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GEOENGINEERS 

Earth Science + Technology

Soil and Groundwater Assessment

L&L Exxon
Richland, Washington

for

Washington State Department of Ecology

March 6, 2013



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Soil and Groundwater Assessment

L&L Exxon Richland, Washington

File No. 0504-081-00

March 6, 2013

Prepared for:

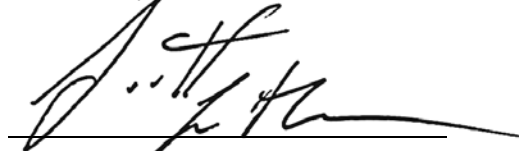
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1.0 INTRODUCTION

This report describes subsurface exploration, groundwater monitoring well installation and groundwater monitoring activities conducted at the former L&L Exxon site located at 1315 Lee Boulevard in Richland, Washington (herein referred to as “site”). The site is located approximately as shown in the attached Vicinity Map, Figure 1.

Environmental activities at the site currently are managed by the Washington State Department of Ecology (Ecology). This report describes field activities, observations, and chemical analytical results associated with soil and groundwater samples collected at the site, and provides recommendations for further assessment. The purpose of the assessment activities described herein was to identify the source and extent of remnant contamination in soil and shallow groundwater beneath the site, if any, associated with operation of three former underground storage tanks (USTs).

2.0 SITE DESCRIPTION AND BACKGROUND

The site was the location of the former L&L Exxon service station, which closed in 1999. Former site features removed at the time of closure included (shown on Site Plan, Figure 2):

- Two 6,000-gallon gasoline USTs (designated as UST-1 and UST-2, respectively), installed in the late 1950s, located on the north side of the property;
- One 4,000-gallon gasoline UST (designated as UST-3), installed in 1979, located south of the 6,000-gallon USTs;
- Two 500-gallon USTs (waste oil and heating oil, designated as UST-4 and UST-5 respectively) located near the south side of the building; and
- Four fuel dispensers and associated subsurface piping, located on the north side of the property west of the USTs.

The site is located in a generally commercial area and currently operates as a used car dealership and maintenance shop. Four historical groundwater monitoring wells (HW-A through HW-D) and a blower, reportedly included as a component of an in-situ remediation system, are located at the site. However, these monitoring wells are in poor condition (including missing caps, caps paved with asphalt) or inaccessible (HW-D was located beneath a storage unit) and are not serviceable to collect future groundwater samples. According to historical assessment and remediation reports, the groundwater flow gradient is toward the east. Existing and historical site features, including former USTs and dispensers and current monitoring wells, are depicted on Figure 2.

Based on a file review of previous environmental reports and interviews with the current property owner and former contractors, the following environmental activities have occurred since 1999:

1. Removal of the USTs and the associated fueling systems;
2. Excavation of petroleum-contaminated soil to a depth of about 12 feet below ground surface (bgs);

3. Installation of four groundwater monitoring wells; and
4. In-situ remediation using microbial injection beneath the existing building supplemented with air injection.

Additional details from previous reports and interviews are included in the File Review (GeoEngineers, 2012A)

3.0 SCOPE OF SERVICES

Based on results of the file review, additional soil and groundwater assessment was required to close the site. Assessment actions included subsurface soil sampling near former dispenser and UST locations and installation of groundwater monitoring wells. Recommended assessment steps are designed to confirm if soil and/or groundwater contamination at the site requires further remedial action and/or an environmental covenant. The scope of services performed by GeoEngineers during implementation of the assessment included the following:

- Prepared a Health and Safety Plan (HASP) for field activities.
- Coordinated underground utility location services using the state one-call system and a private locating service.
- Prepared a draft work plan for sampling activities and submit to Ecology for review. The work plan included a sampling and analysis plan (SAP).
- Conducted a subsurface assessment at the site. The assessment included air-rotary drilling of six soil borings (B-1 through B-6). Borings were advanced near the location of the former USTs and dispensers. Advanced three additional borings and constructed groundwater monitoring wells (MW-1 through MW-3). Wells were screened based on groundwater conditions observed in the field.
- Soil samples were collected continuously during drilling at approximate 5-foot depth intervals using split-spoon samplers. Select sub-samples were field-screened using visual observations, water sheen, and headspace vapor measurements with a photoionization detector (PID) to assess possible presence of petroleum-related contaminants.
- Developed monitoring wells using surging and bailing/pumping.
- Submitted one soil sample from each boring to TestAmerica Laboratories Inc. (TestAmerica) located in Spokane Valley, Washington for chemical analysis. One sample, collected within the vadose zone of each boring and exhibiting the greatest indications of petroleum contamination based on field-screening measurements, was submitted for chemical analysis (see below). The remaining samples were held at the laboratory or GeoEngineers' Spokane office for potential analysis.
- Nine soil samples were analyzed for gasoline-, diesel-, and oil-range petroleum hydrocarbons (GRPH, DRPH, and ORPH, respectively) using Northwest Methods NWTPH-Gx and NWTPH-Dx, benzene, toluene, ethylbenzene, and total xylenes (BTEX), 1,2-Dichloroethane (EDC), methyl-tert-butyl-ether (MTBE) and n-hexane using Environmental Protection Agency (EPA) Method 8260C, 1,2-Dibromoethane (EDB) using EPA Method 8011, lead using EPA Method 6010C, and polycyclic aromatic hydrocarbons (PAHs) using EPA Method 8270C. Two soil samples were

further analyzed for fractionalized petroleum hydrocarbons (aliphatics and aromatics) using Northwest VPH and EPH methods. Samples were analyzed on standard turn-around-time.

- Collected groundwater samples from each well using low-flow/low-stress sampling techniques.
- Submitted groundwater samples to a qualified laboratory for chemical analysis. Samples were analyzed for GRPH using Northwest Method NWTPH-Gx; DRPH using Northwest Method NWTPH-Dx, BTEX, EDC, MTBE and n-hexane using EPA Method 8260B; EDB using EPA Method 8011; lead using EPA Method 6010C, and PAHs using EPA Method 8270C-SIM.
- Investigation-derived waste (IDW) was drummed, labeled, and stored on-site pending results of analytical testing.
- Entered data results information into Ecology's Environmental Information Management (EIM) database.

4.0 FIELD ACTIVITIES

4.1. General

Advanced Underground Utility Locating, Inc. of Spokane, Washington conducted a private utility locate of the site on September 24, 2012. Environmental West Explorations (Environmental West) of Spokane, Washington, advanced nine borings (B-1 through B-6 and MW-1 through MW-3) to depths of between 15 and 23 feet using air rotary drilling methods on September 26 and 27, 2012. Borings MW-1 through MW-3 were completed as monitoring wells. Boring locations are presented in Figure 2 and summarized by the following:

- Soil boring B-1 was drilled near the historical location of UST-1. This boring was located near the reported northern limits of historical remediation efforts.
- Soil boring B-2 was drilled near the historical location of UST-3 near the reported southern limits of historical remedial efforts.
- Soil boring B-3 was drilled in the approximate location of the former fuel dispensers.
- Soil boring B-4 was drilled in an inferred upgradient location relative to the former fueling system (dispenser islands and USTs). This boring is reportedly located near the western limits of former remediation activities.
- Soil boring B-5 was drilled as a "step-out" boring northwest of boring B-1 after field screening indicated the likely presence of soil contamination in boring B-1.
- Soil boring B-6 was advanced near the historical location of USTs 4 and 5.
- Monitoring wells MW-1 and MW-2 were drilled and constructed downgradient from the historical fuel system near the eastern property boundary.
- Monitoring well MW-3 was constructed near the western property boundary in an inferred upgradient location relative to the former fueling system.

Soil cuttings and decontamination/development water were placed in 55-gallon steel drums, labeled, and stored behind the building.

Boring logs associated with the borings are provided in Appendix A.

4.2. Subsurface Conditions

Soil conditions generally were consistent within the nine soil borings described herein. Brown, fine to medium sand with silt was observed in borings B-1, B-2, B-3, B-5, MW-2 and MW-3 to depths of about 5 to 10 feet bgs. The sand was underlain by gravel with varying quantities of sand and silt to the completed depth of the borings at 15 to 23 feet. In borings B-4, B-6, and MW-1, gravel was observed from each recovered sample.

Groundwater was encountered during drilling operations in borings B-1, B-2, MW-1, MW-2 and MW-3, at depths that ranged from about 16 to 18 feet in depth. Groundwater was encountered under unconfined (water table) conditions.

4.3. Field Screening and Sampling

Soil samples from each boring were field-screened for the potential presence of petroleum contamination by visual examination, headspace vapor monitoring with a photoionization detector (PID), and water-sheen testing. Procedures for field-screening and sampling are provided in Appendix A. No sheens were observed on soil samples collected from borings B-1, B-4, B-5, B-6, MW-1 and MW-3. Slight sheens were observed from soil samples collected from borings B-2, B-3 and MW-2. No petroleum-stained soil was observed.

Headspace vapors were not detected while screening soil samples collected from borings B-4, B-6 and MW-3. Headspace vapor measurements for each soil sample are included with the boring logs in Appendix A. Headspace vapors were detected from the remaining borings as summarized below:

- Headspace vapor measurements were detected in samples from boring B-1 collected at 15 and 20 feet bgs with concentrations of 169 ppm and 253 ppm, respectively. Headspace vapors were not detected from shallower sample depths.
- Headspace vapor measurements were detected in boring B-2 from samples collected at 5, 15 and 20 feet bgs. Headspace vapor measurements from this boring did not exceed 10 ppm.
- Boring B-3 headspace vapors were detected from each sample at concentrations of 1,181 ppm at 5 feet bgs, 123 ppm at about 10 feet bgs, and less than 10 ppm at 15 feet bgs.
- Headspace vapors were detected in boring B-5 at about 15 feet bgs with a maximum concentration of 293 ppm. Headspace vapors were not detected at shallower depths.
- Monitoring well MW-1 headspace vapors were only detected from the sample obtained at about 15 feet bgs. Headspace vapors were detected at a concentration of 284 ppm.
- A single headspace vapor measurement of less than 5 ppm was detected from MW-2 at a depth of about 15 feet bgs).

Nine soil samples collected from the unsaturated zone (one sample from each of the nine borings) were submitted to TestAmerica for analysis using the methods described in **Section 3.0**; chemical analytical results are discussed in **Section 5.0**. Due to the coarse nature of the subsurface conditions, poor sample recovery was common throughout the drilling resulting in insufficient sample volume to run chemical analyses at some depths. The samples submitted for analysis

were selected based on sufficient sample volume, field screening evidence of contamination and proximity to the groundwater interface.

4.4. Monitoring Well Installation

Three monitoring wells, designated MW-1 through MW-3, were installed in the approximate locations presented in Figure 2. Well construction details for monitoring wells MW-1 through MW-3 are provided in Figures A-8 through A-10 of Appendix A, respectively. The monitoring wells were installed using air rotary drilling techniques and constructed of 2-inch-diameter, Schedule 40 polyvinyl chloride (PVC) casing and 0.010-inch slot Schedule 40 PVC well screen surrounded by a sand filter pack and bentonite seal. The installed well screens extend from depths of about 8 to 23 feet in each of the monitoring wells.

Monitoring wells MW-1 through MW-3 were completed with flush-mount surface monuments. Lockable compression caps were installed to seal the top of the PVC well casings. A concrete surface seal was constructed around each monument at the ground surface to divert surface water away from the well casings.

4.5. Groundwater Sampling

Following installation and development of monitoring wells MW-1 through MW-3, static depth to groundwater was measured on October 19, 2012 using an electronic water level indicator. Depths ranged from 17.52 feet (MW-3) to 17.57 feet (MW-1) below the top of well casing. GeoEngineers used surveying equipment to measure the relative elevation of the top of the PVC well casing. Top of casing elevation and groundwater elevation were measured relative to a site specific datum set at 100.00 feet. Relative groundwater elevations ranged between 80.29 feet at MW-1 to 80.36 feet at MW-2. Based on the relative groundwater elevations, groundwater flow direction was generally to the south.

Monitoring wells were purged and sampled on October 19, 2012 using standard low-flow sampling methodology. A peristaltic pump equipped with disposable tubing was used to purge and sample each well. Groundwater water quality parameters generally were measured at 3-minute intervals during well purging. Groundwater samples were collected when each water quality parameter had stabilized in conformance with the criteria presented in Appendix A. Groundwater samples were submitted to TestAmerica for analysis using the methods described in **Section 3.0**; chemical analytical results are discussed in **Section 5.0**.

Purge water generated during groundwater sampling was drummed, labeled and stored behind the building pending analytical results for profiling and disposal.

5.0 CHEMICAL ANALYTICAL RESULTS

5.1. Soil Chemical Analytical Results

Nine soil samples collected from the unsaturated zone (one sample from each of the nine borings) were submitted to TestAmerica for the chemical analyses described in **Section 3.0**. TestAmerica's laboratory report is included in Appendix B; chemical analytical results are summarized and compared to MTCA Method A cleanup levels for Unrestricted Land Use in Summary of Chemical

Analytical Results – Soil Samples, Table 1 and Summary of Chemical Analytical Results – PAHs in Soil Samples, Table 2. Chemical analytical results for the submitted soil samples are summarized by the following:

- GRPH were detected in soil samples collected from borings B-1, B-3, B-5, MW-1, and MW-2 at concentrations ranging between 198 milligrams per kilogram (mg/kg) and 4,200 mg/kg. The detected concentrations from these borings exceed the MTCA Method A cleanup level of 30 mg/kg (when benzene is present) and 100 mg/kg (when benzene is not present). GRPH were either not detected or detected at concentrations less than MTCA Method A cleanup levels in samples analyzed from the B-2, B-4, B-6 and MW-3.
- DRPH, ORPH, EDB, and lead were either not detected or detected at concentrations less than MTCA Method A cleanup levels in samples analyzed from each of the borings.
- Volatile organic compounds (VOCs) were detected in samples collected from borings B-1, B-3, B-5, MW-1 and MW-2 at concentrations exceeding MTCA Method A cleanup levels. Benzene exceeded cleanup levels only in MW-1; toluene was detected at a concentration greater than cleanup levels only from boring B-3; ethylbenzene exceeded cleanup levels in borings B-3 and B-5; and total xylenes exceeded cleanup levels in borings B-1, B-3, B-5, MW-1 and MW-2. BTEX was either not detected or detected at concentrations less than MTCA Method A cleanup levels from the remaining borings. MTBE, EDC and n-hexane were either not detected or detected at concentrations less than MTCA cleanup levels.
- Total naphthalenes (naphthalene, 1-methylnaphthalene and 2-methylnaphthalene) concentrations exceeded MTCA Method A cleanup levels in soil samples from borings B-1, B-5, MW-1 and MW-2. Other PAHs were either not detected or detected at concentrations less than MTCA Method A cleanup levels.

Additionally, samples from B-3 at 5 feet and from B-5 at 15 feet were analyzed for aliphatic and aromatic hydrocarbons. Aliphatic and aromatic hydrocarbon results are summarized in Table 1.

5.2. Groundwater Chemical Analytical Results

5.2.1. General

Groundwater samples were collected on October 19, 2012 from monitoring wells MW-1 through MW-3. Groundwater samples were submitted to TestAmerica for the chemical analyses described in **Section 3.0**. TestAmerica's laboratory report is included in Appendix B. Chemical analytical results are tabulated and compared to MTCA Method A cleanup levels in Summary of Chemical Analytical Results - Groundwater, Table 3 and Summary of Chemical Analytical Results – PAHs in Groundwater Samples, Table 4.

5.2.2. Contaminants of Concern

Groundwater analytical results for the project contaminants of concern are summarized by the following:

- GRPH were detected at a concentration of 3,740 micrograms per liter ($\mu\text{g/L}$) in the sample collected from MW-1 and at a concentration of 19,500 $\mu\text{g/L}$ in the sample collected from MW-2. These concentrations exceed the MTCA Method A cleanup level of 800 $\mu\text{g/L}$ (when

benzene is present). GRPH were not detected in samples collected from monitoring well MW-3.

- DRPH were detected from MW-1 and MW-2 at concentrations, 2.40 milligrams per liter (mg/L) and 2.32 mg/L respectively, greater than the MTCA Method A cleanup level (0.5 mg/L). DRPH and ORPH were not detected from MW-3 and ORPH were not detected from MW-1 and MW-2.
- Benzene was detected at a concentration of 178 µg/L in the sample collected from MW-1, which exceeds the MTCA Method A cleanup level of 5 µg/L. Benzene was either not detected or detected at concentrations less than the MTCA Method A cleanup levels in samples collected from the remaining monitoring wells. Toluene (2,400 µg/L), ethylbenzene (834 µg/L), and total xylenes (3,702 µg/L) exceeded their respective MTCA Method A cleanup levels. Toluene, ethylbenzene and total xylenes were either not detected or detected at concentrations less than MTCA Method A cleanup levels from MW-1 and MW-3.
- MTBE, EDC, hexane, EDB and lead were either not detected or detected at concentrations less than MTCA Method A cleanup levels.
- Total naphthalenes were detected in monitoring wells MW-1 and MW-2 at concentrations (178 µg/L and 256 µg/L) greater than MTCA Method A cleanup levels (160 µg/L). Additional PAHs were either not detected or detected at concentrations less than MTCA Method A cleanup levels.

6.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

6.1. Subsurface Conditions

Monitoring well installation activities were conducted September 26 and 27, 2012 at the former L&L Exxon site located at 1315 Lee Boulevard in Richland, Washington. Nine soil borings (B-1 through B-6 and MW-1 through MW-3) were advanced to depths between 15 and 23 feet. Three borings were completed as groundwater monitoring wells (MW-1 through MW-3).

Observed native soil conditions generally consisted of brown, fine sand with silt to between 5 to 10 feet bgs underlain by gravel. Groundwater was encountered during drilling at depths of about 16 to 18 feet.

Soil samples from each boring were field-screened for the potential presence of petroleum contamination by headspace vapor monitoring with a PID (among other methods). Field screening results indicated elevated PID measurements in borings B-1, B-3, B-5, and MW-1.

6.2. Chemical Analytical Results

Chemical analytical results are summarized by the following:

- GRPH were detected at concentrations greater than MTCA Method A cleanup levels in the soil samples collected from borings B-1, B-3, B-5, MW-1 and MW-2.
- BTEX compounds were detected at concentrations greater than MTCA Method A cleanup levels in the soil samples collected from borings B-1, B-3, B-5, MW-1 and MW-2 and from monitoring wells MW-1 and MW-2.

- Total naphthalenes were detected at concentrations greater than MTCA Method A cleanup levels in soil samples from borings B-1, B-5, MW-1 and MW-2 and in groundwater samples from monitoring wells MW-1 and MW-2.
- Laboratory results associated with the remaining contaminants of concern were either not detected or detected at concentrations less than respective MTCA Method A cleanup levels.

6.3. Contaminant Distribution

Contaminants were observed in the general area of the reported historical remediation activities. Based on the locations of chemical analytical results exceeding MTCA cleanup levels, subsurface soil contamination is concentrated in the northeast corner of the property. This area formerly contained three USTs and the fuel dispensers. Field screening and chemical analytical results did not indicate the presence of contamination in borings B-2 and B-4, bounding the potential extents of the contaminated area to the south and west, respectively. COC concentrations were greater than MTCA cleanup levels from the shallow soil sample (5 feet bgs) collected from boring B-3. According to the interviews conducted during the file review, this area was previously excavated to 12 feet bgs. Soil samples collected from borings B-1, B-5, MW-1 and MW-2 were collected at depths (15 to 16 feet bgs) near the groundwater interface.

6.4. MTCA Method B Calculations

Using the EPH and VPH analytical results obtained from borings B-3 and B-5, MTCA Method B cleanup levels were calculated using Ecology's MTCATPH spreadsheet version 11.1. Based on the analytical results from B-3, the calculated Method B cleanup level is 2,782 mg/kg. The Method B cleanup level is 3,359 mg/kg based on the analytical results from boring B-5. GRPH concentrations detected in borings B-3 and B-5 both exceeded the Method B cleanup level calculated from boring B-3 analytical results. Boring B-5 GRPH concentrations exceeded the Method B calculation based on boring B-3 analytical results. GRPH from the remaining borings were detected at concentrations less than either Method B calculation. MTCA Method B calculation summaries are included in Appendix C.

6.5. Recommendations

The observed petroleum contamination observed represents residual impact associated with former service station UST operation. As a result, we recommend that:

- Prepare a draft and final Interim Action Plan. The plan will detail the preferred remediation alternative.
- Continue the quarterly groundwater monitoring program currently planned for the site, including monitoring of natural attenuation parameters.

7.0 LIMITATIONS

We have prepared this report for the exclusive use of Ecology and their authorized agents.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this

report was prepared. The conclusions and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty or other conditions, express or implied, should be understood.

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Please refer to “Report Limitations and Guidelines for Use”, Appendix D for additional information pertaining to use of this report.

8.0 REFERENCES

GeoEngineers, Inc. 2012A. File Review.

GeoEngineers, Inc. 2012B. Sampling and Analysis Plan, Soil and Groundwater Assessment,

Table 1

Summary of Chemical Analytical Results - Soil Samples¹
Former L&L Exxon, 1315 Lee Boulevard
Richland, Washington

Sample Number	B-1	B-2	B-3	B-4	B-5	B-6	MW-1	MW-2	MW-3	MTCA Method A Cleanup Levels ²
Date Sampled	09/26/12	09/26/12	09/27/12	09/27/12	09/27/12	09/27/12	09/27/12	09/27/12	09/26/12	
Sample Depth (feet bgs)	15	5	5	5	16	15.5	15.5	15	6	
GRPH ³ (mg/kg)	573	<7.05	4,200	7.04	3,030	<19.4	198	812	<9.58	30/100
DRPH ⁴ (mg/kg)	66.5	<12.3	1,220	<10.7	113	<10.6	133	96.7	<12.6	2,000
ORPH ⁴ (mg/kg)	<38.0	<30.9	42.3	<26.8	<27.2	<26.4	<27.6	<25.6	<31.6	2,000
MTBE ⁵ (mg/kg)	<0.00602	<0.00846	<0.00674	<0.00544	<0.00552	<0.00760	<0.00568	<0.00497	<0.0115	0.1
Benzene ⁵ (mg/kg)	<0.00602	<0.00705	0.0146	<0.00453	0.0221	<0.00634	0.0303	<0.00414	<0.00958	0.03
Ethylbenzene ⁵ (mg/kg)	1.04	<0.141	22.3	<0.0906	45.4	<0.127	1.77	7.50	<0.192	6
Toluene ⁵ (mg/kg)	0.363	<0.141	10.4	<0.0906	5.01	<0.127	0.246	3.83	<0.192	7
Total Xylenes ⁵ (mg/kg)	14.2	<2.12	261	<1.39	289	<1.90	11.4	56.3	<0.383	9
1,2-Dichloroethane (EDC) ⁵ (mg/kg)	<0.100	<0.141	<0.112	<0.0906	<0.0920	<0.127	<0.0946	<0.0829	<2.87	NE
1,2-Dibromoethane (EDB) ⁶ (µg/kg)	<1.00	<1.18	<1.12	<1.04	<1.09	<1.06	<1.05	<1.01	<0.192	5
Hexane ⁵ (mg/kg)	0.115	<0.141	0.535	<0.0906	<0.0920	<0.127	0.510	0.197	<1.26	NE
C5-C6 Aliphatics (mg/kg)	-	-	1.6 (<74)	-	28 (<55)	-	-	-	-	NE
C6-C8 Aliphatics (mg/kg)	-	-	130 (81)	-	200 (160)	-	-	-	-	NE
C8-C10 Aliphatics (mg/kg)	-	-	630 (160)	-	490 (140)	-	-	-	-	NE
C10-C12 Aliphatics (mg/kg)	-	-	470 (320)	-	280 (190)	-	-	-	-	NE
C8-C10 Aromatics (mg/kg)	-	-	200 (480)	-	52 (270)	-	-	-	-	NE
C10-C12 Aromatics (mg/kg)	-	-	180 (570)	-	31 (240)	-	-	-	-	NE
C12-C13 Aromatics (mg/kg)	-	-	100 (180)	-	14 (64)	-	-	-	-	NE
Total VPH (mg/kg)	-	-	1,700 (1,800)	-	1,100 (1,100)	-	-	-	-	NE
C10-C12 Aliphatics (mg/kg)	-	-	160 (200)	-	55 (68)	-	-	-	-	NE
C12-C16 Aliphatics (mg/kg)	-	-	76 (100)	-	22 (31)	-	-	-	-	NE
C16-C21 Aliphatics (mg/kg)	-	-	13 (18)	-	<5.7	-	-	-	-	NE
C21-C34 Aliphatics (mg/kg)	-	-	7.2 (11)	-	<5.7	-	-	-	-	NE
C10-C12 Aromatics (mg/kg)	-	-	290 (350)	-	24 (26)	-	-	-	-	NE
C12-C16 Aromatics (mg/kg)	-	-	80 (110)	-	13 (16)	-	-	-	-	NE
C16-C21 Aromatics (mg/kg)	-	-	11 (16)	-	<5.7	-	-	-	-	NE
C21-C34 Aromatics (mg/kg)	-	-	7.4 (11)	-	<5.7	-	-	-	-	NE
Lead ⁹ (mg/kg)	3.03	6.63	12.80	4.99	1.80	<1.51	2.02	<1.57	6.47	250

Notes:

¹Samples analyzed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

²Washington State Model Toxics Control Act (MTCA) Method A Unrestricted Land Use cleanup levels. Bold font indicates analyte concentrations in excess of respective cleanup levels.

³Gasoline-range petroleum hydrocarbons (GRPH) analyzed using Northwest Method NWTPH-Gx. GRPH cleanup levels are 30 mg/kg when benzene is detected and 100 mg/kg when benzene is not detected.

⁴Diesel- and oil-range petroleum hydrocarbons (DRPH and ORPH, respectively) analyzed using Northwest Method NWTPH-Dx.

⁵Volatile organic compounds (VOCs) analyzed using Environmental Protection Agency (EPA) Method 8260C. Total Xylenes includes o-xylene and m,p-xylene.

⁶1,2-Dibromoethane (EDB) analyzed using EPA Method 8011.

⁷Volatile petroleum hydrocarbons (VPH) analyzed using Northwest Method NWTPH/VPH. Values in parentheses were analyzed out of hold-time.

⁸Extractable petroleum hydrocarbons (EPH) analyzed using Northwest Method NWTPH/EPH. Values in parentheses were analyzed out of hold-time.

