (2-4)	Solid	Xylenes (total)	8260B	180000		ug/kg	13
004	HA09SB53 (2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	6700		ug/kg	14
004	HA09SB53 (2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	10000		ug/kg	14
004	HA09SB53 (2-4)	Solid	Naphthalene	8270D (SIM)	6200		ug/kg	14
005	HA09SB52(4-6)	Solid	Benzene	8260B	91	J	ug/kg	15
005	HA09SB52(4-6)	Solid	Ethylbenzene	8260B	350		ug/kg	15
005	HA09SB52(4-6)	Solid	Toluene	8260B	51	J	ug/kg	15
005	HA09SB52(4-6)	Solid	Xylenes (total)	8260B	1800		ug/kg	15
005	HA09SB52(4-6)	Solid	1-Methylnaphthalene	8270D (SIM)	4500		ug/kg	16
005	HA09SB52(4-6)	Solid	2-Methylnaphthalene	8270D (SIM)	6300		ug/kg	16
005	HA09SB52(4-6)	Solid	Naphthalene	8270D (SIM)	4100		ug/kg	16
006	HA09SB51(2-4)	Solid	Ethylbenzene	8260B	11		ug/kg	17
006	HA09SB51(2-4)	Solid	Xylenes (total)	8260B	91		ug/kg	17
006	HA09SB51(2-4)	Solid	Acenaphthene	8270D (SIM)	61		ug/kg	18
006	HA09SB51(2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	480		ug/kg	18

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
006	HA09SB51(2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	630		ug/kg	18
006	HA09SB51(2-4)	Solid	Naphthalene	8270D (SIM)	220		ug/kg	18
007	HA09SB45(2-4)	Solid	Ethylbenzene	8260B	1300		ug/kg	19
007	HA09SB45(2-4)	Solid	Xylenes (total)	8260B	6400		ug/kg	19
007	HA09SB45(2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	2000		ug/kg	20
007	HA09SB45(2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	2700		ug/kg	20
007	HA09SB45(2-4)	Solid	Naphthalene	8270D (SIM)	1600		ug/kg	20
008	HA09SB44(4-6)	Solid	Benzene	8260B	330	J	ug/kg	21
008	HA09SB44(4-6)	Solid	Ethylbenzene	8260B	9400		ug/kg	21
008	HA09SB44(4-6)	Solid	Xylenes (total)	8260B	38000		ug/kg	21
008	HA09SB44(4-6)	Solid	Acenaphthene	8270D (SIM)	62		ug/kg	22
008	HA09SB44(4-6)	Solid	Acenaphthylene	8270D (SIM)	50		ug/kg	22
008	HA09SB44(4-6)	Solid	Anthracene	8270D (SIM)	20		ug/kg	22
008	HA09SB44(4-6)	Solid	Benzo(a)anthracene	8270D (SIM)	21		ug/kg	22
008	HA09SB44(4-6)	Solid	Benzo(a)pyrene	8270D (SIM)	16		ug/kg	22
008	HA09SB44(4-6)	Solid	Benzo(b)fluoranthene	8270D (SIM)	20		ug/kg	22
008	HA09SB44(4-6)	Solid	Benzo(g,h,i)perylene	8270D (SIM)	6.3		ug/kg	22
008	HA09SB44(4-6)	Solid	Benzo(k)fluoranthene	8270D (SIM)	9.2		ug/kg	22
008	HA09SB44(4-6)	Solid	Chrysene	8270D (SIM)	18		ug/kg	22
008	HA09SB44(4-6)	Solid	Fluoranthene	8270D (SIM)	62		ug/kg	22
008	HA09SB44(4-6)	Solid	Fluorene	8270D (SIM)	40		ug/kg	22
008	HA09SB44(4-6)	Solid	Indeno(1,2,3-c,d)pyrene	8270D (SIM)	5.8		ug/kg	22
008	HA09SB44(4-6)	Solid	1-Methylnaphthalene	8270D (SIM)	1400		ug/kg	22
008	HA09SB44(4-6)	Solid	2-Methylnaphthalene	8270D (SIM)	2000		ug/kg	22
008	HA09SB44(4-6)	Solid	Naphthalene	8270D (SIM)	1000		ug/kg	22
008	HA09SB44(4-6)	Solid	Phenanthrene	8270D (SIM)	65		ug/kg	22
008	HA09SB44(4-6)	Solid	Pyrene	8270D (SIM)	96		ug/kg	22
009	HA09SB43(4-6)	Solid	Xylenes (total)	8260B	3.3	J	ug/kg	23
010	HA09SB50(2-4)	Solid	Benzene	8260B	1200		ug/kg	25
010	HA09SB50(2-4)	Solid	Ethylbenzene	8260B	6100		ug/kg	25
010	HA09SB50(2-4)	Solid	Toluene	8260B	520	J	ug/kg	25
010	HA09SB50(2-4)	Solid	Xylenes (total)	8260B	27000		ug/kg	25
010	HA09SB50(2-4)	Solid	Acenaphthene	8270D (SIM)	55		ug/kg	26
010	HA09SB50(2-4)	Solid	Acenaphthylene	8270D (SIM)	49		ug/kg	26
010	HA09SB50(2-4)	Solid	Fluorene	8270D (SIM)	46		ug/kg	26
010	HA09SB50(2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	910		ug/kg	26
010	HA09SB50(2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	1200		ug/kg	26
010	HA09SB50(2-4)	Solid	Naphthalene	8270D (SIM)	370		ug/kg	26
011	HA09SB49(2-4)	Solid	Benzene	8260B	7400		ug/kg	27
011	HA09SB49(2-4)	Solid	Ethylbenzene	8260B	50000		ug/kg	27
011	HA09SB49(2-4)	Solid	Toluene	8260B	6600		ug/kg	27
011	HA09SB49(2-4)	Solid	Xylenes (total)	8260B	180000		ug/kg	27
011	HA09SB49(2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	6300		ug/kg	28
011	HA09SB49(2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	8900		ug/kg	28
011	HA09SB49(2-4)	Solid	Naphthalene	8270D (SIM)	4500		ug/kg	28
012	HA09SB48(2-4)	Solid	Benzene	8260B	1700	J	ug/kg	29
012	HA09SB48(2-4)	Solid	Ethylbenzene	8260B	12000		ug/kg	29
012	HA09SB48(2-4)	Solid	Toluene	8260B	23000		ug/kg	29

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
012	HA09SB48(2-4)	Solid	Xylenes (total)	8260B	53000		ug/kg	29
012	HA09SB48(2-4)	Solid	Acenaphthene	8270D (SIM)	930		ug/kg	30
012	HA09SB48(2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	27000		ug/kg	30
012	HA09SB48(2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	36000		ug/kg	30
012	HA09SB48(2-4)	Solid	Naphthalene	8270D (SIM)	23000		ug/kg	30

(98 detections)

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-001
Description: HA09GW01 (6-10)
Matrix: Aqueous
Date Sampled: 06/04/2009 1600
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/09/2009 0216	DLB		12069

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	0.76		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	2.8		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	9.5		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		106	52-138
Bromofluorobenzene		109	70-147
Toluene-d8		108	76-125

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-001
Description: HA09GW01 (6-10)
Matrix: Aqueous
Date Sampled: 06/04/2009 1600
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D (SIM)	1	06/14/2009 2108	DC	06/08/2009 1724	12078

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		0.20	0.021	ug/L	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		0.20	0.024	ug/L	1
Anthracene	120-12-7	8270D (SIM)	ND		0.20	0.016	ug/L	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		0.20	0.019	ug/L	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		0.20	0.020	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		0.20	0.019	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		0.20	0.063	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		0.20	0.024	ug/L	1
Chrysene	218-01-9	8270D (SIM)	ND		0.20	0.021	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		0.20	0.040	ug/L	1
Fluoranthene	206-44-0	8270D (SIM)	ND		0.20	0.018	ug/L	1
Fluorene	86-73-7	8270D (SIM)	ND		0.20	0.022	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		0.20	0.050	ug/L	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	2.0		0.20	0.025	ug/L	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	2.9		0.20	0.027	ug/L	1
Naphthalene	91-20-3	8270D (SIM)	2.7		0.20	0.030	ug/L	1
Phenanthrene	85-01-8	8270D (SIM)	ND		0.20	0.023	ug/L	1
Pyrene	129-00-0	8270D (SIM)	ND		0.20	0.017	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		40	20-150
2-Methylnaphthalene-d10		67	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-002
Description: HA09GW01 (11-15)
Matrix: Aqueous
Date Sampled: 06/04/2009 1615
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/09/2009 0237	DLB		12069

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	0.80		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	5.0		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	0.21	J	0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	17		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		108	52-138
Bromofluorobenzene		98	70-147
Toluene-d8		110	76-125

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-002
Description: HA09GW01 (11-15)
Matrix: Aqueous
Date Sampled: 06/04/2009 1615
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D (SIM)	5	06/14/2009 2134	DC	06/08/2009 1724	12078

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		1.0	0.11	ug/L	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		1.0	0.12	ug/L	1
Anthracene	120-12-7	8270D (SIM)	ND		1.0	0.081	ug/L	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		1.0	0.096	ug/L	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		1.0	0.10	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		1.0	0.096	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	0.71	J	1.0	0.31	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		1.0	0.12	ug/L	1
Chrysene	218-01-9	8270D (SIM)	ND		1.0	0.11	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	0.59	J	1.0	0.20	ug/L	1
Fluoranthene	206-44-0	8270D (SIM)	ND		1.0	0.091	ug/L	1
Fluorene	86-73-7	8270D (SIM)	ND		1.0	0.11	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	0.56	J	1.0	0.25	ug/L	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	5.2		1.0	0.13	ug/L	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	7.3		1.0	0.14	ug/L	1
Naphthalene	91-20-3	8270D (SIM)	6.2		1.0	0.15	ug/L	1
Phenanthrene	85-01-8	8270D (SIM)	ND		1.0	0.12	ug/L	1
Pyrene	129-00-0	8270D (SIM)	ND		1.0	0.086	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		25	20-150
2-Methylnaphthalene-d10		58	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-003
Description: HA09SB54 (2-4)	Matrix: Solid
Date Sampled: 06/04/2009 1530	% Solids: 83.3 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	50	06/09/2009 1201	DLB		12101	13.85

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	65	J	110	24	ug/kg	1
Ethylbenzene	100-41-4	8260B	2900		110	37	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		110	8.7	ug/kg	1
Toluene	108-88-3	8260B	ND		110	37	ug/kg	1
Xylenes (total)	1330-20-7	8260B	980		110	63	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	53-142
Bromofluorobenzene		91	47-138
Toluene-d8		89	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-003
Description: HA09SB54 (2-4)	Matrix: Solid
Date Sampled: 06/04/2009 1530	% Solids: 83.3 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	10	06/14/2009 2254	DC	06/08/2009 1730	12041
2	3550C	8270D (SIM)	50	06/17/2009 1636	DC	06/08/2009 1730	12041

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	140		40	9.9	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	62		40	11	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		40	6.1	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		40	7.1	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		40	7.9	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		40	6.0	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		40	7.8	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		40	5.7	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		40	5.4	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		40	6.1	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	620		40	5.0	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	96		40	6.8	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		40	12	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	420		200	59	ug/kg	2
2-Methylnaphthalene	91-57-6	8270D (SIM)	430		200	59	ug/kg	2
Naphthalene	91-20-3	8270D (SIM)	1700		40	12	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	55		40	8.6	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		40	6.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150	N	0.0	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-004
Description: HA09SB53 (2-4)	Matrix: Solid
Date Sampled: 06/04/2009 1515	% Solids: 85.3 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	2000	06/09/2009 1225	DLB		12101	11.43

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	4000	J	5100	1100	ug/kg	1
Ethylbenzene	100-41-4	8260B	32000		5100	1700	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5100	410	ug/kg	1
Toluene	108-88-3	8260B	5600		5100	1700	ug/kg	1
Xylenes (total)	1330-20-7	8260B	180000		5100	3000	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4	N	189	53-142
Bromofluorobenzene		129	47-138
Toluene-d8	N	140	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-004
Description: HA09SB53 (2-4)	Matrix: Solid
Date Sampled: 06/04/2009 1515	% Solids: 85.3 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	100	06/15/2009 2055	DC	06/08/2009 1730	12041

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		380	95	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		380	110	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		380	59	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		380	68	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		380	76	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		380	58	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		380	75	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		380	55	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		380	52	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		380	59	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		380	48	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		380	66	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		380	120	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	6700		380	110	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	10000		380	110	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	6200		380	110	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		380	83	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		380	58	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-005
Description: HA09SB52(4-6)	Matrix: Solid
Date Sampled: 06/04/2009 1505	% Solids: 85.6 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	50	06/09/2009 1248	DLB		12101	10.79

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	91	J	140	30	ug/kg	1
Ethylbenzene	100-41-4	8260B	350		140	46	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		140	11	ug/kg	1
Toluene	108-88-3	8260B	51	J	140	46	ug/kg	1
Xylenes (total)	1330-20-7	8260B	1800		140	78	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		90	53-142
Bromofluorobenzene		88	47-138
Toluene-d8		85	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-005
Description: HA09SB52(4-6)
Matrix: Solid
Date Sampled: 06/04/2009 1505
% Solids: 85.6 06/05/2009 2353
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	100	06/16/2009 1708	DC	06/08/2009 1730	12041

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		370	94	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		370	110	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		370	58	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		370	67	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		370	75	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		370	57	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		370	74	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		370	54	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		370	51	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		370	58	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		370	48	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		370	65	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		370	110	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	4500		370	110	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	6300		370	110	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	4100		370	110	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		370	82	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		370	57	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-006
Description: HA09SB51(2-4)	Matrix: Solid
Date Sampled: 06/04/2009 1500	% Solids: 83.6 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	06/08/2009 2038	DLB		12087	12.81

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		2.3	0.51	ug/kg	1
Ethylbenzene	100-41-4	8260B	11		2.3	0.79	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		2.3	0.19	ug/kg	1
Toluene	108-88-3	8260B	ND		2.3	0.79	ug/kg	1
Xylenes (total)	1330-20-7	8260B	91		2.3	1.4	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		84	53-142
Bromofluorobenzene		92	47-138
Toluene-d8		85	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-006
Description: HA09SB51(2-4)
Matrix: Solid
Date Sampled: 06/04/2009 1500
% Solids: 83.6 06/05/2009 2353
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	5	06/15/2009 0237	DC	06/08/2009 1730	12041

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	61		20	5.0	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		20	5.7	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		20	3.0	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		20	3.5	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		20	3.9	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		20	3.0	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		20	3.9	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		20	2.9	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		20	2.7	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		20	3.0	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		20	2.5	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		20	3.4	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		20	6.0	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	480		20	5.9	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	630		20	5.9	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	220		20	5.8	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		20	4.3	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		20	3.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		58	20-150
2-Methylnaphthalene-d10		31	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-007
Description: HA09SB45(2-4)	Matrix: Solid
Date Sampled: 06/04/2009 1420	% Solids: 85.8 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	50	06/09/2009 1312	DLB		12101	9.58

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		150	33	ug/kg	1
Ethylbenzene	100-41-4	8260B	1300		150	52	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		150	12	ug/kg	1
Toluene	108-88-3	8260B	ND		150	52	ug/kg	1
Xylenes (total)	1330-20-7	8260B	6400		150	88	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		75	53-142
Bromofluorobenzene		69	47-138
Toluene-d8		70	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-007
Description: HA09SB45(2-4)
Matrix: Solid
Date Sampled: 06/04/2009 1420
% Solids: 85.8 06/05/2009 2353
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	50	06/15/2009 2149	DC	06/08/2009 1730	12041

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		190	48	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		190	55	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		190	29	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		190	34	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		190	38	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		190	29	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		190	37	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		190	28	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		190	26	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		190	29	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		190	24	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		190	33	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		190	58	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	2000		190	56	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	2700		190	57	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	1600		190	56	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		190	41	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		190	29	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-008
Description: HA09SB44(4-6)	Matrix: Solid
Date Sampled: 06/04/2009 1415	% Solids: 80.1 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	500	06/09/2009 1335	DLB		12101	12.50

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	330	J	1200	270	ug/kg	1
Ethylbenzene	100-41-4	8260B	9400		1200	420	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1200	100	ug/kg	1
Toluene	108-88-3	8260B	ND		1200	420	ug/kg	1
Xylenes (total)	1330-20-7	8260B	38000		1200	720	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	53-142
Bromofluorobenzene		94	47-138
Toluene-d8	N	134	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-008
Description: HA09SB44(4-6)
Matrix: Solid
Date Sampled: 06/04/2009 1415
% Solids: 80.1 06/05/2009 2353
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/13/2009 0237	DC	06/08/2009 1730	12041
2	3550C	8270D (SIM)	20	06/15/2009 0330	DC	06/08/2009 1730	12041

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	62		4.1	1.0	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	50		4.1	1.2	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	20		4.1	0.63	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	21		4.1	0.73	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	16		4.1	0.82	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	20		4.1	0.62	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	6.3		4.1	0.80	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	9.2		4.1	0.59	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	18		4.1	0.56	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		4.1	0.63	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	62		4.1	0.52	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	40		4.1	0.70	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	5.8		4.1	1.2	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	1400		82	24	ug/kg	2
2-Methylnaphthalene	91-57-6	8270D (SIM)	2000		82	24	ug/kg	2
Naphthalene	91-20-3	8270D (SIM)	1000		82	24	ug/kg	2
Phenanthrene	85-01-8	8270D (SIM)	65		4.1	0.89	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	96		4.1	0.62	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Fluoranthene-d10		65	20-150	N	0.0	20-150
2-Methylnaphthalene-d10		148	20-150	N	0.0	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-009
Description: HA09SB43(4-6)	Matrix: Solid
Date Sampled: 06/04/2009 1405	% Solids: 85.1 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	06/08/2009 2008	DLB		12087	7.46

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		3.9	0.87	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		3.9	1.3	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3.9	0.32	ug/kg	1
Toluene	108-88-3	8260B	ND		3.9	1.3	ug/kg	1
Xylenes (total)	1330-20-7	8260B	3.3	J	3.9	2.3	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		80	53-142
Bromofluorobenzene		98	47-138
Toluene-d8		84	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-009
Description: HA09SB43(4-6)	Matrix: Solid
Date Sampled: 06/04/2009 1405	% Solids: 85.1 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	06/15/2009 2215	DC	06/08/2009 1730	12041

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		3.8	0.95	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		3.8	1.1	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		3.8	0.59	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		3.8	0.68	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		3.8	0.76	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		3.8	0.57	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		3.8	0.75	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		3.8	0.55	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		3.8	0.52	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		3.8	0.59	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		3.8	0.48	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		3.8	0.66	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		3.8	1.1	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	ND		3.8	1.1	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	ND		3.8	1.1	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	ND		3.8	1.1	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		3.8	0.83	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		3.8	0.57	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		34	20-150
2-Methylnaphthalene-d10		23	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-010
Description: HA09SB50(2-4)	Matrix: Solid
Date Sampled: 06/04/2009 1400	% Solids: 84.2 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	400	06/09/2009 1358	DLB		12101	12.38

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	1200		960	210	ug/kg	1
Ethylbenzene	100-41-4	8260B	6100		960	330	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		960	77	ug/kg	1
Toluene	108-88-3	8260B	520	J	960	330	ug/kg	1
Xylenes (total)	1330-20-7	8260B	27000		960	560	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		79	53-142
Bromofluorobenzene		83	47-138
Toluene-d8		80	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-010
Description: HA09SB50(2-4)
Matrix: Solid
Date Sampled: 06/04/2009 1400
% Solids: 84.2 06/05/2009 2353
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	10	06/15/2009 2242	DC	06/08/2009 1730	12041

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	55		39	9.8	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	49		39	11	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		39	6.0	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		39	7.0	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		39	7.8	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		39	5.9	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		39	7.7	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		39	5.7	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		39	5.3	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		39	6.0	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		39	5.0	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	46		39	6.8	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		39	12	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	910		39	12	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	1200		39	12	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	370		39	11	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		39	8.5	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		39	5.9	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		60	20-150
2-Methylnaphthalene-d10		147	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-011
Description: HA09SB49(2-4)	Matrix: Solid
Date Sampled: 06/04/2009 1350	% Solids: 85.4 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1000	06/09/2009 1524	DLB		12101	8.53

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	7400		3400	750	ug/kg	1
Ethylbenzene	100-41-4	8260B	50000		3400	1200	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3400	270	ug/kg	1
Toluene	108-88-3	8260B	6600		3400	1200	ug/kg	1
Xylenes (total)	1330-20-7	8260B	180000		3400	2000	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4	N	167	53-142
Bromofluorobenzene		123	47-138
Toluene-d8		105	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-011
Description: HA09SB49(2-4)
Matrix: Solid
Date Sampled: 06/04/2009 1350
% Solids: 85.4 06/05/2009 2353
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	100	06/15/2009 2308	DC	06/08/2009 1730	12041

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		380	95	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		380	110	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		380	58	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		380	68	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		380	76	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		380	57	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		380	74	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		380	55	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		380	52	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		380	58	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		380	48	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		380	65	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		380	110	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	6300		380	110	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	8900		380	110	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	4500		380	110	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		380	82	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		380	57	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF05010-012
Description: HA09SB48(2-4)	Matrix: Solid
Date Sampled: 06/04/2009 1340	% Solids: 84.1 06/05/2009 2353
Date Received: 06/05/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	500	06/09/2009 1445	DLB		12101	7.98

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	1700	J	1900	410	ug/kg	1
Ethylbenzene	100-41-4	8260B	12000		1900	630	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1900	150	ug/kg	1
Toluene	108-88-3	8260B	23000		1900	630	ug/kg	1
Xylenes (total)	1330-20-7	8260B	53000		1900	1100	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		64	53-142
Bromofluorobenzene		62	47-138
Toluene-d8	N	51	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-012
Description: HA09SB48(2-4)
Matrix: Solid
Date Sampled: 06/04/2009 1340
% Solids: 84.1 06/05/2009 2353
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	200	06/16/2009 1735	DC	06/08/2009 1730	12041

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	930		770	190	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		770	220	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		770	120	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		770	140	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		770	150	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		770	120	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		770	150	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		770	110	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		770	100	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		770	120	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		770	98	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		770	130	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		770	230	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	27000		770	230	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	36000		770	230	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	23000		770	230	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		770	170	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		770	120	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF05010-013
Description: Trip Blank
Matrix: Aqueous
Date Sampled: 06/05/2009 0930
Date Received: 06/05/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/09/2009 0259	DLB		12069

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		108	52-138
Bromofluorobenzene		96	70-147
Toluene-d8		108	76-125

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

QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: KQ12069-001
Batch: 12069
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	06/08/2009 2302
Ethylbenzene	ND		1	0.50	0.17	ug/L	06/08/2009 2302
Toluene	ND		1	0.50	0.17	ug/L	06/08/2009 2302
Xylenes (total)	ND		1	0.50	0.17	ug/L	06/08/2009 2302

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		106	70-130
Toluene-d8		107	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12069-002
Batch: 12069
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	50		1	101	70-130	06/08/2009 2136
Ethylbenzene	50	50		1	99	70-130	06/08/2009 2136
Toluene	50	50		1	99	70-130	06/08/2009 2136
Xylenes (total)	100	99		1	99	70-130	06/08/2009 2136

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		108	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12069-003
Batch: 12069
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	51		1	102	1.4	70-130	20	06/08/2009 2158
Ethylbenzene	50	51		1	103	3.6	70-130	20	06/08/2009 2158
Toluene	50	50		1	100	0.55	70-130	20	06/08/2009 2158
Xylenes (total)	100	100		1	101	1.9	70-130	20	06/08/2009 2158

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		104	70-130
Toluene-d8		107	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12087-001
Batch: 12087
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	5.0	1.1	ug/kg	06/08/2009 1411
Ethylbenzene	ND		1	5.0	1.7	ug/kg	06/08/2009 1411
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	0.40	ug/kg	06/08/2009 1411
Toluene	ND		1	5.0	1.7	ug/kg	06/08/2009 1411
Xylenes (total)	ND		1	5.0	2.9	ug/kg	06/08/2009 1411

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	47-138
1,2-Dichloroethane-d4		73	53-142
Toluene-d8		81	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12087-002
Batch: 12087
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	46		1	93	69-123	06/08/2009 1300
Ethylbenzene	50	48		1	96	59-128	06/08/2009 1300
Methyl tertiary butyl ether (MTBE)	50	41		1	82	72-122	06/08/2009 1300
Toluene	50	46		1	92	61-129	06/08/2009 1300
Xylenes (total)	100	93		1	93	58-128	06/08/2009 1300

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	47-138
1,2-Dichloroethane-d4		72	53-142
Toluene-d8		81	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12087-003
Batch: 12087
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
Benzene	50	45		1	90	3.1	69-123	20	06/08/2009 1324
Ethylbenzene	50	47		1	93	3.3	59-128	20	06/08/2009 1324
Methyl tertiary butyl ether (MTBE)	50	40		1	79	3.3	72-122	20	06/08/2009 1324
Toluene	50	45		1	90	2.4	61-129	20	06/08/2009 1324
Xylenes (total)	100	90		1	90	3.5	58-128	20	06/08/2009 1324

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	47-138
1,2-Dichloroethane-d4		73	53-142
Toluene-d8		81	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12101-001
Batch: 12101
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		50	250	55	ug/kg	06/09/2009 1043
Ethylbenzene	ND		50	250	85	ug/kg	06/09/2009 1043
Methyl tertiary butyl ether (MTBE)	ND		50	250	20	ug/kg	06/09/2009 1043
Toluene	ND		50	250	85	ug/kg	06/09/2009 1043
Xylenes (total)	ND		50	250	140	ug/kg	06/09/2009 1043

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		108	47-138
1,2-Dichloroethane-d4		109	53-142
Toluene-d8		108	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12101-002
Batch: 12101
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	2500	2300		50	91	69-123	06/09/2009 0933
Ethylbenzene	2500	2300		50	93	59-128	06/09/2009 0933
Methyl tertiary butyl ether (MTBE)	2500	2000		50	79	72-122	06/09/2009 0933
Toluene	2500	2200		50	89	61-129	06/09/2009 0933
Xylenes (total)	5000	4500		50	90	58-128	06/09/2009 0933