⁹Total lead analyzed using EPA Method 6010C.

mg/kg = milligrams per kilogram; µg/kg = micrograms per kilogram; bgs = below ground surface; NE = Not Established; MTBE=methyl tertiary-butyl ether

Table 2

Summary of Chemical Analytical Results - PAHs in Soil Samples¹

Former L&L Exxon, 1315 Lee Boulevard
Richland, Washington

Sample Number		TEF	B-1	B-2	B-3	B-4	B-5	B-6	MW-1	MW-2	MW-3	MTCA Method A Cleanup Levels ²
Date Sampled			09/26/12	09/26/12	09/27/12	09/27/12	09/27/12	09/27/12	09/27/12	09/27/12	09/26/12	
Sample Depth (feet bgs)			15	5	5	5	16	15.5	15.5	15	6	
Carcinogenic PAHs ⁴	Benzo(a)anthracene	0.1	<0.0102	<0.0123	<0.0114	<0.0104	<0.0110	<0.0105	<0.107	<0.0102	<0.0128	NE
	Benzo(a)pyrene	1.0	<0.0102	<0.0123	<0.0114	<0.0104	<0.0110	<0.0105	<0.107	<0.0102	<0.0128	0.1
	Benzo(b)fluoranthene	0.1	<0.0102	<0.0123	<0.0114	<0.0104	<0.0110	<0.0105	<0.107	<0.0102	<0.0128	NE
	Benzo(k)fluoranthene	0.1	<0.0102	<0.0123	<0.0114	<0.0104	<0.0110	<0.0105	<0.107	<0.0102	<0.0128	NE
	Chrysene	0.01	<0.0102	<0.0123	<0.0114	<0.0104	<0.0110	<0.0105	<0.107	<0.0102	<0.0128	NE
	Dibenz(a,h)anthracene	0.1	<0.0061	<0.00737	<0.00686	<0.00625	<0.00659	<0.00629	<0.00645	<0.00612	<0.00755	NE
	Indeno(1,2,3-cd)pyrene	0.1	<0.0102	<0.0123	<0.0114	<0.0104	<0.0110	<0.0105	<0.107	<0.0102	<0.0128	NE
Carcinogenic PAH TEQ ²		--	0.0075	0.0090	0.0084	0.0076	0.0081	0.0077	0.0758	0.0075	0.0094	0.1
Non-carcinogenic PAHs ⁴	Acenaphthene	--	<0.0102	<0.0123	<0.0114	<0.0104	0.0176	<0.0105	<0.0107	<0.0102	<0.0128	NE
	Acenaphthylene	--	<0.0102	<0.0124	<0.0114	<0.0104	<0.0110	<0.0105	<0.0107	<0.0102	<0.0128	NE
	Anthracene	--	0.0163	<0.0125	<0.0114	<0.0104	0.0147	<0.0105	0.0186	<0.0102	<0.0128	NE
	Benzo(ghi)perylene	--	<0.0102	<0.0126	<0.0114	<0.0104	<0.0110	<0.0105	<0.0107	<0.0102	<0.0128	NE
	Fluoranthene	--	0.0115	<0.0127	<0.0114	<0.0104	<0.0110	<0.0105	<0.0107	<0.0102	<0.0128	NE
	Fluorene	--	0.0258	<0.0128	<0.0114	<0.0104	0.0220	<0.0105	<0.0107	0.0156	<0.0128	NE
	1-Methylnaphthalene	--	1.94	<0.0129	<0.0114	<0.0104	2.01	<0.0105	4.60	1.48	<0.0128	5 ⁵
	2-Methylnaphthalene	--	3.50	<0.0130	<0.0114	0.0153	3.85	<0.0105	8.92	2.74	<0.0128	
	Naphthalene	--	2.14	<0.0131	<0.0114	<0.0104	2.30	<0.0105	6.15	1.50	<0.0128	
	Phenanthrene	--	0.0420	<0.0132	<0.0114	<0.0104	0.0425	<0.0105	0.0501	0.0313	<0.0128	NE
Pyrene	--	0.0156	<0.0133	<0.0114	<0.0104	0.0117	<0.0105	0.0122	<0.0102	<0.0128	NE	

Notes:

¹Samples analyzed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

²Toxic equivalency (TEQ) calculated using the toxic equivalency factor (TEF) found in WAC 173-340-900 Table 708-2. Soil and groundwater carcinogenic PAHs were not detected, half the reporting limit was used to calculate the cPAH TEQ.

³Model Toxics Control Act (MTCA) Method A unrestricted land use cleanup level (CUL).

⁴Polycyclic aromatic hydrocarbons (PAHs) analyzed using EPA Method 8270C.

⁵Cleanup level for total naphthalenes (naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene).

Bolding indicates the analyte was detected at concentrations greater than MTCA Method A CULs.

mg/kg = milligrams per kilogram; µg/kg = micrograms per kilogram; NE = Not Established; ND = Not Detected.

Table 3**Summary of Chemical Analytical Results - Groundwater¹**

Former L&L Exxon, 1315 Lee Boulevard
 Richland, Washington

	Monitoring Well and Date Sampled			
	MW-1	MW-2	MW-3	Duplicate-1
	10/19/12	10/19/12	10/19/12	10/19/12
Depth to Groundwater³ (feet)	17.67	17.53	17.52	NA
Groundwater Elevation⁴ (feet)	80.29	80.36	80.31	NA
Petroleum-range Hydrocarbons				
Gasoline-range petroleum hydrocarbons ⁵ (µg/L)	3,740	19,500	<90.0	5,080
Diesel-range petroleum hydrocarbons ⁷ (mg/L)	2.40	2.32	<0.149	2.44
Oil-range petroleum hydrocarbons ⁷ (mg/L)	<0.299	<0.305	<0.298	<0.298
Method EPA 8260C (µg/l)				
Methyl tert-butyl ether	<0.500	<0.500	<0.500	<0.500
Benzene	178	0.990	<0.200	261
Toluene	100	2,400	<0.500	98
Ethylbenzene	16.5	834	<0.500	184
m,p-Xylene	334	2,720	<0.500	433
o-Xylene	139	982	<0.500	180
1,2-Dichloroethane (EDC)	<0.500	<0.500	<0.500	<0.500
Hexane	4.53	6.66	<1.00	4.36
Method EPA 8011 (µg/l)				
1,2-Dibromoethane (EDB)	<0.0100	<0.0100	<0.0100	<0.0100
Method EPA 6010C (mg/L)				
Lead	<0.0150	<0.0150	<0.0150	<0.0150

Notes:

¹Samples analyzed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

²Washington State Model Toxics Control Act Method A cleanup levels for groundwater.

³Groundwater elevation measured from the top of the PVC well casing using an electronic water level indicator.

⁴Groundwater elevations measured relative to a site specific datum set at an elevation of 100 feet.

⁵Gasoline-range petroleum hydrocarbons analyzed using Northwest Method NWTPH-Gx.

⁶Washington State Model Toxics Control Act (MTCA) Method A cleanup level for gasoline-range petroleum hydrocarbons is 1,000 µg/l, if benzene is not detected; otherwise the cleanup level is 800 µg/l.

⁷Diesel- and oil-range petroleum hydrocarbons analyzed using Northwest Method NWTPH-Dx.

⁸Cleanup level for total xylenes.

NE = not established; µg/l = micrograms per liter; mg/l = milligrams per liter

Table 4

Summary of Chemical Analytical Results - PAHs in Groundwater Samples¹

Former L&L Exxon, 1315 Lee Boulevard
Richland, Washington

		TEF ²	Groundwater Sample ID				Groundwater MTCA Method A CUL
			MW-1	MW-2	MW-3	Duplicate-1	
Carcinogenic PAHs ⁴ (µg/L)	Benzo(a)anthracene	0.1	<0.095	<0.019	<0.0095	<0.095	NE
	Benzo(a)pyrene	1.0	<0.190	<0.038	<0.019	<0.190	0.1
	Benzo(b)fluoranthene	0.1	<0.095	<0.019	<0.0095	<0.095	NE
	Benzo(k)fluoranthene	0.1	<0.095	<0.019	<0.0095	<0.095	NE
	Chrysene	0.01	<0.095	<0.019	<0.0095	<0.095	NE
	Dibenz(a,h)anthracene	0.1	<0.095	<0.019	<0.0095	<0.095	NE
	Indeno(1,2,3-cd)pyrene	0.1	<0.095	<0.019	<0.0095	<0.095	NE
Carcinogenic PAH TEQ ²		--	0.1192	0.0238	0.0119	0.1192	0.1
Non-carcinogenic PAHs ⁴ (µg/L)	Acenaphthene	--	0.19	0.11	<0.0095	0.18	NE
	Acenaphthylene	--	<0.095	0.048	<0.0095	<0.095	NE
	Anthracene	--	<0.095	0.021	<0.0095	<0.095	NE
	Benzo(ghi)perylene	--	<0.095	<0.019	<0.0095	<0.095	NE
	Fluoranthene	--	<0.095	<0.019	<0.0095	<0.095	NE
	Fluorene	--	0.20	0.062	<0.0095	0.18	NE
	1-Methylnaphthalene	--	30	37	<0.0095	31	160 ⁵
	2-Methylnaphthalene	--	38	49	<0.012	41	
	Naphthalene	--	110	170	0.16	120	
	Phenanthrene	--	0.13	0.087	<0.0095	0.14	NE
	Pyrene	--	<0.095	<0.019	<0.0095	<0.095	NE

Notes:

¹Samples analyzed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

²Toxic equivalency (TEQ) calculated using the toxic equivalency factor (TEF) found in WAC 173-340-900 Table 708-2. Groundwater carcinogenic PAHs were not detected, half the reporting limit was used to calculate the cPAH TEQ.

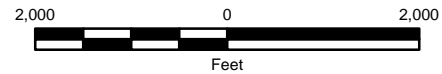
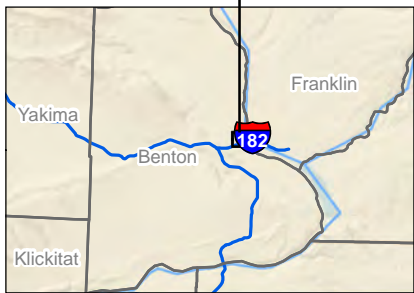
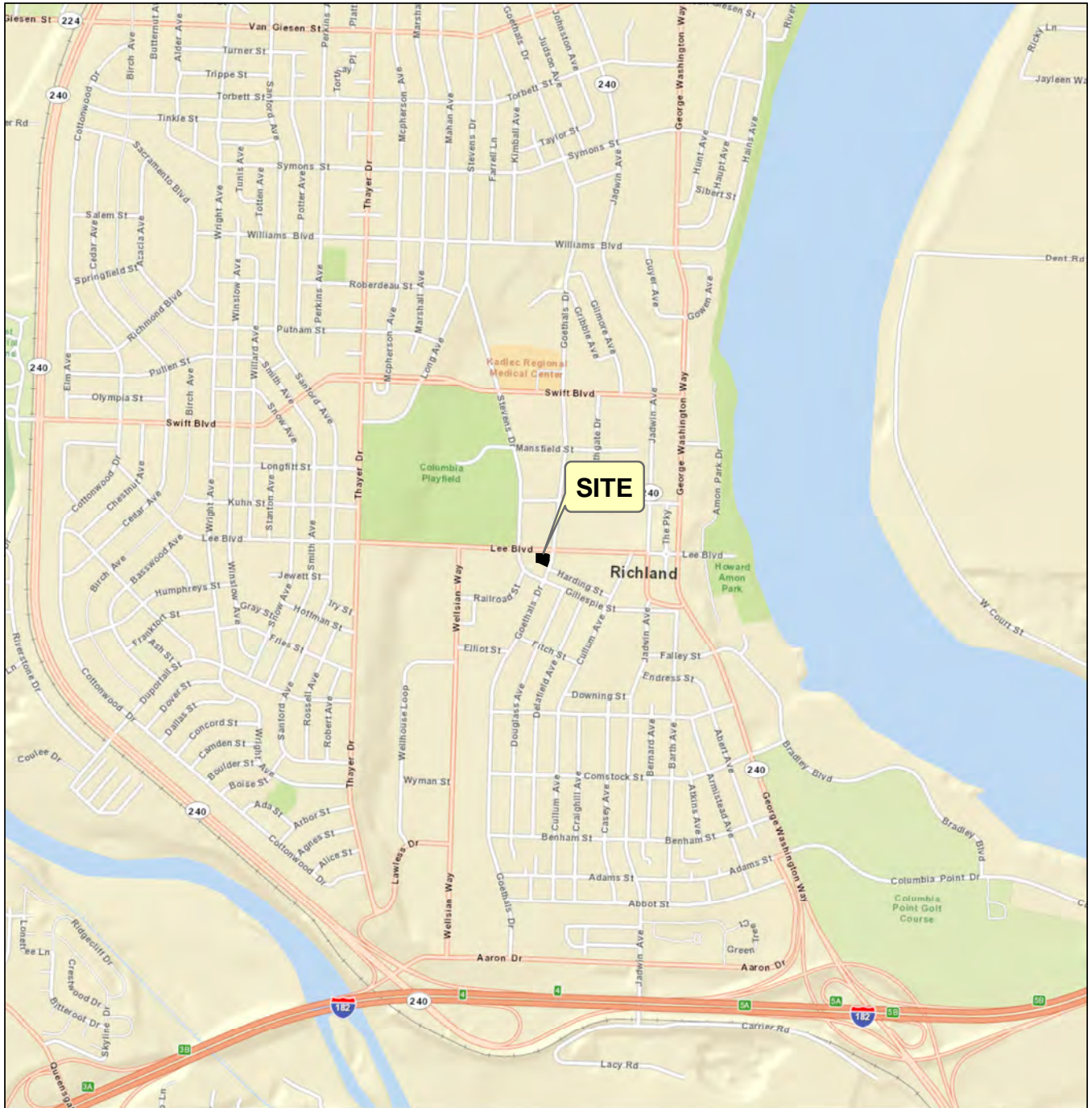
³Model Toxics Control Act (MTCA) Method A unrestricted land use cleanup level (CUL).

⁴Polycyclic aromatic hydrocarbons (PAHs) analyzed using EPA Method 8270C.


⁵Cleanup level for total naphthalenes (naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene).

Bolding indicates the analyte was detected at concentrations greater than MTCA Method A CULs.

mg/kg = milligrams per kilogram; µg/kg = micrograms per kilogram; NE = Not Established; ND = Not Detected.



Notes:
 1. The locations of all features shown are approximate.
 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
 GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
 Data Sources: ESRI Data & Maps, Street Maps 2008.
 Basemap streets base from ESRI Data Online.
 Projection: NAD 1983, UTM Zone 11 North.

Vicinity Map	
Former L&L Exxon 1315 Lee Boulevard Richland, Washington	
GEOENGINEERS 	Figure 1

Map Revised: 1/25/2013 CRC

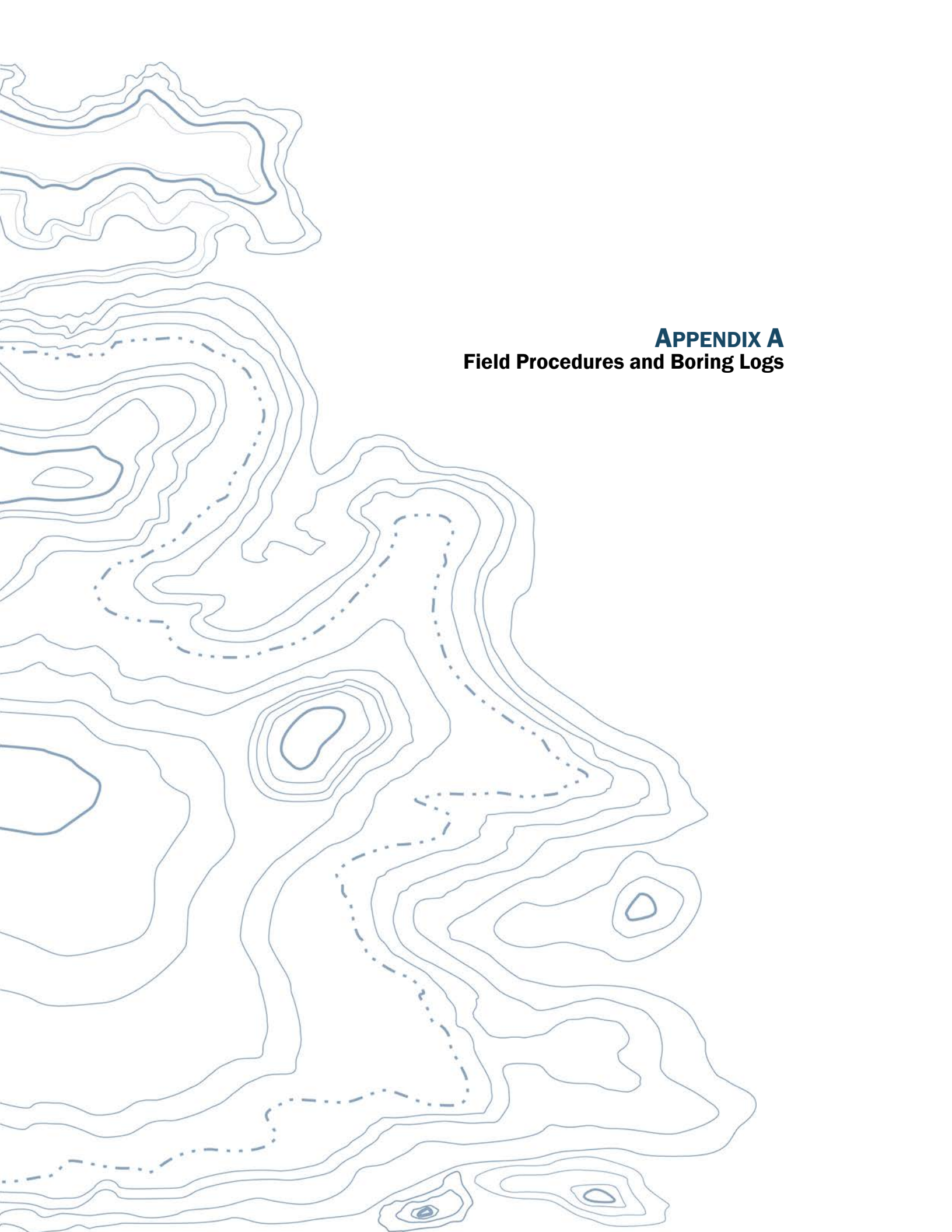
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	Soil Boring Approximate Location		Approximate Location of Transformer		Historical Fuel Dispenser and Approximate Location	
	Monitoring Well Number, Approximate Location and Relative Elevation		Historical Monitoring Well Number and Approximate Location		Approximate Groundwater Flow Direction	
	Approximate Location of Remediation System		UST Number and Approximate Location		Approximate Location of Excavation Area	

Notes:
 1. The locations of all features shown are approximate.
 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
 3. The existing wells on the site are considered to be in poor condition.
 Data Sources: ESRI Data & Maps, Street Maps 2008. Basemap streets base from ESRI Data Online.
 Projection: NAD 1983, UTM Zone 11 North.

Site Plan	
Former L&L Exxon 1315 Lee Boulevard Richland, Washington	
	Figure 2



APPENDIX A
Field Procedures and Boring Logs

APPENDIX A FIELD PROCEDURES AND BORING LOGS

General

Subsurface conditions at the L&L Exxon site were explored on September 26 and 27, 2012 by advancing nine borings (borings B-1 through B-6 and MW-1 through MW-3) at the approximate locations shown on Figure 2. The borings were advanced between 15 and 23 feet below existing site grade using an air rotary drill rig. Borings B-1 through B-6 were abandoned after reaching the full extent of each boring; borings were abandoned by placing bentonite chips in the boring. Borings MW-1 through MW-3 were completed as groundwater monitoring wells, as described in this appendix.

Field methods generally were performed in compliance with the project Sampling and Analysis Plan (SAP) dated May 16, 2012 (GeoEngineers, 2012B).

Soil Sample Collection

Where practicable, Environmental Protection Agency (EPA) 5035 sampling methods were used to collect the soil samples for gasoline-range petroleum hydrocarbon (GRPH), volatile organic compound (VOC) and fractionalized petroleum hydrocarbon analyses. For analysis of other parameters, soil was placed in laboratory-supplied sample bottles and filled to minimize headspace. Soil samples were stored in a chilled cooler until delivery to the analytical laboratory.

The air rotary drilling operations were monitored by staff from our firm who examined and classified the soil encountered, obtained soil samples, and maintained a continuous log of exploration. Soil encountered in the borings was classified in general accordance with ASTM International (ASTM) D 2488 and the classification chart listed in Key to Exploration Logs, Figure A-1. Logs of the borings are presented in Figures A-2 through A-10. The logs are based on interpretation of the field data and indicate the depth at which subsurface materials or their characteristics change, although these changes might actually be gradual.

Field Screening of Soil Samples

GeoEngineers' field representative performed field-screening tests on soil samples obtained from the borings. Field screening results were used as a general guideline to assess areas of possible petroleum-related contamination. The field screening methods used include: (1) visual screening; (2) water-sheen screening; and (3) headspace-vapor screening using a MiniRAE Photo Ionization Detector (PID) calibrated to isobutylene on the day of testing.

Visual screening consisted of observing soil for stains indicative of metal- or petroleum-related contamination. Water-sheen screening involved placing soil in a pan of water and observing the water surface for signs of sheen. Sheen screening may detect both volatile and nonvolatile petroleum hydrocarbons. Sheens observed are classified as follows:

No Sheen (NS)	No visible sheen on the water surface.
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly. Natural organic matter in the soil may produce a slight sheen.
Moderate Sheen (MS)	Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on the water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening involved placing a soil sample in a plastic sample bag. Air was captured in the bag, and the bag was shaken to expose the soil to the air trapped in the bag. Headspace vapor screening targeted volatile petroleum hydrocarbon compounds. In this application, the PID measured concentration of organic vapors ionizable by a 10.6 electron volt (ev) lamp in the range between 1.0 and 2,000 parts per million (ppm), with a resolution of +/- 2 ppm.

Field screening results can be site specific. The effectiveness of field screening can vary with temperature, moisture content, organic content, soil type and type and age of contaminant. The presence or absence of a sheen or headspace vapors does not necessarily indicate the presence or absence of contaminants.

Monitoring Well Construction and Development

Monitoring wells MW-1 through MW-3 were constructed using approximate 2-inch-diameter Schedule 40 PVC pipe and well screen material with a 0.010-inch slot size. Processed 10-20 Colorado silica sand was used as filter pack. Bentonite chips were used as impermeable backfill. At the ground surface, the wells were protected by steel flush-mount monuments. Well construction details for monitoring wells MW-1 through MW-3 are presented graphically in Figures A-8 through A-10, respectively.

After installation, monitoring wells were developed by a combination of pumping and surging until purge water was relatively clear and free of suspended sediment.

Groundwater Elevations

Depths to groundwater were measured relative to the monitoring well casing rim using an electric water level indicator. The probe of the water level indicator was decontaminated between wells using a detergent wash, followed by two distilled water rinses.

Low-Flow Sampling Procedures

Groundwater sampling was performed consistent with the EPA's low-flow groundwater sampling procedure, as described by EPA (1996) and Puls and Barcelona (1996). Monitoring well purging and sampling activities were accomplished using a peristaltic pump with disposable tubing. During purging activities, water quality parameters, including pH, conductivity, temperature, turbidity, oxidation-reduction potential and dissolved oxygen, were measured using an In-Situ Troll 9500 multi-parameter meter equipped with a flow-through cell; measurements were recorded approximately every three minutes. The meter calibration was verified at the beginning of each work day consistent with manufacturer recommendations prior to purging and sampling activities.

Groundwater samples were collected after (1) water quality parameters had stabilized; or (2) a maximum purge time of 60 minutes was achieved. During purging and sampling, purge rate was not allowed to exceed 500 milliliters per minute. Water quality parameter stabilization criteria include the following:

- Turbidity: ± 10 percent or ± 10 nephelometric turbidity units (NTU);
- Dissolved oxygen: ± 10 percent;
- Conductivity: ± 3 percent;
- pH: ± 0.1 unit;
- Temperature: ± 3 percent; and
- Oxidation reduction potential: ± 10 percent or ± 10 millivolts (mV).

After groundwater quality stabilization criteria were reached, the pump's discharge tubing was disconnected from the flow-through cell and groundwater samples were collected for analysis.

Each sample was pumped directly into sample containers supplied by the laboratory. Groundwater samples collected for chemical analysis were kept cool during on-site storage and transport to the laboratory. Chain-of-custody procedures were observed during transport of the groundwater samples.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS	
			GRAPH	LETTER		
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS <small>(LITTLE OR NO FINES)</small>		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES	
		GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES	
	SAND AND SANDY SOILS	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN SANDS <small>(LITTLE OR NO FINES)</small>		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
			SANDS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
		MORE THAN 50% RETAINED ON NO. 200 SIEVE	CLEAN SANDS <small>(LITTLE OR NO FINES)</small>		SW	WELL-GRADED SANDS, GRAVELLY SANDS
			SANDS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		SP	POORLY-GRADED SANDS, GRAVELLY SAND
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY	
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS	
				CH	INORGANIC CLAYS OF HIGH PLASTICITY	
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY	
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

Sampler Symbol Descriptions

	2.4-inch I.D. split barrel
	Standard Penetration Test (SPT)
	Shelby tube
	Piston
	Direct-Push
	Bulk or grab

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

<p>%F Percent fines</p> <p>AL Atterberg limits</p> <p>CA Chemical analysis</p> <p>CP Laboratory compaction test</p> <p>CS Consolidation test</p> <p>DS Direct shear</p> <p>HA Hydrometer analysis</p> <p>MC Moisture content</p> <p>MD Moisture content and dry density</p> <p>OC Organic content</p> <p>PM Permeability or hydraulic conductivity</p> <p>PP Pocket penetrometer</p> <p>PPM Parts per million</p> <p>SA Sieve analysis</p> <p>TX Triaxial compression</p> <p>UC Unconfined compression</p> <p>VS Vane shear</p>	<p>Laboratory / Field Tests</p>
--	--

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS		TYPICAL DESCRIPTIONS
GRAPH	LETTER	
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/Quarry Spalls
	TS	Topsoil/Forest Duff/Sod

Groundwater Contact



Measured groundwater level in exploration, well, or piezometer



Groundwater observed at time of exploration



Perched water observed at time of exploration



Measured free product in well or piezometer

Graphic Log Contact



Distinct contact between soil strata or geologic units



Approximate location of soil strata change within a geologic soil unit

Material Description Contact



Distinct contact between soil strata or geologic units



Approximate location of soil strata change within a geologic soil unit

KEY TO EXPLORATION LOGS

Drilled	Start 9/26/2012	End 9/26/2012	Total Depth (ft)	20.8	Logged By Checked By	KAH SHL	Driller	Environmental West	Drilling Method	Air Rotary	
Surface Elevation (ft) Vertical Datum			Undetermined		Hammer Data		Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment		Mobile B-90
Easting (X) Northing (Y)			System Datum		Groundwater		Date Measured		Depth to Water (ft)		Elevation (ft)
Notes:					9/26/2012		18.0				

Elevation (feet)	FIELD DATA					Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing								
0						XXXX	AS SP	Approximately 2½-inch-thick asphalt parking lot Brown fine to medium sand with occasional gravel (medium dense, moist)				
5	1	23		1					NS	<10		
10	9	38		2			GP	Gray pea gravel (dense, moist)	NS	<10		
15	3	75/2"		3 CA			GW	Gray fine to coarse gravel with trace silt and sand (very dense, moist)	NS	169		
20	6	50/4"		4			GW-GM	Gray fine to coarse gravel with silt and sand (very dense, wet)	NS	253		

Notes: Please refer to Figure A-1 for an explanation of symbols.

Log of Boring B-1



Project: Former L&L Exxon, 1315 Lee Boulevard
 Project Location: Richland, Washington
 Project Number: 0504-081-00

Figure A-2
 Sheet 1 of 1

Drilled	Start 9/26/2012	End 9/26/2012	Total Depth (ft)	21.5	Logged By Checked By	KAH SHL	Driller	Environmental West	Drilling Method	Air Rotary	
Surface Elevation (ft) Vertical Datum			Undetermined		Hammer Data		Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment		Mobile B-90
Easting (X) Northing (Y)			System Datum		Groundwater		Date Measured		Depth to Water (ft)		Elevation (ft)
Notes:					9/26/2012		16.0				

Elevation (feet)	FIELD DATA					Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	Interval Depth (feet)	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing							
0								AS SM	Approximately 2½-inch-thick asphalt parking lot Brown silty fine sand (medium dense, moist)			
5	18	13		1 CA						SS SS	<10 <10	
10	6	50/4"		2				GW	Brown fine to coarse gravel with trace silt and sand (very dense, moist)	NS	<10	
15	3	50/5"		3				GP	Gray coarse gravel (very dense, moist)	NS	<10	
20	12	98		4				GP-GM	Gray fine gravel with silt and sand (very dense, wet)	NS	<10	

Notes: Please refer to Figure A-1 for an explanation of symbols.

Log of Boring B-2



Project: Former L&L Exxon, 1315 Lee Boulevard
 Project Location: Richland, Washington
 Project Number: 0504-081-00

Figure A-3
 Sheet 1 of 1

Drilled	Start 9/27/2012	End 9/27/2012	Total Depth (ft)	16	Logged By Checked By	KAH SHL	Driller	Environmental West	Drilling Method	Air Rotary	
Surface Elevation (ft) Vertical Datum			Undetermined		Hammer Data		Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment		Mobile B-90
Easting (X) Northing (Y)			System Datum		Groundwater Date Measured		Depth to Water (ft)		Elevation (ft)		Not Encountered
Notes:											

Elevation (feet)	FIELD DATA						MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level Graphic Log				
0						AS SP-SM	Approximately 2½-inch-thick asphalt parking lot Brown fine to medium sand with silt and gravel (loose, moist)			
5		12	6		1 CA			SS	1181	
10		10	50/5"		2	GW	Gray fine to coarse gravel with trace silt and sand (very dense, moist)	SS	123	
15		3	50/5"		3			NS	<10	

Notes: Please refer to Figure A-1 for an explanation of symbols.

Log of Boring B-3



Project: Former L&L Exxon, 1315 Lee Boulevard
 Project Location: Richland, Washington
 Project Number: 0504-081-00

Figure A-4
Sheet 1 of 1

Drilled	Start 9/27/2012	End 9/27/2012	Total Depth (ft)	15.5	Logged By Checked By	KAH SHL	Driller	Environmental West	Drilling Method	Air Rotary	
Surface Elevation (ft) Vertical Datum			Undetermined		Hammer Data		Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment		Mobile B-90
Easting (X) Northing (Y)			System Datum		Groundwater Date Measured		Depth to Water (ft)		Elevation (ft)		Not Encountered
Notes:											

Elevation (feet)	FIELD DATA						MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level Graphic Log				
0						AS GW-GM	Approximately 2½-inch-thick asphalt parking lot Gray fine to coarse gravel with silt and sand (very dense, moist)			
5		6	91		1 CA			NS	<10	
10		12	50/5"		2			NS	<10	
15		5	50/5"		3			NS	<10	

Notes: Please refer to Figure A-1 for an explanation of symbols.

Log of Boring B-4



Project: Former L&L Exxon, 1315 Lee Boulevard
 Project Location: Richland, Washington
 Project Number: 0504-081-00

Figure A-5
 Sheet 1 of 1

Spokane: Date: 12/4/13 Path: P:\0504-081\00\GINT\050408100.GPJ DBT\template\lib\template\GEOENGINEERS.GDT\GEB_ENVIRONMENTAL_STANDARD

Drilled	Start 9/27/2012	End 9/27/2012	Total Depth (ft)	16	Logged By Checked By	KAH SHL	Driller	Environmental West	Drilling Method	Air Rotary	
Surface Elevation (ft) Vertical Datum			Undetermined		Hammer Data		Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment		Mobile B-90
Easting (X) Northing (Y)			System Datum		Groundwater Date Measured		Depth to Water (ft)		Elevation (ft)		Not Encountered
Notes:											

Elevation (feet)	FIELD DATA						MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level Graphic Log				
0						AS SP-SM	Approximately 2½-inch-thick asphalt parking lot Brown fine sand with silt (loose, moist)			
5		16	4					NS	<10	
10		6	50/5"			GW	Gray fine to coarse gravel with trace silt and sand (very dense, moist)	NS	<10	
15		12	60/6"			GW GW-GM	Gray fine to coarse gravel (very dense, moist) Gray fine to coarse gravel with silt and sand (very dense, moist)	NS NS	17.7 298	

Notes: Please refer to Figure A-1 for an explanation of symbols.

Log of Boring B-5



Project: Former L&L Exxon, 1315 Lee Boulevard
 Project Location: Richland, Washington
 Project Number: 0504-081-00

Figure A-6
Sheet 1 of 1

Drilled	Start 9/27/2012	End 9/27/2012	Total Depth (ft)	16	Logged By Checked By	KAH SHL	Driller	Environmental West	Drilling Method	Air Rotary	
Surface Elevation (ft) Vertical Datum			Undetermined		Hammer Data		Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment		Mobile B-90
Easting (X) Northing (Y)			System Datum		Groundwater Date Measured		Depth to Water (ft)		Elevation (ft)		Not Encountered
Notes:											

Elevation (feet)	FIELD DATA						MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level Graphic Log				
0						AS GW-GM	Approximately 2½-inch-thick asphalt parking lot Brown fine to coarse gravel with silt and sand (very dense, moist)			
5		4	50/3"	1				NS	<10	
10		5	50/5"	2		GW	Gray fine to coarse gravel with trace sand and silt (very dense, moist)	NS	<10	
15		10	50/5"	3 CA		GW	Gray fine to coarse gravel with trace silt and sand (very dense, moist)	NS	<10	

Notes: Please refer to Figure A-1 for an explanation of symbols.

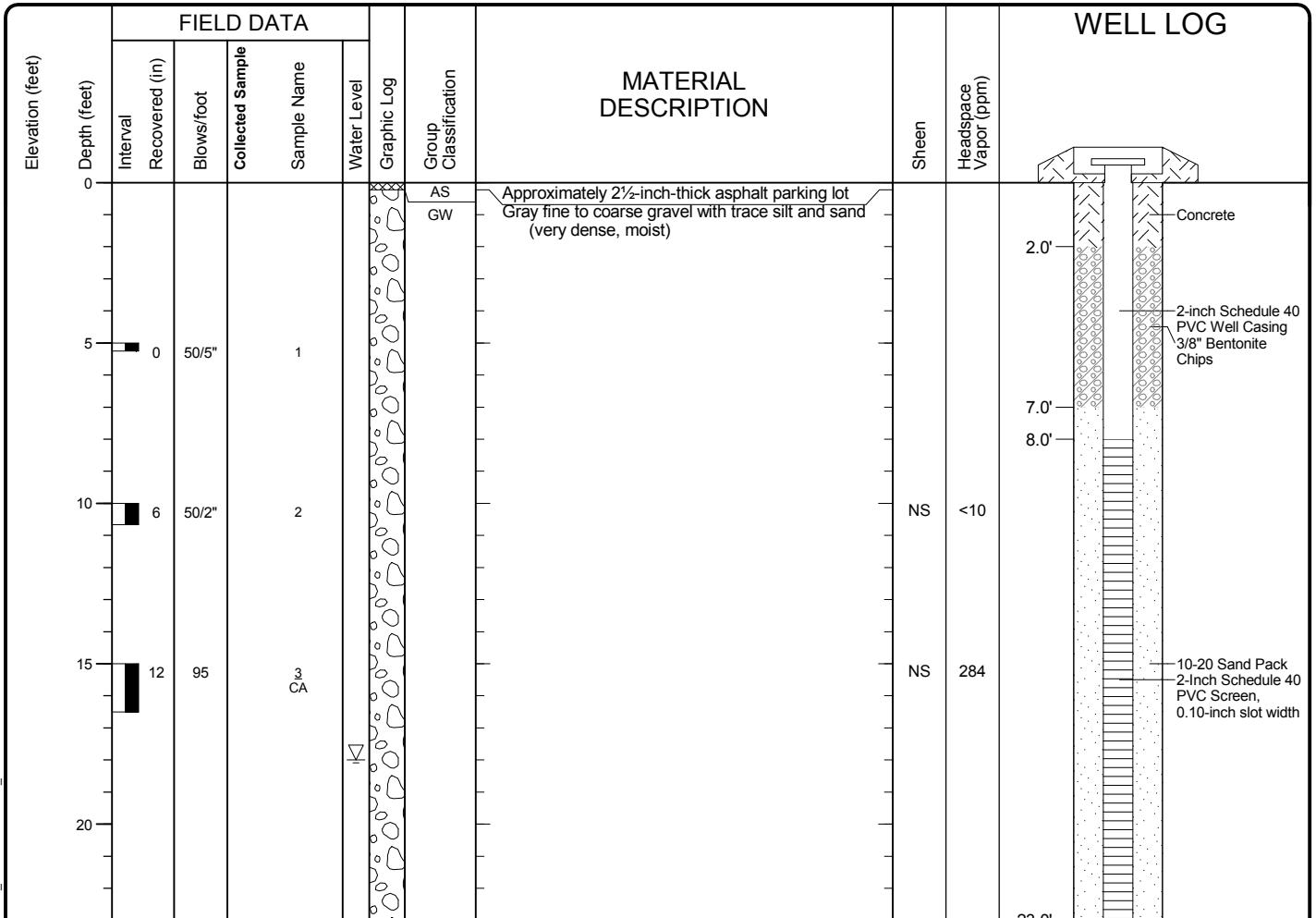
Log of Boring B-6



Project: Former L&L Exxon, 1315 Lee Boulevard
 Project Location: Richland, Washington
 Project Number: 0504-081-00

Figure A-7
 Sheet 1 of 1

Drilled	Start 9/27/2012	End 9/27/2012	Total Depth (ft)	23	Logged By Checked By	KAH SHL	Driller	Environmental West	Drilling Method	Air Rotary
Hammer Data	Autohammer 140 (lbs) / 30 (in) Drop				Drilling Equipment	Mobile B-90		A 2 (in) well was installed on 9/27/2012 to a depth of 23 (ft).		
Surface Elevation (ft) Vertical Datum	Undetermined				Top of Casing Elevation (ft)			Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
Easting (X) Northing (Y)					Horizontal Datum			9/27/2012	18.0	
Notes:										



Notes: Please refer to Figure A-1 for an explanation of symbols.

Log of Monitoring Well MW-1

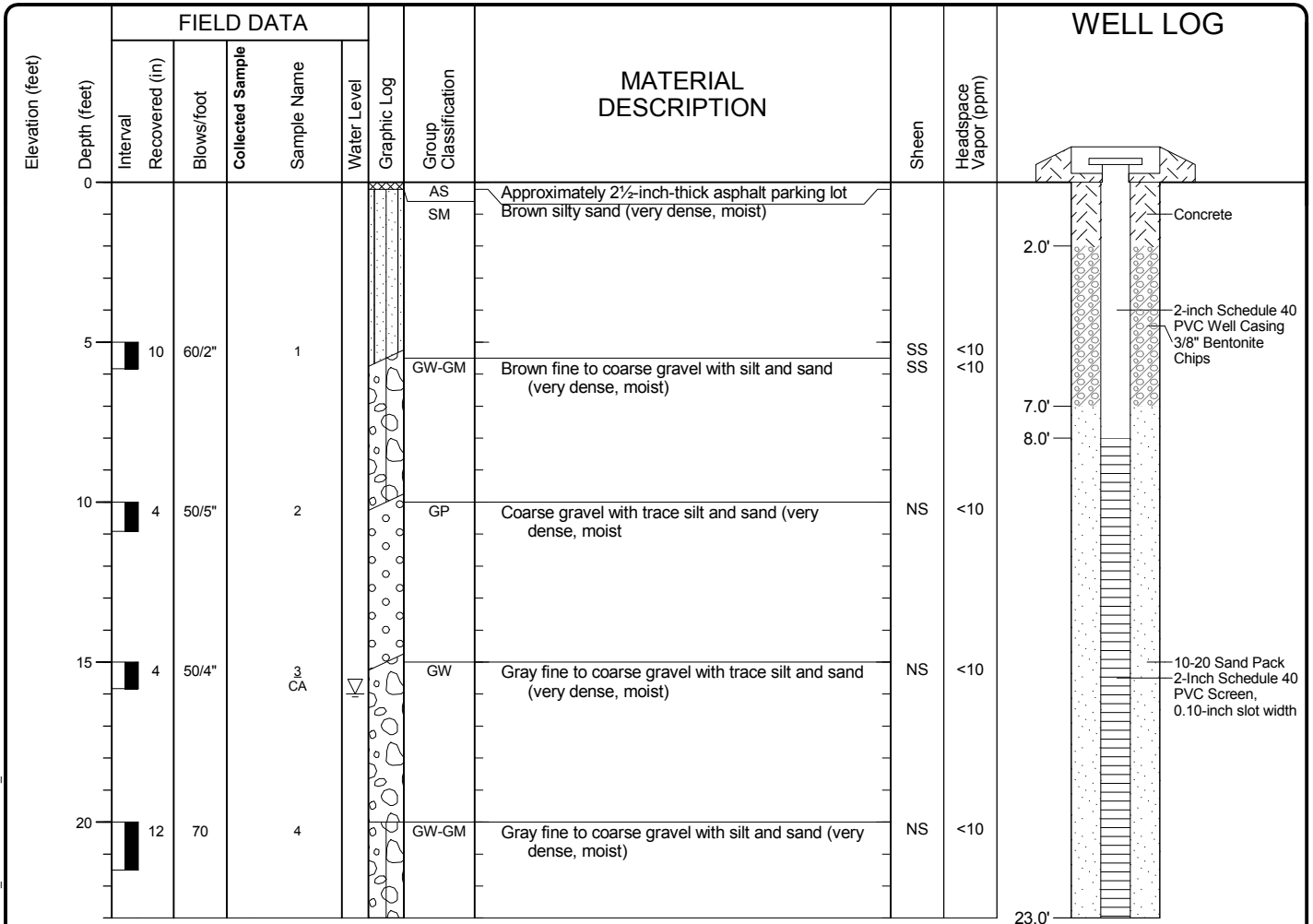


Project: Former L&L Exxon, 1315 Lee Boulevard
 Project Location: Richland, Washington
 Project Number: 0504-081-00

Figure A-8
 Sheet 1 of 1

Spokane: Date: 1/24/13 Path: P:\0504-081\00\GINT\050408100.GPJ DBT\template\lib\template\GEOENGINEERS.GDT\GEB_ENVIRONMENTAL_WELL

Drilled	Start 9/26/2012	End 9/26/2012	Total Depth (ft)	23	Logged By Checked By	KAH SHL	Driller	Environmental West	Drilling Method	Air Rotary
Hammer Data	Autohammer 140 (lbs) / 30 (in) Drop				Drilling Equipment	Mobile B-90		A 2 (in) well was installed on 9/26/2012 to a depth of 23 (ft).		
Surface Elevation (ft) Vertical Datum	Undetermined				Top of Casing Elevation (ft)			Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
Easting (X) Northing (Y)					Horizontal Datum			9/26/2012	16.0	
Notes:										



Notes: Please refer to Figure A-1 for an explanation of symbols.

Log of Monitoring Well MW-2

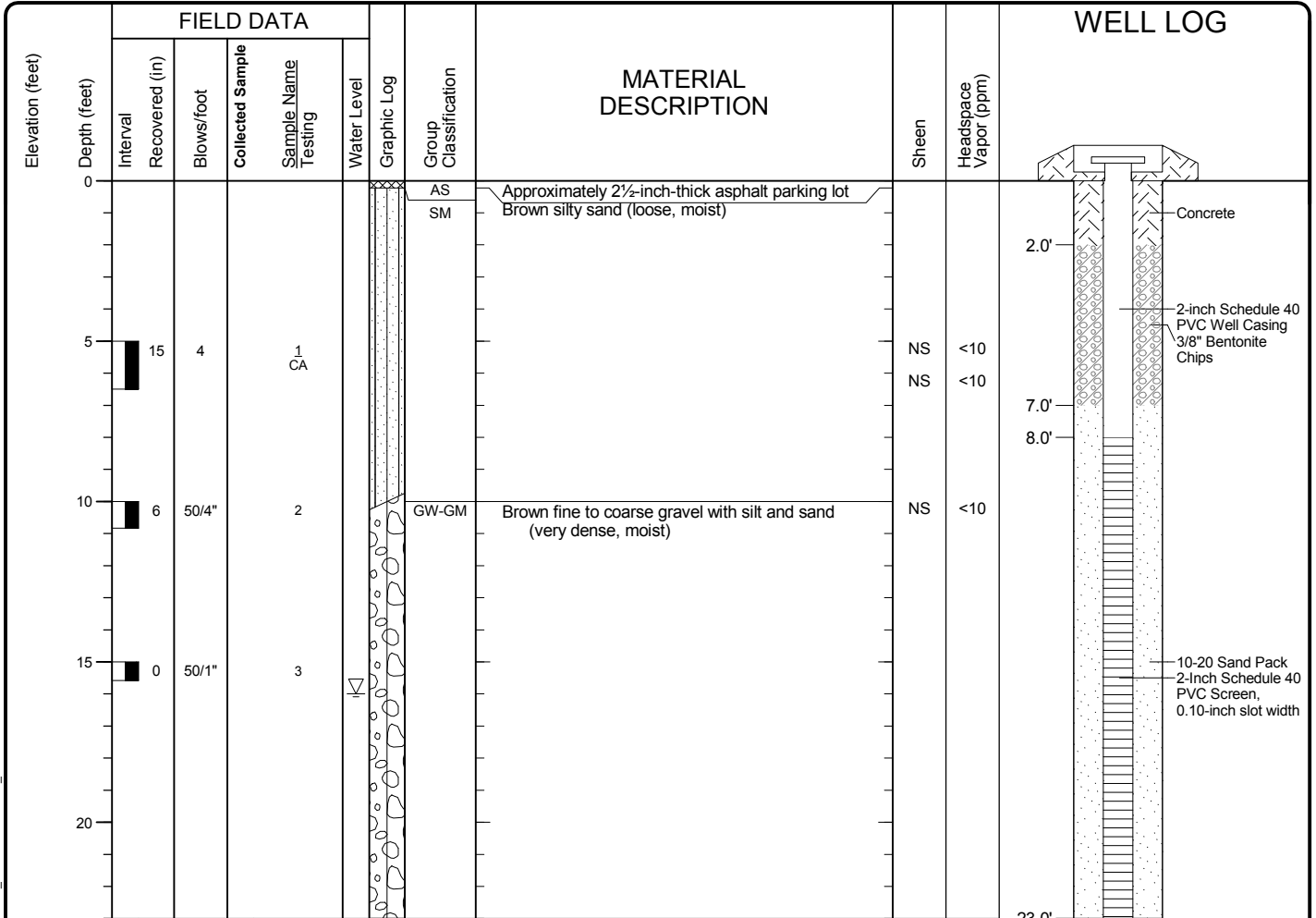


Project: Former L&L Exxon, 1315 Lee Boulevard
 Project Location: Richland, Washington
 Project Number: 0504-081-00

Figure A-9
 Sheet 1 of 1

Spokane: Date: 1/24/13 Path: P:\0504-081\00\GINT\050408100.GPJ DBT\template\lib\template\GEOENGINEERS.GDT\GEB_ENVIRONMENTAL_WELL

Drilled	Start 9/26/2012	End 9/26/2012	Total Depth (ft)	23	Logged By Checked By	KAH SHL	Driller	Environmental West	Drilling Method	Air Rotary
Hammer Data	Autohammer 140 (lbs) / 30 (in) Drop				Drilling Equipment	Mobile B-90		A 2 (in) well was installed on 9/26/2012 to a depth of 23 (ft).		
Surface Elevation (ft) Vertical Datum	Undetermined				Top of Casing Elevation (ft)			<u>Groundwater</u>	Depth to Water (ft)	Elevation (ft)
Easting (X) Northing (Y)					Horizontal Datum			Date Measured	9/26/2012	16.0
Notes:										



Notes: Please refer to Figure A-1 for an explanation of symbols.

Log of Monitoring Well MW-3



Project: Former L&L Exxon, 1315 Lee Boulevard
 Project Location: Richland, Washington
 Project Number: 0504-081-00

Figure A-10
 Sheet 1 of 1

Spokane: Date: 1/24/13 Path: P:\0504081\00\GINT\050408100.GPJ DBT\template\lib\template\GEOENGINEERS.GDT\GEB_ENVIRONMENTAL_WELL



APPENDIX B
Chemical Analytical Laboratory Reports

APPENDIX B CHEMICAL ANALYTICAL LABORATORY REPORTS

Samples

Chain-of-custody procedures were followed during the transport of the field samples to TestAmerica Laboratories, Inc. located in Spokane Valley, Washington. The samples were held in cold storage pending extraction and/or analysis. The analytical results and quality control records are included in this appendix.

Analytical Data Review

The laboratory maintains an internal quality assurance/quality control (QA/QC) program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike (MS) recoveries, matrix spike duplicate (MSD) recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted the following exceptions in their laboratory report associated with project soil samples, dated January 2, 2013.

- EPH: the results exceeded the calibration range. The samples were re-extracted out of hold-time and re-analyzed. Both the data exceeding the calibration range and the data extracted out of hold-time were reported by the laboratory. The original data exceeding the calibration range was used to conduct the Method B calculations.
- VPH: the samples were initially run within the holding time but had to be re-analyzed outside of the holding time due to needed dilutions. Both the initial sample results and the sample results obtained outside of holding times were reported by the laboratory.

The laboratory did not note any exceptions in their laboratory report associated with project groundwater samples, dated November 6, 2012.

Analytical Data Review Summary

We reviewed the laboratory internal quality assurance/quality control (QA/QC) in the context of data quality goals. Based on our review, in our opinion, the quality of the analytical data is acceptable for the intended use.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Spokane
11922 East 1st. Avenue
Spokane, WA 99206
Tel: (509)924-9200

TestAmerica Job ID: SVJ0004
Client Project/Site: 0504-081-00
Client Project Description: L&L Exxon

For:
Geo Engineers - Spokane
523 East Second Ave.
Spokane, WA 99202

Attn: Scott Lathem



Authorized for release by:
1/2/2013 10:36:12 AM

Randee Decker
Project Manager
Randee.Decker@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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

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

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Case Narrative

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Job ID: SVJ0004

Laboratory: TestAmerica Seattle

Narrative

Comments

No additional comments.

Receipt

The samples were received on 10/2/2012 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

Except:

It is noted on the Chain-of-Custody (COC) that no MeOH containers were provided for sample SVJ0004-14 (580-35243-2). The sample has been logged in for VPH with the _M extraction method per client request.

The container labels for the following samples SVJ0004-07 (580-35243-1), SVJ0004-14 (580-35243-2) did not match the information listed on the Chain-of-Custody (COC). The container labels list a date of 9/26/12. The Chain-of-Custody (COC) lists a date of 9/27/12. The samples were logged in per the Chain-of-Custody (COC).

Additional labels (Spokane labels) were added to the pre-tared methanol VOA containers for this sample. The sample has been logged in for analysis.

GC/MS VOA - Method NWTPH/VPH

Due to the high concentration of C6-C8 Aliphatics, C8-C10 Aliphatics, C10-C12 Aliphatics, and C10-C12 Aromatics, the matrix spike / matrix spike duplicate (MS/MSD) for analysis batch 122447 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Surrogate recovery for the following samples (580-35243-1MS), (580-35243-1MSD), SVJ0004-07 (580-35243-1), SVJ0004-14 (580-35243-2) was outside control limits. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The following sample SVJ0004-14 (580-35243-2) was prepared outside of preparation holding time because it was not received by the lab until 10/2/2012. Sampling date was 9/27/2012.

The following samples (580-35243-1MS), (580-35243-1MSD), SVJ0004-07 (580-35243-1), SVJ0004-14 (580-35243-2) required a dilution which was performed outside of the analytical holding time.

Reanalysis of the following samples (580-35243-1MS), (580-35243-1MSD), SVJ0004-07 (580-35243-1), SVJ0004-14 (580-35243-2) was performed outside of the analytical holding time. Per client request, the out of hold data will be reported as primary.

Internal standard responses were outside of acceptance limits for the following samples (580-35243-1MS), (580-35243-1MSD), SVJ0004-14 (580-35243-2). The samples show evidence of matrix interference.

No other analytical or quality issues were noted.

GC Semi VOA - Method NWTPH/EPH

In analysis batch 122487, the laboratory control sample (LCS) and the laboratory control sample duplicate (LCSD) for preparation batch 122001 exceeded control limits for the following analytes: C8-C10, C10-C12, 12-16 Aliphatics, C10-C12 and C16-C21 Aromatics.

In addition, the RPD for C8-C10 and C10-12 Aliphatics did not meet acceptance criteria, most likely due to human error at the bench/spiking event level.

All affected samples from this preparation batch have been re-extracted out of hold, with both sets of data reported, per client request.

No other analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Case Narrative

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Job ID: SVJ0004 (Continued)

Laboratory: TestAmerica Seattle (Continued)

Organic Prep - Method 3550B

Reanalysis of the following samples SVJ0004-07 (580-35243-1), SVJ0004-14 (580-35243-2) was performed outside of the analytical holding time. The samples were re-extracted out of hold due to failing QC samples.

No other analytical or quality issues were noted.

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Sample Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
SVJ0004-02	B-1(15)	Soil	09/26/12 11:24	09/28/12 16:30
SVJ0004-04	B-2(5)	Soil	09/26/12 12:38	09/28/12 16:30
SVJ0004-07	B-3(5)	Soil	09/27/12 10:42	09/28/12 16:30
SVJ0004-10	B-4(5)	Soil	09/27/12 12:03	09/28/12 16:30
SVJ0004-14	B-5(16)	Soil	09/27/12 13:52	09/28/12 16:30
SVJ0004-17	B-6(15.5)	Soil	09/27/12 15:36	09/28/12 16:30
SVJ0004-19	MW-1(15.5)	Soil	09/27/12 09:24	09/28/12 16:30
SVJ0004-21	MW-2(15)	Soil	09/26/12 15:11	09/28/12 16:30
SVJ0004-22	MW-3(6)	Soil	09/26/12 17:10	09/28/12 16:30



Definitions/Glossary

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Qualifiers

GCMS Volatiles

Qualifier	Qualifier Description
ZX	Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

Semivolatiles

Qualifier	Qualifier Description
M4	The sample required a dilution due to matrix interference. Because of this dilution, the matrix spike concentrations in the sample were reduced to a level where the recovery calculation does not provide useful information. See Blank Spike (LCS).
R1	The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the higher value was reported.