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

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12101-003
Batch: 12101
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
Benzene	2500	2600		50	102	11	69-123	20	06/09/2009 0956
Ethylbenzene	2500	2600		50	102	9.4	59-128	20	06/09/2009 0956
Methyl tertiary butyl ether (MTBE)	2500	2100		50	82	4.0	72-122	20	06/09/2009 0956
Toluene	2500	2500		50	99	11	61-129	20	06/09/2009 0956
Xylenes (total)	5000	5000		50	99	10	58-128	20	06/09/2009 0956

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	47-138
1,2-Dichloroethane-d4		104	53-142
Toluene-d8		105	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: KQ12041-001
Batch: 12041
Analytical Method: 8270D (SIM)

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/08/2009 1730

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1-Methylnaphthalene	ND		1	3.3	0.98	ug/kg	06/12/2009 2211
2-Methylnaphthalene	ND		1	3.3	0.99	ug/kg	06/12/2009 2211
Acenaphthene	ND		1	3.3	0.83	ug/kg	06/12/2009 2211
Acenaphthylene	ND		1	3.3	0.95	ug/kg	06/12/2009 2211
Anthracene	ND		1	3.3	0.51	ug/kg	06/12/2009 2211
Benzo(a)anthracene	ND		1	3.3	0.59	ug/kg	06/12/2009 2211
Benzo(a)pyrene	ND		1	3.3	0.66	ug/kg	06/12/2009 2211
Benzo(b)fluoranthene	ND		1	3.3	0.50	ug/kg	06/12/2009 2211
Benzo(g,h,i)perylene	ND		1	3.3	0.65	ug/kg	06/12/2009 2211
Benzo(k)fluoranthene	ND		1	3.3	0.48	ug/kg	06/12/2009 2211
Chrysene	ND		1	3.3	0.45	ug/kg	06/12/2009 2211
Dibenzo(a,h)anthracene	ND		1	3.3	0.51	ug/kg	06/12/2009 2211
Fluoranthene	ND		1	3.3	0.42	ug/kg	06/12/2009 2211
Fluorene	ND		1	3.3	0.57	ug/kg	06/12/2009 2211
Indeno(1,2,3-c,d)pyrene	ND		1	3.3	1.0	ug/kg	06/12/2009 2211
Naphthalene	ND		1	3.3	0.97	ug/kg	06/12/2009 2211
Phenanthrene	ND		1	3.3	0.72	ug/kg	06/12/2009 2211
Pyrene	ND		1	3.3	0.50	ug/kg	06/12/2009 2211

Surrogate	Q	% Rec	Acceptance Limit
2-Methylnaphthalene-d10		62	20-150
Fluoranthene-d10		78	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: KQ12041-002
Batch: 12041
Analytical Method: 8270D (SIM)

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/08/2009 1730

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
2-Methylnaphthalene	13	19		1	149	20-150	06/13/2009 1445
Acenaphthene	13	4.0		1	31	20-150	06/13/2009 1445
Acenaphthylene	13	6.5		1	50	20-150	06/13/2009 1445
Anthracene	13	6.8		1	52	20-150	06/13/2009 1445
Benzo(a)anthracene	13	7.0		1	54	20-150	06/13/2009 1445
Benzo(a)pyrene	13	10		1	76	20-150	06/13/2009 1445
Benzo(b)fluoranthene	13	7.1		1	55	20-150	06/13/2009 1445
Benzo(g,h,i)perylene	13	9.2		1	70	20-150	06/13/2009 1445
Benzo(k)fluoranthene	13	7.7		1	59	20-150	06/13/2009 1445
Chrysene	13	7.2		1	56	20-150	06/13/2009 1445
Dibenzo(a,h)anthracene	13	8.6		1	66	20-150	06/13/2009 1445
Fluoranthene	13	7.5		1	58	20-150	06/13/2009 1445
Fluorene	13	4.2		1	32	20-150	06/13/2009 1445
Indeno(1,2,3-c,d)pyrene	13	9.1		1	70	20-150	06/13/2009 1445
Naphthalene	13	18		1	142	20-150	06/13/2009 1445
Phenanthrene	13	6.4		1	49	20-150	06/13/2009 1445
Pyrene	13	7.9		1	60	20-150	06/13/2009 1445

Surrogate	Q	% Rec	Acceptance Limit
2-Methylnaphthalene-d10		40	20-150
Fluoranthene-d10		52	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - MS

Sample ID: KF05010-003MS
Batch: 12041
Analytical Method: 8270D (SIM)

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/08/2009 1730

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acenaphthene	140	16	250	N	10	766	30-130	06/14/2009 2320
Acenaphthylene	62	16	130	N	10	443	30-130	06/14/2009 2320
Anthracene	ND	16	100	N	10	640	30-130	06/14/2009 2320
Benzo(a)anthracene	ND	16	24	N	10	156	30-130	06/14/2009 2320
Benzo(a)pyrene	ND	16	49	N	10	317	30-130	06/14/2009 2320
Benzo(b)fluoranthene	ND	16	38	N	10	242	30-130	06/14/2009 2320
Benzo(g,h,i)perylene	ND	16	44	N	10	280	30-130	06/14/2009 2320
Benzo(k)fluoranthene	ND	16	26	N	10	166	30-130	06/14/2009 2320
Chrysene	ND	16	16		10	102	30-130	06/14/2009 2320
Dibenzo(a,h)anthracene	ND	16	27	N	10	176	30-130	06/14/2009 2320
Fluoranthene	620	16	5700	N	10	32900	30-130	06/14/2009 2320
Fluorene	96	16	160	N	10	408	30-130	06/14/2009 2320
Indeno(1,2,3-c,d)pyrene	ND	16	33	N	10	213	30-130	06/14/2009 2320
2-Methylnaphthalene	430	16	13000	N	10	55300	30-130	06/14/2009 2320
Naphthalene	1700	16	7300	N	10	35900	30-130	06/14/2009 2320
Phenanthrene	55	16	210	N	10	995	30-130	06/14/2009 2320
Pyrene	ND	16	100	N	10	644	30-130	06/14/2009 2320

Surrogate	Q	% Rec	Acceptance Limit
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - MSD

Sample ID: KF05010-003MD
Batch: 12041
Analytical Method: 8270D (SIM)

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/08/2009 1730

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	140	15	210	N	10	491	19	30-130	20	06/14/2009 2347
Acenaphthylene	62	15	120	N	10	405	5.5	30-130	20	06/14/2009 2347
Anthracene	ND	15	39	N,+	10	253	88	30-130	20	06/14/2009 2347
Benzo(a)anthracene	ND	15	16	+	10	101	44	30-130	20	06/14/2009 2347
Benzo(a)pyrene	ND	15	29	N,+	10	192	50	30-130	20	06/14/2009 2347
Benzo(b)fluoranthene	ND	15	21	N,+	10	140	55	30-130	20	06/14/2009 2347
Benzo(g,h,i)perylene	ND	15	43	N	10	281	1.3	30-130	20	06/14/2009 2347
Benzo(k)fluoranthene	ND	15	14	+	10	94	57	30-130	20	06/14/2009 2347
Chrysene	ND	15	11	+	10	71	37	30-130	20	06/14/2009 2347
Dibenzo(a,h)anthracene	ND	15	34	N,+	10	221	21	30-130	20	06/14/2009 2347
Fluoranthene	620	15	1500	N,+	10	6020	120	30-130	20	06/14/2009 2347
Fluorene	96	15	130	N,+	10	212	22	30-130	20	06/14/2009 2347
Indeno(1,2,3-c,d)pyrene	ND	15	35	N	10	228	5.2	30-130	20	06/14/2009 2347
2-Methylnaphthalene	430	15	4600	N,+	10	2530	95	30-130	20	06/14/2009 2347
Naphthalene	1700	15	2900	N,+	10	7700	86	30-130	20	06/14/2009 2347
Phenanthrene	55	15	74	+	10	126	95	30-130	20	06/14/2009 2347
Pyrene	ND	15	42	N,+	10	272	83	30-130	20	06/14/2009 2347

Surrogate	Q	% Rec	Acceptance Limit
Fluoranthene-d10	N	0.0	20-150
2-Methylnaphthalene-d10	N	0.0	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: KQ12078-001
Batch: 12078
Analytical Method: 8270D (SIM)

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/08/2009 1724

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1-Methylnaphthalene	ND		1	0.20	0.025	ug/L	06/13/2009 0832
2-Methylnaphthalene	ND		1	0.20	0.027	ug/L	06/13/2009 0832
Acenaphthene	ND		1	0.20	0.021	ug/L	06/13/2009 0832
Acenaphthylene	ND		1	0.20	0.024	ug/L	06/13/2009 0832
Anthracene	ND		1	0.20	0.016	ug/L	06/13/2009 0832
Benzo(a)anthracene	ND		1	0.20	0.019	ug/L	06/13/2009 0832
Benzo(a)pyrene	ND		1	0.20	0.020	ug/L	06/13/2009 0832
Benzo(b)fluoranthene	ND		1	0.20	0.019	ug/L	06/13/2009 0832
Benzo(g,h,i)perylene	ND		1	0.20	0.062	ug/L	06/13/2009 0832
Benzo(k)fluoranthene	ND		1	0.20	0.024	ug/L	06/13/2009 0832
Chrysene	ND		1	0.20	0.021	ug/L	06/13/2009 0832
Dibenzo(a,h)anthracene	ND		1	0.20	0.040	ug/L	06/13/2009 0832
Fluoranthene	ND		1	0.20	0.018	ug/L	06/13/2009 0832
Fluorene	ND		1	0.20	0.022	ug/L	06/13/2009 0832
Indeno(1,2,3-c,d)pyrene	ND		1	0.20	0.050	ug/L	06/13/2009 0832
Naphthalene	ND		1	0.20	0.030	ug/L	06/13/2009 0832
Phenanthrene	ND		1	0.20	0.023	ug/L	06/13/2009 0832
Pyrene	ND		1	0.20	0.017	ug/L	06/13/2009 0832

Surrogate	Q	% Rec	Acceptance Limit
2-Methylnaphthalene-d10		66	20-150
Fluoranthene-d10		74	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: KQ12078-002
Batch: 12078
Analytical Method: 8270D (SIM)

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/08/2009 1724

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
2-Methylnaphthalene	0.40	0.27		1	67	30-150	06/13/2009 0858
Acenaphthene	0.40	0.28		1	70	20-150	06/13/2009 0858
Acenaphthylene	0.40	0.39		1	97	30-130	06/13/2009 0858
Anthracene	0.40	0.30		1	74	20-150	06/13/2009 0858
Benzo(a)anthracene	0.40	0.29		1	72	30-150	06/13/2009 0858
Benzo(a)pyrene	0.40	0.36		1	90	20-150	06/13/2009 0858
Benzo(b)fluoranthene	0.40	0.30		1	74	30-150	06/13/2009 0858
Benzo(g,h,i)perylene	0.40	0.29		1	72	20-150	06/13/2009 0858
Benzo(k)fluoranthene	0.40	0.33		1	84	30-150	06/13/2009 0858
Chrysene	0.40	0.28		1	71	20-150	06/13/2009 0858
Dibenzo(a,h)anthracene	0.40	0.29		1	72	30-150	06/13/2009 0858
Fluoranthene	0.40	0.29		1	72	20-150	06/13/2009 0858
Fluorene	0.40	0.30		1	76	30-150	06/13/2009 0858
Indeno(1,2,3-c,d)pyrene	0.40	0.29		1	72	20-150	06/13/2009 0858
Naphthalene	0.40	0.29		1	72	30-150	06/13/2009 0858
Phenanthrene	0.40	0.29		1	72	20-150	06/13/2009 0858
Pyrene	0.40	0.39		1	97	30-150	06/13/2009 0858

Surrogate	Q	% Rec	Acceptance Limit
2-Methylnaphthalene-d10		70	20-150
Fluoranthene-d10		74	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - MS

Sample ID: KF05010-002MS
Batch: 12078
Analytical Method: 8270D (SIM)

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/08/2009 1724

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acenaphthene	ND	0.87	0.28		5	33	30-130	06/14/2009 2201
Acenaphthylene	ND	0.87	0.39		5	45	30-130	06/14/2009 2201
Anthracene	ND	0.87	0.23	N	5	26	30-130	06/14/2009 2201
Benzo(a)anthracene	ND	0.87	0.21	N	5	24	30-130	06/14/2009 2201
Benzo(a)pyrene	ND	0.87	0.34		5	39	30-130	06/14/2009 2201
Benzo(b)fluoranthene	ND	0.87	0.23	N	5	26	30-130	06/14/2009 2201
Benzo(g,h,i)perylene	0.71	0.87	0.61	N	5	-12	30-130	06/14/2009 2201
Benzo(k)fluoranthene	ND	0.87	0.23	N	5	26	30-130	06/14/2009 2201
Chrysene	ND	0.87	0.20	N	5	23	30-130	06/14/2009 2201
Dibenzo(a,h)anthracene	0.59	0.87	0.67	N	5	9.5	30-130	06/14/2009 2201
Fluoranthene	ND	0.87	0.22	N	5	26	30-130	06/14/2009 2201
Fluorene	ND	0.87	0.26	N	5	29	30-130	06/14/2009 2201
Indeno(1,2,3-c,d)pyrene	0.56	0.87	0.55	N	5	-1.5	30-130	06/14/2009 2201
2-Methylnaphthalene	7.3	0.87	1.7	N	5	-648	30-130	06/14/2009 2201
Naphthalene	6.2	0.87	1.8	N	5	-496	30-130	06/14/2009 2201
Phenanthrene	ND	0.87	0.26		5	30	30-130	06/14/2009 2201
Pyrene	ND	0.87	0.25	N	5	28	30-130	06/14/2009 2201

Surrogate	Q	% Rec	Acceptance Limit
Fluoranthene-d10		62	20-150
2-Methylnaphthalene-d10		66	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - MSD

Sample ID: KF05010-002MD
Batch: 12078
Analytical Method: 8270D (SIM)

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/08/2009 1724

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	0.87	0.28		5	33	0.35	30-130	20	06/14/2009 2227
Acenaphthylene	ND	0.87	0.37		5	42	6.5	30-130	20	06/14/2009 2227
Anthracene	ND	0.87	0.22	N	5	25	2.7	30-130	20	06/14/2009 2227
Benzo(a)anthracene	ND	0.87	0.21	N	5	24	1.5	30-130	20	06/14/2009 2227
Benzo(a)pyrene	ND	0.87	0.28		5	33	16	30-130	20	06/14/2009 2227
Benzo(b)fluoranthene	ND	0.87	0.24	N	5	28	6.9	30-130	20	06/14/2009 2227
Benzo(g,h,i)perylene	0.71	0.87	0.59	N	5	-14	3.6	30-130	20	06/14/2009 2227
Benzo(k)fluoranthene	ND	0.87	0.27		5	31	18	30-130	20	06/14/2009 2227
Chrysene	ND	0.87	0.23	N	5	26	14	30-130	20	06/14/2009 2227
Dibenzo(a,h)anthracene	0.59	0.87	0.50	N,+	5	-10	29	30-130	20	06/14/2009 2227
Fluoranthene	ND	0.87	0.24	N	5	28	9.2	30-130	20	06/14/2009 2227
Fluorene	ND	0.87	0.27		5	31	6.4	30-130	20	06/14/2009 2227
Indeno(1,2,3-c,d)pyrene	0.56	0.87	0.50	N	5	-7.1	9.2	30-130	20	06/14/2009 2227
2-Methylnaphthalene	7.3	0.87	1.4	N	5	-680	18	30-130	20	06/14/2009 2227
Naphthalene	6.2	0.87	1.5	N	5	-532	19	30-130	20	06/14/2009 2227
Phenanthrene	ND	0.87	0.26		5	30	0.27	30-130	20	06/14/2009 2227
Pyrene	ND	0.87	0.26		5	30	6.7	30-130	20	06/14/2009 2227

Surrogate	Q	% Rec	Acceptance Limit
Fluoranthene-d10		87	20-150
2-Methylnaphthalene-d10		54	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name GP08HAFS.H09A.KFOEX

Project Location Hunter Army Airfield HAA-9

Laboratory Shealy

Project Manager Chuck Bertz

Sampler(s)/Affiliation Josh Frizzell/Erica Maddox Arcadis

KF05010

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	PAH					Remarks	Total
HA09GW01(6-10)	L	6-4-09/1600		3	2						5
HA09GW01(11-15)	L	6-4-09/1615		3	2						
HA09SB54(2-4)	S	6-4-09/1530		4	1						
HA09SB53(2-4)	S	6-4-09/1515		4	1						
HA09SB52(4-6)	S	6-4-09/1505		4	1						
HA09SB51(2-4)	S	6-4-09/1500		4	1						
HA09SB45(2-4)	S	6-4-09/1420		4	1						
HA09SB44(4-6)	S	6-4-09/1415		4	1						
HA09SB43(4-6)	S	6-4-09/1405		4	1						
HA09SB50(2-4)	S	6-4-09/1400		4	1						
HA09SB49(2-4)	S	6-4-09/1350		4	1						
HA09SB48(2-4)	S	6-4-09/1340		4	1						
Trip Blank	L	6-4-09		2							2

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers ~~60~~ 62

Relinquished by: [illegible]	Organization: Arcadis	Date 6/4/09	Time 1800	Seal Intact?
Received by: Sabrina Boles	Organization: Shealy Environ	Date 06/05/09 06/04/09	Time 0930	Yes No N/A
Relinquished by: FEDEX	Organization: FEDEX	Date 06/05/09	Time 0930	Seal Intact?
Received by: Sabrina Boles	Organization: Shealy Environ	Date 06/05/09	Time 0930	Yes No N/A

Special Instructions/Remarks:

First Cooler Received at 5.8°C

Second Cooler Received at 7.8°C

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 06-2001

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 6

Page 1 of 1
Replaces Date: 09/22/06
Effective Date: 05/29/07

Sample Receipt Checklist (SRC)

Client: Arcadis Cooler Inspected by/date: DMP / 6/5/09 Lot #: KF05010

Means of receipt: ☐ SESI ☐ Client ☐ UPS ☑ FedEx ☐ Airborne Exp ☐ Other

Yes ☑	No ☐	NA ☐	1. Were custody seals present on the cooler?
Yes ☑	No ☐	NA ☐	2. If custody seals were present, were they intact and unbroken?

Cooler ID/temperature upon receipt 5.8 °C / 7.8 °C / °C / °C / °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 ☐	NA ☐	5. Were proper custody procedures (relinquished/received) followed?
Yes ☑	No ☐	NA ☐	6. Were sample IDs listed?
Yes ☑	No ☐	NA ☐	7. Was collection date & time listed?
Yes ☑	No ☐	NA ☐	8. Were tests to be performed listed on the COC or was quote # provided?
Yes ☑	No ☐	NA ☐	9. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐	NA ☐	10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐	NA ☐	11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐	NA ☐	12. Was adequate sample volume available?
Yes ☑	No ☐	NA ☐	13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑	NA ☐	14. Were any samples containers missing?
Yes ☐	No ☑	NA ☐	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/BNA/pest/PCB/herb (<0.2mg/L) and toxicity (<0.1mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?

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

Sample(s)_____ were received incorrectly preserved and were adjusted accordingly 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/BNA/pest/PCB/herb.

Toxicity sample(s)_____ were received with TRC >0.1 mg/L and were analyzed by method 330.5.

Corrective Action taken, if necessary:

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

SESI employee:_____ Date of response: _____

Comments:

Report of Analysis

ARCADIS U.S., Inc.
30 Patewood Drive
Suite 155
Greenville, SC 29615
Attention: Janet Christy

Project Name: Hunter Army Airfeild HAA-9

Project Number: GP08HAFS.HA09A.JG0EX

Lot Number: KF06028

Date Completed: 06/19/2009

Nisreen Saikaly
Project Manager

This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

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

* K F 0 6 0 2 8 *

Case Narrative
ARCADIS U.S., Inc.
Lot Number: KF06028

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.

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.

pH

As per method the holding time for pH analysis is 15 minutes from collection.

TCLP Volatiles

The concentration in the MS for batch 12714 was greater than five times the spike concentration, and is impacting the surrogate recoveries, thus negating their usefulness concerning quality control. All other QC/QA criteria were within acceptance limits. Associated sample data was reported, and no corrective action was required.

TCLP Semivolatiles

The MS recovery for Pyridine in batch 12128 and 12216 was outside acceptance criteria. All other QA/QC criteria for the batch were within acceptance criteria and method control limits. The MS recovery results are attributed to matrix interference. The associated sample results were reported and no corrective action was required.

Sample Summary

ARCADIS U.S., Inc.

Lot Number: KF06028

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	HA09IDW01	Solid	06/05/2009 1500	06/06/2009
002	HA09IDW02	Aqueous	06/05/2009 1505	06/06/2009
003	TRIP BLANK	Aqueous	06/06/2009 0930	06/06/2009
004	HAI3R2IDW-1(060509)	Aqueous	06/05/2009 1520	06/06/2009
005	HA09SB55 (2-4)	Solid	06/05/2009 1520	06/06/2009

(5 samples)

Executive Summary

ARCADIS U.S., Inc.

Lot Number: KF06028

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	HA09IDW01	Solid	Ignitability (Pensky-Martens Closed-	1010A	>140		° F	5
001	HA09IDW01	Solid	Barium	6010B	0.66	B	mg/L	8
001	HA09IDW01	Solid	Mercury	7470A	0.000042	BJ	mg/L	8
001	HA09IDW01	Solid	Silver	6010B	0.024	BJ	mg/L	8
002	HA09IDW02	Aqueous	Ignitability (Pensky-Martens Closed-	1010A	>140		° F	9
004	HAI3R2IDW-1(060509)	Aqueous	Ignitability (Pensky-Martens Closed-	1010A	>140		° F	13
005	HA09SB55 (2-4)	Solid	Benzene	8260B	32		ug/kg	16
005	HA09SB55 (2-4)	Solid	Ethylbenzene	8260B	120		ug/kg	16
005	HA09SB55 (2-4)	Solid	Xylenes (total)	8260B	240		ug/kg	16
005	HA09SB55 (2-4)	Solid	1-Methylnaphthalene	8270D (SIM)	140		ug/kg	17
005	HA09SB55 (2-4)	Solid	2-Methylnaphthalene	8270D (SIM)	220		ug/kg	17
005	HA09SB55 (2-4)	Solid	Naphthalene	8270D (SIM)	220		ug/kg	17

(12 detections)

Inorganic non-metals

Client: ARCADIS U.S., Inc.	Laboratory ID: KF06028-001
Description: HA09IDW01	Matrix: Solid
Date Sampled: 06/05/2009 1500	% Solids: 86.0 06/07/2009 1112
Date Received: 06/06/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Ignitability) 1010A	1	06/10/2009 1548	PMM		
1		(pH) 9045C	1	06/06/2009 1700	MML		12002

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Ignitability (Pensky-Martens Closed-Cup)		1010A	>140				° F	1
pH		9045C	6.09	H			su	1

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

TCLP Volatiles

Client: ARCADIS U.S., Inc.	Laboratory ID: KF06028-001
Description: HA09IDW01	Matrix: Solid
Date Sampled: 06/05/2009 1500	% Solids: 86.0 06/07/2009 1112
Date Received: 06/06/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/5030B	8260B	10	06/18/2009 1256	DLB		12714	06/08/2009 2232

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.050	0.0020	mg/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		0.10	0.018	mg/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.050	0.0040	mg/L	1
Chlorobenzene	108-90-7	8260B	ND		0.050	0.0020	mg/L	1
Chloroform	67-66-3	8260B	ND		0.050	0.0030	mg/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.050	0.0030	mg/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.050	0.0050	mg/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.050	0.0040	mg/L	1
Trichloroethene	79-01-6	8260B	ND		0.050	0.0030	mg/L	1
Vinyl chloride	75-01-4	8260B	ND		0.010	0.0010	mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		108	70-130
Bromofluorobenzene		98	70-130
Toluene-d8		107	70-130

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

TCLP Semivolatiles

Client: ARCADIS U.S., Inc.	Laboratory ID: KF06028-001
Description: HA09IDW01	Matrix: Solid
Date Sampled: 06/05/2009 1500	% Solids: 86.0 06/07/2009 1112
Date Received: 06/06/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/3520C	8270C	1	06/12/2009 2136	GLR	06/09/2009 2358	12128	06/08/2009 2222

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,4-Dichlorobenzene	106-46-7	8270C	ND		0.050	0.0030	mg/L	1
2,4-Dinitrotoluene	121-14-2	8270C	ND		0.10	0.011	mg/L	1
Hexachlorobenzene	118-74-1	8270C	ND		0.050	0.0080	mg/L	1
Hexachlorobutadiene	87-68-3	8270C	ND		0.050	0.0030	mg/L	1
Hexachloroethane	67-72-1	8270C	ND		0.050	0.0030	mg/L	1
2-Methylphenol	95-48-7	8270C	ND		0.050	0.0040	mg/L	1
3 & 4-Methylphenol	106-44-5	8270C	ND		0.10	0.010	mg/L	1
Nitrobenzene	98-95-3	8270C	ND		0.050	0.0030	mg/L	1
Pentachlorophenol	87-86-5	8270C	ND		0.25	0.018	mg/L	1
Pyridine	110-86-1	8270C	ND		0.050	0.016	mg/L	1
2,4,5-Trichlorophenol	95-95-4	8270C	ND		0.050	0.0060	mg/L	1
2,4,6-Trichlorophenol	88-06-2	8270C	ND		0.050	0.0050	mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,4,6-Tribromophenol		96	41-144
2-Fluorobiphenyl		103	37-129
2-Fluorophenol		70	24-127
Nitrobenzene-d5		94	38-127
Phenol-d5		96	28-128
Terphenyl-d14		98	10-148

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

TCLP Metals

Client: ARCADIS U.S., Inc.	Laboratory ID: KF06028-001
Description: HA09IDW01	Matrix: Solid
Date Sampled: 06/05/2009 1500	% Solids: 86.0 06/07/2009 1112
Date Received: 06/06/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/3010A	6010B	10	06/18/2009 0724	KJC	06/16/2009 1633	12551	06/11/2009 1419
1	1311/7470A	7470A	1	06/18/2009 2315	BNW	06/18/2009 1700	12584	06/11/2009 1419
2	1311/3010A	6010B	10	06/18/2009 1705	KJC	06/16/2009 1633	12551	06/11/2009 1419

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Arsenic	7440-38-2	6010B	ND		0.10	0.023	mg/L	1
Barium	7440-39-3	6010B	0.66	B	0.25	0.023	mg/L	1
Cadmium	7440-43-9	6010B	ND		0.020	0.0030	mg/L	1
Chromium	7440-47-3	6010B	ND		0.050	0.014	mg/L	1
Lead	7439-92-1	6010B	ND		0.10	0.017	mg/L	1
Mercury	7439-97-6	7470A	0.000042	BJ	0.00020	0.000033	mg/L	1
Selenium	7782-49-2	6010B	ND		0.10	0.032	mg/L	1
Silver	7440-22-4	6010B	0.024	BJ	0.050	0.0090	mg/L	2

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

Inorganic non-metals

Client: ARCADIS U.S., Inc.
Laboratory ID: KF06028-002
Description: HA09IDW02
Matrix: Aqueous
Date Sampled: 06/05/2009 1505
Date Received: 06/06/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Ignitability) 1010A	1	06/10/2009 1548	PMM		
1		(pH) SM 4500-H B	1	06/06/2009 1700	MML		12023

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Ignitability (Pensky-Martens Closed-Cup)		1010A	>140				° F	1
pH		SM 4500-H B	6.71	H			su	1

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

TCLP Volatiles

Client: ARCADIS U.S., Inc.
Laboratory ID: KF06028-002
Description: HA09IDW02
Matrix: Aqueous
Date Sampled: 06/05/2009 1505
Date Received: 06/06/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/5030B	8260B	10	06/17/2009 1940	IVC		12691	06/10/2009 0000

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.050		mg/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		0.10		mg/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.050		mg/L	1
Chlorobenzene	108-90-7	8260B	ND		0.050		mg/L	1
Chloroform	67-66-3	8260B	ND		0.050		mg/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.050		mg/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.050		mg/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.050		mg/L	1
Trichloroethene	79-01-6	8260B	ND		0.050		mg/L	1
Vinyl chloride	75-01-4	8260B	ND		0.010		mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	70-130
Bromofluorobenzene		109	70-130
Toluene-d8		97	70-130

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

TCLP Semivolatiles

Client: ARCADIS U.S., Inc.
Laboratory ID: KF06028-002
Description: HA09IDW02
Matrix: Aqueous
Date Sampled: 06/05/2009 1505
Date Received: 06/06/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/3520C	8270D	1	06/18/2009 1626	DC	06/10/2009 2350	12216	06/10/2009 0000

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,4-Dichlorobenzene	106-46-7	8270D	ND		0.050		mg/L	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		0.10		mg/L	1
Hexachlorobenzene	118-74-1	8270D	ND		0.050		mg/L	1
Hexachlorobutadiene	87-68-3	8270D	ND		0.050		mg/L	1
Hexachloroethane	67-72-1	8270D	ND		0.050		mg/L	1
2-Methylphenol	95-48-7	8270D	ND		0.050		mg/L	1
3 & 4-Methylphenol	106-44-5	8270D	ND		0.10		mg/L	1
Nitrobenzene	98-95-3	8270D	ND		0.050		mg/L	1
Pentachlorophenol	87-86-5	8270D	ND		0.25		mg/L	1
Pyridine	110-86-1	8270D	ND		0.050		mg/L	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		0.050		mg/L	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		0.050		mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,4,6-Tribromophenol		98	41-144
2-Fluorobiphenyl		107	37-129
2-Fluorophenol		88	24-127
Nitrobenzene-d5		109	38-127
Phenol-d5		107	28-128
Terphenyl-d14		46	10-148

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF06028-003
Description: TRIP BLANK
Matrix: Aqueous
Date Sampled: 06/06/2009 0930
Date Received: 06/06/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/09/2009 0342	DLB		12069

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		108	52-138
Bromofluorobenzene		93	70-147
Toluene-d8		107	76-125

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

Inorganic non-metals

Client: ARCADIS U.S., Inc.
Description: HAI3R2IDW-1(060509)
Date Sampled: 06/05/2009 1520
Date Received: 06/06/2009

Laboratory ID: KF06028-004
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Ignitability) 1010A	1	06/10/2009 1548	PMM		
1		(pH) SM 4500-H B	1	06/06/2009 1700	MML		12023

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Ignitability (Pensky-Martens Closed-Cup)		1010A	>140				° F	1
pH		SM 4500-H B	6.76	H			su	1

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

TCLP Volatiles

Client: ARCADIS U.S., Inc.
Description: HAI3R2IDW-1(060509)
Date Sampled: 06/05/2009 1520
Date Received: 06/06/2009

Laboratory ID: KF06028-004
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/5030B	8260B	10	06/17/2009 2002	IVC		12691	06/10/2009 0000

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.050		mg/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		0.10		mg/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.050		mg/L	1
Chlorobenzene	108-90-7	8260B	ND		0.050		mg/L	1
Chloroform	67-66-3	8260B	ND		0.050		mg/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.050		mg/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.050		mg/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.050		mg/L	1
Trichloroethene	79-01-6	8260B	ND		0.050		mg/L	1
Vinyl chloride	75-01-4	8260B	ND		0.010		mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		94	70-130
Bromofluorobenzene		105	70-130
Toluene-d8		95	70-130

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

TCLP Semivolatiles

Client: ARCADIS U.S., Inc.
Description: HAI3R2IDW-1(060509)
Date Sampled: 06/05/2009 1520
Date Received: 06/06/2009

Laboratory ID: KF06028-004
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/3520C	8270D	1	06/13/2009 0051	DC	06/10/2009 2350	12216	06/10/2009 0000

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,4-Dichlorobenzene	106-46-7	8270D	ND		0.050		mg/L	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		0.10		mg/L	1
Hexachlorobenzene	118-74-1	8270D	ND		0.050		mg/L	1
Hexachlorobutadiene	87-68-3	8270D	ND		0.050		mg/L	1
Hexachloroethane	67-72-1	8270D	ND		0.050		mg/L	1
2-Methylphenol	95-48-7	8270D	ND		0.050		mg/L	1
3 & 4-Methylphenol	106-44-5	8270D	ND		0.10		mg/L	1
Nitrobenzene	98-95-3	8270D	ND		0.050		mg/L	1
Pentachlorophenol	87-86-5	8270D	ND		0.25		mg/L	1
Pyridine	110-86-1	8270D	ND		0.050		mg/L	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		0.050		mg/L	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		0.050		mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,4,6-Tribromophenol		142	41-144
2-Fluorobiphenyl		106	37-129
2-Fluorophenol		102	24-127
Nitrobenzene-d5		94	38-127
Phenol-d5		98	28-128
Terphenyl-d14		100	10-148

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.	Laboratory ID: KF06028-005
Description: HA09SB55 (2-4)	Matrix: Solid
Date Sampled: 06/05/2009 1520	% Solids: 83.0 06/09/2009 2331
Date Received: 06/06/2009	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	06/15/2009 1648	DLB		12434	9.92

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	32		3.0	0.67	ug/kg	1
Ethylbenzene	100-41-4	8260B	120		3.0	1.0	ug/kg	1
Toluene	108-88-3	8260B	ND		3.0	1.0	ug/kg	1
Xylenes (total)	1330-20-7	8260B	240		3.0	1.8	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		133	53-142
Bromofluorobenzene		94	47-138
Toluene-d8		88	68-124

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

Semivolatile Organic Compounds by GC/MS (SIM)

Client: ARCADIS U.S., Inc.
Laboratory ID: KF06028-005
Description: HA09SB55 (2-4)
Matrix: Solid
Date Sampled: 06/05/2009 1520
% Solids: 83.0 06/09/2009 2331
Date Received: 06/06/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	5	06/16/2009 1803	DC	06/10/2009 1159	12156

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D (SIM)	ND		20	4.9	ug/kg	1
Acenaphthylene	208-96-8	8270D (SIM)	ND		20	5.7	ug/kg	1
Anthracene	120-12-7	8270D (SIM)	ND		20	3.0	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D (SIM)	ND		20	3.5	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D (SIM)	ND		20	3.9	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	ND		20	3.0	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D (SIM)	ND		20	3.9	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	ND		20	2.9	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	ND		20	2.7	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	ND		20	3.0	ug/kg	1
Fluoranthene	206-44-0	8270D (SIM)	ND		20	2.5	ug/kg	1
Fluorene	86-73-7	8270D (SIM)	ND		20	3.4	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D (SIM)	ND		20	6.0	ug/kg	1
1-Methylnaphthalene	90-12-0	8270D (SIM)	140		20	5.8	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D (SIM)	220		20	5.9	ug/kg	1
Naphthalene	91-20-3	8270D (SIM)	220		20	5.8	ug/kg	1
Phenanthrene	85-01-8	8270D (SIM)	ND		20	4.3	ug/kg	1
Pyrene	129-00-0	8270D (SIM)	ND		20	3.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		48	20-150
2-Methylnaphthalene-d10		39	20-150

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

QC Summary

Inorganic non-metals - Duplicate

Sample ID: KF06028-001DU
Batch: 12002
Analytical Method: 9045C

Matrix: Solid

Parameter	Sample Amount (su)	Result (mg/L)	Q	Dil	% RPD	% RPD Limit	Analysis Date
pH	6.09	6.08		1	0.16	20	06/06/2009 1700

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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 - MB

Sample ID: KQ12023-001
Batch: 12023
Analytical Method: SM 4500-H B

Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
pH	ND		1	0.0		su	06/06/2009 1150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12069-001
Batch: 12069
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	06/08/2009 2302
Ethylbenzene	ND		1	0.50	0.17	ug/L	06/08/2009 2302
Toluene	ND		1	0.50	0.17	ug/L	06/08/2009 2302
Xylenes (total)	ND		1	0.50	0.17	ug/L	06/08/2009 2302

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		106	70-130
Toluene-d8		107	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12069-002
Batch: 12069
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	50		1	101	70-130	06/08/2009 2136
Ethylbenzene	50	50		1	99	70-130	06/08/2009 2136
Toluene	50	50		1	99	70-130	06/08/2009 2136
Xylenes (total)	100	99		1	99	70-130	06/08/2009 2136

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		108	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12069-003
Batch: 12069
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	51		1	102	1.4	70-130	20	06/08/2009 2158
Ethylbenzene	50	51		1	103	3.6	70-130	20	06/08/2009 2158
Toluene	50	50		1	100	0.55	70-130	20	06/08/2009 2158
Xylenes (total)	100	100		1	101	1.9	70-130	20	06/08/2009 2158

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		104	70-130
Toluene-d8		107	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12434-001
Batch: 12434
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	5.0	1.1	ug/kg	06/15/2009 1145
Ethylbenzene	ND		1	5.0	1.7	ug/kg	06/15/2009 1145
Toluene	ND		1	5.0	1.7	ug/kg	06/15/2009 1145
Xylenes (total)	ND		1	5.0	2.9	ug/kg	06/15/2009 1145

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	47-138
1,2-Dichloroethane-d4		89	53-142
Toluene-d8		88	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12434-002
Batch: 12434
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	51		1	102	69-123	06/15/2009 1035
Ethylbenzene	50	48		1	96	59-128	06/15/2009 1035
Toluene	50	48		1	97	61-129	06/15/2009 1035
Xylenes (total)	100	92		1	92	58-128	06/15/2009 1035

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	47-138
1,2-Dichloroethane-d4		93	53-142
Toluene-d8		92	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12434-003
Batch: 12434
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
Benzene	50	54		1	109	6.9	69-123	20	06/15/2009 1058
Ethylbenzene	50	51		1	102	6.8	59-128	20	06/15/2009 1058
Toluene	50	52		1	104	7.7	61-129	20	06/15/2009 1058
Xylenes (total)	100	98		1	98	6.2	58-128	20	06/15/2009 1058

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	47-138
1,2-Dichloroethane-d4		89	53-142
Toluene-d8		91	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - MB

Sample ID: KQ12691-001
Batch: 12691
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 1311/5030B

Leachate Date: 06/10/2009 0000

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		10	0.050		mg/L	06/17/2009 1443
2-Butanone (MEK)	ND		10	0.10		mg/L	06/17/2009 1443
Carbon tetrachloride	ND		10	0.050		mg/L	06/17/2009 1443
Chlorobenzene	ND		10	0.050		mg/L	06/17/2009 1443
Chloroform	ND		10	0.050		mg/L	06/17/2009 1443
1,2-Dichloroethane	ND		10	0.050		mg/L	06/17/2009 1443
1,1-Dichloroethene	ND		10	0.050		mg/L	06/17/2009 1443
Tetrachloroethene	ND		10	0.050		mg/L	06/17/2009 1443
Trichloroethene	ND		10	0.050		mg/L	06/17/2009 1443
Vinyl chloride	ND		10	0.010		mg/L	06/17/2009 1443

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		80	70-130
Toluene-d8		94	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - LCS

Sample ID: KQ12691-002
Batch: 12691
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 1311/5030B

Leachate Date: 06/10/2009 0000

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	0.50	0.48		10	95	72-127	06/17/2009 1338
2-Butanone (MEK)	1.0	0.88		10	88	60-140	06/17/2009 1338
Carbon tetrachloride	0.50	0.44		10	87	37-166	06/17/2009 1338
Chlorobenzene	0.50	0.46		10	93	78-129	06/17/2009 1338
Chloroform	0.50	0.40		10	80	63-123	06/17/2009 1338
1,2-Dichloroethane	0.50	0.42		10	84	59-143	06/17/2009 1338
1,1-Dichloroethene	0.50	0.48		10	96	50-132	06/17/2009 1338
Tetrachloroethene	0.50	0.48		10	96	70-130	06/17/2009 1338
Trichloroethene	0.50	0.49		10	98	73-124	06/17/2009 1338
Vinyl chloride	0.50	0.41		10	82	29-159	06/17/2009 1338

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		74	70-130
Toluene-d8		96	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - MS

Sample ID: KF06028-004MS
Batch: 12691
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 1311/5030B

Leachate Date: 06/10/2009 0000

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	ND	0.50	0.46		10	92	70-127	06/17/2009 2023
2-Butanone (MEK)	ND	1.0	0.95		10	95	60-140	06/17/2009 2023
Carbon tetrachloride	ND	0.50	0.49		10	97	37-166	06/17/2009 2023
Chlorobenzene	ND	0.50	0.44		10	89	78-129	06/17/2009 2023
Chloroform	ND	0.50	0.44		10	89	63-123	06/17/2009 2023
1,2-Dichloroethane	ND	0.50	0.50		10	99	59-143	06/17/2009 2023
1,1-Dichloroethene	ND	0.50	0.48		10	95	50-132	06/17/2009 2023
Tetrachloroethene	ND	0.50	0.46		10	92	70-130	06/17/2009 2023
Trichloroethene	ND	0.50	0.47		10	94	73-124	06/17/2009 2023
Vinyl chloride	ND	0.50	0.46		10	91	29-159	06/17/2009 2023

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		106	70-130
1,2-Dichloroethane-d4		96	70-130
Toluene-d8		98	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - MB

Sample ID: KQ12714-001
Batch: 12714
Analytical Method: 8260B

Matrix: Solid
Prep Method: 1311/5030B

Leachate Date: 06/08/2009 2232

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		10	0.050	0.0020	mg/L	06/18/2009 1235
2-Butanone (MEK)	ND		10	0.10	0.018	mg/L	06/18/2009 1235
Carbon tetrachloride	ND		10	0.050	0.0040	mg/L	06/18/2009 1235
Chlorobenzene	ND		10	0.050	0.0020	mg/L	06/18/2009 1235
Chloroform	ND		10	0.050	0.0030	mg/L	06/18/2009 1235
1,2-Dichloroethane	ND		10	0.050	0.0030	mg/L	06/18/2009 1235
1,1-Dichloroethene	ND		10	0.050	0.0050	mg/L	06/18/2009 1235
Tetrachloroethene	ND		10	0.050	0.0040	mg/L	06/18/2009 1235
Trichloroethene	ND		10	0.050	0.0030	mg/L	06/18/2009 1235
Vinyl chloride	ND		10	0.010	0.0010	mg/L	06/18/2009 1235

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		106	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - LCS

Sample ID: KQ12714-002
Batch: 12714
Analytical Method: 8260B

Matrix: Solid
Prep Method: 1311/5030B

Leachate Date: 06/08/2009 2232

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	0.50	0.50		10	101	72-127	06/18/2009 1152
2-Butanone (MEK)	1.0	0.98		10	98	60-140	06/18/2009 1152
Carbon tetrachloride	0.50	0.52		10	104	37-166	06/18/2009 1152
Chlorobenzene	0.50	0.46		10	93	78-129	06/18/2009 1152
Chloroform	0.50	0.47		10	95	63-123	06/18/2009 1152
1,2-Dichloroethane	0.50	0.52		10	105	59-143	06/18/2009 1152
1,1-Dichloroethene	0.50	0.54		10	108	50-132	06/18/2009 1152
Tetrachloroethene	0.50	0.46		10	93	70-130	06/18/2009 1152
Trichloroethene	0.50	0.48		10	95	73-124	06/18/2009 1152
Vinyl chloride	0.50	0.58		10	115	29-159	06/18/2009 1152

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		107	70-130
Toluene-d8		105	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - MS

Sample ID: KF06028-001MS
Batch: 12714
Analytical Method: 8260B

Matrix: Solid
Prep Method: 1311/5030B

Leachate Date: 06/08/2009 2232

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	ND	0.50			10	102	70-127	06/18/2009 1213
2-Butanone (MEK)	ND	1.0			10	106	60-140	06/18/2009 1213
Carbon tetrachloride	ND	0.50			10	103	37-166	06/18/2009 1213
Chlorobenzene	ND	0.50			10	94	78-129	06/18/2009 1213
Chloroform	ND	0.50			10	96	63-123	06/18/2009 1213
1,2-Dichloroethane	ND	0.50			10	105	59-143	06/18/2009 1213
1,1-Dichloroethene	ND	0.50			10	107	50-132	06/18/2009 1213
Tetrachloroethene	ND	0.50			10	95	70-130	06/18/2009 1213
Trichloroethene	ND	0.50			10	97	73-124	06/18/2009 1213
Vinyl chloride	ND	0.50			10	114	29-159	06/18/2009 1213

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene	N	0.0	70-130
1,2-Dichloroethane-d4	N	0.0	70-130
Toluene-d8	N	0.0	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Semivolatiles - MB

Sample ID: KQ12128-001
Batch: 12128
Analytical Method: 8270C

Matrix: Solid
Prep Method: 1311/3520C
Prep Date: 06/09/2009 2358 Leachate Date: 06/08/2009 2222

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1,4-Dichlorobenzene	ND		1	0.050	0.0030	mg/L	06/12/2009 2053
2,4,5-Trichlorophenol	ND		1	0.050	0.0060	mg/L	06/12/2009 2053
2,4,6-Trichlorophenol	ND		1	0.050	0.0050	mg/L	06/12/2009 2053
2,4-Dinitrotoluene	ND		1	0.10	0.011	mg/L	06/12/2009 2053
2-Methylphenol	ND		1	0.050	0.0040	mg/L	06/12/2009 2053
3 & 4-Methylphenol	ND		1	0.10	0.010	mg/L	06/12/2009 2053
Hexachlorobenzene	ND		1	0.050	0.0080	mg/L	06/12/2009 2053
Hexachlorobutadiene	ND		1	0.050	0.0030	mg/L	06/12/2009 2053
Hexachloroethane	ND		1	0.050	0.0030	mg/L	06/12/2009 2053
Nitrobenzene	ND		1	0.050	0.0030	mg/L	06/12/2009 2053
Pentachlorophenol	ND		1	0.25	0.018	mg/L	06/12/2009 2053
Pyridine	ND		1	0.050	0.016	mg/L	06/12/2009 2053

Surrogate	Q	% Rec	Acceptance Limit
2,4,6-Tribromophenol		94	41-144
2-Fluorobiphenyl		102	37-129
2-Fluorophenol		90	24-127
Nitrobenzene-d5		91	38-127
Phenol-d5		94	28-128
Terphenyl-d14		98	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Semivolatiles - LCS

Sample ID: KQ12128-002
Batch: 12128
Analytical Method: 8270C

Matrix: Solid
Prep Method: 1311/3520C
Prep Date: 06/09/2009 2358 Leachate Date: 06/08/2009 2222

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dichlorobenzene	1.0	0.79		1	79	30-130	06/12/2009 2114
2,4,5-Trichlorophenol	1.0	0.80		1	80	30-130	06/12/2009 2114
2,4,6-Trichlorophenol	1.0	0.75		1	75	30-130	06/12/2009 2114
2,4-Dinitrotoluene	1.0	0.77		1	77	30-130	06/12/2009 2114
2-Methylphenol	1.0	0.73		1	73	30-130	06/12/2009 2114
3 & 4-Methylphenol	2.0	1.7		1	84	30-130	06/12/2009 2114
Hexachlorobenzene	1.0	0.94		1	94	30-130	06/12/2009 2114
Hexachlorobutadiene	1.0	0.74		1	74	30-130	06/12/2009 2114
Hexachloroethane	1.0	0.78		1	78	30-130	06/12/2009 2114
Nitrobenzene	1.0	0.87		1	87	30-130	06/12/2009 2114
Pentachlorophenol	1.0	0.82		1	82	30-130	06/12/2009 2114
Pyridine	1.0	0.55		1	55	30-130	06/12/2009 2114

Surrogate	Q	% Rec	Acceptance Limit
2,4,6-Tribromophenol		93	41-144
2-Fluorobiphenyl		102	37-129
2-Fluorophenol		80	24-127
Nitrobenzene-d5		95	38-127
Phenol-d5		95	28-128
Terphenyl-d14		97	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Semivolatiles - MS

Sample ID: KF06028-001MS
Batch: 12128
Analytical Method: 8270C

Matrix: Solid
Prep Method: 1311/3520C
Prep Date: 06/09/2009 2358 Leachate Date: 06/08/2009 2222

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dichlorobenzene	ND	1.2	0.97		1	97	30-130	06/15/2009 2027
2,4-Dinitrotoluene	ND	1.2	0.90		1	90	30-130	06/15/2009 2027
Hexachlorobenzene	ND	1.2	1.0		1	102	30-130	06/15/2009 2027
Hexachlorobutadiene	ND	1.2	0.97		1	97	30-130	06/15/2009 2027
Hexachloroethane	ND	1.2	1.0		1	104	30-130	06/15/2009 2027
2-Methylphenol	ND	1.2	0.87		1	87	30-130	06/15/2009 2027
3 & 4-Methylphenol	ND	2.3	2.0		1	101	30-130	06/15/2009 2027
Nitrobenzene	ND	1.2	1.0		1	103	30-130	06/15/2009 2027
Pentachlorophenol	ND	1.2	0.90		1	90	30-130	06/15/2009 2027
Pyridine	ND	1.2	ND	N	1	0.0	30-130	06/15/2009 2027
2,4,5-Trichlorophenol	ND	1.2	0.95		1	95	30-130	06/15/2009 2027
2,4,6-Trichlorophenol	ND	1.2	0.89		1	89	30-130	06/15/2009 2027

Surrogate	Q	% Rec	Acceptance Limit
2,4,6-Tribromophenol		112	41-144
2-Fluorobiphenyl		113	37-129
2-Fluorophenol		103	24-127
Nitrobenzene-d5		111	38-127
Phenol-d5		107	28-128
Terphenyl-d14		111	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: KQ12156-001
Batch: 12156
Analytical Method: 8270D (SIM)

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/10/2009 1159

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1-Methylnaphthalene	ND		1	3.3	0.98	ug/kg	06/14/2009 1548
2-Methylnaphthalene	ND		1	3.3	0.99	ug/kg	06/14/2009 1548
Acenaphthene	ND		1	3.3	0.83	ug/kg	06/14/2009 1548
Acenaphthylene	ND		1	3.3	0.95	ug/kg	06/14/2009 1548
Anthracene	ND		1	3.3	0.51	ug/kg	06/14/2009 1548
Benzo(a)anthracene	ND		1	3.3	0.59	ug/kg	06/14/2009 1548
Benzo(a)pyrene	ND		1	3.3	0.66	ug/kg	06/14/2009 1548
Benzo(b)fluoranthene	ND		1	3.3	0.50	ug/kg	06/14/2009 1548
Benzo(g,h,i)perylene	ND		1	3.3	0.65	ug/kg	06/14/2009 1548
Benzo(k)fluoranthene	ND		1	3.3	0.48	ug/kg	06/14/2009 1548
Chrysene	ND		1	3.3	0.45	ug/kg	06/14/2009 1548
Dibenzo(a,h)anthracene	ND		1	3.3	0.51	ug/kg	06/14/2009 1548
Fluoranthene	ND		1	3.3	0.42	ug/kg	06/14/2009 1548
Fluorene	ND		1	3.3	0.57	ug/kg	06/14/2009 1548
Indeno(1,2,3-c,d)pyrene	ND		1	3.3	1.0	ug/kg	06/14/2009 1548
Naphthalene	ND		1	3.3	0.97	ug/kg	06/14/2009 1548
Phenanthrene	ND		1	3.3	0.72	ug/kg	06/14/2009 1548
Pyrene	ND		1	3.3	0.50	ug/kg	06/14/2009 1548

Surrogate	Q	% Rec	Acceptance Limit
2-Methylnaphthalene-d10		31	20-150
Fluoranthene-d10		46	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

Semivolatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: KQ12156-002
Batch: 12156
Analytical Method: 8270D (SIM)