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
E	Result exceeded calibration range.
H	Sample was prepped or analyzed beyond the specified holding time
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
F	MS or MSD exceeds the control limits

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits
*	RPD of the LCS and LCSD exceeds the control limits
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-1(15)

Lab Sample ID: SVJ0004-02

Date Collected: 09/26/12 11:24

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 97.1

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	573		5.02		mg/kg dry	☼	10/01/12 13:13	10/01/12 18:49	1.00
Methyl tert-butyl ether	ND		0.00602		mg/kg dry	☼	10/01/12 13:13	10/01/12 18:49	1.00
Benzene	ND		0.00502		mg/kg dry	☼	10/01/12 13:13	10/01/12 18:49	1.00
Ethylbenzene	1.04		0.100		mg/kg dry	☼	10/01/12 13:13	10/01/12 18:49	1.00
Toluene	0.363		0.100		mg/kg dry	☼	10/01/12 13:13	10/01/12 18:49	1.00
o-Xylene	4.80		0.201		mg/kg dry	☼	10/01/12 13:13	10/01/12 18:49	1.00
m,p-Xylene	9.44		0.401		mg/kg dry	☼	10/01/12 13:13	10/01/12 18:49	1.00
1,2-Dichloroethane (EDC)	ND		0.100		mg/kg dry	☼	10/01/12 13:13	10/01/12 18:49	1.00
Xylenes (total)	14.2		1.50		mg/kg dry	☼	10/01/12 13:13	10/01/12 18:49	1.00
Hexane	0.115		0.100		mg/kg dry	☼	10/01/12 13:13	10/01/12 18:49	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	104		42.4 - 163	10/01/12 13:13	10/01/12 18:49	1.00
Toluene-d8	113		45.8 - 155	10/01/12 13:13	10/01/12 18:49	1.00
4-bromofluorobenzene	156		41.5 - 162	10/01/12 13:13	10/01/12 18:49	1.00

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.00		ug/kg dry	☼	10/02/12 10:05	10/02/12 18:11	1.00

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	2.14		0.203		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:15	20.0
2-Methylnaphthalene	3.50		0.203		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:15	20.0
1-Methylnaphthalene	1.94		0.203		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:15	20.0
Acenaphthylene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Acenaphthene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Fluorene	0.0258		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Phenanthrene	0.0420		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Anthracene	0.0163		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Fluoranthene	0.0115		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Pyrene	0.0156		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Benzo (a) anthracene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Chrysene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Benzo (b) fluoranthene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Benzo (k) fluoranthene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Benzo (a) pyrene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Dibenzo (a,h) anthracene	ND		0.00610		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00
Benzo (ghi) perylene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:52	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	79.4		54 - 129	10/01/12 12:47	10/02/12 17:52	1.00
2-FBP	86.6		64.2 - 121	10/01/12 12:47	10/02/12 17:52	1.00
p-Terphenyl-d14	99.8		27.5 - 140	10/01/12 12:47	10/02/12 17:52	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	66.5		15.2		mg/kg dry	☼	10/04/12 08:09	10/05/12 12:48	1.00
Heavy Oil Range Hydrocarbons	ND		38.0		mg/kg dry	☼	10/04/12 08:09	10/05/12 12:48	1.00

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-1(15)

Date Collected: 09/26/12 11:24

Date Received: 09/28/12 16:30

Lab Sample ID: SVJ0004-02

Matrix: Soil

Percent Solids: 97.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-FBP	110		50 - 150	10/04/12 08:09	10/05/12 12:48	1.00
n-Triacontane-d62	124		50 - 150	10/04/12 08:09	10/05/12 12:48	1.00

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	3.03		1.56		mg/kg dry	☼	10/05/12 06:18	10/08/12 16:23	1.00

Client Sample ID: B-2(5)

Date Collected: 09/26/12 12:38

Date Received: 09/28/12 16:30

Lab Sample ID: SVJ0004-04

Matrix: Soil

Percent Solids: 80.2

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		7.05		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:13	1.00
Methyl tert-butyl ether	ND		0.00846		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:13	1.00
Benzene	ND		0.00705		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:13	1.00
Ethylbenzene	ND		0.141		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:13	1.00
Toluene	ND		0.141		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:13	1.00
o-Xylene	ND		0.282		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:13	1.00
m,p-Xylene	ND		0.564		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:13	1.00
1,2-Dichloroethane (EDC)	ND		0.141		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:13	1.00
Xylenes (total)	ND		2.12		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:13	1.00
Hexane	ND		0.141		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:13	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	103		42.4 - 163	10/01/12 13:13	10/01/12 19:13	1.00
Toluene-d8	111		45.8 - 155	10/01/12 13:13	10/01/12 19:13	1.00
4-bromofluorobenzene	108		41.5 - 162	10/01/12 13:13	10/01/12 19:13	1.00

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.18		ug/kg dry	☼	10/02/12 10:05	10/02/12 18:23	1.00

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
2-Methylnaphthalene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
1-Methylnaphthalene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Acenaphthylene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Acenaphthene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Fluorene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Phenanthrene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Anthracene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Fluoranthene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Pyrene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Benzo (a) anthracene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Chrysene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Benzo (b) fluoranthene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Benzo (k) fluoranthene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Benzo (a) pyrene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-2(5)

Lab Sample ID: SVJ0004-04

Date Collected: 09/26/12 12:38

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 80.2

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzo (a,h) anthracene	ND		0.00737		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Benzo (ghi) perylene	ND		0.0123		mg/kg dry	☼	10/01/12 12:47	10/02/12 12:40	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	70.0		54 - 129				10/01/12 12:47	10/02/12 12:40	1.00
2-FBP	70.8		64.2 - 121				10/01/12 12:47	10/02/12 12:40	1.00
p-Terphenyl-d14	95.4		27.5 - 140				10/01/12 12:47	10/02/12 12:40	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	ND		12.3		mg/kg dry	☼	10/04/12 08:09	10/05/12 13:06	1.00
Heavy Oil Range Hydrocarbons	ND		30.9		mg/kg dry	☼	10/04/12 08:09	10/05/12 13:06	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-FBP	77.7		50 - 150				10/04/12 08:09	10/05/12 13:06	1.00
n-Triacontane-d62	83.7		50 - 150				10/04/12 08:09	10/05/12 13:06	1.00

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	6.63		1.78		mg/kg dry	☼	10/05/12 06:18	10/08/12 17:18	1.00

Client Sample ID: B-3(5)

Lab Sample ID: SVJ0004-07

Date Collected: 09/27/12 10:42

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 86.1

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.00674		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:36	1.00
Benzene	0.0146		0.00561		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:36	1.00
1,2-Dichloroethane (EDC)	ND		0.112		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:36	1.00
Hexane	0.535		0.112		mg/kg dry	☼	10/01/12 13:13	10/01/12 19:36	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	104		42.4 - 163				10/01/12 13:13	10/01/12 19:36	1.00
Toluene-d8	118		45.8 - 155				10/01/12 13:13	10/01/12 19:36	1.00
4-bromofluorobenzene	505	ZX	41.5 - 162				10/01/12 13:13	10/01/12 19:36	1.00

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	4200		281		mg/kg dry	☼	10/01/12 13:13	10/02/12 10:44	50.0
Ethylbenzene	22.3		5.61		mg/kg dry	☼	10/01/12 13:13	10/02/12 10:44	50.0
Toluene	10.4		5.61		mg/kg dry	☼	10/01/12 13:13	10/02/12 10:44	50.0
o-Xylene	86.1		11.2		mg/kg dry	☼	10/01/12 13:13	10/02/12 10:44	50.0
m,p-Xylene	175		22.5		mg/kg dry	☼	10/01/12 13:13	10/02/12 10:44	50.0
Xylenes (total)	261		84.2		mg/kg dry	☼	10/01/12 13:13	10/02/12 10:44	50.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	102		42.4 - 163				10/01/12 13:13	10/02/12 10:44	50.0
Toluene-d8	111		45.8 - 155				10/01/12 13:13	10/02/12 10:44	50.0
4-bromofluorobenzene	118		41.5 - 162				10/01/12 13:13	10/02/12 10:44	50.0

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-3(5)

Lab Sample ID: SVJ0004-07

Date Collected: 09/27/12 10:42

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 86.1

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND	R1	1.12		ug/kg dry	☼	10/02/12 10:05	10/02/12 18:35	1.00

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
2-Methylnaphthalene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
1-Methylnaphthalene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Acenaphthylene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Acenaphthene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Fluorene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Phenanthrene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Anthracene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Fluoranthene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Pyrene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Benzo (a) anthracene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Chrysene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Benzo (b) fluoranthene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Benzo (k) fluoranthene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Benzo (a) pyrene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Dibenzo (a,h) anthracene	ND		0.00686		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00
Benzo (ghi) perylene	ND		0.0114		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:04	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	80.2		54 - 129	10/01/12 12:47	10/02/12 13:04	1.00
2-FBP	83.0		64.2 - 121	10/01/12 12:47	10/02/12 13:04	1.00
p-Terphenyl-d14	113		27.5 - 140	10/01/12 12:47	10/02/12 13:04	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	1220		11.5		mg/kg dry	☼	10/04/12 08:09	10/05/12 13:58	1.00
Heavy Oil Range Hydrocarbons	42.3		28.7		mg/kg dry	☼	10/04/12 08:09	10/05/12 13:58	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-FBP	90.5		50 - 150	10/04/12 08:09	10/05/12 13:58	1.00
n-Triacontane-d62	126		50 - 150	10/04/12 08:09	10/05/12 13:58	1.00

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	470	E	1.5		mg/Kg	☼	10/10/12 17:02	10/10/12 22:06	1
C10-C12 Aliphatics	320	H	74		mg/Kg	☼	10/10/12 17:02	10/15/12 21:36	50
C10-C12 Aromatics	180	E	1.5		mg/Kg	☼	10/10/12 17:02	10/10/12 22:06	1
C10-C12 Aromatics	570	H	74		mg/Kg	☼	10/10/12 17:02	10/15/12 21:36	50
C12-C13 Aromatics	100	E	1.5		mg/Kg	☼	10/10/12 17:02	10/10/12 22:06	1
C12-C13 Aromatics	180	H	74		mg/Kg	☼	10/10/12 17:02	10/15/12 21:36	50
C8-C10 Aliphatics	630	E	1.5		mg/Kg	☼	10/10/12 17:02	10/10/12 22:06	1
C8-C10 Aliphatics	160	H	74		mg/Kg	☼	10/10/12 17:02	10/15/12 21:36	50
C8-C10 Aromatics	200	E	1.5		mg/Kg	☼	10/10/12 17:02	10/10/12 22:06	1
C8-C10 Aromatics	480	H	74		mg/Kg	☼	10/10/12 17:02	10/15/12 21:36	50
C5-C6 Aliphatics	1.6		1.5		mg/Kg	☼	10/10/12 17:02	10/10/12 22:06	1
C5-C6 Aliphatics	ND	H	74		mg/Kg	☼	10/10/12 17:02	10/15/12 21:36	50

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-3(5)

Lab Sample ID: SVJ0004-07

Date Collected: 09/27/12 10:42

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 89.2

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C8 Aliphatics	130	E	1.5		mg/Kg	☼	10/10/12 17:02	10/10/12 22:06	1
C6-C8 Aliphatics	81	H	74		mg/Kg	☼	10/10/12 17:02	10/15/12 21:36	50
Total VPH	1700	E	10		mg/Kg	☼	10/10/12 17:02	10/10/12 22:06	1
Total VPH	1800	H	520		mg/Kg	☼	10/10/12 17:02	10/15/12 21:36	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BFB - PID	182	X	60 - 140	10/10/12 17:02	10/10/12 22:06	1
BFB - PID	107		60 - 140	10/10/12 17:02	10/15/12 21:36	50
4-Bromofluorobenzene	1031	X	60 - 140	10/10/12 17:02	10/10/12 22:06	1
4-Bromofluorobenzene	109		60 - 140	10/10/12 17:02	10/15/12 21:36	50

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aromatics	160	*	5.5		mg/Kg	☼	10/09/12 16:51	10/16/12 08:36	1
C12-C16 Aromatics	76		5.5		mg/Kg	☼	10/09/12 16:51	10/16/12 08:36	1
C16-C21 Aromatics	13	*	5.5		mg/Kg	☼	10/09/12 16:51	10/16/12 08:36	1
C21-C34 Aromatics	7.2		5.5		mg/Kg	☼	10/09/12 16:51	10/16/12 08:36	1
C10-C12 Aliphatics	290	*	5.5		mg/Kg	☼	10/09/12 16:51	10/16/12 08:36	1
C12-C16 Aliphatics	80	*	5.5		mg/Kg	☼	10/09/12 16:51	10/16/12 08:36	1
C16-C21 Aliphatics	11		5.5		mg/Kg	☼	10/09/12 16:51	10/16/12 08:36	1
C21-C34 Aliphatics	7.4		5.5		mg/Kg	☼	10/09/12 16:51	10/16/12 08:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	84		60 - 140	10/09/12 16:51	10/16/12 08:36	1
o-Terphenyl	84		60 - 140	10/09/12 16:51	10/16/12 08:36	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aromatics	200	H	5.5		mg/Kg	☼	10/17/12 16:59	10/20/12 18:29	1
C12-C16 Aromatics	100	H	5.5		mg/Kg	☼	10/17/12 16:59	10/20/12 18:29	1
C16-C21 Aromatics	18	H	5.5		mg/Kg	☼	10/17/12 16:59	10/20/12 18:29	1
C21-C34 Aromatics	11	H	5.5		mg/Kg	☼	10/17/12 16:59	10/20/12 18:29	1
C10-C12 Aliphatics	350	H	5.5		mg/Kg	☼	10/17/12 16:59	10/20/12 18:29	1
C12-C16 Aliphatics	110	H	5.5		mg/Kg	☼	10/17/12 16:59	10/20/12 18:29	1
C16-C21 Aliphatics	16	H	5.5		mg/Kg	☼	10/17/12 16:59	10/20/12 18:29	1
C21-C34 Aliphatics	11	H	5.5		mg/Kg	☼	10/17/12 16:59	10/20/12 18:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	81		60 - 140	10/17/12 16:59	10/20/12 18:29	1
o-Terphenyl	89		60 - 140	10/17/12 16:59	10/20/12 18:29	1

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	12.8		1.72		mg/kg dry	☼	10/05/12 06:18	10/08/12 16:26	1.00

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-4(5)

Lab Sample ID: SVJ0004-10

Date Collected: 09/27/12 12:03

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 92.8

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	7.04		4.53		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:09	1.00
Methyl tert-butyl ether	ND		0.00544		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:09	1.00
Benzene	ND		0.00453		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:09	1.00
Ethylbenzene	ND		0.0906		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:09	1.00
Toluene	ND		0.0906		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:09	1.00
o-Xylene	ND		0.181		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:09	1.00
m,p-Xylene	0.371		0.363		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:09	1.00
1,2-Dichloroethane (EDC)	ND		0.0906		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:09	1.00
Xylenes (total)	ND		1.36		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:09	1.00
Hexane	ND		0.0906		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:09	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	101		42.4 - 163				10/01/12 13:13	10/02/12 13:09	1.00
Toluene-d8	111		45.8 - 155				10/01/12 13:13	10/02/12 13:09	1.00
4-bromofluorobenzene	106		41.5 - 162				10/01/12 13:13	10/02/12 13:09	1.00

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.04		ug/kg dry	☼	10/02/12 10:05	10/02/12 18:47	1.00

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
2-Methylnaphthalene	0.0153		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
1-Methylnaphthalene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Acenaphthylene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Acenaphthene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Fluorene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Phenanthrene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Anthracene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Fluoranthene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Pyrene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Benzo (a) anthracene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Chrysene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Benzo (b) fluoranthene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Benzo (k) fluoranthene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Benzo (a) pyrene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Dibenzo (a,h) anthracene	ND		0.00625		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Benzo (ghi) perylene	ND		0.0104		mg/kg dry	☼	10/01/12 12:47	10/02/12 13:28	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	72.2		54 - 129				10/01/12 12:47	10/02/12 13:28	1.00
2-FBP	78.8		64.2 - 121				10/01/12 12:47	10/02/12 13:28	1.00
p-Terphenyl-d14	115		27.5 - 140				10/01/12 12:47	10/02/12 13:28	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	ND		10.7		mg/kg dry	☼	10/04/12 08:09	10/05/12 14:15	1.00
Heavy Oil Range Hydrocarbons	ND		26.8		mg/kg dry	☼	10/04/12 08:09	10/05/12 14:15	1.00

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-4(5)

Date Collected: 09/27/12 12:03

Date Received: 09/28/12 16:30

Lab Sample ID: SVJ0004-10

Matrix: Soil

Percent Solids: 92.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-FBP	110		50 - 150	10/04/12 08:09	10/05/12 14:15	1.00
n-Triacontane-d62	130		50 - 150	10/04/12 08:09	10/05/12 14:15	1.00

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	4.99		1.70		mg/kg dry	☼	10/05/12 06:18	10/08/12 16:30	1.00

Client Sample ID: B-5(16)

Date Collected: 09/27/12 13:52

Date Received: 09/28/12 16:30

Lab Sample ID: SVJ0004-14

Matrix: Soil

Percent Solids: 90.9

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.00552		mg/kg dry	☼	10/01/12 13:13	10/01/12 20:24	1.00
Benzene	0.0221		0.00460		mg/kg dry	☼	10/01/12 13:13	10/01/12 20:24	1.00
1,2-Dichloroethane (EDC)	ND		0.0920		mg/kg dry	☼	10/01/12 13:13	10/01/12 20:24	1.00
Hexane	ND		0.0920		mg/kg dry	☼	10/01/12 13:13	10/01/12 20:24	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	103		42.4 - 163	10/01/12 13:13	10/01/12 20:24	1.00
Toluene-d8	133		45.8 - 155	10/01/12 13:13	10/01/12 20:24	1.00
4-bromofluorobenzene	278	ZX	41.5 - 162	10/01/12 13:13	10/01/12 20:24	1.00

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	3030		230		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:08	50.0
Ethylbenzene	45.4		4.60		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:08	50.0
Toluene	5.01		4.60		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:08	50.0
o-Xylene	82.6		9.20		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:08	50.0
m,p-Xylene	206		18.4		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:08	50.0
Xylenes (total)	289		69.0		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:08	50.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	102		42.4 - 163	10/01/12 13:13	10/02/12 11:08	50.0
Toluene-d8	111		45.8 - 155	10/01/12 13:13	10/02/12 11:08	50.0
4-bromofluorobenzene	115		41.5 - 162	10/01/12 13:13	10/02/12 11:08	50.0

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.09		ug/kg dry	☼	10/02/12 10:05	10/02/12 18:59	1.00

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	2.30		0.220		mg/kg dry	☼	10/01/12 12:47	10/12/12 10:11	20.0
2-Methylnaphthalene	3.85		0.220		mg/kg dry	☼	10/01/12 12:47	10/12/12 10:11	20.0
1-Methylnaphthalene	2.01		0.220		mg/kg dry	☼	10/01/12 12:47	10/12/12 10:11	20.0
Acenaphthylene	ND		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Acenaphthene	0.0176		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Fluorene	0.0220		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Phenanthrene	0.0425		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Anthracene	0.0147		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Fluoranthene	ND		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-5(16)

Lab Sample ID: SVJ0004-14

Date Collected: 09/27/12 13:52

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 90.9

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - RE1 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	0.0117		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Benzo (a) anthracene	ND		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Chrysene	ND		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Benzo (b) fluoranthene	ND		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Benzo (k) fluoranthene	ND		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Benzo (a) pyrene	ND		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Dibenzo (a,h) anthracene	ND		0.00659		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Benzo (ghi) perylene	ND		0.0110		mg/kg dry	☼	10/01/12 12:47	10/11/12 16:59	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	107		54 - 129				10/01/12 12:47	10/11/12 16:59	1.00
2-FBP	106		64.2 - 121				10/01/12 12:47	10/11/12 16:59	1.00
p-Terphenyl-d14	135		27.5 - 140				10/01/12 12:47	10/11/12 16:59	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	113		10.9		mg/kg dry	☼	10/04/12 08:09	10/05/12 14:33	1.00
Heavy Oil Range Hydrocarbons	ND		27.2		mg/kg dry	☼	10/04/12 08:09	10/05/12 14:33	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-FBP	106		50 - 150				10/04/12 08:09	10/05/12 14:33	1.00
n-Triacontane-d62	129		50 - 150				10/04/12 08:09	10/05/12 14:33	1.00

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	280	H E	2.2		mg/Kg	☼	10/10/12 17:02	10/11/12 00:44	1
C10-C12 Aliphatics	190	H	55		mg/Kg	☼	10/10/12 17:02	10/15/12 20:43	25
C10-C12 Aromatics	31	H E	2.2		mg/Kg	☼	10/10/12 17:02	10/11/12 00:44	1
C10-C12 Aromatics	240	H	55		mg/Kg	☼	10/10/12 17:02	10/15/12 20:43	25
C12-C13 Aromatics	14	H E	2.2		mg/Kg	☼	10/10/12 17:02	10/11/12 00:44	1
C12-C13 Aromatics	64	H	55		mg/Kg	☼	10/10/12 17:02	10/15/12 20:43	25
C8-C10 Aliphatics	490	H E	2.2		mg/Kg	☼	10/10/12 17:02	10/11/12 00:44	1
C8-C10 Aliphatics	140	H	55		mg/Kg	☼	10/10/12 17:02	10/15/12 20:43	25
C8-C10 Aromatics	52	H E	2.2		mg/Kg	☼	10/10/12 17:02	10/11/12 00:44	1
C8-C10 Aromatics	270	H	55		mg/Kg	☼	10/10/12 17:02	10/15/12 20:43	25
C5-C6 Aliphatics	28	H	2.2		mg/Kg	☼	10/10/12 17:02	10/11/12 00:44	1
C5-C6 Aliphatics	ND	H	55		mg/Kg	☼	10/10/12 17:02	10/15/12 20:43	25
C6-C8 Aliphatics	200	H E	2.2		mg/Kg	☼	10/10/12 17:02	10/11/12 00:44	1
C6-C8 Aliphatics	160	H	55		mg/Kg	☼	10/10/12 17:02	10/15/12 20:43	25
Total VPH	1100	H E	15		mg/Kg	☼	10/10/12 17:02	10/11/12 00:44	1
Total VPH	1100	H	390		mg/Kg	☼	10/10/12 17:02	10/15/12 20:43	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BFB - PID	35	X	60 - 140				10/10/12 17:02	10/11/12 00:44	1
BFB - PID	88		60 - 140				10/10/12 17:02	10/15/12 20:43	25
4-Bromofluorobenzene	496	X	60 - 140				10/10/12 17:02	10/11/12 00:44	1
4-Bromofluorobenzene	108		60 - 140				10/10/12 17:02	10/15/12 20:43	25

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-5(16)

Lab Sample ID: SVJ0004-14

Date Collected: 09/27/12 13:52

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 86.5

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aromatics	55	*	5.7		mg/Kg	☼	10/09/12 16:51	10/16/12 08:59	1
C12-C16 Aromatics	22		5.7		mg/Kg	☼	10/09/12 16:51	10/16/12 08:59	1
C16-C21 Aromatics	ND	*	5.7		mg/Kg	☼	10/09/12 16:51	10/16/12 08:59	1
C21-C34 Aromatics	ND		5.7		mg/Kg	☼	10/09/12 16:51	10/16/12 08:59	1
C10-C12 Aliphatics	24	*	5.7		mg/Kg	☼	10/09/12 16:51	10/16/12 08:59	1
C12-C16 Aliphatics	13	*	5.7		mg/Kg	☼	10/09/12 16:51	10/16/12 08:59	1
C16-C21 Aliphatics	ND		5.7		mg/Kg	☼	10/09/12 16:51	10/16/12 08:59	1
C21-C34 Aliphatics	ND		5.7		mg/Kg	☼	10/09/12 16:51	10/16/12 08:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	89		60 - 140				10/09/12 16:51	10/16/12 08:59	1
o-Terphenyl	74		60 - 140				10/09/12 16:51	10/16/12 08:59	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aromatics	68	H	5.7		mg/Kg	☼	10/17/12 16:59	10/20/12 18:52	1
C12-C16 Aromatics	31	H	5.7		mg/Kg	☼	10/17/12 16:59	10/20/12 18:52	1
C16-C21 Aromatics	ND	H	5.7		mg/Kg	☼	10/17/12 16:59	10/20/12 18:52	1
C21-C34 Aromatics	ND	H	5.7		mg/Kg	☼	10/17/12 16:59	10/20/12 18:52	1
C10-C12 Aliphatics	26	H	5.7		mg/Kg	☼	10/17/12 16:59	10/20/12 18:52	1
C12-C16 Aliphatics	16	H	5.7		mg/Kg	☼	10/17/12 16:59	10/20/12 18:52	1
C16-C21 Aliphatics	ND	H	5.7		mg/Kg	☼	10/17/12 16:59	10/20/12 18:52	1
C21-C34 Aliphatics	ND	H	5.7		mg/Kg	☼	10/17/12 16:59	10/20/12 18:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	88		60 - 140				10/17/12 16:59	10/20/12 18:52	1
o-Terphenyl	87		60 - 140				10/17/12 16:59	10/20/12 18:52	1

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	1.80		1.63		mg/kg dry	☼	10/05/12 06:18	10/08/12 16:37	1.00

Client Sample ID: B-6(15.5)

Lab Sample ID: SVJ0004-17

Date Collected: 09/27/12 15:36

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 94

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	19.4		6.34		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:33	1.00
Methyl tert-butyl ether	ND		0.00760		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:33	1.00
Benzene	ND		0.00634		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:33	1.00
Ethylbenzene	ND		0.127		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:33	1.00
Toluene	ND		0.127		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:33	1.00
o-Xylene	ND		0.253		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:33	1.00
m,p-Xylene	ND		0.507		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:33	1.00
1,2-Dichloroethane (EDC)	ND		0.127		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:33	1.00
Xylenes (total)	ND		1.90		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:33	1.00
Hexane	ND		0.127		mg/kg dry	☼	10/01/12 13:13	10/02/12 13:33	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	102		42.4 - 163				10/01/12 13:13	10/02/12 13:33	1.00

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-6(15.5)

Lab Sample ID: SVJ0004-17

Date Collected: 09/27/12 15:36

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 94

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8	110		45.8 - 155	10/01/12 13:13	10/02/12 13:33	1.00
4-bromofluorobenzene	104		41.5 - 162	10/01/12 13:13	10/02/12 13:33	1.00

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.06		ug/kg dry	☼	10/02/12 10:05	10/02/12 19:12	1.00

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
2-Methylnaphthalene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
1-Methylnaphthalene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Acenaphthylene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Acenaphthene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Fluorene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Phenanthrene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Anthracene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Fluoranthene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Pyrene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Benzo (a) anthracene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Chrysene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Benzo (b) fluoranthene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Benzo (k) fluoranthene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Benzo (a) pyrene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Dibenzo (a,h) anthracene	ND		0.00629		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00
Benzo (ghi) perylene	ND		0.0105		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:17	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	78.4		54 - 129	10/01/12 12:47	10/02/12 14:17	1.00
2-FBP	80.8		64.2 - 121	10/01/12 12:47	10/02/12 14:17	1.00
p-Terphenyl-d14	109		27.5 - 140	10/01/12 12:47	10/02/12 14:17	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	ND		10.6		mg/kg dry	☼	10/04/12 08:09	10/05/12 14:50	1.00
Heavy Oil Range Hydrocarbons	ND		26.4		mg/kg dry	☼	10/04/12 08:09	10/05/12 14:50	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-FBP	110		50 - 150	10/04/12 08:09	10/05/12 14:50	1.00
n-Triacontane-d62	129		50 - 150	10/04/12 08:09	10/05/12 14:50	1.00

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.51		mg/kg dry	☼	10/05/12 06:18	10/08/12 17:22	1.00

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: MW-1(15.5)

Lab Sample ID: SVJ0004-19

Date Collected: 09/27/12 09:24

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 89.9

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	198		4.73		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:12	1.00
Methyl tert-butyl ether	ND		0.00568		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:12	1.00
Benzene	0.0303		0.00473		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:12	1.00
Ethylbenzene	1.77		0.0946		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:12	1.00
Toluene	0.246		0.0946		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:12	1.00
o-Xylene	3.30		0.189		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:12	1.00
m,p-Xylene	8.12		0.378		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:12	1.00
1,2-Dichloroethane (EDC)	ND		0.0946		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:12	1.00
Xylenes (total)	11.4		1.42		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:12	1.00
Hexane	0.510		0.0946		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:12	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	103		42.4 - 163				10/01/12 13:13	10/01/12 21:12	1.00
Toluene-d8	114		45.8 - 155				10/01/12 13:13	10/01/12 21:12	1.00
4-bromofluorobenzene	116		41.5 - 162				10/01/12 13:13	10/01/12 21:12	1.00

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.05		ug/kg dry	☼	10/02/12 10:05	10/02/12 19:24	1.00

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	6.15		0.215		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:28	20.0
2-Methylnaphthalene	8.92		0.215		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:28	20.0
1-Methylnaphthalene	4.60		0.215		mg/kg dry	☼	10/01/12 12:47	10/02/12 17:28	20.0
Acenaphthylene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Acenaphthene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Fluorene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Phenanthrene	0.0501		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Anthracene	0.0186		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Fluoranthene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Pyrene	0.0122		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Benzo (a) anthracene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Chrysene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Benzo (b) fluoranthene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Benzo (k) fluoranthene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Benzo (a) pyrene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Dibenzo (a,h) anthracene	ND		0.00645		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Benzo (ghi) perylene	ND		0.0107		mg/kg dry	☼	10/01/12 12:47	10/02/12 14:41	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	88.4		54 - 129				10/01/12 12:47	10/02/12 14:41	1.00
2-FBP	95.4		64.2 - 121				10/01/12 12:47	10/02/12 14:41	1.00
p-Terphenyl-d14	109		27.5 - 140				10/01/12 12:47	10/02/12 14:41	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	133		11.1		mg/kg dry	☼	10/04/12 08:09	10/05/12 15:25	1.00
Heavy Oil Range Hydrocarbons	ND		27.6		mg/kg dry	☼	10/04/12 08:09	10/05/12 15:25	1.00

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: MW-1(15.5)

Lab Sample ID: SVJ0004-19

Date Collected: 09/27/12 09:24

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 89.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-FBP	102		50 - 150	10/04/12 08:09	10/05/12 15:25	1.00
n-Triacontane-d62	126		50 - 150	10/04/12 08:09	10/05/12 15:25	1.00

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	2.02		1.67		mg/kg dry	☼	10/05/12 06:18	10/08/12 17:26	1.00

Client Sample ID: MW-2(15)