Matrix: Solid
Prep Method: 3550C
Prep Date: 06/10/2009 1159

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
2-Methylnaphthalene	13	6.8		1	52	20-150	06/14/2009 1428
Acenaphthene	13	6.5		1	50	20-150	06/14/2009 1428
Acenaphthylene	13	8.8		1	68	20-150	06/14/2009 1428
Anthracene	13	8.0		1	62	20-150	06/14/2009 1428
Benzo(a)anthracene	13	7.5		1	58	20-150	06/14/2009 1428
Benzo(a)pyrene	13	10		1	80	20-150	06/14/2009 1428
Benzo(b)fluoranthene	13	8.2		1	63	20-150	06/14/2009 1428
Benzo(g,h,i)perylene	13	18		1	137	20-150	06/14/2009 1428
Benzo(k)fluoranthene	13	8.1		1	62	20-150	06/14/2009 1428
Chrysene	13	7.7		1	59	20-150	06/14/2009 1428
Dibenzo(a,h)anthracene	13	17		1	129	20-150	06/14/2009 1428
Fluoranthene	13	7.8		1	60	20-150	06/14/2009 1428
Fluorene	13	6.6		1	50	20-150	06/14/2009 1428
Indeno(1,2,3-c,d)pyrene	13	17		1	131	20-150	06/14/2009 1428
Naphthalene	13	7.5		1	58	20-150	06/14/2009 1428
Phenanthrene	13	7.1		1	54	20-150	06/14/2009 1428
Pyrene	13	9.7		1	75	20-150	06/14/2009 1428

Surrogate	Q	% Rec	Acceptance Limit
2-Methylnaphthalene-d10		47	20-150
Fluoranthene-d10		62	20-150

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Semivolatiles - MB

Sample ID: KQ12216-001
Batch: 12216
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 1311/3520C
Prep Date: 06/10/2009 2350 Leachate Date: 06/10/2009 0000

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1,4-Dichlorobenzene	ND		1	0.050		mg/L	06/12/2009 2351
2,4,5-Trichlorophenol	ND		1	0.050		mg/L	06/12/2009 2351
2,4,6-Trichlorophenol	ND		1	0.050		mg/L	06/12/2009 2351
2,4-Dinitrotoluene	ND		1	0.10		mg/L	06/12/2009 2351
2-Methylphenol	ND		1	0.050		mg/L	06/12/2009 2351
3 & 4-Methylphenol	ND		1	0.10		mg/L	06/12/2009 2351
Hexachlorobenzene	ND		1	0.050		mg/L	06/12/2009 2351
Hexachlorobutadiene	ND		1	0.050		mg/L	06/12/2009 2351
Hexachloroethane	ND		1	0.050		mg/L	06/12/2009 2351
Nitrobenzene	ND		1	0.050		mg/L	06/12/2009 2351
Pentachlorophenol	ND		1	0.25		mg/L	06/12/2009 2351
Pyridine	ND		1	0.050		mg/L	06/12/2009 2351

Surrogate	Q	% Rec	Acceptance Limit
2,4,6-Tribromophenol		125	41-144
2-Fluorobiphenyl		115	37-129
2-Fluorophenol		110	24-127
Nitrobenzene-d5		104	38-127
Phenol-d5		103	28-128
Terphenyl-d14		104	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Semivolatiles - LCS

Sample ID: KQ12216-002
Batch: 12216
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 1311/3520C
Prep Date: 06/10/2009 2350 Leachate Date: 06/10/2009 0000

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dichlorobenzene	1.0	0.95		1	95	30-130	06/13/2009 0011
2,4,5-Trichlorophenol	1.0	1.1		1	110	30-130	06/13/2009 0011
2,4,6-Trichlorophenol	1.0	1.0		1	103	30-130	06/13/2009 0011
2,4-Dinitrotoluene	1.0	0.94		1	94	30-130	06/13/2009 0011
2-Methylphenol	1.0	0.94		1	94	30-130	06/13/2009 0011
3 & 4-Methylphenol	2.0	2.0		1	98	30-130	06/13/2009 0011
Hexachlorobenzene	1.0	1.1		1	111	30-130	06/13/2009 0011
Hexachlorobutadiene	1.0	1.0		1	106	30-130	06/13/2009 0011
Hexachloroethane	1.0	0.94		1	94	30-130	06/13/2009 0011
Nitrobenzene	1.0	0.93		1	93	30-130	06/13/2009 0011
Pentachlorophenol	1.0	0.90		1	90	30-130	06/13/2009 0011
Pyridine	1.0	0.87		1	87	30-130	06/13/2009 0011

Surrogate	Q	% Rec	Acceptance Limit
2,4,6-Tribromophenol		130	41-144
2-Fluorobiphenyl		114	37-129
2-Fluorophenol		118	24-127
Nitrobenzene-d5		100	38-127
Phenol-d5		110	28-128
Terphenyl-d14		103	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Semivolatiles - MS

Sample ID: KF06028-004MS
Batch: 12216
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 1311/3520C
Prep Date: 06/10/2009 2350 Leachate Date: 06/10/2009 0000

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dichlorobenzene	ND	1.0	0.81		1	81	30-130	06/13/2009 0111
2,4-Dinitrotoluene	ND	1.0	1.0		1	103	30-130	06/13/2009 0111
Hexachlorobenzene	ND	1.0	1.1		1	112	30-130	06/13/2009 0111
Hexachlorobutadiene	ND	1.0	0.84		1	84	30-130	06/13/2009 0111
Hexachloroethane	ND	1.0	0.78		1	78	30-130	06/13/2009 0111
2-Methylphenol	ND	1.0	0.87		1	87	30-130	06/13/2009 0111
3 & 4-Methylphenol	ND	2.0	1.7		1	85	30-130	06/13/2009 0111
Nitrobenzene	ND	1.0	0.86		1	86	30-130	06/13/2009 0111
Pentachlorophenol	ND	1.0	1.2		1	117	30-130	06/13/2009 0111
Pyridine	ND	1.0	ND	N	1	0.0	30-130	06/13/2009 0111
2,4,5-Trichlorophenol	ND	1.0	1.1		1	112	30-130	06/13/2009 0111
2,4,6-Trichlorophenol	ND	1.0	1.0		1	104	30-130	06/13/2009 0111

Surrogate	Q	% Rec	Acceptance Limit
2,4,6-Tribromophenol		140	41-144
2-Fluorobiphenyl		106	37-129
2-Fluorophenol		105	24-127
Nitrobenzene-d5		94	38-127
Phenol-d5		101	28-128
Terphenyl-d14		101	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Metals - MB

Sample ID: KQ12551-001
Batch: 12551
Analytical Method: 6010B

Matrix: Solid
Prep Method: 1311/3010A
Prep Date: 06/16/2009 1633 Leachate Date: 06/11/2009 1419

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Arsenic	ND		10	0.10	0.023	mg/L	06/18/2009 0648
Barium	0.024	J	10	0.25	0.023	mg/L	06/18/2009 0648
Cadmium	ND		10	0.020	0.0030	mg/L	06/18/2009 0648
Chromium	ND		10	0.050	0.014	mg/L	06/18/2009 0648
Lead	ND		10	0.10	0.017	mg/L	06/18/2009 0648
Selenium	ND		10	0.10	0.032	mg/L	06/18/2009 0648
Silver	0.064		10	0.050	0.0090	mg/L	06/18/2009 1647

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Metals - LCS

Sample ID: KQ12551-002
Batch: 12551
Analytical Method: 6010B

Matrix: Solid
Prep Method: 1311/3010A
Prep Date: 06/16/2009 1633 Leachate Date: 06/11/2009 1419

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	5.0	4.9		10	98	80-120	06/18/2009 0653
Barium	10	10		10	100	80-120	06/18/2009 0653
Cadmium	1.0	0.97		10	97	80-120	06/18/2009 0653
Chromium	5.0	5.1		10	102	80-120	06/18/2009 0653
Lead	5.0	4.8		10	97	80-120	06/18/2009 0653
Selenium	1.0	0.95		10	95	80-120	06/18/2009 0653
Silver	5.0	5.4		10	108	80-120	06/18/2009 1653

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Metals - LCSD

Sample ID: KQ12551-003
Batch: 12551
Analytical Method: 6010B

Matrix: Solid
Prep Method: 1311/3010A
Prep Date: 06/16/2009 1633 Leachate Date: 06/11/2009 1419

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	5.0	5.0		10	99	1.7	80-120	20	06/18/2009 0658
Barium	10	10		10	101	0.97	80-120	20	06/18/2009 0658
Cadmium	1.0	0.99		10	99	1.9	80-120	20	06/18/2009 0658
Chromium	5.0	5.1		10	103	0.62	80-120	20	06/18/2009 0658
Lead	5.0	4.9		10	98	1.2	80-120	20	06/18/2009 0658
Selenium	1.0	0.96		10	96	0.77	80-120	20	06/18/2009 0658
Silver	5.0	5.6		10	111	3.3	80-120	20	06/18/2009 1659

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Metals - MS

Sample ID: KF06028-001MS
Batch: 12551
Analytical Method: 6010B

Matrix: Solid
Prep Method: 1311/3010A
Prep Date: 06/16/2009 1633 Leachate Date: 06/11/2009 1419

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	ND	5.0	5.0		10	100	75-125	06/18/2009 0729
Barium	0.66	10	11		10	100	75-125	06/18/2009 0729
Cadmium	ND	1.0	0.99		10	99	75-125	06/18/2009 0729
Chromium	ND	5.0	5.1		10	102	75-125	06/18/2009 0729
Lead	ND	5.0	4.9		10	98	75-125	06/18/2009 0729
Selenium	ND	1.0	0.94		10	94	75-125	06/18/2009 0729
Silver	0.024	5.0	5.6		10	111	75-125	06/18/2009 1711

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Metals - MSD

Sample ID: KF06028-001MD
Batch: 12551
Analytical Method: 6010B

Matrix: Solid
Prep Method: 1311/3010A
Prep Date: 06/16/2009 1633 Leachate Date: 06/11/2009 1419

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	ND	5.0	5.0		10	99	0.21	75-125	20	06/18/2009 0734
Barium	0.66	10	10		10	99	0.99	75-125	20	06/18/2009 0734
Cadmium	ND	1.0	0.99		10	99	0.25	75-125	20	06/18/2009 0734
Chromium	ND	5.0	5.1		10	101	0.36	75-125	20	06/18/2009 0734
Lead	ND	5.0	4.9		10	98	0.29	75-125	20	06/18/2009 0734
Selenium	ND	1.0	0.97		10	97	2.7	75-125	20	06/18/2009 0734
Silver	0.024	5.0	5.4		10	108	2.2	75-125	20	06/18/2009 1717

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Metals - MB

Sample ID: KQ12584-001
Batch: 12584
Analytical Method: 7470A

Matrix: Solid
Prep Method: 1311/7470A
Prep Date: 06/18/2009 1700 Leachate Date: 06/11/2009 1419

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Mercury	0.000045	J	1	0.00020	0.000033	mg/L	06/18/2009 2307

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Metals - LCS

Sample ID: KQ12584-002
Batch: 12584
Analytical Method: 7470A

Matrix: Solid
Prep Method: 1311/7470A
Prep Date: 06/18/2009 1700 Leachate Date: 06/11/2009 1419

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.0020	0.0022		1	108	85-115	06/18/2009 2309

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Metals - LCSD

Sample ID: KQ12584-003
Batch: 12584
Analytical Method: 7470A

Matrix: Solid
Prep Method: 1311/7470A
Prep Date: 06/18/2009 1700 Leachate Date: 06/11/2009 1419

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.0020	0.0020		1	102	5.7	85-115	20	06/18/2009 2311

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Metals - MS

Sample ID: KF06028-001MS
Batch: 12584
Analytical Method: 7470A

Matrix: Solid
Prep Method: 1311/7470A
Prep Date: 06/18/2009 1700 Leachate Date: 06/11/2009 1419

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.000042	0.0020	0.0022		1	110	85-115	06/18/2009 2318

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Metals - MSD

Sample ID: KF06028-001MD
Batch: 12584
Analytical Method: 7470A

Matrix: Solid
Prep Method: 1311/7470A
Prep Date: 06/18/2009 1700 Leachate Date: 06/11/2009 1419

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.000042	0.0020	0.0022		1	109	0.45	85-115	20	06/18/2009 2321

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name GP084AFS.A09A.KG0EX

Project Location Hunter Army Airfield HAA-9

Laboratory Shealy

Project Manager Chuck Bertz

Sampler(s)/Affiliation Josh Frizzell/Arcadis

KF06028

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	BTEX	PAH	TCLP VOCs	TCLP SVOCs	Ignitability, pH, Corrosivity		Remarks	Total
HA09SB55(2-4)	S	6-5-09/1035		4	1						5
HA09IDW01	S	6-5-09/1500				1	1	1			2
HA09IDW02	L	6-5-09/1505				3	2	1			6
~~HA13IDW-1~~											
~~HA13R2IDW-1~~	~~L~~	~~6-5-09/1520~~				~~3~~	~~2~~	~~1~~			~~6~~
Trip Blank	L	6-5-09/—		2							2
HA13R2IDW-1(060509)	L	6-5-09/1520				3	2	1			6

Total No. of Bottles/Containers 21

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: [signature]	Organization: Arcadis	Date 6/5/09	Time 1800	Seal Intact?
Received by:	Organization:	Date / /	Time	Yes No N/A
Relinquished by: FED EX	Organization:	Date / /	Time	Seal Intact?
Received by: [signature]	Organization: Shealy Lab	Date 6/6/09	Time 0930	Yes No N/A

Special Instructions/Remarks:

Delivery Method: ☐ In Person ☑ Common Carrier Fed EX (SPECIFY) ☐ Lab Courier T=5.9 ☐ Other _____ (SPECIFY)

AG 05-12/07

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 6

Page 1 of 1
Replaces Date: 09/22/06
Effective Date: 05/29/07

Sample Receipt Checklist (SRC)

Client: Arcadis Cooler Inspected by/date: DMP / 6/6/09 Lot #: KF06028

Means of receipt: ☐ SESI ☐ Client ☐ UPS ☑ FedEx ☐ Airborne Exp ☐ Other

Yes ☐	No ☑	NA ☐	1. Were custody seals present on the cooler?
Yes ☐	No ☐	NA ☑	2. If custody seals were present, were they intact and unbroken?

Cooler ID/temperature upon receipt: 5.9 / ___ °C ___ / ___ °C ___ / ___ °C ___ / ___ °C
___ / ___ °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 ☑	NA ☐	5. Were proper custody procedures (relinquished/received) followed?
Yes ☑	No ☐	NA ☐	6. Were sample IDs listed?
Yes ☑	No ☐	NA ☐	7. Was collection date & time listed?
Yes ☑	No ☐	NA ☐	8. Were tests to be performed listed on the COC or was quote # provided?
Yes ☑	No ☐	NA ☐	9. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐	NA ☐	10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐	NA ☐	11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐	NA ☐	12. Was adequate sample volume available?
Yes ☑	No ☐	NA ☐	13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
DMP 6/16/09 Yes ☑	No ☒	NA ☐	14. Were any samples containers missing? ~~HA095B55~~ (2-4)
Yes ☐	No ☑	NA ☐	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/BNA/pest/PCB/herb (<0.2mg/L) and toxicity (<0.1mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?

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

Sample(s) ___ were received incorrectly preserved and were adjusted accordingly 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/BNA/pest/PCB/herb.

Toxicity sample(s) ___ were received with TRC >0.1 mg/L and were analyzed by method 330.5.

Corrective Action taken, if necessary:

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

SESI employee: ___ Date of response: ___

Comments: ___

Report of Analysis

ARCADIS U.S., Inc.
30 Patewood Drive
Suite 155
Greenville, SC 29615
Attention: Janet Christy

Project Name: HAA-13 Pumphouse 1, Release 1

Project Number: GP08HAFS.H13A.NA1R1

Lot Number: KF09013

Date Completed: 06/22/2009

Nisreen Saikaly
Project Manager

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

* K F 0 9 0 1 3 *

Case Narrative
ARCADIS U.S., Inc.
Lot Number: KF09013

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.

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.

TCLP Semivolatiles

The LCS recovery for Pyridine was outside method control limits in batch 12257. The MS results were within limits. Therefore the associated sample results were reported and no corrective action was required.

The surrogate recovery in batch 12257 was outside the acceptance limit. The surrogate recovery is attributed to matrix interference. The sample results are reported and no corrective action is required.

DRO

Samples -001 and -002 have an unknown pattern associated with the DRO analysis.

Sample Summary

ARCADIS U.S., Inc.

Lot Number: KF09013

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	D-MW37(060809)	Aqueous	06/08/2009 1350	06/09/2009
002	D-MW11(060809)	Aqueous	06/08/2009 1345	06/09/2009
003	IB-01(060809)	Aqueous	06/08/2009 1200	06/09/2009
004	HA13R1IDW-1(060809)	Aqueous	06/08/2009 1430	06/09/2009

(4 samples)

Executive Summary

ARCADIS U.S., Inc.

Lot Number: KF09013

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	D-MW37(060809)	Aqueous	Alkalinity	SM 2320B	8.9	J	mg/L	5
001	D-MW37(060809)	Aqueous	DOC	SM 5310D	16		mg/L	5
001	D-MW37(060809)	Aqueous	Sulfate	300.0	0.45	J	mg/L	5
001	D-MW37(060809)	Aqueous	Sulfide	SM 4500-S2 F	2.0	B	mg/L	5
001	D-MW37(060809)	Aqueous	Benzene	8260B	260		ug/L	6
001	D-MW37(060809)	Aqueous	Ethylbenzene	8260B	230		ug/L	6
001	D-MW37(060809)	Aqueous	Toluene	8260B	1200		ug/L	6
001	D-MW37(060809)	Aqueous	Xylenes (total)	8260B	850		ug/L	6
001	D-MW37(060809)	Aqueous	TPH-DRO	8015C	8900	B	ug/L	7
001	D-MW37(060809)	Aqueous	TPH-GRO	8015B	5600		ug/L	8
001	D-MW37(060809)	Aqueous	Dissolved Iron	6010B	0.70		mg/L	9
001	D-MW37(060809)	Aqueous	Dissolved Lead	6010B	0.0047	J	mg/L	9
001	D-MW37(060809)	Aqueous	Iron	6010B	1.6		mg/L	10
001	D-MW37(060809)	Aqueous	Lead	6010B	0.0048	J	mg/L	10
002	D-MW11(060809)	Aqueous	Alkalinity	SM 2320B	7.1	J	mg/L	11
002	D-MW11(060809)	Aqueous	DOC	SM 5310D	14		mg/L	11
002	D-MW11(060809)	Aqueous	Sulfate	300.0	1.2		mg/L	11
002	D-MW11(060809)	Aqueous	Sulfide	SM 4500-S2 F	2.9	B	mg/L	11
002	D-MW11(060809)	Aqueous	Benzene	8260B	62		ug/L	12
002	D-MW11(060809)	Aqueous	Ethylbenzene	8260B	270		ug/L	12
002	D-MW11(060809)	Aqueous	Toluene	8260B	340		ug/L	12
002	D-MW11(060809)	Aqueous	Xylenes (total)	8260B	1500		ug/L	12
002	D-MW11(060809)	Aqueous	TPH-DRO	8015C	14000	B	ug/L	13
002	D-MW11(060809)	Aqueous	TPH-GRO	8015B	5000		ug/L	14
002	D-MW11(060809)	Aqueous	Dissolved Iron	6010B	0.37		mg/L	15
002	D-MW11(060809)	Aqueous	Dissolved Lead	6010B	0.0081	J	mg/L	15
002	D-MW11(060809)	Aqueous	Iron	6010B	0.38		mg/L	16
002	D-MW11(060809)	Aqueous	Lead	6010B	0.0086	J	mg/L	16
004	HA13R1IDW-1(060809)	Aqueous	Ignitability (Pensky-Martens Closed-	1010A	>140		° F	18

(29 detections)

Inorganic non-metals

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-001
Description: D-MW37(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1350
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B	1	06/10/2009 1528	PMM		12132
1		(DOC) SM 5310D	1	06/11/2009 1418	PMM		12218
1		(Nitrate - N) 353.2	1	06/10/2009 1047	WD		12171
1		(Sulfate) 300.0	1	06/19/2009 1319	DAS		12908
1		(Sulfide) SM 4500-S2 F	1	06/15/2009 1325	BM		12486

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Alkalinity		SM 2320B	8.9	J	10	3.9	mg/L	1
DOC		SM 5310D	16		1.0	0.063	mg/L	1
Nitrate - N		353.2	ND		0.020	0.0013	mg/L	1
Sulfate		300.0	0.45	J	1.0	0.13	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F	2.0	B	1.0	0.62	mg/L	1

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-001
Description: D-MW37(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1350
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	20	06/11/2009 1507	DLB		12302

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	260		10	0.54	ug/L	1
Ethylbenzene	100-41-4	8260B	230		10	3.4	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		10	0.38	ug/L	1
Toluene	108-88-3	8260B	1200		10	3.4	ug/L	1
Xylenes (total)	1330-20-7	8260B	850		10	3.4	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		89	52-138
Bromofluorobenzene		95	70-147
Toluene-d8		90	76-125

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

TPH - DRO

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-001
Description: D-MW37(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1350
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8015C	1	06/13/2009 1320	ASB	06/09/2009 2234	12123

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TPH-DRO		8015C	8900	B	200	23	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
o - Terphenyl		69	53-118

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

TPH - GRO

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-001
Description: D-MW37(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1350
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8015B	5	06/18/2009 1649	IVC		12765

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TPH-GRO		8015B	5600		500	100	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		127	70-130

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

ICP-AES

Client: ARCADIS U.S., Inc.
Description: D-MW37(060809)
Date Sampled: 06/08/2009 1350
Date Received: 06/09/2009

Laboratory ID: KF09013-001
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010B	1	06/16/2009 2209	CDF	06/15/2009 1800	12463

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Dissolved Iron	7439-89-6	6010B	0.70		0.10	0.023	mg/L	1
Dissolved Lead	7439-92-1	6010B	0.0047	J	0.010	0.0019	mg/L	1

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

ICP-AES

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-001
Description: D-MW37(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1350
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010B	1	06/16/2009 2204	CDF	06/15/2009 1800	12463

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Iron	7439-89-6	6010B	1.6		0.10	0.023	mg/L	1
Lead	7439-92-1	6010B	0.0048	J	0.010	0.0019	mg/L	1

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

Inorganic non-metals

Client: ARCADIS U.S., Inc.
Description: D-MW11(060809)
Date Sampled: 06/08/2009 1345
Date Received: 06/09/2009

Laboratory ID: KF09013-002
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity) SM 2320B	1	06/10/2009 1602	PMM		12132
1		(DOC) SM 5310D	1	06/11/2009 1438	PMM		12218
1		(Nitrate - N) 353.2	1	06/10/2009 1048	WD		12171
1		(Sulfate) 300.0	1	06/19/2009 1342	DAS		12908
1		(Sulfide) SM 4500-S2 F	1	06/15/2009 1325	BM		12486

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Alkalinity		SM 2320B	7.1	J	10	3.9	mg/L	1
DOC		SM 5310D	14		1.0	0.063	mg/L	1
Nitrate - N		353.2	ND		0.020	0.0013	mg/L	1
Sulfate		300.0	1.2		1.0	0.13	mg/L	1
Sulfide	18496-25-8	SM 4500-S2 F	2.9	B	1.0	0.62	mg/L	1

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-002
Description: D-MW11(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1345
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	06/11/2009 1756	DLB		12302

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	62		2.5	0.14	ug/L	1
Ethylbenzene	100-41-4	8260B	270		2.5	0.85	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		2.5	0.094	ug/L	1
Toluene	108-88-3	8260B	340		2.5	0.85	ug/L	1
Xylenes (total)	1330-20-7	8260B	1500		2.5	0.85	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		90	52-138
Bromofluorobenzene		100	70-147
Toluene-d8		90	76-125

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

TPH - DRO

Client: ARCADIS U.S., Inc.
Description: D-MW11(060809)
Date Sampled: 06/08/2009 1345
Date Received: 06/09/2009

Laboratory ID: KF09013-002
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8015C	1	06/13/2009 1339	ASB	06/09/2009 2234	12123

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TPH-DRO		8015C	14000	B	200	23	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
o - Terphenyl		82	53-118

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
H = Out of holding time

TPH - GRO

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-002
Description: D-MW11(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1345
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8015B	2	06/18/2009 1714	IVC		12765

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
TPH-GRO		8015B	5000		200	40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		122	70-130

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

ICP-AES

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-002
Description: D-MW11(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1345
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010B	1	06/16/2009 2219	CDF	06/15/2009 1800	12463

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Dissolved Iron	7439-89-6	6010B	0.37		0.10	0.023	mg/L	1
Dissolved Lead	7439-92-1	6010B	0.0081	J	0.010	0.0019	mg/L	1

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

ICP-AES

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-002
Description: D-MW11(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1345
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010B	1	06/16/2009 2214	CDF	06/15/2009 1800	12463

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Iron	7439-89-6	6010B	0.38		0.10	0.023	mg/L	1
Lead	7439-92-1	6010B	0.0086	J	0.010	0.0019	mg/L	1

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-003
Description: IB-01(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1200
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/11/2009 1334	DLB		12302

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		0.50	0.019	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		89	52-138
Bromofluorobenzene		95	70-147
Toluene-d8		90	76-125

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

Inorganic non-metals

Client: ARCADIS U.S., Inc.
Laboratory ID: KF09013-004
Description: HA13R1IDW-1(060809)
Matrix: Aqueous
Date Sampled: 06/08/2009 1430
Date Received: 06/09/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Ignitability) 1010A	1	06/10/2009 1548	PMM		
1		(pH) SM 4500-H B	1	06/09/2009 1430	HBB		12150

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Ignitability (Pensky-Martens Closed-Cup)		1010A	>140				° F	1
pH		SM 4500-H B	5.24				su	1

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

TCLP Volatiles

Client: ARCADIS U.S., Inc.
Description: HA13R1IDW-1(060809)
Date Sampled: 06/08/2009 1430
Date Received: 06/09/2009

Laboratory ID: KF09013-004
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/5030B	8260B	10	06/19/2009 1442	DLB		12825	06/11/2009 0000

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.050		mg/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		0.10		mg/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.050		mg/L	1
Chlorobenzene	108-90-7	8260B	ND		0.050		mg/L	1
Chloroform	67-66-3	8260B	ND		0.050		mg/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.050		mg/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.050		mg/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.050		mg/L	1
Trichloroethene	79-01-6	8260B	ND		0.050		mg/L	1
Vinyl chloride	75-01-4	8260B	ND		0.010		mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		88	70-130
Bromofluorobenzene		99	70-130
Toluene-d8		92	70-130

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

TCLP Semivolatiles

Client: ARCADIS U.S., Inc.
Description: HA13R1IDW-1(060809)
Date Sampled: 06/08/2009 1430
Date Received: 06/09/2009

Laboratory ID: KF09013-004
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/3520C	8270D	1	06/14/2009 0640	GLR	06/11/2009 1723	12257	06/11/2009 0000

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,4-Dichlorobenzene	106-46-7	8270D	ND		0.050		mg/L	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		0.10		mg/L	1
Hexachlorobenzene	118-74-1	8270D	ND		0.050		mg/L	1
Hexachlorobutadiene	87-68-3	8270D	ND		0.050		mg/L	1
Hexachloroethane	67-72-1	8270D	ND		0.050		mg/L	1
2-Methylphenol	95-48-7	8270D	ND		0.050		mg/L	1
3 & 4-Methylphenol	106-44-5	8270D	ND		0.10		mg/L	1
Nitrobenzene	98-95-3	8270D	ND		0.050		mg/L	1
Pentachlorophenol	87-86-5	8270D	ND		0.25		mg/L	1
Pyridine	110-86-1	8270D	ND		0.050		mg/L	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		0.050		mg/L	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		0.050		mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,4,6-Tribromophenol		108	41-144
2-Fluorobiphenyl		109	37-129
2-Fluorophenol		96	24-127
Nitrobenzene-d5		123	38-127
Phenol-d5		98	28-128
Terphenyl-d14		105	10-148

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

QC Summary

Inorganic non-metals - MB

Sample ID: KQ12132-001
Batch: 12132
Analytical Method: SM 2320B

Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Alkalinity	ND		1	10	3.9	mg/L	06/10/2009 0713

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12132-002
Batch: 12132
Analytical Method: SM 2320B

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Alkalinity	100	100		1	100	90-110	06/10/2009 0729

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12132-003
Batch: 12132
Analytical Method: SM 2320B

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Alkalinity	100	100		1	102	2.2	90-110	20	06/10/2009 0745

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KF09013-001MS
Batch: 12132
Analytical Method: SM 2320B

Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Alkalinity	8.9	100	110		1	101	70-130	06/10/2009 1540

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KF09013-001MD
Batch: 12132
Analytical Method: SM 2320B

Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Alkalinity	8.9	100	110		1	103	1.9	70-130	20	06/10/2009 1553

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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 - MB

Sample ID: KQ12150-001
Batch: 12150
Analytical Method: SM 4500-H B

Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
pH	ND		1	0.0		su	06/09/2009 1430

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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 - Duplicate

Sample ID: KF09013-004DU
Batch: 12150
Analytical Method: SM 4500-H B

Matrix: Aqueous

Parameter	Sample Amount (su)	Result	Q	Dil	% RPD	% RPD Limit	Analysis Date
pH	5.24	5.32		1	1.5	20	06/09/2009 1430

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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 - MB

Sample ID: KQ12171-001
Batch: 12171
Analytical Method: 353.2

Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Nitrate - N	ND		1	0.020	0.0013	mg/L	06/10/2009 0000

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12171-002
Batch: 12171
Analytical Method: 353.2

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Nitrate - N	0.80	0.86		1	108	90-110	06/10/2009 0000

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12171-003
Batch: 12171
Analytical Method: 353.2

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Nitrate - N	0.80	0.87		1	108	0.81	90-110	20	06/10/2009 0000

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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 - MB

Sample ID: KQ12218-001
Batch: 12218
Analytical Method: SM 5310D

Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
DOC	ND		1	1.0	0.063	mg/L	06/11/2009 1316

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12218-002
Batch: 12218
Analytical Method: SM 5310D

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
DOC	20	20		1	100	90-110	06/11/2009 1337

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12218-003
Batch: 12218
Analytical Method: SM 5310D

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
DOC	20	20		1	99	1.0	90-110	20	06/11/2009 1357

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KF09013-002MS
Batch: 12218
Analytical Method: SM 5310D

Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
DOC	14	20	33		1	94	70-130	06/11/2009 1459

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KF09013-002MD
Batch: 12218
Analytical Method: SM 5310D

Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
DOC	14	20	33		1	94	0.21	70-130	20	06/11/2009 1519

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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 - MB

Sample ID: KQ12486-001
Batch: 12486
Analytical Method: SM 4500-S2 F

Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Sulfide	0.64	J	1	1.0	0.62	mg/L	06/15/2009 1325

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12486-002
Batch: 12486
Analytical Method: SM 4500-S2 F

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfide	10	10		1	100	80-120	06/15/2009 1325

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12486-003
Batch: 12486
Analytical Method: SM 4500-S2 F

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Sulfide	10	10		1	103	3.5	80-120	20	06/15/2009 1325

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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 - MB

Sample ID: KQ12908-001
Batch: 12908
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Sulfate	ND		1	1.0	0.13	mg/L	06/19/2009 1030

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12908-002
Batch: 12908
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfate	20	19		1	97	90-110	06/19/2009 1053

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12908-003
Batch: 12908
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Sulfate	20	20		1	101	4.0	90-110	20	06/19/2009 1115

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12302-001
Batch: 12302
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	06/11/2009 1137
Ethylbenzene	ND		1	0.50	0.17	ug/L	06/11/2009 1137
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.019	ug/L	06/11/2009 1137
Toluene	ND		1	0.50	0.17	ug/L	06/11/2009 1137
Xylenes (total)	ND		1	0.50	0.17	ug/L	06/11/2009 1137

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		89	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12302-002
Batch: 12302
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	51		1	102	70-130	06/11/2009 1004
Ethylbenzene	50	49		1	99	70-130	06/11/2009 1004
Methyl tertiary butyl ether (MTBE)	50	52		1	105	70-130	06/11/2009 1004
Toluene	50	49		1	99	70-130	06/11/2009 1004
Xylenes (total)	100	98		1	98	70-130	06/11/2009 1004

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		85	70-130
Toluene-d8		87	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12302-003
Batch: 12302
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	52		1	103	1.6	70-130	20	06/11/2009 1027
Ethylbenzene	50	51		1	102	3.5	70-130	20	06/11/2009 1027
Methyl tertiary butyl ether (MTBE)	50	53		1	106	1.0	70-130	20	06/11/2009 1027
Toluene	50	51		1	101	2.7	70-130	20	06/11/2009 1027
Xylenes (total)	100	100		1	101	3.4	70-130	20	06/11/2009 1027

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		84	70-130
Toluene-d8		87	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - MB

Sample ID: KQ12825-001
Batch: 12825
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 1311/5030B

Leachate Date: 06/11/2009 0000

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		10	0.050		mg/L	06/19/2009 1107
2-Butanone (MEK)	ND		10	0.10		mg/L	06/19/2009 1107
Carbon tetrachloride	ND		10	0.050		mg/L	06/19/2009 1107
Chlorobenzene	ND		10	0.050		mg/L	06/19/2009 1107
Chloroform	ND		10	0.050		mg/L	06/19/2009 1107
1,2-Dichloroethane	ND		10	0.050		mg/L	06/19/2009 1107
1,1-Dichloroethene	ND		10	0.050		mg/L	06/19/2009 1107
Tetrachloroethene	ND		10	0.050		mg/L	06/19/2009 1107
Trichloroethene	ND		10	0.050		mg/L	06/19/2009 1107
Vinyl chloride	ND		10	0.010		mg/L	06/19/2009 1107

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		94	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - LCS

Sample ID: KQ12825-002
Batch: 12825
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 1311/5030B

Leachate Date: 06/11/2009 0000

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	0.50	0.50		10	99	72-127	06/19/2009 1003
2-Butanone (MEK)	1.0	0.85		10	85	60-140	06/19/2009 1003
Carbon tetrachloride	0.50	0.53		10	106	37-166	06/19/2009 1003
Chlorobenzene	0.50	0.48		10	96	78-129	06/19/2009 1003
Chloroform	0.50	0.44		10	87	63-123	06/19/2009 1003
1,2-Dichloroethane	0.50	0.49		10	98	59-143	06/19/2009 1003
1,1-Dichloroethene	0.50	0.55		10	111	50-132	06/19/2009 1003
Tetrachloroethene	0.50	0.51		10	102	70-130	06/19/2009 1003
Trichloroethene	0.50	0.50		10	101	73-124	06/19/2009 1003
Vinyl chloride	0.50	0.49		10	99	29-159	06/19/2009 1003

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		96	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - MS

Sample ID: KF09013-004MS
Batch: 12825
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 1311/5030B

Leachate Date: 06/11/2009 0000

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	ND	0.50	0.51		10	101	70-127	06/19/2009 1421
2-Butanone (MEK)	ND	1.0	1.0		10	102	60-140	06/19/2009 1421
Carbon tetrachloride	ND	0.50	0.54		10	108	37-166	06/19/2009 1421
Chlorobenzene	ND	0.50	0.46		10	92	78-129	06/19/2009 1421
Chloroform	ND	0.50	0.43		10	86	63-123	06/19/2009 1421
1,2-Dichloroethane	ND	0.50	0.48		10	95	59-143	06/19/2009 1421
1,1-Dichloroethene	ND	0.50	0.58		10	115	50-132	06/19/2009 1421
Tetrachloroethene	ND	0.50	0.50		10	101	70-130	06/19/2009 1421
Trichloroethene	ND	0.50	0.51		10	101	73-124	06/19/2009 1421
Vinyl chloride	ND	0.50	0.51		10	102	29-159	06/19/2009 1421

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		90	70-130
Toluene-d8		94	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Semivolatiles - MB

Sample ID: KQ12257-001
Batch: 12257
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 1311/3520C
Prep Date: 06/11/2009 1723 Leachate Date: 06/11/2009 0000

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
1,4-Dichlorobenzene	ND		1	0.050		mg/L	06/14/2009 0558
2,4,5-Trichlorophenol	ND		1	0.050		mg/L	06/14/2009 0558
2,4,6-Trichlorophenol	ND		1	0.050		mg/L	06/14/2009 0558
2,4-Dinitrotoluene	ND		1	0.10		mg/L	06/14/2009 0558
2-Methylphenol	ND		1	0.050		mg/L	06/14/2009 0558
3 & 4-Methylphenol	ND		1	0.10		mg/L	06/14/2009 0558
Hexachlorobenzene	ND		1	0.050		mg/L	06/14/2009 0558
Hexachlorobutadiene	ND		1	0.050		mg/L	06/14/2009 0558
Hexachloroethane	ND		1	0.050		mg/L	06/14/2009 0558
Nitrobenzene	ND		1	0.050		mg/L	06/14/2009 0558
Pentachlorophenol	ND		1	0.25		mg/L	06/14/2009 0558
Pyridine	ND		1	0.050		mg/L	06/14/2009 0558

Surrogate	Q	% Rec	Acceptance Limit
2,4,6-Tribromophenol		93	41-144
2-Fluorobiphenyl		108	37-129
2-Fluorophenol		84	24-127
Nitrobenzene-d5		98	38-127
Phenol-d5		99	28-128
Terphenyl-d14		106	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Semivolatiles - LCS

Sample ID: KQ12257-002
Batch: 12257
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 1311/3520C
Prep Date: 06/11/2009 1723 Leachate Date: 06/11/2009 0000

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dichlorobenzene	1.0	0.98		1	98	30-130	06/15/2009 1817
2,4,5-Trichlorophenol	1.0	1.0		1	106	30-130	06/15/2009 1817
2,4,6-Trichlorophenol	1.0	1.0		1	100	30-130	06/15/2009 1817
2,4-Dinitrotoluene	1.0	0.95		1	95	30-130	06/15/2009 1817
2-Methylphenol	1.0	0.88		1	88	30-130	06/15/2009 1817
3 & 4-Methylphenol	2.0	2.0		1	101	30-130	06/15/2009 1817
Hexachlorobenzene	1.0	1.1		1	110	30-130	06/15/2009 1817
Hexachlorobutadiene	1.0	1.0		1	104	30-130	06/15/2009 1817
Hexachloroethane	1.0	1.0		1	100	30-130	06/15/2009 1817
Nitrobenzene	1.0	1.0		1	103	30-130	06/15/2009 1817
Pentachlorophenol	1.0	0.96		1	96	30-130	06/15/2009 1817
Pyridine	1.0	ND	N	1	0.0	30-130	06/15/2009 1817

Surrogate	Q	% Rec	Acceptance Limit
2,4,6-Tribromophenol		128	41-144
2-Fluorobiphenyl		124	37-129
2-Fluorophenol		108	24-127
Nitrobenzene-d5		114	38-127
Phenol-d5		111	28-128
Terphenyl-d14		120	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Semivolatiles - MS

Sample ID: KF09013-004MS
Batch: 12257
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 1311/3520C
Prep Date: 06/11/2009 1723 Leachate Date: 06/11/2009 0000

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,4-Dichlorobenzene	ND	1.0	0.94		1	94	30-130	06/14/2009 0702
2,4-Dinitrotoluene	ND	1.0	0.89		1	89	30-130	06/14/2009 0702
Hexachlorobenzene	ND	1.0	1.1		1	110	30-130	06/14/2009 0702
Hexachlorobutadiene	ND	1.0	1.0		1	101	30-130	06/14/2009 0702
Hexachloroethane	ND	1.0	0.99		1	99	30-130	06/14/2009 0702
2-Methylphenol	ND	1.0	0.93		1	93	30-130	06/14/2009 0702
3 & 4-Methylphenol	ND	2.0	2.2		1	109	30-130	06/14/2009 0702
Nitrobenzene	ND	1.0	1.1		1	110	30-130	06/14/2009 0702
Pentachlorophenol	ND	1.0	0.90		1	90	30-130	06/14/2009 0702
Pyridine	ND	1.0	0.52		1	52	30-130	06/14/2009 0702
2,4,5-Trichlorophenol	ND	1.0	1.0		1	102	30-130	06/14/2009 0702
2,4,6-Trichlorophenol	ND	1.0	0.96		1	96	30-130	06/14/2009 0702

Surrogate	Q	% Rec	Acceptance Limit
2,4,6-Tribromophenol		115	41-144
2-Fluorobiphenyl		117	37-129
2-Fluorophenol		97	24-127
Nitrobenzene-d5	N	150	38-127
Phenol-d5		116	28-128
Terphenyl-d14		109	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - DRO - MB

Sample ID: KQ12123-001
Batch: 12123
Analytical Method: 8015C

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/09/2009 2234

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
TPH-DRO	57	J	1	200	23	ug/L	06/13/2009 0909

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		88	53-118

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - DRO - LCS

Sample ID: KQ12123-002
Batch: 12123
Analytical Method: 8015C

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 06/09/2009 2234

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TPH-DRO	2500	2200		1	90	70-130	06/13/2009 0928

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		87	53-118

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - GRO - MB

Sample ID: KQ12765-001
Batch: 12765
Analytical Method: 8015B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
TPH-GRO	ND		1	100	20	ug/L	06/18/2009 1510

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		122	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - GRO - LCS

Sample ID: KQ12765-002
Batch: 12765
Analytical Method: 8015B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TPH-GRO	1000	960		1	96	70-130	06/18/2009 1420

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		117	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TPH - GRO - LCSD

Sample ID: KQ12765-003
Batch: 12765
Analytical Method: 8015B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TPH-GRO	1000	940		1	94	1.6	70-130	20	06/18/2009 1445

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		115	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

ICP-AES - MB

Sample ID: KQ12463-001
Batch: 12463
Analytical Method: 6010B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/15/2009 1800

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Iron	ND		1	0.10	0.023	mg/L	06/16/2009 2112
Lead	ND		1	0.010	0.0019	mg/L	06/16/2009 2112

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

ICP-AES - LCS

Sample ID: KQ12463-002
Batch: 12463
Analytical Method: 6010B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/15/2009 1800

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Iron	20	20		1	99	80-120	06/16/2009 2117
Lead	0.40	0.38		1	95	80-120	06/16/2009 2117

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

ICP-AES - LCSD

Sample ID: KQ12463-003
Batch: 12463
Analytical Method: 6010B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/15/2009 1800

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Iron	20	20		1	98	0.90	80-120	20	06/16/2009 2123
Lead	0.40	0.38		1	94	0.94	80-120	20	06/16/2009 2123

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

ICP-AES - MB

Sample ID: KQ12463-001
Batch: 12463
Analytical Method: 6010B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/15/2009 1800

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Dissolved Iron	ND		1	0.10	0.023	mg/L	06/16/2009 2112
Dissolved Lead	ND		1	0.010	0.0019	mg/L	06/16/2009 2112

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

ICP-AES - LCS

Sample ID: KQ12463-002
Batch: 12463
Analytical Method: 6010B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/15/2009 1800

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Dissolved Iron	20	20		1	99	80-120	06/16/2009 2117
Dissolved Lead	0.40	0.38		1	95	80-120	06/16/2009 2117

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

ICP-AES - LCSD

Sample ID: KQ12463-003
Batch: 12463
Analytical Method: 6010B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 06/15/2009 1800

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Dissolved Iron	20	20		1	98	0.90	80-120	20	06/16/2009 2123
Dissolved Lead	0.40	0.38		1	94	0.94	80-120	20	06/16/2009 2123

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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 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

Number 102134

Client	ARCADIS
Address	2849 Paces Ferry Rd
City / State / Zip Code	Atlanta / GA / 30339
Project Name	HAA-13 Pumphouse 1 Release 1
Project No.	GP08HAFS. H13A. NAIR1
P.O. No.	
Report to Contact	Scott Bostian
Sampler's Signature	x Erica Maddox
Printed Name	Erica Maddox
Telephone No. / Fax No. / E-mail	770-431-8666 / 770-435-2666
Waybill No.	
Quote No.	
Page	1 of 1
Lot No.	KF09013

Analysis (Attach list if more space is needed.)

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Field-Filtered C-Composite	Matrix: Aqueous	Soil	Non-Aqueous	No. of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	NaS2O3			BTEX/MTBE	SVOCs	Dissolved Total Iron + Lead	TPH	Total Nitrate, Nitrite, Sulfate	TCLP VOCs	TCLP SVOCs	Ignitability, RCRA Reactivity	Remarks / Cooler I.D.
D-MW37 (060809)	6/8/09	1350		X			2		1	5	1				✓	✓	✓	✓	✓	✓			
D-MW11 (060809)	↓	1345		X			2		1	5	1				✓	✓	✓	✓	✓	✓			
TB-01 (060809)		1200		X						2					✓								
HA13R1IDW-1 (060809)	↓	1430		X			3			3					~~✓~~			~~✓~~		✓	✓	✓	

Erica Maddox

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab

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

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☐ Standard ☐ Rush (Specify)

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: Erica Maddox	6-8-09	1500	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by: FedEx	6/9/09	0915	3. Laboratory received by: [signature]	6/9/09	0915

Comments

LAB USE ONLY: Received on ice (Circle) Yes No Ice Pack

Receipt Temp. 3.5 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s), PINK-Field/Client Copy

Document Number: F-AD-012 Effective Date: 08-04-02

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 6

Page 1 of 1
Replaces Date: 09/22/06
Effective Date: 05/29/07

Sample Receipt Checklist (SRC)

Client: Arcadis Cooler Inspected by/date: DMP / 6/9/08 Lot #: KF09013

Means of receipt: ☐ SESI ☐ Client ☐ UPS ☑ FedEx ☐ Airborne Exp ☐ Other

Yes ☐	No ☑	NA ☐	1. Were custody seals present on the cooler?
Yes ☐	No ☐	NA ☑	2. If custody seals were present, were they intact and unbroken?

Cooler ID/temperature upon receipt 3.5 / ____ °C ____ / ____ °C ____ / ____ °C ____ / ____ °C
____ / ____ °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 ☑	NA ☐	5. Were proper custody procedures (relinquished/received) followed?
Yes ☑	No ☐	NA ☐	6. Were sample IDs listed?
Yes ☑	No ☐	NA ☐	7. Was collection date & time listed?
Yes ☑	No ☐	NA ☐	8. Were tests to be performed listed on the COC or was quote # provided?
Yes ☑	No ☐	NA ☐	9. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐	NA ☐	10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐	NA ☐	11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐	NA ☐	12. Was adequate sample volume available?
Yes ☑	No ☐	NA ☐	13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑	NA ☐	14. Were any samples containers missing?
Yes ☐	No ☑	NA ☐	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/BNA/pest/PCB/herb (<0.2mg/L) and toxicity (<0.1mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?

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

Sample(s)_____ were received incorrectly preserved and were adjusted accordingly 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/BNA/pest/PCB/herb.

Toxicity sample(s)_____ were received with TRC >0.1 mg/L and were analyzed by method 330.5.

Corrective Action taken, if necessary:

Was client notified: Yes ☐ No ☐ Did client respond: Yes ☐ No ☐
SESI employee:_____ Date of response: _____
Comments:

Report of Analysis

ARCADIS U.S., Inc.
30 Patewood Drive
Suite 155
Greenville, SC 29615
Attention: Janet Christy

Project Name: FST-26 GW Samples

Project Number: GP08HAFS.F26A.NALTM

Lot Number: KF12018

Date Completed: 06/24/2009

Nisreen Saikaly
Project Manager

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Case Narrative
ARCADIS U.S., Inc.
Lot Number: KF12018

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.

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.

pH

As per method the holding time for pH analysis is 15 minutes from collection.

Sample Summary
ARCADIS U.S., Inc.
Lot Number: KF12018

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	26-MW-52 (060909)	Aqueous	06/09/2009 0945	06/12/2009
002	26-MW-51 (060909)	Aqueous	06/09/2009 0850	06/12/2009
003	26-MW-32 (060909)	Aqueous	06/09/2009 1145	06/12/2009
004	26-MW-42 (060909)	Aqueous	06/09/2009 1055	06/12/2009
005	26-MW-50 (060909)	Aqueous	06/09/2009 1345	06/12/2009
006	26-MW-49 (060909)	Aqueous	06/09/2009 1510	06/12/2009
007	Trip Blank-01 (060909)	Aqueous	06/09/2009 0800	06/12/2009
008	26-MW-25 (061009)	Aqueous	06/10/2009 1200	06/12/2009
009	26-MW-24 (061009)	Aqueous	06/10/2009 1040	06/12/2009
010	26-MW-28 (061009)	Aqueous	06/10/2009 0840	06/12/2009
011	26-MW-27 (061009)	Aqueous	06/10/2009 1315	06/12/2009
012	26-MW-36 (061009)	Aqueous	06/10/2009 1405	06/12/2009
013	26-MW-53 (061009)	Aqueous	06/10/2009 1500	06/12/2009
014	26-MW-6 (061109)	Aqueous	06/11/2009 0855	06/12/2009
015	26-MW-15 (061109)	Aqueous	06/11/2009 0950	06/12/2009
016	DUP-FST26-1 (061109)	Aqueous	06/11/2009 1200	06/12/2009
017	FST26-IDW-1 (061109)	Aqueous	06/11/2009 1100	06/12/2009

(17 samples)

Executive Summary

ARCADIS U.S., Inc.