Lab Sample ID: SVJ0004-21

Date Collected: 09/26/12 15:11

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 97.6

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.00497		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:36	1.00
Benzene	ND		0.00414		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:36	1.00
Toluene	3.83		0.0829		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:36	1.00
1,2-Dichloroethane (EDC)	ND		0.0829		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:36	1.00
Hexane	0.197		0.0829		mg/kg dry	☼	10/01/12 13:13	10/01/12 21:36	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	102		42.4 - 163	10/01/12 13:13	10/01/12 21:36	1.00
Toluene-d8	117		45.8 - 155	10/01/12 13:13	10/01/12 21:36	1.00
4-bromofluorobenzene	159		41.5 - 162	10/01/12 13:13	10/01/12 21:36	1.00

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	812		82.9		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:33	20.0
Ethylbenzene	7.50		1.66		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:33	20.0
o-Xylene	17.8		3.32		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:33	20.0
m,p-Xylene	38.5		6.63		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:33	20.0
Xylenes (total)	56.3		24.9		mg/kg dry	☼	10/01/12 13:13	10/02/12 11:33	20.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	103		42.4 - 163	10/01/12 13:13	10/02/12 11:33	20.0
Toluene-d8	112		45.8 - 155	10/01/12 13:13	10/02/12 11:33	20.0
4-bromofluorobenzene	111		41.5 - 162	10/01/12 13:13	10/02/12 11:33	20.0

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.01		ug/kg dry	☼	10/02/12 10:05	10/02/12 19:36	1.00

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	1.50		0.255		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:05	25.0
2-Methylnaphthalene	2.74		0.255		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:05	25.0
1-Methylnaphthalene	1.48		0.255		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:05	25.0
Acenaphthylene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Acenaphthene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Fluorene	0.0156		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Phenanthrene	0.0313		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Anthracene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Fluoranthene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: MW-2(15)

Lab Sample ID: SVJ0004-21

Date Collected: 09/26/12 15:11

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 97.6

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Benzo (a) anthracene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Chrysene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Benzo (b) fluoranthene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Benzo (k) fluoranthene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Benzo (a) pyrene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Dibenzo (a,h) anthracene	ND		0.00612		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Benzo (ghi) perylene	ND		0.0102		mg/kg dry	☼	10/01/12 12:47	10/02/12 18:17	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	67.8		54 - 129				10/01/12 12:47	10/02/12 18:17	1.00
2-FBP	78.0		64.2 - 121				10/01/12 12:47	10/02/12 18:17	1.00
p-Terphenyl-d14	106		27.5 - 140				10/01/12 12:47	10/02/12 18:17	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	96.7		10.2		mg/kg dry	☼	10/04/12 08:09	10/05/12 16:00	1.00
Heavy Oil Range Hydrocarbons	ND		25.6		mg/kg dry	☼	10/04/12 08:09	10/05/12 16:00	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-FBP	115		50 - 150				10/04/12 08:09	10/05/12 16:00	1.00
n-Triacontane-d62	136		50 - 150				10/04/12 08:09	10/05/12 16:00	1.00

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.57		mg/kg dry	☼	10/05/12 06:18	10/08/12 17:29	1.00

Client Sample ID: MW-3(6)

Lab Sample ID: SVJ0004-22

Date Collected: 09/26/12 17:10

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 78.7

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		9.58		mg/kg dry	☼	10/01/12 13:13	10/01/12 22:00	1.00
Methyl tert-butyl ether	ND		0.0115		mg/kg dry	☼	10/01/12 13:13	10/01/12 22:00	1.00
Benzene	ND		0.00958		mg/kg dry	☼	10/01/12 13:13	10/01/12 22:00	1.00
Ethylbenzene	ND		0.192		mg/kg dry	☼	10/01/12 13:13	10/01/12 22:00	1.00
Toluene	ND		0.192		mg/kg dry	☼	10/01/12 13:13	10/01/12 22:00	1.00
o-Xylene	ND		0.383		mg/kg dry	☼	10/01/12 13:13	10/01/12 22:00	1.00
m,p-Xylene	ND		0.767		mg/kg dry	☼	10/01/12 13:13	10/01/12 22:00	1.00
1,2-Dichloroethane (EDC)	ND		0.192		mg/kg dry	☼	10/01/12 13:13	10/01/12 22:00	1.00
Xylenes (total)	ND		2.87		mg/kg dry	☼	10/01/12 13:13	10/01/12 22:00	1.00
Hexane	ND		0.192		mg/kg dry	☼	10/01/12 13:13	10/01/12 22:00	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	102		42.4 - 163				10/01/12 13:13	10/01/12 22:00	1.00
Toluene-d8	111		45.8 - 155				10/01/12 13:13	10/01/12 22:00	1.00
4-bromofluorobenzene	111		41.5 - 162				10/01/12 13:13	10/01/12 22:00	1.00

TestAmerica Spokane

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: MW-3(6)

Lab Sample ID: SVJ0004-22

Date Collected: 09/26/12 17:10

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 78.7

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.26		ug/kg dry	☼	10/02/12 10:05	10/02/12 20:13	1.00

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
2-Methylnaphthalene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
1-Methylnaphthalene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Acenaphthylene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Acenaphthene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Fluorene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Phenanthrene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Anthracene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Fluoranthene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Pyrene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Benzo (a) anthracene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Chrysene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Benzo (b) fluoranthene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Benzo (k) fluoranthene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Benzo (a) pyrene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Dibenzo (a,h) anthracene	ND		0.00755		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00
Benzo (ghi) perylene	ND		0.0126		mg/kg dry	☼	10/01/12 12:47	10/02/12 15:29	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	71.6		54 - 129	10/01/12 12:47	10/02/12 15:29	1.00
2-FBP	74.0		64.2 - 121	10/01/12 12:47	10/02/12 15:29	1.00
p-Terphenyl-d14	99.0		27.5 - 140	10/01/12 12:47	10/02/12 15:29	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	ND		12.6		mg/kg dry	☼	10/04/12 08:09	10/05/12 16:17	1.00
Heavy Oil Range Hydrocarbons	ND		31.6		mg/kg dry	☼	10/04/12 08:09	10/05/12 16:17	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-FBP	108		50 - 150	10/04/12 08:09	10/05/12 16:17	1.00
n-Triacontane-d62	124		50 - 150	10/04/12 08:09	10/05/12 16:17	1.00

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	6.47		1.96		mg/kg dry	☼	10/05/12 06:18	10/08/12 17:33	1.00

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Lab Sample ID: 12J0003-BLK1

Matrix: Soil

Analysis Batch: 12J0003

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12J0003_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		5.00		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00
Methyl tert-butyl ether	ND		0.00600		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00
Benzene	ND		0.00500		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00
Ethylbenzene	ND		0.100		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00
Toluene	ND		0.100		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00
o-Xylene	ND		0.200		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00
m,p-Xylene	ND		0.400		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00
Naphthalene	ND		0.200		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00
1,2-Dichloroethane (EDC)	ND		0.100		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00
Xylenes (total)	ND		1.50		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00
Hexane	ND		0.100		mg/kg wet		10/01/12 13:13	10/01/12 15:39	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	102		42.4 - 163	10/01/12 13:13	10/01/12 15:39	1.00
Toluene-d8	111		45.8 - 155	10/01/12 13:13	10/01/12 15:39	1.00
4-bromofluorobenzene	107		41.5 - 162	10/01/12 13:13	10/01/12 15:39	1.00

Lab Sample ID: 12J0003-BS1

Matrix: Soil

Analysis Batch: 12J0003

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0003_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Gasoline Range Hydrocarbons	50.0	45.7		mg/kg wet		91.4	74.4 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane	103		42.4 - 163
Toluene-d8	112		45.8 - 155
4-bromofluorobenzene	108		41.5 - 162

Lab Sample ID: 12J0003-BS2

Matrix: Soil

Analysis Batch: 12J0003

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0003_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Methyl tert-butyl ether	0.500	0.480		mg/kg wet		96.1	79 - 127
Benzene	0.500	0.472		mg/kg wet		94.5	75.9 - 123
Ethylbenzene	0.500	0.482		mg/kg wet		96.4	80.7 - 112
Toluene	0.500	0.488		mg/kg wet		97.5	77.3 - 126
o-Xylene	0.500	0.494		mg/kg wet		98.8	85.3 - 117
m,p-Xylene	1.00	0.968		mg/kg wet		96.8	86.1 - 116
Naphthalene	0.500	0.616		mg/kg wet		123	58.8 - 130
Xylenes (total)	1.50	1.46		mg/kg wet		97.5	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane	106		42.4 - 163
Toluene-d8	111		45.8 - 155
4-bromofluorobenzene	108		41.5 - 162

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

(Continued)

Lab Sample ID: 12J0003-BS3

Matrix: Soil

Analysis Batch: 12J0003

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0003_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexane	0.500	0.440		mg/kg wet		87.9	50 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Dibromofluoromethane	100		42.4 - 163				
Toluene-d8	107		45.8 - 155				
4-bromofluorobenzene	108		41.5 - 162				

Method: EPA 8011 - EDB by EPA Method 8011

Lab Sample ID: 12J0011-BLK1

Matrix: Soil

Analysis Batch: 12J0011

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12J0011_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.00		ug/kg wet		10/02/12 10:05	10/02/12 17:46	1.00

Lab Sample ID: 12J0011-BS1

Matrix: Soil

Analysis Batch: 12J0011

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0011_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	5.00	5.18		ug/kg wet		104	60 - 140

Lab Sample ID: 12J0011-BS2

Matrix: Soil

Analysis Batch: 12J0011

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0011_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	5.00	5.06		ug/kg wet		101	60 - 140

Lab Sample ID: 12J0011-MS1

Matrix: Soil

Analysis Batch: 12J0011

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 12J0011_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	ND		5.79	4.63		ug/kg dry	☼	80.0	60 - 140

Lab Sample ID: 12J0011-MSD1

Matrix: Soil

Analysis Batch: 12J0011

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 12J0011_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane	ND		5.56	4.83		ug/kg dry	☼	86.8	60 - 140	4.12	20

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Lab Sample ID: 12J0002-BLK1

Matrix: Soil

Analysis Batch: 12J0002

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12J0002_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
2-Methylnaphthalene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
1-Methylnaphthalene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Acenaphthylene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Acenaphthene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Fluorene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Phenanthrene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Anthracene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Fluoranthene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Pyrene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Benzo (a) anthracene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Chrysene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Benzo (b) fluoranthene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Benzo (k) fluoranthene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Benzo (a) pyrene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Dibenzo (a,h) anthracene	ND		0.00600		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00
Benzo (ghi) perylene	ND		0.0100		mg/kg wet		10/01/12 12:47	10/01/12 15:05	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	99.8		54 - 129	10/01/12 12:47	10/01/12 15:05	1.00
2-FBP	77.6		64.2 - 121	10/01/12 12:47	10/01/12 15:05	1.00
p-Terphenyl-d14	100		27.5 - 140	10/01/12 12:47	10/01/12 15:05	1.00

Lab Sample ID: 12J0002-BS1

Matrix: Soil

Analysis Batch: 12J0002

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0002_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	0.133	0.109		mg/kg wet		82.0	59 - 100
Fluorene	0.133	0.115		mg/kg wet		86.5	52.8 - 115
Chrysene	0.133	0.120		mg/kg wet		90.0	61.4 - 122
Indeno (1,2,3-cd) pyrene	0.133	0.126		mg/kg wet		94.5	61.5 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	79.2		54 - 129
2-FBP	74.0		64.2 - 121
p-Terphenyl-d14	95.0		27.5 - 140

Lab Sample ID: 12J0002-BSD1

Matrix: Soil

Analysis Batch: 12J0002

Client Sample ID: Lab Control Sample Dup

Prep Type: Total

Prep Batch: 12J0002_P

Analyte	Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	0.133	0.132		mg/kg wet		99.0	59 - 100	18.8	35
Fluorene	0.133	0.135		mg/kg wet		102	52.8 - 115	16.0	35
Chrysene	0.133	0.133		mg/kg wet		100	61.4 - 122	10.5	35

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring (Continued)

Lab Sample ID: 12J0002-BSD1

Matrix: Soil

Analysis Batch: 12J0002

Client Sample ID: Lab Control Sample Dup

Prep Type: Total

Prep Batch: 12J0002_P

Analyte	Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Indeno (1,2,3-cd) pyrene	0.133	0.145		mg/kg wet		109	61.5 - 147	13.8	35

Surrogate	LCS Dup %Recovery	LCS Dup Qualifier	Limits
Nitrobenzene-d5	94.2		54 - 129
2-FBP	91.2		64.2 - 121
p-Terphenyl-d14	106		27.5 - 140

Lab Sample ID: 12J0002-MS1

Matrix: Soil

Analysis Batch: 12J0002

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 12J0002_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	Limits
Naphthalene	ND		0.148	0.133		mg/kg dry	☼	90.0	30 - 120
Fluorene	ND		0.148	0.153		mg/kg dry	☼	104	30 - 140
Chrysene	0.00344		0.148	0.147		mg/kg dry	☼	97.2	30 - 133
Indeno (1,2,3-cd) pyrene	ND		0.148	0.140		mg/kg dry	☼	95.0	30 - 140

Surrogate	Matrix Spike %Recovery	Matrix Spike Qualifier	Limits
Nitrobenzene-d5	82.6		54 - 129
2-FBP	82.0		64.2 - 121
p-Terphenyl-d14	103		27.5 - 140

Lab Sample ID: 12J0002-MSD1

Matrix: Soil

Analysis Batch: 12J0002

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 12J0002_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Naphthalene	ND		0.147	0.134		mg/kg dry	☼	91.0	30 - 120	0.822	35
Fluorene	ND		0.147	0.154		mg/kg dry	☼	104	30 - 140	0.678	35
Chrysene	0.00344		0.147	0.142		mg/kg dry	☼	94.2	30 - 133	3.34	35
Indeno (1,2,3-cd) pyrene	ND		0.147	0.147		mg/kg dry	☼	100	30 - 140	4.85	35

Surrogate	Matrix Spike Dup %Recovery	Matrix Spike Dup Qualifier	Limits
Nitrobenzene-d5	86.0		54 - 129
2-FBP	86.0		64.2 - 121
p-Terphenyl-d14	102		27.5 - 140

Lab Sample ID: 12J0069-BLK1

Matrix: Soil

Analysis Batch: 12J0069

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12J0069_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
2-Methylnaphthalene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
1-Methylnaphthalene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Acenaphthylene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring (Continued)

Lab Sample ID: 12J0069-BLK1
Matrix: Soil
Analysis Batch: 12J0069

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12J0069_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Fluorene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Phenanthrene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Anthracene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Fluoranthene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Pyrene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Benzo (a) anthracene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Chrysene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Benzo (b) fluoranthene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Benzo (k) fluoranthene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Benzo (a) pyrene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Dibenzo (a,h) anthracene	ND		0.00600		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00
Benzo (ghi) perylene	ND		0.0100		mg/kg wet		10/10/12 09:35	10/11/12 13:46	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	96.6		54 - 129	10/10/12 09:35	10/11/12 13:46	1.00
2-FBP	94.4		64.2 - 121	10/10/12 09:35	10/11/12 13:46	1.00
p-Terphenyl-d14	127		27.5 - 140	10/10/12 09:35	10/11/12 13:46	1.00

Lab Sample ID: 12J0069-BS1
Matrix: Soil
Analysis Batch: 12J0069

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12J0069_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	0.133	0.126		mg/kg wet		94.5	59 - 100
Fluorene	0.133	0.143		mg/kg wet		108	52.8 - 115
Chrysene	0.133	0.137		mg/kg wet		103	61.4 - 122
Indeno (1,2,3-cd) pyrene	0.133	0.140		mg/kg wet		105	61.5 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	81.8		54 - 129
2-FBP	90.4		64.2 - 121
p-Terphenyl-d14	113		27.5 - 140

Lab Sample ID: 12J0069-BSD1
Matrix: Soil
Analysis Batch: 12J0069

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 12J0069_P

Analyte	Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	0.133	0.117		mg/kg wet		88.0	59 - 100	7.12	35
Fluorene	0.133	0.138		mg/kg wet		104	52.8 - 115	3.79	35
Chrysene	0.133	0.133		mg/kg wet		100	61.4 - 122	2.96	35
Indeno (1,2,3-cd) pyrene	0.133	0.133		mg/kg wet		99.5	61.5 - 147	5.38	35

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: EPA 8270C - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring (Continued)

Lab Sample ID: 12J0069-BSD1
Matrix: Soil
Analysis Batch: 12J0069

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 12J0069_P

Surrogate	LCS Dup	LCS Dup	Limits
	%Recovery	Qualifier	
Nitrobenzene-d5	64.8		54 - 129
2-FBP	83.6		64.2 - 121
p-Terphenyl-d14	109		27.5 - 140

Lab Sample ID: 12J0069-MS1
Matrix: Soil
Analysis Batch: 12J0069

Client Sample ID: Matrix Spike
Prep Type: Total
Prep Batch: 12J0069_P

Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Naphthalene	0.0293		0.145	0.159		mg/kg dry	☼	89.8	30 - 120
Fluorene	0.0367		0.145	0.159		mg/kg dry	☼	84.7	30 - 140
Chrysene	0.374		0.145	0.370	M4	mg/kg dry	☼	-2.97	30 - 133
Indeno (1,2,3-cd) pyrene	0.198		0.145	0.283		mg/kg dry	☼	58.4	30 - 140

Surrogate	Matrix Spike	Matrix Spike	Limits
	%Recovery	Qualifier	
Nitrobenzene-d5	74.0		54 - 129
2-FBP	90.0		64.2 - 121
p-Terphenyl-d14	94.0		27.5 - 140

Lab Sample ID: 12J0069-MSD1
Matrix: Soil
Analysis Batch: 12J0069

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total
Prep Batch: 12J0069_P

Analyte	Sample	Sample	Spike	Matrix Spike Dup	Matrix Spike Dup	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Naphthalene	0.0293		0.145	0.174		mg/kg dry	☼	99.8	30 - 120	8.96	35
Fluorene	0.0367		0.145	0.182		mg/kg dry	☼	99.8	30 - 140	13.0	35
Chrysene	0.374		0.145	0.552	M4	mg/kg dry	☼	123	30 - 133	39.6	35
Indeno (1,2,3-cd) pyrene	0.198		0.145	0.341		mg/kg dry	☼	98.8	30 - 140	18.9	35

Surrogate	Matrix Spike Dup	Matrix Spike Dup	Limits
	%Recovery	Qualifier	
Nitrobenzene-d5	80.0		54 - 129
2-FBP	92.0		64.2 - 121
p-Terphenyl-d14	98.0		27.5 - 140

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Lab Sample ID: 12J0027-BLK1
Matrix: Soil
Analysis Batch: 12J0027

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12J0027_P

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Hydrocarbons	ND		10.0		mg/kg wet		10/04/12 08:09	10/05/12 12:14	1.00
Heavy Oil Range Hydrocarbons	ND		25.0		mg/kg wet		10/04/12 08:09	10/05/12 12:14	1.00

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx (Continued)

Lab Sample ID: 12J0027-BLK1
Matrix: Soil
Analysis Batch: 12J0027

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12J0027_P

Surrogate	Blank		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-FBP	110		50 - 150	10/04/12 08:09	10/05/12 12:14	1.00
n-Triacontane-d62	120		50 - 150	10/04/12 08:09	10/05/12 12:14	1.00

Lab Sample ID: 12J0027-BS1
Matrix: Soil
Analysis Batch: 12J0027

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12J0027_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Hydrocarbons	83.3	86.8		mg/kg wet		104	73 - 133

Surrogate	LCS		Limits
	%Recovery	Qualifier	
2-FBP	112		50 - 150
n-Triacontane-d62	126		50 - 150

Lab Sample ID: 12J0027-MS1
Matrix: Soil
Analysis Batch: 12J0027

Client Sample ID: B-2(5)
Prep Type: Total
Prep Batch: 12J0027_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Hydrocarbons	ND		104	82.4		mg/kg dry	☼	79.3	70.1 - 139

Surrogate	Matrix Spike		Limits
	%Recovery	Qualifier	
2-FBP	103		50 - 150
n-Triacontane-d62	120		50 - 150

Lab Sample ID: 12J0027-DUP1
Matrix: Soil
Analysis Batch: 12J0027

Client Sample ID: B-2(5)
Prep Type: Total
Prep Batch: 12J0027_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Diesel Range Hydrocarbons	ND		ND		mg/kg dry	☼		40
Heavy Oil Range Hydrocarbons	ND		ND		mg/kg dry	☼		40

Surrogate	Duplicate		Limits
	%Recovery	Qualifier	
2-FBP	101		50 - 150
n-Triacontane-d62	115		50 - 150

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-122121/1-A
Matrix: Solid
Analysis Batch: 122123

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 122121

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		2.0		mg/Kg		10/10/12 17:02	10/10/12 21:40	1
C10-C12 Aromatics	ND		2.0		mg/Kg		10/10/12 17:02	10/10/12 21:40	1
C12-C13 Aromatics	ND		2.0		mg/Kg		10/10/12 17:02	10/10/12 21:40	1

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 580-122121/1-A

Matrix: Solid

Analysis Batch: 122123

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 122121

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C8-C10 Aliphatics	ND		2.0		mg/Kg		10/10/12 17:02	10/10/12 21:40	1
C8-C10 Aromatics	ND		2.0		mg/Kg		10/10/12 17:02	10/10/12 21:40	1
C5-C6 Aliphatics	ND		2.0		mg/Kg		10/10/12 17:02	10/10/12 21:40	1
C6-C8 Aliphatics	ND		2.0		mg/Kg		10/10/12 17:02	10/10/12 21:40	1
Total VPH	ND		14		mg/Kg		10/10/12 17:02	10/10/12 21:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BFB - PID	103		60 - 140	10/10/12 17:02	10/10/12 21:40	1
4-Bromofluorobenzene	91		60 - 140	10/10/12 17:02	10/10/12 21:40	1

Lab Sample ID: MB 580-122121/1-A

Matrix: Solid

Analysis Batch: 122447

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 122121

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		2.0		mg/Kg		10/10/12 17:02	10/15/12 19:50	1
C10-C12 Aromatics	ND		2.0		mg/Kg		10/10/12 17:02	10/15/12 19:50	1
C12-C13 Aromatics	ND		2.0		mg/Kg		10/10/12 17:02	10/15/12 19:50	1
C8-C10 Aliphatics	ND		2.0		mg/Kg		10/10/12 17:02	10/15/12 19:50	1
C8-C10 Aromatics	ND		2.0		mg/Kg		10/10/12 17:02	10/15/12 19:50	1
C5-C6 Aliphatics	ND		2.0		mg/Kg		10/10/12 17:02	10/15/12 19:50	1
C6-C8 Aliphatics	ND		2.0		mg/Kg		10/10/12 17:02	10/15/12 19:50	1
Total VPH	ND		14		mg/Kg		10/10/12 17:02	10/15/12 19:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BFB - PID	105		60 - 140	10/10/12 17:02	10/15/12 19:50	1
4-Bromofluorobenzene	102		60 - 140	10/10/12 17:02	10/15/12 19:50	1

Lab Sample ID: LCS 580-122121/2-A

Matrix: Solid

Analysis Batch: 122123

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 122121

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	4.00	4.06		mg/Kg		101	70 - 130
C10-C12 Aromatics	4.00	4.08		mg/Kg		102	70 - 130
C12-C13 Aromatics	8.00	7.99		mg/Kg		100	70 - 130
C8-C10 Aliphatics	8.00	5.66		mg/Kg		71	70 - 130
C8-C10 Aromatics	16.0	16.7		mg/Kg		105	70 - 130
C5-C6 Aliphatics	8.00	5.71		mg/Kg		71	70 - 130
C6-C8 Aliphatics	4.00	3.03		mg/Kg		76	70 - 130
Total VPH	64.0	59.5		mg/Kg		93	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BFB - PID	100		60 - 140
4-Bromofluorobenzene	88		60 - 140

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 580-122121/2-A

Matrix: Solid

Analysis Batch: 122447

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 122121

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	4.00	4.67		mg/Kg		117	70 - 130
C10-C12 Aromatics	4.00	4.07		mg/Kg		102	70 - 130
C12-C13 Aromatics	8.00	7.40		mg/Kg		92	70 - 130
C8-C10 Aliphatics	8.00	7.36		mg/Kg		92	70 - 130
C8-C10 Aromatics	16.0	16.3		mg/Kg		102	70 - 130
C5-C6 Aliphatics	8.00	6.01		mg/Kg		75	70 - 130
C6-C8 Aliphatics	4.00	3.82		mg/Kg		95	70 - 130
Total VPH	64.0	61.5		mg/Kg		96	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BFB - PID	103		60 - 140
4-Bromofluorobenzene	97		60 - 140

Lab Sample ID: 580-35243-1 MS

Matrix: Solid

Analysis Batch: 122123

Client Sample ID: SVJ0004-07

Prep Type: Total/NA

Prep Batch: 122121

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	470	E	4.10	756	E 4	mg/Kg	☼	7053	70 - 130
C10-C12 Aromatics	180	E	4.10	92.9	4 E	mg/Kg	☼	-2061	70 - 130
C12-C13 Aromatics	100	E	8.19	54.1	4 E	mg/Kg	☼	-608	70 - 130
C8-C10 Aliphatics	630	E	8.19	1060	E 4	mg/Kg	☼	5252	70 - 130
C8-C10 Aromatics	200	E	16.4	109	4 E	mg/Kg	☼	-578	70 - 130
C5-C6 Aliphatics	1.6		8.19	13.1	F	mg/Kg	☼	141	70 - 130
C6-C8 Aliphatics	130	E	4.10	223	E 4	mg/Kg	☼	2219	70 - 130
Total VPH	1700	E	65.5	2320	E 4	mg/Kg	☼	907	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
BFB - PID	71		60 - 140
4-Bromofluorobenzene	1039	X	60 - 140

Lab Sample ID: 580-35243-1 MS

Matrix: Solid

Analysis Batch: 122447

Client Sample ID: SVJ0004-07

Prep Type: Total/NA

Prep Batch: 122121

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	320	H	205	699	F	mg/Kg	☼	187	70 - 130
C10-C12 Aromatics	570	H	205	927	F	mg/Kg	☼	175	70 - 130
C12-C13 Aromatics	180	H	410	597		mg/Kg	☼	102	70 - 130
C8-C10 Aliphatics	160	H	410	835	F	mg/Kg	☼	166	70 - 130
C8-C10 Aromatics	480	H	819	1510		mg/Kg	☼	126	70 - 130
C5-C6 Aliphatics	ND	H	410	320		mg/Kg	☼	78	70 - 130
C6-C8 Aliphatics	81	H	205	355	F	mg/Kg	☼	134	70 - 130
Total VPH	1800	H	3280	5910		mg/Kg	☼	126	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
BFB - PID	99		60 - 140

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: 580-35243-1 MS
Matrix: Solid
Analysis Batch: 122447

Client Sample ID: SVJ0004-07
Prep Type: Total/NA
Prep Batch: 122121

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	111		60 - 140

Lab Sample ID: 580-35243-1 MSD
Matrix: Solid
Analysis Batch: 122123

Client Sample ID: SVJ0004-07
Prep Type: Total/NA
Prep Batch: 122121

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
				Result	Qualifier						
C10-C12 Aliphatics	470	E	4.10	706	E 4	mg/Kg	☼	5829	70 - 130	7	25
C10-C12 Aromatics	180	E	4.10	102	4 E	mg/Kg	☼	-1851	70 - 130	9	25
C12-C13 Aromatics	100	E	8.19	61.5	4 E	mg/Kg	☼	-519	70 - 130	13	25
C8-C10 Aliphatics	630	E	8.19	981	E 4	mg/Kg	☼	4256	70 - 130	8	25
C8-C10 Aromatics	200	E	16.4	119	4 E	mg/Kg	☼	-517	70 - 130	9	25
C5-C6 Aliphatics	1.6		8.19	12.3		mg/Kg	☼	130	70 - 130	7	25
C6-C8 Aliphatics	130	E	4.10	205	E 4	mg/Kg	☼	1764	70 - 130	9	25
Total VPH	1700	E	65.5	2190	E 4	mg/Kg	☼	718	70 - 130	5	25

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
BFB - PID	75		60 - 140
4-Bromofluorobenzene	970	X	60 - 140