Lot Number: KF12018

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	26-MW-52 (060909)	Aqueous	Benzene	8260B	0.16	J	ug/L	5
002	26-MW-51 (060909)	Aqueous	Benzene	8260B	0.58		ug/L	6
002	26-MW-51 (060909)	Aqueous	Ethylbenzene	8260B	0.28	J	ug/L	6
004	26-MW-42 (060909)	Aqueous	Benzene	8260B	0.90		ug/L	8
004	26-MW-42 (060909)	Aqueous	Ethylbenzene	8260B	0.23	J	ug/L	8
004	26-MW-42 (060909)	Aqueous	Xylenes (total)	8260B	0.37	J	ug/L	8
005	26-MW-50 (060909)	Aqueous	Benzene	8260B	64		ug/L	9
008	26-MW-25 (061009)	Aqueous	Benzene	8260B	120		ug/L	12
008	26-MW-25 (061009)	Aqueous	Ethylbenzene	8260B	140		ug/L	12
008	26-MW-25 (061009)	Aqueous	Toluene	8260B	4.2		ug/L	12
008	26-MW-25 (061009)	Aqueous	Xylenes (total)	8260B	58		ug/L	12
010	26-MW-28 (061009)	Aqueous	Benzene	8260B	0.27	J	ug/L	14
010	26-MW-28 (061009)	Aqueous	Ethylbenzene	8260B	0.18	J	ug/L	14
010	26-MW-28 (061009)	Aqueous	Toluene	8260B	0.51		ug/L	14
010	26-MW-28 (061009)	Aqueous	Xylenes (total)	8260B	0.58		ug/L	14
011	26-MW-27 (061009)	Aqueous	Benzene	8260B	5.3		ug/L	15
011	26-MW-27 (061009)	Aqueous	Ethylbenzene	8260B	0.74		ug/L	15
011	26-MW-27 (061009)	Aqueous	Xylenes (total)	8260B	0.60		ug/L	15
013	26-MW-53 (061009)	Aqueous	Benzene	8260B	0.34	J	ug/L	17
013	26-MW-53 (061009)	Aqueous	Ethylbenzene	8260B	0.24	J	ug/L	17
014	26-MW-6 (061109)	Aqueous	Benzene	8260B	120		ug/L	18
014	26-MW-6 (061109)	Aqueous	Ethylbenzene	8260B	100		ug/L	18
014	26-MW-6 (061109)	Aqueous	Toluene	8260B	11		ug/L	18
014	26-MW-6 (061109)	Aqueous	Xylenes (total)	8260B	70		ug/L	18
016	DUP-FST26-1 (061109)	Aqueous	Benzene	8260B	100		ug/L	20
016	DUP-FST26-1 (061109)	Aqueous	Ethylbenzene	8260B	84		ug/L	20
016	DUP-FST26-1 (061109)	Aqueous	Toluene	8260B	9.2		ug/L	20
016	DUP-FST26-1 (061109)	Aqueous	Xylenes (total)	8260B	52		ug/L	20
017	FST26-IDW-1 (061109)	Aqueous	Ignitability (Pensky-Martens Closed-	1010A	>140		° F	21

(29 detections)

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-001
Description: 26-MW-52 (060909)
Matrix: Aqueous
Date Sampled: 06/09/2009 0945
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/16/2009 1510	DLB		12591

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	0.16	J	0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	52-138
Bromofluorobenzene		102	70-147
Toluene-d8		105	76-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-002
Description: 26-MW-51 (060909)
Matrix: Aqueous
Date Sampled: 06/09/2009 0850
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/16/2009 1532	DLB		12591

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	0.58		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	0.28	J	0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	52-138
Bromofluorobenzene		101	70-147
Toluene-d8		105	76-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-003
Description: 26-MW-32 (060909)
Matrix: Aqueous
Date Sampled: 06/09/2009 1145
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 1940	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		82	70-138
Bromofluorobenzene		76	70-147
Toluene-d8		84	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-004
Description: 26-MW-42 (060909)
Matrix: Aqueous
Date Sampled: 06/09/2009 1055
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2001	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	0.90		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	0.23	J	0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	0.37	J	0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		84	70-138
Bromofluorobenzene		80	70-147
Toluene-d8		84	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-005
Description: 26-MW-50 (060909)
Matrix: Aqueous
Date Sampled: 06/09/2009 1345
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2023	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	64		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		86	70-138
Bromofluorobenzene		84	70-147
Toluene-d8		85	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-006
Description: 26-MW-49 (060909)
Matrix: Aqueous
Date Sampled: 06/09/2009 1510
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2045	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		85	70-138
Bromofluorobenzene		82	70-147
Toluene-d8		83	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-007
Description: Trip Blank-01 (060909)
Matrix: Aqueous
Date Sampled: 06/09/2009 0800
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2106	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		88	70-138
Bromofluorobenzene		83	70-147
Toluene-d8		85	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-008
Description: 26-MW-25 (061009)
Matrix: Aqueous
Date Sampled: 06/10/2009 1200
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2337	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	120		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	140		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	4.2		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	58		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		87	70-138
Bromofluorobenzene		85	70-147
Toluene-d8		88	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-009
Description: 26-MW-24 (061009)
Matrix: Aqueous
Date Sampled: 06/10/2009 1040
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2128	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		91	70-138
Bromofluorobenzene		83	70-147
Toluene-d8		86	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-010
Description: 26-MW-28 (061009)
Matrix: Aqueous
Date Sampled: 06/10/2009 0840
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2149	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	0.27	J	0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	0.18	J	0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	0.51		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	0.58		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		90	70-138
Bromofluorobenzene		81	70-147
Toluene-d8		83	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-011
Description: 26-MW-27 (061009)
Matrix: Aqueous
Date Sampled: 06/10/2009 1315
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2211	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	5.3		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	0.74		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	0.60		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		89	70-138
Bromofluorobenzene		86	70-147
Toluene-d8		82	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-012
Description: 26-MW-36 (061009)
Matrix: Aqueous
Date Sampled: 06/10/2009 1405
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2233	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		89	70-138
Bromofluorobenzene		83	70-147
Toluene-d8		85	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-013
Description: 26-MW-53 (061009)
Matrix: Aqueous
Date Sampled: 06/10/2009 1500
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2254	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	0.34	J	0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	0.24	J	0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		88	70-138
Bromofluorobenzene		86	70-147
Toluene-d8		86	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-014
Description: 26-MW-6 (061109)
Matrix: Aqueous
Date Sampled: 06/11/2009 0855
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2359	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	120		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	100		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	11		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	70		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		84	70-138
Bromofluorobenzene		83	70-147
Toluene-d8		87	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-015
Description: 26-MW-15 (061109)
Matrix: Aqueous
Date Sampled: 06/11/2009 0950
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/18/2009 2316	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		86	70-138
Bromofluorobenzene		80	70-147
Toluene-d8		83	70-125

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

Volatile Organic Compounds by GC/MS

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-016
Description: DUP-FST26-1 (061109)
Matrix: Aqueous
Date Sampled: 06/11/2009 1200
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	06/19/2009 0020	IVC		12778

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	100		0.50	0.027	ug/L	1
Ethylbenzene	100-41-4	8260B	84		0.50	0.17	ug/L	1
Toluene	108-88-3	8260B	9.2		0.50	0.17	ug/L	1
Xylenes (total)	1330-20-7	8260B	52		0.50	0.17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		80	70-138
Bromofluorobenzene		81	70-147
Toluene-d8		86	70-125

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

Inorganic non-metals

Client: ARCADIS U.S., Inc.
Laboratory ID: KF12018-017
Description: FST26-IDW-1 (061109)
Matrix: Aqueous
Date Sampled: 06/11/2009 1100
Date Received: 06/12/2009

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Ignitability) 1010A	1	06/23/2009 1538	PMM		
1		(pH) SM 4500-H B	1	06/13/2009 1235	RLM		12535

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Ignitability (Pensky-Martens Closed-Cup)		1010A	>140				° F	1
pH		SM 4500-H B	6.80	H			su	1

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

TCLP Volatiles

Client: ARCADIS U.S., Inc.
Description: FST26-IDW-1 (061109)
Date Sampled: 06/11/2009 1100
Date Received: 06/12/2009

Laboratory ID: KF12018-017
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/5030B	8260B	10	06/23/2009 1355	DLB		13071	06/15/2009 0000

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		0.050		mg/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		0.10		mg/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.050		mg/L	1
Chlorobenzene	108-90-7	8260B	ND		0.050		mg/L	1
Chloroform	67-66-3	8260B	ND		0.050		mg/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.050		mg/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.050		mg/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.050		mg/L	1
Trichloroethene	79-01-6	8260B	ND		0.050		mg/L	1
Vinyl chloride	75-01-4	8260B	ND		0.010		mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		120	70-130
Bromofluorobenzene		106	70-130
Toluene-d8		113	70-130

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

QC Summary

Inorganic non-metals - MB

Sample ID: KQ12535-001
Batch: 12535
Analytical Method: SM 4500-H B

Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
pH	ND		1	0.0		su	06/13/2009 1235

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12591-001
Batch: 12591
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	06/16/2009 1010
Ethylbenzene	ND		1	0.50	0.17	ug/L	06/16/2009 1010
Toluene	ND		1	0.50	0.17	ug/L	06/16/2009 1010
Xylenes (total)	ND		1	0.50	0.17	ug/L	06/16/2009 1010

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		103	70-130
1,2-Dichloroethane-d4		104	70-130
Toluene-d8		105	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12591-002
Batch: 12591
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	45		1	90	70-130	06/16/2009 0845
Ethylbenzene	50	44		1	88	70-130	06/16/2009 0845
Toluene	50	44		1	88	70-130	06/16/2009 0845
Xylenes (total)	100	87		1	87	70-130	06/16/2009 0845

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		105	70-130
1,2-Dichloroethane-d4		104	70-130
Toluene-d8		103	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12591-003
Batch: 12591
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	46		1	92	2.4	70-130	20	06/16/2009 0906
Ethylbenzene	50	45		1	90	3.4	70-130	20	06/16/2009 0906
Toluene	50	45		1	89	1.0	70-130	20	06/16/2009 0906
Xylenes (total)	100	88		1	88	2.0	70-130	20	06/16/2009 0906

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		105	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		104	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12778-001
Batch: 12778
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	06/18/2009 1833
Ethylbenzene	ND		1	0.50	0.17	ug/L	06/18/2009 1833
Toluene	ND		1	0.50	0.17	ug/L	06/18/2009 1833
Xylenes (total)	ND		1	0.50	0.17	ug/L	06/18/2009 1833

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		78	70-130
1,2-Dichloroethane-d4		78	70-130
Toluene-d8		85	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12778-002
Batch: 12778
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	51		1	102	70-130	06/18/2009 1727
Ethylbenzene	50	46		1	93	70-130	06/18/2009 1727
Toluene	50	46		1	92	70-130	06/18/2009 1727
Xylenes (total)	100	90		1	90	70-130	06/18/2009 1727

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		79	70-130
1,2-Dichloroethane-d4		75	70-130
Toluene-d8		88	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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: KQ12778-003
Batch: 12778
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	52		1	105	2.6	70-130	20	06/18/2009 1749
Ethylbenzene	50	49		1	97	4.6	70-130	20	06/18/2009 1749
Toluene	50	47		1	95	3.3	70-130	20	06/18/2009 1749
Xylenes (total)	100	94		1	94	3.9	70-130	20	06/18/2009 1749

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		80	70-130
1,2-Dichloroethane-d4		79	70-130
Toluene-d8		88	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - MB

Sample ID: KQ13071-001
Batch: 13071
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 1311/5030B

Leachate Date: 06/15/2009 0000

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		10	0.050		mg/L	06/23/2009 1234
2-Butanone (MEK)	ND		10	0.10		mg/L	06/23/2009 1234
Carbon tetrachloride	ND		10	0.050		mg/L	06/23/2009 1234
Chlorobenzene	ND		10	0.050		mg/L	06/23/2009 1234
Chloroform	ND		10	0.050		mg/L	06/23/2009 1234
1,2-Dichloroethane	ND		10	0.050		mg/L	06/23/2009 1234
1,1-Dichloroethene	ND		10	0.050		mg/L	06/23/2009 1234
Tetrachloroethene	ND		10	0.050		mg/L	06/23/2009 1234
Trichloroethene	ND		10	0.050		mg/L	06/23/2009 1234
Vinyl chloride	ND		10	0.010		mg/L	06/23/2009 1234

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		113	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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

TCLP Volatiles - LCS

Sample ID: KQ13071-002
Batch: 13071
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 1311/5030B

Leachate Date: 06/15/2009 0000

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	0.50	0.53		10	106	72-127	06/23/2009 1212
2-Butanone (MEK)	1.0	1.0		10	105	60-140	06/23/2009 1212
Carbon tetrachloride	0.50	0.52		10	105	37-166	06/23/2009 1212
Chlorobenzene	0.50	0.51		10	102	78-129	06/23/2009 1212
Chloroform	0.50	0.44		10	88	63-123	06/23/2009 1212
1,2-Dichloroethane	0.50	0.48		10	96	59-143	06/23/2009 1212
1,1-Dichloroethene	0.50	0.58		10	116	50-132	06/23/2009 1212
Tetrachloroethene	0.50	0.54		10	108	70-130	06/23/2009 1212
Trichloroethene	0.50	0.53		10	106	73-124	06/23/2009 1212
Vinyl chloride	0.50	0.54		10	108	29-159	06/23/2009 1212

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		111	70-130
1,2-Dichloroethane-d4		104	70-130
Toluene-d8		115	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
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.

SHEALY 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

Number 102269

Client: ARCADIS	Report to Contact: Andy Davis	Telephone No. / Fax No. / E-mail: 770-431-8666 / 770-435-2666	Quote No.
Address: 2849 Paces Ferry Rd	Sampler's Signature: x Erica Maddox	Waybill No.	Page 1 of 2
City: Atlanta; State: GA; Zip Code: 30339	Printed Name: Erica Maddox	Analysis (Attach list if more space is needed.)	
Project Name: FST-26 GW Samples			
Project No.: GPDBHAFS.F26A.NALTM	P.O. No.		Lot No.: KF12018

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab/Composite	Matrix: Aqueous	Solid	Non-Aqueous	No. of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	NaS2O3		BTEX (8260B)									Remarks / Cooler I.D.
26-MW-52 (060909)	6/9/09	0945		X						3				✓									
26-MW-51 (060909)		0850		X						3				✓									
26-MW-32 (060909)		1145		X						3				✓									
26-MW-42 (060909)		1055		X						3				✓									
26-MW-50 (060909)		1345		X						3				✓									
26-MW-49 (060909)		1510		X						3				✓									
Trip Blank-01 (060909)		0800		X						2				✓									
26-MW-25 (061009)	6/10/09	1200		X						3				✓									
26-MW-24 (061009)		1040		X						3				✓									
26-MW-28 (061009)		0840		X						3				✓									

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

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab

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

Turn Around Time Required (Prior lab approval required for expedited T.A.T.): X Standard ☐ Rush (Specify)

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished by: Erica Maddox	6/11/09		1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by: FEDEX	6/12/09	0910	3. Laboratory received by	6/12/09	0910

Comments:

LAB USE ONLY: Received on ice (Circle) Yes No Ice Pack

Receipt Temp. 3.7 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-012 Effective Date: 08-04-02

SHEALY ENVIRONMENTAL SERVICES, INC.

SHEALY ENVIRONMENTAL SERVICES, INC.

SHEALY 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

Number 102268

Client: ARCADIS	Report to Contact: Andy Davis	Telephone No. / Fax No. / E-mail: 770-431-8666 / 770-435-2666	Quote No.
Address: 2849 Paces Ferry Rd	Sampler's Signature: x Erica Maddox	Waybill No.	Page 2 of 2
City: Atlanta; State: GA; Zip Code: 30339	Printed Name: Erica Maddox	Analysis (Attach list if more space is needed.)	
Project Name: FST-26 GW Samples			
Project No.: GP08HAFS.F26A.NALTM; P.O. No.			Lot No.: KF12018

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab/Composite	Matrix: Aqueous	Solid	Non-Aqueous		No. of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	5035 Kit		BTEX	KCL VOCs	Ignitability							Remarks / Cooler I.D.
26-MW-27 (061009)	6/10/09	1315		X							3				✓									
26-MW-36 (061009)	↓	1405		X							3				✓									
26-MW-53 (061009)	↓	1500		X							3				✓									
26-MW-6 (061109)	6/11/09	0855		X							3				✓									
26-MW-15 (061109)	↓	0950		X							3				✓									
DUP-FST26-1 (061109)	↓	1200		X							3				✓									
FST26-IDW-1 (061109)	↓	1100		X				2								✓	✓							

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab

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

Turn Around Time Required (Prior lab approval required for expedited TAT.): X Standard ☐ Rush (Specify)

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: Erica Maddox	6/11/09		1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by: FEDEX	6/12/09	0910	3. Laboratory received by	6/12/09	0910

Comments

LAB USE ONLY: Received on ice (Circle) Yes No Ice Pack

Receipt Temp. 3.7 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-012 Effective Date: 08-04-09

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 6

Page 1 of 1
Replaces Date: 09/22/06
Effective Date: 05/29/07

Sample Receipt Checklist (SRC)

Client: Arcadis Cooler Inspected by/date: AMD / 6/12/09 Lot #: KF/2018

Means of receipt: ☐ SESI ☐ Client ☐ UPS ☑ FedEx ☐ Airborne Exp ☐ Other

Yes ☑	No ☐	NA ☐	1. Were custody seals present on the cooler?
Yes ☑	No ☐	NA ☐	2. If custody seals were present, were they intact and unbroken?

Cooler ID/temperature upon receipt 3.7 °C / °C / °C / °C / °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 ☑	NA ☐	5. Were proper custody procedures (relinquished/received) followed?
Yes ☑	No ☐	NA ☐	6. Were sample IDs listed?
Yes ☑	No ☐	NA ☐	7. Was collection date & time listed?
Yes ☑	No ☐	NA ☐	8. Were tests to be performed listed on the COC or was quote # provided?
Yes ☑	No ☐	NA ☐	9. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐	NA ☐	10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐	NA ☐	11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐	NA ☐	12. Was adequate sample volume available?
Yes ☐	No ☑	NA ☐	13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑	NA ☐	14. Were any samples containers missing?
Yes ☐	No ☑	NA ☐	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/BNA/pest/PCB/herb (<0.2mg/L) and toxicity (<0.1mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?

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

Sample(s)_____ were received incorrectly preserved and were adjusted accordingly 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/BNA/pest/PCB/herb.

Toxicity sample(s)_____ were received with TRC >0.1 mg/L and were analyzed by method 330.5.

Corrective Action taken, if necessary:

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

SESI employee:_____ Date of response: _____

Comments:_____

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Appendix F

Alternate Concentration Limit and Alternate Threshold Level Calculations

HAA-09 CAP-Part B Addendum #1

ATL & ACL Calculation

Point of Compliance: Storm Drain approximately 100 ft from source area

Maximum Soil Concentrations:

COPC	Cs			STL	
Benzene	94	mg/kg	value from SB-35	0.005	mg/kg
Toluene	23	mg/kg	value from SB-48	0.4	mg/kg
Ethylbenzene	380	mg/kg	value from SB-35	0.37	mg/kg
Xylenes	790	mg/kg	value from SB-35	20	mg/kg
DBA				1.5	mg/kg

Soil Parameters

		Analytical Results from DPT Samples			Average	
		SB-28	**SB-29**	**SB-40**		
TOC		4800	550	5400	3583	mg/kg
		SB-15	**SB-26**	**SB-36**		
TPH	GRO	1500	1200	200		
	DRO	2500	220	220		
	Total TPH	4000	1420	420	1947	mg/kg

Soil Bulk Density

1.32	kg/l	1.32	g/cm3	from CAP-A UST 117 (sample predominantly clay)
1.7	kg/l	1.7	g/cm3	typical value for silty sand (used for bioscreen model)

COPC	Partition Coefficient - Koc		
Benzene	81	ml/g	GA EPD Guidance
Toluene	133	ml/g	GA EPD Guidance
Ethylbenzene	176	ml/g	GA EPD Guidance
Xylenes	639	ml/g	GA EPD Guidance
DBA	1668800	ml/g	

Fraction of Organic Carbon

Fcs = (TOC + TPH/1.724) x (1 x 10^{-6}) UST CAP-Part A Guidance Equation Set I, Step 1

Fcs= 0.00471249

Maximum Groundwater Concentrations

Cw = Cs / (Koc x Fcs) UST CAP-Part A Guidance Equation Set I, Step 2 Cw = pore water concentration in equilibrium with source soil

COPC	Cw		Highest in DPT GW			IWQS	
Benzene	246.3	mg/l	0.66	mg/l		0.051	
Toluene	36.7	mg/l	0.37	mg/l		5.98	
Ethylbenzene	458.2	mg/l	0.17	mg/l		2.1	
Xylenes	262.3	mg/l	1.8	mg/l		10	(MCL)
Naphthalene	not calculated		0.25	mg/l		0.0065	(EPA R3 RBC)
PAHs	not calculated		0.00059	mg/l	DiBenzo(a,h)anthracene	0.000018	
					Indeno(1,2,3-c,d)pyrene	0.000018	

Alternate Threshold Level

ATL = Koc(ml/g) x Fcs x Cstd(mg/l) x DAFw

COPC	ATL		DAFw (from bioscreen)	Soil Saturation Limits	
Benzene	0.3	mg/kg	14.5		
Toluene	54.3	mg/kg	14.5	479	mg/kg
Ethylbenzene	25.3	mg/kg	14.5	187	mg/kg
Xylenes	436.6	mg/kg	14.5	893	mg/kg

Alternate Concentration Level

ACL = IWQS x DAFw

COPC	ACL		DAFw (from bioscreen)	
Benzene	0.7	mg/l	14.5	
Toluene	86.7	mg/l	14.5	
Ethylbenzene	30.5	mg/l	14.5	
Xylenes	145.0	mg/l	14.5	
Naphthalene	0.9425	mg/l	145.0	DAF = 10 x benzene DAF
PAHs*	0.0026	mg/l	145.0	*DiBenzo(a,h)anthracene
				*Indeno(1,2,3-c,d)pyrene
				DAF = 10 x benzene DAF

MODEL INPUTS

COPC	Concentrations (ug/l) in GW from DPT downgrad1 GW1	source1 GW2	source2 GW3	downgrad2 GW4	Maximum concentrations in GW (mg/l) (equilibrium with maximum soil concentration)
Benzene	0.76	330	660	2.2	246.3
Toluene	< 0.5	8.0	170	0.40 J	36.7
Ethylbenzene	2.8	100	370	0.63	458.2
Xylenes	9.5	420	1800	2.2	262.3

Hydraulic Conductivity	K	0.0029	cm/sec	from slug tests in CAP-Part B for UST 117
Hydraulic Gradient	i	0.0035	ft/ft	from CAP-Part A for UST 117
Porosity	n	0.18		used in previous model for site; midrange of values for fine sand
Longitudinal Dispersivity	alpha x	10	ft	based on commonly used relationship to plume length (USTMP Guidance)
Transverse Dispersivity	alpha y	3.3	ft	based on commonly used relationship to plume length
Vertical Dispersivity	alpha z	0.5	ft	based on commonly used relationship to plume length
Plume length	Lp	100	ft	distance to receptor
Solute Half - Life		t-half		
Benzene		2	years	conservative value per GA EPD Guidance
Toluene		0.17	years	conservative value
Ethylbenzene		0.62	years	conservative value
Xylene		1	years	conservative value
Plume Width		100	ft	
Simulation time		20	years	since release unknown - tanks demolished in 1999 reaches steady state simulation
Source thickness		10	ft	
Source mass		1000000	kg	constant source (conservative assumption)

DAF Calculation from Modeling Results

	DPT Samples Results	Source Equilibrium Concentration	Conservative DAFw
Source Benzene Concentration =	0.66 mg/l	246.3 mg/l	
Model Results at Receptor =	0.026 mg/l	17.029 mg/l	
DAFw for Benzene =	25.4	14.5	14.5
Source Toluene Concentration =	0.17 mg/l	36.7 mg/l	
Model Results at Receptor =	0 mg/l	0 mg/l	
DAFw for Toluene =	N/A	N/A	14.5
Source Ethylbenzene Concentration =	0.37 mg/l	458.2 mg/l	
Model Results at Receptor =	0 mg/l	0.039 mg/l	
DAFw for Ethylbenzene =	N/A	11747.8	14.5
Source Xylene Concentration =	1.8 mg/l	262.3 mg/l	
Model Results at Receptor =	0 mg/l	0 mg/l	
DAFw for Xylene =	N/A	N/A	14.5
DAFw for PAHs =		(10 x Benzene DAF)	145

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Appendix G

Summary of Fate and Transport Model

File Edit View Insert Format Tools Data Window Help

W = 100

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Hunter AAF
HAA-09 - Benzene
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
or
0.02 → 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* → Data used directly in model.
20 → Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	*Vs*	58.3	*(ft/yr)*
or		or	
Hydraulic Conductivity	*K*	2.9E-03	*(cm/sec)*
Hydraulic Gradient	*i*	0.0035	*(ft/ft)*
Porosity	*n*	0.18	*(-)*

2. DISPERSION

Longitudinal Dispersivity*	*alpha x*	10.0	*(ft)*
Transverse Dispersivity*	*alpha y*	3.3	*(ft)*
Vertical Dispersivity*	*alpha z*	0.5	*(ft)*
or		or	
Estimated Plume Length	*Lp*	100	*(ft)*

3. ADSORPTION

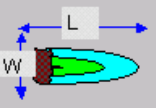
Retardation Factor*	*R*	4.6	*(-)*
or		or	
Soil Bulk Density	*rho*	1.7	*(kg/l)*
Partition Coefficient	*Koc*	81	*(L/kg)*
FractionOrganicCarbon	*foc*	4.7E-3	*(-)*

4. BIODEGRADATION

1st Order Decay Coeff*	*lambda*	3.5E-1	*(per yr)*
or		or	
Solute Half-Life	*t-half*	2.00	*(year)*
or Instantaneous Reaction Model			
Delta Oxygen*	*DO*	1.65	*(mg/L)*
Delta Nitrate*	*NO3*	0.7	*(mg/L)*
Observed Ferrous Iron*	*Fe2+*	16.6	*(mg/L)*
Delta Sulfate*	*SO4*	22.4	*(mg/L)*
Observed Methane*	*CH4*	6.6	*(mg/L)*

5. GENERAL

Modeled Area Length*	100	*(ft)*
Modeled Area Width*	100	*(ft)*
Simulation Time*	20	*(yr)*



6. SOURCE DATA

Source Thickness in Sat.Zone* 10 *(ft)*

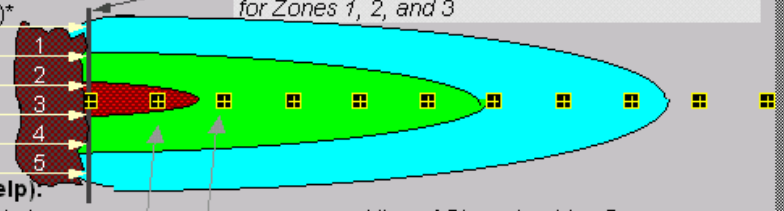
Source Zones:

Width* (ft)	Conc. (mg/L)*
100	0.66
0	0
0	0

Source Halflife (see Help):

>1000	>1000	*(yr)*
Inst. React.	1st Order	
Soluble Mass	1000000	*(Kg)*
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	.66					.002					
Dist. from Source (ft)	0	10	20	30	40	50	60	70	80	90	100

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help

Recalculate This Sheet

Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

Input / Centerline Output / Plume Output / dlgDensity

Ready

Microsoft Excel - BIOSCRN4_HAA09_benzene_1

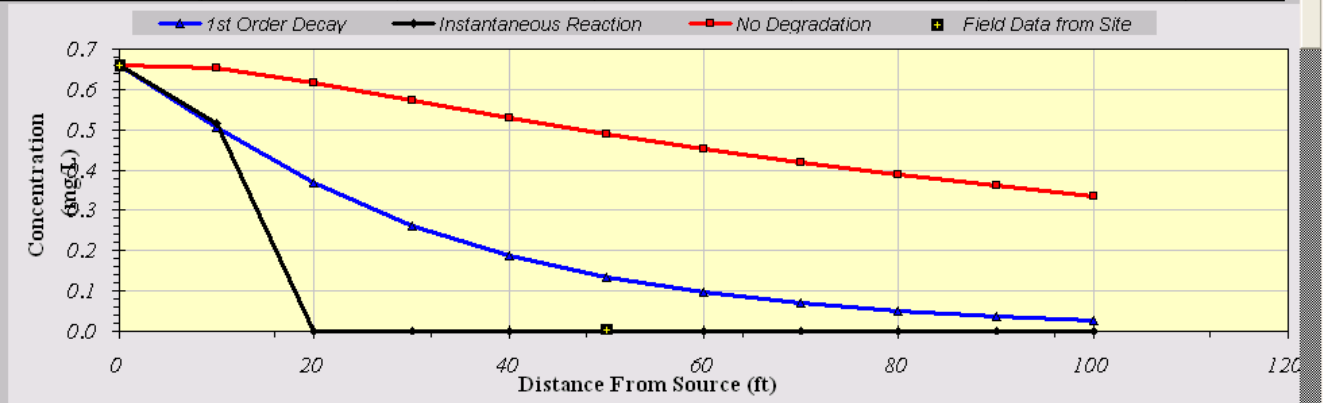
File Edit View Insert Format Tools Data Window Help

PlumeCenter

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	10	20	30	40	50	60	70	80	90	100
No Degradation	0.660	0.654	0.618	0.572	0.528	0.488	0.452	0.419	0.389	0.362	0.336
1st Order Decay	0.660	0.504	0.367	0.263	0.187	0.134	0.096	0.069	0.050	0.036	0.026
Inst. Reaction	0.659	0.515	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.660					0.002					



Replay Animation | Next Timestep | Prev Timestep

Time: 20 Years

Return to Input | Recalculate This Sheet

Input | Centerline Output | Plume Output | dlgDensity

Ready

File Edit View Insert Format Tools Data Window Help

J8 =

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Hunter AAF
HAA-09 - Benzene
Run Name

Data Input Instructions:

115 or 0.02 → 1. Enter value directly....or 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* → Data used directly in model.