Lab Sample ID: 580-35243-1 MSD
Matrix: Solid
Analysis Batch: 122447

Client Sample ID: SVJ0004-07
Prep Type: Total/NA
Prep Batch: 122121

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
BFB - PID	101		60 - 140
4-Bromofluorobenzene	112		60 - 140

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-122001/1-B
Matrix: Solid
Analysis Batch: 122487

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 122001

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
C10-C12 Aromatics	ND		5.0		mg/Kg		10/09/12 16:51	10/16/12 07:27	1
C12-C16 Aromatics	ND		5.0		mg/Kg		10/09/12 16:51	10/16/12 07:27	1
C16-C21 Aromatics	ND		5.0		mg/Kg		10/09/12 16:51	10/16/12 07:27	1
C21-C34 Aromatics	ND		5.0		mg/Kg		10/09/12 16:51	10/16/12 07:27	1
C10-C12 Aliphatics	ND		5.0		mg/Kg		10/09/12 16:51	10/16/12 07:27	1
C12-C16 Aliphatics	ND		5.0		mg/Kg		10/09/12 16:51	10/16/12 07:27	1
C16-C21 Aliphatics	ND		5.0		mg/Kg		10/09/12 16:51	10/16/12 07:27	1
C21-C34 Aliphatics	ND		5.0		mg/Kg		10/09/12 16:51	10/16/12 07:27	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctadecane	85		60 - 140	10/09/12 16:51	10/16/12 07:27	1
o-Terphenyl	77		60 - 140	10/09/12 16:51	10/16/12 07:27	1

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 580-122001/2-B

Matrix: Solid

Analysis Batch: 122487

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 122001

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aromatics	6.67	ND	*	mg/Kg		67	70 - 130
C12-C16 Aromatics	20.0	14.2		mg/Kg		71	70 - 130
C16-C21 Aromatics	40.0	27.7	*	mg/Kg		69	70 - 130
C21-C34 Aromatics	53.3	48.3		mg/Kg		91	70 - 130
C10-C12 Aliphatics	6.67	ND	*	mg/Kg		53	70 - 130
C12-C16 Aliphatics	13.3	8.94	*	mg/Kg		67	70 - 130
C16-C21 Aliphatics	20.0	16.6		mg/Kg		83	70 - 130
C21-C34 Aliphatics	40.0	32.5		mg/Kg		81	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctadecane	80		60 - 140
o-Terphenyl	79		60 - 140

Lab Sample ID: LCSD 580-122001/3-B

Matrix: Solid

Analysis Batch: 122487

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 122001

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aromatics	6.67	5.01		mg/Kg		75	70 - 130	12	25
C12-C16 Aromatics	20.0	15.9		mg/Kg		80	70 - 130	11	25
C16-C21 Aromatics	40.0	29.7		mg/Kg		74	70 - 130	7	25
C21-C34 Aromatics	53.3	51.4		mg/Kg		96	70 - 130	6	25
C10-C12 Aliphatics	6.67	ND	*	mg/Kg		72	70 - 130	30	25
C12-C16 Aliphatics	13.3	10.9		mg/Kg		81	70 - 130	19	25
C16-C21 Aliphatics	20.0	18.0		mg/Kg		90	70 - 130	8	25
C21-C34 Aliphatics	40.0	34.9		mg/Kg		87	70 - 130	7	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctadecane	80		60 - 140
o-Terphenyl	82		60 - 140

Lab Sample ID: MB 580-122690/1-B

Matrix: Solid

Analysis Batch: 122934

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 122690

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aromatics	ND		5.0		mg/Kg		10/17/12 16:59	10/20/12 16:56	1
C12-C16 Aromatics	ND		5.0		mg/Kg		10/17/12 16:59	10/20/12 16:56	1
C16-C21 Aromatics	ND		5.0		mg/Kg		10/17/12 16:59	10/20/12 16:56	1
C21-C34 Aromatics	ND		5.0		mg/Kg		10/17/12 16:59	10/20/12 16:56	1
C10-C12 Aliphatics	ND		5.0		mg/Kg		10/17/12 16:59	10/20/12 16:56	1
C12-C16 Aliphatics	ND		5.0		mg/Kg		10/17/12 16:59	10/20/12 16:56	1
C16-C21 Aliphatics	ND		5.0		mg/Kg		10/17/12 16:59	10/20/12 16:56	1
C21-C34 Aliphatics	ND		5.0		mg/Kg		10/17/12 16:59	10/20/12 16:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	100		60 - 140	10/17/12 16:59	10/20/12 16:56	1

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 580-122690/1-B
Matrix: Solid
Analysis Batch: 122934

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 122690

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
<i>o</i> -Terphenyl	93		60 - 140	10/17/12 16:59	10/20/12 16:56	1

Lab Sample ID: LCS 580-122690/2-B
Matrix: Solid
Analysis Batch: 122934

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 122690

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aromatics	6.67	5.53		mg/Kg		83	70 - 130
C12-C16 Aromatics	20.0	17.6		mg/Kg		88	70 - 130
C16-C21 Aromatics	40.0	32.7		mg/Kg		82	70 - 130
C21-C34 Aromatics	53.3	51.1		mg/Kg		96	70 - 130
C10-C12 Aliphatics	6.67	ND		mg/Kg		73	70 - 130
C12-C16 Aliphatics	13.3	11.5		mg/Kg		87	70 - 130
C16-C21 Aliphatics	20.0	19.5		mg/Kg		97	70 - 130
C21-C34 Aliphatics	40.0	36.8		mg/Kg		92	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
<i>1</i> -Chlorooctadecane	84		60 - 140
<i>o</i> -Terphenyl	90		60 - 140

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

Lab Sample ID: 12J0038-BLK1
Matrix: Other (L)
Analysis Batch: 12J0038

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12J0038_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.50		mg/kg wet		10/05/12 06:18	10/08/12 15:49	1.00

Lab Sample ID: 12J0038-BS1
Matrix: Other (L)
Analysis Batch: 12J0038

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12J0038_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	49.8		mg/kg wet		99.7	80 - 120

Lab Sample ID: 12J0038-MS1
Matrix: Other (L)
Analysis Batch: 12J0038

Client Sample ID: Matrix Spike
Prep Type: Total
Prep Batch: 12J0038_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	8.01		49.0	57.2		mg/kg wet		100	75 - 125

TestAmerica Spokane

QC Sample Results

Client: Geo Engineers - Spokane
 Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method: EPA 6010C - Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B

(Continued)

Lab Sample ID: 12J0038-MSD1

Matrix: Other (L)

Analysis Batch: 12J0038

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 12J0038_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Lead	8.01		46.7	53.9		mg/kg wet		98.1	75 - 125	6.06	20

Lab Sample ID: 12J0038-DUP1

Matrix: Other (L)

Analysis Batch: 12J0038

Client Sample ID: Duplicate

Prep Type: Total

Prep Batch: 12J0038_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Lead	8.01		8.05		mg/kg wet		0.472	20

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-1(15)

Lab Sample ID: SVJ0004-02

Date Collected: 09/26/12 11:24

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 97.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		0.945	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0003	10/01/12 18:49	CBW	TAL SPK
Total	Prep	EPA 3580		0.971	12J0011_P	10/02/12 10:05	MS	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0011	10/02/12 18:11	MS	TAL SPK
Total	Prep	EPA 3550B		0.988	12J0002_P	10/01/12 12:47	MS	TAL SPK
Total	Analysis	EPA 8270C		20.0	12J0002	10/02/12 12:15	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12J0002	10/02/12 17:52	MS	TAL SPK
Total	Prep	EPA 3550B		1.47	12J0027_P	10/04/12 08:09	CBW	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	12J0027	10/05/12 12:48	MS	TAL SPK
Total	Prep	EPA 3050B		1.01	12J0038_P	10/05/12 06:18	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12J0038	10/08/12 16:23	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12J0015_P	10/01/12 16:12	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12J0015	10/03/12 15:52	MS	TAL SPK

Client Sample ID: B-2(5)

Lab Sample ID: SVJ0004-04

Date Collected: 09/26/12 12:38

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		0.933	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0003	10/01/12 19:13	CBW	TAL SPK
Total	Prep	EPA 3580		0.949	12J0011_P	10/02/12 10:05	MS	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0011	10/02/12 18:23	MS	TAL SPK
Total	Prep	EPA 3550B		0.985	12J0002_P	10/01/12 12:47	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12J0002	10/02/12 12:40	MS	TAL SPK
Total	Prep	EPA 3550B		0.990	12J0027_P	10/04/12 08:09	CBW	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	12J0027	10/05/12 13:06	MS	TAL SPK
Total	Prep	EPA 3050B		0.952	12J0038_P	10/05/12 06:18	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12J0038	10/08/12 17:18	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12J0015_P	10/01/12 16:12	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12J0015	10/03/12 15:52	MS	TAL SPK

Client Sample ID: B-3(5)

Lab Sample ID: SVJ0004-07

Date Collected: 09/27/12 10:42

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 86.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		0.828	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0003	10/01/12 19:36	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	0.828	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	50.0	12J0003	10/02/12 10:44	CBW	TAL SPK
Total	Prep	EPA 3580		0.961	12J0011_P	10/02/12 10:05	MS	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0011	10/02/12 18:35	MS	TAL SPK

TestAmerica Spokane

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-3(5)

Lab Sample ID: SVJ0004-07

Date Collected: 09/27/12 10:42

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 86.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3550B		0.985	12J0002_P	10/01/12 12:47	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12J0002	10/02/12 13:04	MS	TAL SPK
Total	Prep	EPA 3550B		0.989	12J0027_P	10/04/12 08:09	CBW	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	12J0027	10/05/12 13:58	MS	TAL SPK
Total/NA	Prep	5035			122121	10/10/12 17:02	EZ	TAL SEA
Total/NA	Analysis	NWTPH/VPH		1	122123	10/10/12 22:06	EZ	TAL SEA
Total/NA	Analysis	NWTPH/VPH		50	122447	10/15/12 21:36	EZ	TAL SEA
Total/NA	Prep	3550B			122001	10/09/12 16:51	RS	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	122487	10/16/12 08:36	EK	TAL SEA
Total/NA	Prep	3550B	RE		122690	10/17/12 16:59	AA	TAL SEA
Total/NA	Analysis	NWTPH/EPH	RE	1	122934	10/20/12 18:29	EK	TAL SEA
Total	Prep	EPA 3050B		0.990	12J0038_P	10/05/12 06:18	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12J0038	10/08/12 16:26	ICP	TAL SPK
Total/NA	Analysis	D 2216		1	121868	10/08/12 13:35	RM	TAL SEA
Total	Prep	Wet Chem		1.00	12J0015_P	10/01/12 16:12	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12J0015	10/03/12 15:52	MS	TAL SPK

Client Sample ID: B-4(5)

Lab Sample ID: SVJ0004-10

Date Collected: 09/27/12 12:03

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 92.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		0.769	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0003	10/02/12 13:09	CBW	TAL SPK
Total	Prep	EPA 3580		0.967	12J0011_P	10/02/12 10:05	MS	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0011	10/02/12 18:47	MS	TAL SPK
Total	Prep	EPA 3550B		0.967	12J0002_P	10/01/12 12:47	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12J0002	10/02/12 13:28	MS	TAL SPK
Total	Prep	EPA 3550B		0.996	12J0027_P	10/04/12 08:09	CBW	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	12J0027	10/05/12 14:15	MS	TAL SPK
Total	Prep	EPA 3050B		1.05	12J0038_P	10/05/12 06:18	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12J0038	10/08/12 16:30	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12J0015_P	10/01/12 16:12	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12J0015	10/03/12 15:52	MS	TAL SPK

Client Sample ID: B-5(16)

Lab Sample ID: SVJ0004-14

Date Collected: 09/27/12 13:52

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 90.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		0.745	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0003	10/01/12 20:24	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	0.745	12J0003_P	10/01/12 13:13	CBW	TAL SPK

TestAmerica Spokane

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: B-5(16)

Lab Sample ID: SVJ0004-14

Date Collected: 09/27/12 13:52

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 90.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Analysis	EPA 8260C	RE1	50.0	12J0003	10/02/12 11:08	CBW	TAL SPK
Total	Prep	EPA 3580		0.995	12J0011_P	10/02/12 10:05	MS	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0011	10/02/12 18:59	MS	TAL SPK
Total	Prep	EPA 3550B	RE1	0.999	12J0069_P	10/01/12 12:47	MS	TAL SPK
Total	Analysis	EPA 8270C	RE1	1.00	12J0069	10/11/12 16:59	MS	TAL SPK
Total	Analysis	EPA 8270C	RE1	20.0	12J0069	10/12/12 10:11	MS	TAL SPK
Total	Prep	EPA 3550B		0.989	12J0027_P	10/04/12 08:09	CBW	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	12J0027	10/05/12 14:33	MS	TAL SPK
Total/NA	Prep	5035			122121	10/10/12 17:02	EZ	TAL SEA
Total/NA	Analysis	NWTPH/VPH		1	122123	10/11/12 00:44	EZ	TAL SEA
Total/NA	Analysis	NWTPH/VPH		25	122447	10/15/12 20:43	EZ	TAL SEA
Total/NA	Prep	3550B			122001	10/09/12 16:51	RS	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	122487	10/16/12 08:59	EK	TAL SEA
Total/NA	Prep	3550B	RE		122690	10/17/12 16:59	AA	TAL SEA
Total/NA	Analysis	NWTPH/EPH	RE	1	122934	10/20/12 18:52	EK	TAL SEA
Total	Prep	EPA 3050B		0.990	12J0038_P	10/05/12 06:18	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12J0038	10/08/12 16:37	ICP	TAL SPK
Total/NA	Analysis	D 2216		1	121868	10/08/12 13:35	RM	TAL SEA
Total	Prep	Wet Chem		1.00	12J0015_P	10/01/12 16:12	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12J0015	10/03/12 15:52	MS	TAL SPK

Client Sample ID: B-6(15.5)

Lab Sample ID: SVJ0004-17

Date Collected: 09/27/12 15:36

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 94

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.13	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0003	10/02/12 13:33	CBW	TAL SPK
Total	Prep	EPA 3580		0.996	12J0011_P	10/02/12 10:05	MS	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0011	10/02/12 19:12	MS	TAL SPK
Total	Prep	EPA 3550B		0.985	12J0002_P	10/01/12 12:47	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12J0002	10/02/12 14:17	MS	TAL SPK
Total	Prep	EPA 3550B		0.993	12J0027_P	10/04/12 08:09	CBW	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	12J0027	10/05/12 14:50	MS	TAL SPK
Total	Prep	EPA 3050B		0.943	12J0038_P	10/05/12 06:18	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12J0038	10/08/12 17:22	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12J0015_P	10/01/12 16:12	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12J0015	10/03/12 15:52	MS	TAL SPK

TestAmerica Spokane

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: MW-1(15.5)

Lab Sample ID: SVJ0004-19

Date Collected: 09/27/12 09:24

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		0.750	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0003	10/01/12 21:12	CBW	TAL SPK
Total	Prep	EPA 3580		0.945	12J0011_P	10/02/12 10:05	MS	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0011	10/02/12 19:24	MS	TAL SPK
Total	Prep	EPA 3550B		0.966	12J0002_P	10/01/12 12:47	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12J0002	10/02/12 14:41	MS	TAL SPK
Total	Analysis	EPA 8270C		20.0	12J0002	10/02/12 17:28	MS	TAL SPK
Total	Prep	EPA 3550B		0.994	12J0027_P	10/04/12 08:09	CBW	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	12J0027	10/05/12 15:25	MS	TAL SPK
Total	Prep	EPA 3050B		1.00	12J0038_P	10/05/12 06:18	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12J0038	10/08/12 17:26	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12J0015_P	10/01/12 16:12	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12J0015	10/03/12 15:52	MS	TAL SPK

Client Sample ID: MW-2(15)

Lab Sample ID: SVJ0004-21

Date Collected: 09/26/12 15:11

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 97.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		0.785	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0003	10/01/12 21:36	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	0.785	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	20.0	12J0003	10/02/12 11:33	CBW	TAL SPK
Total	Prep	EPA 3580		0.983	12J0011_P	10/02/12 10:05	MS	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0011	10/02/12 19:36	MS	TAL SPK
Total	Prep	EPA 3550B		0.995	12J0002_P	10/01/12 12:47	MS	TAL SPK
Total	Analysis	EPA 8270C		25.0	12J0002	10/02/12 15:05	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12J0002	10/02/12 18:17	MS	TAL SPK
Total	Prep	EPA 3550B		0.999	12J0027_P	10/04/12 08:09	CBW	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	12J0027	10/05/12 16:00	MS	TAL SPK
Total	Prep	EPA 3050B		1.02	12J0038_P	10/05/12 06:18	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12J0038	10/08/12 17:29	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12J0015_P	10/01/12 16:12	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12J0015	10/03/12 15:52	MS	TAL SPK

Client Sample ID: MW-3(6)

Lab Sample ID: SVJ0004-22

Date Collected: 09/26/12 17:10

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 78.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.30	12J0003_P	10/01/12 13:13	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0003	10/01/12 22:00	CBW	TAL SPK
Total	Prep	EPA 3580		0.991	12J0011_P	10/02/12 10:05	MS	TAL SPK

TestAmerica Spokane

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Client Sample ID: MW-3(6)

Lab Sample ID: SVJ0004-22

Date Collected: 09/26/12 17:10

Matrix: Soil

Date Received: 09/28/12 16:30

Percent Solids: 78.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Analysis	EPA 8011		1.00	12J0011	10/02/12 20:13	MS	TAL SPK
Total	Prep	EPA 3550B		0.990	12J0002_P	10/01/12 12:47	MS	TAL SPK
Total	Analysis	EPA 8270C		1.00	12J0002	10/02/12 15:29	MS	TAL SPK
Total	Prep	EPA 3550B		0.994	12J0027_P	10/04/12 08:09	CBW	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	12J0027	10/05/12 16:17	MS	TAL SPK
Total	Prep	EPA 3050B		1.03	12J0038_P	10/05/12 06:18	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12J0038	10/08/12 17:33	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	12J0015_P	10/01/12 16:12	MS	TAL SPK
Total	Analysis	TA SOP		1.00	12J0015	10/03/12 15:52	MS	TAL SPK

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200

Certification Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Laboratory: TestAmerica Spokane

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-071	10-31-13
Washington	State Program	10	C569	01-06-13

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-13
California	NELAC	9	1115CA	01-31-13
L-A-B	DoD ELAP		L2236	01-19-13
L-A-B	ISO/IEC 17025		L2236	01-19-13
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAC	10	WA100007	11-06-12
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-13

Method Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0004

Method	Method Description	Protocol	Laboratory
EPA 8260C	NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C		TAL SPK
EPA 8011	EDB by EPA Method 8011		TAL SPK
EPA 8270C	Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring		TAL SPK
NWTPH-Dx	Semivolatile Petroleum Products by NWTPH-Dx		TAL SPK
NWTPH/PH	Northwest - Volatile Petroleum Hydrocarbons (GC)	NWTPH	TAL SEA
NWTPH/EPH	Northwest - Extractable Petroleum Hydrocarbons (GC)	NWTPH	TAL SEA
EPA 6010C	Metals Content by EPA 6010/7000 Series Methods, Prep by EPA 3050B		TAL SPK
D 2216	Percent Moisture	ASTM	TAL SEA
TA SOP	Conventional Chemistry Parameters by APHA/EPA Methods		TAL SPK

Protocol References:

ASTM = ASTM International

NWTPH = Northwest Total Petroleum Hydrocarbon

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
 11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: STJ0004

CLIENT: <u>GEO ENGINEERS</u>		INVOICE TO: <u>SCOTT LATHEN</u> <u>GEO ENGINEERS</u>										TURNAROUND REQUEST in Business Days * Organic & Inorganic Analyses <input checked="" type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 Petroleum Hydrocarbon Analyses <input checked="" type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. <input type="checkbox"/> OTHER Specify: _____ * Turnaround Requests less than standard may incur Rush Charges.									
REPORT TO: <u>SCOTT LATHEN</u> ADDRESS: <u>523 E. 2ND AVE</u>		P.O. NUMBER: <u>0504-081-00</u>																			
PHONE: <u>509-363-3125</u> FAX: <u>509-363-3126</u>		PRESERVATIVE																			
PROJECT NAME: <u>L+LEXCON</u>		REQUESTED ANALYSES																			
PROJECT NUMBER: <u>0504-081-00</u>																					
SAMPLED BY: <u>KATIE HALL</u>																					
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	GRAPH BY	GRAPH-GK	DEPTH/DEPTH BY	ANALYST-DK	BTEX EPA 8260B	EDC	SVI EPA 8260B	MTOE EPA 8260B	N-HEXANE EPA 8260B	STYRENE EPA 8260B	EDB BY	SVI EPA 8260B	LEAD BY EPA 8260B	PAHS BY EPA 8260B	VPH	OPH	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1 B-1(5)	9/26/12 1107																	S	1		
2 B-1(15)	9/26/12 1124	X	X	X	X	X	X	X	X	X	X	X	X	X	X			S	1		
3 B-1(20-20.5)	9/26/12 1159																	S	5		
4 B-2(5)	9/26/12 1238	X	X	X	X	X	X	X	X	X	X	X	X	X	X			S	5		
5 B-2(10)	9/26/12 1247																	S	1		
6 B-2(20)	9/26/12 1356																	S	1		
7 B-3(5)	9/27/12 1042	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S	5		
8 B-3(10.7)	9/27/12 1056																	S	1		
9 B-3(15)	9/27/12 1116																	S	1		
10 B-4(5)	9/27/12 1203	X	X	X	X	X	X	X	X	X	X	X	X	X	X			S	5		
RELEASED BY: <u>Katie Hall</u>	FIRM: <u>GET</u>	DATE: <u>9/28/12</u>	RECEIVED BY: <u>Ed Johnston</u>	FIRM: <u>TESTAmerica</u>	DATE: <u>9/28/12</u>																
PRINT NAME: <u>KATIE HALL</u>		TIME: <u>1545</u>	PRINT NAME: <u>Ed Johnston</u>		TIME: <u>1630</u>																
RELEASED BY:	FIRM:	DATE:	RECEIVED BY:	FIRM:	DATE:																
PRINT NAME:		TIME:	PRINT NAME:		TIME:																
ADDITIONAL REMARKS:																		TEMP: <u>38</u>	PAGE <u>1</u> OF <u>3</u>		

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1/2/2013



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
 11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: **5150004**

CLIENT: GED ENGWEEBS		INVOICE TO: SCOTT LATHEN GED ENGWEEBS		TURNAROUND REQUEST in Business Days * Organic & Inorganic Analyses <input checked="" type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 Petroleum Hydrocarbon Analyses <input checked="" type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 OTHER Specify: * Turnaround Requests less than standard may incur Rush Charges.																									
REPORT TO: SCOTT LATHEN ADDRESS: 523 E 2ND AVE		P.O. NUMBER:																											
PHONE: 509-363-3125 FAX: 509-363-3126		PRESERVATIVE																											
PROJECT NAME: L+L EXXON		REQUESTED ANALYSES																											
PROJECT NUMBER: 0504-081-00																													
SAMPLED BY: KATIE HALL																													
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	GRAPH	NI/PT/PI-CY	PH/PH/OL/PH	NH/DH-DX	BTEX	BZ/OLB	EDC	SPA	BZ/LOS	MIBE	SPA	BZ/LOS	N-HEXANE	SPA	BZ/LOS	ED6	SP/OL	LEAD	SP/AL/OL/OL	PAHS	SPA	BZ/LOS/4	NPH	PH	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1 B-4(11)	9/27/12 1216																									S	1		
2 B-5(6)	9/27/12 1316																									S	1		
3 B-5(10)	9/27/12 1329																									S	1		
4 B-5(16)	9/27/12 1352	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S	1		
5 B-6(5)	9/27/12 1454																									S	1		
6 B-6(10)	9/27/12 1506																									S	1		
7 B-6(15.5)	9/27/12 1536	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S	5		
8 MW-1(10)	9/27/12 0859																									S	1		
9 MW-1(15.5)	9/27/12 0924	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S	1		
10 MW-2(5.5)	9/26/12 1439																									S	5		
RELEASED BY: Katie Hall		FIRM: GEL		DATE: 9/28/12		TIME: 1545		RECEIVED BY: Cat Stapleton		FIRM: TestAmerica		DATE: 9/28/12		TIME: 16:30															
RELEASED BY:		FIRM:		DATE:		TIME:		RECEIVED BY:		FIRM:		DATE:		TIME:															
PRINT NAME:		FIRM:		DATE:		TIME:		PRINT NAME:		FIRM:		DATE:		TIME:															
ADDITIONAL REMARKS:																													

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244
 11922 E. First Ave, Spokane, WA 99206-5302
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

425-420-9200 FAX 420-9210
 509-924-9200 FAX 924-9290
 503-906-9200 FAX 906-9210
 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: **SNS0004**

CLIENT: GED ENGINEERS		INVOICE TO: SCOTT LATHEN GEDENGINEERS		TURNAROUND REQUEST in Business Days * Organic & Inorganic Analyses <input checked="" type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. Petroleum Hydrocarbon Analyses <input checked="" type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. <input type="checkbox"/> OTHER Specify: * Turnaround Requests less than standard may incur Rush Charges.																										
REPORT TO: SCOTT LATHEN ADDRESS: 523 E. 2ND AVE		P.O. NUMBER:																												
PHONE: 509-363-3125 FAX: 509-363-3126		PRESERVATIVE																												
PROJECT NAME: L+L EXXON		REQUESTED ANALYSES																												
PROJECT NUMBER: 0504-081-00		SAMPLED BY: KATIE HALL																												
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	GLPH	NUOTPH-GH	DRPH-TOURPH	NUOTPH-DX	BTEX	SVL	BZL	SVL	BZL	MTC	SVL	BZL	N-HEXANE	SVL	BZL	EDB	SVL	TDI	LEAD	SVL	PAHS	SVL	MSL	HAN	EPH	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1 MW-2 (15)	9/26/12 1511	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S	1			
2 MW-3 (6)	9/26/12 1710	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S	5			
3 MW-3 (10)	9/26/12 1720																									S	1			
4																														
5																														
6																														
7																														
8																														
9																														
10																														
RELEASED BY: Katie Hall		FIRM: GET		DATE: 9/28/12		TIME: 1545		RECEIVED BY: Cal Johnson		FIRM: TestAmerica		DATE: 9-28-12		TIME: 1630																
PRINT NAME: KATIE HALL		FIRM: GET		DATE: 9/28/12		TIME: 1545		RECEIVED BY: Cal Johnson		FIRM: TestAmerica		DATE: 9-28-12		TIME: 1630																
RELEASED BY:		FIRM:		DATE:		TIME:		RECEIVED BY:		FIRM:		DATE:		TIME:																
PRINT NAME:		FIRM:		DATE:		TIME:		RECEIVED BY:		FIRM:		DATE:		TIME:																
ADDITIONAL REMARKS:																														

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**TestAmerica Spokane
Sample Receipt Form**

Work Order #: <u>S130004</u>	Client: <u>GeoEngineers</u>	Project: <u>L+L Exxon</u>		
Date/Time Received: <u>9-18-12 11:30</u>		By: <u>OS</u>		
Samples Delivered By: <input type="checkbox"/> Shipping Service <input checked="" type="checkbox"/> Courier <input type="checkbox"/> Client <input type="checkbox"/> Other:				
List Air Bill Number(s) or Attach a photocopy of the Air Bill:				
Receipt Phase	Yes	No	NA	Comments
Were samples received in a cooler:	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Custody Seals are present and intact:			<input checked="" type="checkbox"/>	
Are CoC documents present:	<input checked="" type="checkbox"/>			
Necessary signatures:	<input checked="" type="checkbox"/>			
Thermal Preservation Type: <input type="checkbox"/> Blue Ice <input type="checkbox"/> Gel Ice <input checked="" type="checkbox"/> Real Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> None <input type="checkbox"/> Other:				
Temperature by IR Gun: <u>3.8</u> °C Thermometer Serial #81500 (acceptance criteria 0-6 °C)				
Temperature out of range: <input type="checkbox"/> Not enough ice <input type="checkbox"/> Ice melted <input type="checkbox"/> w/in 4hrs of collection <input type="checkbox"/> NA <input type="checkbox"/> Other:				
Log-in Phase	Yes	No	NA	Comments
Date/Time: <u>9-18-12 11:35</u> By: <u>OS</u>				
Are sample labels affixed and completed for each container	<input checked="" type="checkbox"/>			
Samples containers were received intact:	<input checked="" type="checkbox"/>			
Do sample IDs match the CoC	<input checked="" type="checkbox"/>			
Appropriate sample containers were received for tests requested	<input checked="" type="checkbox"/>			
Are sample volumes adequate for tests requested	<input checked="" type="checkbox"/>			
Appropriate preservatives were used for the tests requested	<input checked="" type="checkbox"/>			
pH of inorganic samples checked and is within method specification	<input checked="" type="checkbox"/>			
Are VOC samples free of bubbles >6mm (1/4" diameter)	<input checked="" type="checkbox"/>			
Are dissolved parameters field filtered			<input checked="" type="checkbox"/>	
Do any samples need to be filtered or preserved by the lab			<input checked="" type="checkbox"/>	
Does this project require quick turnaround analysis		<input checked="" type="checkbox"/>		
Are there any short hold time tests (see chart below)		<input checked="" type="checkbox"/>		
Are any samples within 2 days of or past expiration		<input checked="" type="checkbox"/>		
Was the CoC scanned	<input checked="" type="checkbox"/>			
Were there Non-conformance issues at login		<input checked="" type="checkbox"/>		
If yes, was a CAR generated #			<input checked="" type="checkbox"/>	

24 hours or less	48 hours	7 days
Coliform Bacteria	BOD, Color, MBAS	TDS, TSS, VDS, FDS
Chromium +6	Nitrate/Nitrite	Sulfide
	Orthophosphate	Aqueous Organic Prep

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Spokane
11922 East 1st. Avenue
Spokane, WA 99206
Tel: (509)924-9200

TestAmerica Job ID: SVJ0178
Client Project/Site: 0504-081-00
Client Project Description: L&L Exxon

For:
Geo Engineers - Spokane
523 East Second Ave.
Spokane, WA 99202

Attn: Scott Lathem



Authorized for release by:
11/6/2012 9:16:04 AM

Randee Decker
Project Manager
Randee.Decker@testamericainc.com

LINKS

Review your project
results through
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www.testamericainc.com

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

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

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Sample Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
SVJ0178-01	MW-1-101912	Water	10/19/12 17:16	10/22/12 13:15
SVJ0178-02	MW-2-101912	Water	10/19/12 16:18	10/22/12 13:15
SVJ0178-03	MW-3-101912	Water	10/19/12 18:15	10/22/12 13:15
SVJ0178-04	Duplicate-1-101912	Water	10/19/12 12:34	10/22/12 13:15
SVJ0178-05	Trip Blank	Water	10/04/12 00:00	10/22/12 13:15

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Definitions/Glossary

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Qualifiers

GCMS Volatiles

Qualifier	Qualifier Description
C	Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
RER	Relative error ratio
DER	Duplicate error ratio (normalized absolute difference)
DLC	Decision level concentration
RL	Reporting Limit or Requested Limit (Radiochemistry only)

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Client Sample ID: MW-1-101912

Lab Sample ID: SVJ0178-01

Date Collected: 10/19/12 17:16

Matrix: Water

Date Received: 10/22/12 13:15

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.500		ug/l		10/23/12 11:41	10/23/12 20:38	1.00
Toluene	100		0.500		ug/l		10/23/12 11:41	10/23/12 20:38	1.00
1,2-Dichloroethane (EDC)	ND		0.500		ug/l		10/23/12 11:41	10/23/12 20:38	1.00
Hexane	4.53		1.00		ug/l		10/23/12 11:41	10/23/12 20:38	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	109		71.2 - 143				10/23/12 11:41	10/23/12 20:38	1.00
Toluene-d8	112		74.1 - 135				10/23/12 11:41	10/23/12 20:38	1.00
4-bromofluorobenzene	106		68.7 - 141				10/23/12 11:41	10/23/12 20:38	1.00

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	3740		900		ug/l		10/23/12 11:41	10/24/12 14:52	10.0
Benzene	178		2.00		ug/l		10/23/12 11:41	10/24/12 14:52	10.0
Ethylbenzene	16.5		5.00		ug/l		10/23/12 11:41	10/24/12 14:52	10.0
m,p-Xylene	334		5.00		ug/l		10/23/12 11:41	10/24/12 14:52	10.0
o-Xylene	139		5.00		ug/l		10/23/12 11:41	10/24/12 14:52	10.0
Xylenes (total)	474		15.0		ug/l		10/23/12 11:41	10/24/12 14:52	10.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	108		71.2 - 143				10/23/12 11:41	10/24/12 14:52	10.0
Toluene-d8	110		74.1 - 135				10/23/12 11:41	10/24/12 14:52	10.0
4-bromofluorobenzene	104		68.7 - 141				10/23/12 11:41	10/24/12 14:52	10.0

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	38		0.12		ug/L		10/23/12 13:53	11/02/12 15:32	10
1-Methylnaphthalene	30		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Acenaphthylene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Acenaphthene	0.19		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Fluorene	0.20		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Phenanthrene	0.13		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Anthracene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Fluoranthene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Pyrene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Benzo[a]anthracene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Chrysene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Benzo[a]pyrene	ND		0.19		ug/L		10/23/12 13:53	11/02/12 15:32	10
Indeno[1,2,3-cd]pyrene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Dibenz(a,h)anthracene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Benzo[g,h,i]perylene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Benzo[b]fluoranthene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Benzo[k]fluoranthene	ND		0.095		ug/L		10/23/12 13:53	11/02/12 15:32	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	64		20 - 150				10/23/12 13:53	11/02/12 15:32	10

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	110		0.95		ug/L		10/23/12 13:53	11/02/12 16:59	100

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Client Sample ID: MW-1-101912

Lab Sample ID: SVJ0178-01

Date Collected: 10/19/12 17:16

Matrix: Water

Date Received: 10/22/12 13:15

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.0100		ug/l		10/23/12 11:07	10/23/12 15:55	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	2.40		0.150		mg/l		10/29/12 10:00	10/29/12 15:37	1.00
Heavy Oil Range Hydrocarbons	ND		0.299		mg/l		10/29/12 10:00	10/29/12 15:37	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-FBP	71.8		50 - 150	10/29/12 10:00	10/29/12 15:37	1.00
n-Triacontane-d62	103		50 - 150	10/29/12 10:00	10/29/12 15:37	1.00

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0150		mg/l		11/05/12 08:16	11/05/12 17:25	1.00

Client Sample ID: MW-2-101912

Lab Sample ID: SVJ0178-02

Date Collected: 10/19/12 16:18

Matrix: Water

Date Received: 10/22/12 13:15

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.500		ug/l		10/23/12 11:41	10/23/12 21:25	1.00
Benzene	0.990		0.200		ug/l		10/23/12 11:41	10/23/12 21:25	1.00
1,2-Dichloroethane (EDC)	ND		0.500		ug/l		10/23/12 11:41	10/23/12 21:25	1.00
Hexane	6.66		1.00		ug/l		10/23/12 11:41	10/23/12 21:25	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	108		71.2 - 143	10/23/12 11:41	10/23/12 21:25	1.00
Toluene-d8	123		74.1 - 135	10/23/12 11:41	10/23/12 21:25	1.00
4-bromofluorobenzene	110		68.7 - 141	10/23/12 11:41	10/23/12 21:25	1.00

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	19500		9000		ug/l		10/23/12 11:41	10/24/12 15:39	100
Toluene	2400		50.0		ug/l		10/23/12 11:41	10/24/12 15:39	100
Ethylbenzene	834		50.0		ug/l		10/23/12 11:41	10/24/12 15:39	100
m,p-Xylene	2720		50.0		ug/l		10/23/12 11:41	10/24/12 15:39	100
o-Xylene	982		50.0		ug/l		10/23/12 11:41	10/24/12 15:39	100
Xylenes (total)	3700		150		ug/l		10/23/12 11:41	10/24/12 15:39	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	108		71.2 - 143	10/23/12 11:41	10/24/12 15:39	100
Toluene-d8	108		74.1 - 135	10/23/12 11:41	10/24/12 15:39	100
4-bromofluorobenzene	107		68.7 - 141	10/23/12 11:41	10/24/12 15:39	100

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	0.048		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Acenaphthene	0.11		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Fluorene	0.062		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Phenanthrene	0.087		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Anthracene	0.021		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Fluoranthene	ND		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Client Sample ID: MW-2-101912

Lab Sample ID: SVJ0178-02

Date Collected: 10/19/12 16:18

Matrix: Water

Date Received: 10/22/12 13:15

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Benzo[a]anthracene	ND		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Chrysene	ND		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Benzo[a]pyrene	ND		0.038		ug/L		10/25/12 12:46	11/02/12 15:54	2
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Dibenz(a,h)anthracene	ND		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Benzo[g,h,i]perylene	ND		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Benzo[b]fluoranthene	ND		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Benzo[k]fluoranthene	ND		0.019		ug/L		10/25/12 12:46	11/02/12 15:54	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	67		20 - 150				10/25/12 12:46	11/02/12 15:54	2

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	170		0.48		ug/L		10/25/12 12:46	11/02/12 16:38	50
2-Methylnaphthalene	49		0.62		ug/L		10/25/12 12:46	11/02/12 16:38	50
1-Methylnaphthalene	37		0.48		ug/L		10/25/12 12:46	11/02/12 16:38	50

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.0100		ug/l		10/23/12 11:07	10/23/12 16:07	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	2.32		0.153		mg/l		10/29/12 10:00	10/29/12 15:54	1.00
Heavy Oil Range Hydrocarbons	ND		0.305		mg/l		10/29/12 10:00	10/29/12 15:54	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-FBP	71.3		50 - 150				10/29/12 10:00	10/29/12 15:54	1.00
n-Triacontane-d62	105		50 - 150				10/29/12 10:00	10/29/12 15:54	1.00

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0150		mg/l		11/05/12 08:16	11/05/12 17:03	1.00

Client Sample ID: MW-3-101912

Lab Sample ID: SVJ0178-03

Date Collected: 10/19/12 18:15

Matrix: Water

Date Received: 10/22/12 13:15

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND	C	90.0		ug/l		10/23/12 11:41	10/23/12 21:48	1.00
1,2-Dichloroethane (EDC)	ND		0.500		ug/l		10/23/12 11:41	10/23/12 21:48	1.00
Hexane	ND		1.00		ug/l		10/23/12 11:41	10/23/12 21:48	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	109		71.2 - 143				10/23/12 11:41	10/23/12 21:48	1.00
Toluene-d8	110		74.1 - 135				10/23/12 11:41	10/23/12 21:48	1.00
4-bromofluorobenzene	108		68.7 - 141				10/23/12 11:41	10/23/12 21:48	1.00

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Client Sample ID: MW-3-101912

Lab Sample ID: SVJ0178-03

Date Collected: 10/19/12 18:15

Matrix: Water

Date Received: 10/22/12 13:15

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.500		ug/l		10/23/12 11:41	10/24/12 16:02	1.00
Benzene	ND		0.200		ug/l		10/23/12 11:41	10/24/12 16:02	1.00
Toluene	ND		0.500		ug/l		10/23/12 11:41	10/24/12 16:02	1.00
Ethylbenzene	ND		0.500		ug/l		10/23/12 11:41	10/24/12 16:02	1.00
m,p-Xylene	ND		0.500		ug/l		10/23/12 11:41	10/24/12 16:02	1.00
o-Xylene	ND		0.500		ug/l		10/23/12 11:41	10/24/12 16:02	1.00
Xylenes (total)	ND		1.50		ug/l		10/23/12 11:41	10/24/12 16:02	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	108		71.2 - 143	10/23/12 11:41	10/24/12 16:02	1.00
Toluene-d8	108		74.1 - 135	10/23/12 11:41	10/24/12 16:02	1.00
4-bromofluorobenzene	106		68.7 - 141	10/23/12 11:41	10/24/12 16:02	1.00

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.016		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
2-Methylnaphthalene	ND		0.012		ug/L		10/25/12 12:46	11/02/12 15:11	1
1-Methylnaphthalene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Acenaphthylene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Acenaphthene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Fluorene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Phenanthrene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Anthracene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Fluoranthene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Pyrene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Benzo[a]anthracene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Chrysene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Benzo[a]pyrene	ND		0.019		ug/L		10/25/12 12:46	11/02/12 15:11	1
Indeno[1,2,3-cd]pyrene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Dibenz(a,h)anthracene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Benzo[g,h,i]perylene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Benzo[b]fluoranthene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1
Benzo[k]fluoranthene	ND		0.0095		ug/L		10/25/12 12:46	11/02/12 15:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	65		20 - 150	10/25/12 12:46	11/02/12 15:11	1

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.0100		ug/l		10/23/12 11:07	10/23/12 16:19	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	ND		0.149		mg/l		10/29/12 10:00	10/29/12 16:11	1.00
Heavy Oil Range Hydrocarbons	ND		0.298		mg/l		10/29/12 10:00	10/29/12 16:11	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-FBP	73.9		50 - 150	10/29/12 10:00	10/29/12 16:11	1.00
n-Triacontane-d62	101		50 - 150	10/29/12 10:00	10/29/12 16:11	1.00

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0150		mg/l		11/05/12 08:16	11/05/12 17:29	1.00

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Client Sample ID: Duplicate-1-101912

Lab Sample ID: SVJ0178-04

Date Collected: 10/19/12 12:34

Matrix: Water

Date Received: 10/22/12 13:15

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.500		ug/l		10/23/12 11:41	10/23/12 22:11	1.00
Toluene	98.0		0.500		ug/l		10/23/12 11:41	10/23/12 22:11	1.00
1,2-Dichloroethane (EDC)	ND		0.500		ug/l		10/23/12 11:41	10/23/12 22:11	1.00
Hexane	4.36		1.00		ug/l		10/23/12 11:41	10/23/12 22:11	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	110		71.2 - 143				10/23/12 11:41	10/23/12 22:11	1.00
Toluene-d8	113		74.1 - 135				10/23/12 11:41	10/23/12 22:11	1.00
4-bromofluorobenzene	109		68.7 - 141				10/23/12 11:41	10/23/12 22:11	1.00

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	5080		900		ug/l		10/23/12 11:41	10/24/12 16:26	10.0
Benzene	261		2.00		ug/l		10/23/12 11:41	10/24/12 16:26	10.0
Ethylbenzene	184		5.00		ug/l		10/23/12 11:41	10/24/12 16:26	10.0
m,p-Xylene	433		5.00		ug/l		10/23/12 11:41	10/24/12 16:26	10.0
o-Xylene	180		5.00		ug/l		10/23/12 11:41	10/24/12 16:26	10.0
Xylenes (total)	614		15.0		ug/l		10/23/12 11:41	10/24/12 16:26	10.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	110		71.2 - 143				10/23/12 11:41	10/24/12 16:26	10.0
Toluene-d8	108		74.1 - 135				10/23/12 11:41	10/24/12 16:26	10.0
4-bromofluorobenzene	105		68.7 - 141				10/23/12 11:41	10/24/12 16:26	10.0

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	41		0.12		ug/L		10/25/12 12:46	11/02/12 16:16	10
1-Methylnaphthalene	31		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Acenaphthylene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Acenaphthene	0.18		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Fluorene	0.18		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Phenanthrene	0.14		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Anthracene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Fluoranthene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Pyrene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Benzo[a]anthracene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Chrysene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Benzo[a]pyrene	ND		0.19		ug/L		10/25/12 12:46	11/02/12 16:16	10
Indeno[1,2,3-cd]pyrene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Dibenz(a,h)anthracene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Benzo[g,h,i]perylene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Benzo[b]fluoranthene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Benzo[k]fluoranthene	ND		0.095		ug/L		10/25/12 12:46	11/02/12 16:16	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	62		20 - 150				10/25/12 12:46	11/02/12 16:16	10

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	120		0.95		ug/L		10/25/12 12:46	11/02/12 17:43	100

Client Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Client Sample ID: Duplicate-1-101912

Lab Sample ID: SVJ0178-04

Date Collected: 10/19/12 12:34

Matrix: Water

Date Received: 10/22/12 13:15

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.0100		ug/l		10/23/12 11:07	10/23/12 16:31	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	2.44		0.149		mg/l		10/29/12 10:00	10/30/12 09:29	1.00
Heavy Oil Range Hydrocarbons	ND		0.298		mg/l		10/29/12 10:00	10/30/12 09:29	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-FBP	72.9		50 - 150	10/29/12 10:00	10/30/12 09:29	1.00
n-Triacontane-d62	99.7		50 - 150	10/29/12 10:00	10/30/12 09:29	1.00

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0150		mg/l		11/05/12 08:16	11/05/12 17:33	1.00

Client Sample ID: Trip Blank

Lab Sample ID: SVJ0178-05

Date Collected: 10/04/12 00:00

Matrix: Water

Date Received: 10/22/12 13:15

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND	C	90.0		ug/l		10/23/12 11:41	10/23/12 22:35	1.00
Methyl tert-butyl ether	ND		0.500		ug/l		10/23/12 11:41	10/23/12 22:35	1.00
Benzene	ND		0.200		ug/l		10/23/12 11:41	10/23/12 22:35	1.00
Toluene	ND		0.500		ug/l		10/23/12 11:41	10/23/12 22:35	1.00
Ethylbenzene	ND		0.500		ug/l		10/23/12 11:41	10/23/12 22:35	1.00
m,p-Xylene	ND		0.500		ug/l		10/23/12 11:41	10/23/12 22:35	1.00
o-Xylene	ND		0.500		ug/l		10/23/12 11:41	10/23/12 22:35	1.00
1,2-Dichloroethane (EDC)	ND		0.500		ug/l		10/23/12 11:41	10/23/12 22:35	1.00
Xylenes (total)	ND		1.50		ug/l		10/23/12 11:41	10/23/12 22:35	1.00
Hexane	ND		1.00		ug/l		10/23/12 11:41	10/23/12 22:35	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	108		71.2 - 143	10/23/12 11:41	10/23/12 22:35	1.00
Toluene-d8	110		74.1 - 135	10/23/12 11:41	10/23/12 22:35	1.00
4-bromofluorobenzene	110		68.7 - 141	10/23/12 11:41	10/23/12 22:35	1.00

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

Lab Sample ID: 12J0181-BLK1

Matrix: Water

Analysis Batch: 12J0181

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12J0181_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND	C	90.0		ug/l		10/23/12 11:41	10/23/12 14:24	1.00
Methyl tert-butyl ether	ND		0.500		ug/l		10/23/12 11:41	10/23/12 14:24	1.00
Benzene	ND		0.200		ug/l		10/23/12 11:41	10/23/12 14:24	1.00
Toluene	ND		0.500		ug/l		10/23/12 11:41	10/23/12 14:24	1.00
Ethylbenzene	ND		0.500		ug/l		10/23/12 11:41	10/23/12 14:24	1.00
m,p-Xylene	ND		0.500		ug/l		10/23/12 11:41	10/23/12 14:24	1.00
o-Xylene	ND		0.500		ug/l		10/23/12 11:41	10/23/12 14:24	1.00
1,2-Dichloroethane (EDC)	ND		0.500		ug/l		10/23/12 11:41	10/23/12 14:24	1.00
Xylenes (total)	ND		1.50		ug/l		10/23/12 11:41	10/23/12 14:24	1.00
Hexane	ND		1.00		ug/l		10/23/12 11:41	10/23/12 14:24	1.00

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	107		71.2 - 143	10/23/12 11:41	10/23/12 14:24	1.00
Toluene-d8	109		74.1 - 135	10/23/12 11:41	10/23/12 14:24	1.00
4-bromofluorobenzene	107		68.7 - 141	10/23/12 11:41	10/23/12 14:24	1.00

Lab Sample ID: 12J0181-BS1

Matrix: Water

Analysis Batch: 12J0181

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0181_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Hydrocarbons	1000	922		ug/l		92.2	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane	108		71.2 - 143
Toluene-d8	109		74.1 - 135
4-bromofluorobenzene	104		68.7 - 141

Lab Sample ID: 12J0181-BS2

Matrix: Water

Analysis Batch: 12J0181

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0181_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	10.0	9.61		ug/l		96.1	80.1 - 128
Benzene	10.0	10.5		ug/l		105	84.2 - 122
Toluene	10.0	10.6		ug/l		106	85.8 - 123
Ethylbenzene	10.0	10.4		ug/l		104	83.6 - 111
m,p-Xylene	20.0	21.4		ug/l		107	86.4 - 115
o-Xylene	10.0	10.8		ug/l		108	90.2 - 116
Xylenes (total)	30.0	32.2		ug/l		107	91.4 - 114

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane	109		71.2 - 143
Toluene-d8	110		74.1 - 135
4-bromofluorobenzene	106		68.7 - 141

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Method: EPA 8260C - NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C

(Continued)

Lab Sample ID: 12J0181-BS3

Matrix: Water

Analysis Batch: 12J0181

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0181_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexane	10.0	8.81		ug/l		88.1	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane	109		71.2 - 143
Toluene-d8	110		74.1 - 135
4-bromofluorobenzene	106		68.7 - 141

Lab Sample ID: 12J0181-DUP1

Matrix: Water

Analysis Batch: 12J0181

Client Sample ID: MW-1-101912

Prep Type: Total

Prep Batch: 12J0181_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Hexane	4.53		4.15		ug/l		8.76	20

Lab Sample ID: 12J0181-DUP1

Matrix: Water

Analysis Batch: 12J0181

Client Sample ID: MW-1-101912

Prep Type: Total

Prep Batch: 12J0181_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Gasoline Range Hydrocarbons	3740		3690		ug/l		1.26	35
Benzene	178		173		ug/l		2.68	20
Ethylbenzene	16.5		16.0		ug/l		3.08	20
m,p-Xylene	334		335		ug/l		0.059	20
							8	
o-Xylene	139		142		ug/l		2.28	20
Xylenes (total)	474		477		ug/l		0.715	20

Surrogate	Duplicate %Recovery	Duplicate Qualifier	Limits
Dibromofluoromethane	110		71.2 - 143
Toluene-d8	108		74.1 - 135
4-bromofluorobenzene	105		68.7 - 141

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-123133/1-A

Matrix: Water

Analysis Batch: 123836

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 123133

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
2-Methylnaphthalene	ND		0.013		ug/L		10/23/12 13:41	11/02/12 14:27	1
1-Methylnaphthalene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Acenaphthylene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Acenaphthene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Fluorene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Phenanthrene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Anthracene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Fluoranthene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-123133/1-A

Matrix: Water

Analysis Batch: 123836

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 123133

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Benzo[a]anthracene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Chrysene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Benzo[a]pyrene	ND		0.020		ug/L		10/23/12 13:41	11/02/12 14:27	1
Indeno[1,2,3-cd]pyrene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Dibenz(a,h)anthracene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Benzo[g,h,i]perylene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Benzo[b]fluoranthene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Benzo[k]fluoranthene	ND		0.010		ug/L		10/23/12 13:41	11/02/12 14:27	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	70		20 - 150				10/23/12 13:41	11/02/12 14:27	1

Lab Sample ID: LCS 580-123133/2-A

Matrix: Water

Analysis Batch: 123836

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 123133

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	2.01	2.05		ug/L		102	60 - 125
2-Methylnaphthalene	2.00	2.05		ug/L		102	60 - 125
1-Methylnaphthalene	2.01	2.18		ug/L		109	60 - 125
Acenaphthylene	2.00	2.13		ug/L		106	65 - 125
Acenaphthene	2.00	2.06		ug/L		103	65 - 125
Fluorene	2.02	1.94		ug/L		96	70 - 125
Phenanthrene	2.01	2.32		ug/L		115	75 - 125
Anthracene	2.00	1.99		ug/L		100	50 - 125
Fluoranthene	2.00	2.23		ug/L		111	70 - 125
Pyrene	2.00	2.23		ug/L		112	70 - 125
Benzo[a]anthracene	2.00	2.39		ug/L		119	65 - 125
Chrysene	1.93	2.26		ug/L		117	70 - 125
Benzo[a]pyrene	2.00	1.61		ug/L		80	45 - 125
Indeno[1,2,3-cd]pyrene	2.01	2.41		ug/L		120	75 - 125
Dibenz(a,h)anthracene	2.00	2.00		ug/L		100	75 - 130
Benzo[g,h,i]perylene	2.00	2.18		ug/L		109	75 - 125
Benzo[b]fluoranthene	2.00	1.85		ug/L		92	70 - 125
Benzo[k]fluoranthene	2.00	1.99		ug/L		100	70 - 125
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Terphenyl-d14	85		20 - 150				

Method: EPA 8011 - EDB by EPA Method 8011

Lab Sample ID: 12J0176-BLK1

Matrix: Water

Analysis Batch: 12J0176

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12J0176_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.0100		ug/l		10/23/12 11:07	10/23/12 15:18	1.00

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Method: EPA 8011 - EDB by EPA Method 8011 (Continued)

Lab Sample ID: 12J0176-BS1
Matrix: Water
Analysis Batch: 12J0176

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12J0176_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2-Dibromoethane	0.250	0.264		ug/l		106	60 - 140

Lab Sample ID: 12J0176-BS2
Matrix: Water
Analysis Batch: 12J0176

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12J0176_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2-Dibromoethane	0.250	0.259		ug/l		104	60 - 140

Lab Sample ID: 12J0176-BSD1
Matrix: Water
Analysis Batch: 12J0176

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 12J0176_P

Analyte	Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2-Dibromoethane	0.250	0.251		ug/l		100	60 - 140	5.14	20

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Lab Sample ID: 12J0185-BLK1
Matrix: Water
Analysis Batch: 12J0185

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12J0185_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	ND		0.125		mg/l		10/29/12 10:00	10/29/12 13:36	1.00
Heavy Oil Range Hydrocarbons	ND		0.250		mg/l		10/29/12 10:00	10/29/12 13:36	1.00
Surrogate	Blank %Recovery	Blank Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-FBP	69.5		50 - 150				10/29/12 10:00	10/29/12 13:36	1.00
n-Triacontane-d62	77.5		50 - 150				10/29/12 10:00	10/29/12 13:36	1.00

Lab Sample ID: 12J0185-BS1
Matrix: Water
Analysis Batch: 12J0185

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12J0185_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Hydrocarbons	2.50	1.98		mg/l		79.3	54.5 - 136
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
2-FBP	66.4		50 - 150				
n-Triacontane-d62	78.5		50 - 150				

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods

Lab Sample ID: 12K0024-BLK1
Matrix: Water
Analysis Batch: 12K0024

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12K0024_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0300		mg/l		11/05/12 08:16	11/05/12 17:00	1.00

QC Sample Results

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Method: EPA 6010C - Total Metals by EPA 6010/7000 Series Methods (Continued)

Lab Sample ID: 12K0024-BS1
Matrix: Water
Analysis Batch: 12K0024

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12K0024_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	0.986		mg/l		98.6	80 - 120

Lab Sample ID: 12K0024-MS1
Matrix: Water
Analysis Batch: 12K0024

Client Sample ID: MW-2-101912
Prep Type: Total
Prep Batch: 12K0024_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1.00	0.918		mg/l		91.8	75 - 125

Lab Sample ID: 12K0024-MSD1
Matrix: Water
Analysis Batch: 12K0024

Client Sample ID: MW-2-101912
Prep Type: Total
Prep Batch: 12K0024_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		1.00	0.960		mg/l		96.0	75 - 125	4.43	20

Lab Sample ID: 12K0024-DUP1
Matrix: Water
Analysis Batch: 12K0024

Client Sample ID: MW-2-101912
Prep Type: Total
Prep Batch: 12K0024_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		mg/l			20

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Client Sample ID: MW-1-101912