20 → Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	58.3	(ft/yr)
or		or	
Hydraulic Conductivity	K	2.9E-03	(cm/sec)
Hydraulic Gradient	i	0.0035	(ft/ft)
Porosity	n	0.18	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	10.0	(ft)
Transverse Dispersivity*	alpha y	3.3	(ft)
Vertical Dispersivity*	alpha z	0.5	(ft)
or		or	
Estimated Plume Length	Lp	100	(ft)

3. ADSORPTION

Retardation Factor*	R	4.6	(-)
or		or	
Soil Bulk Density	rho	1.7	(kg/l)
Partition Coefficient	Koc	81	(L/kg)
FractionOrganicCarbon	foc	4.7E-3	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	3.5E-1	(per yr)
or		or	
Solute Half-Life	t-half	2.00	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO	1.65	(mg/L)
Delta Nitrate*	NO3	0.7	(mg/L)
Observed Ferrous Iron*	Fe2+	16.6	(mg/L)
Delta Sulfate*	SO4	22.4	(mg/L)
Observed Methane*	CH4	6.6	(mg/L)

5. GENERAL

Modeled Area Length*	100	(ft)
Modeled Area Width*	100	(ft)
Simulation Time*	20	(yr)

6. SOURCE DATA

Source Thickness in Sat.Zone* 10 (ft)

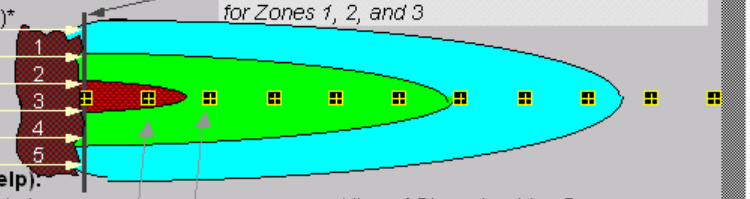
Source Zones:

Width* (ft)	Conc. (mg/L)*
100	246.3
0	0
0	0

Source Halflife (see Help):

>1000	>1000	(yr)
Inst. React.	1st Order	
Soluble Mass	1000000	(Kg)
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	246.3					.002					
Dist. from Source (ft)	0	10	20	30	40	50	60	70	80	90	100

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help — Recalculate This Sheet

Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

Input / Centerline Output / Plume Output / dlgDensity

Ready

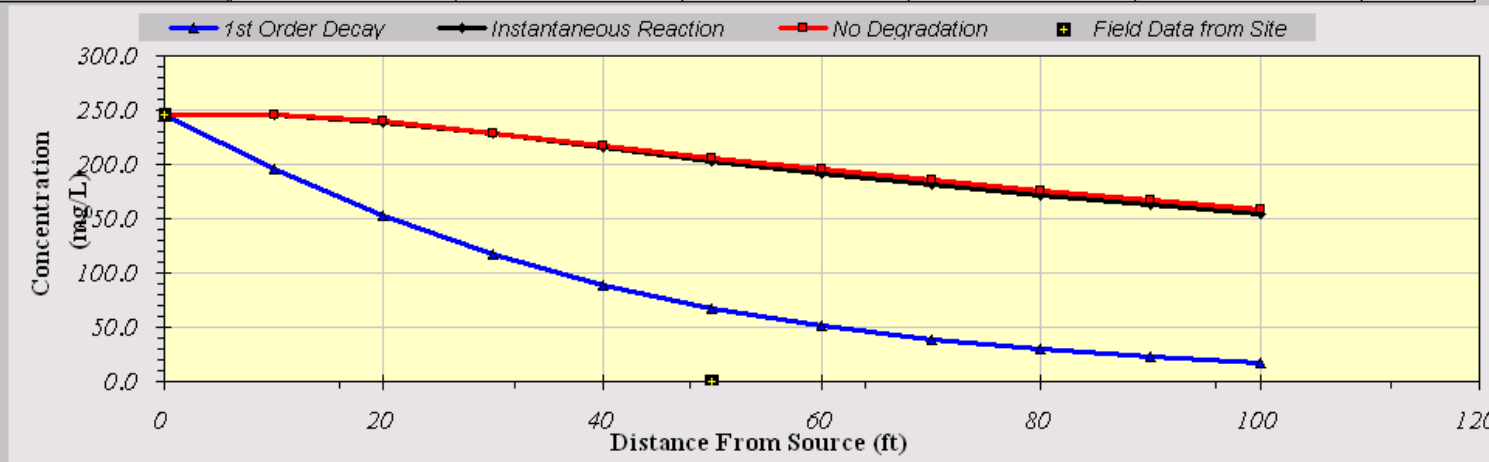
File Edit View Insert Format Tools Data Window Help

PlumeCenter =

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	10	20	30	40	50	60	70	80	90	100
No Degradation	245.760	245.387	239.550	229.021	217.366	205.920	195.095	185.008	175.670	167.052	159.103
1st Order Decay	245.760	196.235	153.196	117.126	88.899	67.351	51.031	38.701	29.390	22.353	17.029
Inst. Reaction	245.694	245.299	239.117	227.964	215.617	203.493	192.026	181.339	171.448	162.318	153.898
Field Data from Site	246.300					0.002					



Replay Animation | Next Timestep | Prev Timestep

Time: 20 Years

Return to Input | Recalculate This Sheet

Input | Centerline Output | Plume Output | dlgDensity

Ready

File Edit View Insert Format Tools Data Window Help

J8 =

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Hunter AAF
HAA-09 - Toluene
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
or
0.02 → 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* → Data used directly in model.
20 → Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	58.3	(ft/yr)
or		or	
Hydraulic Conductivity	K	2.9E-03	(cm/sec)
Hydraulic Gradient	i	0.0035	(ft/ft)
Porosity	n	0.18	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	10.0	(ft)
Transverse Dispersivity*	alpha y	3.3	(ft)
Vertical Dispersivity*	alpha z	0.5	(ft)
or		or	
Estimated Plume Length	Lp	100	(ft)

3. ADSORPTION

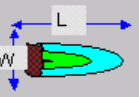
Retardation Factor*	R	6.9	(-)
or		or	
Soil Bulk Density	rho	1.7	(kg/l)
Partition Coefficient	Koc	133	(L/kg)
FractionOrganicCarbon	foc	4.7E-3	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	4.1E+0	(per yr)
or		or	
Solute Half-Life	t-half	0.17	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO	1.65	(mg/L)
Delta Nitrate*	NO3	0.7	(mg/L)
Observed Ferrous Iron*	Fe2+	16.6	(mg/L)
Delta Sulfate*	SO4	22.4	(mg/L)
Observed Methane*	CH4	6.6	(mg/L)

5. GENERAL

Modeled Area Length*	100	(ft)
Modeled Area Width*	100	(ft)
Simulation Time*	20	(yr)



6. SOURCE DATA

Source Thickness in Sat.Zone* 10 (ft)

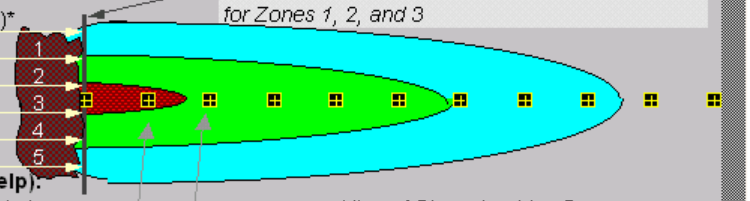
Source Zones:

Width* (ft)	Conc. (mg/L)*
100	0.17
0	0
0	0

Source Halflife (see Help):

>1000	>1000	(yr)
Inst. React.	1st Order	
Soluble Mass	1000000	(Kg)
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	.17					.0					
Dist. from Source (ft)	0	10	20	30	40	50	60	70	80	90	100

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help — Recalculate This Sheet

Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

Input / Centerline Output / Plume Output / dlgDensity

Ready

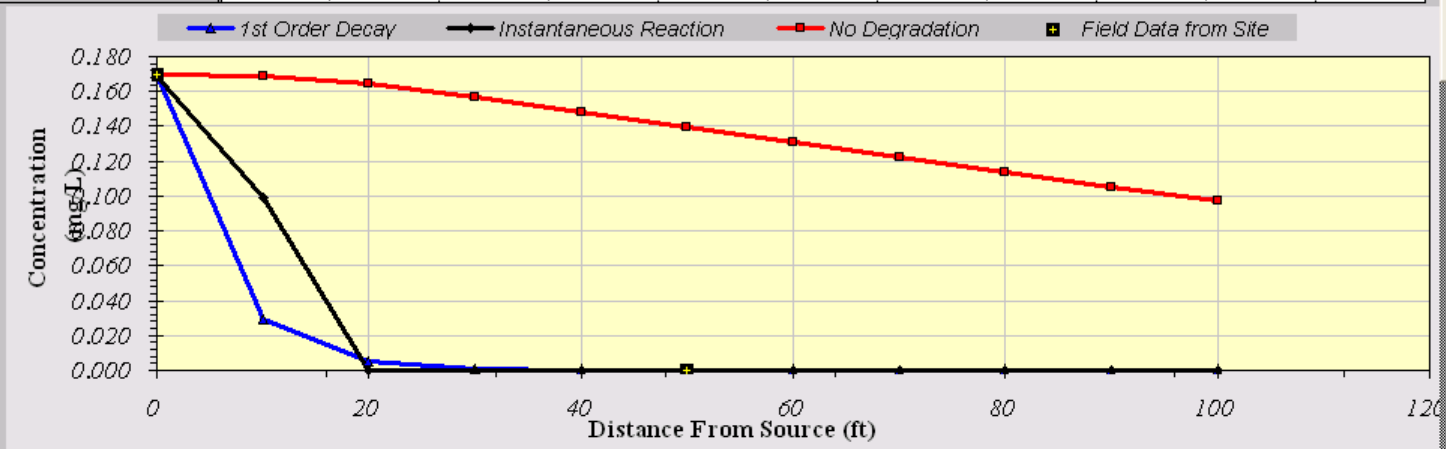
File Edit View Insert Format Tools Data Window Help

PlumeCenter

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	10	20	30	40	50	60	70	80	90	100
No Degradation	0.170	0.169	0.165	0.157	0.148	0.139	0.131	0.122	0.114	0.105	0.097
1st Order Decay	0.170	0.029	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	0.169	0.099	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.170					0.000					



Replay Animation | Next Timestep | Prev Timestep

Time: 20 Years

Return to Input | Recalculate This Sheet

Input | Centerline Output | Plume Output | dlgDensity

Ready

File Edit View Insert Format Tools Data Window Help

W = 100

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Hunter AAF
HAA-09 - Toluene
Run Name

Data Input Instructions:

115 or 0.02
1. Enter value directly....or
2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* → Data used directly in model.
20 → Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	58.3	(ft/yr)
or		or	
Hydraulic Conductivity	K	2.9E-03	(cm/sec)
Hydraulic Gradient	i	0.0035	(ft/ft)
Porosity	n	0.18	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	10.0	(ft)
Transverse Dispersivity*	alpha y	3.3	(ft)
Vertical Dispersivity*	alpha z	0.5	(ft)
or		or	
Estimated Plume Length	Lp	100	(ft)

3. ADSORPTION

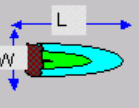
Retardation Factor*	R	6.9	(-)
or		or	
Soil Bulk Density	rho	1.7	(kg/l)
Partition Coefficient	Koc	133	(L/kg)
FractionOrganicCarbon	foc	4.7E-3	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	4.1E+0	(per yr)
or		or	
Solute Half-Life	t-half	0.17	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO	1.65	(mg/L)
Delta Nitrate*	NO3	0.7	(mg/L)
Observed Ferrous Iron*	Fe2+	16.6	(mg/L)
Delta Sulfate*	SO4	22.4	(mg/L)
Observed Methane*	CH4	6.6	(mg/L)

5. GENERAL

Modeled Area Length*	100	(ft)
Modeled Area Width*	100	(ft)
Simulation Time*	20	(yr)



6. SOURCE DATA

Source Thickness in Sat.Zone* 10 (ft)

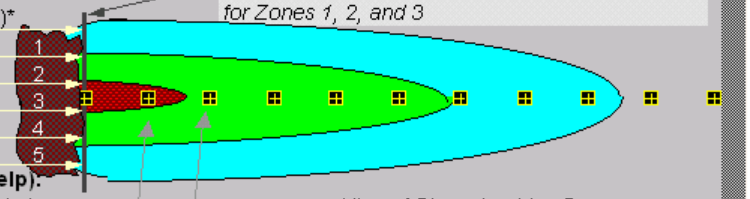
Source Zones:

Width* (ft)	Conc. (mg/L)*
100	36.7
0	0
0	0

Source Halflife (see Help):

>1000	>1000	(yr)
Inst. React.	1st Order	
Soluble Mass	1000000	(Kg)
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	36.7					.0					
Dist. from Source (ft)	0	10	20	30	40	50	60	70	80	90	100

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help — Recalculate This Sheet

Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

Input / Centerline Output / Plume Output / dlgDensity

Ready

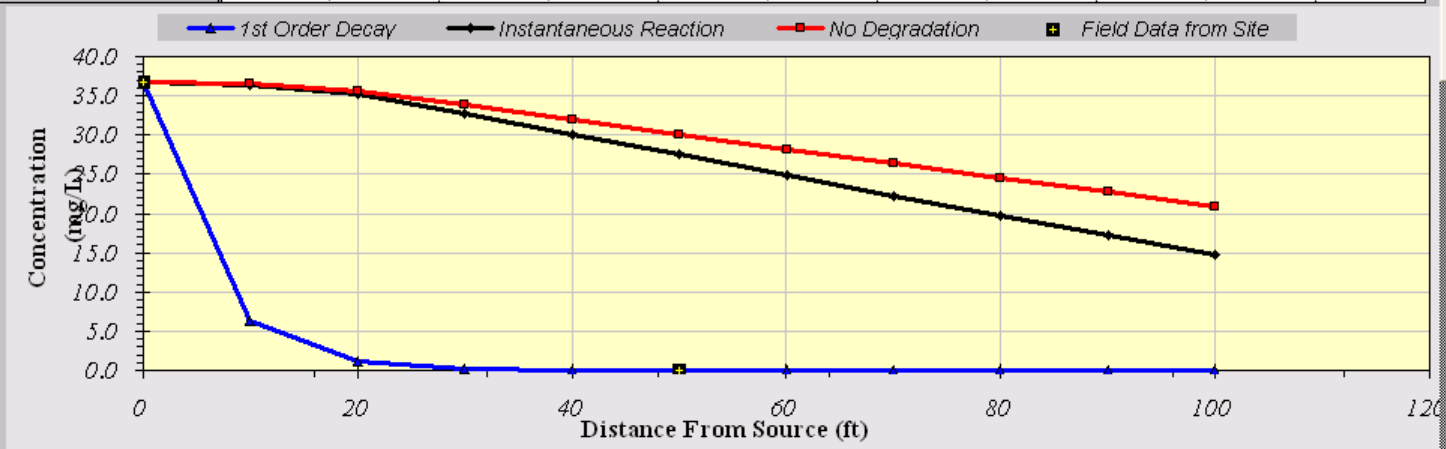
File Edit View Insert Format Tools Data Window Help

PlumeCenter

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	10	20	30	40	50	60	70	80	90	100
No Degradation	36.692	36.520	35.575	33.899	32.014	30.108	28.229	26.383	24.561	22.750	20.940
1st Order Decay	36.692	6.335	1.069	0.177	0.029	0.005	0.001	0.000	0.000	0.000	0.000
Inst. Reaction	36.684	36.443	35.122	32.777	30.140	27.473	24.844	22.261	19.711	17.178	14.645
Field Data from Site	36.700					0.000					



Replay Animation | Next Timestep | Prev Timestep

Time: 20 Years

Return to Input | Recalculate This Sheet

Input | Centerline Output | Plume Output | dlgDensity

Ready

File Edit View Insert Format Tools Data Window Help

W = 100

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Hunter AAF
HAA-09 - Ethylbenzene
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
or
0.02 → 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* → Data used directly in model.
20 → Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	58.3	(ft/yr)
or		or	
Hydraulic Conductivity	K	2.9E-03	(cm/sec)
Hydraulic Gradient	i	0.0035	(ft/ft)
Porosity	n	0.18	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	10.0	(ft)
Transverse Dispersivity*	alpha y	3.3	(ft)
Vertical Dispersivity*	alpha z	0.5	(ft)
or		or	
Estimated Plume Length	Lp	100	(ft)

3. ADSORPTION

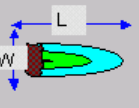
Retardation Factor*	R	8.8	(-)
or		or	
Soil Bulk Density	rho	1.7	(kg/l)
Partition Coefficient	Koc	176	(L/kg)
FractionOrganicCarbon	foc	4.7E-3	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	1.1E+0	(per yr)
or		or	
Solute Half-Life	t-half	0.62	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO	1.65	(mg/L)
Delta Nitrate*	NO3	0.7	(mg/L)
Observed Ferrous Iron*	Fe2+	16.6	(mg/L)
Delta Sulfate*	SO4	22.4	(mg/L)
Observed Methane*	CH4	6.6	(mg/L)

5. GENERAL

Modeled Area Length*	100	(ft)
Modeled Area Width*	100	(ft)
Simulation Time*	20	(yr)



6. SOURCE DATA

Source Thickness in Sat.Zone* 10 (ft)

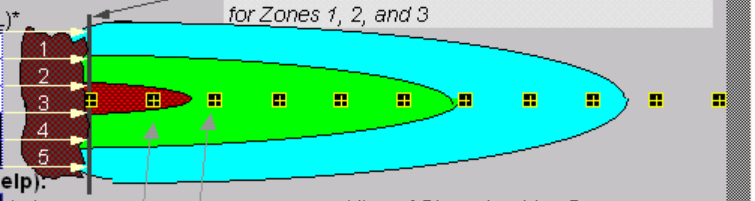
Source Zones:

Width* (ft)	Conc. (mg/L)*
100	0.37
0	0
0	0

Source Halflife (see Help):

>1000	>1000	(yr)
Inst. React.	1st Order	
Soluble Mass	1000000	(Kg)
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	.37					.001					
Dist. from Source (ft)	0	10	20	30	40	50	60	70	80	90	100

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help — Recalculate This Sheet

Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

Input / Centerline Output / Plume Output / dlgDensity

Ready

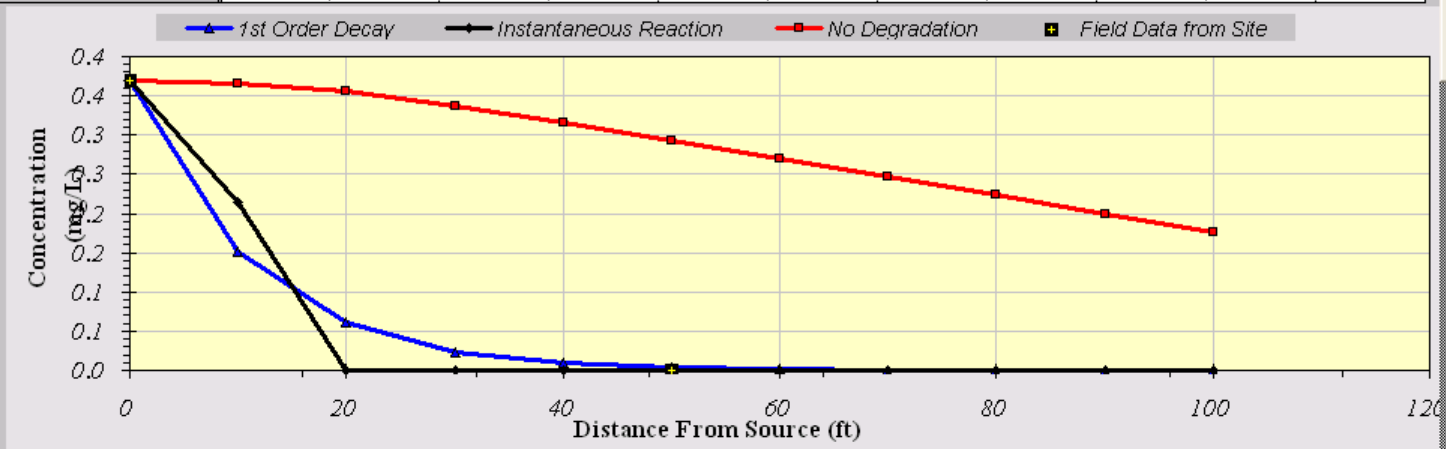
File Edit View Insert Format Tools Data Window Help

PlumeCenter

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	10	20	30	40	50	60	70	80	90	100
No Degradation	0.370	0.366	0.355	0.337	0.315	0.293	0.270	0.247	0.223	0.200	0.176
1st Order Decay	0.370	0.151	0.060	0.024	0.009	0.004	0.001	0.001	0.000	0.000	0.000
Inst. Reaction	0.369	0.214	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.370					0.001					



Replay Animation | Next Timestep | Prev Timestep

Time: 20 Years

Return to Input | Recalculate This Sheet

Input | Centerline Output | Plume Output | dlgDensity

Ready

File Edit View Insert Format Tools Data Window Help

W = 100

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Hunter AAF
HAA-09 - Ethylbenzene
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
or
0.02 → 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* → Data used directly in model.
20 → Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	58.3	(ft/yr)
or		or	
Hydraulic Conductivity	K	2.9E-03	(cm/sec)
Hydraulic Gradient	i	0.0035	(ft/ft)
Porosity	n	0.18	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	10.0	(ft)
Transverse Dispersivity*	alpha y	3.3	(ft)
Vertical Dispersivity*	alpha z	0.5	(ft)
or		or	
Estimated Plume Length	Lp	100	(ft)

3. ADSORPTION

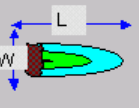
Retardation Factor*	R	8.8	(-)
or		or	
Soil Bulk Density	rho	1.7	(kg/l)
Partition Coefficient	Koc	176	(L/kg)
FractionOrganicCarbon	foc	4.7E-3	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	1.1E+0	(per yr)
or		or	
Solute Half-Life	t-half	0.62	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO	1.65	(mg/L)
Delta Nitrate*	NO3	0.7	(mg/L)
Observed Ferrous Iron*	Fe2+	16.6	(mg/L)
Delta Sulfate*	SO4	22.4	(mg/L)
Observed Methane*	CH4	6.6	(mg/L)

5. GENERAL

Modeled Area Length*	100	(ft)
Modeled Area Width*	100	(ft)
Simulation Time*	20	(yr)



6. SOURCE DATA

Source Thickness in Sat.Zone* 10 (ft)

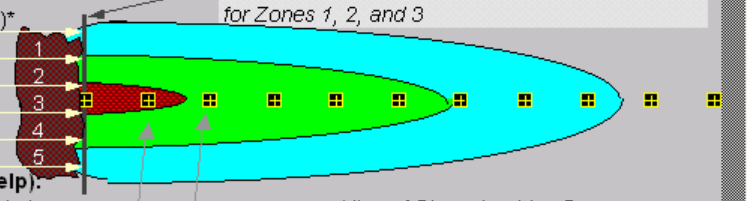
Source Zones:

Width* (ft)	Conc. (mg/L)*
100	458.2
0	0
0	0

Source Halflife (see Help):

>1000	>1000	(yr)
Inst. React.	1st Order	
Soluble Mass	1000000	(Kg)
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	458.2					.001					
Dist. from Source (ft)	0	10	20	30	40	50	60	70	80	90	100

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help — Recalculate This Sheet

Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

Input / Centerline Output / Plume Output / dlgDensity

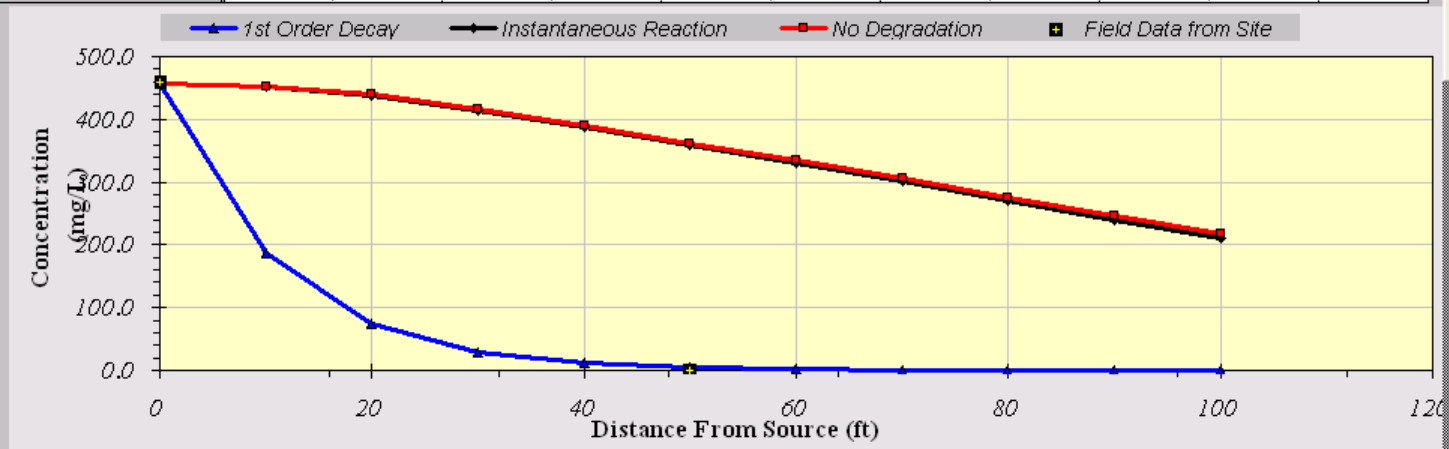
Ready

File Edit View Insert Format Tools Data Window Help

PlumeCenter

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	10	20	30	40	50	60	70	80	90	100
No Degradation	456.954	452.333	439.046	416.022	389.624	362.076	333.940	305.326	276.284	246.941	217.558
1st Order Decay	456.954	186.711	74.588	29.182	11.334	4.394	1.704	0.661	0.257	0.100	0.039
Inst. Reaction	456.873	452.108	438.400	414.644	387.406	358.981	329.948	300.423	270.455	240.176	209.855
Field Data from Site	458.200					0.001					



Replay Animation | Next Timestep | Prev Timestep

Time: 20 Years

Return to Input | Recalculate This Sheet

Input | Centerline Output | Plume Output | dlgDensity

Ready

File Edit View Insert Format Tools Data Window Help

J8 =

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Hunter AAF
HAA-09 - Xylenes
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
or
0.02 → 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* → Data used directly in model.
20 → Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	58.3	(ft/yr)
or		or	
Hydraulic Conductivity	K	2.9E-03	(cm/sec)
Hydraulic Gradient	i	0.0035	(ft/ft)
Porosity	n	0.18	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	10.0	(ft)
Transverse Dispersivity*	alpha y	3.3	(ft)
Vertical Dispersivity*	alpha z	0.5	(ft)
or		or	
Estimated Plume Length	Lp	100	(ft)

3. ADSORPTION

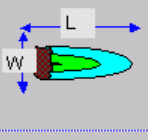
Retardation Factor*	R	29.4	(-)
or		or	
Soil Bulk Density	rho	1.7	(kg/l)
Partition Coefficient	Koc	639	(L/kg)
FractionOrganicCarbon	foc	4.7E-3	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	6.9E-1	(per yr)
or		or	
Solute Half-Life	t-half	1.00	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO	1.65	(mg/L)
Delta Nitrate*	NO3	0.7	(mg/L)
Observed Ferrous Iron*	Fe2+	16.6	(mg/L)
Delta Sulfate*	SO4	22.4	(mg/L)
Observed Methane*	CH4	6.6	(mg/L)

5. GENERAL

Modeled Area Length*	100	(ft)
Modeled Area Width*	100	(ft)
Simulation Time*	20	(yr)



6. SOURCE DATA

Source Thickness in Sat.Zone* 10 (ft)

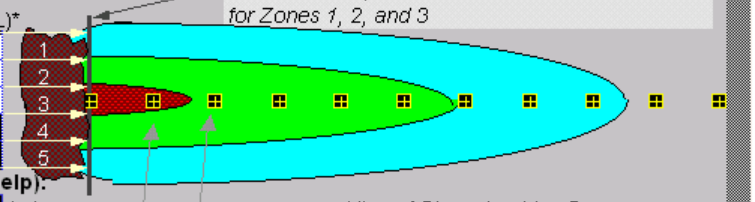
Source Zones:

Width* (ft)	Conc. (mg/L)*
100	1.8
0	0
0	0

Source Halflife (see Help):

>1000	>1000	(yr)
Inst. React.	1st Order	
Soluble Mass	1000000	(Kg)
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	1.8					.002					
Dist. from Source (ft)	0	10	20	30	40	50	60	70	80	90	100

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help — Recalculate This Sheet

Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

Input / Centerline Output / Plume Output / dlgDensity

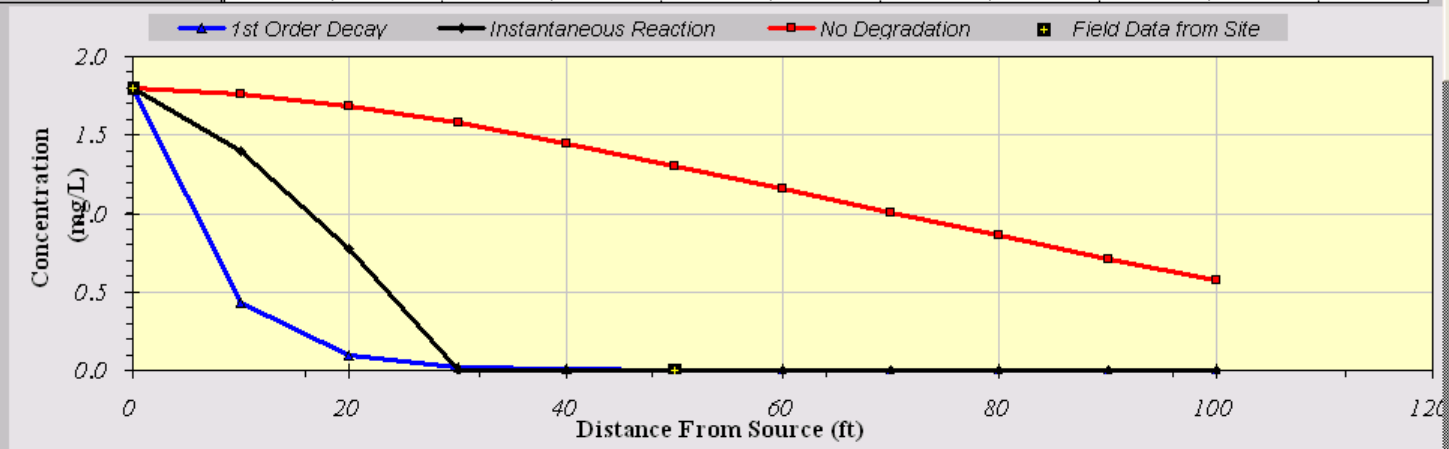
Ready

File Edit View Insert Format Tools Data Window Help

PlumeCenter

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	10	20	30	40	50	60	70	80	90	100
No Degradation	1.800	1.756	1.688	1.576	1.445	1.304	1.157	1.007	0.857	0.711	0.573
1st Order Decay	1.800	0.428	0.099	0.023	0.005	0.001	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	1.796	1.398	0.773	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.800					0.002					



Replay Animation | Next Timestep | Prev Timestep

Time: 20 Years

Return to Input | Recalculate This Sheet

Input | Centerline Output | Plume Output | dlgDensity

Ready

File Edit View Insert Format Tools Data Window Help

J8 =

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Hunter AAF
HAA-09 - Xylenes
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
or
0.02 → 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* → Data used directly in model.
20 → Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	58.3	(ft/yr)
or		or	
Hydraulic Conductivity	K	2.9E-03	(cm/sec)
Hydraulic Gradient	i	0.0035	(ft/ft)
Porosity	n	0.18	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	10.0	(ft)
Transverse Dispersivity*	alpha y	3.3	(ft)
Vertical Dispersivity*	alpha z	0.5	(ft)
or		or	
Estimated Plume Length	Lp	100	(ft)

3. ADSORPTION

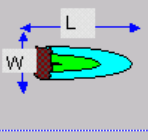
Retardation Factor*	R	29.4	(-)
or		or	
Soil Bulk Density	rho	1.7	(kg/l)
Partition Coefficient	Koc	639	(L/kg)
FractionOrganicCarbon	foc	4.7E-3	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	6.9E-1	(per yr)
or		or	
Solute Half-Life	t-half	1.00	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO	1.65	(mg/L)
Delta Nitrate*	NO3	0.7	(mg/L)
Observed Ferrous Iron*	Fe2+	16.6	(mg/L)
Delta Sulfate*	SO4	22.4	(mg/L)
Observed Methane*	CH4	6.6	(mg/L)

5. GENERAL

Modeled Area Length*	100	(ft)
Modeled Area Width*	100	(ft)
Simulation Time*	20	(yr)



6. SOURCE DATA

Source Thickness in Sat.Zone* 10 (ft)

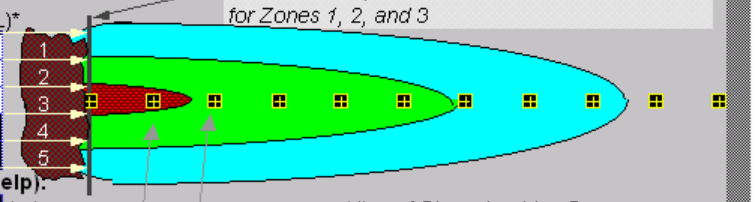
Source Zones:

Width* (ft)	Conc. (mg/L)*
100	262.3
0	0
0	0

Source Halflife (see Help):

>1000	>1000	(yr)
Inst. React.	1st Order	
Soluble Mass	1000000	(Kg)
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	262.3					.002					
Dist. from Source (ft)	0	10	20	30	40	50	60	70	80	90	100

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help

Recalculate This Sheet

Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

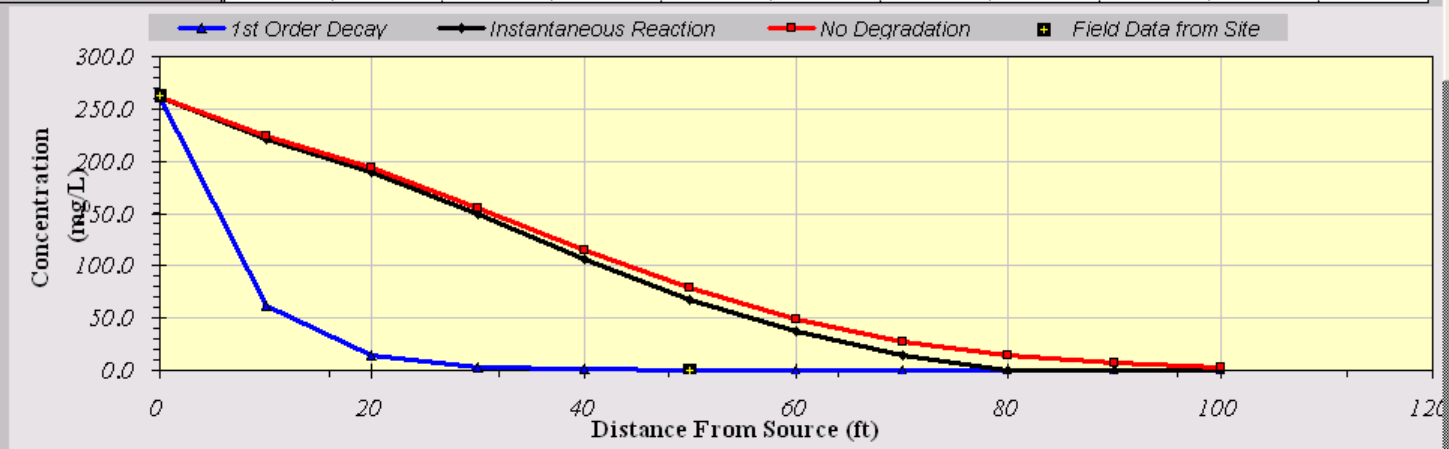
Input / Centerline Output / Plume Output / dlgDensity

Ready

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	10	20	30	40	50	60	70	80	90	100
No Degradation	261.891	223.323	193.433	154.868	114.777	78.309	48.868	27.719	14.216	6.564	2.720
1st Order Decay	261.891	62.244	14.464	3.291	0.744	0.168	0.038	0.009	0.002	0.000	0.000
Inst. Reaction	261.844	221.129	189.575	148.861	106.533	68.028	36.942	14.610	0.353	0.000	0.000
Field Data from Site	262.300					0.002					



Replay Animation | Next Timestep | Prev Timestep

Time: 20 Years

Return to Input | Recalculate This Sheet

ARCADIS

Appendix H

Site Ranking Form

SITE RANKING FORM (WILL BE COMPLETED AFTER SITE INVESTIGATION)

Facility Name: Former AST 7001/7003 (HAA-9) Ranked by: SB

Facility ID: 9-025113*3 County: Chatham Date Ranked: 8/31/09

SOIL CONTAMINATION

A. Total Regulated PAHs – Maximum concentration at the site (Assume < 0.660 mg/kg if only gasoline was stored on site)

X ≤ 0.0660 = 0
____ .066-0.99 mg/kg = 10
____ 1-10 mg/kg = 25
____ >10 mg/kg = 50

B. Total Benzene – Maximum Concentration found on the site

____ ≤ 0.005 mg/kg = 0
____ >0.005 - .05 mg/kg = 1
____ .05 – .99 = 10
____ 1 – 9.9 = 25
____ 10 – 49.9 mg/kg = 40
X ≥ 50 mg/kg = 50

C. DEPTH TO GROUNDWATER – (Shallowest)
(bls = below land surface)

____ > 50' bls = 1
____ > 25' bls = 2
____ > 10' bls = 5
X ≤ 10' bls = 10

Fill in the blanks: (A. + B.) x C. = D.
(0 + 50) x 10 = 500

GROUNDWATER CONTAMINATION

E. Free Product (Nonaqueous-phase liquid hydrocarbons: See Guidelines for definition of "sheen").

____ No free product = 0
____ Sheen – 1/8" = 250
____ > 1/8" - 6" = 500
____ > 6" – 1ft. = 1,000
X For every additional inch above a foot, add 100 more points = 1,000+
(1.35 max in June 2009)

F. Dissolved Benzene – Maximum Concentration at the site (One well must be located at the source of the release.)

____ ≤ ug/L = 0
____ >5 – 100 ug/L = 5
X
____ >100 – 1,000 ug/L = 50
____ >1,000 – 5,000 ug/L = 250
____ >5,000 – 10,000 ug/L = 500
____ > 10,000 ug/L = 1,500

Fill in the blanks: (E. + F.) = G.
(1000 + 50) = 1050

POTENTIAL RECEPTORS

Distance from nearest contaminant plume boundary to the nearest hydraulically connected Point of Withdrawal for water supply. This distance must be field-verified. **If the point of withdrawal is not hydraulically connected, evidence as outlined in the CAP-A guidance document MUST be presented to substantiate this claim.**

H. Public Water Supply

____ Impacted = 2,000
____ ≤ 500' = 500
____ > 500' – 1/4 mi = 25
> 1/4 mi – 1 mi = 10
X > 1 mi – 2 mi = 2
> 2 mi = 0

For lower susceptibility areas only:
____ > 1 mi = 0

I. Non-Public Water Supply

____ Impacted = 1,000
____ ≤ 100' = 500
____ > 100' - 500' = 25
> 500' – 1/4 mi = 5
> 1/4 mi – 1/2 mi = 2
X > 1/2 mi = 0

For lower susceptibility areas only:
____ > 1/4 mi = 0

Note: If site is in lower susceptibility area do not use the shaded areas.

J. Distance from nearest contaminant Plume boundary to downgradient Surface Waters **OR UTILITY TRENCHES & VAULTS** (a utility trench may be omitted from ranking if its invert elevation is more than 5 feet above the water table)

_____ Impacted = 500
X ≤ 500' = 50
_____ > 500'- 1,000' = 5
_____ > 1,000' = 2

K. Distance from any Free Product to basements and crawl spaces

_____ Impacted = 500
_____ ≤ 500' = 50
_____ > 500'- 1,000' = 5
X > 1,000' = 2

Fill in the blanks:

(H + I + J + K) = L. (G x L) = M. (M + D) = N

(2 + 0 + 50 + 2) = 54 (1050 x 54) = 56700 (56700 + 500) = 57200

P. SUSCEPTIBILITY AREA MULTIPLIER

____ If site is located in a Low Ground – Water Pollution Susceptibility Area = 0.5
X All other sites = 1

Q. EXPLOSION HAZARD

Have any explosive petroleum vapors, possibly originating from this release, been detected in any subsurface structure (e.g., utility trenches, basements, vaults, crawl space, etc.)

____ Yes = 200,000
X No = 0

Fill in the blanks:

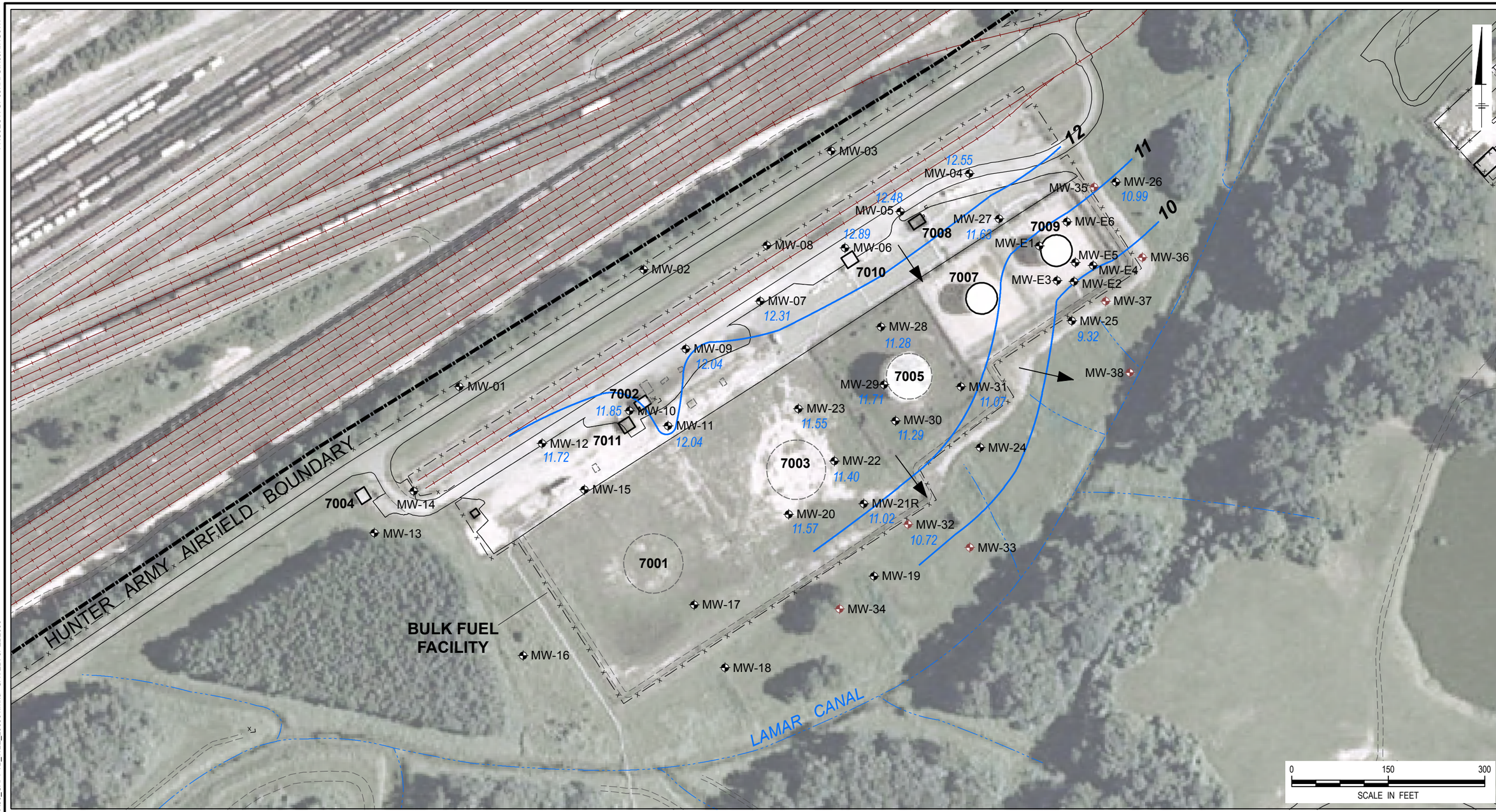
(N.) x (P.) = M. (M.) + (Q.)

= 57200

ENVIRONMENTAL SENSITIVITY SCORE

Appendix I

Groundwater Potentiometric Surface Maps from CAP Part-B



AERIAL REFERENCE: NRCS, CHATHAM COUNTY, GEORGIA, NAIP 2007.
REFERENCE: Third Annual Monitoring and Free-Product Removal Report (SAIC 2007).

LEGEND:

- Monitor Well (CAP - Part A)
- Monitor Well (CAP - Part B)
- Potentiometric Contour Line (ft, amsl)
- Direction of Groundwater Flow
- *11.72* Water-Level Elevation, (ft, amsl) Measured January 12, 2005

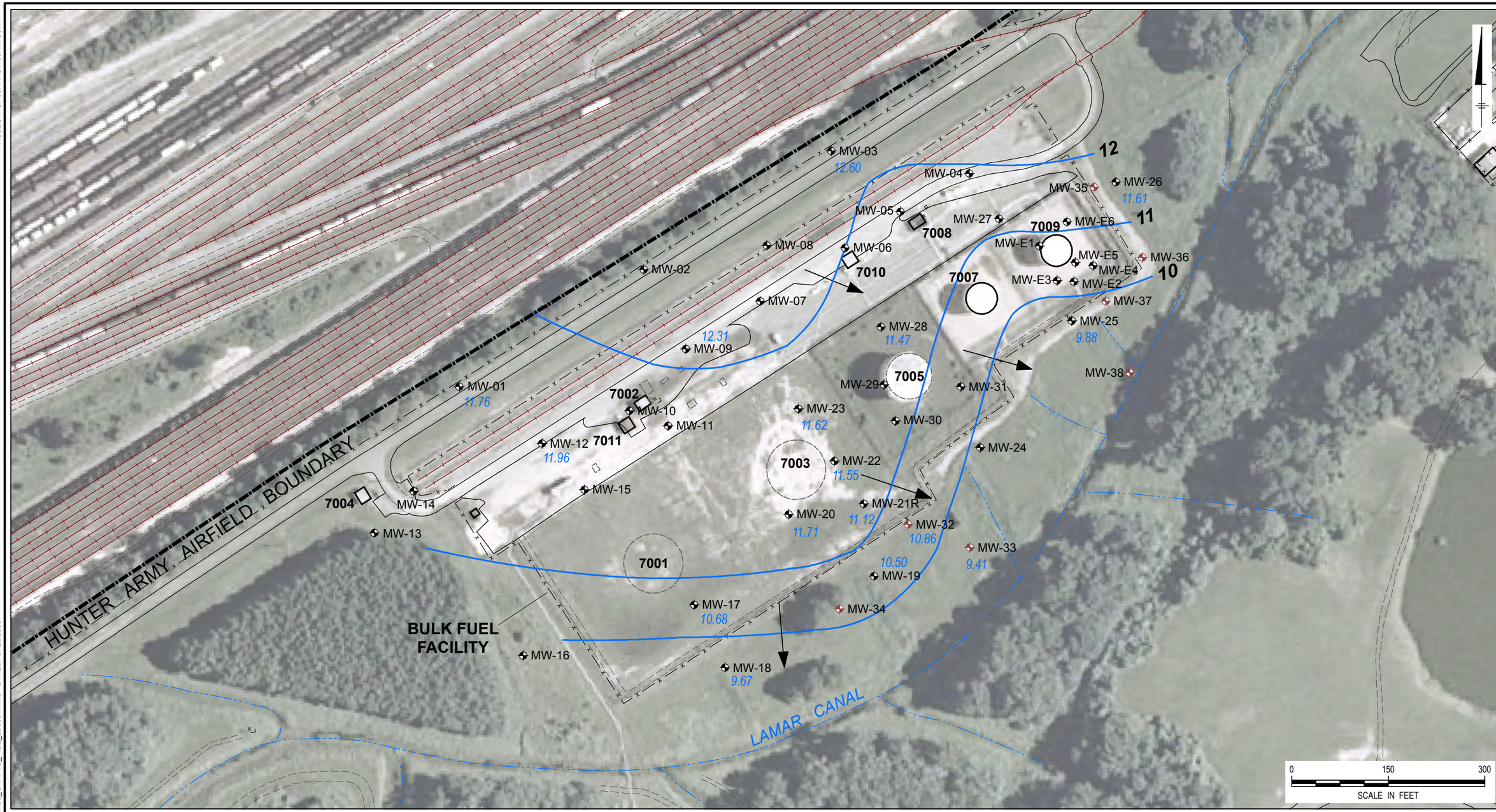
HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
CORRECTIVE ACTION PLAN – PART B

Groundwater Potentionmetric Surface Map
January 2005

ARCADIS

FIGURE
4a

PROJECT: GP08HAFS.H09A.HG0WP
CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) LD:(B.ALTOM) PIC:(M.FENNER) PM:(C.BERTZ) TM:(S.BOSTIAN/E.MADDOX)
G:\GIS\GP08HAFS\H09A\2009_CAP_PTB\F4a HAA09_CAPPTB_WLE_200501.mxd SAVED: 3FEB2009



AERIAL REFERENCE: NRCS, CHATHAM COUNTY, GEORGIA, NAIP 2007.
REFERENCE: Third Annual Monitoring and Free-Product Removal Report (SAIC 2007).

LEGEND:

- Monitor Well (CAP - Part A)
- Monitor Well (CAP - Part B)
- Potentiometric Contour Line (ft, amsl)
- Direction of Groundwater Flow
- 9.67 Water-Level Elevation, (ft, amsl) Measured January 12, 2005

HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
CORRECTIVE ACTION PLAN – PART B

Groundwater Potentionmetric Surface Map
January 2003

ARCADIS

FIGURE
4b

PROJECT: GP08HAFS.H09A.HG0WP
CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) LD:(B.ALTOM) PIC:(M.FENNER) PM:(C.BERTZ) TM:(S.BOSTIAN/E.MADDOX)
G:\GIS\GP08HAFS\H09A\2009_CAP_PTB\F4b HAA09_CAPPTB_WLE_200301.mxd SAVED: 3FEB2009