Lab Sample ID: SVJ0178-01

Date Collected: 10/19/12 17:16

Matrix: Water

Date Received: 10/22/12 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12J0181_P	10/23/12 11:41	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0181	10/23/12 20:38	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	1.00	12J0181_P	10/23/12 11:41	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	10.0	12J0181	10/24/12 14:52	CBW	TAL SPK
Total/NA	Prep	3520C	DL		123133	10/23/12 13:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM	DL	100	123836	11/02/12 16:59	AP	TAL SEA
Total/NA	Prep	3520C			123133	10/23/12 13:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		10	123836	11/02/12 15:32	AP	TAL SEA
Total	Prep	EPA 3580		1.00	12J0176_P	10/23/12 11:07	CBW	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0176	10/23/12 15:55	CBW	TAL SPK
Total	Prep	EPA 3510/600 Series	RE1	0.599	12J0185_P	10/29/12 10:00	CBW	TAL SPK
Total	Analysis	NWTPH-Dx	RE1	1.00	12J0185	10/29/12 15:37	MS	TAL SPK
Total	Prep	Metals		1.00	12K0024_P	11/05/12 08:16	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12K0024	11/05/12 17:25	ICP	TAL SPK

Client Sample ID: MW-2-101912

Lab Sample ID: SVJ0178-02

Date Collected: 10/19/12 16:18

Matrix: Water

Date Received: 10/22/12 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12J0181_P	10/23/12 11:41	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0181	10/23/12 21:25	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	1.00	12J0181_P	10/23/12 11:41	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	100	12J0181	10/24/12 15:39	CBW	TAL SPK
Total/NA	Prep	3520C			123133	10/25/12 12:46	RD	TAL SEA
Total/NA	Analysis	8270C SIM		2	123836	11/02/12 15:54	AP	TAL SEA
Total/NA	Prep	3520C	DL		123133	10/25/12 12:46	RD	TAL SEA
Total/NA	Analysis	8270C SIM	DL	50	123836	11/02/12 16:38	AP	TAL SEA
Total	Prep	EPA 3580		1.00	12J0176_P	10/23/12 11:07	CBW	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0176	10/23/12 16:07	CBW	TAL SPK
Total	Prep	EPA 3510/600 Series	RE1	0.610	12J0185_P	10/29/12 10:00	CBW	TAL SPK
Total	Analysis	NWTPH-Dx	RE1	1.00	12J0185	10/29/12 15:54	MS	TAL SPK
Total	Prep	Metals		1.00	12K0024_P	11/05/12 08:16	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12K0024	11/05/12 17:03	ICP	TAL SPK

Client Sample ID: MW-3-101912

Lab Sample ID: SVJ0178-03

Date Collected: 10/19/12 18:15

Matrix: Water

Date Received: 10/22/12 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12J0181_P	10/23/12 11:41	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0181	10/23/12 21:48	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	1.00	12J0181_P	10/23/12 11:41	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	1.00	12J0181	10/24/12 16:02	CBW	TAL SPK

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Client Sample ID: MW-3-101912

Lab Sample ID: SVJ0178-03

Date Collected: 10/19/12 18:15

Matrix: Water

Date Received: 10/22/12 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			123133	10/25/12 12:46	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	123836	11/02/12 15:11	AP	TAL SEA
Total	Prep	EPA 3580		1.00	12J0176_P	10/23/12 11:07	CBW	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0176	10/23/12 16:19	CBW	TAL SPK
Total	Prep	EPA 3510/600 Series	RE1	0.596	12J0185_P	10/29/12 10:00	CBW	TAL SPK
Total	Analysis	NWTPH-Dx	RE1	1.00	12J0185	10/29/12 16:11	MS	TAL SPK
Total	Prep	Metals		1.00	12K0024_P	11/05/12 08:16	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12K0024	11/05/12 17:29	ICP	TAL SPK

Client Sample ID: Duplicate-1-101912

Lab Sample ID: SVJ0178-04

Date Collected: 10/19/12 12:34

Matrix: Water

Date Received: 10/22/12 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12J0181_P	10/23/12 11:41	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0181	10/23/12 22:11	CBW	TAL SPK
Total	Prep	GC/MS Volatiles	RE1	1.00	12J0181_P	10/23/12 11:41	CBW	TAL SPK
Total	Analysis	EPA 8260C	RE1	10.0	12J0181	10/24/12 16:26	CBW	TAL SPK
Total/NA	Prep	3520C	DL		123133	10/25/12 12:46	RD	TAL SEA
Total/NA	Analysis	8270C SIM	DL	100	123836	11/02/12 17:43	AP	TAL SEA
Total/NA	Prep	3520C			123133	10/25/12 12:46	RD	TAL SEA
Total/NA	Analysis	8270C SIM		10	123836	11/02/12 16:16	AP	TAL SEA
Total	Prep	EPA 3580		1.00	12J0176_P	10/23/12 11:07	CBW	TAL SPK
Total	Analysis	EPA 8011		1.00	12J0176	10/23/12 16:31	CBW	TAL SPK
Total	Prep	EPA 3510/600 Series	RE1	0.596	12J0185_P	10/29/12 10:00	CBW	TAL SPK
Total	Analysis	NWTPH-Dx	RE1	1.00	12J0185	10/30/12 09:29	MS	TAL SPK
Total	Prep	Metals		1.00	12K0024_P	11/05/12 08:16	JSP	TAL SPK
Total	Analysis	EPA 6010C		1.00	12K0024	11/05/12 17:33	ICP	TAL SPK

Client Sample ID: Trip Blank

Lab Sample ID: SVJ0178-05

Date Collected: 10/04/12 00:00

Matrix: Water

Date Received: 10/22/12 13:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	12J0181_P	10/23/12 11:41	CBW	TAL SPK
Total	Analysis	EPA 8260C		1.00	12J0181	10/23/12 22:35	CBW	TAL SPK

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200

Certification Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Laboratory: TestAmerica Spokane

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Washington	State Program	10	C569	01-06-13

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-13
California	NELAC	9	1115CA	01-31-13
L-A-B	DoD ELAP		L2236	01-19-13
L-A-B	ISO/IEC 17025		L2236	01-19-13
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAC	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-13

Method Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-081-00

TestAmerica Job ID: SVJ0178

Method	Method Description	Protocol	Laboratory
EPA 8260C	NWTPH-Gx and Volatile Organic Compounds by EPA Method 8260C		TAL SPK
8270C SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL SEA
EPA 8011	EDB by EPA Method 8011		TAL SPK
NWTPH-Dx	Semivolatile Petroleum Products by NWTPH-Dx		TAL SPK
EPA 6010C	Total Metals by EPA 6010/7000 Series Methods		TAL SPK

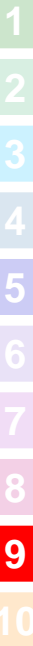
Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200



CHAIN OF CUSTODY REPORT

Work Order # 5100178

CLIENT: <u>GED ENGINEERS</u>				INVOICE TO: <u>SCOTT LATHEN</u>				TURNAROUND REQUEST in Business Days * Organic & Inorganic Analyses <input type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. Petroleum Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. <input type="checkbox"/> OTHER Specify: * Turnaround Requests less than standard may incur Rush Charges.															
REPORT TO: <u>SCOTT LATHEN</u> ADDRESS: <u>523 E 2ND AVE</u> <u>SPOKANE, WA 99202</u>				P.O. NUMBER:																			
PHONE: <u>509-362-3125</u> FAX: <u>509-363-3126</u>				PRESERVATIVE																			
PROJECT NAME: <u>L+L EXXON</u>				REQUESTED ANALYSES																			
PROJECT NUMBER: <u>0504-081-00</u>																							
SAMPLED BY: <u>KATIE HALL</u>																							
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	Graph by	NALPHAN-GN DPH+COPIH BY	NALPHAN-DX BY	BTEX BY	EDS BY	EDS BY	EDS BY	EDS BY	EDS BY	EDS BY	EDS BY	EDS BY	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID						
1 MW-1-10/9/12	10/19/12 1716	X	X	X	X	X	X	X	X	X	X	X	X	W	9								
2 MW-2-10/9/12	10/19/12 1618	X	X	X	X	X	X	X	X	X	X	X	X	W	9								
3 MW-3-10/9/12	10/19/12 1815	X	X	X	X	X	X	X	X	X	X	X	X	W	9								
4 DUPLICATE-1-10/9/12	10/19/12 1234	X	X	X	X	X	X	X	X	X	X	X	X	W	9								
5 TRIP BLANK		X		X	X	X	X							W	1								
6																							
7																							
8																							
9																							
10																							
RELEASED BY: <u>Katie Hall</u>				DATE: <u>10/19/12</u>				RECEIVED BY: <u>Scott Lathen</u>				DATE: <u>10/19/12</u>											
PRINT NAME: <u>KATIE HALL</u>				FIRM: <u>GET</u>				TIME: <u>1900</u>				PRINT NAME: <u>Scott Lathen</u>				FIRM: <u>GET</u>				TIME: <u>1100</u>			
RELEASED BY: <u>Scott Lathen</u>				DATE: <u>10/22/12</u>				RECEIVED BY: <u>Pat Shannon</u>				DATE: <u>10-22-12</u>											
PRINT NAME: <u>Scott Lathen</u>				FIRM: <u>GET</u>				TIME: <u>1315</u>				PRINT NAME: <u>Pat Shannon</u>				FIRM: <u>TestAmerica</u>				TIME: <u>13:15</u>			
ADDITIONAL REMARKS:														TEMP: <u>4.3</u>		PAGE OF							

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11/6/2012

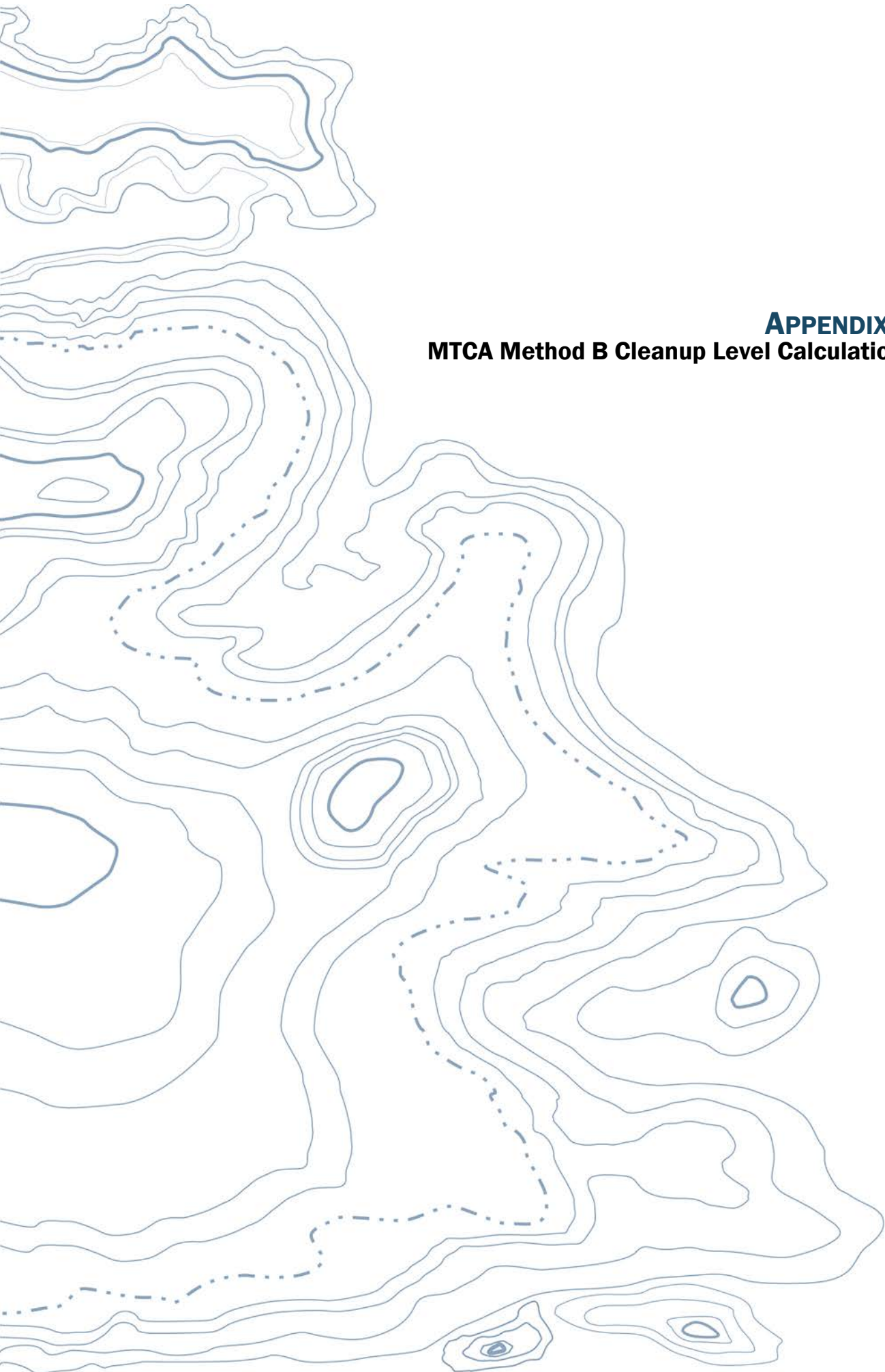


**TestAmerica Spokane
Sample Receipt Form**

Work Order #: <u>8550178</u>	Client: <u>Geo-Engineers</u>	Project: <u>L+L Exxon</u>		
Date/Time Received: <u>10-22-12 13:15</u>		By: <u>CS</u>		
Samples Delivered By: <input type="checkbox"/> Shipping Service <input checked="" type="checkbox"/> Courier <input type="checkbox"/> Client <input type="checkbox"/> Other:				
List Air Bill Number(s) or Attach a photocopy of the Air Bill:				
Receipt Phase	Yes	No	NA	Comments
Were samples received in a cooler:	<input checked="" type="checkbox"/>			
Custody Seals are present and intact:			<input checked="" type="checkbox"/>	
Are CoC documents present:	<input checked="" type="checkbox"/>			
Necessary signatures:	<input checked="" type="checkbox"/>			
Thermal Preservation Type: <input type="checkbox"/> Blue Ice <input type="checkbox"/> Gel Ice <input checked="" type="checkbox"/> Real Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> None <input type="checkbox"/> Other:				
Temperature by IR Gun: <u>4.3</u> °C Thermometer Serial #81500 (acceptance criteria 0-6 °C)				
Temperature out of range: <input type="checkbox"/> Not enough ice <input type="checkbox"/> Ice melted <input type="checkbox"/> w/in 4hrs of collection <input type="checkbox"/> NA <input type="checkbox"/> Other:				
Log-in Phase	Yes	No	NA	Comments
Date/Time: <u>10-22-12 14:15</u> By: <u>CS</u>				
Are sample labels affixed and completed for each container	<input checked="" type="checkbox"/>			
Samples containers were received intact:	<input checked="" type="checkbox"/>			
Do sample IDs match the CoC	<input checked="" type="checkbox"/>			
Appropriate sample containers were received for tests requested	<input checked="" type="checkbox"/>			
Are sample volumes adequate for tests requested	<input checked="" type="checkbox"/>			
Appropriate preservatives were used for the tests requested	<input checked="" type="checkbox"/>			
pH of inorganic samples checked and is within method specification	<input checked="" type="checkbox"/>			
Are VOC samples free of bubbles >6mm (1/4" diameter)	<input checked="" type="checkbox"/>			
Are dissolved parameters field filtered			<input checked="" type="checkbox"/>	
Do any samples need to be filtered or preserved by the lab			<input checked="" type="checkbox"/>	
Does this project require quick turnaround analysis		<input checked="" type="checkbox"/>		
Are there any short hold time tests (see chart below)		<input checked="" type="checkbox"/>		
Are any samples within 2 days of or past expiration		<input checked="" type="checkbox"/>		
Was the CoC scanned	<input checked="" type="checkbox"/>			
Were there Non-conformance issues at login		<input checked="" type="checkbox"/>		
If yes, was a CAR generated #			<input checked="" type="checkbox"/>	

24 hours or less	48 hours	7 days
Coliform Bacteria	BOD, Color, MBAS	TDS, TSS, VDS, FDS
Chromium +6	Nitrate/Nitrite	Sulfide
	Orthophosphate	Aqueous Organic Prep





APPENDIX C
MTCA Method B Cleanup Level Calculations

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 01/02/13

Site Name: L&L Exxon

Sample Name: B-3(5)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc	Composition
	dry basis	Ratio
	mg/kg	%
<u>Petroleum EC Fraction</u>		
AL_EC >5-6	1.6	0.08%
AL_EC >6-8	130	6.19%
AL_EC >8-10	630	29.99%
AL_EC >10-12	470	22.37%
AL_EC >12-16	80	3.81%
AL_EC >16-21	11	0.52%
AL_EC >21-34	7.4	0.35%
AR_EC >8-10	200	9.52%
AR_EC >10-12	180	8.57%
AR_EC >12-16	76	3.62%
AR_EC >16-21	13	0.62%
AR_EC >21-34	7.2	0.34%
Benzene	0.0146	0.00%
Toluene	10.4	0.50%
Ethylbenzene	22.3	1.06%
Total Xylenes	261	12.43%
Naphthalene	0.0057	0.00%
1-Methyl Naphthalene	0.0057	0.00%
2-Methyl Naphthalene	0.0057	0.00%
n-Hexane	0.535	0.03%
MTBE	0.00337	0.00%
Ethylene Dibromide (EDB)	0.00056	0.00%
1,2 Dichloroethane (EDC)	0.056	0.00%
Benzo(a)anthracene	0.0057	0.00%
Benzo(b)fluoranthene	0.0057	0.00%
Benzo(k)fluoranthene	0.0057	0.00%
Benzo(a)pyrene	0.0057	0.00%
Chrysene	0.0057	0.00%
Dibenz(a,h)anthracene	0.00343	0.00%
Indeno(1,2,3-cd)pyrene	0.0057	0.00%
Sum	2100.56426	100.00%

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared

REMARK:

Enter site-specific information here.....

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentration (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 1/2/2013

Site Name: L&L Exxon

Sample Name: B-3(5)

Measured Soil TPH Concentration, mg/kg: **2,100.564**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,782	1.39E-07	7.55E-01	Pass
	Method C	51,046	2.98E-08	4.12E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	49	6.28E-05	2.37E+00	Fail
	Target TPH GW Conc. @ 500 ug/L	25	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through -7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	2,782.03	51,045.63
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI=1	YES	2.78E+03	1.84E-07	1.00E+00	YES	5.10E+04	7.25E-07	1.00E+00
Total Risk=1E-5	NO	1.51E+05	1.00E-05	5.44E+01	NO	7.04E+05	1.00E-05	1.38E+01
Risk of Benzene= 1E-6	NO	2.61E+06	1.73E-04	9.39E+02	NA			
Risk of cPAHs mixture= 1E-6	NO	2.60E+04	1.72E-06	9.34E+00				
EDB	NO	4.08E+04	2.69E-06	1.47E+01				
EDC	NO	3.81E+05	2.51E-05	1.37E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	HI=1
Protective Ground Water Concentration, ug/L	819.60
Protective Soil Concentration, mg/kg	48.78

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	8.20E+02	5.20E-06	1.00E+00	4.88E+01
Total Risk = 1E-5	NO	1.23E+03	1.00E-05	1.45E+00	9.94E+01
Total Risk = 1E-6	YES	1.90E+02	1.00E-06	2.42E-01	9.09E+00
Risk of cPAHs mixture= 1E-5	NO	2.12E+03	9.24E-05	2.48E+00	100% NAPL
Benzene MCL = 5 ug/L	NO	2.12E+03	9.24E-05	2.48E+00	100% NAPL
MTBE = 20 ug/L	NO	2.12E+03	9.24E-05	2.48E+00	100% NAPL

Note: 100% NAPL is 68000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	2.77E-06	6.27E-01	2.54E+01

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 01/09/13

Site Name: L&L Exxon

Sample Name: B-5(16)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc	Composition
	dry basis	Ratio
	mg/kg	%
<u>Petroleum EC Fraction</u>		
AL_EC >5-6	28	1.90%
AL_EC >6-8	200	13.54%
AL_EC >8-10	490	33.17%
AL_EC >10-12	280	18.96%
AL_EC >12-16	22	1.49%
AL_EC >16-21	3.35	0.23%
AL_EC >21-34	3.35	0.23%
AR_EC >8-10	52	3.52%
AR_EC >10-12	31	2.10%
AR_EC >12-16	13	0.88%
AR_EC >16-21	3.35	0.23%
AR_EC >21-34	3.35	0.23%
Benzene	0.00317	0.00%
Toluene	5.01	0.34%
Ethylbenzene	45.4	3.07%
Total Xylenes	289	19.57%
Naphthalene	2.3	0.16%
1-Methyl Naphthalene	2.01	0.14%
2-Methyl Naphthalene	3.85	0.26%
n-Hexane	0.046	0.00%
MTBE	0.0038	0.00%
Ethylene Dibromide (EDB)	0.000545	0.00%
1,2 Dichloroethane (EDC)	0.046	0.00%
Benzo(a)anthracene	0.0055	0.00%
Benzo(b)fluoranthene	0.0055	0.00%
Benzo(k)fluoranthene	0.0055	0.00%
Benzo(a)pyrene	0.0055	0.00%
Chrysene	0.0055	0.00%
Dibenz(a,h)anthracene	0.003295	0.00%
Indeno(1,2,3-cd)pyrene	0.0055	0.00%
Sum	1477.10581	100.00%

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared

REMARK:

Enter site-specific information here.....

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentration (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 1/9/2013

Site Name: L&L Exxon

Sample Name: B-5(16)

Measured Soil TPH Concentration, mg/kg: **1,477.106**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	3,359	1.33E-07	4.40E-01	Pass
	Method C	64,329	2.86E-08	2.30E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	49	7.11E-05	2.17E+00	Fail
	Target TPH GW Conc. @ 500 ug/L	19	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through -7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	3,359.29	64,328.54
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI=1	YES	3.36E+03	3.02E-07	1.00E+00	YES	6.43E+04	1.25E-06	1.00E+00
Total Risk=1E-5	NO	1.11E+05	1.00E-05	3.31E+01	NO	5.16E+05	1.00E-05	8.02E+00
Risk of Benzene= 1E-6	NO	8.46E+06	7.61E-04	2.52E+03	NA			
Risk of cPAHs mixture= 1E-6	NO	1.89E+04	1.70E-06	5.64E+00				
EDB	NO	2.95E+04	2.65E-06	8.77E+00				
EDC	NO	3.26E+05	2.93E-05	9.70E+01				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

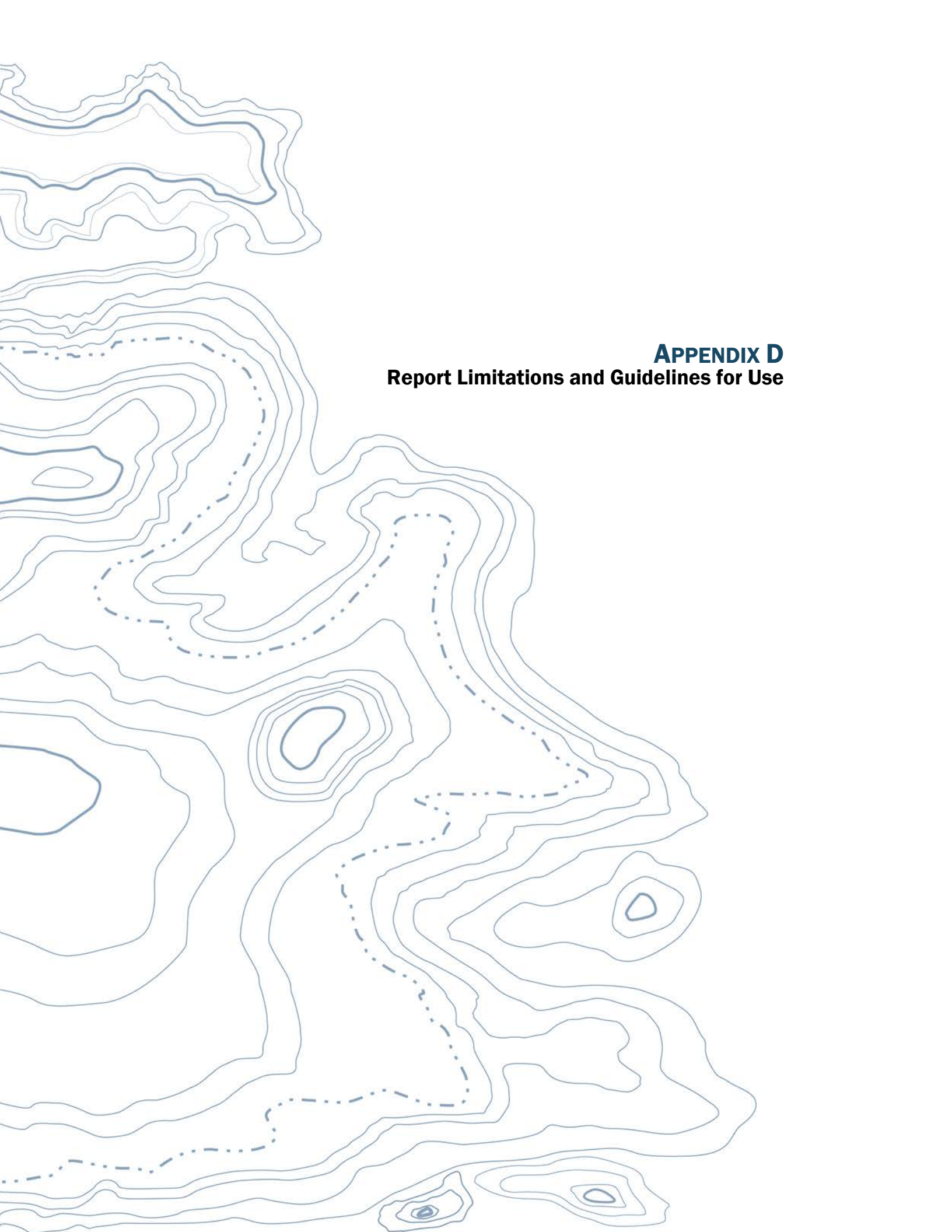
Most Stringent Criterion	HI=1
Protective Ground Water Concentration, ug/L	1135.77
Protective Soil Concentration, mg/kg	49.25

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	1.14E+03	7.07E-06	1.00E+00	4.92E+01
Total Risk = 1E-5	NO	1.42E+03	1.00E-05	1.23E+00	7.16E+01
Total Risk = 1E-6	YES	1.93E+02	1.00E-06	1.76E-01	6.75E+00
Risk of cPAHs mixture= 1E-5	NO	2.63E+03	1.12E-04	2.29E+00	100% NAPL
Benzene MCL = 5 ug/L	NO	2.63E+03	1.12E-04	2.29E+00	100% NAPL
MTBE = 20 ug/L	NO	2.63E+03	1.12E-04	2.29E+00	100% NAPL

Note: 100% NAPL is 66000 mg/kg TPH.

3.2. Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	2.79E-06	4.48E-01	1.91E+01



APPENDIX D
Report Limitations and Guidelines for Use

APPENDIX D REPORT LIMITATIONS AND GUIDELINES FOR USE¹

This Appendix provides information to help you manage your risks with respect to the use of this report.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for the exclusive use of the Washington State Department of Ecology (Ecology). This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Ecology should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the L&L Exxon site located at 1315 Lee Boulevard in Richland, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

Our report was prepared for the exclusive use of Ecology. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm and Ecology with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with

¹ Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

Ecology and generally accepted environmental practices in this area at the time this report was prepared.

Environmental Regulations are Always Evolving

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

Uncertainty May Remain Even After This Phase II ESA is Completed

No ESA can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

Most Environmental Findings are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproductions are acceptable, but recognize that separating logs from the report can elevate risk.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these “Report Limitations and Guidelines for Use” apply to your project or site.

Geotechnical, Geologic and Geoenvironmental Reports Should Not be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

Biological Pollutants

GeoEngineers’ Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants and no conclusions or inferences should be drawn regarding Biological Pollutants, as they may relate to this project. The term “Biological Pollutants” includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

If Ecology desires these specialized services, they should be obtained from a consultant who offers services in this specialized field.

Have we delivered World Class Client Service?
Please let us know by visiting [www. geoengineers.com/feedback](http://www.geoengineers.com/feedback).

